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Decolonizing Approaches to Renewable Energy Development in Alberta through Indigenous Community-Led Research and Engagement

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ABSTRACT

Geothermal energy has the potential to be the next transformative technology to boost Canada's green energy sector. Given that many potential geothermal sites are located on Indigenous lands, meaningful engagement and consultation with Indigenous communities will be key to successfully developing geothermal energy projects and policy. This paper focuses on the communication of risk, as a component of community engagement strategies, prior to and throughout the development of a geothermal energy project. How can we account for differential impacts on Indigenous and non-Indigenous communities, and whose risks are accounted for where societal norms differ, and where access to remedy is not uniform?

This paper proposes a novel approach to co-developing equitable communication models for responsible and sustainable renewable energy development in partnership with Indigenous communities now contemplating geothermal energy development in their traditional lands. This model is designed to assist in establishing a more appropriate, community-centered approach to consultation, honouring Indigenous rights to free, prior and informed consent as expressed in the United Nations Declaration on the Rights of Indigenous Peoples; and in adherence to the spirit and intent of treaties between Indigenous Nations and the Government of Canada; and in response to the Truth and Reconciliation Commission of Canada: Calls to Action, numbers 43 and 44.

1. ENERGY DEVELOPMENT ON INDIGENOUS TRADITIONAL LANDS

Energy development projects in Canada are facing greater public scrutiny, as they must navigate issues of control, ownership and governance, and account for their cultural, social, economic, environmental and spiritual impacts on local and global communities. Article 32 of the United Nations Declaration on the Rights of Indigenous Peoples (hereafter, the UN Declaration) emphasizes consultation and cooperation "in good faith with the indigenous peoples… in order to obtain free, prior and informed consent prior to the approval of any project affecting their lands or territories and other resources, particularly in connection with the development, utilization or exploitation of mineral, water or other resources" (United Nations, 2007). In 2017, the Supreme Court of Canada (SCC) issued two important rulings emphasizing the duty to consult with Indigenous communities that may be affected by industrial activities (i.e., *Clyde River Hamlet v. Petroleum Geo-Service Inc.* (2017 SCC 40) and *Chippewas of the Thames First Nation v. Enbridge Pipelines Inc.* (2017 SCC 41)).

Despite the Government of Canada committing to implementing the UN Declaration (Government of Canada, 2018a), the Federal Court of Appeal's August 2018 Trans Mountain Pipeline ruling (*Tsleil-Waututh Nation v. Canada (Attorney General)*, 2018 FCA 153) clearly demonstrates that current community consultation processes will require drastic changes to incorporate Article 32 of the UN Declaration (Bellrichard, 2018). Such changes to decolonize the consultation process need to address: 1) how renewable energy systems can be developed in an equitable and sustainable manner, respecting Indigenous rights; 2) what policies or protocols exist or need to be drafted in consultation with Indigenous communities to govern and regulate the development of renewable resources, with due attention to meaningful accommodation (e.g., environmental regulations and royalty structures); 3) how Indigenous community members can participate meaningfully in community engagement and consultation for energy development activities; and 4) how Indigenous community members can prepare for the process of transitioning to renewable energy systems, or conversely, prepare for resistance should the renewable energy development adversely affect the community's traditional lands and ways of life in ways that are not acceptable to its members.

2. GEOTHERMAL ENERGY: CANADA'S NEXT RENEWABLE ENERGY SOURCE?

As renewable energy development projects are typically built outside of urban centres, meaningful engagement and consultation with Indigenous and rural communities will be key to successfully developing renewable energy projects and policy throughout Canada. In 2017, the Government of Canada launched Generation Energy, which aims to be "an open and inclusive nation-wide dialogue with stakeholders, experts and individual Canadians to envision what a low-carbon energy future would look like for Canada over the course of a generation" (Government of Canada, 2018b, p. 2). The Government of Canada also appointed a General Energy Council to report on how a nation-wide energy transition might be facilitated over the long term. In its 2018 report, the Generation Energy Council wrote:

> "This transition represents a unique, once-in-a-generation opportunity to find a stronger and more stable place in the energy economy for regions and communities that weren't previously well connected to it. The shift to a low-carbon economy will involve many and varied energy projects nationwide, and these offer new opportunities to build real, durable partnerships with Indigenous and rural communities by investing directly in their energy future. It provides a chance to expand access to affordable, reliable and clean energy across the country – not to mention giving Canadians a much greater range of choice in the kind of energy they use and when and how they use it" (Government of Canada, 2018b, p. 7).

Geothermal energy has the potential to be the next transformative technology to boost Canada's green energy sector. Although geothermal energy is considered a clean (i.e., carbon-free), sustainable and "renewable energy resource because the heat emanating from the interior of the Earth is essentially limitless" (Kagel et al., 2007, p. 2), harnessing geothermal energy is not without its risks. For example, geochemical precipitates contain toxic materials that are released when water under pressure deep underground is brought to the surface, and the "extraction of large amounts of fluid… [can occur] at a faster rate than natural [aquifer] replenishment" (Hodder, 2010, p. 8). Currently, geothermal energy is used for electrical power production in 24 countries, "and another 11 are developing and testing geothermal systems" (Van Nguyen et al., 2015, p. 27).

The Pacific Ring of Fire is a region best situated to develop geothermal energy. Notably, Canada is the only country located in the Ring of Fire "that doesn't use [geothermal] for commercial-scale energy" (Suzuki and Hanington, 2016). Presently, as depicted in Figure 1, the border between the provinces of British Columbia and Alberta, as well as the Yukon and Northwest Territories are the most viable areas for geothermal energy development (Canadian Geothermal Energy Association, n.d.). Figure 1 also reveals the population growth in urban centres compared to where geothermal potential is the greatest (i.e., in the less populated, rural areas of Canada). Though British Columbia and Nova Scotia have developed geothermal legislation, neither "has resulted in the development of any geothermal electricity projects yet. Further, British Columbia's Ministry of Energy and Mines acknowledged that its Geothermal Resources Act needs to be revised" (Van Hal, 2013, p. vii).

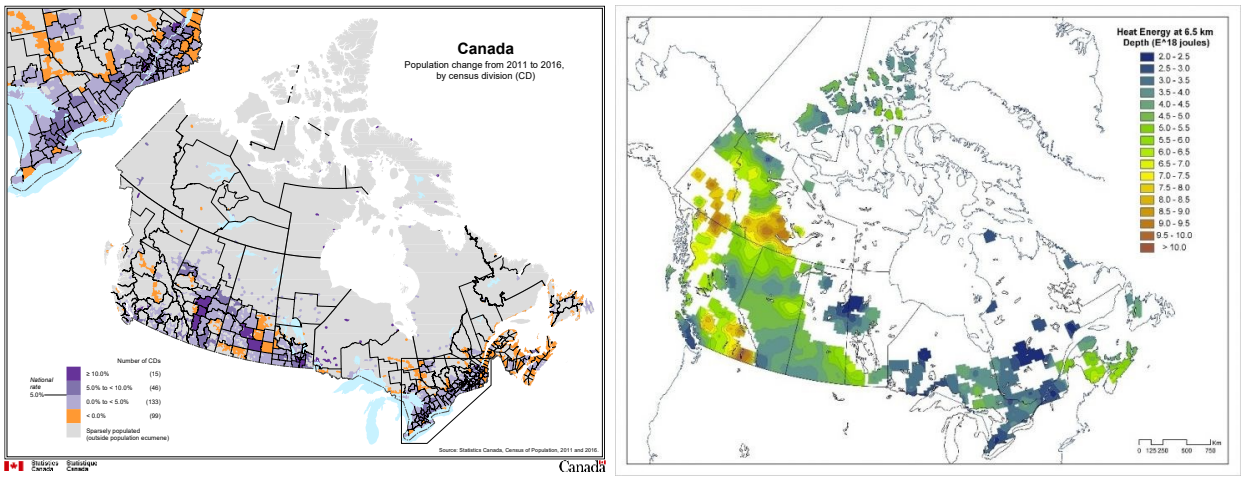


Figure 1: In Canada, renewable energy development projects typically are built outside of urban centres. The image on the left shows the distribution of Canada's population (Statistics Canada, 2017). The image on the right shows a map of the geothermal resource in Canada (Grasby et al., 2012). The most viable areas for geothermal energy are located in rural areas, many of which are Indigenous traditional lands.

In 2018, the Town of Hinton, Alberta, completed a Front-End Engineering Design (FEED) study that investigated the use of abandoned wells as points of access for geothermal energy (Epoch Energy Development Inc. 2018). The Government of Alberta designated Hinton's geothermal FEED study as a case to assess the feasibility of geothermal energy and to build the province's regulations in this area, providing $1.2 million in funding toward the initiative, together with Western Economic Diversification Canada and Alberta Innovates (Bentein, 2018). However, the Indigenous communities with traditional lands in the vicinity of the proposed geothermal project were not formally consulted regarding the proposed renewable energy development which may affect land-based activities including, but not limited to, making sweats, hunting, using trap lines, and picking berries, herbs and medicine (Alexis Nakota Sioux Nation, 2019; L. Letendre, 2019, pers. comm.; Peterson, 2015). One of the Indigenous communities with traditional lands in the vicinity of the proposed geothermal project is Alexis Nakota Sioux Nation.

In its final report for the FEED study, the industrial proponent for the Hinton geothermal energy project indicated the following.

> "Geothermal was not shown to be an easily accessible, viable heat source. … Hinton has a tremendous subsurface heat and geothermal resource potential, but with a higher degree of technical complexity for development than other locations in Alberta. The technical complexity of developing the geothermal resource increases the capital required, which at the current market conditions does not make it viable for a standalone heat project. … It is recommended that a study be undertaken to review a combined geothermal heat and power plant to justify the capital required to develop the technically complex but significant heat resource in Hinton" (Epoch Energy Development Inc. 2018, i-ii).

It is unknown whether the recommended combined study is underway. Further, the Town of Hinton's website (n.d.) states the "option to drill a new well is possible but may make project economics challenging to satisfy", meaning that geothermal energy development in Hinton is essentially not moving forward until it is economically viable to do so.

It is important to note that prior to, throughout, and after the FEED study, there were no indications from the Government of Alberta that consultations on this energy development project would be conducted with Indigenous communities living in the area. On June 27, 2017, the Hinton & District Chamber of Commerce hosted a Geothermal Energy Seminar for local business leaders in Hinton. A subsequent Town Hall and presentation at the local high school were held for town residents on October 5, 2017 (these activities were conducted by researchers from the University of Alberta's Future Energy Systems – Geothermal Theme). To the

best of the authors' knowledge, no such similar activities were held by the Town of Hinton nor the Government of Alberta for the Indigenous communities living in the areas surrounding Hinton, which would be directly impacted by the proposed geothermal development. It is not known whether Epoch Energy Development Inc. contacted the Chiefs and Councils for the Indigenous communities with traditional lands in the areas surrounding Hinton. However, it is important to note that the provincial and federal governments are ultimately responsible for ensuring the duty to consult with Indigenous communities is fulfilled prior to the development of any natural resource (Government of Alberta, 2020b; Government of Canada, 2020).

On October 7, 2020, the Government of Alberta announced its intentions to move forward with developing geothermal energy regulation; on December 9, 2020, *Bill 36: the Geothermal Resource Development Act* received royal assent (Government of Alberta, 2020a). Indigenous communities whose traditional lands, ways of life and economic opportunities will be affected by geothermal energy development have not been consulted. Within the two months of preliminary policy drafting and *Bill 36* receiving royal assent, the Government of Alberta did not conduct consultations with Indigenous communities on geothermal energy regulation development. This is against the spirit of the UN Declaration.

Some view the commodification of this renewable resource ignores the sacred relationships between Indigenous people and the land, and instead "focus[es] on those aspects of nature that can be appropriated for human use" (Scott, 1998, p. 13). A critical view of engaging in the colonial consultation process as it currently stands is that such approaches that "seek empowerment through the accumulation of financial resources may seem to hold promise, but they are opposed to basic and shared [Indigenous] values [and]… simply mimic foreign logics" (Alfred, 2005, p. 22-23).

Indeed, various levels of government in Canada have been wrestling with rectifying colonial logics, processes and systems through the lens of the Truth and Reconciliation Commission of Canada's (2015) Calls to Action, of which #43 "call[s] upon federal, provincial, territorial, and municipal governments to fully adopt and implement the United Nations Declaration on the Rights of Indigenous Peoples as the framework for reconciliation" (p. 4). However, rather than participating in reconciliation, which "permanently absolve[s] colonial injustices and is itself a further injustice" (Alfred, 2009, p. 181), there are advocates for the restitution of lands and funds to Indigenous communities to "move towards a true and lasting foundation for justice that will result in meaningful changes in the lives of Indigenous peoples and in the return of their lands" (ibid).

> "When I say, 'Give it back,' I am talking about settlers demonstrating respect for what we share—the land and its resources—and making things right by offering us the dignity and freedom we are due and returning enough of our power and land for us to be self-sufficient" (Alfred, 2009, p. 182).

> "The recognition/redistribution… approach is insufficient insofar as it tends to, at best, address the political economy of colonialism in a strictly 'affirmative' manner: through reformist state redistribution schemes like granting certain cultural rights and concessions to Aboriginal communities via self-government and land claims processes. Although this approach may alter the intensity of some of the effects of colonial-capitalist exploitation and domination, it does little to address their generative structures, in this case a racially stratified capitalist economy and the colonial state" (Coulthard, 2007, p. 446).

The Truth and Reconciliation Commission of Canada's (2015) Call to Action #44 states, "we call upon the Government of Canada to develop a national action plan, strategies, and other concrete measures to achieve the goals of the United Nations Declaration on the Rights of Indigenous Peoples" (p. 4), such as Article 32 of the UN Declaration. Clearly to achieve this, a new Indigenous community-led approach is needed to decolonize the consultation process, not only for the proposed geothermal energy development in Alberta, but also for all extraction-based activities on the traditional lands of Indigenous peoples across Canada.

3. DECOLONIZING THE CONSULTATION PROCESS: AN EXAMPLE OF AN INDIGENOUS COMMUNITY-LED RESEARCH COLLABORATION

> "Canada's relationship with Indigenous Peoples should play an important role in the success of our energy transition. Indigenous peoples already play a leadership role as pathfinders – stewards of the land, environment and natural resources. Both Indigenous and non-Indigenous Canadians see the value of greater Indigenous participation in Canada's energy future and want to ensure that Indigenous communities benefit more directly from energy development. … As part of this new relationship, Indigenous peoples must be included as partners in shaping Canada's energy future. By embracing Indigenous participation in the energy transition, Canadian and Indigenous leaders alike can create a powerful lever for change, accelerating progress on economic reconciliation, reducing poverty and increasing prosperity. This transition is an opportunity for Indigenous Peoples and communities to take their place at the table" (Government of Canada, 2018b, p. 8).

One approach to decolonizing the consultation process, for example in the case of geothermal energy development in Alberta, is to have members of the Indigenous communities whose traditional lands and ways of life might be affected by industrial activities lead research to identify the benefits and risks of a geothermal development for use in discussions with industry proponents and consultations with the government. Such an approach utilizes traditional knowledge and intergenerational learning, and it would allow an opportunity for the community to reach consensus regarding whether or not they want to proceed with geothermal energy development, in a manner which respects the community's right to self-determination, as stated in Article 3 of the UN Declaration (United Nations, 2007). Further, "research guided by community objectives and governance processes provide the opportunity for transformation in relationships of power [and in] relationships between researchers, Indigenous communities and the Crown" (Behr, 2019).

Alexis Nakota Sioux Nation has partnered with a research team based at the University of Alberta, through its Future Energy Systems research initiative, to co-conduct research regarding the risks and benefits of geothermal energy development in their traditional lands. This interdisciplinary research draws on theory and practice from Indigenous studies, anthropology, business, economics, engineering and renewable resources management, and investigates the communication of risk and scientific expertise,

from Indigenous traditional knowledge and the western paradigm, as a component of community engagement strategies prior to and throughout the development of a geothermal energy project.

Alexis Nakota Sioux Nation has agreed to collaborate on this project as co-investigators and co-creators of knowledge to identify oral histories, protocols and risks as they pertain to geothermal energy in their traditional lands. Through innovative communication and consultation processes to be co-developed by Alexis Nakota Sioux Nation and the university-based researchers, the proposed research aims to inform how we might sustainably develop renewable resources in a way that respects the Indigenous right to free, prior and informed consent (United Nations, 2007). As co-investigators, Alexis Nakota Sioux Nation and the university-based researchers will increase their mutual capacity for developing innovative energy research methodologies, and understandings of self-governance mechanisms, in the context of developing a more sustainable energy future for all.

This partnership also aims to co-develop a novel, inclusive community engagement process focusing on risk communication and management as well as scientific communication between Indigenous and non-Indigenous communities, industrial developers and the government to enhance how community engagement and consultation are conducted prior to and during the development, construction and operation of a renewable energy project. It is envisioned that the engagement process and risk communication/management framework could become transferable tools to be customized for local use by other communities affected by renewable energy development projects to better understand how risk is conceptualized, so that local understandings of the environment and human responsibilities for managing risk can be effectively accounted for, and considered, in the consultation process. It is further envisioned that these frameworks and processes, when localized, can help facilitate community consensus on whether to accept and adapt to, or resist, energy development activities.

4. CULTURAL RESURGENCE: HOW ALEXIS NAKOTA SIOUX NATION'S PAST INFORMS GEOTHERMAL ENERGY DEVELOPMENT TODAY

> "Local and indigenous knowledge refers to the understandings, skills and philosophies developed by societies with long histories of interaction with their natural surroundings. For rural and indigenous peoples, local knowledge informs decision-making about fundamental aspects of day-to-day life. This knowledge is integral to a cultural complex that also encompasses language, systems of classification, resource use practices, social interactions, ritual and spirituality. These unique ways of knowing are important facets of the world's cultural diversity, and provide a foundation for locally-appropriate sustainable development" (United Nations Education, Scientific and Cultural Organization, n.d.).

Alexis Nakota Sioux Nation's traditional territory in Alberta "reaches from Cardinal River in the south along the foothills and Rocky Mountains beyond Whitecourt and the Swan Hills in the north, and reaches east past Barrhead" (Alexis Nakota Sioux Nation, 2019). The proposed geothermal energy development in Hinton is situated in Alexis Nakota Sioux Nation's traditional land in the Jasper National Park, which is famous for its hot springs.

The Alexis Nakota Sioux Nation Heritage Department is currently working on a research project to identify the specific origins of rocks and identification of animal hides, teeth and bone precious to members of the Nation that are now housed at the Smithsonian Institution's National Museum of the American Indian. Gaining better knowledge of their provenance, such that they can be identified as part of Alexis Nakota Sioux Nation's cultural property, is a process that allows the community "to take their heritage in their hands and be empowered… [which] is a great part of decoloniz[ation]" (Hoobler, 2006).

Through a collaboration with the Royal Alberta Museum, Alexis Nakota Sioux Nation is endeavouring to strengthen their enduring connections and reestablish relationships of proper care and ceremony with that which has been removed from their territory and now rests in the Smithsonian Institution. This process has begun with visits by a few members of Alexis Nakota Sioux Nation to the Smithsonian, to identify the connections and has led to the proposal for temporary exhibit to be housed at the Royal Alberta Museum (tentatively titled *Awche nibahaud*: They Brought Them Back). As explained by Royal Alberta Museum Curator Emerita Susan Berry, "the project will enable Nation members to reconnect with ancestral [belongings] that left the community 100 years ago. Nakota leaders have told [Royal Alberta Museum] staff that in bringing back the [belongings], project participants are helping to put back together something that has been broken" (S. Berry, 2019, pers. comm.). The renewed connections with the ceremonial and cultural belongings will provide Alexis Nakota Sioux Nation opportunities to "acknowledge [their] past… and begin a healing process for [their] communities and the communities that surround [them]" (Lonetree, 2009, p. 332).

"The oral traditions of First Nations have been … cherished and deeply respected ways of communicating complex information about culture, politics, the environment and economics" (Tobias, 2000, p. vi). Watts (2013) writes, "As Indigenous peoples, it is not only an obligation to communicate with Place-Thought (ceremonies with land, territory, the four directions, etc.), but it ensures our continued ability to act and think according to our cosmologies" (p. 32). Further, Tinker (2004) wrote:

> "Did you know that rocks talk? Well, they do. Yes, I am aware that this is an audacious claim—even for an American Indian—made in the context of late modernity (or even postmodernity, if you insist) and in the context of a world indelibly marked by the accomplishments of modern science. But… rocks talk and have what we must call consciousness. And we must extend our discussion of rocks to trees and to the rest of the created world around us. … As the oldest and wisest of all life forms, then, rocks are to be deeply respected as a category but especially as persons" (pp. 106-109).

The belongings, such as those made up of rock, to be brought back from Washington, D.C., can inform protocols and oral histories regarding rocks, water, and the relationship between the land and people as it relates to geothermal energy. For example, the stone bowls of sacred ceremonial pipes represent the mountains and strength (Grand Chief W. Littlechild, 2019, pers. comm.).

Researchers based at the University of Alberta will assist with the identification of the provenance of that which is returned, as well as to work with Alexis Nakota Sioux Nation Elders and community members, in concert with Royal Alberta Museum professionals to inform the relationship between land, rocks, water and people in regards to geothermal energy. In particular, the community-led research collaboration will investigate the following questions: 1) What are the Indigenous protocols and oral histories regarding

rocks, water and the relationship between the land and people as it relates to geothermal energy? 2) How can we reflect these protocols in identifying relationships with respect to a key set of cultural materials that are presently at the Smithsonian Institution, which the Alexis Nakota Sioux Nation Heritage Department has identified? 3) What are the potential implications for these sacred relationships associated with geothermal energy and methods of development?

It is envisioned that the sharing the collection with the Elders and community knowledge holders will allow them to draw on their memories and contribute their oral histories to the community's knowledge base regarding ceremony and protocol. "Indigenous storytelling is… crucial to the cultural and political resurgence of Indigenous nations" (Corntassel et al., 2009, p. 137), and it is critical to assert that Indigenous oral histories and "cosmological frameworks are not an abstraction but rather a literal and animate extension of Sky Woman and First Woman" (Watts, 2013, p. 22) (i.e., the creation stories of the Haudenosaunee and the Anishnaabe, respectively). Corntassel (2012) further states, "our ceremonies are cyclical, as our stories need to be re-told and acted upon as part of our process of remembering and maintaining balance within our communities. It is the stories that sustain us and ensure our continuity as peoples" (p. 89). In the 100 years that they have been away from the community, the ceremonial and cultural belongings have missed 400 ceremonies – they have stories to tell, and it is imperative to get them back to the community (Chief T. Alexis, 2019, pers. comm.).

Youth in the community will have the opportunity to learn the oral histories from the Elders and knowledge holders. Further, this research collaboration will help youth develop research skills through working with the Alexis Nakota Sioux Nation Heritage Department and will revive the use of Indigenous languages among the youth living in Alexis Nakota Sioux Nation.

> "For example, students in the local junior high would be assigned one [belonging] in the collection to research. How was this [belonging] made? How was it used? What materials were used in making it? What are the Nakota names for this [belonging], the materials and the activities associated with the [belonging]? The youth will directly engage with ceremonial knowledge holders and community members with the appropriate knowledge of how these materials are to be respectfully treated, encouraging intergenerational learning" (S. Berry, 2019, pers. comm.).

Ultimately, the research project will engage community members "in different capacities, thereby reinforcing their ownership of [their ceremonial and cultural belongings] and, by extension, of their own power and postcolonial identity" (Hoobler, 2006).

5. DECOLONIZING THE RESEARCH PROCESS: INTERGENERATIONAL LEARNING AND NATION-TO-NATION RELATIONSHIP BUILDING

> "Being Indigenous today means struggling to reclaim and regenerate one's relational, place-based existence by challenging the ongoing, destructive forces of colonization. Whether through ceremony or through other ways that Indigenous peoples (re)connect to the natural world, processes of resurgence are often contentious and reflect the spiritual, cultural, economic, social and political scope of the struggle…. Decolonization offers different pathways for reconnecting Indigenous nations with their traditional land-based and water-based cultural practices." (Corntassel, 2012, p. 88-89).

It is recognized that, as co-creators of knowledge, community members from Alexis Nakota Sioux Nation will "participate at all stages of the project, including defining the questions, developing the hypotheses, right through to discussion of the results and answering new questions" (Follett and Strezov, 2015, p. 2). To truly honour Indigenous knowledge and ways of knowing, this research program must also be flexible to accommodate and incorporate ideas and questions that are important to community members, including those that will arise in the course of direct encounters with the belongings presently housed at the Smithsonian Institution. This approach is also consistent with the naturalistic paradigm, where the "inquiry problem guides and bounds an inquiry" (Guba and Lincoln, 1982, p. 244) rather than relying on a priori theory. Further, because the naturalistic paradigm relies on continual data/knowledge gathering to advance the inquiry process, the research program will require a broad research design for consideration of new areas of interest as they materialize.

To further decolonize the research process, researchers based at the University of Alberta will work with members of Alexis Nakota Sioux Nation to replace the Euro-western epistemological-ontological framework for understanding the relationship (or lack thereof) between humans and nature with an Indigenous frame of Place-Thought (Watts, 2013) to guide the research. This paradigm shift will strengthen the community's ability to research using "holistic, experiential methods of Indigenous pedagogy" (Regan, 2010, p. 52), such as ceremony and oral histories. It is also guided by writings about prior research relationships such as those developed by Liz Letendre (Ruttan et al., 2017).

A key aspect of the research process is the interaction between Alexis Nakota Sioux Nation Elders, knowledge holders and youth to identify and evaluate risks, and to proactively explore what the introduction of geothermal energy in their communities might mean and whether to reject development. The focus on intergenerational learning between Elders and Indigenous youth is critical because, in the five, ten, or twenty years it will take for a geothermal project to be developed, these youth will become the leaders in the community. Over time, today's youth will be become keepers of the community's traditional knowledge to continue stewardship of the environment, to know what ceremonies and protocols are required for geothermal energy development (if it is accepted by the community), to know what types of activities associated with geothermal energy development are not acceptable to their community and ways of life, and to pass on the knowledge to the next generation of leaders.

Another critical component in the research process is the facilitated interaction between Indigenous and non-Indigenous youth in Hinton to discuss the development of natural resources. Through encouraging empathy-based learning and dialogue in a circle format, youth participants will better understand the cultural, social, economic, environmental and spiritual impacts of the geothermal project from each other's viewpoints. Further, these facilitated sessions might create a solidarity network of Indigenous and non-Indigenous community members who "support fundamental issues of human rights and self-determination" (Keefer, 2010, p. 84), which will strengthen Alexis Nakota Sioux Nation's presence during formal consultations with the Crown when they occur.

Support and solidarity from outside Alexis Nakota Sioux Nation can also come through Nation-to-Nation relationship building with other Indigenous communities who have experienced geothermal development on their traditional lands. Through the collaboration with University of Alberta-based researchers and their networks, Alexis Nakota Sioux Nation will participate in research comparing approaches toward Indigenous water rights, ownership and engagement in other countries. An examination of other countries' geothermal energy experiences, including the political and social milieux of Indigenous-settler relations, royalty structures and land use, will provide insight and strengthen Indigenous communities' ability to inform geothermal energy policy and planning options in Canada.

For example, the development of geothermal energy sites in Aotearoa New Zealand, such as the Rotokawa Geothermal Project (Legmann and Sullivan, 2003; United Nations Social Development Network, 2016), offer insights into various ways to approach ownership, management, and royalty structures on an individual community basis, rather than a "one-size-fits-all" approach. Further, the experiences of a Māori community (Ngāpuhi iwi) that cares for the Ngāwha geothermal springs located on the North Island can provide understandings of how the community participated in the Waitangi Tribunal Wai 1040 case for the Treaty Claims of Ngapuhi (the largest confederation of tribes of Māori New Zealand comprising 157,000 of the 700,000 Māori in the country) with respect to Māori relationships with water, including geothermal and freshwater. The University of Alberta has arranged opportunities for Alexis Nakota Sioux Nation community members to meet with one of the elders (rangatira) who helped lead the Treaty Claim and who has over eighty years' lived experience of Māori-Crown relations concerning the sovereignty of Māori in Northland, Aotearoa New Zealand, and treaty relationships with the Crown.

Should Alexis Nakota Sioux Nation decide that geothermal energy development is detrimental to its traditional lands and ways of life, relationships could be forged with Native Hawaiians' whose ongoing opposition to geothermal projects in the Puna District is well known (Coe, 1991; Edelstein, 1995; Stickler, 2013; Wong, 2018). Through Nation-to-Nation relationship building, Alexis Nakota Sioux Nation can gain knowledge of other Indigenous communities' resource development experiences to potentially use in their own path toward accepting or resisting geothermal energy development.

Of most significance, the research process will be guided by the principles found in OCAP® (Ownership, Control, Access and Possession) from the Alberta First Nations Information Governance Centre. OCAP® "respects the right of First Nations communities in making its decisions regarding why, how, and by whom information is collected, used, or shared" (Alberta First Nations Information Governance Centre, n.d.), thereby ensuring that the community's information, data and rights are protected.

Overall, this research aims to inform and develop equitable community engagement processes and frameworks for approaching renewable energy development responsibly and sustainably, while respecting Indigenous rights to free, prior and informed consent. Alexis Nakota Sioux Nation will use its traditional scientific knowledge, oral histories, ceremonies and protocol to inform and develop a new model for approaching renewable energy development responsibly and sustainably with consideration for Indigenous control and proprietary interests in geothermal resources. As co-investigators and co-creators of knowledge, researchers from Alexis Nakota Sioux Nation and the University of Alberta will mobilize the innovative community engagement practices to increase our mutual capacity in energy research and governance, and governmental agency capacity to listen and respond appropriately to community concerns.

6. WHY DECOLONIZATION MATTERS AND HOW TO START THE PATH TO DECOLONIZATION

"The experienced materiality of colonialism is grounded… in dispossessions and repossessions of land" (Harris, 2004, p. 167). Raised in a settler family who was granted refugee status to enter Canada after fleeing persecution in our homeland, I recognize that without the historic treaties signed by Indigenous Nations, I would not have a place to call home (Day, 2010). I am part of Treaty Six. All Indigenous peoples and settlers are Treaty people. All settlers who wish to benefit from the natural/renewable resources available on Turtle Island need to recognize the importance of the historic treaties and how colonialism dispossessed Indigenous Nations of their traditional lands (Harris, 2004). Without proper consultation processes, geothermal energy development could be considered an act of colonialism that will dispossess Indigenous communities of their traditional land and affect their ways of life, their relationship with the land, their land-based activities and their economic opportunities.

Bill 36: the Geothermal Resource Development Act is an important change to Alberta legislation as geothermal resources are to be explicitly regulated for the first time. The Government of Alberta fashioned its geothermal energy policy after the *Oil and Gas Conservation Act* (Bankes, 2020), and geothermal resources will be considered as part of the regulation of minerals, to be subject to royalties, rather than being principally regulated under the Alberta Water Act as geothermal water (First Nations' uses of and rights to water are not considered in the current Water Act (Government of Alberta, n.d.)). Given that the most viable geothermal sites in Alberta are on Indigenous traditional lands, it will be critical to assess the impact of such industrial development on traditional land and water use, to evaluate whether or not the risks are acceptable to the affected Indigenous communities and, if acceptable to the communities, to explore the feasibility of incorporating an Indigenous equity component (e.g., co-management, ownership stake in the project or land use agreement between the company and the community) of geothermal resources as part of the Government of Alberta's geothermal policy.

Renewable energy development is the "creation of sustainable alternatives to the dominant global order" (Day, 2010, p. 261) in terms of energy consumption. There are too many examples of extractive industries that have used colonial processes and systems that have disregarded the rights of Indigenous peoples. In this era of reconciliation, decolonizing the approach to natural resource extraction or renewable energy development requires a commitment from settler actors (i.e., the government, industry and settler communities) to reexamine their place of privilege and the colonial systems and structural inequality that allowed such privilege (ibid). When such introspection occurs, there is a "creation of new men" (Fanon, 1963, p. 2), and it is then that the "creation of sustainable alternatives to the dominant global order" that Day (2010) refers to (i.e., Indigenous resistance, cultural resurgence and restitution for past wrongs) might be possible.

In Alberta, the overarching approach to decolonizing renewable energy development, and the consultation processes associated with it, is to braid Treaty Six, the UN Declaration and the Truth and Reconciliation Commission of Canada Calls to Action (Grand Chief W. Littlechild, 2019, pers. comm.). There are principles regarding protecting the environment and environmental stewardship, as well as protecting tradition and culture in each of these important, living documents. As Indigenous and non-Indigenous people living in Treaty Six territory come together and recognize their relationships to one another and the land and water through this historic treaty, through ceremony, storytelling and listening, they will be able to increase their mutual capacity for decolonizing geothermal energy development, which will lead to a more sustainable energy future for all.

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