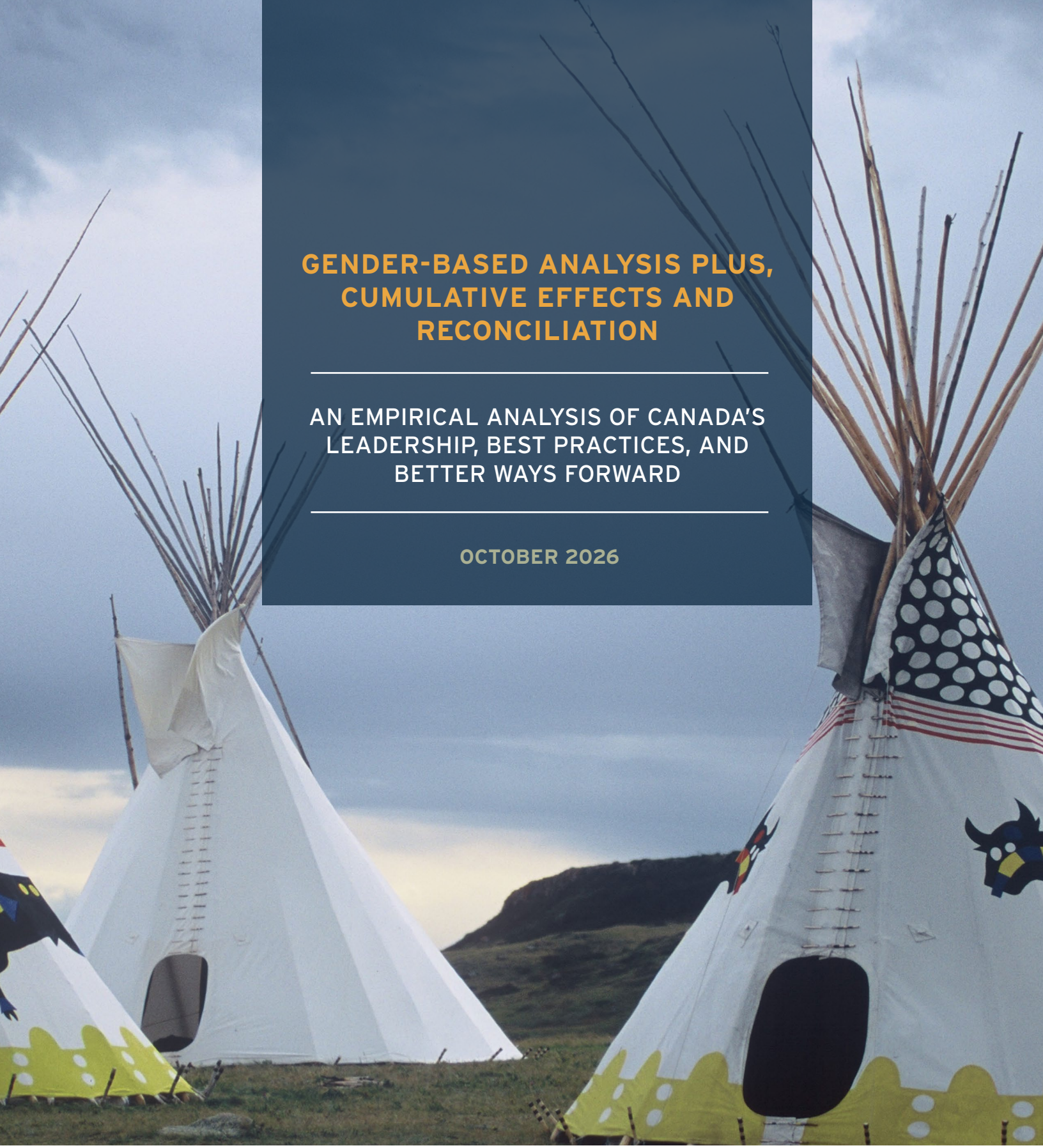


GENDER-BASED ANALYSIS PLUS, CUMULATIVE EFFECTS AND RECONCILIATION

AN EMPIRICAL ANALYSIS OF CANADA'S LEADERSHIP, BEST PRACTICES, AND BETTER WAYS FORWARD

OCTOBER 2026

Indigenous Centre for Cumulative Effects

Government of Canada / Gouvernement du Canada
Impact Assessment Agency of Canada

SFU
SIMON FRASER UNIVERSITY

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October 2026

ELENA LANDAVERDE, PATRICIA FITZPATRICK, AND DAWN HOOGEVEEN

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104 – 360 College Street, Toronto, Ontario M5T 1S6
t: 819.410.0580 / e: info@icce-caec.ca

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SUMMARY

Applying Gender-based Analysis Plus (GBA Plus) in impact assessment is a relatively new requirement in Canada, and its systematic application is in its early stages. The intersection of sex and gender, along with other identity factors, is among the factors to be considered in impact assessments under sub-section 22(1) of the *Impact Assessment Act* (S.C. 2019, c. 28, s. 1) (hereafter IAA). In the Strange Lake Rare Earth Mining Project's Tailored Impact Statement Guidelines, GBA Plus is defined as "an intersectional analysis that goes beyond biological (sex) and socio-cultural (gender) differences to consider other factors, such as age, disability, education, ethnicity, economic status, geography (including rurality), language, race, religion, and sexual orientation" (IAAC, 2024, p. 3). More details regarding GBA Plus as defined by the Impact Assessment Agency of Canada (IAAC) can be found in the GBA Plus guidance document (IAAC, 2021).[1]

Although there is extensive literature on GBA Plus and impact assessment surveyed nationally and internationally, few studies have conducted empirical analyses of its application under the IAA. It is still unclear whether proponents are implementing GBA Plus consistently and adequately. Existing research (Antwi et al., 2024; Gill & Ritchie, 2020; Kwon et al., 2025; Vanclay & Esteves, 2024) also highlights a lack of attention to social and cumulative effects in impact assessments, thereby sidelining practices such as GBA Plus and the meaningful integration of Indigenous rights and knowledge. These practices are formally integrated into the federal impact assessment in Canada through legislative requirements; however, this formality does not necessarily ensure consistent and adequate application. Systems of power and structures of oppression continue to shape impact assessment practice, leading to ongoing difficulties. Therefore, legislative requirements are an important first step but must be accompanied by an ongoing effort by government, practitioners, and proponents to work toward best-practice principles, some of which are outlined in this report.

The siloed nature of GBA Plus (e.g., GBA Plus largely stand-alone, rather than integrated in relevant sections such as cumulative effects, health effects and Indigenous rights) is in tension with best practices that emphasize the importance of Indigenous Peoples' rights and concerns for sustainable and equitable project decision-making and the inclusion of social impact assessment across project appraisal methodologies. *Gender-based Analysis Plus, Cumulative Effects, and Reconciliation: An empirical analysis of Canada's leadership, best practices, and better ways forward* examines three projects assessed under the IAA to evaluate how proponents are implementing GBA Plus, with particular attention to intersections between cumulative effects and Indigenous engagement and Indigenous Knowledge. Tailored Impact Statement Guidelines (TISG) and Impact Statements were reviewed using a keyword search approach. The analysis shows that the guidelines for GBA Plus implementation lack methodological clarity and rigour, resulting in uneven and sometimes vague application across projects. The use of GBA Plus remains significant, yet there is room for

1 The GBA Plus guidance provided by IAAC defines the practice as "an analytical process that can guide practitioners in identifying who is impacted by a project and assess how they may experience impacts differently" (p. 3). The guidance also states that "GBA Plus considers many identity factors and how these intersect with context and lived experiences to impact how people experience projects" (p. 5), including the recognition that "historical and current power structures (e.g., laws, policies, governments and other institutions) have shaped society and contributed to inequalities" (p. 3).

The use of GBA Plus remains significant, yet there is room for improvement, as intersections with cumulative effects and Indigenous Knowledge are either siloed or absent.

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We examine three projects subject to assessment under the IAA. First is the Strange Lake Rare Earth Mining project, located northeast of Schefferville, Quebec (initiated 2023). The second project is the Crawford Nickel mine, located north of Timmins, Ontario. Crawford was announced as one of the major projects under the second tranche of projects referred to by the Major Projects Office to "serve as an anchor of Canada's local leadership in clean industrial minerals" (Government of Canada, 2025a). Its assessment, also under the IAA, was initiated in 2022. The third project is Cedar LNG located near Kitimat, British Columbia. This project was subject to process; as such, the assessment was conducted by the Environmental Assessment Office in British Columbia, meeting the requirements of both the IAA and the provincial *Environmental Assessment Act* (SBC 2018 CHAPTER 51).

Gender-based Analysis Plus, Cumulative Effects, and Reconciliation: An empirical analysis of Canada's leadership, best practices, and better ways forward recommends more detailed and methodologically specific guidance for the application of GBA Plus. More specifically:

1. Establish a GBA Plus follow-up program, as defined in the IAA as: "a program for verifying the accuracy of the impact assessment of a designated project and determining the effectiveness of any mitigation measures."
2. Expand on GBA Plus to require a culturally relevant approach and improved mechanisms to honour Indigenous Knowledge, including adequate funding.
3. Ensure operational guidance on Indigenous-led processes, Indigenous jurisdiction, and the United Nations Declaration on the Rights of Indigenous Peoples including the United Nations Declaration Act, when drawing on harmonized or substituted "one review" IA processes.
4. Prioritize participatory and integrative approaches to cumulative effects, including social cumulative effects and cultural indicators in cumulative effects and GBA Plus.

Clearer requirements would help proponents meaningfully integrate GBA Plus. More broadly, the findings underscore the need to better account for cumulative effects, including social and Indigenous cultural and 'way of life' indicators, and strengthen the use of frameworks that honour Indigenous rights and Indigenous Knowledge. Canada's very use of GBA Plus and attempts at meaningful cumulative effects work place the country as a leader in social impact assessment, internationally. Recommendations point to improving work domestically, to remain a leader in the field and showcase how best practice can be actualized as even better practices in the international field.

INTRODUCTION

In his 2025 article "Transformative governance of cumulative effects through an Indigenous outlook" Lawrence Ignace points to the chasm between cumulative effects assessment and Indigenous Knowledge. He posits leverage points for transformative governance in bringing these two ways of thinking together, noting the importance of recognizing Indigenous Knowledge, upholding Indigenous rights, and shifting to governance systems that align with Indigenous self-determination and co-governance.

While globally best-practice impact assessment considers the suite of social, cultural, health, and rights-based impacts associated with proposed developments, the inclusion of these perspectives is limited and varies across Canada (Pimentel da Silva et al., 2021; Westwood et al., 2025). IA regimes largely continue to prioritize direct biophysical impacts, relegating human consequences to indirect or induced areas of analysis, or adding them only on a discretionary basis (Antwi et al., 2024; Arnold et al., 2022; Kwon et al., 2025). Similarly, cumulative effects assessment is adopted sporadically across Canadian assessment legislation (Arnold et al., 2022). Assessments are somewhat handcuffed by the approach to assessing impacts in each jurisdiction's legislation; the norm across Canada tends to favour project-specific impacts, with a biophysical approach over more holistic and social analysis of impact assessment, replete with cumulative effects considerations. As a result of these persistent gaps in assessing cumulative and rights-based impacts, Indigenous Nations have increasingly turned to Canadian courts to challenge assessment outcomes (Keefer et al., 2025).

IA, Rights-holders, and Rights-deserving Groups

IA has been criticized for its insufficient management of impacts on Indigenous rights and cumulative effects (Keefer et al., 2025) as well as gendered impacts on women, two-spirit, trans, queer, and non-binary people (Dempsey et al., 2023). In "Inconsistent, downplayed, and pathologized: How mining's gendered impacts are considered in BC environmental assessment," Dempsey et al. (2023) warn that IA processes risk further legitimizing resource extraction while doing little to promote intersectional gender equality. Similarly, Keefer et al. (2025) point to IA's failure to meaningfully recognize Indigenous self-determination, and to the erosion of Indigenous rights caused by inadequate cumulative effects assessment. Taken together, these critiques point to the need for IA processes with stronger consideration of cumulative impacts, equal integration of Indigenous Knowledge, and meaningful efforts to address gendered impacts.

Further, building on Lawrence Ignace's poignant piece, Indigenous Knowledge Systems are foundational to the assessment of social, cultural, health, and rights-based impacts, and the consideration of cumulative effects, yet IA regimes continue to marginalize these systems, failing to accord them the same consideration in decision-making and evidentiary weight as Western scientific approaches. The contrast between Indigenous Knowledge Systems and Western scientific approaches is particularly marked when considering how federal assessments address the potential impacts of development on Rights-holders and Rights-deserving groups, such as queer, 2SLGBTQI+ and disabled peoples (Zacharias et al., 2026). The Blueberry First Nation cumulative effects decision *Yahey v. British Columbia* (2021 BCSC 1287) has been a catalyst for change, in regard to meaningful integration of cultural and 'Indigenous way of life' indicators. Among the suite of methodological advances needed in the implementation and regulation of GBA Plus in IA, is a reinvigorated focus on cultural rights including culturally relevant GBA Plus as defined by First Nations and from a lens that supports integrative approaches. While there remain significant moves to centre Indigenous Knowledge systems and culturally relevant GBA Plus (Sanchez-Pimienta et al., 2021; Bridges & Skelding, 2024), work towards implementation remains ongoing.

GBA Plus and intersectionality are two related lenses that have been utilized to better account for difference and diversity across populations. While considering differential impacts on women can be traced to the 1950s, the adoption of the Beijing Declaration in 1995 served as an important milestone in the work. Between 2017 and 2021, the federal government adopted GBA Plus as a requirement across various systems, including budgetary measures, policies and proposals. Importantly for this work, GBA Plus was included as a requirement for federal assessment in the IAA. It is a tool and methodology that mandates an analysis of "sex, gender, and other identity factors," as written into the IAA in Section 22 (Hoogeveen et al., 2021; Stienstra et al., 2020). While some jurisdictions, such as British Columbia, incorporate related considerations, requirements vary across jurisdictions. This leads to uneven analysis in the assessment of major projects across jurisdictions.

Moreover, while there has been a push to emphasize Indigenous-led impact assessment (see Arnold et al., 2024), when emphasis remains on economic reconciliation, approaches can sideline community responses to impact assessment processes. This limits meaningful uptake of approaches that better align with Indigenous identities, such as Indigenous Gender-based Analysis Plus, a frame used in British Columbia, or culturally relevant GBA Plus.

The gap between best practice and implementation of GBA Plus was made apparent at a 2025 International Association for Impact Assessment workshop led by Hoogeveen and Fitzpatrick, titled *Gender-Based Analysis Plus & Intersectional Impact Assessment: An invitation for action*. Drawing on experiences shared by researchers and practitioners across diverse fields related to impact assessment internationally, the workshop participants revealed that intersectional analysis remains poorly defined and inconsistently applied in impact assessments, including in Canada. Participants identified both technical and structural barriers. At the operational level, practitioners noted there is a lack of clear standards for data collection and analysis, adequate training opportunities, and robust datasets. At the systemic level, practitioners face vague government guidance, broad legal requirements, and entrenched cultural and political barriers. These findings underscore that the marginalization of intersectional and gender-based approaches is not merely a matter of capacity but reflects deeper institutional failures to mandate and enforce equitable impact assessment.

Overall, despite well-founded recognition of the intersection of GBA Plus, cumulative impacts and the impacts on Indigenous lands, resources, language, and culture, provincial environmental and impact assessments in Canada typically lack meaningful inclusion of these factors. And at the federal level, practices are nascent.

In *Honouring the Truth, Reconciling for the Future* 2015 report, the Truth and Reconciliation Commission, led by Justice Murray Sinclair, establishes that reconciliation is not an Aboriginal problem, it is a Canadian one that requires establishing mutual respect between Indigenous and non-Indigenous peoples. Following Sinclair's emphasis on maintaining this cross-cultural respect, in this report we draw on reconciliation as a tool to promote better implementation of culturally relevant GBA Plus. We also acknowledge interventions by critical Indigenous scholars, such as Glen Coulthard, who caution against state-centred settler-colonial approaches to reconciliation. In conclusion of this work, we demonstrate the need to support Indigenous leadership in culturally relevant GBA Plus, as this need to implement better culturally relevant GBA Plus supports led by Indigenous Nations was evident throughout our analysis.

Building on creating bridges between polarized ways of thinking, this report draws on a qualitative case study analysis to review how GBA Plus has been implemented in Canada and outlines best practices and missed opportunities in the landscape with attention to Indigenous Knowledge and cumulative effects. We provide an updated evidence base to operationalize best practices, including under the current *Impact Assessment Act* (S.C. 2019, c. 28, s. 1) (hereafter IAA) Gender-based Analysis Plus (GBA Plus) legislative requirement, within cumulative effects frameworks such as those proposed in regional assessments.

Keepers of the Circle have done significant grounded research offering tools to implement culturally relevant GBA Plus (see Bridges and Skelding 2024). This project seeks to contribute to this body of work by exploring opportunities to strengthen the implementation of GBA Plus in impact assessment across Canada, including bringing to the fore practices that foreground cumulative effects and Indigenous reconciliation. Through a review of case studies, the work is designed to show engagements with emerging GBA Plus practice and explores critical themes of cumulative effects and reconciliation and offers case studies of current examples.

We use impact assessment to describe the process through which projects, plans and initiatives are reviewed to consider, and where possible mitigate, negative impacts of a project proposal. The term IAA refers specifically to assessments under the *Impact Assessment Act* (S.C. 2019, c. 28, s. 1).

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Our scope for the empirical analysis was national, looking at three projects.

- **Strange Lake Rare Earth Mining Project:** This project, located 235 km northeast of Schefferville, Quebec, proposes the construction, operation, decommissioning, and abandonment of an open-pit rare-earth mine. The mine is expected to operate for 30 years. It also includes a new metal mill, an airstrip, and a 170 km road connecting the mine to new port facilities on the Labrador coast. The project is currently being assessed by the Impact Assessment Agency of Canada (IAAC), in an informal collaboration with the Government of Newfoundland and Labrador[2]. The planning phase of the project has been completed, with the joint guidelines published in November 2024. The project is in the Impact Statement phase, and at the time of writing this report, is approximately halfway through the phase.

- **Crawford Nickel Project:** This project located 42 km north of Timmins, Ontario, proposes the construction, operation, decommissioning, and abandonment of an open-pit nickel-cobalt mine. The project includes an on-site metal mill. The mine is expected to operate for 41 years. The project is being assessed by the IAAC under the IAA. The planning phase of the project has been completed, with the TISG published in March 2023. At the time of writing, the project has nearly completed the Impact Statement phase. The Impact Statement was published in November 2024 and completed its comment period in February 2025.

- **Cedar LNG:** This project proposes to develop, construct, and operate a floating liquefied natural gas (LNG) facility and marine export terminal, including an off-site transmission line between BC Hydro's Minette Substation and the facility area. The project is located near Kitamaat Village, in Haisla territory. The project is expected to operate for up to 40 years, starting in 2028. It was assessed by the British Columbia Environmental Assessment Office (EAO), under a provincial-federal substitution process, whereby the provincial assessment was conducted in place of the federal process while meeting federal requirements. The Impact Statement was published in November 2022 and the project received a positive decision statement in March 2023, with the federal Minister of Environment and Climate Change determining that the project is not likely to cause significant adverse environmental effects. The project is currently in the post-decision, pre-construction phase, and serves as a counterpoint to the two other projects we examine.

The Crawford Nickel and Strange Lake projects were selected because they are current and federally regulated as of 2025. The Cedar LNG project was selected because it underwent a substitution from the federal to the provincial regulatory process, which provides insight into the differences between the two. Additionally, the Cedar LNG project is particularly relevant to this research due to its Indigenous ownership, providing insights into the role of economic reconciliation and Indigenous jurisdiction in assessments in this case. Importantly, all projects we studied need to meet the requirements of the IAA — whether they are reviewed through substitution (Cedar LNG), or there was collaboration for the terms of reference (Strange Lake) or if it is Crawford.

2 The project is subject to assessment as per the IAA and the Environmental Protection Act (SNL2002 CHAPTER E-14.2) of Newfoundland and Labrador. We use the phrase *collaboration* as the federal and provincial departments worked together to develop the guidelines for the project, but the assessment reports and decisions will be separate. We use the term *informal* to note this collaboration falls outside of a specific cooperation agreement negotiated between the two governments, based on current assessment legislation.

An initial background literature search examined recent academic and grey literature surrounding the intersection of GBA Plus, cumulative effects, and Indigenous Knowledge. There is not a lot of work at this interface. Empirical research relied on a desktop review of the assessment documentation, including the terms of reference for the Impact Statements (i.e., the Strange Lake TISG, the Crawford Nickel TISG, and the Cedar LNG Application Information Requirements), the Impact Statements (i.e., the Crawford Nickel Impact Statement and the Cedar LNG Impact Statement), and technical memos (i.e., Cedar LNG Information Request Regarding GBA Plus).

Throughout these documents, GBA Plus was most frequently implemented through requirements to consider and direct assessments toward *diverse populations*. The term *diverse populations* (including diverse [population] subgroups and diverse population groups), although a good first step to consider individuals who may be left out of assessments, can be superficial and unevenly applied throughout reports and within reports themselves, often defined differently and excluding identity factors such as disability. While the concept of diverse populations can facilitate the implementation of GBA Plus, its current inconsistent usage raises concerns regarding the reproducibility and effectiveness of GBA Plus in these reports. This is not to say that GBA Plus is not significant. Rather, given the relatively new implementation of GBA Plus in Canadian impact assessment, it still holds proponents accountable for including gender and other identity factors in their assessments, mainly through disaggregated data and inclusive engagement practices. However, the extent and meaningfulness of these GBA Plus approaches remain insufficient and somewhat siloed from the assessment of cumulative effects and the potential adverse impacts of project activities on the exercise of Indigenous rights.

The below analysis leans into an examination of if and how GBA Plus and cumulative effects affecting rights-holders and rights-deserving groups are analyzed, across three projects. In doing so, we also note that when social impacts are analyzed, they can be siloed across and within assessments.

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METHODS

We conducted a high-level review of the available documentation for the case studies of Crawford, Strange Lake and Cedar LNG. As each project is in a different stage of review, we considered:

- The published Tailored Impact Statement Guidelines for the Crawford Nickel and Strange Lake projects and the Application Information Requirements (AIR) for the Cedar LNG project;
- the Impact Statements (IS) for the Crawford Nickel and Cedar LNG projects.

The analysis focused on identifying key sections of these documents that integrated/discussed gender considerations, cumulative effects, and Indigenous Knowledge, and their intersections. The key sections were first selected through a targeted keyword search, including "GBA Plus," "gender-based analysis plus," "cumulative effects," and "Indigenous Knowledge." After this initial review, the documents were examined more broadly to identify any additional relevant sections, including those not captured through the keyword search. The goal was to identify potential gaps in the implementation of GBA Plus, particularly at its intersections with cumulative effects and Indigenous Knowledge. Once these sections were selected, a detailed review was conducted to understand: (1) the extent to which GBA Plus was applied, (2) how GBA Plus is being operationalized, (3) whether GBA Plus is incorporated into cumulative effects assessments (and more broadly, whether cumulative social impacts are assessed and considered), and (4) how Indigenous Knowledge is used within GBA Plus analysis and cumulative effects assessments.

TAILORED IMPACT STATEMENT GUIDELINES – STRANGE LAKE AND CRAWFORD NICKEL

The Strange Lake and Crawford Nickel mining projects have been subject to impact assessment (IA) under the federal regulatory process. A TISG was developed for each project, with the goal of better informing proponents in developing their Impact Statements. Findings from the Strange Lake TISG and the Crawford Nickel TISG are presented together in the following section, since they contain nearly identical content. The documents differ only slightly in wording and structure. In other words, the requirements and guidelines regarding GBA Plus, Indigenous engagement, Indigenous Knowledge, and cumulative effects are consistent across both TISG.

SCOPE OF GBA PLUS

In the opening pages, GBA Plus is introduced in a way that establishes the document's overarching tone. Its placement suggests that the proponent is expected to integrate GBA Plus throughout the Impact Statement meaningfully. This introductory section briefly outlines what GBA Plus is, why it matters, and what its implementation should look like. Although keeping reflections at a high level, it highlights key GBA Plus elements as defined by the government, which are further expanded on and applied to the project's context in later sections of the TISG. One of these elements is the definition of GBA Plus provided in the Strange Lake TISG, which states that GBA Plus is "an intersectional analysis that goes beyond biological (sex) and socio-cultural (gender) differences to consider other factors, such as age, disability, education, ethnicity, economic status, geography (including rurality), language, race, religion, and sexual orientation" (IAAC, 2024, p. 3).

In the following sections of the TISG, for both Strange Lake and Crawford Nickel, GBA Plus is also underscored in the context of public participation, Indigenous engagement, cumulative effects, health conditions, social conditions, economic conditions, and Indigenous Peoples' physical and cultural heritage, current use, and rights. A GBA Plus approach requires inclusive engagement and public participation. The extent to which these sections consider the intersectional definition provided at the outset, however, remains open to examination. In other words, the preliminary nature of the statements leaves room for interpretation of how implementation and follow-up and monitoring might flow in future assessment stages.

METHODS REQUIRED FOR GBA PLUS IMPLEMENTATION

The TISG present various approaches required for implementing GBA Plus. The most frequently cited approach was data disaggregation by identity factors.

Another commonly referenced approach was engagement or consultation with "diverse populations." This term, found throughout the TISG, is used to encapsulate specific groups of individuals under different identity factors, specified as those to be included in the GBA Plus. Examples of diverse populations mentioned included youths, women, two-spirited people, individuals with disabilities, Elders, gender diverse people, and other groups identified with community-relevant factors. Of note, is that the concept of *diverse populations* is defined inconsistently across the documents' sections. Some sections used broader definitions, such as limiting the selection of groups by gender and age, while others used more detailed definitions that aligned more closely with the original definition of GBA Plus given in the introduction. For example, in sections addressing Indigenous interests, the definition becomes more specific by including identity factors related to Indigenous identity, stating "diverse population groups, including Indigenous Peoples or other relevant population groups (e.g., women, youth, Elders)" (IAAC, 2024, p. 123).

The TISG also require the proponent to describe diverse populations' access to resources, opportunities, and services, as well as potential differential effects and the related mitigation and enhancement measures.

A fourth method, though less frequently mentioned, is the use of trauma-informed approaches in the engagement process. Culturally appropriate engagement and data collection in the implementation of GBA Plus was also presented.

Culturally appropriate, or relevant, GBA Plus addresses the persistent effects of colonization and the power structures and oppression that Indigenous Peoples continue to experience today. It recognizes the ongoing trauma and violence experienced by Indigenous Peoples and highlights cultural and historical perspectives. Trauma-informed approaches recognize trauma, violence and their impacts on individuals' lives (Government of Canada, 2025b). They offer individuals the time and opportunities needed to engage in emotionally and physically safe environments. Trauma-informed and culturally appropriate approaches are particularly relevant within the context of impact assessment, where development projects have historically contributed to the oppression of Indigenous Peoples and communities.

Although reports and guidance documents are available for proponents' use and reference, the absence of explicit requirements in the TISG means that proponents have little accountability to demonstrate how, or whether, these approaches were applied. Although the TISG do present some methods for implementing GBA Plus, they remain principle-based, lacking detail on how the proponent will implement GBA Plus methodologically. For example, while TISG encourage the use of quantitative and qualitative data from studies, engagement, and consultations, they do not specify explicit criteria for data collection or analysis. The methods are presented in a concise way that does not include space for specific methodologies, which could ensure that the proponent adequately and meaningfully implements GBA Plus in a project's assessment. As a result, the TISG's guidance for GBA Plus tends to be general, thus potentially limiting the depth and rigour of assessments.

It is important to note that this principle-based approach is not characteristic of TISGs as a whole, as other sections take a more prescriptive approach to guidelines and requirements. For example, the Strange Lake TISG's section on atmospheric environment offers far more methodological detail, requiring the inclusion of total particulate matter (2024, p. 64) and hourly distribution of noise events (2024, p. 67). This inconsistency suggests that inadequate guidance on data collection, analysis, and methodological approaches for GBA Plus is not simply a matter of TISGs favouring brevity across the board but reflects a specific gap in how GBA Plus is treated relative to other assessment components.

This gap creates uncertainty about the meaningful application of GBA Plus by proponents, enabling superficial compliance, "box-ticking," or inadequate implementation of GBA Plus by the proponent. The lack of detailed guidance for GBA Plus also reflects the persistent sidelining of qualitative methods relative to quantitative approaches in impact assessment (see also Walker et al., 2025). As a practice that tends to fall in the social sciences, GBA Plus' qualitative methods and findings can be perceived as subordinate within the assessment process, receiving less attention and detail in formal documentation.

It is also important to acknowledge that these approaches are still emerging, that practitioner expertise remains limited, and that there is no established standard against which adequacy can be easily measured (see Bridges and Skelding 2024 for an exception). For these reasons, embedding clear, specific information requirements directly within the TISG is needed to support proponents in applying these approaches meaningfully and to enable reviewers to assess whether the engagement was conducted adequately.

EXTENT OF INDIGENOUS ENGAGEMENT AND INDIGENOUS KNOWLEDGE WITH GBA PLUS

The TISGs integrate Indigenous engagement and Indigenous Knowledge into their GBA Plus guidelines and requirements by explicitly requiring a description of the proponent's efforts to engage with diverse populations within each concerned Indigenous group in culturally appropriate ways. These populations are identified by gender, age, and other community-relevant factors, which can include hunters, trappers, harvesters, and Elders. Furthermore, the process also emphasizes integrating perspectives from Indigenous youth, women, two-spirited people, individuals with disabilities, Elders, and other relevant community members. For example, the Strange Lake TISG states,

> *The Impact Statement must indicate where input from Indigenous groups, including Indigenous Knowledge, has been incorporated and how it was considered. Information should … integrate the perspectives of various population groups, such as youth, women, elders, gender diverse, two-spirited people, individuals with disabilities, and other community-relevant factors where provided. (IAAC, 2024, p. 37-38)*

Additionally, the TISG require that Indigenous Knowledge be integrated in the development of baseline conditions and the assessment of potential effects.

CONSIDERATION OF CUMULATIVE EFFECTS THROUGH THE LENS OF GBA PLUS AND INDIGENOUS KNOWLEDGE

GBA Plus is not mentioned in the TISG cumulative effects assessment guidelines and requirements. The cumulative effects section mentions the inclusion of non-biophysical impacts, such as health, social, economic, the well-being of Indigenous Peoples, traditional land and resource use, and the rights of Indigenous Peoples, but it does not mention any GBA Plus lens for analyzing these cumulative impacts.

Regarding Indigenous Knowledge, the TISG require proponents to collaborate with Indigenous groups to assess the cumulative effects on the rights and interests of Indigenous Peoples. Furthermore, the potential impact on the current use of lands and resources for traditional purposes must also be considered in this assessment. As mentioned in the Strange Lake TISG, "the Impact Statement must … describe how cumulative effects to environmental and socio-cultural conditions, including changes to those conditions, have already impacted physical and cultural heritage." (IAAC, 2024, p. 134). Follow-up and monitoring requirements are crucial to meaningful and long-term application of ongoing assessment.

The absence of GBA Plus from cumulative effects requirements reflects a broader pattern of siloing between GBA Plus, cumulative effects, and Indigenous Knowledge. These three areas of guidance are treated as distinct streams of analysis rather than as interconnected. However, reviewing these sections together reveals an overlap in their objectives, suggesting that a more integrated approach could strengthen the assessment of cumulative impacts on Rights-holders and Rights-deserving groups.

APPLICATION INFORMATION REQUIREMENTS – CEDAR LNG

The Cedar LNG AIR offer an alternative perspective on the requirements imposed on proponents for developing their Impact Statements. While the project is at a later state in development, there are contrasting approaches to scope that are significant. We turn to this next.

CEDAR LNG SCOPE OF GBA PLUS

METHODS REQUIRED FOR GBA PLUS IMPLEMENTATION

The AIR for Cedar LNG requires GBA Plus to be implemented in the following ways, which closely mirror the requirements previously seen in the federally assessed projects presented above. First, proponents must use both qualitative and quantitative data that are disaggregated by identity factors. The AIR also specifies that assessments must consider how specific subgroups may be differentially affected by various identity factors. In this regard, it is worth noting that the AIR explicitly mentions the application of intersectionality, which is defined as "multiple identity factors that influence [diverse populations] experiences" (EAO, 2021, p. 192). The application of intersectionality is also a requirement in the TISG; however, it is not explicitly defined and is presented only briefly, leaving the proponent to refer to the GBA Plus guidance for further detail.[3] Further, the AIR itself does not provide further detail on how intersectionality should be implemented.

GBA Plus must also be applied when describing baseline conditions and when engaging with Indigenous Nations, including diverse populations within Indigenous Nations and ensuring culturally appropriate approaches. For the assessment of the social valued components mentioned above, proponents are required to evaluate differential effects and residual effects on diverse populations, considering identity factors such as sex, age, and other community-relevant identity factors. The AIR also requires the description of any limitations to the application of GBA Plus and how it may have affected the analysis.

3 For specific information on what constitutes intersectionality or how to implement it in practice, the IAAC recommends the use of the guidance document. In the guidance, the concept of intersectionality is embedded into the definition of GBA Plus, stating that: "GBA Plus considers many identity factors and how these intersect with context and lived experiences to impact how people experience projects. In this way, GBA Plus is an intersectional analysis. An intersectional analysis recognizes that identities cannot be separated from the systems of power and privilege, like racism, colonialism and discrimination" (IAAC, 2021, p. 5).

EXTENT OF INDIGENOUS ENGAGEMENT AND INDIGENOUS KNOWLEDGE WITH GBA PLUS

The AIR outlines the need for culturally appropriate engagement practices that point toward a GBA Plus approach. However, the extent to which these engagement requirements are enforced in practice remains unclear. For example, the AIR states:

> *Efforts to engage diverse populations of the Nation community in culturally appropriate ways, including Indigenous local group/sub-group (e.g., clan, family) areas within the broader traditional territory, and groups identified by gender, age, or other community-relevant factors (EAO, 2021, p. 138).*

This language suggests that engagement with diverse populations is encouraged as an effort rather than mandated as a requirement. Furthermore, the reference to "gender" raises questions about whether the AIR intends gender to be understood beyond a binary male/female framework. Since the AIR does emphasize an intersectional approach, it can be inferred that gender is meant to be interpreted more broadly, aligning with an understanding of diverse gender identities.

The AIR outlines requirements for integrating Indigenous Knowledge into the assessment process. Within the *Summary of Human and Community Well-being*, the AIR mandates that the proponent acknowledge and consider the Haisla Nation's Community Plan. This well-being section considers potential social, cultural, economic, and health effects that may impact human and community well-being, emphasizing a holistic approach that recognizes the interconnections among these effects. Additionally, the AIR requires the inclusion of local and Indigenous perspectives regarding the current state of human and community well-being. This integrated approach of the AIR is not something found in the TISG, which takes on a siloed approach, fragmenting components of well-being into discrete sections on health, social, and economic conditions.

The *Summary of Human and Community Well-being* in the AIR reflects a more deliberate effort to move beyond siloing of effects assessment and toward a more integrated understanding that aligns more with Indigenous Knowledge systems. With respect to GBA Plus, this section also creates an opportunity for a genuinely intersectional analysis by foregrounding multiple interrelated factors that may impact diverse populations.

CONSIDERATION OF CUMULATIVE EFFECTS THROUGH THE LENS OF GBA PLUS AND INDIGENOUS KNOWLEDGE

Concerning cumulative effects assessment, the AIR states that consideration should be given to collaborative initiatives between the proponent, proponents of other projects, and third parties, such as Indigenous Nations. The guidelines also require the proponent to propose an adaptive management strategy that involves Indigenous Nations in the creation of mitigation measures. The proponent must also describe the involvement of Indigenous Nations in the follow-up strategy. Furthermore, AIR requires an assessment of cumulative effects on Indigenous interests and community well-being, including the identification of mitigation measures and the description of the likelihood of any adverse residual cumulative effects. For identified cumulative effects, the proponent must describe a follow-up program that addresses environmental, health, social, and economic effects, including disproportionate effects, in accordance with GBA Plus analysis.

IMPACT STATEMENTS ANALYSIS

We now return to an analysis of the Impact Statements for the Crawford Nickel project and the Cedar LNG project, which are presented in this section to illustrate the differences in assessments under their respective assessment guidelines and requirements.

CRAWFORD NICKEL

METHODS REQUIRED FOR GBA PLUS IMPLEMENTATION

Data for the GBA Plus assessment was collected through project engagement, stakeholder feedback on project documents, published literature, professional judgment, and prior project experience. Information and concerns from specific sub-groups were collected and used to inform the description of baseline socio-economic conditions. The qualitative and quantitative data collected have been disaggregated by selected identity factors whenever possible. Furthermore, the Impact Statement reports the implementation of inclusive engagement approaches. However, little detail is provided about the methods. Engagement was also conducted with organizations representing vulnerable groups. The proponent states that they are committed to sharing information to "identify issues, interests, and concerns… seek feedback on potential means of limiting adverse effects and enhancing beneficial effects… [and] seek qualitative and quantitative information on vulnerable sub-populations" (Stantec Consulting, 2024g, p. 17).

The inclusion criteria for defining diverse populations vary across the selected valued components (VCs), leading to unequal application of GBA Plus. For example, regarding economic conditions, the Impact Statement affirms that populations "*may* include women, Indigenous nations, visible minorities, persons with disabilities, youth, and older adults, among others, and groups who demonstrate any intersection of those characteristics" (Stantec Consulting, 2024c, p. 10). For social conditions, populations considered include women, Indigenous nations, low-income families, visible minorities, persons with disabilities, youth, and older adults, but omit the broader intersectional framing used for economic conditions.

The proponent also confirms having applied GBA Plus to describe baseline conditions for diverse populations within the chosen VCs, to inform the effects assessment, and to develop mitigation measures and follow-up programs. That said, the Impact Statement fails to provide a detailed explanation of how the framework was implemented in practice.

GBA Plus was applied to social, economic and health conditions. The most detailed GBA Plus application is found in the health impact assessment (HIA). The groups considered in this GBA Plus approach include Indigenous Nations, Indigenous women and girls, Women+ (women, girls, and non-binary people), Men+ (men, boys, and non-binary people), low-income individuals and households,

people with disabilities, lone-parent families, 2SLGBTQQIA+ community members, and children and youth. In this case, the GBA Plus analysis extends beyond workers to include the community as a whole, a practice that is not always present in GBA Plus practice or associated mitigation measures. The inclusion of these identity factors indicates an attempt to address intersectionality rather than focusing exclusively on gender.

The HIA's application of GBA Plus illustrates the possibilities of current GBA Plus practice, as well as its limitations and persistent challenges. One of the clearest issues relates to data availability. Trends in baseline conditions were assessed by comparing the study health unit to Ontario; however, in some cases only Canada-wide data were available, limiting the ability to conduct meaningful, localized comparisons. Other limitations include a lack of area-specific data, outdated information, and datasets that could not be disaggregated for GBA Plus purposes. These limitations are illustrated in the discussion of potential health risks for 2SLGBTQQIA+ populations, where Canada-wide data were used, potentially obscuring regional differences:

> *2SLGBTQQIA+ populations are also overrepresented by the homeless population and have higher rates of suicide ideation (Government of Canada 2025b). This general trend may also occur within the [Regional Study Area] RSA, and potential Project-related changes in cost of living or Project-related income and employment conditions could affect these populations disproportionately. (Stantec Consulting, 2024e, p. 66)*

Challenges also arise in the development of mitigation measures. One measure developed through a GBA Plus lens is the implementation of a whistleblower mechanism to address workplace harassment, with attention to the heightened risks experienced by women. Yet the Impact Statement itself acknowledges that whistleblower systems are often ineffective because workers may avoid reporting due to fear of reprisal. Despite this known limitation, the proponent indicates that alternative mechanisms will only be considered if the initial approach fails. This conditional commitment raises concerns about the rigour and reliability of the proposed mitigation strategy. As the Impact Statement notes:

> *Canada Nickel will implement a harassment policy and an internal whistleblower mechanism for confidential reporting of workplace harassment. Given that Canada Nickel does not have camp accommodations, this may reduce the risk of sexual harassment or abuse for female workers during off-work hours. However, people subject to workplace harassment may not report incidents due to fear of reprisal (National Inquiry into Missing Murdered Indigenous Women and Girls 2019) and, as such, Canada Nickel will consider mechanisms to encourage reporting of workplace harassment. (Stantec Consulting, 2024e, p. 90).*

While availability of data is one issue, another is defining whistleblower mechanisms and working through anti-oppression frameworks to meaningfully address workplace harassment. Engagement with organizations such as the Native Women's Association of Canada, that has developed culturally relevant GBA Plus guidance is one avenue. A second recommendation would be to work with local Indigenous and women's organizations to meaningfully engage with those who work with people impacted by structural inequity, throughout the life of the project.

EXTENT OF INDIGENOUS ENGAGEMENT AND INDIGENOUS KNOWLEDGE WITH GBA PLUS

Among the three VCs — social, economic, and health — to which GBA Plus was applied, the health VC was the only one to explicitly mention the use of Indigenous Knowledge in the form of traditional land-use studies and socio-economic reports submitted by Indigenous Nations. This VC therefore shows a more robust integration of Indigenous Knowledge than the other two, which rely more generally on engagement efforts rather than on these specific knowledge products. The use of formal reports, rather than comments captured solely through engagement sessions, marks a step toward valuing Indigenous Knowledge on a more equal footing with Western science. It reflects data collection and analysis conducted by Indigenous communities themselves, rather than knowledge mediated and interpreted through the proponent's engagement process.

CONSIDERATION OF CUMULATIVE EFFECTS THROUGH THE LENS OF GBA PLUS AND INDIGENOUS KNOWLEDGE

The cumulative effects on the Apitipi Anicinapek Nation, Taykwa Tagamou Nation, Flying Post First Nation, Matachewan First Nation, Mattagami First Nation, and Métis Nation of Ontario are presented in the Impact Statement for Crawford Nickel, showing that cumulative residual effects include changes to Indigenous and Treaty rights, changes in physical and cultural heritage, and changes to governance, health, social, and economic conditions. The assessment was partly informed by the consultation and engagement process, drawing on information and concerns shared by First Nations, as well as on Indigenous Knowledge related to cumulative effects. The topics reviewed included Indigenous interests, social and health conditions, atmospheric environment, surface water, fish and fish habitat, vegetation, riparian and wetland environments, and wildlife and wildlife habitat. The Apitipi Anicinapek Nation's regional overview of the area, regarding their traditional territory and understanding of past and existing physical activities, was also considered for the cumulative effects assessment.

The Impact Statement briefly acknowledges disproportionately distributed residual cumulative effects on sub-groups of Indigenous Nations. However, the analysis is limited, stating that "project activities in combination with activities associated with past/present and reasonably foreseeable projects are anticipated to result in the same disproportionately distributed effects" (Stantec Consulting, 2024f, p. 72). The GBA Plus approach to cumulative effects is reduced to asserting that the cumulative impacts will mirror those already identified, without further analysis, differentiation, or exploration of how intersecting identity factors may intensify cumulative impacts. This lack of consideration for cumulative effects and its intersection with GBA Plus, is also seen in other sections of the report (i.e., health, social and economic conditions, such as social wellbeing, community safety, resource use, or employment) where there is no mention of GBA Plus or how it might have been considered or implemented.

Overall, the proponent's methods for implementing GBA Plus do reflect those found in the TISG. The level of detail regarding *how* GBA Plus was implemented is minimal. The TISG demonstrates the

proponent follows the requirements and guidelines presented, rarely deviating from them. The same goes for the extent of Indigenous engagement, integration of Indigenous Knowledge and cumulative effects. *This adherence to minimum requirements shows the significance of having meaningful GBA Plus and cumulative effects policies and methodologically robust guidance in place.*

CEDAR LNG

SCOPE OF GBA PLUS

GBA Plus was implemented for VCs that are predicted to have disproportionate effects on diverse populations, including employment and economy, land and resource use, marine use, infrastructure and services, Indigenous interests, and human and community well-being. GBA Plus was also applied to the development of mitigation measures, follow-up strategies, and in the analysis of residual and cumulative effects.

METHODS REQUIRED FOR GBA PLUS IMPLEMENTATION

The data used to inform the GBA Plus analysis was collected from statistics and published reports, consultation and engagement, government databases, government publications, public data sources, grey literature, and EA reports of neighbouring projects.

The proponent then scoped and identified vulnerable subpopulations and identity factors, used disaggregated data to describe baseline conditions, and included qualitative data to describe subpopulations and the barriers they face. Identity factors were chosen based on input from project engagement, baseline conditions, local studies, literature, and professional experience. These included sex, Indigeneity, income, education, gender, disability, LGBTQ2+, Immigrant status and age, as well as their intersections, reflecting an effort to implement the AIR's requirement to implement intersectionality.

To address differential effects on subgroups, the proponent proposed a follow-up program and mitigation measures for GBA Plus on selected VCs. Mitigation measures were expected to incorporate community engagement and be developed in consultation with the concerned Indigenous Nations. The follow-up program for GBA Plus included a review of new disaggregated data and a report on the results of the proponent's gender equity and diversity policy. It also referenced measures such as the development of a strategic emergency management plan that incorporates policies and training regarding workplace code of ethics, cultural sensitivity, drug and alcohol use, respectful workplace, and workplace violence, and gender equity and diversity measures. The role of GBA Plus in the human health component of the assessment was unclear, despite the clear relevance of GBA Plus in assessing differentiated health impacts.

EXTENT OF INDIGENOUS ENGAGEMENT AND INDIGENOUS KNOWLEDGE WITH GBA PLUS

Indigenous Knowledge was considered throughout the assessment of the employment and economy, and the infrastructure and services VCs. Notably, information from the Gitxaala Nation Community Health and Socio-Economic Risk Report of the Cedar LNG Project and comments from the Kitselas, Kitsumkalum, Gitxaala, CHN, Gitga'at, Lax Kw'alaams, and Metlakatla were taken into consideration.

The EAO led engagement activities to support the implementation of UNDRIP by seeking free, prior, and informed consent (FPIC) from concerned Indigenous Nations. The EAO and Indigenous Nations collaborated, intending to achieve consensus on key issues throughout the EA process.

The engagement approach varied across Indigenous Nations, including identifying check-ins aligned with key milestones in the EA process and developing a consensus-tracking tool for documentation and communication. Examples of other EAO-led activities included participation in a working group, regular government-to-government meetings between the EAO and each Indigenous Nation, an opportunity to submit a document outlining the Indigenous Nation's views on the Assessment Report, project description, and Table of Contents, as well as grants/funding for participation in the pre-application and application review phases.

Proponent-led engagement activities were conducted throughout the pre-application and application review phases. The proponent's engagement activities varied across different Indigenous Nations. They included providing regularly scheduled project updates, conference calls, and meetings with Indigenous Nation administrative staff, consultants, Elders, and other parties; conducting community meetings, open houses, and workshops; and providing printed and digital materials to be shared with community members.

CONSIDERATION OF CUMULATIVE EFFECTS THROUGH THE LENS OF GBA PLUS AND INDIGENOUS KNOWLEDGE

For cumulative effects on employment and economy, the proponent reports that none were identified. However, cumulative effects on infrastructure and services were examined by considering comments received during the EA process and by situating the assessment within the broader regional context. Cumulative effects were also assessed for the human and well-being VCs, with specific attention to effects on vulnerable subpopulations. For the human health VC, the proponent considered cumulative effects regarding air emissions and their potential impacts on health. Regarding Indigenous interests, cumulative effects were identified across different Indigenous Nations, particularly in relation to the use and integrity of sacred and culturally important sites and landscape features, land and resources, harvesting rights, Indigenous governance and self-determination, and territorial stewardship.

The proponent acknowledges that regional socioeconomic pressures extend beyond the project. To address these wider issues, the proponent recommends that provincial or local governments establish a regional social and economic management and monitoring committee to coordinate responses to cumulative socioeconomic challenges.

DISCUSSION

ROLE OF GOVERNANCE ON ASSESSMENTS

A comparison of the Cedar LNG and Crawford Nickel project assessments reveals important insights into how governance structures, such as GBA Plus federal guidance and requirements under substituted processes, can shape the assessment process and methods, including its form, the extent of meaningful Indigenous engagement, and the integration of Indigenous Knowledge.

As previously outlined, following a substitution decision, the Cedar LNG project was assessed by the British Columbia Environmental Assessment Office (EAO), thereby adhering to provincial regulatory processes while also complying with federal requirements, including those related to the application of GBA Plus. British Columbia's trauma-informed work in the case of Cedar LNG extends the frameworks found in the TISG. In contrast, the Crawford Nickel project was not substituted and is undergoing an impact assessment under the federal regulatory framework (the IAA). The governance of the two projects also differs considerably in terms of project ownership. Cedar LNG is the first Indigenous-majority-owned LNG export facility in North America, with the Haisla Nation holding a 50.1% ownership stake alongside Pembina Pipeline Corporation. By comparison, the Crawford Nickel project is owned entirely by Canada Nickel Company Inc., a Canadian-based company. Notable differences emerge in the final Impact Statements for each project, particularly regarding Indigenous engagement and the integration of Indigenous Knowledge. Cedar LNG demonstrates a more substantive implementation of these requirements.

Both proponents were required by the TISG and the AIR to collaborate with Indigenous groups and incorporate Indigenous Knowledge throughout the assessment and development of mitigation and follow-up measures. Nevertheless, the two cases differ rather drastically in how these requirements materialized in practice. Consistent with the TISG, Crawford Nickel completed distinct assessments for each Indigenous Nation, considering changes to treaty rights, lands and resource use, physical and cultural heritage, governance, health, social and economic conditions. Indigenous Knowledge was integrated from multiple sources, including engagement activities and Indigenous-led studies such as traditional land-use and socio-economic assessments. The Crawford Nickel assessment adopts a uniform structure across Indigenous groups. Cedar LNG followed these same steps, considering harvesting rights, governance systems, the use and integrity of sacred and culturally significant sites, and Indigenous health and well-being. However, Cedar LNG substantially differs from Crawford Nickel as it offered more space in the Impact Statement for the integration of Indigenous-led assessments and Indigenous inputs. Indigenous-led assessment results were integrated into the final Impact Statement, thereby demonstrating a more substantive commitment to Indigenous engagement and knowledge integration.

For example, the Gitxaala Nation conducted its own risk and impact assessment addressing title and rights, cultural identity, governance, harvesting, and sacred places. This assessment explicitly examined the impacts of inequity on subpopulations, including women, Elders, youth, and two-

spirit individuals, and considered their distinct resilience capacities. These considerations were less evident in the EAO-led assessments for Indigenous Nations that chose not to conduct their own. Similarly, the Kitselas First Nation undertook an assessment based on values they identified as foundational, including history, future, lands, authority, and community, consequently better representing the Nation's values. These examples illustrate how Cedar LNG's governance structure may have encouraged greater space for Indigenous Knowledge, worldviews, and value systems to shape the assessment.

The more extensive incorporation of Indigenous Knowledge in the Cedar LNG assessment is also reflected in the greater detail provided for each Indigenous Nation's report sections, such as the human and community well-being VC, which better integrates Indigenous Knowledge systems into its analytical approach. This contributes to an assessment that is less siloed, an important aspect given how frameworks often lack integration, and may conflict with Indigenous worldviews and knowledge, recognizing the diversity of Indigenous values across peoples and communities.

That said, it is important to note that these Indigenous-led assessments were not incorporated into the Impact Statement as independent documents with equal weight to the Impact Statement itself. Instead, they were embedded as sections within the larger document, occupying more space than they did under the TISG-based Crawford Nickel assessment, but nonetheless continued epistemic hierarchies, in which Indigenous ways of knowing are made legible within a Western assessment structure rather than granted standing on their own terms. This pattern Anishinaabe scholar Deborah McGregor's (2021) broader critique of how Indigenous Knowledge is integrated into governance processes:

> *By continuing to focus on incorporating Indigenous knowledge rather than on collaborating with Indigenous peoples to fully recognize Indigenous knowledge systems, governments and other external actors are explicitly excluding the broader systems of knowledge since these may well directly challenge the purpose and intent of the very legislation within which attempts at compartmentalized Indigenous knowledge currently find expression. In short, Indigenous knowledge "incorporation" serves federal government and other external agency agendas, but not Indigenous self-determination. (McGregor, 2021, p. 6)*

GAPS IN CUMULATIVE EFFECTS – SOCIAL VALUED COMPONENTS

There is a lack of GBA Plus implementation in the assessment of cumulative effects. This gap is closely linked to the limited consideration of social VCs within cumulative effects assessments. This is a persistent issue in impact assessment practice noted in the literature (Antwi et al., 2024; Gill & Ritchie, 2020). Even in the Cedar LNG project, where Indigenous engagement was comparatively stronger and Indigenous interests and knowledge were more meaningfully incorporated, the social VCs considered in the cumulative effects assessment remained narrow. They primarily focused on infrastructure and services, human health, and human and community well-being. Moreover, the cumulative effects analysis of health was largely restricted to risks associated with air quality only.

Some Indigenous Nations involved in the assessment point out this lack of consideration. For example, the Kitsumkalum Nation stated that "Cedar LNG contributions to cumulative effects in the region are underestimated, both by Cedar and in the Assessment Report, and/or are likely not to be adequately mitigated, especially in the context of risks of accidents and malfunctions in the marine environment, disproportionate effects to Indigenous populations in terms of community wellbeing, changes to socioeconomic conditions, and cumulative effects to air quality." (EAO, 2022, p. 743). Similarly, the Kitselas Nation expressed concern that "cumulative effects are generally underestimated by the EAO. (...) As it stands, it may be allowing a project to proceed that does not, in itself, have a significant effect, but when added to the overall total effect, will push the environment beyond its limits." (EAO, 2022, p. 715).

TRANSPARENCY OF METHODS IN ASSESSMENTS

Limited transparency regarding the methods used by proponents poses a significant challenge to evaluating whether GBA Plus is being adequately implemented in impact assessment practice. This limitation can also be observed when considering Indigenous engagement processes, the integration of Indigenous Knowledge, and the assessment of social cumulative effects. Although methods are identified, they are presented in broad terms, lacking detail, and sometimes allocated only a few lines. This lack of specificity constrains the ability to assess proponents' compliance with assessment guidelines. It creates space for proponents to meet only minimal requirements. Low transparency of methods weakens accountability and undermines trust in assessment findings, mitigation measures, and follow-up strategies. More broadly, low transparency reflects and reinforces persistent challenges relating to Indigenous self-determination and self-governance within impact assessment practice.

Although increased transparency can lead to greater accountability and trust-building, it can, at the same time, undermine Indigenous sovereignty by making Indigenous data vulnerable to extraction, appropriation, misuse, and misapplication (Cannon et al., 2024). Transparency must thus not only be seen as a technical issue but also a governance issue. Requirements for transparency can be applied in line with data sovereignty frameworks, such as for example the CARE principles, outlined by Cannon et al., to ensure ethical use of data (2024) and Indigenous Nations' rights to steward data in ways that reflect their worldviews and that are meaningful to them (Govorchin et al., 2026).

RECOMMENDATIONS:
BETTER WAYS FORWARD

While GBA Plus has adopted a principles-based rather than a prescriptive approach within the TISG and AIR, this stands in contrast to other sections of the same guidelines, which explicitly require specific methodologies, revealing an internal inconsistency. This inconsistency is particularly concerning in the context of GBA Plus, precisely because it remains an emerging practice. Thus, without prescriptive guidance, proponents are left with broad discretion at a stage when the practice requires structured direction to ensure consistent and meaningful implementation. **To ensure that GBA Plus is consistently and adequately implemented by proponents throughout projects, we recommend that the TISG and AIR provide more detailed, methodologically specific guidance on how GBA Plus should be applied in practice, taking a more prescriptive approach.** TISG and AIR require enhancement in data collection methods and analytical frameworks. The latter is particularly underdeveloped in existing TISGs, yet data analysis methods are essential to the meaningful implementation of GBA Plus and intersectionality principles. Not only is analytical guidance important for understanding how identity factors make certain populations more vulnerable to project impacts, but it is also important for understanding how these factors interact within broader systems of power and institutional processes.

- Among the suite of methodological advances needed in the implementation and regulation of GBA Plus in IA, is a reinvigorated focus on cultural rights including culturally relevant GBA Plus or trauma-informed approaches, that are strength-based and defined by Indigenous Nations themselves.
- There is room to improve and define diverse populations, including through local engagement of social and not-for-profit groups that serve local populations and understand diverse community barriers, such as work with local Indigenous and women's organizations to meaningfully engage with those who work with people impacted by structural inequity, throughout the life of a project.
- Improved transparency and availability of relevant data and documents can help make informed decisions and improve evaluation, monitoring and follow-up.
- Work needs to be done with and in communities.

While IAAC's GBA Plus guidance (IAAC, 2021)[4] offers valuable information on its best practices, broad methodologies, mitigation examples, and tools, its principle-based, rather than prescriptive, approach creates significant accountability gaps for proponents. As highlighted by Lefroy & Stacey (2022), IAAC's guidance fails to specify the objectives, methodologies, criteria, or standards used to evaluate a proponent's assessment of potential impacts outlined in the Impact Statement. This latitude afforded to proponents raises concerns about meaningful implementation and risks reducing GBA Plus to a procedural exercise rather than a framework for transformative change (Lefroy & Stacey, 2022).

4 IAAC's GBA Plus guidance is no longer available online. A revised version will be made publicly available at a later date.

RECOMMENDATION 1: Establish a GBA Plus follow-up program, as defined in the IAA as: "a program for verifying the accuracy of the impact assessment of a designated project and determining the effectiveness of any mitigation measures."

Establishing clear, precise, and methodologically rigorous guidance and requirements in TISG would support proponents in conducting meaningful GBA Plus and provide assessment authorities with transparent, publicly accountable benchmarks needed to evaluate compliance more effectively. As Bridges and Skelding have indicated, clear grievance and dispute procedures are needed as an indicator, including measurement parameters that improve performance. At the TISG stage, this includes creating clear vision and purpose by project and community leadership including a sexual assault and harassment policy (2024). Follow-up programs can mandate harassment training, for example and on-site resources for Indigenous women and gender diverse people as well as the creation of culturally relevant spaces (Bridges and Skelding, 2024, p. 70, 72).

GBA Plus guidance would benefit significantly from a standardized follow-up mechanism, such as a structured reporting document, that enables assessment authorities to verify whether the approaches committed to during the review process were implemented. This is particularly important given that GBA Plus remains an emerging practice with limited empirical data on the accuracy of predictions or the effectiveness of proposed mitigation measures. Without systematic follow-up, the field risks repeating the same gaps across projects. A formalized quality assurance mechanism, as prescribed in TISG, would therefore serve a dual purpose: holding proponents accountable for their commitments and building an evidence base of lessons learned that can meaningfully inform and improve future impact assessments.

However, greater methodological detail alone is insufficient. TISG and AIR should consider expanding on the requirement for culturally relevant GBA Plus.[5] Methods for gathering data or community meetings could include engaging local local not-for-profits and community support organizations that know the impacts of development on communities and could provide qualitative response needs to establish meaningful project mitigation measures, acknowledging the diversity across communities and that there is no one size fits all approach to GBA plus.

Establishing clear, precise, and methodologically rigorous guidance and requirements in TISG would support proponents in conducting meaningful GBA Plus and provide assessment authorities with transparent, publicly accountable benchmarks needed to evaluate compliance more effectively.

5 IAAC's revised GBA Plus guidance is anticipated to include more details regarding culturally relevant GBA Plus.

RECOMMENDATION 2: Expand on GBA Plus to require a culturally relevant approach and improved mechanisms to honour Indigenous Knowledge, including adequate funding.

Guidelines and requirements only briefly mention culturally relevant GBA Plus, relegating this framework to one option among many that proponents may choose to apply. Its implementation, thus, remains discretionary rather than integral to an assessment. Uplifting culturally appropriate GBA Plus is therefore critical. In the context of Canada's ongoing commitments to reconciliation, this framework can offer a way for impact assessment to move beyond the status quo and toward more meaningful engagement with Indigenous Nations and consideration of Indigenous identities and Indigenous Knowledge systems.

Current GBA Plus frameworks remain limited in their ability to account for Indigenous rights and identities adequately. Consideration of Indigenous identities and Indigenous Knowledge is present in assessment documentation but remains superficial. This limitation can be seen in the assessment of cumulative effects, where assessment of social impacts is consistently low, even though these impacts have long been documented as disproportionately affecting Indigenous communities affected by development projects. Perhaps the underlying issue is less about GBA Plus guidance and more about how that guidance is operationalized in practice — a question that warrants further research.

Culturally relevant GBA Plus addresses these limitations by "focusing on the unique historical and contemporary realities of Indigenous Peoples" (GiiiA, n.d.). It is "distinctions-based, intersectional, gender-diverse, Indigenous-led, and trauma-informed" (NWAC, n.d.). These principles reframe the GBA Plus framework and allow for the recognition of the impacts of colonization and systemic oppression and how it has shaped the experiences of Indigenous women, girls, and Two-Spirited people (GiiiA, n.d.). Here, Indigenous Knowledge is valued on its own terms.

Better integration of Indigenous Knowledge through **culturally relevant GBA Plus in impact assessments** can also support Indigenous governance systems (Ignace, 2025). A place where more meaningful integration of social impacts is seen is in Cedar LNG's well-being studies. However, this requires more than procedural inclusion and funding from the scoping phase onwards. It requires collaboration, trust, respect, and reciprocity, as well as a commitment by Western science and management systems to uphold Indigenous rights and identities (Ignace, 2025).

Moving toward harmonization in impact assessment raises important questions about how best practices in GBA Plus can be implemented while meaningfully engaging Indigenous governance systems. Harmonization has been presented as an opportunity to increase efficiency by avoiding duplication of federal assessments with provincial ones. However, this approach has the risk of worsening existing gaps in assessment quality rather than improving them. Notably, most provincial IA regimes in Canada do not require consideration of human impacts beyond indirect or induced effects. Only a small number of provincial IA regimes mandate the application of GBA Plus, and few require a cumulative effects assessment. The same goes for including Indigenous jurisdictional and rights-based concerns, which are also unevenly addressed across provincial frameworks.

RECOMMENDATION 3: Ensure operational guidance on Indigenous-led processes, Indigenous jurisdiction, and the United Nations Declaration on the Rights of Indigenous Peoples including the United Nations Declaration Act, when drawing on harmonized or substituted "one review" IA processes.

Considering this uneven regulatory landscape, harmonization's reliance on provincial jurisdictions is likely to threaten the application of GBA Plus, especially in terms of meaningful application and consideration of Indigenous rights and interests as indicated in the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) and Canada's commitments to the Declaration. Concerns over meaningful engagement and adherence to UNDRIP also apply to cumulative effects. Here, the need for clear and precise federal expectations, including within TISG, has never been greater. Even in cases of substitution, such as under the BC EAO process, where IAAC works with BC authorities to ensure federal information requirements are reflected in provincial documents such as the AIR, this coordination must be robust and consistently applied to ensure that GBA Plus, cumulative effects, and Indigenous rights, governance, and values are not treated as discretionary, regardless of which review process a project follows. Operational guidance needs to adhere to international and national commitments to reconciliation, as per the United Nations Declaration on the Rights of Indigenous Peoples Act.

RECOMMENDATION 4: Prioritize participatory and integrative approaches to cumulative effects, including social cumulative effects and cultural indicators in cumulative effects and GBA Plus.

Greater consideration of social cumulative effects, along with the use of GBA Plus in assessment, is recommended. In a paper by Antwi et al. (2024), planning approaches that prioritize community-based monitoring, participatory decision-making, and community value setting are recommended to better account for social cumulative effects. The integration of Indigenous Knowledge within these assessments, as well as greater collaboration between researchers and Rights-holders, is also presented (Antwi et al., 2024). Approaches to integrate community-based monitoring, participatory decision-making, and community value setting allow assessments to more effectively address community priorities and potential impacts on Indigenous rights and interests. When combined with culturally relevant GBA Plus, such approaches can encourage equitable decision-making and strengthen Indigenous governance in IA, supporting Indigenous rights and self-determination.

CONCLUSION

The application of GBA Plus in Canadian impact assessment has only recently gained more traction with the implementation of the IAA, which made the analysis a requirement for projects undergoing federal assessment. GBA Plus, as a requirement has enabled project assessments to better consider differential impacts on populations based on identity factors such as gender, race, sex, income, disability, and more. The incorporation of GBA Plus in impact assessment demonstrates Canada's significant commitment to equity, diversity, and inclusion. Funding of these initiatives and having well-resourced Indigenouss engagement and the emergence of culturally relevant and trauma informed approaches in impact assessment places Canada as a leader in the international arena in regard to human rights and social impact assessment. However, this first step for inclusive decision making in development projects still has work to be done for it to be truly effective.

Gender-based Analysis Plus, Cumulative Effects, and Reconciliation: An empirical analysis of Canada's leadership, best practices, and better ways forward reviewed three projects being assessed under the IAA to understand how GBA Plus is being implemented in practice, with a particular focus on cumulative effects, Indigenous engagement, and Indigenous Knowledge. The analysis shows that the Tailored Impact Statement Guidelines issued by IAAC shaped proponents' Impact Statements, dictating how GBA Plus will be implemented. The methods most frequently used were disaggregated data, engagement with Indigenous communities, identification of diverse populations and potential differential effects.

Further growth is necessary, as the methods presented in the Tailored Impact Statement Guidelines, as well as in proponents' Impact Statements, that tends to be inconsistent and vague, even across documents and projects. Methods for applying GBA Plus lacked detail on how they were or will be undertaken, with some explanations as brief as a paragraph or a single line. The analysis also showed a siloed approach in Impact Statement Guidelines, which was reflected in the Impact Statements and may continue to translate into decision-making.

Considering the harmonization process underway at the federal level, caution must be exercised against offloading federal responsibilities, including GBA Plus, to other jurisdictions that may lack the capacity and resources to adequately implement them. This is particularly important for jurisdictions that lack robust commitments to intersectional analysis, cumulative effects, and have historically failed at honouring Indigenous approaches and self-determination in the IA process. Finally, honouring Indigenous jurisdictions and Indigenous-led approaches to GBA Plus, including culturally relevant and trauma-informed approaches provides a strong avenue for meaningful participation and engagement and determining mitigation and follow-up plans. Drawing back to Murray Sinclair's emphasis on cross-cultural respect, for GBA Plus to be meaningful, approaches must work with Indigenous peoples in full participation and partnership.



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We come to this work as non-Indigenous people, living and working across Turtle Island. Elena Landaverde lives in Tiohtià:ke (Montreal), on the unceded territory of the Kanien'kehá:ka Nation, long a gathering place for many First Nations. Patricia Fitzpatrick lives in Winnipeg, on Treaty One Territory, the ancestral lands of the Anishinaabeg, Anisininew, Ininiwak/Nehethowuk, and Dakota Oyate, the National Homeland of the Red River Métis, and a place of significance for the Denesuline and the Inuit. Dawn Hoogeveen lives on unceded traditional territories of the xʷməθkʷəy̓əm (Musqueam), Sḵwx̱wú7mesh Úxwumixw (Squamish Nation), and səlilwətaɬ (Tsleil-Waututh) Nations.

We acknowledge our positionality as non-Indigenous report co-authors and have sought to center Indigenous Knowledge and voices without speaking on behalf of First Nations, Inuit or Métis peoples. We see this as part of our ongoing responsibility to listen, learn, unlearn, and support Indigenous self-determination on the path toward reconciliation. We recognize that our interpretations are shaped by our positionality and are inherently limited. Views in this report are solely those of the authorship group and do not reflect those of affiliated organizations.

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Indigenous Centre for
Cumulative Effects

104 – 360 College Street, Toronto, Ontario M5T 1S6
t: 819.410.0580 / e: info@icce-caec.ca