Reconciliation through renewable energy? A survey of Indigenous communities, involvement, and peoples in Canada

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ABSTRACT

Reconciliation is about the genuine restructuring and transformation of the relationships between Indigenous and settler people. Although renewable energy has not been inherently positive for Indigenous peoples, Indigenous communities in Canada have been participating in renewable energy production, which presents a potential pathway to reconciliation, climate change mitigation and a just energy transition. This study explores whether and to what extent community energy—defined by deep engagement in process, as well as local and collective benefits—relates to elements of participation associated with reconciliation, both conceptually and empirically. A conceptual framework based in community energy was developed to characterize and analyse 194 renewable energy projects associated with Indigenous communities. This framework considered 'community' as belonging to traditional land, places where Indigenous people live, and as local authority, such as the Indigenous political organization of a settlement or reserve. Projects were examined by legal form, project location, and control. The findings do not provide strong indications of reconciliation. We suggest that one pathway to reconciliation is equity ownership, which has risen over time, although most projects located on traditional territories and Indigenous communities generally have minority or no ownership. There were no projects associated with Métis communities, and only 6 associated with Inuit communities. Institutional change requires implementation of free, prior and informed consent (FPIC) and extensive policy supports. Further research with and by Indigenous communities should examine how to support equity ownership by examining the findings of the 41 projects controlled by Indigenous communities and increased attention to Métis and Inuit communities.

1. Introduction

Critical aspects of energy transitions include whether carbon is mitigated quickly enough to stay within 1.5 °C of average temperature warming [1] and whether it is accompanied by a societal transformation [2]. Concerns about whether energy transitions are just [3] and democratic [4], have been tied to the proliferation of renewable energy (RE) [5,6] across a diversity of actors. A renewable energy transition is considered to be more compatible with the democratization of energy than other forms of energy generation [5]. However, who a renewable energy transition is by and for is a question increasingly being asked in research and in practice [7–9].

Anishinaabe scholar McGregor [10] argues that climate change policy cannot be successful if it does not "result in the genuine restructuring and transformation of contemporary relationships between the state and Aboriginal peoples". Due to colonization and cultural genocide [11] Indigenous peoples have been largely disconnected from the land and water activities which are integral to their identities [12] and legal structures [10,13]. Indigenous people are disproportionally affected by climate change [10,14]; and, as noted by the Intergovernmental Panel on Climate Change (IPCC,2018), there will be disparate impacts among "disadvantaged and vulnerable populations, [including] Indigenous peoples, and local communities [which are] dependent on agricultural or coastal livelihoods" [1]. Past and future warming in Canada is double the magnitude of global warming, including Northern Canada, where Inuit reside [15]. One concept that is central to Indigenous people's rights movements in what is now called Canada is reconciliation. The Royal Commission on Aboriginal People, the Truth and Reconciliation Commission (TRC), and the United Nations Declaration on the Rights of Indigenous People (UNDRIP) have all called for a reckoning with this past and a movement towards a future of reconciliation, which is about coexistence between Indigenous and settler people [10].

Canada is a resource-rich nation, with significant fossil fuel

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Table 1
Indigenous Communities in Canada [34–38].

Identity	Number	Source
First Nations	630	Government of Canada. (2017). *Indigenous peoples and communities.*
	634	Assembly of First Nations. *About AFN.*
Metis	8	Government of Alberta. (2020). *Metis Settlements locations*
	NA	The Metis National Council which is the national body that represents Metis communities and individuals does not state the number of Metis communities across Canada.
Inuit	53	Government of Canada. (2019). *Inuit.*
	51	Inuit Tapiriit Kanatami. (2020). *About Canadian Inuit.*

extraction, processing and consumption activities [16]. In Canada, renewable energy already generates the highest share of electricity [17] with a large share from hydro power in the provinces of British Columbia, Manitoba, Labrador, and Ontario [18]. Although renewable energy is not inherently positive for Indigenous peoples [19], transitioning away from fossil fuels and towards renewable energy is viewed by some communities and advocates as a pathway to reconciliation [20,21]. The Canadian Pact for a Green New Deal has called for a 100% renewable energy transition and reconciliation with Indigenous people [22]. Scott [20] and McGregor [10] have both argued that reconciliation and climate change goals go hand in hand. MacArthur et al. [2] have argued that a democratic transition to renewable enery led by Indigenous people holds promise. Across Canada's vast landscape, modeling suggests that renewable energy potential based on current technology can supply much more than what is needed for current energy demand with 100% renewable energy in Canada, to a hypothetical maximum of 3670 terawatt hours per year [23]. All of this renewable energy potential in Canada resides on Indigenous traditional lands. There are assertions that the majority of potential renewable electricity generation capacity for solar, hydro, wind and biomass is on land that is or has been subject to land claims with Indigenous communities [21].

'Community energy' is a potential pathway for renewable energy. It is concerned with the process of planning, development, investment, ownership, and operation of projects being open and participatory, rather than closed and institutional [24]. It is equally concerned with ensuring that benefits are distributed locally and collectively, rather than distantly and privately [24].

In this paper, we explore the argument that community energy, in its ideal form, may be the way for renewable energy to contribute to reconciliation. In the case of Indigenous communities, community energy highlights the tensions between settler and Indigenous institutions and legal orders [10,13]. We argue that the participation of an Indigenous community in energy projects is not enough to assume widespread community support; whether a process is open and participatory and the benefits are local and collective depends on a range of factors, such as processes for participation, relationships with the colonial state and the private sector, as well as institutions, including community governance [20,25]. Hoicka and MacArthur [26] and McMurtry [27] have all defined Indigenous ownership and control of projects in Canada as community energy, however, these studies did not explore these projects in detail to clarify why they were specifically classified as such. Increasing local and democratic decision-making power over profits, jobs, and investments contributes to reconciliation [20]. The alignment of community energy with self-determination has been explored [25]. However, the relationship between community energy and reconciliation has not yet been characterized in greater detail across the Canadian landscape. In this study, we develop a conceptual framework based in community energy to characterize and analyse 194 renewable energy projects associated with Indigenous communities in Canada. Using publicly available sources of information, we characterize these projects by examining for legal form, project location, and control. This analysis provides a survey of the landscape of Indigenous community participation in renewable energy in terms of community control and benefits and a framework for further research to inform action. This analysis is important to move towards the goal of reconciliation in climate change and in a transition to 100% renewable energy.

2. Background and literature

2.1. Indigenous communities in Canada

Canada is a settler colonial state, meaning that the colonizer assumes control of another nation's territories, imposes its own systems of laws and governance and settles in the other nation's homeland, to "erase Indigenous economies, cultures, and political organizations for the sake of establishing their own" [28].

Indigenous communities are present across Canada in every province and territory. Section 35 of Canada's *Constitution Act*, 1982 recognizes and affirms the rights of the Aboriginal peoples of Canada: First Nation, Inuit, and Métis. There are over 630 First Nations communities [29] representing 50 First Nations in Canada; (Table 1); 53 Inuit communities across four regions of Inuvialuit, Nunavik, Nunatsiavut, and Nunavut [30]; and many Métis communities and associations throughout the country [31,32] [1]. According to the 2016 census, 1.67 million people identified as Indigenous (4.9% of the population) [33] of which 977,230 people identified as First Nations, 65,025 identified as Inuit, and 587,545 people identified as Métis, who live in Indigenous and non-Indigenous communities across Canada [33].

292 communities are off-grid, of which at least 170 are Indigenous [39], and the majority depend on diesel fuel, which is costly to transport [40]. There are also at least 510 Indigenous communities connected to the North American Power Grid [41,42]. Due to colonization, Indigenous communities now experience energy poverty [43], child poverty and poor health conditions [44], and face disparities and disadvantages in every conceivable indicator of wellbeing [10].

2.2. History of renewable energy development and Indigenous people

The history of renewable energy development in Canada is fraught with conflict and is important to contextualise the prospects for an Indigenous form of community energy. The history of energy development and Indigenous people in Canada can be divided into three phases in terms of how of Indigenous communities engaged in energy development projects: 1) no recognition; 2) introduction of consultation and accommodation; 3) increased equity ownership.

2.2.1. No recognition

Until the 1970s, there was no legal or political system (that the Canadian government recognized) that required governments, energy developers, or corporations to consult with Indigenous communities [18]. In the provinces of British Columbia, Manitoba, Labrador, and Ontario, rivers and land were flooded by hydro dams without notice, destroying

[1] There are national and provincial Métis Nations in Ontario, Saskatchewan and Alberta. For example, the Métis Nation of Ontario, has chartered councils located within non-Indigenous communities throughout the province. The Government of Canada's Métis webpage does not provide information on Métis communities in Canada. The total number of Métis communities in Canada cannot be confirmed.

traditional hunting and fishing areas, camps, trails and travel routes, and burial and sacred sites [18]. Traditional economies were decimated, many communities plunged into poverty, and hundreds of families were displaced [45]. Communities today continue to be threatened by new hydropower projects under development such as the Site C dam currently under construction in British Columbia [46] and Muskrat Falls in Newfoundland and Labrador [19].

2.2.2. Introduction of consultation and accommodation

The Supreme Court of Canada has confirmed that Aboriginal rights are protected by the *Constitution* and that governments must 'consult and accommodate' Indigenous peoples whenever a government agency contemplates conduct that may impact Aboriginal rights [18]. This changed the way Indigenous communities participate in the energy industry [18]. For example, as a result, a trend to allocate benefits from energy projects to Indigenous communities through various types of agreements has emerged. Impact and benefit agreements (IBAs), which are contracts between the Indigenous community and a private company where conditions and benefits from the proposed project are outlined [47,48] are one example of such agreements. IBAs oftentimes result in small and temporary benefits being delivered to communities [49]. Another example are resource revenue sharing agreements that are "between governments and Aboriginal groups, which share public revenues, such as royalties and taxes, generated from resource development" [50].

Alternatively, some Indigenous communities seek equity and control in renewable energy projects on their land, which they view as part of reconciliation [49,51]. They argue that projects are unlikely to go forward without involvement of Indigenous communities in pre-planning and planning stages, and in partnerships [52]. Increased equity ownership is important for the increased delivery of social goods, and local regional development; reduced ecological impacts; accelerated permit approvals; reduced risk/lower cost of capital [49] and long-term stable revenue [51].

2.2.3. Recent policies

To some extent, Indigenous community equity in renewable energy projects has been supported by federal and especially provincial/territorial government policies that encourage and prioritize renewable energy projects with Indigenous partnerships [49,53,54]. In British Columbia, the *Clean Energy Act* (2010) and the First Nations Clean Energy Business Fund are the driving policy tools that have been supporting Indigenous renewable energy development [49,55]. In Ontario, the Feed-In-Tariff (FIT) program, and Large Renewable Procurement (LRP) programs included the Aboriginal Price Adder, which offered above-market, fixed price contracts, are directly responsible for the increase in First Nation equity in projects [55,56]. Independent power policies that support purchase power agreements across other provinces/territories in Canada "have played an important role in attracting financing for Indigenous power projects elsewhere" [42]. Federally, the ecoENERGY for Aboriginal and Northern Communities Program supported Indigenous communities' attempts to reduce greenhouse gas emissions by funding the integration of proven renewable energy technologies between 2007 and 2016 [57]. This program funded feasibility studies, design, and construction for over 110 projects by Indigenous communities and groups between 2007 and 2011 alone [57]. However, many of these policies have been removed, become uncertain if they will remain in place, or are time restricted. Future participation depends on the policy choices we make around electrification and energy sovereignty [49].

2.3. Reconciliation

In 2009, the TRC of Canada began a multi-year process of truth determination with Indigenous survivors of the Indian residential school system, with the intention of laying the foundation for reconciliation. The Commission views reconciliation as being "awareness of the past, acknowledgement of the harm that has been inflicted, atonement for the causes, and action to change behaviour" in addition to "establishing and maintaining a mutually respectful relationship between Aboriginal and non-Aboriginal peoples in this country" [58]. For Indigenous peoples, reconciliation is an opportunity to affirm their own sovereignty in partnership with Canada, while 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." [59]

The Report laid out 94 calls to action to begin this process, and endorses the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) of which a prominent underlying theme is self-determination [11]. By virtue of the right to self-determination, Indigenous people freely determine their political status and freely pursue their economic, social and cultural development [60].

McGregor argues that climate change cannot be addressed without Indigenous conceptions of reconciliation [10] based on Indigenous legal traditions, knowledges, protocols and practices [28], and without addressing colonialism "that continues to alienate Indigenous peoples from the lands/waters and creates the conditions for climate change vulnerability" [10]. She argues that the current environmental crisis is an intensification of colonialism [28] and that climate change policies and plans will fail without a restructuring of relationships between Indigenous people and the state [10,28].

2.4. Indigenous community ownership and control of renewable energy

There is a small but emerging body of literature from settler-colonial countries of Canada, the United States, and Aotearoa New Zealand, about Indigenous people's participation in renewable energy projects. Here renewable energy is viewed as complementary to Indigenous cultures [56], a potential source of political and economic sovereignty, a type of reclamation of land and environmental rights [61], and a response to climate justice [62]. The common motivations for Indigenous engagement in renewable energy projects are economic development [43,55,63,64], self-sufficiency [43,55,64], asserting autonomy and self-determination [19], and environmental reasons such as reducing carbon emissions [25,43,53,55,63]. Several studies and reports examine Indigenous community involvement in renewable energy across Canada and the response of communities to preferential policies, such as feed-in-tariff laws or grid-connection for off-grid communities [19,21,26,55,56,61,65–67]. The literature identifies many barriers such as lack of internal capacity [68,69], lack of financial capital [70–72], lack of progressive policies, and mistrust of government and developers [71,73].

Based on the Pact for a Green New Deal movement in Canada, MacArthur et al. [2] argue that a 100% renewable energy transition requires Indigenous people's sovereignty and leadership. A SHARED Future project[2] [19,66] connects reconciliation with Indigenous leadership in renewable energy development. Based on a systematic review of literature, a reported primary motivator is energy autonomy and security [19]. Due to the historical exclusion of Indigenous communities in resource development and energy planning, many communities are participating in renewable energy development as a way to assert their collective rights to land and self-determination [19].

However, some scholars are also critical of the notion that

[2] A SHARED Future, is a research program that is co-directed by an Indigenous scholar and a settler scholar, with guidance from the team's Algonquin Elder, a steering committee of four Indigenous scholars and two settler scholars, and an international advisory committee. Each project that the program supports is autonomously directed by an Indigenous community/organization co-lead and a steering committee co-lead, each with its own sets of Indigenous advisors. [111]

Indigenous participation in renewable energy allows Indigenous communities to pursue autonomy in a contemporary manner. A SHARED Future [19] highlights that although settler peoples are beginning to view renewable energy development as a potential path towards reconciliation, the potential to perpetuate the colonial structures of exploitation still exists; thus, they caution us to assess projects on a case-by-case basis [19].

2.5. Community energy

With a desire for equity ownership and for increased benefits for communities [49,51], and the importance that Indigenous conceptions of reconciliation should play for climate change action [10], community energy may provide a useful framework to understand the spectrum of energy activities that Indigenous communities are or can become involved in [20,25]. Community energy as a conceptual framework distinguishes between a community and private investment, legal form, benefits, community control, whether it is grassroots and participatory, and community as place or as legal structure.

Community energy is an umbrella term for "various forms of locally led, collectively owned, and managed energy projects" [74]. By distinguishing between "community" and "private" ownership, it challenges the historic top-down planning and operation of centralized infrastructure and increasingly private ownership [2,75]. Community energy projects emphasize the process of planning, setting up and, potentially the running of the project, being open and participatory, rather than closed and institutional, and are concerned with ensuring benefits are local and collective benefits, rather than distant and private [24]. In its ideal form, community energy "refer to grassroots, bottom-up energy initiatives with strong citizen participation, local ownership and sharing, collective benefit sharing, early and extensive participation using a range of methods, involving local individuals and groups" [76].

Community can be place based or an actor. Community as place "implies a set of social relationships embedded in a particular locality—the idea of territorial community or community of locality" [77] where "identification with a place-based community in facilitating participation: a sense of belonging to a particular place is observed to inspire voluntary efforts to develop community renewable energy to generate local benefits" [74]. Community as actor could be a local authority or municipality. The legal structure of a project can influence outcomes, and many legal structures exist in practice that combine what are called communities of interest (for example, non-local investors) and communities of place [74].

The technology associated with community energy is often scaled to local needs and demand [76], where the scale of generation is "typically small-scale, but can range from under 100 kW to larger multimegawatt projects" [77]. Community energy projects can have many different functions such as renewable energy supply, management, and distribution [26].

Oftentimes, the legal form of the project is viewed as a key indicator of whether a project can be considered community energy and whether the community has control [26,27]. Legal forms considered to be community energy include community trusts, community associations, charities, Indigenous ownership, partnerships, joint ventures, social enterprises, local energy service companies, local government led projects community investment funds, municipalities, universities, schools, hospitals sector [26,27,77]. The main barriers to community energy are organizational [78,79], market discrimination [78], lack of institutional and political support [16,27,67,78], NIMBYism [78,79], and resources [78-80].

Community energy projects are dependent on collaborations with the private sector for technology provision, and oftentimes maintenance and operation, and on the state for enabling regulation for contracts and capacity building [74]. The structural factors that affect the development and shape of the national community energy sector are the material-economic elements, such as biophysical conditions, economic structure, energy market; actor-institutional, such as governance traditions, access to policymaking, regulations; and discursive, which is openness to alternative ideas and practices [26]. Berka et al. [65] have shown the limits of grassroots agency and the dependence of wider diffusion of community energy on an enabling institutional context in Aotearoa New Zealand. Enabling policy instruments and supports for community energy include participatory energy planning and deliberation [5,67], economic and regulatory instruments [81]. Hoicka and MacArthur [26] have demonstrated that in two different settler colonial states, Canada and Aotearoa New Zealand, different prevalent legal forms emerge in structurally different institutional contexts; for example, community trusts in Aotearoa New Zealand and municipalities and cooperatives in Canada.

2.6. Community energy as a conceptual framework for research on Indigenous participation in renewable energy

Community is a slippery concept in a settler colonial state like Canada, where reconciliation is related to Indigenous peoples' inherent rights to land, and as such, relates to community as place. Community as legal structure will depend on how a community and its members make decisions, and whether they are defined by settler legislation or by their own Indigenous legal traditions, protocols and practices that McGregor [10] associates with reconciliation. There are two studies that explicitly address the connections between community energy and leadership by Indigenous communities in renewable energy, and their findings are applied to this framework. Smith and Scott [25] have published the only case study, Batchewana First Nation's project, the Chinodin Chigumi Nodin Kitagan (Bow Lake Wind Farm). Scott [20] has published an evaluation review of policy for Indigenous community energy.

2.6.1. Defining Indigenous community as place

Each Indigenous nation and community are unique and may define community in different ways. Indigenous interpretations of 'community of place' may come from the following connections to land: 1) traditional land is the place to which Indigenous people belong and to which they claim their inherent rights ; 2) treaty rights and lands; and 3) reserves and other Indigenous settlements legislated by the Crown and treaties, where Indigenous people live together, and also have rights.

Traditional lands are lands historically occupied or used by Indigenous nations for traditional purposes such as ceremonies, hunting, fishing and trapping [82]. North America is traditionally referred to as "Turtle Island" by Indigenous peoples from the continent [83] where Indigenous nations have large, overlapping traditional territories that cross colonial borders of the United States and Canada. Articles 26, 28, and 29 of UNDRIP outlines Indigenous people's rights to the control and development of the lands, and territories to which they belong, including those confiscated, resources, as well as the right to protect and conserve the environment, along with the importance of free, prior and informed consent to any future activities that take place on these lands [84]. Today, many Indigenous people live in communities that often do not overlap spatially with their traditional lands, and many parts of Canada are subject to Indigenous land claims to traditional lands that have yet to be settled [85,86].

Colonial laws and agreements create many barriers and some supports to accessing these rights and land, structuring a different form of 'community' for Indigenous peoples. We argue that this is important to distinguish when characterizing Indigenous forms of community energy. These include treaties between some Indigenous communities and the colonial government, the *Constitution*, and the *Indian Act*. Métis, First Nation and Inuit are all encompassed by the term "Aboriginal" in the *Constitution*.

From the Crown's perspective, the terms of some treaties involved giving up occupation of traditional lands in exchange for land elsewhere (e.g. reserve lands) [87]. Many modern and historic treaties, even when they offer rights and benefits, are constantly broken by different actors

Table 2
Conceptual Framework.

Categories	Community Energy	Indigenous participation in renewable energy
Community as place	Sense of belonging Set of social relationships embedded in a particular locality Territorial community or community of locality	Traditional land Reserves Settlement
Institutions*	Institutional structure Economic and regulatory state support Legal forms of ownership	Free, prior and informed consent (FPIC) Treaties Land claim agreements Settler institutions Settlement agreements
Legal forms	Local authority Cooperative Community trust Community association Joint venture Partnership Charities Social enterprises Local energy service companies Non-local co-operative ownership (community of interest)	Indigenous Economic Development Corporation Self-government Aboriginal community Northern community Band council Tribal council Aboriginal organization Aboriginal community group Territorial governments and northern organization Municipality
Community Control	Collective benefit sharing Early and extensive participation using a range of methods Participatory energy planning and deliberation Participation of local individuals and groups Collective ownership	Reconciliation Indigenous legal orders Moral authority that has the interest of the community at heart Community trust spending negotiated by community
Community benefits	Renewable energy project acceptance Capacity development Economic development and revenue Reducing greenhouse gas emissions Socio-economic regeneration Knowledge and skills development Social capital Energy literacy and environmentally benign lifestyles Access to affordable energy Empowerment	Equity ownership Long-term sustainable benefits from economic development projects Community trust for revenue spending Equitable access to jobs, training, and education opportunities in the corporate sector Access to affordable energy Memorandum of understanding (MOU) Impact and Benefit Agreement Resource revenue sharing agreements

*Institutions are meant to inform structure, not a comprehensive list of institutions and policy instruments.

of the Canadian state, including the renewable energy industry, such as large scale hydro projects Muskrat Falls and Site C, which are deemed a justifiable infringement on treaty rights [88].

Métis, First Nation and Inuit have had their relationships with their traditional lands affected in different ways.

- The *Indian Act* enacted in 1876, provides a framework intended to control and dominate First Nations in order to extinguish their cultural and governance practices [86]. Across Canada, there are over 630 First Nation communities that reside on reserve lands which are defined by the Indian Act, which are Crown land held in trust for First Nations and may or may not overlap with traditional lands (Table 1).
- There is a patchwork of legislation for Métis settlements in Canada. Alberta is the only province that recognizes both Métis land and structures for local governance in Canada where Métis Settlement legislation [89] led to the transfer of lands from the provincial government to eight Métis settlements [31,90]. In 2015, Ontario implemented the *Métis Nation of Ontario Secretariat Act*, acknowledging the Métis Nation of Ontario and its Chartered Community Councils [89] that are found throughout what can be classified as non-Indigenous communities [32]. In 2015, Canada signed an agreement in principle with the Northwest Territories Métis Nation that, when completed, will result in 25,194 square kilometres being transferred to the nation [89].
- The Inuit never gave up rights to their traditional lands. The federal government of Canada forced Inuit communities to relocate at various points in time for convenience of government administration and their perception of the need to industrialize and assimilate Inuit [86]. A series of land claims agreements, resulted in the settlements for the Inuit Nunangat that have different forms of self-government. Now, Canada has four Inuit regions: Nunavut, a territory in the central and eastern Arctic, Nunavik in the Province of Québec, Inuvialuit, on the northwestern coast of Canada's Arctic in the Northwest Territories and the Yukon, and Nunatsiavut, along the northeast coast of the province of Newfoundland and Labrador [86].

2.6.2. *Institutions and legal forms for Indigenous communities*

Community energy is dependent on state actors and support [74,76]. Institutional structure is an important factor in the way that community energy emerges and succeeds in an institutional setting [26,65].

Smith and Scott [25] argue that "Settler colonialism continues to structure the broader set of relations in which renewable energy projects, even equity projects, are situated." Under the current settler legal structures, Henderson [21] cites emerging clean energy regulatory requirements, grievance settlements, the Federal Canadian Environmental Assessment Act, climate change plans and public expectations all as drivers of the development of renewable energy by Indigenous peoples. Although the Crown holds some of their traditional lands, Indigenous communities can claim some of the benefits to these types of developments, such as jobs, economic development, and revenue [21] and should be owners in an energy transition [91]. Scott [20] cites enabling policy supports recommended by the International renewable energy Renewable Energy Agency (IRENA) for distributed and decentralized generation. Other enabling policy supports include the phase out of subsidies to fossil fuels, feed-in-tariffs and set asides for grid connected communities and support for pre-feasibility, feasibility, and construction for remote communities, training policies, and profiling of an Indigenous community energy value chain [20].

Reconciliation challenges the colonial construct, requiring different institutional structures, rooted in Indigenous legal traditions. This would assert Indigenous knowledge and legal systems that include the rights of nature and Indigenous rights to land [10,13,28], leading to a different set of protocols and practices [10], including different legal forms. An important institutional structure to reconciliation is free, prior and informed consent (FPIC), considered critical for energy democracy, and a 100% renewable energy transition for Canada [2]. Scott [13] argues that because FPIC is not present in Canada's legal regime, Indigenous communities are often required to negotiate some form of benefits (usually IBAs) or have no benefits, for a project that will go ahead regardless of consent. This is because "the primary jurisprudential tool that settler courts in Canada use to decide these disputes is the duty to consult and accommodate—a spectrum of consultation and accommodation rights developed by the settler courts to manage areas on which Aboriginal and Treaty rights have been claimed or recognized." [13] In the case of fossil fuel development, one Chief publicly stated their powerlessness in signing a contract for a project without consent as they feel this is the only way to ensure the avoidance of the worst outcomes for communities, such as legal debt [13]. In Scott's view, implementing FPIC requires a change in institutional structure, and would encourage Indigenous forms of governance as they would be able to assert their inherent rights in resource negotiations with power [13].

For policy to support community energy for Indigenous communities in Canada, Scott [20] argues that organizations that have a "moral authority" should be leading community energy. Whether or not structured under the *Indian Act* or other settler institutions, or grassroots community initiatives, "moral authorities include any traditional governance or leadership entities such as clan mothers, Elders' councils, and Indigenous governance structures. Contemporary examples of Indigenous moral authority include women's and health organizations as well as some, but not all, Indigenous governance structures created under colonial rule (i.e., the Indian Act) that function with collective interest at heart." [20].

The political governance structures of Indigenous communities in Canada fall under three broad categories: (1) they may be governed under the colonial *Indian Act* that applies to the governance of First Nations people and reserves; (2) they may be the outcome of treaty or land claim agreements; or (3) they may have self-government agreements. While all communities vary, regardless of a democratic structure, such as the First Nations elected Chief and Council (Band Council), self-government agreements, Métis Settlement Councils' elected councillors, Inuit municipalities and co-management agreements, and proportionate representation in colonial territorial governments [89,92-95], the final form of government is negotiated through the colonial Crown and is not determined solely by Indigenous communities themselves. Oftentimes, the Crown reserves the right to veto decisions or to make new rules.

Even under colonial governance structures, Indigenous communities have found ways to assert community forms of participation and control. For example, with community members, these political governance structures can establish an economic development corporation (EDC) as a separate for-profit business entity. EDCs are an emerging legal form of business that are able to engage in equity partnerships and manage businesses. There are an estimated 260 Indigenous EDCs in Canada [96]. One important driver is that of strong and consistent streams of own-source revenue that flows from EDCs, which can support a shift to self-governance. In the case of First Nations communities, this allows the avoidance of the strict rules asserted over the spending of annual federal government transfers they receive as part of the Crown's fiduciary duty to them [25].

Smith and Scott [25] found that in the case of Batchewana First Nation, while the Nation is governed by the Band Council, the community was able to assert principles deriving from its own legal order into the approval process. They did this, at least in part, by having more stringent environmental regulations than settler legislation required. Despite having a Band Council arrangement to set up the project, they were able to arrange a less hierarchical governance structure by developing a community trust where the trust's structure and spending were based on participatory community consultations. The settler institutional structure of 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, guaranteeing returns, and creating statutory incentives for industry to seek out partnerships with Indigenous communities", which influenced the legal form.

There are a few other legal forms mentioned in the literature and in practice. For example, Indigenous communities can develop their own not-for profits as legal structures. The Aboriginal ecoENERGY program delivered by the federal government only allowed projects that benefited the wider community, and not individuals. Listed eligible participants included Aboriginal communities across Canada; Northern communities (i.e. north of the 60th parallel); Band councils; Tribal councils; Aboriginal organizations; Aboriginal community groups; Territorial governments and northern organizations [97].

2.6.3. Benefits

Localized benefits for the community are important to both reconciliation and community energy. The community energy literature identifies that benefits can include the community's acceptance of a renewable energy project [74,77,98], capacity development [78], economic development and revenue [78,98,99], reducing greenhouse gas emissions [78,98], socio-economic regeneration; knowledge and skills development; social capital; energy literacy and environmentally benign lifestyles, access to affordable energy, and empowerment [98]. However, it is difficult to measure and establish the extent to which the outcomes of community energy projects benefit local communities, as more in-depth qualitative methods are often required [98].

In the case of Indigenous communities in Canada, there are several options for benefits. The TRC's 92nd Call to Action recommends ensuring "that Aboriginal peoples have equitable access to jobs, training, and education opportunities in the corporate sector, and that Aboriginal communities gain long-term sustainable benefits from economic development projects" [100].

IBAs and resource revenue sharing agreements are often offered to Indigenous communities in resource agreements. IBAs "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" [50]. Some of the typical benefits include hiring quotas, Indigenous input on project design, and procurement contracts for Indigenous-owned businesses [48]. They are sometimes seen to provide much needed social investment into often poor communities in exchange for social license to develop Indigenous lands [48]. However, IBAs do not represent grassroots community control. Due to the lack of implementation of FPIC, IBAs are the result of asymmetries of power between the Indigenous community and the developer [13] and they often include non-disclosure clauses which makes the details of IBAs confidential [47,48], criticized for often being weak and short-lived [49]. Another type of agreement is a Memorandum of Understanding (MOU), which addresses the rights and responsibilities of each party in a specific situation, such as hunting practices or harvesting of a particular area [101], rather than the allocation of benefits and tangible commitments by industry. Due to their weakness, these types of agreements are not considered reconciliation, and are considered as "distant and private" in the terminology of community energy.

The legal form of Indigenous EDCs appears to offer benefits aligned with both reconciliation and community energy. For example,

Table 3
Coding for Community.

Community Category*	Project Location
Within Indigenous community	Within reserve (First Nation), settlement (Métis), or hamlet or municipality (Inuit) boundaries
On reserve land but outside of main community	On an unconnected parcel of reserve land (First Nation) that is not the main community settlement. Often, First Nations with many parcels of reserve land have the community located on one reserve while the other reserve land is used for traditional activities, business development, or other purposes.
Traditional territory	Located outside of the Indigenous community boundaries but on the nation's traditional territory.
Outside of the Indigenous community but unsure if on traditional territory	Project was not within the community boundaries but there was inadequate information to determine whether or not the project was on the nation's traditional territory**.
Unknown	Location of the project was unidentifiable. Not enough evidence to confidently code project location

*categories are mutually exclusive.
** This is usually because the traditional territory could not be identified. For example, if the exact location of the renewable energy project was known, using the government of Canada's First Nations map we were able to see that the project definitely was not inside reserve lands, but we could not verify whether or not it was on the nation's traditional territory.

Indigenous peoples comprise, on average, 72 % of EDCs' employees [102]. Other opportunities brought by EDCs include drawing business investment interest into their community by networking, engaging local industry, actively seeking partners, and supporting small business owners in the community with preferred supplier relationships, and by mentoring and providing financial assistance [102]. EDCs across Ontario have financially supported sports teams and facilities, health services, community centres, youth and senior programs in their communities [102].

Some Indigenous communities themselves equate equity ownership with reconciliation. According to Chief Ken Cameron of Saulteau First Nations, Moberly Lake, who witnessed the WAC Bennet Dam that caused significant negative impacts on Treaty 8 Nations while the community received none of the benefits: "Ownership is the only type of reconciliation we understand; ownership and partnership" [51].

Equity ownership combined with a participatory community trust, as was employed by Batchewana First Nation, allows for revenues to be managed locally and collectively. The community trust set up by Batchewana First Nation greatly increases the chances of decision-making honoring principles of environmental stewardship (i.e. emphasizing relations of reciprocity rather than entitlement), respecting ecological limits, and allowed spending on community priorities [25]. It also had the benefit of increasing own source revenue and reducing reliance on federal transfer funds, which supports options for self-government and reconciliation [25].

Therefore, equity ownership is considered as a benefit and control that is more local and collective than IBAs. Indigenous EDCs can allow a broader set of community members to participate in decision making for the community, and also bring about benefits through private sector relationships that allow for control, such as preferred supplier relationships. Despite these indications, whether benefits and control are local and collective must be examined on a case-by-case basis, like most community energy projects.

3. Materials and methods

Based on the literature review and context in Section 2, a conceptual framework (Table 2) was developed to outline how five common categories of concepts emerging in both community energy literature and Indigenous participation in renewable energy might apply to Indigenous participation in renewable energy in the context of Canada. Common concepts from each body of literature are listed under the categories *Community as place*, *Collective*, *Legal forms*, *Institutions* and *Benefits*. Not everything listed in the column of "Indigenous participation in renewable energy" is considered community energy or reconciliation for Indigenous people. This column describes the options that exist under a colonial or reconciliation construct. For example, IBAs are benefits, despite being considered weak.

Active clean energy projects involving Indigenous participation were identified from two relevant and current secondary data sets. 143 active projects were identified from the Indigenous Clean Energy [3]publicly posted dataset [103], and 71 active projects identified from Hoicka and MacArthur's dataset [26]. There was overlap between the two datasets of 20 active projects, duplicates were removed, resulting in a total of 194 projects. This dataset contains active and verified projects of $>$ 1 MW clean energy projects in Canada [4]with Indigenous participation as well as projects from ecoENERGY that required benefits to the community itself [97]. At the time of analysis, there had been little published on Indigenous participation in renewable energy. The completeness of the Indigenous Clean Energy dataset would depend on community response rates from their study. Completeness was ensured by checking if any projects in Hoicka and MacArthur dataset had become active.

Based in the conceptual framework, we coded the projects for the following:

- Whether the project was affiliated with an Inuit, Métis or First Nation community;
- Project type (e.g., solar, wind, hydro, etc.), size (MW); and year active;
- Province or territory;
- Community: reserve, settlement or traditional land;
- Legal form; and
- Control and benefits: Equity share of ownership, impact and benefit agreement, resource revenue sharing agreement, MOU.

The coding was based entirely on analysis of publicly available documents.

Since reconciliation and community energy must be evaluated on a case-by-case basis with more qualitative analysis, and the concept of reconciliation varies, we cannot provide a definitive answer as to whether a project contributes to reconciliation. However, as outlined in the conceptual framework, a project is more likely to address reconciliation if the Indigenous community has control over it (i.e., greater than 50% ownership), particularly if it lies on traditional land, where Indigenous people have inherent rights but have not necessarily been

[3] "The Indigenous Clean Energy (ICE) Social Enterprise is a pan-Canadian not-for-profit platform which advances Indigenous inclusion in Canada's energy futures economy through Indigenous leadership, and broad-based collaboration with energy companies, utilities, governments, development firms, cleantech innovators, academic sector, and capital markets." [115]

[4] The Indigenous Clean Energy survey identified of 1,200 small scale (<1MW) indigenous clean energy projects in Canada that are not included in this analysis as the dataset was not publicly available.

Table 4
Legal Forms.

Legal Forms*	Definition
Indigenous political organization	Political organization of the Indigenous community involved in the project, for example, the band council.
Indigenous economic development corporation	For-profit business entity. Band or settlement members are the only shareholder of the EDC. The EDC reports to its board of directors that is usually a mix of Indigenous and non-Indigenous, band/settlement members and other members, that directs the business to please its shareholders, which is the band/settlement membership. Considered a social enterprise [96]
Partnership	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, ownership shares, capital contribution, profit distribution, and so on [106]. Determined if the business that owns the project is a 'limited partnership' or if keywords 'partner' or 'partnership', 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. Partnerships can be between business and non-business organizations such as Indigenous communities.
Joint venture	Joint ventures are specifically between business entities. The share of ownership between the two parties can vary [107]. Determined a 'joint venture' if the term 'joint venture' was identified.
Private ownership (non-Indigenous)	Canadian corporation. "a legally established business that can own assets and incur debt" and has registered the business with a provincial or federal government through articles of incorporation [108]. Determined' if only one non-Indigenous organization claims ownership of the project and there is no mention of partnerships.
Local energy service provider	Municipal or provincial public utilities companies, also known as Crown corporations. [26,77].
Local government led project (municipalities)	Local government (e.g., municipality) takes a major role in developing and operating energy infrastructure on behalf of the local community [77]
Charities/social enterprise	Associations with charitable status that provide or run facilitates for the local community [109]
Community trust	Community (also called development) trusts represent a community's interests in revenue-generation enterprises and can even have some community ownership in the project or enterprise [109].
Cooperative	Most democratic legal form, one member one vote, legislated participatory decision-making processes and collective sharing of economic outcomes [32]
Unknown	There was not enough publicly available evidence to determine the ownership form.

* categories are mutually exclusive.

able to access them, and particularly if Indigenous people control the project according to their own legal traditions (whether on traditional, reserve or settlement land), which will vary across communities and nations. Some ownership of a project is also indicative of reconciliation, as the benefits are still longer lasting. IBAs, resource revenue sharing agreements and MOU's are not considered strong indicators of reconciliation.

3.1. Community

The location of the project was determined using desk research (Table 3). First, using news articles, websites of Indigenous communities, and company websites. Keywords were used to code the location such as "in community", "traditional territory", "our territory", "school building", "office building" and other indicators that the project is located within the community or on the nation's traditional territory . Using this method, many project locations were successfully coded. For the 67 remaining unknown projects, mapping websites which include Google maps, native-land.ca (an Indigenous-led, Canadian not-for-profit organization) [104], and the government of Canada's First Nation Profile interactive map [105] were used to determine the project location. If the exact or approximate location of the project was identified, the maps of community boundaries, reserve boundaries, and traditional territories were used to determine whether or not the project was within the community or on their traditional territory. When possible, the traditional territory identified using native-land was matched to the traditional territory on the community's website.

Table 5
Community Control and Benefits.*

Label	Keywords found in Online sources as they relate to Indigenous Ownership
Wholly Indigenous Owned (100%)	"wholly owned" "100% owned/ownership", "sole owner", "own and operate"
Majority Indigenous Owned (51–99%)	"majority owned", "majority ownership"
Half Indigenous Owned (50%)	"half owned", "50%", "50/50"
Minority Indigenous Owned (1–49%)	"minority owned" or "minority ownership"
Some Indigenous Ownership (1–100%)	Source stated some Indigenous ownership, but the amount is not disclosed. Keywords include 'part owner', 'owned by', 'jointly owned'.
No Indigenous Ownership (0%)	Owner/owners of the project did not identify as Indigenous.
Benefit agreements	Includes impact and benefit agreements (IBA), resource revenue sharing agreements, and MOUs. Keywords: "IBA", "impact benefit agreement" "revenue sharing agreement", or "resource revenue sharing agreement", "MOU" found in the online sources.
Unknown	No information found

* Community control categories are mutually exclusive, benefits agreements are not.

Table 6
Number of Projects by Indigenous Community Type.

Type of Community	Number of Projects
First Nations	188
Inuit	6
Métis	0
Total	194

Table 7
Number of Communities by Type.

Indigenous group	Number of communities	On-grid	Off-grid	Not applicable
First Nation	138	118	20	
Inuit	6	1	5	
Tribal Council	7	2	5	
First Nations non-profit	1	0	0	1
Total	152	121	25	6

Table 8
First Nations Governance Type.

Governance Type	Number of communities
Indian Act	124
Self-governing agreement	19
Unknown	1
Total	144

3.2. Legal forms

The legal forms were determined using desk research of publicly available information (Table 4). The types of sources used were press releases, company websites, Indigenous community websites, and news articles. In these different types of sources, the keywords and definitions of each category were used to determine the ownership form.

3.3. Community control and benefits

The share of Indigenous ownership in each project is identified in Table 5. This was determined using desk research of publicly available information. The sources used include press releases, company websites, Indigenous community websites, and news articles.

4. Results

Tables 6 through 8 and Figs. 1–3 offer descriptive results of the communities that are participating in renewable energy in Canada. The results show that the majority of projects are associated with First Nations communities (188), and none are associated with Métis communities. The findings show that 152 communities are involved, of which most are grid connected communities (121). Of these communities, 124 are governed under the *Indian Act*, 19 are self-governing, one community's governance structure is unknown.

Most of the projects are in the Canadian provinces of British Columbia, Ontario and Quebec (Fig. 1). In British Columbia and Ontario, this is likely due to both having larger numbers of Indigenous communities and supportive policies (Ontario's supportive policies ended in 2018). In Québec, which has the largest hydro reserves in the country, the James Bay and Northern Québec Agreement of 1975 allowed for hydro development in partnership with the Cree, and had some renewable energy procurement policies reserved for Indigenous communities [55]. In terms of project size (Fig. 2), within the scale of community energy projects observed by Walker [77], 37% of the projects are in the range of 10 to 100 MW, 19% fall into the range of 1 to 10 MW, and 5% within 100 kW to 1 MW and 6% of 10–100 kW. While 3% of projects are below 10 kW, these are from the Aboriginal ecoENERGY program that were required to be at community scale, so some community scale projects are lower than the range set out by Walker. Fifteen percent of projects are 100 to 1000 MW in size, larger than what would be considered community scale. 46% of the projects are hydropower, followed by 21% solar, 17% wind power, 8% biomass and 3% geothermal (Fig. 3).

Table 9 compares Indigenous community control and benefits from projects according to the three phases of Indigenous involvement in

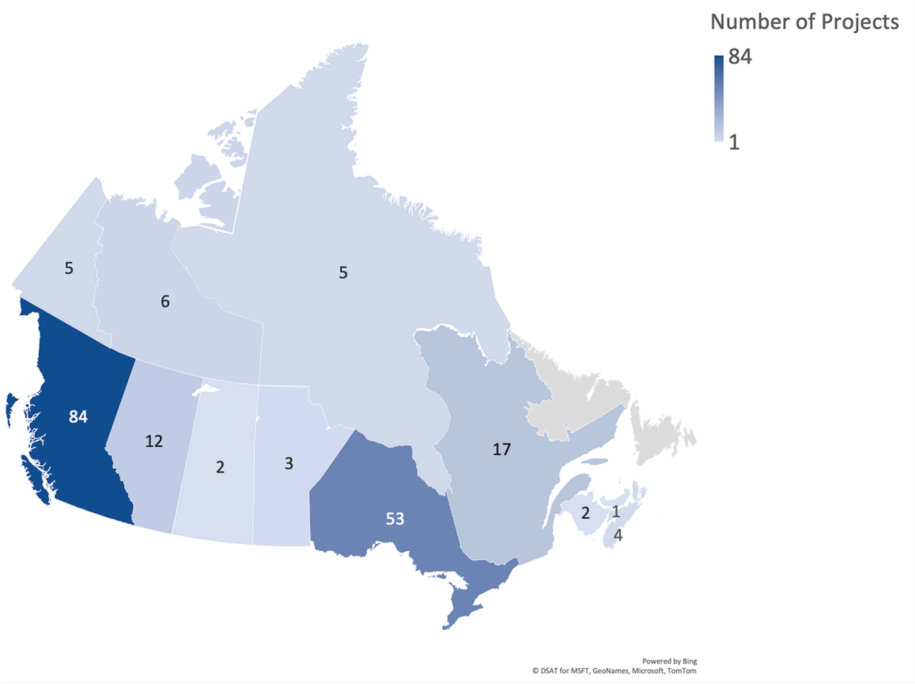

Fig. 1. Number of active projects in each province and territory.

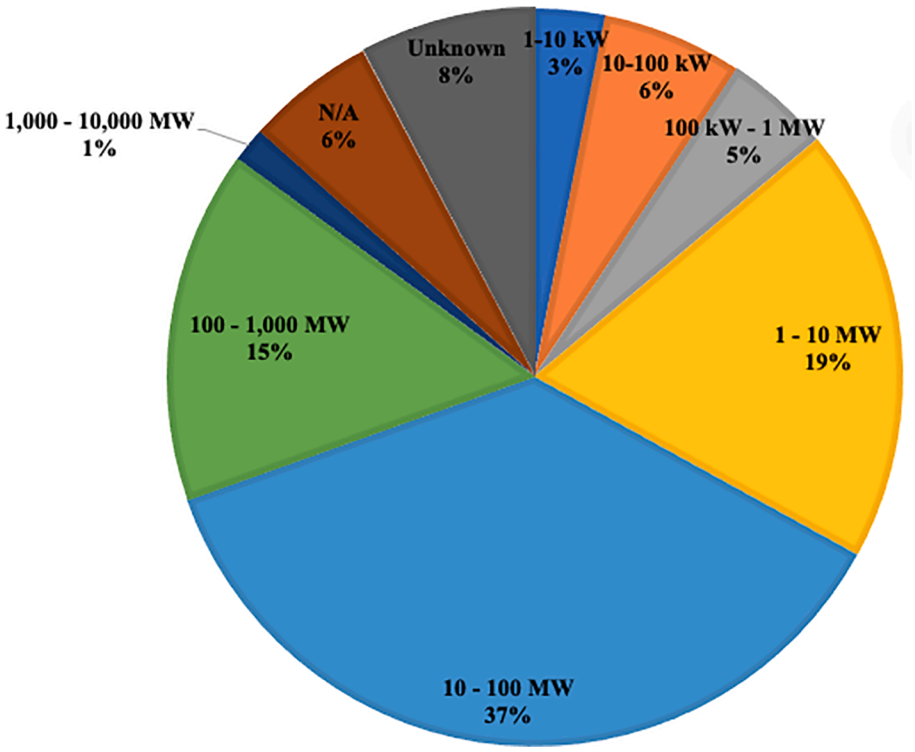

Fig. 2. Projects by size.

renewables. One observed trend is that the number of projects has approximately doubled to quadrupled from one phase to the next (7 to 15 to 27 to 120). Another is that the amount of Indigenous control and benefits has risen. Within each phase, and across all phases, the majority of projects have no Indigenous ownership or a minority share. Lastly, 43 benefits agreements were identified, 34 in the most recent timeframe of 2010–2020.

Table 10 shows that the majority of projects (114/194) are located on traditional lands, outside the local community. More than half of these projects on traditional lands (60/114) have no indications of Indigenous ownership. Of these, 19 have minority ownership and 33 have benefits agreements. Lastly, 50, or a little over 25% of projects, are

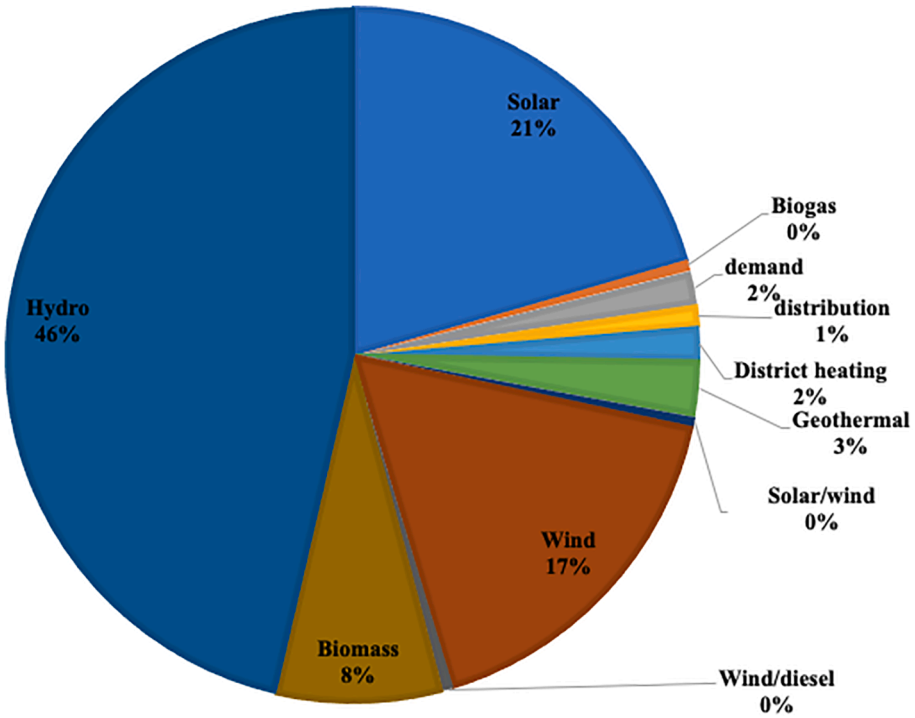

Fig. 3. Type of Energy source.

Table 9
Number of projects by Indigenous control and benefits and year of operation.

Indigenous share of ownership	Pre 1975	1975–1999	2000–2009	2010–2020	Timeline Unknown	Not applicable	Total
Wholly Indigenous Owned	0	4	3	13	7	6	33
Majority Indigenous Owned	0	0	3	5	0	0	8
Half Indigenous Owned	0	0	1	7	1	0	9
Minority Indigenous Owned	0	2	3	20	0	0	25
Partial to Wholly Owned	0	1	1	16	5	4	27
No Indigenous Ownership	6	6	14	48	0	2	76
Ownership Unknown	1	2	2	11	0	0	16
Total	7	15	27	120	13	12	194
Impact and Benefit Agreement (IBA)	2	1	1	13	0	2	19
Resource revenue sharing	0	0	2	16	0	0	18
Memorandum of Understanding (MOU)	1	0	0	5	0	0	6
Total Benefits Agreements	3	1	3	34	0	2	43

Table 10
Indigenous Control and Benefits compared to Community by Location.

	Within Indigenous community	On reserve land outside of main community	Traditional territory	Outside Indigenous community unsure if on traditional territory	Unknown	Total
Wholly Indigenous Owned (100%)	22	0	7	0	3	32
Majority Indigenous Owned (51–99%)	1	0	7	0	1	9
Half Indigenous Owned (50%)	3	0	5	0	1	9
Minority Indigenous Owned (1–49%)	2	0	19	2	1	24
Some Indigenous Ownership (1–100%)	20	0	6	0	1	27
No Indigenous Ownership (0%)	2	1	60	4	10	77
Unknown	2	1	10	0	3	16
Total	52	2	114	6	20	194
Impact and Benefit Agreement (IBA)	1	4	11	0	3	19
Revenue sharing	0	0	16	0	2	18
Memorandum of Understanding (MOU)	0	0	6	0	0	6
Total	1	4	33	0	5	43

Table 11
Legal Form compared to Project Location.

Legal form/ Location	Within Indigenous community	On reserve land outside of main community	Traditional Territory	Outside Indigenous community traditional territory unclear	Unknown	Total	Percent of Total
Indigenous political organization	28	0	5	0	3	36	19%
Indigenous economic development corporation	8	0	2	0	0	10	5%
Partnership	7	1	44	2	11	65	34%
Joint venture	4	0	5	0	1	10	5%
Private ownership (non-Indigenous)	0	1	40	3	3	47	24%
Local energy service provider	1	0	15	1	1	18	9%
Local government led project (municipalities)	1	0	1	0	0	2	1%
Charities/social enterprise	0	0	0	0	0	0	0%
Community trust	0	0	0	0	0	0	0%
Cooperative	0	0	0	0	0	0	0%
Unknown	3	0	2	0	1	6	3%
Total	52	2	114	6	20	194	
Percent of Total	27%	1%	59%	3%	10%		

Table 12
Aboriginal EcoEnergy Program Projects.

Share of Indigenous ownership	Legal Forms	Community location	Size ranges	Technology
10 Wholly Indigenous owned (100%)	21 political organization	26 First Nation	3 1–10 kW	1 biomass
17 Some Indigenous Ownership (1–100%)	6 Indigenous economic development corporation	1 Inuit	7 10–100 kW	3 hydropower
		23 within Indigenous community	1 100 kW to 1 MW	3 geothermal
		2 on traditional territory	4 1 to 10 MW	18 solar
		2 unknown	12 unknown size	2 wind

controlled by Indigenous communities (over 50% equity ownership).

Table 11 shows that there are no cooperatives, community trusts, or charities/social enterprises as the ownership form. The most common legal form is a partnership, followed by private, non-Indigenous ownership, and then the Indigenous political organization. Partnerships, private non-Indigenous ownership and local energy service providers control the majority of projects on traditional lands. Indigenous political organizations control the majority of projects within communities, followed by Indigenous economic development corporations and partnerships.

Table 13
Indigenous community controlled projects, excluding Aboriginal EcoEnergy.

Share of Indigenous ownership	Legal Forms	Community location	Size ranges	Technology
23 Wholly Indigenous owned 100%	1 Joint-venture	17 within Indigenous community	2 1–10 kW	2 biomass
8 Majority Indigenous owned 51–99%	1 charity/ social enterprise	11 traditional territory	4 10–100 kW	11 hydropower
	1 local government	3 unknown	4 100 kW to 1 MW	1 demand
	5 Indigenous economic development corporation		14 1 to 10 MW	2 distribution
	13 political organization		2 10 to 100 MW	1 solar
	10 partnership			1 solar/Wind
				3 wind
				1 wind/diesel

Tables 12 focuses on the Aboriginal ecoENERGY program that was designed specifically with community needs in mind. Of 27 projects, 10 were controlled by the Indigenous community, and most projects were within the Indigenous community. The program supported a range of project sizes that fall within the typical scale of community energy. While the majority were solar power, biomass, hydropower, geothermal and wind projects were also present.

Table 13 shows that there are an additional 31 projects controlled by Indigenous communities, with a variety of legal forms, technologies, typical community scale (the largest is 25 MW), with a greater share outside of the Indigenous community and on traditional territory.

5. Discussion

We are limited in our interpretation of the results without more information that could be obtained through surveys or qualitative study, and it is important to highlight the in-depth case study and participatory action research being conducted by projects such as A SHARED Future [110] and CASES [111]. We have addressed some limitations by clearly labeling what is unknown. This is often the case when benefits agreements are signed, as they are often confidential [13]. We are confident in our results that prioritized publicly available information from Indigenous communities themselves, supplemented by information from other credible sources. While this broad survey was not able to provide the same details that case studies can provide, it provides important findings as an overview of the types of Indigenous communities involved, scale and type of technology or function, and the extent of Indigenous control over renewable energy projects on traditional lands and in lived communities.

First, if control of renewable energy projects by Indigenous communities is one important indicator of reconciliation, particularly on their traditional lands, based in the results, we can conclude that reconciliation in practice is increasing. However, it is difficult to conclude that reconciliation as practice is widespread or the dominant practice. From before the 1970 s to the present, the number of projects associated with Indigenous communities, including those with equity ownership, has risen. The number of projects without Indigenous control has also risen and is larger than those with equity ownership. Even in the most recent timeframe of 2010–2020, most projects do not have Indigenous control, or even a share of ownership. In total, only 41 of the 194 projects are controlled (51% ownership or more) by the Indigenous community, and most of these are on the reserve or community settlement. Of these, 10 are supported by the Aboriginal ecoENERGY program that targeted projects that benefited the community as a whole. Most projects on traditional territory are not controlled by Indigenous communities, rather, they are controlled by private ownership or partnerships. While it is difficult to make conclusions about benefits agreements, their number rose substantially after 2010. Benefits agreements could include some of the goals of reconciliation, such as access to jobs, training, and education opportunities in the corporate. However, IBAs are described by Hickling [49] as often weak and short-lived. From the perspective of many Indigenous people, IBAs do not rise to the standard of reconciliation [51]. Clearly renewable energy projects have not re-asserted Indigenous jurisdiction and control to their traditional territories. This can be improved by pursuing equity partnerships over weaker benefit agreements.

Second, there are a range of sources of generation and functions present, including within the projects controlled by Indigenous communities. The ecoENERGY program has enabled mostly solar power projects (Table 12).

Third, the majority of the projects are associated with First Nation communities, with only six Inuit projects and no Métis projects at all. The majority of projects are in British Columbia and Ontario, which could be due to a combination of there being more Indigenous communities located in these provinces, as well as supportive policies. The majority of projects are for grid-connected communities, and only 25 are for off-grid. Scott [20] recommends different policy supports for grid-connected and remote communities; using this logic, there should be specific policy supports for Métis and Inuit communities.

Finally, for the projects that are controlled by Indigenous communities, there are a wide variety of legal forms present (Tables 12 and 13). This includes Namewaminikan Hydro Inc. a joint venture of three First Nations, the Animbiigoo Zaagi'igan Anishinaabek First Nation, the Biinjitiwabik Zaaging Anishnabek First Nation, and the Bingwi Neyaashi Anishinaabek First Nation, that own the Twin Falls (4.4 MW) and Long Rapids (5.6 MW) in Ontario. Although cooperatives are most common form of community energy in Canada [26], this is one legal form that is not present in Indigenous communities. What is also not present are community organizations, charities or social enterprises, the types of organizations that may be "moral authorities" that have the collective community's best interest at heart, as argued by Scott [20]. While the Indigenous political organization and EDCs are involved in many projects, we did not find evidence of the other legal forms, particularly any defined by Indigenous legal systems, knowledge or practices. The lack of decentralized and democratic forms of ownership, such as cooperatives, trusts and non-profits may be a barrier to a low-carbon, just transition. The large representation of business legal structures is most likely due to economic forces and policies that reward for-profit energy generation. However, this also requires more in-depth understanding as to how community decisions are made on a case by case basis, such as research done by Smith and Scott on Batchewana First Nation that identified a collective process to decide on how the revenue was spent [25]. As a result, while Indigenous communities do control many projects, we still cannot assume widespread community support or whether underlying processes have been open and participatory.

This broad survey points to new research directions. First, given the lack of projects by Inuit and Métis communities, we recommend further attention to renewable energy development with these communities. Scott recommends "stable enabling policy frameworks co-created with Indigenous communities, with credible and aspiring targets and clear responsibilities" [20]. CASES out of the University of Saskatchewan is leading research into renewable energy for Indigenous Arctic communities in Canada, Alaska and Norway that will shed light on this issue. The province of Alberta, where eight Métis communities are located, has announced the one billion dollar Alberta Indigenous Opportunities Corporation fund "that will increase Indigenous communities' access to capital and technical support to invest in natural resource projects and related infrastructure" [112]. However, an Indigenous intermediary,

First Nations Power Authority that serves Métis communities, has complained that it will not benefit communities seeking to build capacity and equity ownership in renewable energy [113]. Second, as all community energy relies on the private sector and the state [74], it is important to analyse other factors that will encourage the private sector to step up, and work hand in hand with communities for reconciliation on their terms. It continues to be extremely difficult for Indigenous communities to have access to the capital required for renewable energy projects [70,113]. One important future analysis could combine qualitative and quantitative results to examine whether there is a relationship between different sources/technologies and Indigenous control. Third, the importance of institutional structures to support reconciliation, FPIC, and Indigenous community participation in renewable energy are critical to increasing Indigenous equity ownership, particularly on traditional lands. FPIC is required in the current Canadian institutional structure as one of the key policies to enable Indigenous equity ownership of renewable energy, to introduce their own legal structures and governance, that vary from community to community. The Aboriginal Price Adder in Ontario also had the effect of enabling equity ownership for some First Nations. Therefore, we also recommend further research into policy mixes, actors and institutional frameworks that will support Indigenous community control of energy. Like community energy, this includes capacity building for installation and maintenance [20]. One place to start is more in-depth study in particular of the 31 Indigenous community-controlled projects outside of ecoENERGY to better understand the specific factors that support Indigenous control of renewable energy projects. The range of supports across these projects come from a variety of sources for each project, and this would provide a rich area of study. It is also important to examine the community capacity building and benefits from the Aboriginal ecoENERGY program and from capacity building programs like 20/20 Catalyst program that provides mentorship and capacity building [114].

6. Conclusion

In this paper we explore whether and to what extent community energy—as it relates to elements of participation associated with reconciliation, both conceptually and empirically. In this study, we explored the argument that community energy, in its ideal form, may be the way forward for renewable energy to contribute to reconciliation and to address climate change. Community is a slippery concept, and in the case of Indigenous community participation, we have distinguished that community can mean a place where Indigenous people live, often defined by settler colonial laws, that can be a place as "actor", such as the local authority given to the Indigenous political organization of a settlement or First Nation reserve. Community as a place of belonging extends to traditional lands, as indicated by UNDRIP. Because of the importance of the institutional structure to community energy, we have also argued that fundamental changes in institutional structure for reconciliation in the present [10,13,28] would potentially provide different legal forms. We developed a conceptual framework to outline the concepts of community energy and the important concepts for Indigenous participation in renewable energy. Our study only found legal forms defined within settler colonial institutions, of Indigenous political organization, Indigenous economic development corporation, and one not for profit. Our most critical finding is that while equity ownership, which is one indicator of reconciliation, is rising, only 41 of 194 projects are controlled by Indigenous communities. Furthermore, we did not find any projects in Métis communities, and only 6 in Inuit communities. Most projects controlled by Indigenous communities (23 of 41) existed within the settlement or First Nation reserve, with fewer (10 of 31) on traditional land. Most projects on traditional land, even in the past 10 years, have little to no ownership by Indigenous communities. This landscape survey across what is now called Canada, by assessing the current state of Indigenous community control and benefits associated with renewable energy projects, is an important first step to assessing broader goals such as centering reconciliation in climate change policy and the transition to 100% renewable energy.

The most profound change to support reconciliation would be the implementation of FPIC that would allow Indigenous communities control over all resource development projects [13], including renewable energy. Other supports include programs and policies that are targeted towards equity ownership, that include capacity building and access to capital [70,113,114]. We recommend further research into policy mixes that effectively support Indigenous equity ownership of renewable energy; comparison of case studies of legal forms and community governance of the project in practice; and attention to the inclusion of Inuit and Métis communities.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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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.2020.101897.

References

[1] V. Masson-Delmotte, P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, T. Maycock, A. M. Tignor, T.W. (eds.), Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, 2018.

[2] J.L. MacArthur, C.E. Hoicka, H. Castleden, R. Das, J. Lieu, Canada's Green New Deal: forging the socio-political foundations of climate resilient infrastructure? Energy Res. Social Sci. 65 (2020) 101442, https://doi.org/10.1016/j.erss.2020.101442.

[3] K. Jenkins, B.K. Sovacool, D. McCauley, Humanizing sociotechnical transitions through energy justice: an ethical framework for global transformative change, Energy Policy 117 (2018) 66–74, https://doi.org/10.1016/j.enpol.2018.02.036.

[4] B. Van Veelen, Negotiating energy democracy in practice: governance processes in community energy projects, Environ. Politics 27 (4) (2018) 644–665, https://doi.org/10.1080/09644016.2018.1427824.

[5] M.J. Burke, J.C. Stephens, Energy democracy: goals and policy instruments for sociotechnical transitions, Energy Res. Social Sci. 33 (2017) 35–48, https://doi.org/10.1016/j.erss.2017.09.024.

[6] M.J. Burke, J.C. Stephens, Political power and renewable energy futures: a critical review, Energy Res. Social Sci. 35 (2018) 78–93, https://doi.org/10.1016/j.erss.2017.10.018.

[7] E. Allen, H. Lyons, J.C. Stephens, Women's leadership in renewable transformation, energy justice and energy democracy: redistributing power, Energy Res. Social Sci. 57 (2019) 101233, https://doi.org/10.1016/j.erss.2019.101233.

[8] R. Pearl-Martinez, J.C. Stephens, Toward a gender diverse workforce in the renewable energy transition, Sustain.: Sci. Pract. Policy 12 (1) (2016) 8–15, https://doi.org/10.1080/15487733.2016.11908149.

[9] IRENA, Renewable Energy: A Gender Perspective., Abu Dhabi, 2019.

[10] D. McGregor, Reconciliation, Colonization, and Climate Futures, in: C.H. Tuohy, S. Borwein, P.J. Loewen, A. Potter (Eds.), Policy Transform. Canada. Is Past Prologue?, University of Toronto Press, 2019.

[11] Truth and Reconciliation Commission of Canada (TRC), Honouring the Truth, Reconciling for the Future Summary of the Final Report of the Truth and Reconciliation Commission of Canada, 2015. www.trc.ca.

[12] J. Corntassel, Re-envisioning resurgence: Indigenous pathways to decolonization and sustainable self-determination, Decolonization Indig. Educ. Soc. 1 (2012) 86–101.

[13] D.N. Scott, Extraction Contracting: The Struggle for Control of Indigenous Lands, South Atl. Q. 119 (2020) 269–299. doi:10.1215/00382876-8177759.

[14] K.A. Carpenter, J.A. Jampolsky, Indigenous peoples From energy poverty to energy empowerment, in: L. Guruswamy (Ed.), Int. Energy Poverty, Routledge, 2015: pp. 39–52.
[15] E. Bush, D.S. Lemmen, Canada's Changing Climate Report; Government of Canada, Ottawa, Canada, 2019. www.ChangingClimate.ca/CCCR2019.
[16] J. MacArthur, Trade, Tarsands and Treaties: The Political Economy Context of Community Energy in Canada, Sustainability. 9 (2017) 464. doi:10.3390/su9030464.
[17] Natural Resources Canada, Generation by Source 2017, Nat. Resour. Canada. (2019).
[18] K. Coates, First Nations Engagement in the Energy Sector in Western Canada Prepared for Indian Resource Council, 2016.
[19] Robert D. Stefanelli, Chad Walker, Derek Kornelsen, Diana Lewis, Debbie H. Martin, Jeff Masuda, Chantelle A.M. Richmond, Emily Root, Hannah Tait Neufeld, Heather Castleden, Renewable energy and energy autonomy: how Indigenous peoples in Canada are shaping an energy future, Environ. Rev. 27 (1) (2019) 95–105, https://doi.org/10.1139/er-2018-0024.
[20] K. Scott, Reconciliaton and energy democracy, Can. J. Progr. Eval. 34 (2020) 480–491, https://doi.org/10.3138/cjpe.6844.
[21] C. Henderson, Aboriginal Power: Clean Energy and the Future of Canada's First Peoples, Rainforest Editions, 2013.
[22] Coalition for a Green New Deal, What did we hear at The Pact for a Green New Deal Town Halls? | Green New Deal, (2019). https://act.greennewdealcanada.ca/what-we-heard/ (accessed August 22, 2019).
[23] Christopher Barrington-Leigh, Mark Ouliaris, The renewable energy landscape in Canada: a spatial analysis, Renew. Sustain. Energy Rev. 75 (2017) 809–819, https://doi.org/10.1016/j.rser.2016.11.061.
[24] Gordon Walker, Patrick Devine-Wright, Community renewable energy: what should it mean? Energy Policy 36 (2) (2008) 497–500, https://doi.org/10.1016/j.enpol.2007.10.019.
[25] A.A. Smith, D.N. Scott, Renewing Indigenous Power: A Case Study of Chinodin Chigumi Nodin Kitagan, in: Atapattu, Gonzalez, S. Seck (Eds.), Environ. Justice, Sustain. Dev. Soc. Pillar / Cambridge Handb. Environ. Justice Sustain. Dev., Cambridge University Press, 2019.
[26] Christina E. Hoicka, Julie L. MacArthur, From tip to toes: Mapping community energy models in Canada and New Zealand, Energy Policy 121 (2018) 162–174, https://doi.org/10.1016/j.enpol.2018.06.002.
[27] J.J. McMurtry, Canadian Community Energy: Policy, Practice, and Problems, in: Handb. Energiewende Und Partizipation, Springer Fachmedien Wiesbaden, Wiesbaden, 2018: pp. 975–996. doi:10.1007/978-3-658-09416-4_57.
[28] Deborah McGregor, Steven Whitaker, Mahisha Sritharan, Indigenous environmental justice and sustainability, Curr. Opin. Environ. Sustain. 43 (2020) 35–40, https://doi.org/10.1016/j.cosust.2020.01.007.
[29] Government of Canada, First Nations, (2017).
[30] Government of Canada, Inuit, (2018).
[31] Government of Alberta, The Metis Settlements of Alberta, (1995).
[32] Métis Nation of Ontario, Governing Structure, the Métis Nation of Ontario, (2019). http://www.metisnation.org/governance/governing-structure/.
[33] Statistics Canada, Aboriginal Peoples in Canada: Key Results from the 2016 Census, 2017.
[34] Government of Canada, Indigenous peoples and communities, Gov. Canada. (2017). https://www.rcaanc-cirnac.gc.ca/eng/1100100013785/1529102490303 (accessed May 2, 2020).
[35] Assembly of First Nations, About AFN, (2019). http://www.afn.ca/description-of-the-afn/.
[36] Government of Canada, Inuit, Gov. Canada. (2019). https://www.rcaanc-cirnac.gc.ca/eng/1100100014187/1534785248701 (accessed May 3, 2020).
[37] About Canadian Inuit - Inuit Tapiriit Kanatami, Inuit Tapiriit Kanatami. (2020). https://www.itk.ca/about-canadian-inuit/ (accessed May 2, 2020).
[38] Government of Alberta, Metis Settlements locations, Gov. Alberta. (2020). https://www.alberta.ca/metis-settlements-locations.aspx.
[39] Government of Canada, Status of Remote/Off-Grid Communities in Canada, 2011. https://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/canmetenergy/files/pubs/2013-118_en.pdf.
[40] Advance Energy Centre (AEC), Enabling a Clean Energy Future for Canada's Remote Communities, (2015) 1–7.
[41] Natural Resources Canada, Remote Communities Energy Database, (2018). https://atlas.gc.ca/rced-bdece/en/index.html.
[42] E. Fitzgerald, D. Lovekin, Renewable Energy Partnerships and Project Economics Research supporting Indigenous-utility partnerships and power purchase agreements, 2018.
[43] Maryam Rezaei, Hadi Dowlatabadi, Off-grid: community energy and the pursuit of self-sufficiency in British Columbia's remote and First Nations communities, Local Environment 21 (7) (2016) 789–807, https://doi.org/10.1080/13549839.2015.1031730.
[44] N. Beedie, D. Macdonald, D. Wilson, Towards Justice: Tackling Indigenous Child Poverty in Canada, 2019.
[45] J. Lorinc, Aboriginal hydropower. Navigating the the collaborative future between First Nations and the Canadian hydro industry, Can. Geogr. (2016). https://www.canadiangeographic.ca/article/aboriginal-hydropower (accessed July 22, 2020).
[46] Amnesty International, The Point of No Return, London, 2016.
[47] Michele-Lee Moore, Suzanne von der Porten, Heather Castleden, Consultation is not consent: hydraulic fracturing and water governance on Indigenous lands in Canada: consultation is not consent, WIREs Water 4 (1) (2017) e1180, https://doi.org/10.1002/wat2.1180.
[48] H. King, S. Pasternak, Land Back, Toronto, 2019. https://redpaper.yellowheadinstitute.org/wp-content/uploads/2019/10/red-paper-report-final.pdf (accessed March 4, 2020).
[49] J. Hickling, Indigenous Green Energy: Policy and Finance for a Sustainable Future., in: Post-Pandemic Oppor. a Sustain. Soc., Canadian Climate Law Initiative, Vancouver, 2020.
[50] N. Kielland, Supporting Aboriginal Participation in Resource Development: The Role of Impact and Benefit Agreements, Ottawa, 2015.
[51] K. Cameron, Indigenous Green Energy: Policy and Finance for a Sustainable Future, in: Post-Pandemic Oppor. a Sustain. Soc., Canadian Climate Law Initiative., Vancouver, BC, 2020.
[52] T. Bull, Indigenous Green Energy: Policy and Finance for a Sustainable Future, in: Post-Pandemic Oppor. a Sustain. Soc., Canadian Climate Law Initiative, Vancouver, BC, 2020.
[53] C. Sanders, Powering Reconciliation, 2017. https://icenet.work/attachment?file=abMCEkD9%2FT6pEwV%2BYfmgLw%3D%3D (accessed July 26, 2019).
[54] C. Sanders, Accelerating Transition, Ottawa, 2020.
[55] J. Lipp, S. Bale, Growing Indigenous Power: A Review of Indigenous Involvement & Resources to Further Renewable Energy Development Across Canada, Toronto Renewable Energy Cooperative (TREC), Toronto, 2018. http://www.trec.on.ca/wp-content/uploads/2018/03/TREC-PPP_IndigenousPowerReport_FINAL.pdf.
[56] A. Jaffar, Establishing A Clean Economy or Strengthening Indigenous Sovereignty: Conflicting & Complementary Narratives for Energy Transitions, University of Guelph, 2015. https://atrium.lib.uoguelph.ca/xmlui/bitstream/handle/10214/9230/Jaffar_Atiya_201509_MA.pdf?sequence=1&isAllowed=y (accessed July 23, 2019).
[57] Government of Canada, Evaluation of the ecoENERGY for Aboriginal and Northern Communities Program, 2015.
[58] Truth and Reconciliation Commission of Canada (TRC), What We Have Learned, Principles of Truth and Reconciliation, 2015.
[59] Truth and Reconciliation Commission of Canada (TRC), Canada's residential schools: Reconciliation. The final report of the Truth and Reconciliation Commission of Canada, 2015. doi:10.5860/choice.196543.
[60] United Nations General Assembly, United Nations Declaration on the Rights of Indigenous Peoples, 2008.
[61] Gregory Lowan-Trudeau, Indigenous environmental education: the case of renewable energy projects, Educ. Stud. 53 (6) (2017) 601–613, https://doi.org/10.1080/00131946.2017.1369084.
[62] United Frontline Table, A People's Orientation to a Regenerative Economy: Protect, Repair, Invest and Transform, 2020. doi:10.1017/CBO9781107415324.004.
[63] M. Bargh, Indigenous Peoples ' Energy Projects, Australas. Can. Stud. 28 (2010) 1–30.
[64] Daniel Brookshire, Nikhil Kaza, Planning for seven generations: energy planning of American Indian tribes, Energy Policy 62 (2013) 1506–1514, https://doi.org/10.1016/j.enpol.2013.07.021.
[65] Anna L. Berka, Julie L. MacArthur, Claudia Gonnelli, Explaining inclusivity in energy transitions: local and community energy in Aotearoa New Zealand, Environ. Innov. Societal Trans. 34 (2020) 165–182, https://doi.org/10.1016/j.eist.2020.01.006.
[66] Chad Walker, Alyssa Alexander, Mary Beth Doucette, Diana Lewis, Hanna Tait Neufeld, Debbie Martin, Jeff Masuda, Robert Stefanelli, Heather Castleden, Are the pens working for justice? News media coverage of renewable energy involving Indigenous Peoples in Canada, Energy Res. Social Sci. 57 (2019) 101230, https://doi.org/10.1016/j.erss.2019.101230.
[67] Susan Morrissey Wyse, Christina E. Hoicka, "By and for local people": assessing the connection between local energy plans and community energy, Local Environ. 24 (9) (2019) 883–900, https://doi.org/10.1080/13549839.2019.1652802.
[68] R. Rakshit, C. Shahi, M.A. (Peggy) Smith, A. Cornwell, Community Capacity Building for Energy Sovereignty: A First Nation Case Study, Sustain. Environ. 3 (2018) 177–196. doi:10.22158/se.v3n2p177.
[69] Roopa Rakshit, Chander Shahi, M.A. (Peggy) Smith, Adam Cornwell, Bridging gaps in energy planning for first nation communities, Strategic Plan. Energy Environ. 37 (3) (2018) 17–42, https://doi.org/10.1080/10485236.2018.11958658.
[70] Joel Krupa, Identifying barriers to aboriginal renewable energy deployment in Canada, Energy Policy 42 (2012) 710–714, https://doi.org/10.1016/j.enpol.2011.12.051.
[71] Joel Krupa, Blazing a new path forward: a case study on the renewable energy initiatives of the Pic River First Nation, Environmental Development 3 (2012) 109–122, https://doi.org/10.1016/j.envdev.2012.05.003.
[72] Martin J. Pasqualetti, Thomas E. Jones, Len Necefer, Christopher A. Scott, Benedict J. Colombi, A Paradox of Plenty: renewable Energy on Navajo Nation Lands, Society Natural Resour. 29 (8) (2016) 885–899, https://doi.org/10.1080/08941920.2015.1107794.
[73] T.E. Jones, L.E. Necefer, Identifying Barriers and Pathways for Success for Renewable Energy Development on American Indian Lands, 2016. http://www.ntis.gov/search (accessed June 27, 2019).
[74] Emily Creamer, Will Eadson, Bregje van Veelen, Annabel Pinker, Margaret Tingey, Tim Braunholtz-Speight, Marianna Markantoni, Mike Foden, Max Lacey-Barnacle, Community energy: entanglements of community, state, and private sector, Geography Compass 12 (7) (2018) e12378, https://doi.org/10.1111/gec3.12378.
[75] Nikola Šahović, Patricia Pereira da Silva, Community renewable energy - research perspectives, Energy Procedia 106 (2016) 46–58, https://doi.org/10.1016/j.egypro.2016.12.104.

[76] Patrick Devine-Wright, Community versus local energy in a context of climate emergency, Nat. Energy 4 (11) (2019) 894–896, https://doi.org/10.1038/s41560-019-0459-2.
[77] Gordon Walker, The role for 'community' in carbon governance: the role for 'community' in carbon governance, WIREs Clim. Change 2 (5) (2011) 777–782, https://doi.org/10.1002/wcc.137.
[78] V. Brummer, Community energy – benefits and barriers_ a comparative literature review of Community Energy in the UK, Germany and the USA, the benefits it provides for society and the barriers it faces, Renew. Sustain. Energy Rev. (2019) 187–196, https://doi.org/10.1016/j.rser.2018.06.013.
[79] Laura Tozer, Community energy plans in Canadian cities: success and barriers in implementation, Local Environment 18 (1) (2013) 20–35, https://doi.org/10.1080/13549839.2012.716406.
[80] Gill Seyfang, Jung Jin Park, Adrian Smith, A thousand flowers blooming? An examination of community energy in the UK, Energy Policy 61 (2013) 977–989, https://doi.org/10.1016/j.enpol.2013.06.030.
[81] J. Lowitzsch, C.E. Hoicka, F.J. van Tulder, Renewable energy communities under the 2019 European Clean Energy Package – governance model for the energy clusters of the future? Renew. Sustain. Energy Rev. 122 (2020) 109489, https://doi.org/10.1016/j.rser.2019.109489.
[82] Indigenous Corporate Training, First Nation Protocol on Traditional Territory, (2019). https://www.ictinc.ca/first-nation-protocol-on-traditional-territory (accessed May 8, 2020).
[83] S. Newcomb, "Canada" and the "United States" are in Turtle Island, Indian Ctry. Today. (2011). https://indiancountrytoday.com/archive/canada-and-the-united-states-are-in-turtle-island-BuMvxVSitEG766jBQ2WplA.
[84] Indigenous Clean Energy social enterprise, Indigenous Energy Futures Dialogue Workshop Overview, (2019).
[85] E. Hanson, Reserves, Indig. Found. (2009). https://indigenousfoundations.arts.ubc.ca/reserves/.
[86] Olthuis Kleer Townshend LLP, Aboriginal Law Handbook, 5th ed., Thompson Reuters Canada Limited, Toronto, 2018.
[87] A. Hall, Treaties with Indigenous Peoples in Canada, Can. Encycl. (2017). https://www.thecanadianencyclopedia.ca/en/article/aboriginal-treaties.
[88] H. King, S. Pasternak, Canada's Emerging Indigenous Rights Framework: A Critical Analysis, Toronto, 2018. https://yellowheadinstitute.org/rightsframework/ (accessed March 4, 2020).
[89] J. Teillet, Métis Law in Canada, Pape Salter Teillet LLP, Vancouver, BC, 2017.
[90] Government of Alberta, About Metis Settlements. Initiatives that support effective governance, enhanced accountability and long-term sustainability, (2019). https://www.alberta.ca/about-metis-settlements.aspx?utm_source=redirector.
[91] EnergiMedia, An Optimistic, Moderate Vision of Canada's Energy Future, EnergiMedia. (2020). https://energi.media/the-energi-declaration/.
[92] J. Graham, I. on Governance, Advancing Governance of the Metis Settlements of Alberta: Selected Working Papers, (2007) 35.
[93] J. Teillet, Métis Law in Canada, (2013). http://www.pstlaw.ca/resources/Metis-Law-in-Canada-2013.pdf.
[94] Makivik Corporation, JBNQA, (n.d.). https://www.makivik.org/corporate/history/jbnqa/.
[95] Makivik Corporation, Nunavik Government, (n.d.). https://www.makivik.org/nunavik-government/.
[96] Canadian Council for Aboriginal Business, Community and Commerce, 2015, (2015).
[97] Indigenous And Northern Affairs Canada, ecoENERGY for Aboriginal and Northern Communities Program, (2016).
[98] Anna L. Berka, Emily Creamer, Taking stock of the local impacts of community owned renewable energy: a review and research agenda, Renew. Sustain. Energy Rev. 82 (2018) 3400–3419, https://doi.org/10.1016/j.rser.2017.10.050.
[99] Jarra Hicks, Nicola Ison, An exploration of the boundaries of 'community' in community renewable energy projects: navigating between motivations and context, Energy Policy 113 (2018) 523–534, https://doi.org/10.1016/j.enpol.2017.10.031.
[100] Truth and Reconciliation Commission of Canada (TRC), Truth and Reconciliation Commission of Canada, Calls to Action, 2015. http://nctr.ca/assets/reports/Calls_to_Action_English2.pdf.
[101] Ryan Bullock, Morrissa Boerchers, Denis Kirchhoff, Analyzing control, capacities, and benefits in Indigenous natural resource partnerships in Canada, Environ. Pract. 21 (2) (2019) 85–99, https://doi.org/10.1080/14660466.2019.1592413.
[102] Canadian Council for Aboriginal Business, Community and Commerce A Survey of Aboriginal Economic Development Corporations in Ontario, Toronto, 2015.
[103] Indigenous Clean Energy Social Enterprise (ICE), Indigenous Clean Energy Projects, (2019).
[104] Native Land, Native Land, (n.d.). www.native-land.ca.
[105] Government of Canada, Welcome to the First Nation Profiles Interactive Map, (2012). https://geo.aadnc-aandc.gc.ca/cippn-fnpim/index-eng.html.
[106] Business Development Canada, General partnership, Gov. Canada. (n.d.). https://www.bdc.ca/en/articles-tools/entrepreneur-toolkit/templates-business-guides/glossary/pages/general-partnership.aspx.
[107] Alberta Law Reform Institute, Joint venture, Alberta Law Reform Institute, Edmonton, 2012.
[108] Business Development Canada, Corporation, Gov. Canada. (n.d.). https://www.bdc.ca/en/articles-tools/entrepreneur-toolkit/templates-business-guides/glossary/pages/corporation.aspx.
[109] Gordon Walker, What are the barriers and incentives for community-owned means of energy production and use? Energy Policy 36 (12) (2008) 4401–4405, https://doi.org/10.1016/j.enpol.2008.09.032.
[110] A SHARED Future, A SHARED Future, (2018).
[111] University of Saskatchewan, Renewable Energy in Northern, Remote and Indigenous Communities, (2020).
[112] Government of Alberta, Creating Indigenous opportunities, (2019).
[113] B. Morin, Can First Nations Power Authority transform the energy industry? Canada's Natl. Obs. (2019) 1–11.
[114] Indigenous Clean Energy social enterprise, 20/20 Catalyst Program, (2020).
[115] Indigenous Clean Energy, Indigenous Clean Energy, (2020). https://indigenouscleanenergy.com/about/.