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Empowering Indigenous Voices: Strengthening Clean Energy Pathways through Knowledge Mobilization for a Net-Zero Future

Indigenous Perspectives

Prepared by:
Johnston Research Inc.
Smart Microgrid Applied Research Team, BCIT

Prepared for:
Future Skills Centre

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Johnston Research

BCIT

Disclaimer

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1. PREFACE

The overall objective of this project is to create better pathways for Indigenous communities to participate in the clean energy sector. Canada is moving forward with goals for a net-zero economy by 2050, and Indigenous and remote communities are positioned to benefit from this transition, offering pathways to self-reliance, energy sovereignty, and sustainable jobs within this sector. However, systemic barriers hinder these communities from fully engaging in and benefiting from the clean energy sector. This project builds on insights from the previous phase of the "Empowering Diverse Communities with Skills Development through Virtual Experiential Learning" by implementing data-gathering activities such as surveys and interviews to assess knowledge levels, values, skills gaps, and needs within these communities. There are two reports associated with this project. This report focuses on data analysis from an Indigenous perspective. The companion report focuses on data analysis from a Utility and Clean Energy Employer perspective.

2. INTRODUCTION

Energy systems hold both practical and spiritual dimensions for Indigenous peoples. These interviews and surveys were conducted to understand how communities experience energy today, what barriers and opportunities shape their participation in clean energy, and how communities envision a future where energy sovereignty aligns with cultural values. Across northern, remote, and rural Indigenous settings, energy is not simply infrastructure — it connects to land, identity, governance, and intergenerational wellbeing. As one source highlights, Indigenous communities often pursue renewable projects “as a way to… achieve energy sovereignty and create local sustainable economic opportunities” (Barberstock, 2024).

This report organizes responses around 12 core themes, each tied to a central question and enriched with participant voices, survey data, and supporting literature. A narrative of resilience, aspiration, and ongoing struggle emerges. Many communities are navigating historical mistrust with external energy providers and colonial systems while seeking culturally grounded training, respectful partnerships, and greater control over energy futures. The following sections synthesize those lived experiences and link them to broader research trends in Indigenous clean energy leadership and capacity building.

3. METHODS

The primary methods applied in this project were Ownership, Control, Access, and Possession (OCAP) principles, primary data collection via interviews and survey data, and secondary data via corroborating evidence in the literature. OCAP was applied as follows:

1) interviews were voluntary, 2) interviewees could stop the participating at any point during the research project, 3) no recordings were made – all interviews were attended by 2 – 4 research witnesses including one Indigenous lead interviewer and transcribers, 4) data results were shared via webinars that presented the data and allowed for questions and answers with the researchers, and 5) the final reports were posted online and shared with respondents in December 2025. Primary data collection occurred from June 2025 to December 2025. Secondary data were collected in December 2025. The report preparation and knowledge sharing occurred in December 2025. No interviews withdrew their data. Many interviewees appreciated the opportunity to participate in this research project and commented on the interview questions as being thought provoking and important at the same time. One interviewee commented that because the interview was so valuable and its questions and answers, a newly appointed economic development officer was invited to take this as a learning opportunity. All interview notes will be destroyed after 6 months.

Data sources included: attending conferences, online survey results and interview data. The types of conferences and events attended included:

1. AFN National Natural Resources Forum
2. Renewables in Remote Communities Conference
3. Clean Energy BC's Generate 2025
4. Indigenous Clean Energy's Changemakers Forum

A snowball sampling dominated the interview data sampling strategy for this research project, and the team consistently pursued interview options throughout the study period. All but one of the interviews were participated by First Nations community members from British Columbia primarily, and as well Ontario, Saskatchewan and Alberta. The one non-First Nations interviewee was working as the energy manager in a northern British Columbia First Nation. The survey results applied were only those we could determine without a doubt to have been completed by Indigenous Peoples. Interview transcripts (n=15) and survey data (n=16) were reviewed from data files and reorganized responses under 12 thematic sections corresponding to key interview questions. Each interview was reviewed in full and data from both interviews and the survey were systematically assigned to the most relevant section. Patterns and themes were identified through iterative reading, noting repeated ideas, and comparing participant statements with peer-reviewed and journalistic literature on Indigenous clean energy participation. Each summary combines community voices with published article quotes to support broader contextual interpretation.

4. DETAILED REPORT

4.1 Grounded Power: How Energy is Supplied

Across communities, energy supply reflects a mix of long-standing reliance on diesel, provincial grids, and emerging renewable assets. In northern and remote regions, diesel remains a backbone due to infrastructure limitations, with interviewees often noting the heavy costs and logistical challenges of fuel delivery. Participants described transport hurdles, “diesel trucked in on the winter road,” illustrating how isolation shapes energy realities. Meanwhile, some communities have adopted solar installations and hybrid systems to reduce reliance on fossil fuels, highlighting early steps toward autonomy. As Indigenous climate scholars note, clean energy projects represent a convergence of tradition and innovation, addressing climate change while opening economic opportunities (Barberstock, 2024).

These supply differences have material consequences. Grid-connected communities benefit from relative stability but still face outages and rate inequities, while isolated communities grapple with expensive and environmentally harmful diesel. Nonetheless, community initiatives signal a shift. Many leaders see clean energy not merely as cost-saving but as a foundational strategy for energy sovereignty, linking infrastructure improvements to cultural and ecological wellbeing. In short, the data reveals a distinct pathway for moving forward, how energy systems map directly onto broader themes of independence and sustainability.

4.2 Trust, Utility, and Legacy

Many participants reported varied degrees of trust with energy providers. Some described functional relationships with utilities like provincial power companies, where service issues were addressed reasonably quickly. Yet deeper structural distrust emerged when communities felt excluded from meaningful decision-making or equitable benefits. One participant shared, “they treat us like customers, not partners,” capturing frustrations rooted in historical exclusion. This reflects broader research showing that Indigenous involvement strengthens when projects respect rights and equity rather than merely consulting communities (Agrawal & El-Katiri, 2023).

Trust is undermined when communities are not engaged early or equitably. Free, Prior, and Informed Consent (FPIC) principles underscore that consent — not just consultation — must guide projects involving Indigenous land and resources (Wikipedia: FPIC). Participants emphasized that meaningful trust arises from shared governance and co-ownership, not unilateral decisions by external utilities. Where such equitable engagement has begun, trust is slowly emerging, pointing to relational governance as key to moving forward.

4.3 Skills and Capabilities for Clean Energy Futures

Participants stressed the need for practical, technology-focused skills, including solar installation, electrical safety, project management, and grant writing. Many noted the importance of hands-on learning: “we need people trained not just in theory but in practice.” This aligns with broader literature emphasizing that Indigenous clean energy participation grows where training is community-rooted and tied to real projects, fostering both technical and leadership capabilities (Indigenous Clean Energy Network, 2025). This articles approach was consistent among the interviewees. Further elaborated by one interviewee, and supported by other interviewees, training programs were described as needing to be more long-term, not short one-off approaches, “The skills our Indigenous communities need to participate equally in the clean energy sector begin with improving our infrastructure. Our buildings need to be retrofitted with the proper tools and modern equipment. We also need meaningful training—not just short, one-time sessions, but sustained programs that lead to real, recognized certification”.

Yet barriers persist. Gaps in basic education, limited apprenticeship pathways, and lack of funding for long-term skill development were commonly cited. One participant described the challenge of insufficient math and science preparation at earlier schooling levels. Research suggests strengthening apprenticeship and education systems is crucial to positioning Indigenous youth and adults for clean energy careers (Waves of Change: Climate Institute, 2021). Mentorship programs and partnerships that respect Indigenous knowledge and cultural contexts can help bridge these gaps, fostering a workforce capable of leading energy transitions.

4.4 Culturally Grounded Training: A Different Way of Learning

Culturally relevant training was described as learning that is rooted in land-based, relational, and traditional practices. Participants emphasized that such training should begin with community opening practices, include Elders’ wisdom, and integrate Indigenous worldviews alongside technical skill development. “Training should look like who we are,” one interviewee stated, signaling a desire for education that honors identity and community values. This approach contrasts sharply with colonial models that privilege abstract, classroom-only learning divorced from lived experience.

Literature on Indigenous clean energy supports this: programs that integrate cultural protocols, community leadership, and relational pedagogy yield more sustainable engagement and empowerment outcomes (Indigenous Clean Energy Network, 2025). In this view, culturally relevant training is not optional but fundamental — it aligns capacity building with self-determination and community wellbeing.

4.5 Digital Literacy on Uneven Terrain

Digital literacy varied widely among respondents. Some community members are proficient with computers and online systems, while others have minimal access or exposure, especially in remote areas. One participant noted that many community members "never use a computer and only speak the local language," demonstrating that online learning platforms may be inaccessible without localized supports. This digital divide can hinder participation in remote or hybrid training programs.

Enhancing digital literacy requires more than devices — it requires culturally appropriate instruction, language support, and robust internet infrastructure. Literature suggests that without adaptive approaches that meet communities "where they are," digital inequities can deepen existing educational gaps (Energy Sustainability Directory, 2025). Participants emphasized that digital access needs to be complemented by in-person and culturally embedded experiences.

4.6 Clearing the Path to Training Access

Participants identified infrastructure and structural needs to improve access to training. Reliable internet, tools and equipment, transportation, and steady funding were repeatedly mentioned. "We need supports beyond just information — we need resources," one respondent explained, reflecting the challenge of piecing together training without systemic supports. Additionally, community education leaders are often overburdened, balancing grant writing, coordination, and program delivery with limited administrative support.

Literature on sustainable job growth among Indigenous clean energy workers emphasizes the need for "wrap-around supports" such as mentorship, childcare, and culturally responsive workplaces to enable participation (He et al., 2024). Without these fundamental improvements, training efforts risk being superficial rather than transformative.

4.7 Community Readiness for Clean Energy

Readiness was framed as a combination of cultural motivation, leadership vision, and lived urgency about environmental change. Participants articulated that clean energy aligns with caring for the land and protecting future generations, and some communities have already made successful moves toward renewable installations. One noted that projects reduce reliance on expensive diesel shipments, creating both economic and environmental benefits. This reflects broader trends where Indigenous communities are leading renewable energy innovation to build resilience (Barberstock, 2024).

Readiness also comes from education, intergenerational knowledge exchange, and youth engagement. Interviewees often tied readiness directly to cultural values — preparing for projects that reflect identity, stewardship, and collective goals. These narratives

demonstrate that readiness isn't merely technical; it's rooted in holistic community wellbeing. One interviewee provided a statement on how to move forward supporting communities and their education approaches, "We also need a local technical school that offers hands-on training delivered in ways that respect and include our language, our traditional languages, and our deep connection to the land and waters". "These sentiments were corroborated by the other interviews.

4.8 Barriers to Participation and Progress

Barriers to readiness centered on resource constraints, leadership transitions, competing priorities, and systemic exclusion. Many communities lack designated energy leads or sufficient funding to plan, implement, or sustain clean energy initiatives. Others cited regulatory complexity and uncertainty about where to begin, particularly when accessing federal or provincial funding streams. One participant lamented that energy work often falls on "one person wearing many hats," stretching capacity thin.

This resonates with broader research identifying lack of internal capacity, financial capital, and progressive policy supports as major barriers to Indigenous participation in energy projects (Hoicka et al., 2021). Addressing these obstacles requires systemic changes that acknowledge historical exclusion and support Indigenous-led energy governance. One interviewee provided a statement as a call to address community membership barriers first and foremost, "Most importantly, we must focus on uplifting our people—building their confidence, honoring their knowledge, and creating opportunities that help them see the strengths they carry. These elements together would help ensure that clean energy education is accessible, culturally grounded, and empowering for our community". This strategic approach was similarly expressed by the other interviewees.

4.9 Doing Things in a Good Way: Cultural Principles of Action

For many participants, doing things "in a good way" means acting with respect, consensus, and cultural integrity. It involves ensuring decisions align with land-based protocols, elders' guidance, and community values rather than external pressures or rushed timelines. One interviewee explained that good process involves "respectful consultation, transparency, and shared benefits," emphasizing relational accountability.

This theme aligns with the principle of FPIC, which ensures bottom-up participation in projects on traditional territories (Wikipedia: FPIC). Doing things "in a good way" extends beyond technical implementation — it shapes how partnerships are formed, how knowledge is shared, and how community wellbeing is prioritized. A participant provided a statement that fully incorporates the FPIC approach, "My Nation and the green energy sector work side by side to create sustainable, respectful, long-term solutions that protect both the people and the environment, ensuring that future generations inherit a thriving and resilient land".

4.10 Barriers to Clean Energy Participation

Participants described barriers ranging from economic challenges, lack of technical expertise, limited funding, and regulatory obstacles to historical mistrust of external institutions. The high upfront cost of renewable installations and prolonged approval processes were frequent concerns, as was the difficulty of balancing traditional livelihoods with modern project requirements. One community member noted that even well-intentioned programs falter if they "don't consider cultural rhythms and community priorities."

The communities engaged in clean energy initiatives faced several significant systemic challenges that must be addressed simultaneously. One of the primary obstacles is the persistent lack of access to capital, which often hinders their ability to secure funding for renewable energy projects. Additionally, insufficient infrastructure—evident in unreliable transportation and communication networks—can complicate project development and hinder the efficient distribution of energy.

The Indigenous communities also experienced limitations in local capacity and expertise related to clean energy technologies, which can restrict effective project planning and implementation. This skills gap was identified by respondents as requiring the establishment of external partnerships or the creation of training programs to develop the necessary knowledge and workforce within their communities.

Moreover, complex regulatory barriers at both local and national levels pose further challenges. Navigating the legal landscape often demands substantial resources and a deep understanding of intricate laws concerning land use, energy production, and environmental protection. Addressing these interconnected issues is crucial for the successful advancement of clean energy projects in Indigenous communities. One interviewee was very clear that the environmental impacts to the lands, forest and water ways need to be examined extremely carefully and deter development for reasons of land and water protection.

Researchers identify similar barriers: Indigenous communities often face systemic exclusions in policy design and resource distribution, limiting access to financial and technical support needed for equitable participation in clean energy systems (Energy Sustainability Directory, 2025). Removing these barriers requires intentional policy reforms and equitable partnership structures.

4.11 Opportunities and Aspirations for Clean Energy

Interviewees spoke with optimism about community-owned renewable projects, economic diversification, and youth engagement. Many see solar farms, biomass systems, and microgrids as ways to reduce costs while creating jobs and retaining energy dollars locally.

One participant said, “we want energy that belongs to us,” capturing aspirations for both autonomy and economic resilience.

Research supports this vision, noting Indigenous-led renewable efforts create social and economic opportunities while reinforcing cultural stewardship (Barberstock, 2024). Such aspirations extend beyond energy to encompass broader community wellbeing, including education, employment, and governance innovation.

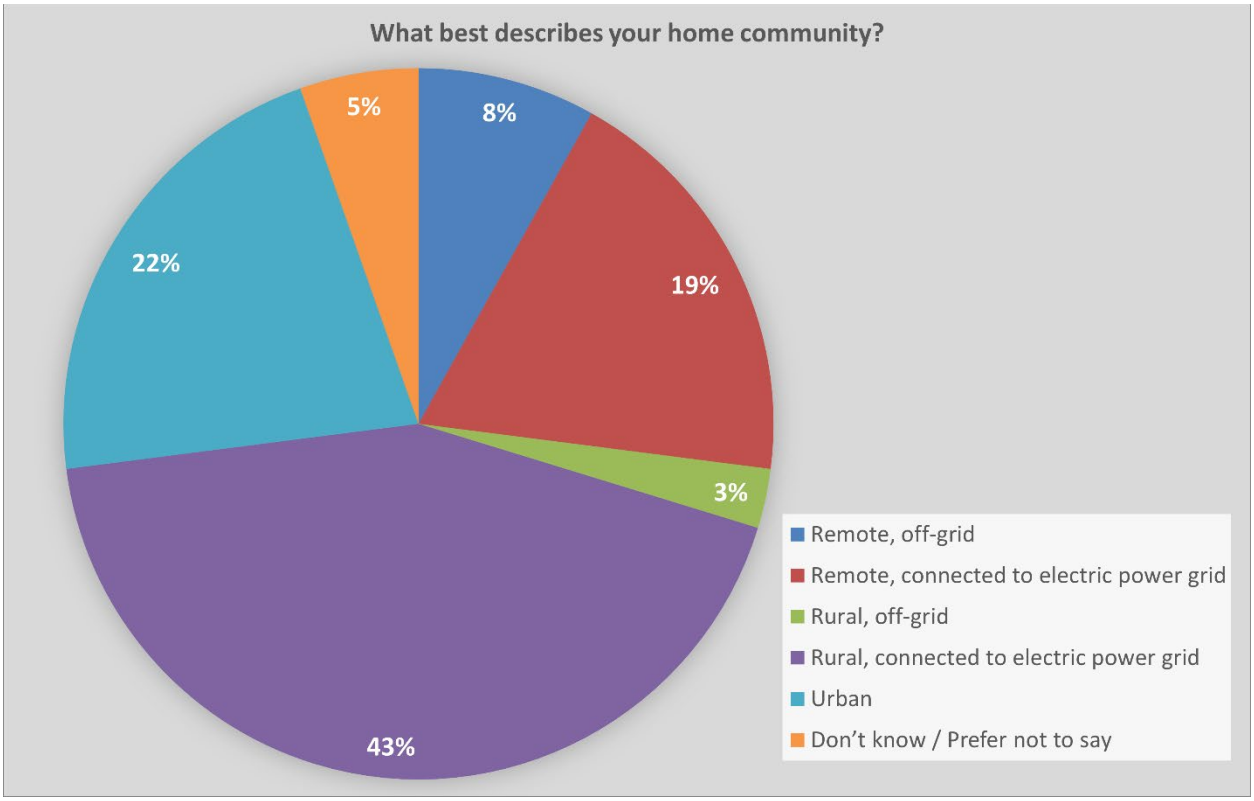
4.12 Supports, Relationships, and Governance for Indigenous-Led Clean Energy

Across interviews, participants emphasized respectful partnerships grounded in mutual benefit, cultural competency, and shared decision-making. They called for co-ownership models, sustained funding, and governance frameworks that honour Indigenous jurisdiction and rights. One community leader explained that supports must include “access to capital, cultural training, and shared governance protocols,” signaling the importance of structural equity. An interviewee stated a call to action and that clean energy is about legacy and preservation at its most upmost priority, “Moving toward clean energy is not just a technological shift; it’s a necessary step to strengthen and secure our future. It offers a path to healthier lands, healthier waters, and a healthier future for our people”. This positive empowering advice was shared by the other interviewees, as a new direction for clean energy projects.

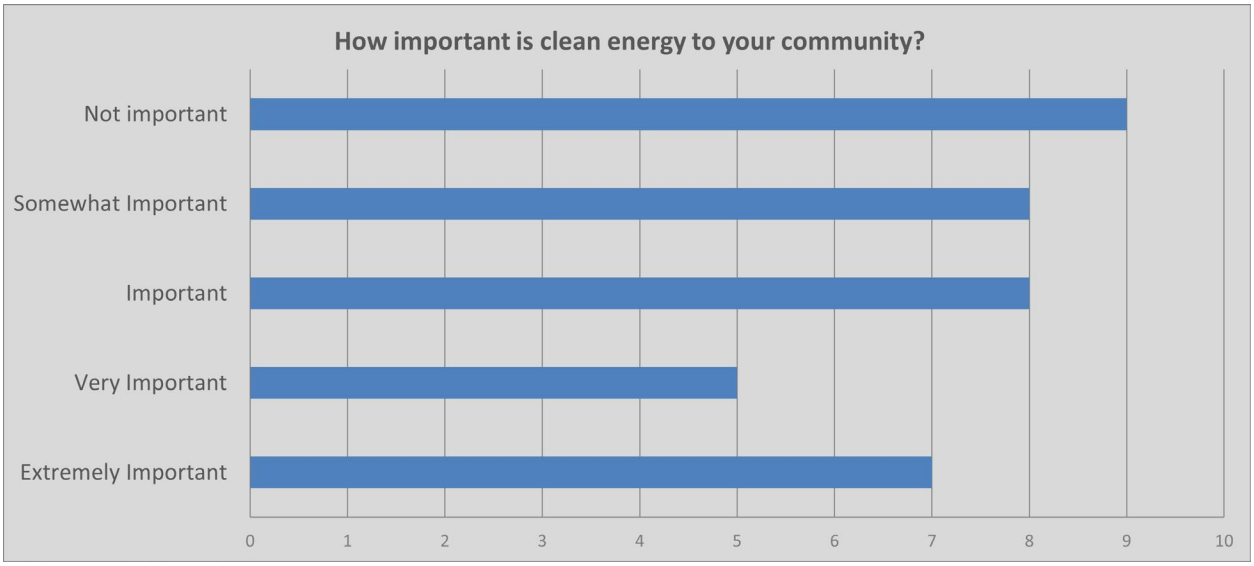
Research underscores that community ownership and equitable partnerships are critical for advancing Indigenous energy projects. Findings show that engagement must involve meaningful participation, respect for rights, and equitable distribution of benefits (IHRB, 2023). True supports extend beyond financial incentives to encompass trust-building, knowledge exchange, and long-term systemic commitment.

5. SURVEY DATA

An online survey was conducted via SurveyMonkey as part of the project’s data collection process. The survey targeted Indigenous community members, and the results presented in this section exclude responses from participants who did not identify as Indigenous.



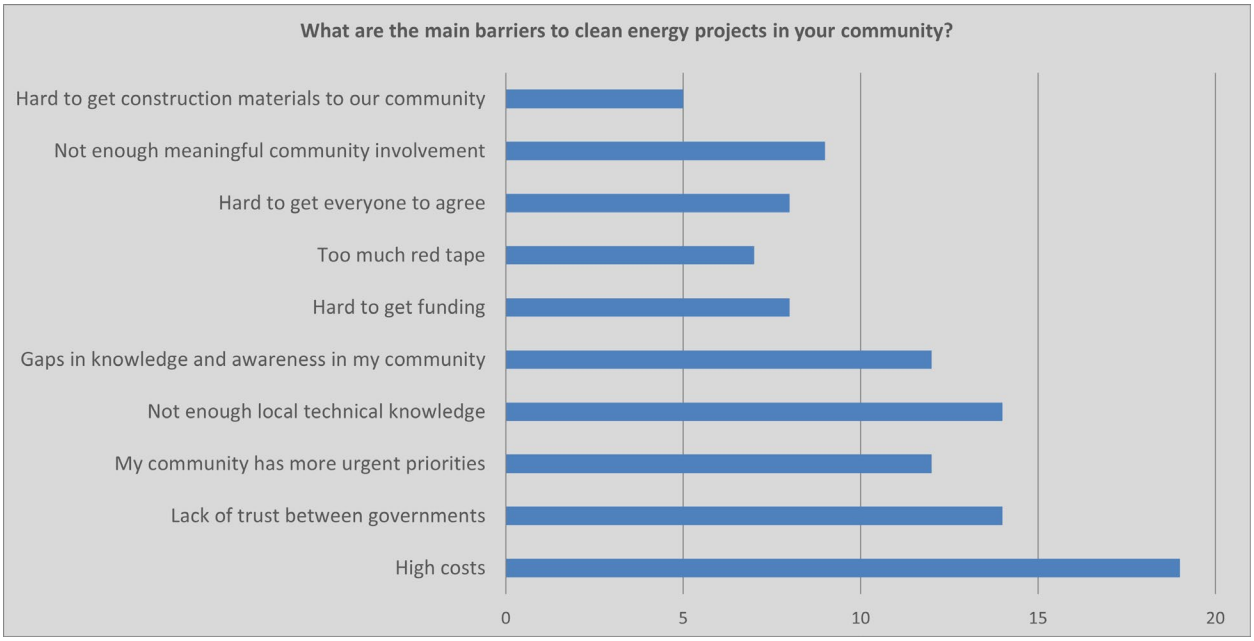
The first question focused on the participant's community and how they get their electricity. About one-quarter of respondents are from remote communities, with roughly one-third of those living off-grid and the remainder connected to the electric power grid. Nearly half of respondents are from rural areas, with all but one being grid-connected. Another 22% live in urban, grid-connected areas. Finally, about 5% indicated they did not know or preferred not to say.



Responses to the second question, "How important is clean energy to your community?", were spread out across all options, indicating no clear consensus. There is an almost even split between those who view clean energy as important (Important, Very Important,

Extremely Important) and those who consider it of lower importance (Somewhat Important, Not Important). This mixed perspective is also reflected in the open-ended responses provided by participants. Some examples include:

> *"It's important to help Mother Earth to keep clean."*
>
> *"We live off diesel fuel generators in the rural north, off grid, and as a community, we're trying to ensure the future of clean energy as self-sovereignty. "*
>
> *"Clean energy is not clean - wind pollutes the well water my community lives on."*

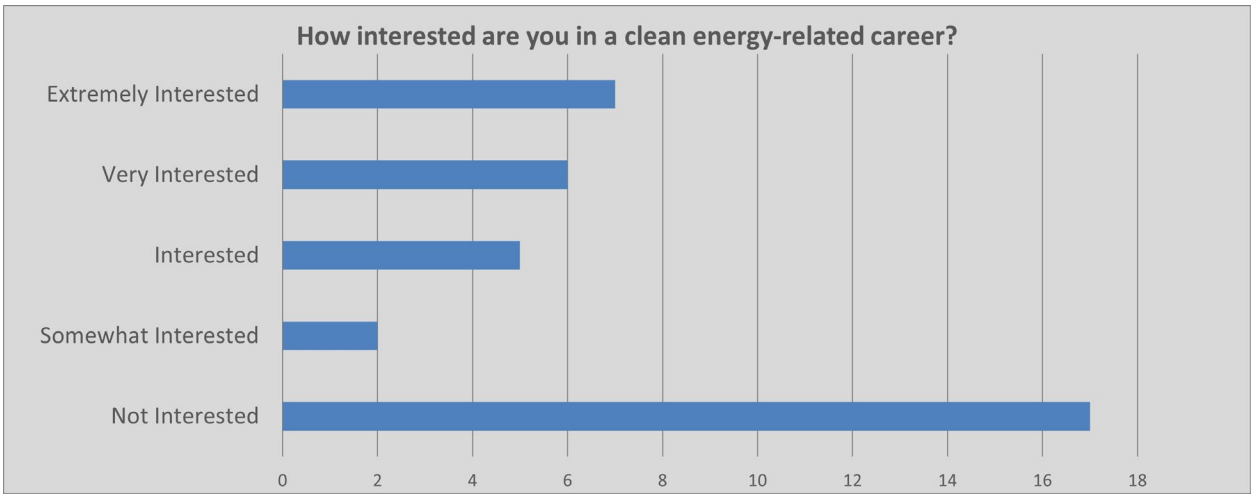


In terms of the main barriers to clean energy projects, cost stands out as the single largest challenge. Knowledge gaps, whether due to a lack of technical expertise or general awareness within the community, are also substantial. Rounding out the top barriers are a lack of trust in government and competing priorities within communities.

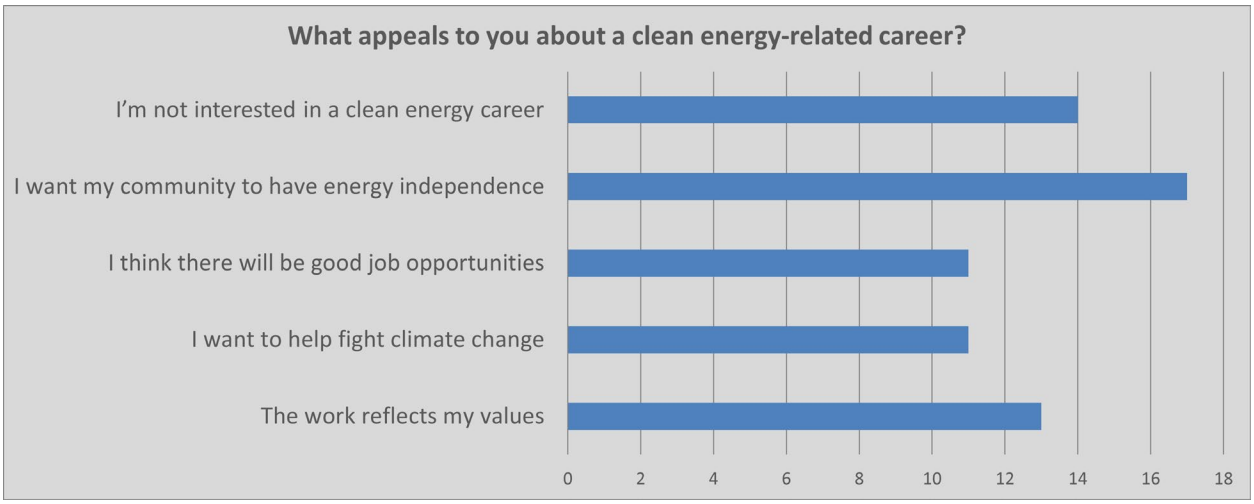
This reality is well captured by one respondent's comment:

> *"In my experience, many remote communities suffer from resource constraints. Community leaders wear too many hats and it is difficult to find a motivated individual who is willing to take responsibility for project success.*
>
> *Additionally, remote communities in the north suffer from strict and short construction windows which are compounded by limited community access, creating many challenges for transporting equipment/materials.*
>
> *Inter-community consultation on projects can also create delays as council and community members only meet so often and this can vary between communities."*

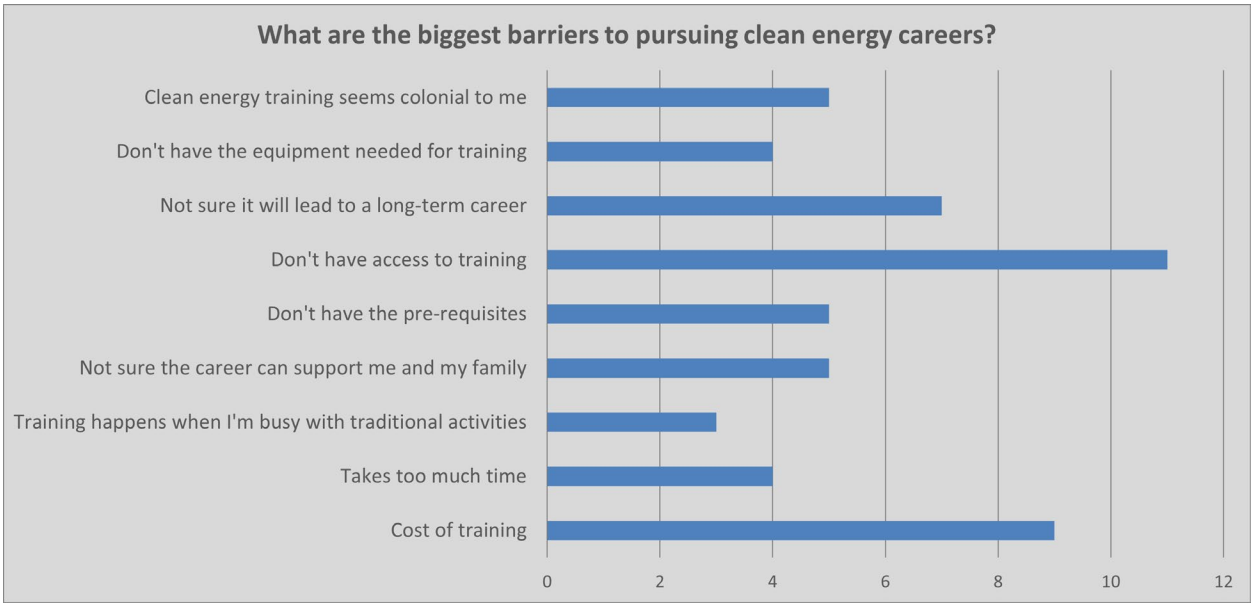
The next two questions focused on interest in clean energy-related careers, which appears evenly split between those who are interested and those who are not.



Among respondents who find such careers appealing, the leading motivator is the potential for energy independence within their community. Other reasons such as good job opportunities, contributing to the fight against climate change, and aligning with personal and cultural values follow closely behind.



There were also several respondents who indicated they have retired and were not interested in another career.



The biggest barriers to pursuing clean energy careers were identified as access to and cost of training. One respondent explained:

> *"Many training opportunities require travel, which can be daunting for many indigenous community members, especially for those who have never left their community.*
>
> *Creating a more centralized training program that is accessible to a large span of communities could help remedy this issue."*

On-the-job and in-person in community training are the preferred method of training delivery. One respondent says:

> *"In my opinion, hands-on training is the best method to learn about renewable energy systems. Ideally this would be done in community in conjunction with a community-led renewable energy project."*

At the end of the survey was an open-ended question for any additional comments. Several respondents provided thoughtful and meaningful comments:

> *"... So many communities across Canada are unique, from the landscape, cultures, and its people. Finding a way for these communities to adopt clean energy is a huge challenge, but one most communities I've found are interested in as it speaks to many indigenous values. ..."*
>
> *"It's very important to preserve the climate by taking care of global warming and we can all do our part to promote clean energy."*
>
> *"I think the whole concept of 'clean energy' and 'sustainability' are colonial and westernized terms to describe something the Indigenous peoples have always talked about. Since time immemorial, our people have taken care of the planet and it has taken care of us in abundance. ... You can't talk about this issue of the climate, the energy, the need to protect natural resources without talking about the work Indigenous peoples have done globally, nationally, provincially."*

6. CONCLUSIONS

Across all interviews and survey responses, a rich and emotionally layered narrative emerges about Indigenous relationships to energy, sovereignty, and the future. The discussions show that communities are navigating the tension between historical imposition and contemporary possibility. Clean energy is not simply a technological transition; it is a pathway toward self-determination, cultural resurgence, and healing. Participants repeatedly spoke about the land in intimate terms — the forests that snap under ice, the changes in weather they can feel in their bones, and the responsibility to future generations that guides every decision. One participant described watching "3-inch icicles forming from the ground up" and realizing their community would "pay many millions" for emergency responses to climate disasters. These stories reveal climate change not as a distant concept, but as an ongoing upheaval shaping daily life.

A central insight is that readiness for clean energy is deeply connected to cultural strength. Communities described being ready because they have always adapted: through winter storms, through economic shifts, through the impacts of colonization. As one participant expressed, "we want energy that belongs to us," signaling a wish for governance models that align with community values rather than external institutions. Clean energy projects resonate with Indigenous worldviews that understand energy as coming from the land itself, not just wires or fuels. This worldview shapes how training should occur — not through colonial pedagogy, but through ceremonies, stories, mentorship, and hands-on experiences that honor relational learning.

However, readiness exists alongside profound barriers. Participants named systemic inequalities: high costs, long permitting delays, unreliable infrastructure, and decades of exclusion from decision-making. Many noted the absence of stable funding, the exhaustion of Energy Champions carrying overwhelming responsibilities, and a digital divide that limits access to remote training. Others spoke to structural distrust: utilities that "treat us like customers, not governments," or planning processes that historically ignored Indigenous communities. These barriers resonate the mirrored findings by Hoicka and colleagues, who argue that Indigenous participation in clean energy is hampered by insufficient policy support, financial inequities, and limited access to technical resources. The interviews reinforce that capacity challenges are not about lack of interest or ability, but about system design.

Despite these barriers, a vivid sense of possibility emerges. Communities imagine clean energy as a source of pride and empowerment — a way to reduce diesel dependence, create jobs, revive land-based learning, and cultivate youth leadership. Participants described solar farms owned by their Nations, biomass heating systems reducing fuel costs, and long-term visions of co-governed renewable infrastructure. Opportunities extend far beyond kilowatts: they involve language revitalization, re-connection to land, and building confidence in younger generations. As Barberstock notes, Indigenous clean energy projects "balance tradition and innovation," allowing communities to embody their teachings while addressing global challenges.

At its heart, the collective story across the interviews is one of resilience and continuity. Clean energy carries emotional weight — tied to cultural identity, environmental grief, and dreams for future autonomy. Doing things "in a good way" is not a procedural checkbox; it is a reminder that all actions must be relational, respectful, and grounded. The conclusions across all sections suggest that the path forward requires not just equipment and training, but a transformation in governance, partnership, and the recognition of Indigenous rights. Clean energy must become a field where Indigenous Nations are not merely participants, but leaders shaping the energy futures of their territories and of the country; as a wholsitic solution to a significant problem.

7. RECOMMENDATIONS

1. Build long-term, culturally grounded training pathways.

Training should be delivered through land-based, visual, and hands-on approaches guided by Elders and local knowledge holders. Participants emphasized that "training should look like who we are," meaning programs must align with cultural values, traditional land use, and local learning styles. Incorporating ceremony, community protocols, and

intergenerational teaching can help overcome historical educational barriers and strengthen community ownership over clean energy work.

2. Create stable funding and support structures for Energy Champions.

Energy Champions are vital but overextended. Communities described them as “doing everything from grant writing to contract management.” Sustainable funding for staffing, mentorship, administrative support, and peer networks is essential. Provincial and federal bodies should prioritize multi-year funding agreements and remove burdensome reporting requirements to prevent burnout and turnover.

3. Strengthen Indigenous-led governance, co-ownership, and FPIC-based partnerships.

To rebuild trust, utilities and governments must move from consultation to co-governance. This includes revenue sharing, equity ownership, and decision-making authority over projects on Indigenous lands. Free, Prior, and Informed Consent (FPIC) principles should guide every stage, as participants consistently expressed frustration with being treated as customers instead of rights-holding governments. Real partnerships honour sovereignty and improve long-term project success.

4. Expand digital, technical, and educational infrastructure.

Improving access to clean energy training requires reliable internet, appropriate tools, community training centres, and transportation supports. Digital literacy programs should be adapted to local contexts, with in-person alternatives available. As one participant noted, “computers are not part of the culture,” signaling the need to design training formats that work for all age groups and learning styles.

5. Support youth engagement and early education in clean energy.

Youths are pivotal to long-term energy transitions. Interviewees stressed integrating energy topics into grades 9–12, offering hands-on learning, and creating mentorship pathways with Indigenous professionals. These early experiences cultivate confidence, leadership, and career interest, helping communities build internal capacity to sustain future projects.

6. Reduce structural and regulatory barriers to Indigenous clean energy.

High upfront costs, restrictive permitting, and slow approval processes impede progress. Governments should streamline regulatory pathways for Indigenous-led projects, subsidize feasibility studies, and provide dedicated grant programs that do not require competing against other Nations for small funding pools. Addressing these barriers is essential for equitable transition.

7. Enhance community-wide awareness and involvement.

Participants emphasized that meaningful involvement is not only technical. It requires community meetings, plain-language materials, and opportunities for people to ask

questions and express concerns. “We need uplifting, not just information,” a participant noted — reminding us that emotional and cultural care should be embedded in community engagement strategies.

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