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Original research article

# Indigenous legal forms and governance structures in renewable energy: Assessing the role and perspectives of First Nations economic development corporations

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## ABSTRACT

In the literature on community energy, there has been little exploration of how legal forms affect the governance structures employed and resulting impacts to communities. In a settler colonial context like Canada, renewable energy transitions and projects will take place on or near Indigenous traditional territories. In the emerging body of knowledge around Indigenous community involvement in renewable energy the role of the Indigenous economic development corporation (EDCs), a uniquely Indigenous legal form has had little attention. Although a range of governance structures that could support renewable energy projects exist; what has not been explored are which legal forms tend to employ specific governance structures. Employing a national dataset, surveys and interviews, this study assesses the experience and involvement of Indigenous EDCs as a legal form in renewable energy projects, the governance structures EDCs employ, and how these governance structures respond to the needs for self-determination and decision-making power of Indigenous communities. The findings show that at least 26 EDCs are involved in renewable energy projects, that EDCs tend to use economic instruments, while political organizations, (e.g., Band Council), tend to use political instruments, such as impact and benefit agreements (IBAs). Interviewed and surveyed EDCs agreed that ownership of a project is more beneficial than IBAs that tend to be short lived. Although full ownership denotes control over a project, which aligns with UNDRIP, the desired level of ownership varies depending on a variety of factors, such as comfort with risk and how provincial context affects preferred ownership structures.

## 1. Introduction

The low-carbon energy transition calls for greater generation and consumption of renewable energy [1]. Since renewable energy technologies are more decentralized [2], renewable energy transitions will occur geographically across regional landscapes [3]; capturing the abundance of renewable energy will alter landscapes [4]. In a settler colonial context such as Canada, this also means that its development will take place on or near Indigenous traditional territories and communities [5]. Economic development that results from Indigenous participation in renewable energy is often viewed as a pathway to self-sufficiency, creation of jobs and revenue for the community, and reducing a community's dependence on colonial institutions [6–8].

Community ownership of renewable energy can provide a range of socioeconomic benefits and impacts to communities, depending on who

initiates and owns them, and how the legal forms are structured [9–12]. Institutional structures help determine the types of legal forms that can be set up for community ownership of renewable energy [13] as well as the extent to which these models of ownership scale up [14,15]. Governance structures affect the types of impacts communities receive [11]. However, there has been little attention to the relationship between the legal form of a project and the types of governance structures that are employed, that ultimately impact the outcomes [11,16]. That is, ownership models matter in the context of how the benefits of renewable energy are distributed, but there has been little investigation about how the type of legal form affects those benefits. Slee [16] is one of the few studies that examined the relationship between legal forms and outcomes. By studying community development trust, cooperative or community benefit society and the shared ownership model, Slee found that the community development trust appears to offer the greatest

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range and scale of local beneficial outcomes for sustainable rural development [16]. In the case of Indigenous communities, if renewable energy has the potential to address historical harms through reconciliation, then it is critically important to understand how the legal forms available to Indigenous communities impact the outcomes.

### 1.1. Renewable energy as an opportunity for reconciliation and self-determination?

Whether or not current active projects are contributing to the process of reconciliation is subject to debate [e.g., 5,17,18]. The current blend of legal forms and governance structures that are used in natural resource projects and partnerships vary in the amount of control and benefits guaranteed for the Indigenous community [19]. It is currently unclear which legal forms and governance structures can best support renewable energy development that corresponds with reconciliation and self-determination.

The objective of this study is to contribute to this debate by including an important voice to the discussion of economic reconciliation, that is under-studied: that of Indigenous economic development corporations (EDCs). The establishment of Indigenous EDCs is an emerging trend for Indigenous communities across Canada, where there are at least 294 EDCs among close to 700 First Nations, Inuit and Metis communities. With approval from community members, the political organization of an Indigenous community can establish an EDC as a separate for-profit business entity to engage in business opportunities on behalf of the community. As a for-profit business entity, the EDC can enter into partnerships and joint ventures, including owning renewable energy projects. Unlike other businesses, the community's members are the only shareholder, which means the EDC is directly responsible and reports to the community, its board of directors, and the Indigenous political organization, the elected political leadership of the community.

Indigenous EDCs operate in the Indigenous and Canadian economy. In Canada there are over 50,000 Indigenous businesses creating a gross domestic product (GDP) of \$48.9 billion dollars [20]. Within this context, Indigenous EDCs have been operating in Canada for decades. They exist across a range of industries such as retail, forestry, fisheries, energy, mining, construction, and hospitality [20]. It has been argued that EDCs offer potential to be major economic drivers for First Nations, Métis, and Inuit communities [21]. Given their unique structure and position, Indigenous EDCs hold a unique perspective as a community driven corporation that focuses on generating business and managing partnerships on behalf of the community members (rather than shareholders).

So far, there has been little research identifying the unique perspective of Indigenous EDCs in renewable energy development. The Canadian Council for Aboriginal Business (CCAB), an Indigenous-led not-for-profit which seeks to promote, strengthen and enhance business relationships and opportunities between Indigenous and non-Indigenous businesses.<sup>1</sup> This research was conducted in partnership

<sup>1</sup> The CCAB, formed in 1982, and is the longest running advocate for economic reconciliation in Canada (<https://www.ccab.com/about-ccab/our-history/>). The CCAB plays a unique role in the Canadian context. The CCAB is membership driven, receives no government funding, and represents and supports over 1600 Indigenous members across Canada with a range of services (<https://www.ccab.com/membership/>). The Canadian Council for Aboriginal Business advocates for economic reconciliation as the core part of their work. For example, CCAB regularly produces and commissions research into Indigenous-owned business supply chains that is used to inform their members as well as governments at all levels (Indigenous, federal, provincial, municipal) on how to better support and grow Indigenous supply chains. They offer certification of Indigenous ownership of businesses. The CCAB has argued that Indigenous businesses could support up to a quarter of Federal government procurement needs [20]. The research was conducted according to the CCAB's own rigorous methods.

with the CCAB, where resources were provided by both parties.

This study centers Indigenous voices and perspectives as much as possible by surveying and interviewing First Nation EDC staff that are involved with active renewable energy projects. The objectives of this study are to assess the experience and involvement of Indigenous economic development corporations as a legal form in renewable energy projects, and to analyze the governance structures that EDCs are using for these projects, and assess how these governance structures respond to the needs for self-determination and decision-making power of Indigenous communities. This study examines the emerging role of the unique business structure of Indigenous EDCs in Indigenous community participation in renewable energy, and their perspective on how renewable energy can contribute to reconciliation and self-determination.

### 1.2. Focus on grid-connected communities

The majority (510 of 695) of Indigenous communities in Canada are connected to electricity grids [5,22], yet much of the literature on Indigenous renewable energy in Canada has focused on off-grid remote Indigenous communities or has not focused on grid-connected communities explicitly. This is likely because remote communities, which are not connected to either the North American, Yukon or Northwest Territories power grids, experience acute challenges due to their remoteness [7,23–26] energy poverty [27], and economic poverty [6] associated with “the true cost of energy” for diesel dependent communities [28].

Grid connected Indigenous communities have different opportunities for renewable energy for local economic development and may have different motivations and benefits of renewable energy projects than remote communities. Some grid-connected communities have been studied through case studies [29–31], this study offers the first national scale study on the topic.

## 2. Background and literature

### 2.1. Reconciliation and self-determination of Indigenous Peoples in Canada

Settler colonialism inflicted many historical and ongoing harms on Indigenous People by settlers and colonial institutions. These include infection with fatal pathogens, displacement off of traditional lands and onto settler-colonial mandated “reserves” created by the Indian Act and other forms of settlement legislation, the forced removal of children from their communities to be assimilated and experimented on in abusive residential schools or in the “sixties scoop”, and the lack of respect of treaties and land rights, all used as methods to control Indigenous people [32,33]. Today, Indigenous people encounter systemic and institutionalized racism. The mark of colonialism has left Indigenous communities in Canada “confronted with disparities and disadvantages in every conceivable indicator of wellbeing.” [34].

Canada's economy relies heavily on natural resources (e.g., mining, forestry, energy). Indigenous Peoples have been negatively affected by extractive and resource development economies, including renewable energy development. Throughout the history of colonization, settlers have been extracting from Indigenous people since they arrived to what is now called Canada [35]. The energy and resource development industry has perpetuated colonialism and harms on Indigenous People by displacing them from their land through environmental injustices. Some examples include the Grand Rapids dam in northern Manitoba [36], and toxic, nuclear waste associate with uranium mining and consumption in Saskatchewan [37] and Ontario [38] and large-scale hydro projects like Muskrat Falls and Site C dam in Newfoundland and Labrador and in British Columbia [39]. These energy and resource development projects have had devastating environmental, health and social consequences on nearby Indigenous communities. Large-scale hydroelectricity, and ‘clean’ energy, such as uranium mining for nuclear, has caused physical

and social damages such as flooding of sacred sites, destruction of the environment, and forced relocation of families [40,41]. Anishinaabe activist and writer Gilbert Oskaboosé condenses the history of settler resource extractivism as follows: “First the white men came and trapped all the mink and otter and beaver, then they came back for the trees and all we had left were the rocks. Then the s.o.b.’s came back for the rocks [referring to uranium mining]” [35].

Broadly speaking, reconciliation is about rebuilding relationships between Indigenous and settler people, although views on what that means may differ [33,34]. Beginning in 2009, the Truth and Reconciliation Commission of Canada emerged as a process with Indigenous survivors of the Indian residential school system to tell their stories, resulting in several reports and 94 calls to action as recommendations. The Commission articulates that reconciliation is “awareness of the past, acknowledgement of the harm that has been inflicted, atonement for the causes, and action to change behaviour” to “establishing and maintaining a mutually respectful relationship between Aboriginal<sup>2</sup> and non-Aboriginal peoples in this country” [33]. However, according to the Commission, the Canadian government “appears to believe that reconciliation entails Aboriginal peoples’ accepting the reality and validity of Crown sovereignty and parliamentary supremacy in order to allow the government to get on with business” [33].

The Commission’s report endorses self-determination and the United Nations Declaration on the Rights of Indigenous People (UNDRIP) and laid out 94 calls to action for reconciliation [33]. Self-determination is the process by which Indigenous People are reclaiming their inherent rights to govern themselves and their land that has been taken from them through settler colonialism [33]. This is also affirmed through the UNDRIP, in particular article 19 which states that governments must seek out free, prior and informed consent (FPIC) by Indigenous people before adopting legislation that affects them and their land [42]. Indigenous Peoples’ right to govern any development on their lands is a key component of self-determination. FPIC is the mechanism through which control can be asserted by Indigenous communities on decisions of development on traditional land, through the offering of either consent, or veto [43]. Self-determination of an Indigenous community is about their control over resources and community well-being which has been taken away through the process of settler colonization. Returning control to Indigenous communities and strengthening self-determination are ways the state can begin to reconcile its faults with Indigenous peoples [17].

## 2.2. Economic development, reconciliation and self-determination

Financial resources affect a community’s ability to execute their right to self-determination. Funding for Indigenous communities comes from a combination of the federal government and own-source revenue [44]. These government funding structures create a paternalistic, “top-down welfarism” type of governance structure [45]. The Government transfers funds to Indigenous communities because the Crown, represented by the Government of Canada, has a fiduciary responsibility to Indigenous Peoples and lands which sets a legal obligation for the Crown to act in the best interest of Indigenous Peoples [33]. The funding is often not enough to meet the community’s needs [46]. To manage these challenges, many Indigenous communities are seeking economic development opportunities to create own-source revenue to relieve their dependence on funds provided by the Crown and affirm their right to self-determination [44,47]. Breaking colonial and paternalistic relationships between the state can be extremely challenging for communities that financially depend on the federal government and struggle with systemic issues such as poverty, poor health, and discrimination from years of colonial law. However, the *Indian Act*, that governs First

<sup>2</sup> The term Aboriginal is older terminology that is present in legislation and many texts, and can be taken to mean Indigenous.

Nations, also created barriers for First Nations economic development because it restricts the seizure of property on reserve land which undermines First Nation borrowers’ ability to offer collateral to lenders [48]. As a result, large socio-economic gaps exist between Indigenous and non-Indigenous people [49].

Historically, Indigenous communities have been largely excluded from the economic development and wealth generated from their territories, receiving little to no benefits from the energy development on their lands and waters, despite facing environmental and social burdens. Economic reconciliation is broadly understood as recognizing and respecting Indigenous rights to economic opportunities by way of forming relationships, partnerships, and Indigenous concepts of wealth and well-being [50]. Economic reconciliation aims to narrow these gaps and advocate for inclusive economic growth through meaningful partnerships between Indigenous and non-Indigenous people and organizations in order to create economic prosperity for the community [49]. To achieve economic reconciliation, governments and the private sector would need to rebuild trust with Indigenous nations and dismantle systemic financial, legislative, and social barriers to economic opportunities for Indigenous people and businesses [51].

## 2.3. Motivations to pursue renewable energy

Stefanelli et al. [17] conducted a systematic review of studies of the involvement of Indigenous communities in renewable energy in Canada, and analyzed their motivations and outcomes of participation, and the real or perceived impact on autonomy, reconciliation, and healing [17]. Their review determined that environmental, economic, or socio-political forms of autonomy, economic prosperity, and social development are the driving motivations for Indigenous communities pursuing renewable energy projects. The economic, environmental and political benefits of renewable energy support the sovereignty and the local decision-making process of each Indigenous nation.

Supporting a community’s ability to plan their energy systems is part of strengthening Indigenous self-determination. Brookshire and Kaza [52] surveyed Native American tribes in the United States on energy resource development and planning efforts and respondents reported that energy planning is central for increasing Indigenous sovereignty and sustainability, especially for remote, off-grid communities. Tribes with community energy plans, strong leadership, and support federal and state policies were more likely to pursue energy development and efficiency programs. Rakshit et al. [26] showed that Indigenous energy planning and renewable energy projects should be community-led to and resist top-down energy planning solutions in order to achieve their desired goals. In another study, Rakshit et al. [25] found that developing capacities within a First Nation is a key building block for self-determination and energy sovereignty. With increased capacities, First Nations are able to make informed decisions on their energy planning.

## 2.4. Legal forms and governance structures

A core debate is about which governance structures Indigenous communities can use to assert control over resource development projects in a natural resource sector that has rapidly growing participation from Indigenous communities [19]. According to Bullock et al. [19], Indigenous communities can assert control and receive benefits from resource development projects (e.g., mining, forestry, energy) through arrangements such as impact and benefit agreements (IBAs), revenue sharing agreements, memorandum of understanding (MOUs), and potentially treaties, land claims, and land use strategies, many of which are outlined in Table 1.

These strategies can be used when participating in renewable energy projects. Across Canada, the blend of legal forms and governance structures that are used in renewable energy projects and partnerships vary in the amount of ownership and control guaranteed for the Indigenous community [5]. Within debates on which governance structures

**Table 1**  
Scope of governance structures in indigenous resource partnerships.

Governance Structure	Definition
<b>Legal governance structures</b>	
	IBAs are “are privately negotiated, legally enforceable agreements that establish formal relationships between Aboriginal communities and industry proponents. With a few exceptions, governments are not directly involved in the development or negotiation of these bilateral arrangements” [53]. They are meant to address the multitude of adverse socio-economic, environmental and health impacts from resource development projects [54]. The negotiation of an IBA can outline the parameters of the project, the commitment and responsibilities of both parties, and how the First Nations will share in benefits of the operation.
Impact and benefit agreement (IBA)	Resource revenue sharing agreements are “between governments and Aboriginal groups, which share public revenues, such as royalties and taxes, generated from resource development” [53]. “Treaties are agreements made between the Government of Canada, Indigenous groups and often provinces and territories that define ongoing rights and obligations on all sides. These agreements set out continuing treaty rights and benefits for each group” [55]. Historic treaties are the first treaties signed between the Crown and Indigenous people in the 18th, 19th, and 20th Centuries. Modern treaties, also called comprehensive land claims, or self-government agreements, are signed between Indigenous people and Canada where Indigenous land, title, and rights have not been dealt with through a historic treaty or other legal means [56].
Revenue sharing agreements	
Treaties and land claim agreements	
<b>Political governance Structures</b>	
Memorandum of Understanding (MOU)	Addresses the rights and responsibilities of each party in a specific situation, such as hunting practices or harvesting of a particular area. [19,57] Indigenous land use planning and management, occurring when Indigenous organizations hold full responsibility for the full range of management activities, including goal setting, planning and implementation (although some activities may be delegated to non-Indigenous organizations) [19,57] Environmental assessment is a process to predict environmental effects of proposed initiatives before they are carried out. An environmental assessment is a planning and decision-making tool. The objectives of an environmental assessment are to minimize or avoid adverse environmental effects before they occur; and incorporate environmental factors into decision making [19,58]
Land use strategy/ regional planning	Advisory multi-party committees and round tables that enable Indigenous people and other stakeholders to participate in discussions about management, but without decision-making powers [19,57].
Environmental assessments	
Advisory committee	
<b>Economic governance structures</b>	
	A joint venture is “the relationship that subsists between two persons who carry on, in common and with a view to profit, a business venture established by contract for a discrete project undertaking or for a series of discrete business projects or undertakings” [59]. Joint ventures are specifically between business entities while partnerships, as seen in this research, can be between business and non-business organizations such as Indigenous communities. The ownership breakdown between the two parties can vary. The ownership form was determined a ‘business joint venture’ if the term ‘joint venture’ was identified.
Business joint venture	A general partnership is a business established by two or more owners with no formal legal requirements, but the owners will usually work out a partnership agreement that outlines the respective powers,
Partnership	

**Table 1 (continued)**

Governance Structure	Definition
	ownership shares, capital contribution, profit distribution, and so on [60]. The ownership form was determined a ‘partnership’ if the business that owns the project is a ‘limited partnership’ or if the keywords ‘partner’ or ‘partnership’ were used in the online resources, as long as there was equity or some form of investment involved by each partner. This is to differentiate between Indigenous non-equity ‘partners’ that may have been consulted with or engaged in the project but have little to no control or ownership in the project.
Indigenous owned	The Indigenous political organization or economic development corporation govern the project however the exact ownership amount varies. [5].

offer more control to communities, it is contested whether an IBA would suffice the Commission's call to action 92 which calls on corporate Canada to adopt UNDRIP as a reconciliation framework and to apply its principles to business activity with Indigenous Peoples because, as Scott [43] argues, contractual agreements between unequal power holding parties are not an expression of consent. IBAs offer short-lived benefits and do not challenge the power dynamics between First Nations and industry, and therefore do not represent meaningful self-determination [43]. According to Scott [43] free, prior and informed consent (FPIC) would provide the legal structure for consent to be treated as equal partners in economic development projects on their land. Bullock et al. [19] argued that capacity in the form of social, human, financial, built, and natural capital are also required in pursuing control in natural resource development projects.

There are differences in perspectives about how Indigenous participation in renewable energy projects using various governance structures can contribute to reconciliation. Some proponents assert that “clean energy projects with Indigenous participation embody the process of national reconciliation between Canada and Indigenous Peoples” [61]. The evidence for whether renewable energy is contributing to reconciliation is mixed, as the documented barriers to supportive governance structures are substantial.

Renewable energy for revenue is commonly developed by working in partnership with the renewable energy industry—consultants, utilities, and renewable energy developers to finance and develop renewable energy projects on traditional lands. The ways that partnerships are created and understood is essential to evaluating the current and future potential of reconciliation through renewable energy [18]. Walker et al. [18] explored the potential for renewable energy partnerships between Indigenous communities and businesses and non-Indigenous corporations, business and utilities to contribute to Canada's reconciliation and decolonization efforts by understanding how non-Indigenous peoples working in the renewable energy sector relate to their Indigenous partners. Representatives from non-Indigenous organizations such as developers, provincial and territorial utilities, and government officials, involved in partnerships with Indigenous communities were interviewed. The authors found that most participants had a superficial or misunderstanding of the reconciliation frameworks in Canada, such as UNDRIP, free, prior, and informed consent (FPIC), and the Commission's Calls to Action. Most non-Indigenous representatives viewed their business-as-usual approach to consultation and collaboration as adequate efforts towards reconciliation. However most non-Indigenous representatives also agreed that equity partnerships with significant or majority Indigenous ownership provide benefits to communities, yet their views on duty to consult, FPIC, and responsibilities contradict earlier comments about building positive relationships. Overall, their research suggests that there is room for improvement in company-wide and individual understandings of reconciliation as a framework to be applied to their renewable energy partnerships with Indigenous communities.

There are other substantial barriers to developing Indigenous-owned renewable energy created by the legacy of colonialism, not all of which are specific to renewable energy. In energy or resource development projects, communities may lack internal capacity such as technical skills and training needed for on-site jobs, financial capital to train their members, and human resources to oversee partnerships and community engagement [19,26]. Access to capital is a challenge for Indigenous communities across all industries because of the inability to use reserve land as collateral for business loans [48]. Grid-tied renewable energy projects have high upfront costs which can make some Indigenous communities uncomfortable or unable to take on financial risk, especially if there are other competing priorities that require significant resources [6,62]. Indigenous people often face institutional biases from lenders because they are seen as higher risk [63]. This leads to higher interest rates compared to non-Indigenous borrowers which makes loan repayment and project profitability more challenging. Across different jurisdictions in Canada, there have been progressive, supportive policies that have been the accelerated Indigenous-led renewable energy projects [6,29]. Another barrier for Indigenous communities and businesses in renewable energy development is the inconsistency and lack of supportive policy mixes [23]. These challenges are not inherent to Indigenous Peoples; they have been created out of hundreds of years of settler-colonialism and oppressive legislation from different levels of government. Because of this, Indigenous communities also mistrust colonial governments and private developers which is a barrier to renewable energy partnerships and project development.

Smith and Scott [31] found that in the case of Batchewana First Nation, while the Nation is governed by a Band Council, the community was able to assert principles deriving from its own legal order into the approval process. They did this for example by having more stringent environmental regulations than settler legislation required. Despite having a Band Council to set up the project, they were able to arrange a less hierarchical legal structure by developing a community trust. The structure and spending were based on participatory community consultations.

Hoicka et al. [5] argued that reconciliation is indicated by ownership and control of renewable energy development on an Indigenous communities' traditional lands, whereas, agreements, such as IBAs, MOUs or revenue sharing agreements, offer weaker benefits or control to Indigenous ownership and less indicative of reconciliation. Of 194 projects analyzed across Canada, 114 were located on traditional land, 19 projects had less than 50 % ownership by Indigenous communities, and 60 projects had no Indigenous ownership at all. Meanwhile, of the 52 projects developed on reserves created by settler colonial institutions, the majority had at least 50 % Indigenous community ownership, of which 22 were wholly owned by the community. Reserve<sup>3</sup>-based projects were smaller and less likely to produce substantial revenues to the community. Overall, they found that Indigenous communities have less control over renewable energy projects on their traditional territories, demonstrating lack of a strong presence of reconciliation due to the lack of majority Indigenous ownership in existing projects, particularly the projects located on traditional lands.

### 2.5. Indigenous legal forms

What has not been explored extensively in the literature are which legal forms are able to carry out the range of governance structures. For example, the Indigenous political organization is the elected political body of an Indigenous community such as the Band Council used by many First Nations. Hoicka et al. [5] found no cooperative legal forms in renewable energy projects associated with Indigenous communities.

Within this context, Indigenous EDCs are a legal form specific to

<sup>3</sup> Reserves are tracts of land set aside for First Nations under Canadian legislation and treaties.

Indigenous communities that has emerged to support Indigenous community engagement in business opportunities. EDCs can assert influence on economic development projects on their land while also directly benefiting the community. EDCs draw business investment interest into their community by networking, engaging local industry and actively seeking partners, supporting small business owners in the community, with preferred supplier relationships, and provide mentoring and financial assistance [21] (Fig. 1).

How to encourage the development of renewable energy projects that meaningfully contribute to reconciliation and self-determination remains an important area of exploration.

## 3. Methodology

This research was conducted in a partnership with the CCAB that has over 1600 Indigenous owned businesses as members. During two years prior to the research, the primary researcher of this study worked as a researcher in CCAB's research department and received internal training from the CCAB and from Environics Analytics, a national polling organization, on how to conduct survey and interview research with Indigenous businesses. She also completed a graduate level Indigenous research methods course taught by an Indigenous faculty member, as well as Canada's national Tri-Council's module for Research with Aboriginal People. This contributed to understanding the difference in culture and practice for interviews with Indigenous people. This research followed formal ethics procedures for research with Aboriginal People.

### 3.1. Impact of Covid 19 pandemic

On March 11, 2020 the World Health Organization declared the outbreak of COVID-19 a global pandemic and by March 17, several provinces declared a state of emergency [64] which severely restricted travel and closed non-essential stores and offices. Between April and July 2020, surveys were emailed to EDCs. Interviews were conducted from mid April to mid July 2020. At the time of data collection, several provinces were under a state of emergency and many people were working from home or unemployed. This likely affected the response rate for both the survey and interviews.

### 3.2. Quantitative analysis

A preexisting national dataset compiled from publicly available information of 194 active renewable energy projects across Canada with some form of grid-connected and off-grid Indigenous involvement was analyzed for this study [5]. For each renewable energy project, the dataset identified the project location, Indigenous communities involved, whether the community was grid connected, project ownership, and capacity (MW), the governance structures and legal forms from Table 1 identified as used in the project. As noted in Hoicka et al. [5], the dataset was compiled based on publicly available information. Equity ownership by Indigenous communities is often shared publicly, however, governance arrangements of IBAs, resource sharing agreements or MOUs are often covered by non-disclosure agreements, and therefore, their prevalence is potentially under-reported in the dataset.

The key variables used to filter out the dataset were community grid-connection and project capacity size. The analysis of the dataset only included projects involving grid-connected First Nations and projects with reported capacity size greater than 0.5 MW or unknown MW. We included projects (17) with unknown capacity size because we could not confirm or deny the project size.

### 3.3. Survey

Grid-connected communities that were involved in at least one renewable energy project and had an EDC were identified by cross-

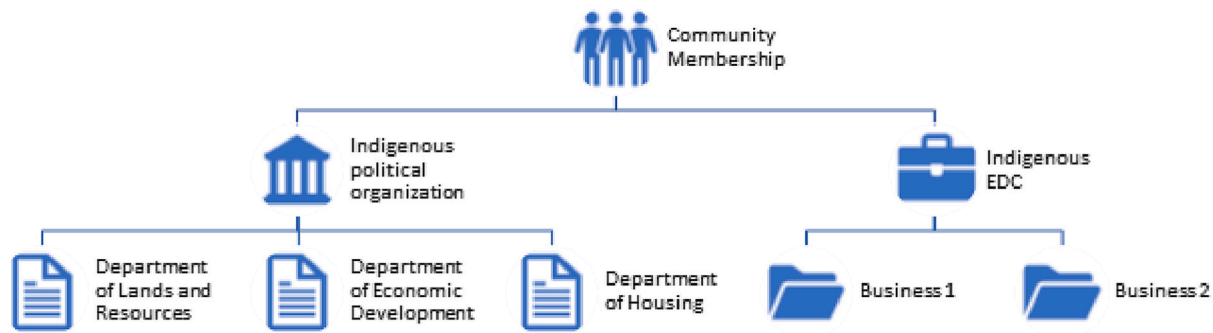


Fig. 1. Example of an organizational chart of an Indigenous community (own elaboration).

referencing the list of 194 projects with the CCABs proprietary list of 294 EDCs across Canada and online desk research. This resulted in the identification of 49 EDCs of First Nations of grid-connected communities that may or may not have had active renewable energy projects. A semi-structured online survey was sent via email to these 49 EDCs. EDCs were contacted through the project partner, CCAB, which contributed to this project by providing access to their proprietary list of Indigenous EDCs in Canada, which includes contact information on EDC leadership.

The survey is provided in supplementary materials. The purpose was mainly to collect information about motivations and governance structures used to set up the identified renewable energy projects and how these related to reconciliation and self-determination; validate or update the data in the national dataset; and to identify additional active renewable energy projects with First Nation involvement.

After one month of surveying and sending four reminder emails, seven of 49 EDCs completed the entire survey. Participants had the option to enter their name and contact information if they wanted to do a follow up in-depth interview. Project-related data from the survey were added to the national dataset and analyzed in aggregate. The remaining data from the surveys were analyzed on its own or combined with the interview data.

### 3.4. Interviews

Interviews were conducted to gather more in-depth information about how EDCs are engaging with the range of governance structures to support renewable energy projects and the relationship of these projects with reconciliation and self-determination. The questions asked were open ended. The interview guide is provided in supplementary materials. The interview guide was informed by the literature review and the original dataset. Interviews with Indigenous people includes more time for relationship building and storytelling in interviews compared to traditional interview practices. According to CCAB practice interviewing Indigenous business people, interview responses were recorded in bullet points, not verbatim.

Five survey participants indicated that they wanted to participate in the interview, one participant did not participate in the survey, but participated in an interview. Overall, four interviews were conducted. The interviews were conducted over the phone or Zoom. The researcher then followed up in the transcriptions to record relevant quotes verbatim.

### 3.5. Thematic analysis

Thematic analysis was chosen to analyze the interview data. This approach is typically used for contextual research that seeks to unpack issues and understand how they are connected [65]. The predefined themes of governance structures, reconciliation, self-determination, and the relationships to renewable energy were built into the open-ended interview questions and coding scheme. The findings from the interview data were sorted into these themes with a focus on the research

question to examine the relationship between governance structures and reconciliation and/or self-determination. A cross-sectional approach was taken to indexing and sorting the data by applying thematic labels across the whole interview data set. Once the data were sorted based on the thematic framework, categories or sub-themes were developed based on the occurrence of key concepts in the interview responses for example, barriers to participation, that came up as responses to open-ended questions. Because of the small sample size, a coding scheme for sub-themes was not developed in advance to allow some of the themes to emerge from the text. This process determined the key findings that are summarized in the Results and Discussion section.

## 4. Results

### 4.1. EDC involvement in renewable energy

Based in the pre-existing dataset, survey and interview, we found EDC involvement in projects with a range of renewable energy technologies, provinces and territories. The following findings stand out:

- EDCs are present in 280 grid connected Indigenous communities across all provinces and territories across Canada (Table 2).
- Based on the dataset and survey responses, at least 26 EDCs are involved in 47 renewable energy projects across all provinces and territories except the provinces of New Brunswick, Nova Scotia, Newfoundland and Labrador, Prince Edward Island or the territory of Nunavut (Tables 2 and 3). Most EDCs have ownership in only one renewable energy project, but some EDCs have ownership in up to six.
- EDCs are involved in solar, wind, hydroelectric, and biomass projects ranging in size from 0.5 MW to 230 MW, with 6 projects under 1 MW, 12 projects between 1 and 10 MW, 18 projects between 10 and 99 MW, 8 projects over 100 MW. EDCs are involved in two large scale hydroelectric projects. (Fig. 2).
- 83 Political organizations are involved in renewable energy projects (Table 2). The governance structures that the political organization uses most often are impact and benefit agreements (IBAs), revenue sharing agreements, and Indigenous owned (Table 4).
- EDCs are more often associated with a controlling share of ownership of renewable energy projects than the political organization (28 versus 9) (Table 4). EDCs are more frequently involved with economic types of governance structures such as joint ventures, partnerships, and Indigenous ownership of renewable energy projects (Tables 4, 5).
- While 49 EDCs were identified as potentially being involved in a renewable energy project and of those, 26 EDCs were confirmed to be involved in renewable energy projects through online desk research and survey (Table 2). Although we do not know if the remaining 23 EDCs (difference between 49 and 26) had renewable energy projects, 7 responses of a known 26 EDCs with projects is considered a good response rate.

**Table 2**  
Indigenous involvement in renewable energy in grid-connected communities.

Provinces/ Territories	Political Organizations (n)	EDCs (n)	Renewable energy projects (n)	EDCs involved in renewable energy projects (n)	Political Organizations involved in renewable energy projects (n)	EDC Survey Responses (n)	EDC Interviews (n)
British Columbia	171	58	68	7	52	3	2
Ontario	108	60	49	10	12	2	1
Quebec	33	40	16	4	4	0	0
Alberta	53	17	5	1	1	0	0
Manitoba	59	23	3	1	3	0	0
New Brunswick	15	3	3	0	3	0	0
Saskatchewan	69	23	3	1	2	1	0
Yukon	10	15	6	1	3	1	1
Nova Scotia	13	3	4	0	2	0	0
Newfoundland and Labrador	3	2	0	0	0	0	0
Northwest Territories	7	35	1	1	0	0	0
Prince Edward Island	2	1	1	0	1	0	0
Nunavut	0	0	0	0	0	0	0
Total	543	280	159	26	83	7	4

**Table 3**  
Grid connected renewable energy projects with involvement by Indigenous legal form.

Indigenous legal form	Number of projects
EDC	43
political organization	86
Both forms (EDC and political organization)	4
Non-profit	5
Unknown	21
Total	159

- The 7 EDCs who completed the survey are located in British Columbia, Yukon, Ontario, and Saskatchewan. They are involved in 20 projects that include biomass (1), hydro (1), solar (11), and wind (7). The projects range in size from 0.3 to 230 MW.
- The four EDCs who completed the interview are located in British Columbia, Yukon and Ontario. They are involved in hydro (1), solar (4), and wind (1), totalling to 6 projects. The hydro project is 28 MW and the wind project is 99 MW.

4.2. EDC motivations to pursue renewable energy

In both the surveys and the interviews, all participants agreed that renewable energy projects are a way for the community to generate own-source revenue and wane off their dependence on the provincial and federal governments (Table 6). One survey participant shared that “[the EDC’s] strategic priorities include stimulating job creation, pursuing investment opportunities, and promoting revenue generation within the community - with the long term of [sic] goal of assisting our community in achieving economic sovereignty. Renewable energy is one sector that has enabled us to move towards our goal”. Another mentioned that Indigenous ownership in renewable energy is part of economic reconciliation.

Interviewees expressed that EDCs involved in renewable energy projects not only build a collective sense of pride and ownership, but also build capacity among individual community members through good jobs and training. Job creation was mentioned by 6 of 8 survey respondents as an important motivation for pursuing renewable energy projects (Table 6). One participant reported the lack of community

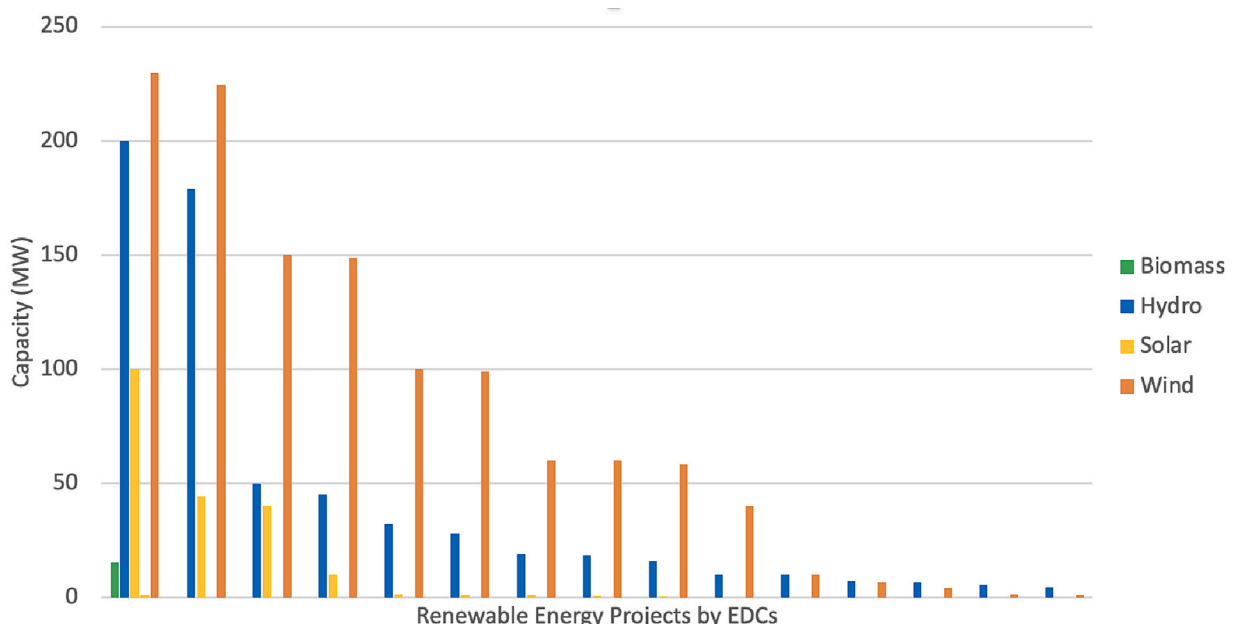


Fig. 2. Renewable energy projects with EDC involvement (projects with unknown capacity sizes excluded).

**Table 4**  
Number of project governance structures by indigenous legal form.

Governance structures	Indigenous legal forms			Total
	EDC	Political organization	Both	
Impact and Benefit Agreement (IBA)	0	16	0	16
Revenue sharing	0	14	1	15
Treaty or land claim agreement	0	4	0	4
MOU	1	1	0	2
Land use planning	1	1	0	2
Advisory committee	0	0	0	0
Business joint venture <sup>a</sup>	12	0	0	12
Partnership <sup>a</sup>	19	8	4	31
Indigenous owned <sup>a</sup>	11	13	0	24
Total	44	57	5	106

<sup>a</sup> For business joint ventures and partnerships, and Indigenous owned, 28 projects with EDC involvement and 9 with political organization involvement have 50 % or more confirmed ownership.

**Table 5**  
Survey responses on governance structures used.

Category of governance structure	Governance structures	n
Legal	Impact and benefit agreement (IBA)	2
	Revenue sharing agreement	2
	Treaties/land claims	0
	MOU	2
	Land use strategy/regional planning	2
Political	Environmental assessment	1
	Advisory committee	0
	Business joint venture	11
	Partnership	13
Economic	Indigenous owned	5
	Total	38

**Table 6**  
Survey respondent's motivations for pursuing renewable energy projects (n = 7).

Motivations	n
Own-source revenue	7
Economic self-sufficiency	7
Job creation	6
Environmental reasons	4
Autonomy/self-determination	3
Knowledge and skills development	3
Increased local support for renewable energy	3
Energy literacy	3
Government policies	2
Social capital	2
Access to affordable energy	2
Empowerment	2
Energy self-sufficiency	2
Transition off diesel	1

capacity and ability to retain educated people within the community. In renewable energy projects, there are opportunities for meaningful employment and skill development across all levels. By training young people in high paying jobs, this builds their experience, skills, and encourages them to stay in the community instead of leaving to find work elsewhere.

4.3. EDC preferred governance structures

Table 7 provides a summary of responses about how governance structures that are available to EDCs and Indigenous communities are preferred for renewable energy, and how these governance structures

respond to the needs for self-determination and decision-making power of Indigenous communities and their relationship to reconciliation or self-determination. Some responses are paraphrased and some are provided verbatim. For anonymity, responses are not provided by province or territory.

The key finding is that there is agreement that ownership is generally preferred to impact and benefit agreements. This aligns with the other presented findings that show that EDCs have more experience with economic governance structures, such as partnerships and joint ventures, than Indigenous political organizations (Table 4) and have more experience with Indigenous ownership as a governance structure than projects with IBAs (Tables 4 and 6). Some interviewees expressed that ownership in renewable energy projects not only brings financial benefits, but also an affirmed sense of pride to be recognized as the rightsholders and custodians of the land. However, the findings presented in Table 7 show that the amount of ownership selected for a project is highly context dependent, depending on a range of factors. For example, 100 % ownership may not be desirable due to the high levels of assumed risk, therefore a partnership or joint venture may be preferred where risk can be shared.

Even though CCAB materials describe EDCs as functioning for community shareholders rather than for business shareholders, one interviewee mentioned that community cooperatives might be a legal form with more community engagement.

Where there is disagreement is on the importance of treaties as it relates to governing and establishing renewable energy projects. While two interviewees outlined that respecting the intent of the treaties to manage resources includes renewable energy, another interviewee pointed out that a community without a treaty (unceded) does not see the value of treaties, seeing them as a loss of control over resource development. This is one example that demonstrates the vast experiences and perspectives of First Nations. Not all First Nations in Canada have signed treaties and therefore there are different interpretations of its value and purpose in the modern context.

Another important governance structure mentioned by interview participants is having at least one First Nations person from the EDC or community on the board of directors of the project partnership. The board of directors guides decision making for companies and therefore it is important that the First Nations partner is able to assert their decision-making authority over the project and their land, especially if they are in partnership with a non-Indigenous company. One interview participant explained that their experience sitting on the board of directors for a hydro project provided meaningful leadership experience and grew their professional network. Building capacity and experience among First Nations staff and directors puts First Nations in a strong position to pursue more renewable energy projects and assert their control.

4.4. Barriers to participation in preferred governance structures

Despite the growing participation of EDC involvement in renewable energy projects, interviewees mentioned several barriers. For example, the lack of trust between First Nations and the Crown because of the history of colonialism generally and hydroelectricity projects specifically. Interviewees expressed that the energy injustices of the past have stained their relationships with the Canadian government. When one participant explained the origin of a hydroelectricity project near their community, they said “you know how industry was a long time ago, they did whatever they wanted, wherever they wanted. They didn't need permission. It's a new world now”. Similarly, when asked about whether the EDC or nation would participate in a new hydroelectricity project, another participant said that “there hasn't been fantastic experiences with hydro in the Yukon”.

Some First Nation EDCs reported that they don't receive “respect as a business entity” from their non-Indigenous counterparts, they sometimes aren't included in important conversations for proposed resource development projects until the very end. In these situations, because of

**Table 7**  
Responses to preferred governance structures for renewable energy.

Governance Structure Themes	Responses
Impact and Benefit Agreement (IBA)	<p>The provincial government of British Columbia (BC) has policies to promote and mandate industry to talk to local First Nations when they would like to develop projects. This ensures that there is at least an IBA in place but also an opportunity for the First Nation to invest in the project.</p> <p>The pay off and benefits from IBAs are short term and will be gone in one generation. IBAs are fine but it does not address the history of governments and industry extracting resources from Indigenous lands and hoarding the wealth generated from it.</p> <p>Industry is coming along and beginning to work with Indigenous Peoples. We are moving past IBAs because ownership is more important.</p> <p>“a significant share of ownership in the project is very important because it is more lucrative and sustainable than an IBA. Once the government or industry partner fills the requirements of the IBA, they are not obliged to engage further with the Indigenous community.”</p>
Free, prior and informed consent (FPIC)	<p>First Nation businesses don't want to be in a position where they are not able to say no to a project on their lands.</p>
Ownership	<p>Industry is coming along and beginning to work with Indigenous Peoples. We are moving past IBAs because ownership is more important.</p> <p>Self determination means pride, ownership, doing it on your own, and building capacity within the First Nation.</p> <p>Ownership is more lucrative. Sitting on the board and having ownership in the project is important for building capacity and relationships.</p> <p>Indigenous participation in renewable energy is part of economic reconciliation. Independent Power Producer programs are a great way to get ownership in projects.</p> <p>“a significant share of ownership in the project is very important because it is more lucrative and sustainable than an IBA. Once the government or industry partner fills the requirements of the IBA, they are not obliged to engage further with the Indigenous community.”</p> <p>Some participants expressed that projects wholly owned and controlled by either the Indigenous EDC or political organization can be considered gestures of self-determination because the Indigenous community does not have to depend on or work with industry or government.</p>
Partnership	<p>“50-50 ownership structures between the Indigenous EDC and the energy developer as an ideal breakdown because “when you share [between two nations] it should be half and half. That's my logic. This 50-50 ownership structure reflects what the treaties promised and shows that First Nations and their EDCs are valid and important business partners.”</p> <p>“in the business world, interviewees expressed that partnerships are very important especially in renewable energy development. Each partner brings their own skills, expertise, and financing to the table.”</p> <p>100 % ownership of a project makes the Band Council feel good but actually partnerships can often be better. Because legally speaking, a First Nation being involved is very high risk. If something goes wrong, the whole community can be negatively impacted. This is a challenge the EDC and the band have to manage.</p> <p>In the future he would like to see more 50-50 partnerships. When you share between settlers and Indigenous People it should be half.</p> <p>In the province of British Columbia (BC, joint ventures are not used. Limited partnerships (LP) are used instead. That is the preferred legal structure because the LP has limited risk and exposure. The General Partner (GP) has the risk and this works fine.</p>
Joint venture	<p>From text “the ideal governance structure would be when two limited partnerships create a joint venture, as with this structure there is a high potential for</p>

**Table 7 (continued)**

Governance Structure Themes	Responses
Cooperative	<p>return on investment, and job and wealth creation for the EDC and community by extension.”</p> <p>Limited partnerships work fine but they would like to see in the future more community-controlled trusts and cooperatives being used instead of the EDC of a community. The EDC is interested in looking at other legal forms such as trusts and cooperatives. The coop model instead of the EDC model is more community focused.</p>
EDC Structure	<p>From the perspective of an interviewee who has set up five EDCs, EDCs can be structured as many different models, there isn't one best one. It all depends on what the community wants.</p>
Treaties	<p>One First Nation mentioned sharing resources was the intent of their 1905 treaty and that this is symbolic of their current hydroelectricity project in partnership with a non-Indigenous utility.</p> <p>One First Nation mentioned that sharing resources is key, is part of nation to nation building, which goes back to the intent of the treaty. This is why they prefer partnerships in their renewable energy projects.</p> <p>Honouring the treaties is important for reconciliation because it re-distributes the land and resources back to First Nations, which can help with their healing process. This is important because, generally speaking, the treaties state that the resources of the land would be shared between the signing nations and those agreements have not been upheld. Using their resources from the land reduces First Nations' dependency on the state and helps heal the multi-generational trauma many First Nations people experience.</p> <p>One First Nation is protecting their land and their community's self-determination by avoiding any modern treaty agreement with the Canadian government.</p>
Leadership and capacity building	<p><b>Strategic planning</b></p> <p>Indigenous participation in renewable energy can play a part in reconciliation by being meaningfully engaged and involved in Yukon Energy's strategic planning.</p> <p><b>Board participation</b></p> <p>Sitting on the board and having ownership in the project is important for building capacity and relationships.</p> <p>The joint venture should also have a board of directors of business people. To have a successful business you have to separate politics and business, as per the Harvard Project on American Indian Economic Development.</p> <p>“the board of directors should only include business-minded people who understand the community needs but also know how to run a business.”</p>

the systemic barriers First Nation EDCs experience, when they are finally consulted, they are usually in a position where they are “not able to say no” to a development project. First Nation EDCs want to be involved in the “meaningful” parts of the project such as the design and planning process where they can bring forward their own ideas and visions. Interview participants expressed that their relationships with energy developers and governments have improved but that there is more work to be done. One interview participant shared their experience working with a public utility on regional energy planning, calling it “the most condescending meeting ever”.

First Nation EDCs are starting on an uneven playing field when trying to enter new industries or grow their business for a variety of reasons. Two interviewees expressed frustration about the inequitable access to financing from mainstream banks for First Nation EDCs. First Nation communities and their EDCs face barriers to accessing capital because of legislation in the *Indian Act* that limits the First Nation's ability to raise revenue through borrowing private investment because they are unable use their land as property and collateral [66]. As one participant

explained, because of this institutional barrier, the Indigenous political organization, typically called the band, has to be the guarantor when the EDC is seeking to access capital from a bank which puts the entire community “on the hook for a lot more debt than anyone else would be”. Even when communities create EDCs as a way to generate wealth and jobs for the community and stimulate the local economy, they experience barriers that non-Indigenous companies do not face. This holds the EDC back from growth and opportunities.

#### 4.5. Opportunities

Government policies are needed to encourage First Nation participation and ownership in development projects. Some federal and provincial policies in British Columbia and Ontario that encouraged greater Indigenous ownership in renewable energy projects are contributing to leveling the playing field. One participant shared that the British Columbia government is making good steps forward in reconciliation by ensuring that private sector consults with First Nations and that there is an opportunity for some benefits or ownership in the project, although there is more to be done. The Aboriginal Price Adder set up by the Province of Ontario specifically encouraged equity ownership “as the *Green Energy and Economy Act* explicitly countered some of the barriers to Indigenous ownership, by providing access to capital, by guaranteeing returns, and by creating statutory incentives for industry to seek out partnerships with Indigenous communities” [31]. Most projects are located in British Columbia and Ontario, provinces that had supportive policies and have the largest populations of Indigenous communities (Table 2).

Not only do First Nations demand to be included in planning and development conversations, but one interviewee said that they also want to take part of the provincial government's role and become energy providers. The provincial and territorial energy providers are too centralized and “are far too powerful”. First Nation communities should not just receive energy, but also become providers to themselves and the non-Indigenous population. One way to encourage First Nation energy providers is by redirecting “all the subsidies that have gone to the big centralized colonial providers [...] there should be some sort of subsidy to be able to empower First Nation communities to be the provider of energy solutions”. A more decentralized approach to energy provision is therefore aligned with self-determination because it decentralizes the power of energy provision from the provincial government to the First Nation.

Participants explained the tension between the desire to reduce dependency on the federal government but also recognizing Canadian law that protects Indigenous people's lands and rights. One participant mentioned that although the *Indian Act* is a colonial and oppressive legislation, it is “in some cases a hinderance, but in some cases an advantage” because it controls Indigenous peoples lives and land while also securing their rights recognized by the Canadian government. The interviewee's First Nation does not have a treaty with the Crown meaning that their land is unceded. They expressed that the *Indian Act* protects their land.

## 5. Discussion

There has been limited attention to how specific legal forms bring about benefits to communities that engage in renewable energy ownership [11,16]. This is especially true in the settler colonial context of Canada where there is an emerging body of literature around Indigenous community involvement in renewable energy. Within the context of Indigenous communities, Indigenous EDCs play a major role in a range of resource sectors, generating substantial opportunity [20]; however, there is limited understanding and analysis of the potential of EDCs to support local renewable energy development. So far, there has been little exploration of the role of the Indigenous EDC, which is a unique legal form of renewable energy ownership globally. As such, this

study offers a number of unique findings and contributions and corroborates previous studies about Indigenous community participation in renewable energy.

First, this study confirms that Indigenous EDCs across Canada are emerging as key players in renewable energy deployment, as they are involved in ownership of an increasing number of renewable energy projects of a range of sizes. As such, it appears that the involvement of EDCs can play a role to strengthen Indigenous self-determination by increasing opportunities for own-source revenue and being in control of resource developments on their lands.

Second, with respect to outcomes of renewable energy projects, the results show that First Nation EDCs, as legal forms, tend to seek some amount of ownership in renewable energy projects and make use of economic governance structures such as partnerships and joint ventures. This analysis also demonstrates that Indigenous political organizations have tended to use legal governance structures such as impact and benefit agreements. The interviewees who work at EDCs generally agreed that ownership in a project (through economic governance structures) is more beneficial than impact and benefit agreements (a legal governance structures) because it brings longer term, sustainable benefits. This shows that certain legal forms lend themselves to certain governance structures which vary in the amount of control they offer over renewable energy projects [43], and this impacts the outcomes, including economic development for self-governance. These findings corroborate critiques of the use of impact and benefit agreements in energy and resource sectors [43,54]. These findings also align with Hoicka et al. [5] who argued that the control of renewable energy projects is an important indicator of reconciliation because of the increased control over development on traditional land afforded to the community.

Third, the findings show that the amount of ownership in a project desired by a First Nation EDC depends on a variety of factors including acceptable risk to the community and barriers to accessing financing. Our interviews confirmed that not every community strives for whole ownership in renewable energy projects, and that risk to the community from borrowing to finance projects plays an important role in this decision. The greater the ownership, the greater the risk taken on by the proponent, and some interviewees pointed out that this financial risk may be too high for their political organization and community to take on. Lack of access to cash has been previously identified as a key barrier to Indigenous participation in renewable energy [29]. Chief Sharlene Gale and Goldy Harder have argued that First Nations should be partnering in infrastructure projects in a clean energy transition, but are unable to access the capital needed, in part, due to the complexities established by the *Indian Act* [67]. They argue for an Indigenous loans guarantee program to ensure Indigenous community participation in the low carbon energy transition. EDCs, that operate at arms length from the political organization, can partner with another company on a project as a way to overcome barriers to financing. The specific type of partnership tends to depend on the context; some legal forms, such as joint ventures or limited partnerships, are easier to set up than others, depending on the province or territory.

Fourth, the evidence demonstrates a trend and preference towards partnerships as both legal forms and governance structures. The interviewees said that this is usually more economically favourable and also deeply symbolic of nation-to-nation relationships, working symbiotically, towards a shared benefit. References to historic and modern treaties often came up in conversation with participants; some communities viewed treaties as an important support to renewable energy, while one community on unceded land mentioned the lack of a treaty was supportive. Partnerships between Indigenous and non-Indigenous businesses and organizations are described as important in their potential for meaningful reconciliation and economic benefits to the EDC that flow to the community by extension. This corroborates with existing literature on Indigenous renewable energy projects and partnerships [5,18,19].

Fifth, the findings from the interviews highlight the social barriers, caused by colonial power imbalances between settlers and Indigenous Peoples, to EDCs from participating in renewable energy projects from the perspective of Indigenous business people, who reported feeling condescended to, or not included in planning of projects. This corroborates Walker et al. [18] who interviewed non-Indigenous renewable energy corporate and governmental project partners about their relationships with Indigenous partners, finding them to be dismissive of reconciliation in these relationships. The lack of trust and a shared understanding of reconciliation, self-determination, and the rights of Indigenous Peoples are a major impediment to meaningful partnerships between Indigenous EDCs and non-Indigenous partners.

### 5.1. Limitations

There are limitations to gathering information on governance structures using desk research, so some of the gathered results on governance structures in Table 7 must be interpreted with caution. However, this limitation was addressed through the use of surveys and interviews to provide more detailed information about experiences with these governance structures and their importance to renewable energy projects. Another limitation was contacting EDCs for research during the COVID-19 pandemic and the spring and summer which may have negatively impacted the response rates. 91 % of Indigenous businesses have been negatively affected due to COVID-19 [68]. During the warmer weather more people tend to go on vacation. Although this is a small sample size, this can be an entry point for an area of future research.

Furthermore, the results and analysis presented in this paper should be considered within the context that is a diversity of Indigenous cultures and nations across Turtle Island with similar but also unique experiences. This paper interviewed and surveyed a number of representatives from First Nation EDCs. This is a small window into the world of Indigenous forms of self-organization. Despite the richness of information provided in this report, we must avoid treating Indigenous Peoples as a monolith in research studies.

## 6. Conclusion

Governance structures and ownership models matter in the context of how the benefits of renewable energy are distributed. Although we know that governance structures affect the types of impacts and benefits for communities [11], there has been little attention to the relationship between the legal form of a project and the types of governance structures that are employed, that ultimately impact the outcomes [11,16]. That is, there has been little investigation about how the type of legal form affects those benefits. This is particularly important to understand for Indigenous communities in Canada, where own-source revenue plays an important role in self-determination [47].

There has been little research that offers the unique perspective of grid-connected Indigenous EDCs in renewable energy development. This research makes a unique and timely contribution by assessing the experience and involvement of Indigenous EDCs as a legal form in renewable energy projects, by analysing the governance structures that EDCs are using for these projects, and by assessing how these governance structures respond to the needs for self-determination and decision-making power of Indigenous communities. To understand their engagement better, the quantitative analysis is supplemented with surveys and interviews of EDCs about their involvement in the renewable energy industry. This paper explores the breadth of the legal form of First Nation EDCs involvement in renewable energy projects in Canada. In this study, we analyzed the role of Indigenous EDCs through a national dataset of renewable energy projects with Indigenous involvement, and surveys and interviews conducted with representatives from First Nation EDCs that have active renewable energy projects.

This paper makes several contributions to the emerging body of literature around Indigenous involvement in renewable energy and to

community energy literature. First, Indigenous EDCs are a unique legal form of ownership that has not been previously explored in the renewable and community energy literature. This paper makes a contribution through the analysis of the role of EDCs in renewable energy across Canada, supplemented with surveys and interviews of EDCs about their involvement in the renewable energy industry. In the quantitative analysis, we observed that EDCs tend to use economic instruments, while political organizations, such as the Band Council, tend to use political instruments, such as impact and benefit agreements. The EDCs interviewed agreed that ownership of a project is more beneficial than impact and benefits agreements that tend to be short lived. However, while whole ownership denotes control over a project, which aligns with UNDRIP, the desired level of ownership varies depending on a variety of factors, such as comfort with risk and ownership structures. Another key finding was that within the uniquely Indigenous governance structure of EDCs risk for communities in ownership is a key issue for financing and for the selection of partnership or joint venture governance structure.

Own-source revenue and capacity development created through renewable energy projects could be important steps to reinforce First Nations decision making authority over their land and decrease their dependency on the federal government, which is imperative to their right to self-determination. However, for this to happen, it is time to bridge the gap in the planning conversations between non-Indigenous utilities, governments, businesses and First Nations EDCs. For energy and development plans by the government and industry, First Nations need to be meaningfully included from the beginning. This study confirmed that as of 2020, as few as 26 of 280 Indigenous EDCs from grid-connected communities were involved with renewable energy projects on behalf of their communities.

Indigenous EDC involvement in this new industry of renewable energy is important to analyze to understand how Indigenous communities are increasingly engaging in a low-carbon energy transition. The emergence of Indigenous EDCs as a novel legal form using economic governance structures, particularly partnerships and joint ventures, are important for governments and industry to understand and enable in Canada's energy transition. This study confirms many benefits to supporting First Nation EDCs in renewable energy development, including fulfilling the government's commitment to reconciliation with Indigenous Peoples. However, there are systemic barriers that need to be removed in order for the full range of benefits and outcomes to be materialized.

### Declaration of competing interest

There are no known conflicts of interest associated with this publication.

### Data availability

First Nation EDC interview data is confidential, while other data are publicly available.

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### Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.erss.2023.103121>.

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