



Co-Developing Energy Education with Remote Indigenous Communities

BUILDING ENERGY LITERACY AND CAPACITY

RUBY LIEU-ASHTHORN

This publication may be obtained from:

YukonU Research Centre, Yukon University

500 University Drive P.O. Box 2799

Whitehorse, Yukon Y1A 5K4

867 456 6986 or 1 800 661 0504

www.YukonU.ca/research

Recommended Citation:

Lieu-Ashthorn, R. (2025). *Co-Developing Energy Education with Remote Indigenous Communities: Building Energy Literacy and Capacity*. Yukon University.

Acknowledgment

In developing and reading this report, it is important to acknowledge the leadership of the Vuntut Gwitchin First Nation (VGFN) that brought the Community Energy Systems (CES) program to life. In 2019, VGFN was amid a significant solar energy development, Sree Vyàa (Old Crow Solar Project) and recognized that gaps in community capacity posed a major challenge. To support the growth and success of their renewable energy initiatives and garner community involvement, VGFN sought to address these gaps through an in-community and culturally grounded energy systems course. The course sought to achieve the following goals:

1. To develop skills, knowledge, and prepare community members for work on their local renewable energy project.
2. To increase energy literacy and support engagement from community members.
3. To create knowledge-sharing and networking opportunities with stakeholders and key partners in the renewable energy sector.

The first CES course was co-developed in 2020 in Old Crow at the Alice Frost, Yukon University Campus, a product of ample support and community involvement. Thanks to VGFN's initiative, interest in the CES program has expanded to remote communities in Nunavut and the Northwest Territories (NWT), including Paulatuk, Rankin-Inlet, Baker Lake and Gjoa Haven. Without these communities' trust and willingness to work with Northern Energy Innovation (NEI), the CES program would not be what it is today. Moving forward, this report aims to provide constructive guidance for NEI and its current and future community relations in pursuing genuine collaboration and culturally centred energy work.

Table of Contents

Acknowledgment.....	2
Table of Contents	3
Acronyms	5
Definitions	6
Background - NEI and CES.....	10
Introduction	10
Energy Transitions in Remote Indigenous Communities	10
Purpose and Goals	11
Goal #1: Enhance Energy Literacy.....	12
Goal #2: Build Community Capacity	12
Goal #3: Advance Energy Justice	13
Thematic Focus	15
Methods.....	16
Disclaimer.....	16
Roadmap	17
Findings	18
Section 1: Relationships & Trust Building.....	18
Reflexivity and Vulnerability from Non-Indigenous Parties.....	19
Deep Listening and Observation.....	21
Creating Space to be Together & Ongoing Communication	22
Flexible timelines and budgets.....	23
Summary.....	25
Section 2: Centering Indigenous Knowledge & Pedagogies	26
Intro:.....	26
Cultural Specificity	26
Involving the Entire Community	28

Place and Land-Based Learning	31
Summary.....	32
Section 3: Building Programs from the Ground Up	33
Introduction.....	33
Understanding Communities' Unique Priorities	33
Strengths-Based Approaches	36
Embracing Local Leadership.....	38
Summary.....	40
Conclusion.....	41
Recommendations	41
A. Program Foundations.....	42
#1 Form meaningful relationships with support organizations and communities.....	42
#2 Implement a collaborative framework to determine community capacity	43
B. Community Leadership & Equity.....	43
#3 Support the hiring and training of local educators and energy champions	43
#4 Build in Time and Resources for Relationship Development & Program Effectiveness.....	44
C. Curriculum Design & Knowledge Sharing.....	44
#5 Embed Indigenous pedagogies and land-based learning into courses	44
#6 Facilitate Interlocal Energy Networks	45
Bibliography.....	46

Acronyms

NEI – Northern Energy Innovation

CES – Community Energy Systems

EHRC – Electricity Human Resources Canada

FNEC - First Nations Education Council

FNESC - First Nation Education Steering Committee

FPIC – Free, Prior and Informed Consent

GNWT - Government of the Northwest Territories

ICE - Indigenous Clean Energy Social Enterprise

NCCIE – National Center for Collaboration on Indigenous Education

NWT - Northwest Territories

STEM - science, technology, engineering, and mathematics

UNDRIP - United Nations Declaration on Rights of Indigenous Peoples

VGFN - Vuntut Gwitchin First Nation

YFNED – Yukon First Nation Education Directorate

Definitions

Indigenous Peoples

Refers to the original inhabitants of the land that is now called Canada and is inclusive of First Nations, Métis, Inuit, non-status Indians, and other rights holder classifications (National Centre for Collaboration in Indigenous Education & Dockstator, 2022). The Yukon is home to 14 distinct First Nation groups (See [Figure 1](#)), however, NEI's scope of work spans throughout Northern Canada.

Energy Literacy

Refers to an individual's or community's knowledge related to energy systems and technologies (McMaster et al., 2024). This includes but is not limited to an understanding of various energy sources, how power is generated and opportunities for involvement.

Community Capacity

"The collective ability of a community to create and take advantage of opportunities to meet community energy needs, thus providing for greater self-sufficiency and, for many Indigenous communities, charting a course for self-determination" (McMaster et al., 2024, p. 1)

Remote Communities

Vodden and Cunsolo (2021) define remote communities as those with fewer than 10,000 residents and no commuters traveling to urban areas for work (p. 109). In this report, the term also refers to communities that are not connected to the North American power grid but instead rely on isolated microgrids or regional grids (EHRC, 2025).

Decolonizing

Exposing and dismantling the harmful perspectives and interpretations of history imposed on Indigenous peoples by colonizers to restore the Indigenous worldview (Jacobs, 2019, p. 7).

Indigenous Education (IE)

The National Centre for Collaboration in Indigenous Education [NCCIE] & Dockstator (2022) define Indigenous Education as a lifelong journey that places students at the center of learning, involves “all our relations”, is holistic and takes place on-the-land, in communities and in schools. It is intended for everyone, not just Indigenous Peoples and encourages individually adapted learning methods. Components of IE include cooperative environments, integrative learning and emphasis on imagery, metaphor and storytelling as teaching methods (D. (Four A. T. Jacobs, 2019).

Indigenous Pedagogy

A method of teaching which focuses on students’ holistic well-being (physical, socio-emotional, intellectual, and spiritual) and acknowledges that each of these elements are interconnected (Yukon First Nation Education Directorate & Firelight Research Inc., 2021). Moves beyond a top-down, rules-based method of teaching and focuses on interactive, relationship-centered, experiential and strengths-based methods. Students are encouraged to observe and learn from Elders and community members through dialogue and shared experiences (FNEC et al., 2025, p. 83).

Co-development or Co-creation

Referred to as the process of listening (to partners and community members), developing relationships, weaving together different forms of knowledge and making decisions through a consensus-based approach (Rogers, 2022; Tremblay et al., 2024). It by no means replaces the duty to consult or engage with Indigenous communities. The acknowledgment that communities are best suited to develop programs and initiatives for their community members is fundamental to co-development and co-creation.

Energy Champions

Refers to individuals who are highly engaged in energy initiatives within their community. Activities include energy advocacy, the promotion of energy education and actively leading energy projects that support the energy transition (McMaster et al., 2024, p. 3).

Indigenous led

Refers to when Indigenous peoples hold control and authority over project timelines and agendas and determining the way in which engagement is carried out (Loginova et al., 2025, p. 3). Indigenous led projects and initiatives often result in more benefits for the community and Indigenous sovereignty.

Figure 1

Traditional Territories of Yukon First Nations and Settlement Areas of Inuvialuit and Tetlit Gwich'in



Note. From *First Nations Traditional Territories*, by Department of Environment, 2021 (https://open.yukon.ca/information/53db5c16-068b-409d-8058-c9141576013d/resource/500cb7d4-c1a5-3f2a-81c3-31c1f4e3dbdd/download/env.020.01-aug2021_0.pdf). In the public domain.

Background - NEI and CES

NEI is a research program at Yukon University that is dedicated to supporting Northern communities as they navigate the complexity of the energy transition in remote and isolated communities. Grounded in electrical engineering, NEI's technical team leverages innovation and emerging technologies to enhance energy sovereignty. However, NEI recognizes that technological solutions alone are not sufficient without meaningful community participation and leadership.

This is where the CES program plays a vital role. Inspired by the VGFN and led by NEI, the CES program seeks to increase the participation and leadership of Indigenous governments and community members in local energy systems. The program offers tailored energy education courses that are co-developed with each community to reflect their unique priorities, values, and ways of knowing. NEI acknowledges the colonial foundations of the Western education system and its limitations in Indigenous contexts. As such, CES courses are intentionally co-created to incorporate traditional knowledge and Indigenous pedagogies, ensuring relevance, respect, and mutual benefit.

Introduction

Energy Transitions in Remote Indigenous Communities

The climate crisis is one of the most urgent and complex challenges of our time - one deeply intertwined with histories of conflict, inequity, and systemic injustice. The current energy system, built on predominantly colonial foundations, is responsible for roughly 75% of global greenhouse gas emissions, driving unprecedented increases in atmospheric temperatures (United Nations Development Programme, 2024). Beyond its environmental toll, this system disproportionately harms Indigenous and other marginalized communities, who often bear the greatest social and economic burdens while reaping the fewest benefits.

In line with the Paris Agreement, Canada has pledged to reduce its 2005 greenhouse gas emissions by 40% by 2030 and to reach net zero by 2050 (von der Porten et al., 2024). Achieving this will require a just energy transition - one that actively includes and is led by historically excluded groups. Such a transition rests on the principle that no one is left behind, prioritizing social, economic, and environmental justice through

job creation, equitable policy, and transformation of education systems. For Indigenous communities, energy sovereignty offers a path toward reconciliation and climate action - enabling local control over energy systems, fostering democratization, and accelerating decarbonization.

The isolation of remote Indigenous communities from the North American energy grid emphasizes the urgency of this work, as many rely primarily on diesel generators, which are costly, polluting, and unsustainable. Combined with limited educational opportunities and capacity constraints, this creates layered challenges that cannot be addressed by one-size-fits-all solutions. Progress demands approaches that directly confront Canada's history and ongoing realities of colonization, while advancing Indigenous led, culturally grounded energy solutions. Fundamentally, this means co-creating doorways to renewable energy participation through culturally relevant energy educational programs.

Purpose and Goals

This report will help provide a foundation for co-developing energy education programs with Indigenous communities in ways that are respectful, relevant, and rooted in community priorities. Commissioned by NEI, it informs the continued development of the CES program and offers guidance for other parties with similar objectives.

The literature review and analysis will focus on advancing three interrelated goals:

1. **Enhancing energy literacy** – ensuring foundational knowledge and skills to meaningfully participate in energy transitions.
2. **Building community capacity** – equipping communities with the resources, networks, and confidence to lead their own energy futures.
3. **Advancing energy justice** – centering Indigenous leadership, rights, and knowledge systems in shaping a just energy future.

These goals are mutually reinforcing: literacy enables participation, capacity makes leadership possible, and justice ensures that Indigenous Peoples' rights, knowledge, and priorities remain at the center. The following subsections expand on each goal and their significance to advancing a just energy transition.

Goal #1: Enhance Energy Literacy

Energy literacy is a critical foundation for enabling Indigenous led, community renewable energy projects. Without a basic understanding of energy systems and the opportunities within the energy sector, Indigenous Peoples cannot meaningfully participate in or shape the energy transition. McMaster et al. (2023) define energy literacy as:

“Foundational knowledge about energy use, energy sources, and energy technologies, coupled with access to energy literacy programs and learning opportunities” (p. 147).

This understanding must precede engagement. According to the Indigenous Clean Energy Social Enterprise [ICE] (2023), communities must understand why energy projects matter and how they can be involved before meaningful buy-in can occur. McMaster et al. (2024) further underscore this point, stating that “a community’s understanding of and familiarity with energy resources and technologies is key to meaningful engagement in, and acceptance of, energy planning and local energy projects” (p. 5).

Conversely, low levels of energy literacy or misunderstandings about energy systems can hinder engagement and diminish the long-term impact of renewable energy initiatives (McMaster et al., 2023, p. 153).

Given this, there is a clear need for programs like CES to collaborate with communities in co-developing culturally relevant and accessible energy education. According to Electricity Human Resources Canada [EHRC] (2025), “education pathways that inculcate renewable energy-specific skills are essential to help Indigenous communities successfully manage sustainable projects and strive to achieve energy independence” (p. 14). Furthermore, these programs must be tailored to each community’s context, centering Indigenous knowledge and pedagogies to ensure that learning is both effective and respectful.

Goal #2: Build Community Capacity

The second goal of this report is to lay a foundation for building community capacity that supports and sustains Indigenous-led energy projects. Capacity building is essential to ensure that communities are equipped to take ownership of their energy

futures and participate effectively in the energy transition. As Loginova et al. (2025) notes, Indigenous-centered and led initiatives depend on the capacities of Indigenous peoples, institutions, and organizations. Similarly, McMaster et al. (2023) define community capacity as “the collective ability of a community to create and seize opportunities to meet community needs, thus providing for greater self-sufficiency and control over social and economic future” (p. 147).

These perspectives highlight that barriers to community-led energy initiatives are often rooted not in a lack of interest, but in limited capacity (Hoicka et al., 2021; McMaster et al., 2023; von der Porten et al., 2024). This challenge is especially pronounced in remote Indigenous nations not connected to the North American electricity grid - an estimated 178 communities, half of which are fly-in only. Remoteness creates additional barriers such as high costs of labour, capital, transportation, restrictive geography, and the inability to sell excess energy due to grid disconnection. Consequently, building clean energy capacity in these contexts is particularly crucial to support meaningful participation in Canada’s energy transition.

Capacity building starts with community members, particularly in rural and remote regions that face unique challenges. As Rakshit et al. (2018) explains, the energy sector’s capacity building relies on a broad set of resources - human, institutional, knowledge-based, social, physical, cultural, natural, and financial. This illustrates the complexity of the task and underscores the need for collaboration among a wide range of stakeholders, both within and outside of communities.

The CES program enhances community capacity through knowledge sharing, relationship building, and mentorship. These activities strengthen local leadership and create pathways for energy sovereignty and energy justice by equipping communities with the tools and confidence needed to lead their own energy transitions.

Goal #3: Advance Energy Justice

Advancing energy justice is the overarching goal of this report, emphasizing the need to place Indigenous Peoples at the center of decision-making about energy systems. In line with Article 26 of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), energy justice upholds Indigenous Peoples’ rights to Free, Prior, and Informed Consent (FPIC) regarding their lands, territories, waters, and resources

(United Nations, 2007). Renewable energy projects pursued without Indigenous leadership risk reinforcing colonial and oppressive systems (Schmidt, 2024)). Given the sector's reliance on resource extraction and land development - much of it occurring on Indigenous traditional lands (Hoicka et al., 2021) - energy justice requires that Indigenous interests remain central.

Elmallah et al. (2022) identify six key principles of energy justice, including grounding approaches in place, shifting power dynamics, and fostering participatory environments built on cooperation. A just energy future requires addressing the colonial roots of the energy sector, which has historically - and continues to - displace Indigenous peoples and exploit their territories. The ongoing tension between the Nordic states and the Saami people illustrates this: state-led climate action has reinforced colonial dynamics by dispossessing the Saami of ancestral reindeer herding lands and heightening their exposure to climate change (Fjellheim, 2023). The Saami Parliament has further described the development of Fosen's wind farm as an act of "green colonialism" by the Norwegian Government - a term that highlights how seemingly "green" initiatives addressing climate change can simultaneously harm, displace, and oppress Indigenous peoples (Schmidt, 2024).

However, Norway is not the only country where green colonialism in the renewable energy transition is taking place. The Site C hydroelectric dam, stretching across the Peace River Valley in British Columbia represents a stark example (Cox, 2024). Despite opposition and warnings from Treaty 8 Nations, the dam flooded 83 kilometers of the Peace River running through their traditional territories. The dam has left permanent impacts on the Nations' hunting, non-tenured trapping and fishing activities that will limit their capacity to transfer knowledge and culture to future generations. BC Hydro's efforts to reconcile with the Treaty 8 Nations included cash payments, contracting opportunities, and an offer to give the dam an Indigenous name. Each of these efforts hugely undermine the Nations' cultural and spiritual losses resulting from the project. Thus, the crown corporation's failure to center Indigenous knowledges and rights to generate "clean" electricity further enforced colonial structures in the energy sector.

These examples reflect a broader pattern: Indigenous Peoples often bear the environmental and social costs of energy development without equitable participation, recognition, or compensation (von der Porten et al., 2024).

Conversely, Schmidt (2024) points to the benefit of Indigenous-led renewable energy projects, such as the Gitchi Animki Hydroelectric Project in Ontario and the Henvey Inlet First Nation wind partnership. She states that such projects “have the potential to create both the ability to trust in the longevity of a power source, and in many instances, benefit from socioeconomic assets if communities decide to own and operate their systems independently” (para. 8). In this way, communities can gain autonomy over their energy systems as power and energy justice are redistributed away from governments and other colonial parties.

Therefore, pursuing energy justice means actively working to decolonize the energy sector. This involves creating space for Indigenous leadership, supporting community-led energy initiatives, and ensuring that Indigenous knowledge, values, and governance systems inform how energy systems are developed and operated (Rioux-Gobeil & Thomassin, 2024). It also requires providing communities with the tools, resources, and opportunities necessary to shape their own energy futures.

Ultimately, energy justice is about transforming who has power in the energy transition, ensuring that Indigenous communities are not only included but are leading the way in defining what a just and sustainable energy future looks like.

Thematic Focus

Together, the three goals - energy literacy, community capacity, and energy justice - frame the thematic analysis of this report. This literature review identified three recurring best practices for advancing these goals:

- 1. Relationship and Trust Building**
- 2. Centering Indigenous Knowledge and Pedagogies**
- 3. Building Programs from the Ground Up**

Each theme builds on the others, highlighting the interconnected nature of education, community capacity, and justice in Indigenous-led energy transitions.

Methods

The literature review informing this report was conducted between June and mid-July of 2025, relying exclusively on online sources. Both academic and grey literature were reviewed to ensure a broad, inclusive, and contextually relevant range of perspectives. Materials included peer-reviewed journal articles, government and non-governmental organization (NGO) reports, educational websites, podcasts, and news articles. A variety of source types were consulted for two main reasons:

1. The intersection of education, capacity building, and co-development in advancing Indigenous participation in the energy sector is a relatively new and evolving area of research.
2. Indigenous perspectives, experiences, and voices - central to this topic - are often underrepresented in academic literature and more frequently reflected in grey literature and other non-traditional sources.

Sources were selected based on three criteria:

1. Credibility of the publisher or author
2. Relevance to one or more of the three research lenses:
 - a. Energy Capacity Building in Indigenous Communities
 - b. Indigenous Education
 - c. Co-development With Indigenous Communities
3. Recency of publication, with preference given to sources published within the past decade.

Because few sources addressed all three lenses simultaneously, the analysis emphasized cross-referencing themes, identifying shared assumptions, and synthesizing best practices. These findings were then used to inform readers of the recommendations outlined in this report.

Disclaimer

This report is intended as a guiding resource for the ongoing development of the CES program and other parties looking to advance similar goals. It does not offer definitive solutions for working with Indigenous Peoples or designing formal education programs. Rather, the insights and recommendations presented here should be interpreted with care, adapted to each community's unique context and

needs, and refined over time through sustained relationships, respectful collaboration, and lived experience.

Throughout the report, key ideas are reiterated. This is intentional. The best practices discussed are interconnected and cannot be meaningfully pursued in isolation. For example, culturally grounded programming cannot be developed without first establishing trust and centering Indigenous Knowledges. Readers are encouraged to draw connections between sections and to view the recommendations holistically. This integrated approach is essential to advancing the report's three central goals: to enhance energy literacy, build community capacity, and advance energy justice.

Roadmap

Guided by the goals and methods outlined above, the following sections expand into each of the three best practices identified in the literature review:

1. Relationship and Trust Building
2. Centering Indigenous Knowledge and Pedagogies
3. Building Programs from the Ground Up

These practices are synthesized and organized into topic clusters to build a strong case for their prioritization. Finally, the report concludes with practical recommendations intended to inform NEI's CES program and support other initiatives seeking to co-develop impactful, community-driven energy education programs.

Findings

Section 1: Relationships & Trust Building

Meaningful relationships are the foundation of successful energy education initiatives with Indigenous communities. According to the Yukon First Nation Education Directorate [YFNED] & Firelight Research Inc. (2021), “being in relationship rather than a formal partnership is the Indigenous way”, which centers trust, collaboration, accountability, and mutual respect (p. 16). Trust is nurtured through intention, respect, and transparency, and creates environments where communities feel safe to share knowledge, voice priorities, and shape program design. Scholars and organizations consistently affirm that without these conditions, co-development cannot succeed (Bilous et al., 2018; Dlouhy-Nelson & Hanson, 2023; EHRC, 2025; C. Jacobs et al., 2022; & Dockstator, 2022; Ng-A-Fook, n.d.; Sway-la Duenas et al., 2024; Tremblay et al., 2024; Tzou et al., 2020).

Relational approaches are especially critical when working in educational contexts, which have historically oppressed and dispossessed Indigenous Peoples of their languages, cultures, and rights. Buergelt et al. (2017) highlight a case of tension between Indigenous Peoples and the Western education system, observing a wide mistrust among Yolŋu (a Northern Australian Indigenous Peoples) citizens. These citizens held the perception that Western educators and researchers only cared about sharing their knowledge while ignoring traditional Yolŋu knowledges and cultural practices. Therefore, prioritizing trust and relationship building within the communities, including hiring and training Yolŋu research assistants, was key to enabling effective cooperation.

Comparable dynamics have been observed in Canada. The NCCIE and Dockstator (2022) found that communities were hesitant to engage when trust was not sufficiently established. Factors contributing to this mistrust included the absence of face-to-face meetings, misunderstandings about project goals, and longstanding historical distrust towards non-Indigenous researchers and institutions. This example illustrates how legacies of oppression and cultural genocide in education continue to shape present-day dynamics, underscoring the need for patience and intention in relationship building between Indigenous communities, educators, researchers, and institutions (FNEC et al., 2025).

Relationships also play a particularly important role in remote contexts. McMaster et al. (2024) emphasize that geographic isolation, limited capacity, and unfamiliarity with the renewable energy sector heighten the need for strong networks and collaborative approaches. Interlocal connections allow communities to share knowledge and resources to navigate common challenges, such as financial constraints, harsh climates, and reliance on diesel. Members of NWT communities, for example, expressed a desire to “understand the details of how other Indigenous communities developed their solar and wind projects” and stressed that “evidence needs to be shared between all communities and made clear to us how this could help our community” (p. 6). These perspectives affirm the importance of both community-to-community relationships and wider support networks in advancing collective energy transitions.

The following sections outline four key elements of relationship and trust building identified across the literature and in this report’s findings: (1) reflexivity and vulnerability, (2) deep listening and observation, (3) creating space to be together, and (4) flexible timelines and budgets. These elements are not discrete but interwoven, reinforcing one another and reflecting Indigenous worldviews of interconnectedness. Readers are encouraged to approach the discussion with a relational lens, recognizing that successful co-development requires non-Indigenous parties to embrace reflexivity, humility, and vulnerability as a starting point.

Reflexivity and Vulnerability from Non-Indigenous Parties

Western-colonial educators have a heightened responsibility to critically examine and decolonize their perspectives about Indigenous education. This requires a willingness to unlearn internalized biases that perpetuate colonial structures in the education space. The process of unlearning demands self-reflection, self-awareness, and vulnerability to disrupt dominant Western frameworks and ongoing colonial cycles (Bilous et al., 2018; Dlouhy-Nelson & Hanson, 2023; FNEC et al., 2025; Government of Yukon, 2023; NCCIE & Dockstator, 2022; Tzou et al., 2020). Only through such personal and professional reckoning can trust be rebuilt between Indigenous communities and educational institutions, laying the groundwork for equitable co-development work.

Dlouhy-Nelson and Hanson (2023) emphasize the importance of self-reflection and an ongoing awareness of their settler positionality in co-development work. As they state:

"We were Settlers, and we needed to name our stance at all times as we traverse(d) a never-ending process of unsettling our settler selves to understand more deeply" (p. 135).

However, the authors acknowledge that self-awareness and vulnerability were not innate - they had to be cultivated over time. Their co-development journey began with unexamined assumptions about shared interests, aligned goals, and effective communication methods. These assumptions, both personal and structural, contributed to their Indigenous counterparts feeling unheard and misunderstood. It was only through patience, lived experience, and continuous self-reflection that Dlouhy-Nelson and Hanson began to recognize the limits of their perspectives, the flaws in their collaborative approaches, and what they call their "settler naiveness." This example illustrates the harm that can result when self-reflectiveness and vulnerability are neglected by non-Indigenous parties. Furthermore, these qualities were crucial to building trust and allowed the authors to collaborate more respectfully and responsively.

Echoing this, the NCCIE & Dockstator (2022) advocate for a "community first" approach, where non-Indigenous parties are expected to be humble and accountable to the communities they work with. Sway-la Duenas et al. (2024) make a similar point, emphasizing the importance of seeking permission before entering Indigenous sovereign spaces. They write, "it is vital to show up humbly, care about those around you, navigate bureaucracy in non-traditional ways, and heed advice about how to move forward" (p. 151). Such guidance underscores the need for a continuous process of unlearning and relearning to genuinely embrace Indigenous Knowledge.

Building on these practices, Tzou et al. (2020) introduce the concepts of role remediation and porosity in co-development, which require vulnerability and a rejection of traditional power hierarchies to make space for Indigenous leadership. These approaches also foster what they describe as politicized trust, allowing those historically excluded from decision-making to step into leadership roles. Developing

this kind of trust requires Western educators to reflect on how their positionality and institutional authority shape their work, while remaining open to Indigenous priorities, perspectives, and ways of knowing. Ultimately, this means being willing to share - or even relinquish - positions of power and approaching collaboration with a commitment to humility, accountability, and listening.

Deep Listening and Observation

The acts of listening, observing, and being present are foundational to building trust between Indigenous communities and educational institutions (Bilous et al., 2018; Dlouhy-Nelson & Hanson, 2023; FNEC et al., 2025; Rodway et al., 2023; Sway-la Duenas et al., 2024; Tremblay et al., 2024; Tzou et al., 2020). Given the long history of oppression, silencing, and the systemic denial of Indigenous rights, these practices are both respectful and necessary. Building authentic relationships begins with a genuine willingness to learn about the diverse histories, identities, and values of Indigenous Peoples. As Bilous et al. (2018) note, skewed power dynamics are inevitable in cross-cultural collaborations. Thus, creating space for Indigenous Peoples to share their experiences is a crucial first step toward approaching co-development.

Applying these relational principles in practice requires actively redistributing power and centering Indigenous voices in decision-making. One example comes from Sway-la Duenas et al. (2024), who note that non-Indigenous teachers may find it difficult to honor Indigenous histories and stories that are not theirs to tell, but are crucial to ground learning in. To address this challenge, the authors applied Design-Based Implementation Research (DBIR) to co-develop a series of Indigenous educational materials. DBIR emphasizes collaboration, iterative processes, and systematic inquiry to strengthen systems and relationships (Design-Based Implementation Research, n.d.). The goal of this approach is to achieve effective, equitable, and sustainable improvements in education. In this case, the approach centered on listening sessions, interviews, surveys, and participant observation - methods vital for understanding Indigenous perspectives. By embedding these practices, DBIR offers a framework through which non-Indigenous educators can step back, listen attentively, and allow Indigenous priorities to guide the work.

This emphasis on listening and observation resonates with the NCCIE and Dockstator's (2022) "Community First" approach, which upholds principles of FPIC. Their work demonstrates that projects should only advance when they are endorsed by communities. This ethic is reinforced by Loginova et al. (2025), who remind us that both "no" and renegotiation are legitimate outcomes of collaboration. The devastating example of the Site C dam - built despite major opposition from Treaty 8 Nations and without their consent - shows the consequences of failing to listen and honor FPIC. As a result, the project left profound impacts on the Nations' lands, waters, and crown relationships. Such cases highlight why sustained listening and accountability are indispensable to authentic co-development.

Alongside these structural commitments, Bilous et al. (2018) and Llewellyn & Ng-A-Fook (2019) underscore the relational power of storytelling and place-based histories, which cultivate trust, build confidence, and establish reciprocity in relationships (p. 172). A key aspect of fostering this trust is ensuring that Indigenous Peoples communicate and teach on their own terms (Dlouhy-Nelson & Hanson, 2023). When non-Indigenous parties expect conformity to Western modes of knowledge-sharing, they risk replicating colonial dynamics and undermining relationship-building efforts. To disrupt these patterns, Western-colonial educators and institutions must actively embrace diverse forms of communication - such as oral storytelling, sharing circles, and in-person dialogue. Doing so creates the space necessary for Indigenous voices to be heard, respected, and centered in co-development processes.

Yet communication alone is not sufficient. Time spent together and engaging beyond formal project structures also contributes to relationships and trust with Indigenous communities.

Creating Space to be Together & Ongoing Communication

Beyond listening, building relationships and trust with Indigenous communities requires presence and a sustained commitment to ongoing engagement and communication. This includes participation in both formal meetings and informal gatherings that foster deeper, more personal connections. As Bilous et al. (2018) emphasize, "co-creation depends upon the intimate interactions, experiences, and lives of the participants that exist outside of project concerns" (p. 174). These interactions may take the form of shared meals, community living during the project

period, or excursions that create space for mutual understanding beyond formal project boundaries. Similarly, Jacobs et al. (2022) reflect on the importance of relationship-building activities - such as retreats at NinDaWaabjig and visits to significant natural sites across the Bkejwanong Territory - in laying the foundation for meaningful co-development.

Building trust also relies heavily on face-to-face engagement, particularly in remote and Northern regions where physical presence demonstrates respect and commitment (NCCIE & Dockstator, 2022). For instance, the NCCIE supported in-person engagement by hosting closing ceremonies within communities. These gatherings created opportunities for collective reflection, gratitude, and celebration, reinforcing relational ties while contributing to the project's overall success.

However, presence alone is not sufficient. To maintain the momentum generated through in-person exchanges, consistent communication between visits is equally important (FNEC et al., 2025; Sway-la Duenas et al., 2024; Tremblay et al., 2024). Bilous et al. (2018) underscores that clear and reliable lines of communication preserve relational integrity and create space for feedback and reflection. Such communication often requires multiple channels, including email, virtual meetings, and phone calls, so that partners can remain connected despite geographical distance.

The NCCIE & Dockstator (2022) illustrate how adapting communication strategies to community needs can strengthen relationships further. Weekly teleconferences kept a geographically dispersed team aligned, while tools such as Doodle Polls and e-newsletters supported coordination and knowledge-sharing. Importantly, the team worked with each community to determine preferred methods, ensuring cultural appropriateness and inclusivity. Flexibility also extended to time and resources. Sufficient funding enabled travel, gatherings, and in-person exchanges, while time allowed for these approaches and strengthened trust. As the authors note, investing in communication is a foundational requirement for building lasting, respectful, and reciprocal relationships with Indigenous communities.

Flexible timelines and budgets

"Building meaningful relationships and working in Indigenous contexts takes time. It requires those who embark on this type of project to be patient, respectful, and

accountable to participants and their communities, but it also demands a lot of time on behalf of the project organizers” (NCCIE & Dockstator, 2022, p. 12)

Relationship-building with Indigenous communities requires time and financial flexibility. This principle applies in both the education and energy sectors, where colonial agendas have created deep mistrust among Indigenous Peoples (Buergelt et al., 2017; FNEC et al., 2025; He & Gatkuoth, 2023; ICE, 2023; NCCIE & Dockstator, 2022; Sway-la Duenas et al., 2024). In the energy context, Rioux-Gobeil and Thomassin (2024) highlight the importance of “appropriate deliberative timeframes” (p. 6) and early participation to ensure social and economic benefits for Indigenous Peoples. Similarly, flexible timelines and budgets are essential to honor diverse community protocols and processes for relationship building (NCCIE & Dockstator, 2022). Across both domains, flexibility serves as a foundation for building trust and supporting Indigenous-led initiatives.

In the context of climate education, Sway-la Duenas et al. (2024) stress that this flexibility requires “slowing down to build trust and strong friendships . . . and engage in practices of deep care and vision” (p. 151). Story-sharing and relationship-building cannot be rushed, and externally imposed schedules conflict with the slower, community-led pace. Concrete examples reinforce this reality. For instance, the co-development of a land-based field course between the University of Windsor and Bkejwanong Territory (Walpole Island First Nation) emerged after “years of relationship building” between faculty and community members (C. Jacobs et al., 2022). Similarly, Tremblay et al. (2024) highlights the need to spend significant time in communities and prioritize trust-building to ensure long-term investment and support (p. 7).

Further insights from the NCCIE & Dockstator (2022) explain why timelines in Indigenous research must remain flexible. They note that:

- Some communities and individuals need extended time to fully understand the scope and intent of a project before engaging.
- Community-specific protocols and approval processes must be respected.
- Unexpected emergencies within the community may take precedence and delay participation.

- Weather-related travel disruptions, especially in remote Northern regions, are frequent and unpredictable.

NCCIE concluded that the “gift of time” allowed them to prioritize relationships and navigate uncertainties with care, acknowledging that trust cannot be rushed. By contrast, Buergelt et al. (2017) reflect on how limited project timelines in their work with six Yolngu communities prevented participants from fully grasping the initiative’s scope, diminishing long-term impact and uptake.

Respecting community protocols and timelines is also central to trust-building (ICE, 2023). This can involve scheduling meetings around seasonal activities (e.g., avoiding hunting season in the fall) or participating in meals prepared by community members. For many Indigenous communities, oral dialogue and face-to-face communication are preferred (p. 7). However, reaching remote communities, particularly in the North, requires extensive travel and financial investment. For this reason, ample time, resources, and budgetary flexibility are crucial for supporting co-development processes and building culturally grounded relationships with Indigenous peoples (EHRC, 2025; ICE, 2023; McMaster et al., 2024; NCCIE & Dockstator, 2022; Rakshit et al., 2018; Rogers, 2022; Sway-la Duenas et al., 2024; YFNED & Firelight Research Inc., 2021).

Equally important is aligning budgets with community needs. Rakshit et al. (2018) argue that financial resources must be commensurate with the goals of equitable participation and capacity building (p. 188). NCCIE & Dockstator (2022) similarly affirm that financial and administrative flexibility was critical to their project’s success. This included the ability to travel to communities, meet in person, provide honoraria, host ceremonies, and offer practical support such as childcare. They emphasize that in particularly remote regions such as Yukon and Nunavut, these investments are indispensable (p. 36). Therefore, the pursuit of energy education initiatives in remote Indigenous communities must maintain budgetary flexibility as a priority.

Summary

Ultimately, trust and relationships must be firmly in place before co-development can advance the three goals of this report: enhancing energy literacy, building community capacity, and advancing energy justice. This requires that non-Indigenous parties recognize the limits of their own perspectives and actively work

to unlearn colonial biases. Deep listening, observation, and sustained presence in communities create the conditions for authentic engagement, while diverse and culturally grounded communication practices, including storytelling and face-to-face interactions, ensure Indigenous voices guide co-development processes. Equally, flexible timelines and budgets are essential to respect community protocols, support meaningful participation, and allow trust to grow at its natural pace. Together, these practices establish a relational foundation for co-development in both energy and education. Only once this foundation is in place can non-Indigenous parties effectively support the centering of Indigenous knowledges and pedagogies, fostering culturally relevant energy education programs.

Section 2: Centering Indigenous Knowledge & Pedagogies

Intro:

Centering Indigenous knowledge and pedagogies is essential to building effective energy education programs for remote Indigenous communities. As the NCCIE & Dockstator (2022) emphasize, a core principle of Indigenous education is “nothing about us without us” (p. 27). This underscores the need for Indigenous control and self-determination in initiatives that directly impact their communities. Without this grounding, efforts to increase energy literacy, build community capacity, and advance energy justice risk reproducing colonial dynamics rather than supporting just transitions. To meet these goals, energy education programs must be rooted in each community’s worldviews, values, and priorities. This requires attention to three interconnected priorities: honoring cultural specificity, involving the entire community in the process, and employing place- and land-based learning. The next section will discuss the significance of cultural specificity in energy education initiatives.

Cultural Specificity

“Having a culturally relevant and appropriate curriculum which supports the development of a positive self-identity through learning Indigenous histories, cultures, traditional values and knowledge is key to the success of Indigenous students” (YFNED & Firelight Research Inc., 2021, p. 17)

Cultural specificity is foundational to Indigenous education, energy projects, and energy education initiatives. Capacity-building programs for Indigenous-led energy

projects must reflect each community's energy vision (McMaster, 2022; McMaster et al., 2023, 2024), and that vision must be rooted in the community's history, needs, and opportunities (p. 4). Because education and energy literacy are central to capacity building, energy education programs must also be grounded in culture.

Successful Indigenous education programs center Indigenous worldviews and relationships, embedding curriculum within cultural foundations (Buergelt et al., 2017; NCCIE & Dockstator, 2022; Russell, 2025; Spang & Bang, n.d.-b, n.d.-a; Sway-la Duenas et al., 2024; YFNED & Firelight Research Inc., 2021). The FNEC et al. (2025) emphasize that to foster equity and inclusivity, programs must be recentered around the needs, voices, and experiences of Indigenous students, ensuring they feel belonging and ownership (p. 138). First Nations Curriculum Consultants Flora Asp and Tammy Stoneman describe this as doing education “in a good way,” a phrase that signifies work carried out with respect for tradition and spirit (Government of Yukon, 2023).

Creating Indigenous-specific curricular content, rather than simply “indigenizing” Western curricula, is central to this approach. As the YFNED & Firelight Research Inc. (2021) note, the goal is to develop programs “where cultural content is not being brought into the curriculum, but rather culture is the curriculum” (p. 18). Buergelt et al. (2017) illustrate this in their collaboration with six Yolŋu communities to design an energy efficiency program. Fire - valued for its cultural and traditional significance - was identified as the bridge between Yolŋu culture and energy education. Community members emphasized that fire connects them to the land through reciprocal relationships, while many Elders expressed a desire to return to ancestral ways of living and interacting with energy. This example demonstrates how embedding culture at the heart of education can strengthen both community engagement and perceptions of energy.

Building on this cultural grounding, Indigenous pedagogies ensure that students are seen, heard, and supported in their learning. The NCCIE & Dockstator (2022) emphasize holism and respect for diverse learning styles, while FNEC et al. (2025) highlight participatory approaches rooted in community experience (p. 83). Instead of memorization, these pedagogies prioritize analysis, creativity, and evaluation (YFNED & Firelight Research Inc., 2021, p. 23). Storytelling exemplifies this approach,

passing on values, histories, and practices while fostering critical and relational thinking. Incorporating community-specific pedagogies is therefore vital to co-developing effective energy education programs.

The Deh Gáh School offers an important example. Grounded in Dene culture, the school uses holistic, relational, and experiential methods such as “spiral learning,” where topics are revisited in more depth over time (YFNED & Firelight Research Inc., 2021, p. 23). Teachers adapt lesson plans to meet each student at their own entry point, ensuring that individual needs are met while culture remains central. As one teacher explained,

“The lesson plans have to be differentiated to meet the kids where they’re at, to meet them at their level. And that’s when we talk about entry point. What entry point can you bring that child in?” (p. 26).

This approach applies to learners of all ages, demonstrating how Indigenous pedagogies can make energy education inclusive and culturally grounded.

Cultural grounding is equally important in science, technology, engineering, and mathematics (STEM). While STEM education is critical for Indigenous participation in the energy sector, it must be decolonized (NCCIE & Dockstator, 2022). The EHRC (2025) recommends weaving STEM subjects with lessons on energy efficiency, conservation, and responsible harvesting to create synergies between modern technologies and traditional practices (p. 31). Hands-on learning, guided by Elders and Knowledge Keepers, connects energy concepts to cultural teachings through observation and storytelling. Spang & Bang (n.d.) highlight practices such as studying natural patterns in plants, animals, and weather, or situating energy education on the land where renewable energy projects may one day be developed.

Cultural specificity grounds energy education in Indigenous students’ identities, knowledges, and priorities, making learning meaningful and community driven. Building on this foundation, the next step is to engage the wider community in co-developing education programs that strengthen Indigenous-led energy transitions.

Involving the Entire Community

Community-led processes are essential when co-developing culturally relevant energy education programs with remote Indigenous communities. Meaningful

involvement includes Elders, Knowledge Keepers, students, families, and local leadership. Co-development in this form ensures that educational content reflects Indigenous values, lived experiences, and ways of knowing (Buergelt et al., 2017; He & Gatkuoth, 2023; YFNED & Firelight Research Inc., 2021).

FNEC et al. (2025) emphasize that “working with Indigenous communities to ensure their culture is centered, including students’ families, is fundamental to the process of building trust” (p. 99). Similarly, Sway-la Duenas et al. (2024) argue that “students’ science learning [should] parallel family activities, cultural celebrations, and Tribal events” (p. 155). The First Nations School Board’s (FNSB) organizational chart illustrates this principle by placing students at the center, surrounded by teachers, parents, and the broader community (Russell, 2025). Such a model reinforces that learning is embedded in community life rather than confined to the classroom (YFNED & Firelight Research Inc., 2021).

Within this framework, leadership from Indigenous Elders and Knowledge Keepers emerges as foundational to community-driven education (Buergelt et al., 2017; FNEC et al., 2025; Government of Yukon, 2023; D. Four A. T. Jacobs, 2019; NCCIE & Dockstator, 2022; Russell, 2025; Spang & Bang, n.d.-b, n.d.-a; YFNED & Firelight Research Inc., 2021). Their early and sustained involvement ensures that traditional knowledge, histories, and cultural protocols guide curriculum design. Revered for their wisdom, Elders’ leadership is not only a sign of respect but also a cornerstone of decolonized education.

Examples from across Canada illustrate the transformative role of Elders and families in education. The Land and Language Based Learning Program at Ladysmith Secondary School, rooted in Coast Salish knowledge and pedagogy, centers Elders’ teachings and community involvement (YFNED & Firelight Research Inc., 2021, p. 18). Lessons are delivered by Stz’uminus and Snuneymuxw Elders, ensuring that orality and relationship building - central to Coast Salish teachings - shape both curriculum and delivery. Similarly, the Akwesasne Freedom School was established through the leadership of Mohawk clan leaders and Elders, with local educators developing its culturally centered curriculum (YFNED & Firelight Research Inc., 2021). Families also play a central role, contributing to curriculum development, school operations, and

maintenance. In both cases, embedding families in decision-making strengthens relationships and ensures that diverse community perspectives shape education.

The TechTales program further illustrates the impact of family involvement, particularly in STEM contexts. Co-developed by families, Indigenous educators, librarians, and Western academics, the program delivered robotics workshops and “learning backpacks” shaped by family stories and cultural contexts (Tzou et al., 2020). These activities extended learning beyond classrooms and centered Indigenous knowledge systems as the foundation of design. As the authors reflect:

“We recognized that we were not simply building cultural connections; we were centering Indigenous knowledge systems, family, and community as the foundation and the purpose of our design work, going far beyond typical deficit assumptions or demands to assimilate.” (Para. 27).

This deep engagement produced strong outcomes, with 80–90% of students and families returning for later events. TechTales demonstrates how community-led design fosters culturally relevant STEM learning and offers a model for effective energy education.

However, ensuring this depth of engagement also requires recognition of the challenges communities face. Elders and community leaders - especially in remote and northern regions - often carry many responsibilities, limiting their availability. In some communities, the number of knowledge holders has been reduced by the intergenerational impacts of colonialism and language loss (D. Four A. T. Jacobs, 2019; & Firelight Research Inc., 2021). To support meaningful participation, it is crucial that co-development processes include patience, appropriate compensation such as honoraria, and culturally grounded support. Flexible budgets and timelines are also critical to align with community capacity and pace.

In sum, centering families, Elders, and broader community leadership ensures that energy education reflects the lived realities and values of Indigenous communities. This approach can enhance community uptake and the outcomes of energy literacy and capacity building efforts. Yet, cultural relevance is not only rooted in who is involved, but also in where and how learning takes place. Building on these community-driven processes, the next section turns to place- and land-based

learning, which situates energy education within Indigenous relationships to land, language, and environment.

Place and Land-Based Learning

Previous sections emphasized the importance of centering Indigenous knowledge and pedagogies in the development of energy education programs for remote communities. Doing so requires localized learning and educational materials that are grounded in place- and land-based teachings (NCCIE & Dockstator, 2022). FNEC et al. (2025) highlight traditional methods of learning among Yukon First Nations, which largely take place on the land. Communities believe that “the whole world is a classroom” (p. 96), mobilized through time spent with Elders and extended family members on the land.

This emphasis on learning through lived experience is echoed by Lewthwaite (2007), who underscores that place-based education draws directly from community contexts:

“Teaching is grounded in what students are familiar with, actualities rather than abstractions. It emerges from the characteristics of place. It draws from the unique characteristics and strengths of the community and, thus, does not lend itself to duplication or replication. It promotes the use of community resource people and is inherently experiential, drawing upon the opportunities provided by the local context and its people.” (p. 5)

Building on this, the YFNED & Firelight Research Inc. (2021) describe “situated learning,” which occurs in the communities where teachings apply (p. 27). Often land- and place-based, this model encourages students to think critically and understand nature through traditional knowledge systems. For energy education, these approaches ensure lessons are relevant, culturally grounded, and tied to lived community experiences.

The value of these methods can be seen in practice. For example, the ClimeTime network co-developed STEM courses with Chief Leschi School, a Puyallup Tribal school, to embed learning within local ecological priorities (Sway-la Duenas et al., 2024). Because salmon are culturally and ecologically central to the Puyallup, lessons often focus on protecting this species (p. 154). By connecting STEM skills to place and

culture, the program prepares students for meaningful careers and offers a model for energy education in other Indigenous communities.

These responsibilities to community and place are also highlighted by Spang & Bang (n.d.-a), who note that “many Indigenous students have responsibilities to their communities and territories (including human and non-human ancestors and future generations), so their learning and lives are often embedded in these responsibilities” (para. 3). Delivering programs directly within communities strengthens these responsibilities, supporting both cultural relevance and the ability for members to remain and work locally (EHRC, 2025, p. 31). This approach is critical for developing local leadership and sustaining participation in energy transitions.

Of course, land-based programs often require greater financial investment than standard classroom models (YFNED & Firelight Research Inc., 2021). Yet, despite these higher costs, multiple sources stress their necessity. Centering land and place in curriculum design grounds learning in lived realities, honors Indigenous knowledge systems, and advances decolonization. Without such approaches, energy education risks irrelevance and ineffectiveness. Achieving energy justice therefore demands sustained funding and long-term program support, as emphasized in Section 1.

Finally, NCCIE & Dockstator (2022) remind us that “given the history of colonialism and the violent dispossession of land from Indigenous peoples, decolonial education frameworks must reconnect Indigenous peoples to land and the relations, knowledges and languages that arise from the land” (p. 27). Thus, reconnecting education to land is not only pedagogically *powerful*, but also an act of reclamation and resistance.

Summary

Taken together, these three dimensions - cultural specificity, community-wide involvement, and place- and land-based learning - demonstrate that effective energy education for Indigenous communities must be deeply rooted in Indigenous knowledges and pedagogies. Programs that reflect each community's culture, engage entire communities, and draw learning directly from the land create environments where students are seen, valued and inspired. Such approaches move beyond tokenistic “inclusion” of Indigenous perspectives toward truly Indigenous-led

education that strengthens local capacity and contributes to a just energy future. Building on these foundations, the next section explores how energy education programs can be developed from the ground up, guided by Indigenous leadership.

Section 3: Building Programs from the Ground Up

Introduction

Building energy education programs in remote Indigenous communities requires an approach that is responsive, adaptive, and rooted in local realities. A “ground-up” model – informed by community priorities, knowledges, and strengths - ensures relevance, sustainability, and alignment with community values (Tremblay et al., 2024). Building on this, Amber et al. (2023) note that internally advanced projects, rather than externally imposed ones, are far more effective in garnering community buy in. Energy education programs that are built from the ground up are more likely to advance energy literacy, build capacity, and contribute to energy justice in remote Indigenous communities.

This approach begins with recognizing that each Indigenous community is unique, shaped by its own culture, governance systems, and priorities. Such recognition requires educators, organizations, and non-Indigenous partners to let go of assumptions and engage with humility, deep listening, and openness to context. A ground-up approach also means moving beyond deficit-based narratives to build upon communities’ existing strengths, skills, and resources. Finally, long-term sustainability depends on investing in local leadership, supporting programs to be community-driven and community-led. Only then can energy education programs truly reflect and serve the communities they are intended to support.

The following sections explore what a ground-up approach looks like in practice, beginning with the principle that each community is unique.

Understanding Communities’ Unique Priorities

A common misconception is that all Indigenous Peoples and communities share the same values and goals. This often leads to a “pan-Indigenous” approach to energy initiatives, which scholars and educational institutions caution against as ineffective and inappropriate (Amber et al., 2023; Buergelt et al., 2017; LaRiccia, 2025; McMaster et al., 2023, 2024; NCCIE & Dockstator, 2022; Rakshit et al., 2018; YFNED & Firelight

Research Inc., 2021). Instead, McMaster et al. (2024) argue that the motivation for local initiatives should stem directly from communities' unique energy visions. Entering relationships with Indigenous communities without assuming their priorities is therefore critical.

Amber et al. (2023) provide strong evidence for this through their energy transition study in the NWT. One participant stated that “cookie cutter models do not work in Northern communities” (p. 6). They described how the Government of the Northwest Territories (GNWT) sent external consultants into their community with fixed assumptions, agendas, and Western success metrics. This left no room for Indigenous knowledge or perspectives and ultimately eroded community trust. Another participant shared their community's aspirations for a fully Indigenous-owned energy corporation, which they understood would require external support. The participant further stressed the importance of a locally tailored approach in reaching this goal, recognizing that all Northern communities have their own needs and visions. These experiences demonstrate that while innovation and adaptation are widely recognized as necessary, Indigenous communities differ significantly from governments and must chart their own paths toward a healthy future.

Von der Porten et al. (2024) expand on these differences, noting that the Canadian government often prioritizes affordable electricity, while Indigenous nations shoulder disproportionate costs through displacement from their lands and waters. Externally imposed electricity projects reinforce government agendas while undermining reconciliation priorities. To shift this colonial pattern, renewable energy initiatives must center the priorities and unique circumstances of the Nations whose lands, waters, and peoples they concern. Importantly, Indigenous communities differ not only from governments but also from one another in knowledge systems, practices, and visions for their futures.

Building on this point, McMaster et al. (2024) observe that renewable energy projects in remote communities are not always motivated by climate concerns or technological advancements. Instead, socio-cultural, economic, or land-based priorities may take precedence. This challenges dominant Western narratives, which often impose climate-driven projects with no regard to community values, timelines,

or practices. When these aspects are ignored, energy-related initiatives fail to serve Indigenous communities' priorities.

Concrete examples highlight the importance of tailoring projects to community context. The Innavik Hydro Project in Inukjuak, Quebec, is a 50-50 partnership between the Inuit-owned Pituvik Landholding Corporation and Innergex, a Canadian renewable power producer (Innavik Hydro, n.d.). Rather than building a traditional storage dam, the community chose a run-of-river design to minimize environmental impacts. Protecting drinking water remained the top priority, guiding site selection and development through extensive community engagement and environmental assessments. This locally adaptive process ensured that Inukjuak's unique circumstances were respected and garnered strong community support (Pituvik Landholding Corporation & Innergex Renewable Energy, 2019).

The Atlin Hydro Expansion Project, led by the Tlingit Homeland Energy Limited Partnership (THELP), also demonstrates how priorities differ across communities. While the project pursues sustainable energy and economic development, it was carefully shaped by the Taku River Tlingit First Nation's specific cultural and ecological concerns. For example, the project plan incorporated measures to protect sheep migration routes, safeguard archaeological sites, and respect traditional land uses in the sub-Arctic dry zone (Tlingit Homeland Energy Limited, 2023). These concerns highlight the unique adaptations required to reflect TRTFN's priorities - adaptations that differ markedly from those in Inukjuak.

These cases show that while Indigenous communities may share broad aspirations for sustainable energy and self-determination, their specific priorities, values, and cultural protocols are distinct, meaning Western partners must listen, learn, and create space for Indigenous voices to lead. This is especially important for Indigenous energy education programs, which provide the foundation for communities - particularly remote ones - to guide their own energy transitions and, when rooted in local priorities, naturally extend to renewable energy developments that reflect community aspirations.

The following section builds on this idea by showing how strengths-based approaches further support community-led pathways.

Strengths-Based Approaches

Coupled with assumptions about what Indigenous communities need or want is a hyper-focus on their weaknesses, or what they are perceived to lack. Approaching co-development with a deficit narrative replicates colonial dynamics by undervaluing existing community strengths and eroding trust. In education, this dynamic has been well documented - Indigenous students who internalize lowered expectations often experience reduced performance and engagement (FNEC et al., 2025). Similarly, lowered expectations in the context of energy initiatives can undermine respect, trust, and collaboration. In response, scholars increasingly advocate for strengths-based approaches that identify and build upon communities' and individuals existing assets (Buergelt et al., 2017; McMaster et al., 2023, 2024; NCCIE & Dockstator, 2022; Rakshit et al., 2018).

Rakshit et al. (2018) and McMaster et al. (2024) emphasize that identifying a community's current resources should be the first step in assessing its energy capacity. Many communities - especially those dependent on diesel - already possess transferable and technical skills. Recognizing and leveraging these strengths forms a critical foundation for capacity building (McMaster et al., 2024, p. 5).

To support this process, McMaster (2022) proposes a conceptual framework for assessing socio-technical capacities. The framework outlines eight pillars intended to guide early-stage capacity-building programs in partnership with communities:

1. Community Energy Champions
2. Inter-local Energy Networks
3. Community Energy Vision
4. Community Energy Value
5. Energy Literacy
6. Embedded Skills
7. Skills Development Opportunities
8. Next Generation Leaders

McMaster (2022) recommends co-applying this framework with communities to ensure local perspectives drive the process. For example, the "embedded skills" pillar invites communities to reflect on current and transferable abilities and envision how these strengths can support energy transitions.

This approach has been applied in McMaster et al.'s (2023) study of four Gwich'in communities in the NWT. Community members in Fort McPherson and Inuvik highlighted existing and retired skills - ranging from electrical work to mining, oil and gas, and business - that were considered highly valuable for energy projects. Many also suggested that retired skills could be transferred back into the workforce through mentorship and hands-on learning. These accounts demonstrate the resilience and resourcefulness already present in Indigenous communities.

Similarly, the Tu Deh Kah Geothermal Project in Fort Nelson, British Columbia, demonstrates how community members' existing skills can be directed towards the energy transition (EHRC, 2025, p. 45). Many members of the Fort Nelson First Nation who previously worked in the oil and gas industry transferred their skills to the geothermal project. Training programs were then built on this foundation, enabling community members to play leading roles in advancing local energy sovereignty. This case illustrates how recognizing and mobilizing existing strengths not only accelerates project success but also ensures that benefits remain within the community.

However, strengths-based approaches require genuine collaboration. External parties may find them challenging, as only community members themselves are best positioned to identify their strengths. This reinforces the need for inclusive processes that center community voices. For example, the EHRC (2025) suggests using surveys and skill-tracking databases to compile local expertise, which can then inform training and educational programs (p. 31). Such methods allow third parties to support, rather than direct, capacity-building by helping communities leverage their own assets.

By contrast, overlooking inherent strengths risks undermining trust and project outcomes. Buergelt et al. (2017) describe their failure to fully recognize the Yolngu communities' strengths in Australia, where collaborators initially overlooked traditional knowledges in favor of Western energy-efficiency frameworks. This disregard not only devalued Yolngu expertise but also harmed relationships. Echoing this sentiment, one NWT community member noted: "Just because our northern knowledge doesn't take place in a university, doesn't make it any less valid and equivalent . . . Elder's words live on in the identity of community members" (Amber

et al., 2023, p. 7). Such perspectives highlight the invaluable role of traditional knowledges and the risks of marginalizing them.

Ultimately, Indigenous communities hold a wide range of inherent strengths - from technical and professional skills to traditional knowledge, lived experiences, and cultural teachings - that must be valued in capacity building. Centering these strengths within energy education programs ensures that initiatives are empowering, culturally grounded, and responsive to community visions. Moving beyond deficit narratives in this way fosters respectful relationships, amplifies Indigenous knowledge systems, and advances energy sovereignty. To fully realize this potential, however, programs must prioritize meaningful local participation and leadership. The following section turns to the importance of hiring local talent in energy education.

Embracing Local Leadership

Beyond respecting community uniqueness and inherent strengths, a ground-up approach requires recognizing and empowering local leadership. In the context of local energy transitions, McMaster et al. (2023) warn against assuming an energy leadership deficit and imposing external authority on remote Indigenous communities. They emphasize that “while the lack of formally designated community energy leaders may be constraining, we should not assume that the communities lack local leadership to advance community energy” (p. 155). Many communities are guided by energy champions who draw on traditional knowledge, cultural values, and local experience rather than formal credentials. As such, leadership can take many forms, including Knowledge Keepers, community liaisons, program developers and educators.

In the educational space, local and racialized leadership is particularly important for supporting Indigenous students and ensuring that their cultures are reflected in their learning (Bilous et al., 2018; NCCIE & Dockstator, 2022). FNEC et al. (2025) argue that this representation strengthens student-teacher relationships beyond the confines of the classroom and rigid curricula (p. 111). They emphasize that “representation in leadership creates a cycle of empowerment, where students are not only supported but are inspired to become future educators, advocates, and change-makers themselves” (p. 112). In the context of energy literacy and capacity-building programs

in remote Indigenous communities, such representation is especially critical for inspiring confidence and participation in the energy transition.

Building on this, the YFNED & Firelight Research Inc. (2021) highlight the concept of “circular sustainability,” which occurs when community members are trained and hired to work in their local schools, encouraging them to stay and invest in their home communities. However, they note that this can be a significant challenge for remote communities due to limited access and small populations. Their environmental scan of Indigenous educational programs revealed that community-based teacher training helped to address these barriers. Partnerships with universities and hiring local community members were key to many of these initiatives. For energy education programs, this means prioritizing the identification of potential local educators while relying on institutional partnerships for ongoing support and resources.

The Xetólacw Community School in British Columbia demonstrates this approach. In partnership with the First Nation Education Steering Committee (FNESC), the school is actively working to upgrade the qualifications of all Indigenous staff and build a team of local Education Assistants (YFNED & Firelight Research Inc., 2021). Similarly, the Salish School of Spokane has a workforce of nearly 100% local teachers. While only six of these teachers have formal education degrees, the majority received in-community training. These examples highlight the potential for Indigenous leadership to thrive irrespective of Western-recognized credentials and illustrate how institutional partnerships can strengthen local capacity.

At the same time, McMaster et al. (2023) caution that imposing external leadership risks replicating colonial dynamics. Within energy education, centering community-based leadership is key to moving beyond the harmful legacies of institutions like residential schools and addressing the mistrust Indigenous students may hold. Hiring local educators not only supports cultural continuity and community trust but also ensures that programs remain grounded in the local context and follow culturally appropriate protocols.

Tremblay et al. (2024) note additional benefits of hiring community-based staff, including stimulating the local economy, tailoring programming to local needs, and increasing community buy-in. Their work on a community-based early years program

illustrates how external actors can provide backbone support while leaving room for Indigenous-led transformation - a critical component for any sustainable and culturally appropriate initiative.

An additional advantage of prioritizing local talent is the ability to sustain programs beyond the co-development phase. Buergelt et al. (2017) recommend designing education and capacity-building initiatives with long-term community leadership in mind. This involves hiring and training local educators, building on their existing skills, and providing the tools and infrastructure necessary for long-term maintenance. Such approaches require ongoing employment opportunities, substantial funding, and flexible timelines. The EHRC (2025) echo this point, noting that third-party experts are most effective when their role is to transfer knowledge rather than to lead.

In conclusion, hiring and training local Indigenous leaders is not only a matter of representation but a foundational component of sustainable, community-led energy education programs. By investing in local leadership and supporting culturally grounded programming, these initiatives foster long-term community resilience, empowerment, and self-determination. External parties must therefore take time to identify and support these leaders rather than replace them.

Summary

Ground-up approaches to energy education are the key to success for remote Indigenous communities and their collaborators. This means rooting all co-development processes and products in community priorities, strengths, and leadership. By respecting community uniqueness, rejecting deficit narratives, and investing in local leadership, ground-up approaches ensure that energy programs reflect Indigenous values and knowledge systems, contributing to a broader trust. When implemented, these strategies increase energy literacy by embedding learning in local contexts, build community capacity through mobilization of local strengths, and advance energy justice by shifting leadership to communities. Together, these elements affirm that energy education in remote Indigenous communities is most effective when developed from the ground up and guided by the voices of those it is meant to serve.

The following section of this report will summarize the key findings and implications for future program development

Conclusion

This report presented findings from a literature review aimed at three goals: 1) enhancing energy literacy, 2) building community capacity, and 3) advancing energy justice. While inspired by the CES program developed by VGFN and NEI, the findings are broadly applicable to other Indigenous energy education initiatives, and through cross-referencing and synthesis, three best practices emerged for co-developing programs in remote Indigenous communities.

First, meaningful relationships and trust must form the foundation of all collaborations. Given the legacies of violence and injustice in the energy and education sectors, non-Indigenous partners have a responsibility to engage with humility, reflexivity, and vulnerability. Practices such as deep listening, consistent communication, and shared time together create conditions for trust, while flexibility in timelines and budgets ensures space for relationships to grow - critical to advancing both community capacity and energy justice.

Second, energy education must center Indigenous knowledges, pedagogies, and priorities. Co-developing culturally specific content, incorporating land-based learning, and involving the broader community ensures that programs are relevant, meaningful, and empowering. By grounding energy literacy in traditional knowledge and lived experience, communities are more likely to embrace and sustain these programs, strengthening both capacity and sovereignty over their energy futures.

Finally, programs must be built from the ground up, not imposed through top-down approaches. Recognizing the inherent strengths within communities, including technical skills, lived experiences, and cultural teachings, as the foundation for capacity building is essential. Supporting local leadership in education, technical fields, and community engagement ensures that programs are not only effective but also sustainable, advancing energy justice by reinforcing self-determination and reducing reliance on external authority.

Taken together, these findings highlight that there are no universal blueprints for Indigenous energy education programs - only guiding practices that must be adapted in partnership with each community. The following recommendations translate these principles into actionable steps for NEI and other organizations.

Recommendations

A. Program Foundations

#1 Form meaningful relationships with support organizations and communities

NEI should prioritize forming meaningful relationships with Indigenous communities and key support organizations to ensure the CES program is culturally grounded, community-driven, and effectively implemented. These relationships are not only essential for fostering trust and effective collaboration, but also for addressing capacity gaps, accessing funding opportunities, pooling resources, and strengthening professional guidance. NEI is encouraged to explore collaborations with the following individuals and organizations:

- **Community Elders & Knowledge Keepers**
 - Forming strong relationships with Elders and Knowledge Keepers early on can help ensure that CES courses are culturally relevant and grounded in local pedagogies.
- **Yukon First Nation Education Directorate (YFNED)**
 - The YFNED brings extensive experience in developing culturally adaptive educational approaches for Indigenous students. Their knowledge and networks can support NEI in designing CES courses that are relevant, respectful, and rooted in local context. The YFNED may also offer opportunities for resource sharing and human capital support.
- **The National Centre for Collaboration in Indigenous Education (NCCIE)**
 - NCCIE specializes in co-developing culturally relevant Indigenous educational resources, including curricula, frameworks, and lesson plans. With connections across Canada and a proven track record of collaboration with Indigenous communities, NCCIE can offer valuable guidance for CES course development and may assist NEI in expanding its reach and building trust with communities nationwide.
- **Indigenous Education Consultants (e.g., Tammy Stoneman & Flora Asp)**

- These consultants have deep experience co-developing effective, culturally grounded educational programming with Indigenous communities. They can provide strategic input during CES development and may help fill temporary human capital gaps in cases where communities face limited capacity or cannot hire local educators immediately.

Establishing these relationships early in the development of CES courses will help ensure the initiative is responsive, respectful, and equipped with the expertise necessary to support long-term energy justice.

#2 Implement a collaborative framework to determine community capacity

NEI should co-develop a framework with each community to assess baseline capacity, drawing inspiration from models such as McMaster et al.'s (2024) community capacity framework. Rather than prescribing rigid criteria, this process should provide flexible guidance that prioritizes community perspectives and definitions of capacity. A strengths-based lens is essential, focusing on existing assets - such as skills, knowledge, and experiences - rather than perceived deficits. This collaborative, asset-oriented approach reflects best practices for respectful and effective engagement with Indigenous communities, as highlighted by McMaster et al. (2023; 2024), Lewthwaite (2007), Rakshit et al. (2018), NCCIE & Dockstator (2022), and the YFNED & Firelight Research Inc. (2021).

B. Community Leadership & Equity

#3 Support the hiring and training of local educators and energy champions

Energy education programs in remote Indigenous communities should prioritize hiring local talent and creating accessible pathways for energy-related training and certification. Investing in Indigenous leadership strengthens community ownership, trust, and long-term program sustainability. Local educators and energy champions not only foster stronger engagement but also serve as role models, inspiring students to pursue similar careers. This is especially important given the historical mistrust of non-Indigenous educators and the biases that have limited Indigenous student success. By hiring and training locally, communities can build a self-sustaining cycle in which skills and knowledge remain in the community, support the local economy, and empower the next generation.

#4 Build in Time and Resources for Relationship Development & Program Effectiveness

Rigid budgets and rushed timelines undermine the success of Indigenous energy education programs and limit opportunities for meaningful relationship-building. To overcome these barriers, programs should embed flexibility into funding and scheduling from the start by:

- **Respecting community protocols, timelines, and decision-making processes** - These may move at a slower but more deliberate pace, and timelines should adapt to community needs and capacity.
- **Allocating adequate resources for honoraria and relationship-building activities** - Investments in group retreats, land gatherings, or community feasts are essential to fostering trust and collaboration.
- **Maintaining ongoing communication through regular check-ins** - Consistent dialogue helps sustain relationships and ensures all voices are heard and engaged.
- **Investing in localized and culturally grounded teaching methods** - Approaches such as land-based learning require additional time and funding but are critical to long-term success.

Embedding this flexibility not only strengthens relationships but also ensures that energy education programs are culturally relevant, community-driven, and sustainable.

C. Curriculum Design & Knowledge Sharing

#5 Embed Indigenous pedagogies and land-based learning into courses

Embedding Indigenous pedagogies is fundamental to the success of energy education programs in remote Indigenous communities. Approaches such as storytelling, observation, land-based teachings, and learning by doing create culturally relevant and decolonized programs. These can be implemented by:

- **Engaging Elders and Knowledge Keepers** to guide educational content through traditional teachings and knowledge of place.
- **Incorporating land-based, experiential learning** that reflects Indigenous ways of learning (e.g., critical thought, interpretation) and connects directly to natural and renewable energy systems.

- **Grounding courses in place-based stories, languages, and traditional relationships with energy systems.**

Implementing these approaches supports respectful co-development while ensuring culture remains the guiding force of energy education programs.

#6 Facilitate Interlocal Energy Networks

Renewable energy projects in remote Indigenous communities see higher success rates when communities can learn from one another, share resources, and exchange guidance. This is especially vital in the remote North, where local capacities and experience with energy transitions may be limited. External partners supporting energy education programs can play an important role in facilitating interlocal networks that build capacity while reinforcing Indigenous leadership and collaboration in the energy sector.

Possible approaches to developing interlocal networks, ranging from lower to higher resource requirements, include:

- **Co-developing community reports** that outline the goals of energy education programs, what worked well and what did not, key lessons learned, and recommendations to be shared with other communities.
- **Creating a public website** to highlight participating communities, provide program details, and share lessons learned and resources.
- **Hosting annual interlocal gatherings or conferences** where communities, aspiring participants, and partners can share knowledge, celebrate progress, and plan future collaborations.

These initiatives require time, resources, and experience, but they represent important long-term goals. Working toward interlocal networks throughout future co-developments can help ensure that energy education remains community-driven, culturally grounded, and guided by Indigenous voices leading the path forward.

Bibliography

Amber, C., Agrawal, S., & Zoe, C. (2023). Just transition in the northwest territories:

Insights and values from indigenous and non-indigenous northerners.

Heliyon, 9(8), e18837. <https://doi.org/10.1016/j.heliyon.2023.e18837>

Bilous, R., Hammersley, L., Lloyd, K., Rawlings-Sanaei, F., Downey, G., Amigo, M.,

Gilchrist, S., & Baker, M. (2018). 'All of us together in a blurred space':

Principles for co-creating curriculum with international partners. *International Journal for Academic Development*, 23(3), 165–178.

<https://doi.org/10.1080/1360144X.2017.1412973>

Buergelt, P. T., Maypilama, E. L., McPhee, J., Dhurrkay, G., Nirrpuranydji, S.,

Mänydjurrpuy, S., Wunungmurra, M., Skinner, T., Lowell, A., & Moss, S. (2017).

Working Together with Remote Indigenous Communities to Facilitate

Adapting to Using Energy Wisely: Barriers and Enablers. *Energy Procedia*, 121,

262–269. <https://doi.org/10.1016/j.egypro.2017.08.026>

Design-Based Implementation Research. (n.d.). *Home*. LearnDBIR. Retrieved August

13, 2025, from <https://www.learndbir.org>

Dlouhy-Nelson, J., & Hanson, K. (2023). Finding Our Co-: Witness Blanket as Co-

curricular Making for Local Indigenous and Settler Relations. *LEARNING*

Landscapes, 16(1), Article 1. <https://doi.org/10.36510/learnland.v16i1.1101>

EHRC. (2025). *Lighting the Path*. <https://ehrc.ca/labour-market-intelligence/lighting-the-path/>

Elmallah, S., Reames, T. G., & Spurlock, C. A. (2022). Frontlining energy justice: Visioning principles for energy transitions from community-based organizations in the United States. *Energy Research & Social Science*, 94, 102855. <https://doi.org/10.1016/j.erss.2022.102855>

Fjellheim, E. M. (2023). “You Can Kill Us with Dialogue:” Critical Perspectives on Wind Energy Development in a Nordic-Saami Green Colonial Context. *Human Rights Review*, 24(1), 25–51. <https://doi.org/10.1007/s12142-023-00678-4>

FNEC, YCAO, & YFNED. (2025). *For Our Children: Review of Systemic Racism in YUKON Education* (pp. 1–169). <https://www.yfned.ca/racismreview>

Government of Yukon. (2023, November 27). *Pathways: Localizing curriculum in the Yukon*. <https://yukon.ca/en/pathways-localizing-curriculum-yukon>

He, E., & Gatkuoth, B. (2023, December 21). Clean energy capacity building in remote communities | Pembina Institute. *Pembina Institute*. <https://www.pembina.org/blog/clean-energy-capacity-building-remote-communities>

Hoicka, C. E., Savic, K., & Campney, A. (2021). Reconciliation through renewable energy? A survey of Indigenous communities, involvement, and peoples in

Canada. *Energy Research & Social Science*, 74, 101897.

<https://doi.org/10.1016/j.erss.2020.101897>

Indigenous Clean Energy Social Enterprise. (2023). *Enabling Efficiency: Pathways and recommendations based on the perceptions, barriers, and needs of Indigenous people, communities, and organizations*.

<https://indigenoucleanenergy.com/wp-content/uploads/2023/12/Enabling-Efficiency-Report-December-2023.pdf>

Innavik Hydro. (n.d.). *ABOUT*. Innavikhydro. Retrieved August 20, 2025, from

<https://www.innavikhydro.com/about>

Jacobs, C., Donaldson, C., Ives, J., Keeshig, K., & Catherine, F. (2022). Weaving Indigenous and Western Science Knowledges Through a Land-Based Field Course at Bkejwanong Territory (Laurentian Great Lakes) | Request PDF.

ResearchGate, 5(1), 1–11. <https://doi.org/10.1525/cse.2021.1422042>

Jacobs, D. (Four A. T. (2019). The Indigenization Controversy: For Whom and By

Whom? *Critical Education*, 10(18). <https://doi.org/10.14288/ce.v10i18.186438>

LaRicca, D. (2025). Environmental Justice and Indigenous Communities. *Energy*

History. [https://energyhistory.yale.edu/environmental-justice-and-](https://energyhistory.yale.edu/environmental-justice-and-indigenous-communities/)

[indigenous-communities/](https://energyhistory.yale.edu/environmental-justice-and-indigenous-communities/)

Lewthwaite, B. (2007). From School in Community to a Community-Based School:

The Influence of an Aboriginal Principal on Culture-Based School

Development. *Centre for Research, Youth, Science Teaching and Learning*, 64.

<https://files.eric.ed.gov/fulltext/EJ806979.pdf>

Loginova, J., Landauer, M., Joona, J., Datta, R., & Joona, T. (2025). Enabling Indigenous-centred decision-making for a just energy transition? Lessons from community consultation and consent in the circumpolar Arctic. *Energy Research & Social Science*, 120, 103928.

<https://doi.org/10.1016/j.erss.2025.103928>

McMaster, R. (2022). *Attributes of Socio-technical Baseline Capacities for Energy Transition in the North: Opportunities and Challenges for Gwich'in Communities, Northwest Territories* [University of Saskatchewan].

<https://harvest.usask.ca/bitstreams/9b014924-5a99-4be7-83de-b629178329c9/download>

McMaster, R., Noble, B., & Poelzer, G. (2024). Assessing local capacity for community appropriate sustainable energy transitions in northern and remote Indigenous communities. *Renewable and Sustainable Energy Reviews*, 191, 114232. <https://doi.org/10.1016/j.rser.2023.114232>

McMaster, R., Noble, B., Poelzer, G., & Menghwani, V. (2023). Local Capacity for Energy Transition in Northern and Indigenous Communities: Analysis of Gwich'in Communities in Northwest Territories, Canada. *Arctic*, 76(2), 143–159.

National Centre for Collaboration in Indigenous Education, & Dockstator, J. S.

(2022). *A "Community First" Approach to Indigenous Research: The National Centre for Collaboration in Indigenous Education*. National Centre for Collaboration in Indigenous Education. <https://www.nccie.ca/wp-content/uploads/2022/09/FINAL-NCCIE-Process-Paper-Mar-31.pdf>

Ng-A-Fook, N. (n.d.). *Talking about "Academicky" Stuff with Margaret Macintyre Latta, Bill Cohen, Terry Beaudry, & Jody Dlouhy-Nelson* (No. 57) [Broadcast]. Retrieved June 17, 2025, from <https://www.fooknconversation.com/podcast/episode-57-ubc-okanagan-team/>

Pituvik Landholding Corporation & Innergex Renewable Energy. (2019). *Innavik Hydroelectric Project environmental and social impact assessment summary*. Ministry of Environment and the Fight Against Climate Change. https://www.innavikhydro.com/_files/ugd/9a8346_db72ab6d57ed4c4f89d40fa26435ebbc.pdf

Rakshit, R., Shahi, C., Smith, M. A. (Peggy), & Cornwell, A. (2018). Community Capacity Building for Energy Sovereignty: A First Nation Case Study. *Sustainability in Environment*, 3(2), 177. <https://doi.org/10.22158/se.v3n2p177>

Rioux-Gobeil, F., & Thomassin, A. (2024). A just energy transition for Indigenous peoples: From ideal deliberation to fairness in Canada and Australia. *Energy*

Research & Social Science, 114, 103593.

<https://doi.org/10.1016/j.erss.2024.103593>

Rodway, D. J., Campbell, D. C., Davidson, D. S. F., Lopez, D. A., Moore, D. S., Ng-A-Fook, D. N., & Schnellert, D. L. (2023, January 24). Decolonizing Professional Learning. *EdCan Network*. <https://www.edcan.ca/articles/decolonizing-professional-learning/>

Rogers, S. (2022, December 2). Inuit-Crown Co-Development Principles. *Inuit Tapiriit Kanatami*. <https://www.itk.ca/inuit-crown-co-development-principles/>

Russell, R. (2025, March 7). *First Nations Are Rethinking Education in the Yukon. And It's Working* | *The Walrus*. The Walrus. <https://thewalrus.ca/first-nation-school-board/>

Schmidt, E. (2024, August 20). Through Colonial Patterns of Extractivism: Self-Governance as a Sustainable Path Forward. *The Arctic Institute - Center for Circumpolar Security Studies*. <https://www.thearcticinstitute.org/through-colonial-patterns-extractivism-self-governance-sustainable-path-forward/>

Spang, M., & Bang, M. (n.d.-a). Implementing Meaningful STEM Education with Indigenous Students & Families. *STEM Teaching Tools*. Retrieved July 7, 2025, from <https://stemteachingtools.org/brief/11>

- Spang, M., & Bang, M. (n.d.-b). Teaching STEM In Ways that Respect and Build Upon Indigenous Peoples' Rights: StemTeachingTools (en-US). *STEM Teaching Tools*. Retrieved July 7, 2025, from <https://stemteachingtools.org/brief/10>
- Sway-la Duenas, D., Wapesa-Mays, C., Brewer, B., Hookano, S.-L., Bear, C., Ebert, E., Lydon, C., Nelson, N., Dehn, R., Kuchler, D., Mitchell, E., Kurtz, K., Peck, A., Brotherton, P., & Fowler, K. (2024). Learning to Design Climate Education That Honors Indigenous Climate Leadership and Sovereignty. *Connected Science Learning*, 6(4), 150–162. <https://doi.org/10.1080/24758779.2024.2360533>
- Tlingit Homeland Energy Limited. (2023). *Clean Energy Development Plan for the Atlin Hydro Expansion Project: Volume Guide & Appendices* (No. 2101446.00). https://drive.google.com/file/d/1S6RA3Esixd5b3kEkxmeXzhW5nnlUG6uJ/view?usp=share_link
- Tremblay, M., Ferguson, C., Willsie, J., Downie, H., Rattlesnake, C., Kolb, B., Gokiart, R., Hayden, J., & Fallon, B. (2024). *Co-developing culturally grounded early years programming with Indigenous communities*. <https://doi.org/10.1177/14639491241293474>
- Tzou, C., Starks, E., Meixi, Rambayon, A., Ortiz, S. M., Peterson, S., Gladstone, P., Tail, E., Chang, A., Andrew, E., Nevarez, X., Braun, A., & Bang, M. (2020). Codesigning With Indigenous Families and Educators: Creating Robotics

Education That Contributes to Indigenous Resurgence. *Connected Science Learning*, 2(3). <https://doi.org/10.1080/24758779.2020.12318741>

United Nations. (2007, September 13). *United Nations Declaration on the Rights of Indigenous Peoples*.

https://www.un.org/development/desa/indigenouspeoples/wp-content/uploads/sites/19/2018/11/UNDRIP_E_web.pdf

United Nations Development Programme. (2024, February 29). *What is the sustainable energy transition and why is it key to tackling climate change?* | *UNDP Climate Promise*. <https://climatepromise.undp.org/news-and-stories/what-sustainable-energy-transition-and-why-it-key-tackling-climate-change>

Vodden, K., & Cunsolo, A. (2021). *Chapter 3: Rural and Remote Communities* (Canada in a Changing Climate: National Issues Report, pp. 104–184). Natural Resources Canada. https://natural-resources.canada.ca/sites/nrcan/files/GNBC/Chapter%203_Rural%20and%20Remote%20Communities_Final_EN.pdf#:~:text=Remote%20communities%20either%20have%20no%20residents%20that,to%20Canadian%20society%2C%20culture%20and%20environmental%20stewardship.

von der Porten, Dr. S., Savic, K., Edwards, N., McCormick, J., Kwatuuma Cole Sayers, & Cherie Brant. (2024). *National Indigenous Electrification Strategy: Strategy to*

Accelerate Indigenous Ownership of Net Zero Infrastructure in Canada (p. 106).

First Nations Major Projects Coalition. [https://fnmpc.ca/wp-](https://fnmpc.ca/wp-content/uploads/FNMPC_National_Electrification_digital_final_04222024.pdf)

[content/uploads/FNMPC_National_Electrification_digital_final_04222024.pdf](https://fnmpc.ca/wp-content/uploads/FNMPC_National_Electrification_digital_final_04222024.pdf)

Yukon First Nation Education Directorate & Firelight Research Inc. (2021).

ENVIRONMENTAL SCAN INDIGENOUS EDUCATIONAL PROGRAMS AND ACADEMIES

(pp. 1–52) [Final Report].

[https://static1.squarespace.com/static/5ddc27b50cfd2a79a6da6595/t/61f0c3](https://static1.squarespace.com/static/5ddc27b50cfd2a79a6da6595/t/61f0c3d47f98de524c5c2974/1643168730909/YFNED-)

[d47f98de524c5c2974/1643168730909/YFNED-](https://static1.squarespace.com/static/5ddc27b50cfd2a79a6da6595/t/61f0c3d47f98de524c5c2974/1643168730909/YFNED-)

[IndigenousEducationPrograms-FinalReport.pdf](https://static1.squarespace.com/static/5ddc27b50cfd2a79a6da6595/t/61f0c3d47f98de524c5c2974/1643168730909/YFNED-)

Yukon Government. (2021). Traditional Territories of Yukon First Nations and

Settlement Areas of Inuvialuit and Tetlit Gwich'in [Map]. Department of

Environment. [https://open.yukon.ca/information/53db5c16-068b-409d-8058-](https://open.yukon.ca/information/53db5c16-068b-409d-8058-c9141576013d/resource/500cb7d4-c1a5-3f2a-81c3-31c1f4e3dbdd/download/env.020.01-aug2021_0.pdf)

[c9141576013d/resource/500cb7d4-c1a5-3f2a-81c3-](https://open.yukon.ca/information/53db5c16-068b-409d-8058-c9141576013d/resource/500cb7d4-c1a5-3f2a-81c3-31c1f4e3dbdd/download/env.020.01-aug2021_0.pdf)

[31c1f4e3dbdd/download/env.020.01-aug2021_0.pdf](https://open.yukon.ca/information/53db5c16-068b-409d-8058-c9141576013d/resource/500cb7d4-c1a5-3f2a-81c3-31c1f4e3dbdd/download/env.020.01-aug2021_0.pdf)