

Framing Indigenous Partnerships in Energy and Allied Renewable Resource Sectors



Final Knowledge Synthesis Report for the Social Sciences and Humanities Research Council of Canada

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Key Messages

- This research examines framings of Indigenous partnerships in Canada’s growing bioenergy sector.
- Understanding identities, roles and responsibilities, and issues within traditional territories is integral to understanding environmental governance systems that are inclusive of Indigenous peoples.
- All Canadian provinces and territories have policies and programs aimed at supporting biofuels development and partnerships, though some are more advanced than others.
- Based on a review of available Indigenous bioenergy partnership literature, bioenergy sector policy and participation models are best described as emerging. Scant evidence of Indigenous perspectives on bioenergy exists.
- Conventional roles are still evident, namely that proponents support projects to generate corporate revenue, communities demand benefits from new projects, and governments support new resource development to strengthen economies.
- But the rising importance of concepts and practices like social license to operate, community-led companies, and local/municipal intermediate facilitation in “higher order” structures and processes (i.e., like corporate-community collaboration) all highlight that conventional roles are shifting.
- Evidence suggests that governments demonstrate uncertainty and hesitation around energy and forestry developments that are small scale, experimental, and/or occurring during periods of economic and social fluctuation. This could be a barrier to bioenergy proliferation.
- Despite challenges, companies, communities and governments are building collaborative agreements that are based on common interests and mutual benefit.
- Identities and perspectives are complex and can shift depending on various factors relating to development projects, as well as the particularities about how business is done around such projects.
- Assertions of responsibility relating to indigenous participation included governments, companies and communities as the primary actors in governance.
- The foundation of responsibility for Indigenous communities is their custodial role in the stewardship of the land, whereas other governments hold fiduciary responsibility for consultation, as well as facilitating new policy tools and frameworks that promote Indigenous participation. Companies maintain responsibility for how they engage Indigenous communities within what is possible according to policy. Different positions of responsibility exist that should be acknowledged.
- Solutions based on different types of collaboration, including corporate partnerships involving companies and Indigenous communities, are increasingly noted.
- Despite the breadth of partnership research in Canada, more empirical research with and by communities actually involved in bioenergy development is needed.
- There remains a need to fully document bioenergy policies, including conducting comparative policy analysis across the provincial and territorial resource sectors.

Executive Summary

Canada is a top five global energy producer and thus is in a leadership position with respect to how it engages in international markets and, increasingly, energy partnerships. Growing global energy demand and international firms place demands on Indigenous communities and lands where benefits could exist, but also where local agendas and views may differ from international strategic agreements. Such is the case in the rapidly expanding biomass energy sector, which promises to support low carbon energy options that also support economic development and Indigenous involvement.

Bioenergy is energy derived from any living organisms or by-products (biomass) used to produce energy or fuel (biofuel). Although bioenergy presents a range of advantages (e.g., greenhouse gas displacement, energy self-sufficiency, and regional economic benefits), its widespread use is a point of contention and political debate. The bioenergy industry is often perceived to be competing with food, driving up energy prices, and overstating its environmental benefits.

This research examines how partnerships involving Indigenous groups in Canada and international and domestic partners are framed. In particular, we probe current global-local framings emanating from communities and their partners in energy and forest sectors, and, in particular, how different groups frame bioenergy economic and policy opportunities. This research has 7 objectives:

1. advance current understanding of types of Indigenous participation and engagement in renewable energy development and forestry in Canada;
2. investigate the views held by Indigenous leaders and communities, policy makers, researchers, and industry, many of whom are potential partners in new initiatives;
3. develop new understanding of Indigenous involvement in the energy sector and allied sectors such as forestry, including preferences and expectations surrounding bioenergy innovation and growth;
4. investigate whether and how international energy partnerships with Indigenous groups are perceived by different groups, and what measures might hold the most promise for strengthening current understanding of bioenergy potential;
5. analyse existing beliefs as well as areas of agreement and disagreement among different interests (i.e., communities, policy makers, researchers, and industry) to identify perceived problems and solutions for developing mutually beneficial energy partnerships, policy and programs;
6. develop understanding for how to conduct effective engagement processes, build cross-cultural partnerships, and understand similarities and differences in views and values; and,
7. analyze dominant and marginalized framings of energy partnerships and explore paths to meeting truth and reconciliation priorities.

Analysis first focuses on statements relevant to bioenergy issues and perceptions, making sense of and probing the nuanced discourse that exists in published literature, thus providing new insights on existing knowledge. We then use the broader literature on Indigenous participation and global and local partnerships in forestry and energy development to create a deeper and more nuanced understanding of the different frames potentially relating to ongoing bioenergy development in Canada. In particular, we probed how current global-local framings position communities and their partners in development, and how different groups frame bioenergy economic and policy opportunities. Systematic and bibliometrics approaches were used in our analysis.

All Canadian provinces and territories have policies and programs aimed at supporting biofuels development and partnerships, though some are more advanced than others. Based on a review of available Indigenous bioenergy partnership literature, bioenergy sector policy and participation models are best described as emerging. Scant evidence of Indigenous perspectives on bioenergy exists.

Conventional roles are still evident, namely that proponents support projects to generate corporate revenue, communities demand benefits from new projects, and governments support new resource development to strengthen economies. The rising importance of concepts and practices like social license to operate, community-led companies, and local/municipal intermediate facilitation in “higher order” structures and processes (i.e., like corporate-community collaboration) all highlight that conventional roles are shifting. Evidence suggests that governments demonstrate uncertainty and hesitation around energy and forestry developments that are small scale, experimental, and/or occurring during periods of economic and social fluctuation. This could be a barrier to bioenergy proliferation. Despite challenges, companies, communities and governments are building collaborative agreements that are based on common interests and mutual benefit.

Identities and perspectives are complex and can shift depending on various factors relating to development projects, as well as the particularities about how business is done around such projects. Assertions of responsibility relating to indigenous participation included governments, companies and communities as the primary actors in governance. The foundation of responsibility for Indigenous communities is their custodial role in the stewardship of the land, whereas other governments hold fiduciary responsibility for consultation, as well as facilitating new policy tools and frameworks that promote Indigenous participation. Companies maintain responsibility for how they engage Indigenous communities within what is possible according to policy. Different positions of responsibility exist that should be acknowledged.

Benefits and incentives for participation in governance include influence on how projects take shape (including the assertion of rights), as well as socio-economic outcomes for communities, such as jobs and community infrastructure. Experience with participation in the non-renewables ranges from conflict to full involvement via environmental assessments and IBAs. Processual issues remain, and establishing meaningful participation and consent are not straight forward matters for Indigenous partners nor companies. Government has the ability to change, yet participation remains inequitable for Indigenous communities, especially those that might want to assert rights and visions that are perceived to be incompatible with development.

Solutions based on different types of collaboration, including corporate partnerships involving companies and Indigenous communities, were increasingly noted. The importance of improving relationships with communities through genuine forms of engagement is stressed, and participatory spaces where communities are empowered to communicate on their own terms are promoted as having the greatest potential for working through conflict and facilitating the development of trust, among other relational qualities the call for shared value initiatives where business success is connected to community prosperity is explicitly stated as a solution to issues around community wellbeing and participation in development projects. Despite the breadth of partnership research in Canada, more empirical research with and by communities actually involved in bioenergy development is needed. There remains a need to fully document bioenergy policies, including conducting comparative policy analysis across the provincial and territorial resource sectors, as well as other countries.

1. Introduction: bioenergy sources, and commonly associated benefits and impacts

Canada is a top five energy producer worldwide, making it a global leader in energy resourcesⁱ. The energy sector remains a key driver of the national economy, creating jobs, supporting important programs and services, and meeting our daily energy needs. Given the significance of Canada's energy role, the sector also attracts investment as well as international demand. Our country is thus in a leadership position with respect to how it engages in international markets and, increasingly, energy partnerships.

According to the *Canadian Energy Strategy*, provincial and territorial governments seek to be officially involved in international energy dialogues, while their commitment to collaboration with their Indigenous leadership counterparts is based on observing Aboriginal and treaty rights. At the same time, growing global demand and international firms place demands on Indigenous communities and lands where benefits could exist, but also where local agendas and views may differ from international strategic agreements. This creates trilateral, multi-level, and in the case of bioenergy, multi-sector (e.g., energy and forestry) arrangements for engagement that involve parties with different rights, capacities, and objectives, as well as different forums for engaging one another.

Such is the case in the rapidly expanding biomass energy sector, which promises to support low carbon energy options that also support economic development and Indigenous involvementⁱⁱ. Bioenergy is energy derived from any living organisms or by-products (biomass) used to produce energy or fuel (biofuel). Various technologies produce energy and fuel from biological sources (biomass), each combination resulting in different environmental, social, and economic impacts. Although bioenergy presents a range of advantages (e.g., greenhouse gas displacement, energy self-sufficiency, and regional economic benefits), its widespread use is a point of contention and political debate. The bioenergy industry is often perceived to be competing with food, driving up energy prices, and overstating its environmental benefits. This perception presents a barrier to policy and partnership development needed for the emergence of a sustainable, advanced bioeconomy.

There is a need to better understand this global-local interface, in particular, how Indigenous communities, governments, and firms are engaging international markets and partners for energy partnerships. This research examines how partnerships involving Indigenous groups in Canada and international and domestic partners are framed. In particular, we probe current global-local framings emanating from communities and their partners in energy and forest sectors, and, in particular, how different groups frame bioenergy economic and policy opportunities.

2. Knowledge synthesis objectives

Previous research indicates that not all renewable energy sources, including bioenergy, are perceived as desirable and environmentally neutral. Still, no recent research has analyzed global and local perspectives on Indigenous partnerships, and how foreign and domestic interests and views interact to shape energy development partnerships in Canada. Furthermore, little work has been done to clarify how different groups frame major and unique issues linked to Indigenous energy partnerships involving communities as well as international and domestic firms and governments. Our research will help meet current information needs (see Canadian Council for Aboriginal Business report *Promise and Prosperity*ⁱⁱⁱ) and seeks to improve practice and policy for successful non-Indigenous and Indigenous partnerships in major resource and technology sectors. By analyzing different perspectives on bioenergy development, and elucidating framings that are perhaps not fully documented, this research assists Indigenous groups in determining their own identities, objectives, and approaches that can help to achieve development goals. Amid opportunities and increasing demands on Indigenous leadership and labour, better

understanding how domestic and international partners can work together effectively and respectfully is essential to managing conflict and uncertainty.^{iv} This synthesis research helps to address the identified gaps and meet current information needs through the following objectives:

- 1) Advance current understanding of types of Indigenous participation and engagement in renewable energy development and forestry in Canada;
- 2) Investigate the views held by Indigenous leaders and communities, policy makers, researchers, and industry, many of whom are potential partners in new initiatives;
- 3) Develop new understanding of Indigenous involvement in the energy sector and allied sectors such as forestry, including preferences and expectations surrounding bioenergy innovation and growth;
- 4) Investigate whether and how international energy partnerships with Indigenous groups are perceived by different groups, and what measures might hold the most promise for strengthening current understanding of bioenergy potential;
- 5) Analyse existing beliefs as well as areas of agreement and disagreement among different interests (i.e., communities, policy makers, researchers, and industry) to identify perceived problems and solutions for developing mutually beneficial energy partnerships, policy and programs;
- 6) Develop understanding for how to conduct effective engagement processes, build cross-cultural partnerships, and understand similarities and differences in views and values; and,
- 7) Critically analyze dominant and marginalized framings of energy partnerships and explore paths to meeting truth and reconciliation priorities.

This synthesis research provides a benchmark to compare international and domestic framings of Indigenous partnerships in Canada's renewable energy and forest sectors. In particular, this research advances current understanding of the views held by Indigenous leaders and communities, policy makers, researchers, and industry, many of whom are potential partners in new initiatives and can help improve design of informational programs and policy initiatives. This research was designed to support the overarching goal of developing a nuanced yet reliable knowledge base that is required if we hope to foster innovation needed to have a world class bioenergy industry that will contribute to community economic development and make Canada a global leader. Findings are significant because they can improve informational programming and policy designs, and thus they are strategically important for communities, policy makers, and firms.

3. Implications

3.1. Broad implications of bioenergy development in Canada

At a time when Indigenous issues and engagement in energy development are being heavily promoted in Canada,^v there is acknowledgement that more needs to be done to design and conduct proper engagement processes, build cross-cultural partnerships, and understand similarities and differences in views and values.^{vi} Establishing an advanced bioenergy industry (e.g., fuel and energy from biological sources such as wood fibre) in Canada will not occur with only basic information about Indigenous partnerships. Rather, a nuanced yet reliable knowledge base is required if we hope to foster and maximize innovation needed to have a world class bioenergy industry that will contribute to community economic development and make Canada a global leader.

The *Canadian Energy Strategy* (2015) and the *Kenora Declaration of Forest Innovation* both emphasize the role of Indigenous businesses and innovation in growing Canada's bioeconomy.^{vii} While possible synergies hold promise, they are not automatic, and statements of commitment need to be backed by specific actions and resources. A complicating factor in such efforts is that we do not fully acknowledge or understand the interplay of Western and Indigenous knowledge and governance systems as this relates to processes and conditions that support innovation in energy and allied sectors. For example, it has been exceedingly difficult to realize the full contribution and benefits of Indigenous involvement in environmental resource management because their knowledge, if it is used at all, is often used inappropriately through selective and de-contextualized applications.^{viii} Thankfully, research has demonstrated that knowledge and governance systems are also not immutable and each evolves and is pluralistic.^{ix} Still, much more effort is spent devising technologies and products than is spent building relationships, common lexicon and protocols, and decision making procedures and processes. The latter things are not self-evident. There is much work to be done in the human dimensions of energy and forestry, which likewise might be considered the social innovation side of bioenergy partnerships involving Indigenous representatives and their partners.^x Like technological innovation, social innovations require experimentation, failure, and perseverance.^{xi} Examples of current community-led partnerships emphasize that such activities are precursory and on-going activities that are essential to upholding local control, building respect, and support.^{xii}

It is acknowledged that successful national economic initiatives aimed at fully promoting technological innovation would also include and promote associated socio-political institutional innovation.^{xiii} As much of the potential for bioenergy growth and partnerships is supported by interest in international markets, would-be Canadian partners face additional leadership responsibilities to help set the stage for effective working arrangements with groups that yet again hold unique knowledges and backgrounds. Pathways to collaboration involving Indigenous groups and conventional industry partners in forestry and energy may exist in some of the current business to business partnerships and governance models (see Section 5.4.); however, effectively combining different knowledges, governance systems, and land use approaches requires much more attention if energy projects and industries are to meet their full potential. This will also require companies and governments to spend less time and money entrenching conventional disciplines, markets and power structures that have typified Canada's staple economy,^{xiv} and more time embracing new entrants in business, research and development, and policy making. There is an almost countless array of models as experimentation and necessity push partners to develop new ways of working together.^{xv, xvi} Social processes such as collaboration, engagement, learning, and collective mobilization must not be treated as accepted background processes that are merely there to support and drive focal enterprises such as commercialization, product development, training and talent development, and financial investment. A much more intentional approach to designing mutually acceptable processes that incorporate the knowledge and incentives of all parties is needed to promote Indigenous energy partnerships and innovations that span the energy and forest sectors.

3.2. Implications for Indigenous communities and reconciliation

In addition to the commonly associated impacts and benefits with developing bioenergy (Section 1.2), there are a number of special considerations for Indigenous communities. Bioenergy development in Canada has the potential to impact and/or benefit Indigenous communities in similar ways to other natural resources developments, such as forestry and other types of energy projects.^{xvii} Benefits to Indigenous communities from resources development projects are generally in the form short- and/or long-term economic gains, such as employment and other forms of community enhancements such as infrastructure, as well as other types of investments.^{xviii} Impacts can also be both short- or long-term, including degradation to the environment, as well as impacts on the social and economic wellbeing of

communities, including impacts on Indigenous rights and civil liberties.^{xi} Such impacts have resulted in numerous adverse effects, including the contamination of lands and waters, and the disconnection from traditional territory and practices, such as hunting, fishing, and trapping.^{xx, xxi, xxii} Connected to these impacts and the disassociation from traditional ways of life are emotional pain and numerous social effects affecting individuals and entire communities.^{xxiii} The trans-generational effects associated with colonization and ongoing development on traditional territories, as well as their impacts on individual and community wellbeing and governance, is only beginning to be understood and represented in the emerging literature from communities and academics.^{xxiv}

Indigenous communities face continuous barriers to developing meaningful participation and obtaining benefits from renewable energy sources, such as biofuels.^{xxv} The history of Canadian policy reforms provides a significant portion of the context for understanding the implications of resource development and partnerships between First Nations, proponents and the government. For the most part, consultations with First Nations governments and people have mainly been conducted because of legal obligations, with a fairly limited regard to culture or other issues that might be critical to enhancing participation and equitable outcomes for communities.^{xxvi} In order to influence governments and (development and conservation) project proponents, the international community, and advisory bodies such as the IUCN and the United Nations have been bringing together multi-institutional perspectives (i.e., community representatives, NGOs, national and regional governments) to contribute to building guidelines for new policy affecting Indigenous peoples.^{xxvii, xxviii} The United Nations' *Declaration on the Rights of Indigenous Peoples* (UNDRIP) is a leading example of such policy. This monumental declaration indicates a major shift in international values, norms, and politics regarding Indigenous peoples, their roles in governance and their rights to sovereignty and other forms of decision-making power. Canada joined UNDRIP as one of the last signatory nations in November 2010.^{xxix} Fifteen of the forty-six declarations relate to the rights of Indigenous peoples to participate in decision-making processes that affect their livelihoods.^{xxx}

Despite the impacts associated with the dispossession and degradation of land, Indigenous peoples in Canada maintain strong connections to their traditional territories and they are forging new ways for asserting their traditional custodial rights and responsibilities. Coinciding with these actions, and due to court decisions (e.g., recognition of Aboriginal Title for the Tsilhqot'in Nation in British Columbia in 2014) as well as collaborative actions (e.g., Miitigoog Partnership Inc. in northwestern Ontario, established in 2010), governments and resource development companies have incrementally shifted towards greater Indigenous participation. Co-management or other arrangements have elevated Indigenous decision-making authority with relation to their traditional territories.^{xxxi, xxxii} Concurrently, a wealth of research has been undertaken to develop knowledge that helps to understand and guide governance systems that are inclusive of Indigenous participation (e.g., Castro and Neilson, 2001;^{xxxiii} Armitage, Berkes and Doubleday, 2007;^{xxxii} Berkes, 2009;^{xxxiv} Bullock and Hanna, 2012;^{xxxv} Wyatt and Nelson, 2016^{xxxvi}).

Coinciding with the shift towards acknowledging the role of Indigenous peoples in natural resources development is the need to consider how such developments relate to reconciliation, which has been identified as a priority by Indigenous communities and the Government of Canada towards establishing and maintaining mutually respectful relationships between Indigenous and non-Indigenous peoples into the future.^{xxxvii} In 2008, the Truth and Reconciliation Commission of Canada (TRC) was established as a component of the Indian Residential Schools Settlement Agreement. The TRC gathered statements from residential school survivors, families and communities, the Churches, former school employees, the government and other Canadians with the "hope to guide and inspire Aboriginal peoples and Canadians in a process of reconciliation and renewed relationships that are based on mutual understanding and respect."^{xxxviii} Following the hearings, the TRC developed a set of Calls to Action, which would serve as a guide to reconciliation for the government of Canada and all Canadians.^{xxxix} Indigenous lands are

referred to several times in the TRC Calls to Action. Call to Action, 45(iv) states how it will be important to, “Reconcile Aboriginal and Crown constitutional and legal orders to ensure that Aboriginal peoples are full partners in Confederation, including the recognition and integration of Indigenous laws and legal traditions in negotiation and implementation processes involving Treaties, land claims, and other constructive agreements.”^{xl} Calls to Action, 45(i), 46(ii), 47 and 49 talk about Indigenous lands and the need to reduplicate concepts such as the Doctrine of Discover and *terra nullius*, which have been used to justify European sovereignty, and have been the foundation of laws and policies that have marginalized Indigenous peoples’ participation in governance. Call to Action 92 speaks specifically to the “corporate sector of Canada” to adopt UNDRIP and meaningfully and equitably involve Indigenous people in the policy and core operational activities affecting their lands (Box. 1).

Box. 1. Truth and Reconciliation Commission: Call to Action, 92:

We call upon the corporate sector of Canada to adopt the *United Nations Declaration on the Rights of Indigenous Peoples* as a reconciliation framework and to apply its principles, norms, and standards to corporate policy and core operational activities involving Indigenous peoples and their lands and resources. This would include, but not be limited to, the following:

- i. Commit to meaningful consultation, building respectful relationships, and obtaining the free, prior, and informed consent of Indigenous peoples before proceeding with economic development projects.
- ii. Ensure the 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.
- iii. Provide education for management and staff on the history of Aboriginal peoples, including the history and legacy of residential schools, the *United Nations Declaration on the Rights of Indigenous Peoples*, Treaties and Aboriginal rights, Indigenous law, and Aboriginal-Crown relations. This will require skills based training in intercultural competency, conflict resolution, human rights, and anti-racism.

In addition to following the Calls to Action from the TRC, it will be important to continue to understand how reconciliation can be understood structurally as an attribute associated with different forms of Indigenous participation for the governance of lands and natural resources.^{xli, xlii} Exploring governance structures and learning surrounding such structures will be important for creating insightful pathways for understanding the drivers of reconciliation in the context of relationships around lands and resources.^{xliii}

4. Research approach and knowledge synthesis

4.1. Social framing: making sense of collaboration and conflict

Understanding identities, roles and responsibilities, and issues within traditional territories is integral to understanding environmental governance systems that are inclusive of Indigenous peoples.^{xliiii, xliiv, xliv} Social framing provides an approach for understanding different viewpoints, shifting perspectives, and the production of shared meanings,^{xlvi, xlvii, xlviii, xlix, l} and has been used to explore different characterizations and identities that are linked to environmental issues and solutions.^{xlvi, li} Framing theory is frequently used in public policy and organizational research to examine public discourse and ‘make sense’ of complex natural resource policy issues.^{lii, liii} Framings of different actors can indicate problem and solution definitions among different individuals and groups, and also help to identify attributions of blame or praise, as well as desired future actions.^{xlviii, liv} Specifically, *diagnostic frames*

define the issues and personal reasoning for issues, and *prognostic frames* outline potential solutions and the roles and responsibilities involved in implementing solutions.^{xlvii} Research shows that social framings are also imperfect as they can be affected by bias, preference, and misinformation; they can contain contradictions and flawed logic.^{lv}

While there is a growing literature on framing theory and analysis, there is a smaller literature comprised of domestic and international authors who focus on understanding the perceptions of environmental resource industries and other actors. Applying frame analysis to situations where new issues and risks are emerging, such as periods of economic transition and environmental conflict, is helpful in explaining different perceptions that direct adaptation, investment, and even political support.^{lvi} Frame analysis has been used to understand multi-stakeholder decision-making processes,^{lvii} and increasingly, First Nation-municipal collaboration^{lviii} and other forms of collaborative environmental resource initiatives involving Indigenous peoples in Canada^{lix}, and also internationally.^{lx} Through frame analysis, it is possible to understand actions that are the products of new relationships between parties emerge, including how individuals in such parties begin to learn together and build trust and other foundations for moving past conflict, towards collaboration.^{xlvi, xlvi (p. 274)}

Guided by framing theory, this work develops new understandings of Indigenous involvement in the forestry and energy sectors, analyzes existing beliefs and issues related to forestry and energy development, and identifies areas of agreement and disagreement among different interests for development of mutually beneficial energy partnerships. Analysis first focuses on statements relevant to bioenergy issues and perceptions, making sense of and probing the nuanced discourse that exists in published literature, thus providing new insights on existing knowledge. We then use the broader literature on Indigenous participation and global and local partnerships in forestry and energy development to create a deeper and more nuanced understanding of the different frames potentially relating to ongoing bioenergy development in Canada. In particular, we probed how current global-local framings position communities and their partners in development, and how different groups frame bioenergy economic and policy opportunities. This synthesis work: (1) applies framing theory and analysis to develop new understanding of Indigenous involvement in bioenergy sectors, including preferences and expectations surrounding bioenergy innovation and growth; (2) analyzes existing beliefs and issues to identify perceived problems and solutions for developing bioenergy and related initiatives; (3) identified areas of agreement and disagreement among different interests and consider implications for development of mutually beneficial energy partnerships; and, (4) applies framing theory to forest and other energy sectors, with a view to understanding whether and how energy partnerships with Indigenous groups are perceived by different groups, and what measures might hold the most promise for strengthening current understanding of bioenergy potential.

4.2. Relevant literature and categories for inclusion in knowledge synthesis

A comprehensive search of research articles and grey literature was conducted using ISI Web of Science, which is considered one of the most comprehensive and extensively used academic databases.^{lxi} An initial search (Appendix A, Search 1) was conducted in ISI Web of Science using search terms that would narrow in on the literature on all forms of Indigenous participation in bioenergy projects published in the last 10 years (2008 - 2017). This initial search produced one result (Appendix B), indicating that the peer-reviewed literature in this area is exceedingly limited. The scope of the literature search (Appendix A, Search 2) was then broadened to include all materials relating to forest and energy development and the different forms of Indigenous participation. This search produced 29 results (Appendix C), inclusive of the one that were part of the initial search. This literature became the data for the frame analysis for Indigenous participation in forest and energy sectors. Abstracts of the articles that were results of the broader ISI Web of Science were reviewed for relevance and criteria for inclusion and exclusion were developed.^{lxii} Inclusion criteria consisted of any paper discussing Indigenous participation in forest and

energy sectors in the Canadian context. Exclusion criteria consisted of papers discussing resource sectors or topics outside the Canadian context (e.g., palm oil production by Canadian companies abroad) and papers not relating to Indigenous participation, and industries not involving forests or energy. A total of 6 articles were excluded from the review because they fell within the exclusion criteria or were records of articles that were no longer accessible (e.g., part of the grey literature that is no longer supported through affiliated institutions). Therefore, 23 peer-reviewed sources (journal articles, conference papers, etc.) were used for a frame analysis of Indigenous participation in forest and energy development over the past 10 years. Bibliometrics for the sample of papers are in Appendix D.

Next, an all-inclusive global search of government, community and industry materials (e.g., reports, presentations, briefs) relating to bioenergy development and Indigenous partnerships and/or participation was conducted in order to supplement the resources that specifically pertain to bioenergy. This search also produced relatively few results, especially give the scope of existing and plans for future bioenergy partnerships between Indigenous communities and companies in Canada. Materials found through conducting the all-inclusive global search included: (i) reports and policy briefs produced by energy companies; (ii) reports and policy briefs produced by Indigenous communities; (iii) First Nations websites; (iv) company websites; (v) consultancy websites; (vi) government websites; (vii) company presentations (power points); (viii) government presentations (power points); (ix) industry magazine articles (e.g., Canadian Biomass Magazine); (x) news articles (e.g., CBC News); (xi) letters and petitions; (xii) a doctoral thesis; and, (xiii) a web-based training module.

4.3. Data analysis

A coding framework was developed based on analytical constructs from the literature (i.e., frame categories) to assist classification, and open coding was used to help account for emergent findings. All statements relevant to bioenergy issues and perceptions were coded. Analysis included content analysis involving theme coding, pattern matching,^{lxiii} and ranking to construct profiles of the different perspectives and positions that currently underlie Indigenous partnerships in the bioenergy sector.

For the frame analysis we coded for characterization, identity, diagnostic and prognostic frames. Identity codes related directly to those parties that were involved in governance relating to forest and energy development. We use Kooiman's definition of governance as "the totality of interactions, in which public as well as private sectors participate, aimed at solving societal problems or creating societal opportunities."^{lxiv} Identity frames and codes therefore included: "community;" "government;" "NGO;" and, "proponent." A subset codes for each of the identity codes were used to indicate whether the party was "supportive," "neutral" or "against" the development being discussed in the literature. Characterization frames and codes related to whether the development in question was characterized as: (i) either being "positive" or "negative for the environment;" (ii) "creating positive or negative socioeconomic outcomes"; and/or, (iii) as being either "equitable;" or, "inequitable for Indigenous communities."

Diagnostic frames and codes described whether "community(s)," "company(s)," and/or "government(s)" were the parties that were responsible for the outcomes of development. This relates directly to characterization frame, for example the "government" could be deemed responsible for a situation that is "inequitable for Indigenous communities." Prognostic frames and codes indicated what parties were thought to have the solution(s) to the resource development issues at hand. Prognostic codes therefore included: "communities;" "companies;" and/or "the government" as having the solution; or, "the solution lies in partnership." The code "the solution lies in partnership" included the subset codes: "led by communities," "led by companies," "led by the government," or, "led by all parties."

In addition to coding for frames mobilized in current policy and research discourse, statements in non-academic and academic literature were coded for magnitude to further probe attitudes, motivations, and priorities (after Plummer et al 2016^{li}). Magnitudes were “empty” (descriptive), “implicit” (advisory), or “explicit” (directive). This method helped us to make sense of the nuanced discourse that bridges domestic and international actors, and provide new insights on existing knowledge that has been used over the past ten years to advise energy policy and Indigenous engagement. Two types of emergent codes were derived. The first type of emergent code, were types of Indigenous participation that were featured in the literature (reported in Section 4.2.1). The second were codes relating to the themes that were highlighted through the literature (reported in 4.2.2).

5. Status of bioenergy policy, programs and partnerships

5.1. Federal policy, programs and economics

According to Natural Resources Canada (NRCan), bioenergy currently accounts for approximately 6% of Canada’s total energy supply and the Government of Canada is heavily investing the bioenergy systems research and development through CanmetENERGY.^{lxv, lxvi} CanmetEnergy is “Canada’s leading research and technology organization in the field of clean energy.”^{lxvi} Their research on bioenergy “focuses on the conversion of biomass energy and fuels that can be used to meet energy needs in industry, transportation, agriculture and residential heating.”^{lxv} Research is being conducted through the NRCan Program of Energy Research and Development (PERD),^{lxvii} and through the Canadian Biomass Innovation Network (CBIN), which “is a network of federal researchers, program managers, policy makers, and expert advisors partnered with industry, academia, non-governmental organizations, other government levels and the international community” with the goal of continually ensuring “the availability of knowledge, technology and enabling policy required to support the development of a sustainable Canadian bioeconomy.”^{lxviii}

Forests are a primary source of biomass for bioenergy in Canada, and include: (i) “trees that are of harvestable age but are not suitable for lumber;” (ii) “materials from stand thinning;” (iii) “harvest residues;” (iv) “trees killed by disturbances such as fire, disease or insects;” and, (v) “trees from plantations grown specifically to provide biomass for conversion to bioenergy.”^{lxix} In order to support the development of the biomass industry in Canada, the Canadian Forest Service (CFS) maintains research on: (i) identifying more sources of both existing and new biomass;” (ii) developing efficient methods of growing, harvesting and collecting biomass and of transporting it to sites where it will be converted into biofuel;” and, (iii) “demonstrating the sustainability of increased biomass supply.”^{lxix} Canada also participates along with 16 other countries in research activities through the International Energy Agency (IEA) Bioenergy, and “More research is planned as environmental and economic needs continue to make forest-based bioenergy an increasingly attractive energy alternative in Canada.”^{lxix} Bioenergy has been part of Canadian forestry (mainly in the production of pulp and paper) for over 28 years,^{lvii} contributing energy to this primary industry, which accounts for 8-10% of Canada’s GDP and almost 7% of all Canadian exports.^{lxx} Bioenergy policy falls within both federal and provincial jurisdictions in Canada. NRCan has a number of past and on-going policies that are designed to be supportive of heat and power production from forest, agriculture and municipal sectors (Appendix E).

Bioenergy development has also been a part of Canada’s strategic priorities programming. The NRCan Energy Sector Sustainable Bioenergy Strategic Priority 2012 goals were to: “reduce fossil fuel energy consumption; directly or indirectly reduce greenhouse gas (GHG) and criteria air contaminant (CAC) emissions; diversify the energy supply; and seed the development of Canada’s bio-based economy by advancing the development of bioenergy, biofuels and bioproducts by substituting for petroleum products and increasing energy efficiency.”^{lii} With relation to Aboriginal partnerships, the *Evaluation of the Sustainable Bioenergy Strategic Priority* states that benefits from investment in bioenergy would

involve “the creation of new industries and new markets” and “will contribute to employment and economic growth.”^{vii}

5.2. Provincial policy and programs

In Canada, Crown lands are managed by the provinces and territories, several of which have policies and programs aimed at supporting biofuels development and partnerships.

Alberta: Between 2007-2011, Alberta’s Bioenergy Commercialization and Market Development Program (BCMDP) and Bioenergy Infrastructure Development Program (BIDP) assisted in strengthening the bioenergy industry by investing funding in companies working in the bioenergy sector.^{lxxi} In 2011 (ending in March 2016), the Bioenergy Producer Credit Program (BPCP) was introduced to encourage investment in bioenergy production capacity in Alberta.^{lxxii}

British Columbia: The BC Bioenergy Strategy^{lxxiii} outlines next steps for developing bioenergy in British Columbia, which focuses on supporting the BC Bioenergy Network (BCBN) that will: (i) support wood gasification research; (ii) advance biorefining; (iii) encourage the development of pilot and demonstration projects; (iv) support research on socially and environmentally responsible dedicated energy crop production and enhance enzymatic and other biotechnology solutions for biomass-to-energy conversion; and, (v) advance the development of biofuels, such as cellulosic ethanol and renewable diesel from algae and other sources. To date the BCBN has invested approximately \$1.64 million into 12 capacity building projects, including market evaluations, availability studies, and planning and technical feasibility studies.^{lxxiv}

Manitoba: *The Biofuels Act* is the legislative framework for bioenergy in Manitoba. In 2008, the Manitoba Government implemented the Ethanol Mandate requiring fuel suppliers in Manitoba to replace 8.5% of their gasoline with ethanol, and in 2009 implemented the Biodiesel Mandate requiring 2% renewable content in both on and off-road diesel fuel.^{lxxv} Manitoba’s Biomass Energy Support Program supports capital and/or infrastructure upgrades (up to 50% of eligible costs up to \$50,000 per upgrade) for manufacturing and consuming biomass fuel.^{lxxvi}

New Brunswick: In 2008, the Crown Land Forest Biomass Harvesting Policy (CLFBHP) was released towards supporting the biomass industry in New Brunswick. The CLFBHP defines forest biomass, identifies impact assessment procedures, and provides a set of guidelines for eligible biomass harvesting on Crown land.^{lxxvii}

Newfoundland and Labrador: Biomass is acknowledged as a renewable energy source that is worthy of development in Newfoundland and Labrador’s Energy Plan^{lxxviii} and Energy Innovation Roadmap.^{lxxix}

Northwest Territories: The NWT Greenhouse Gas Strategy 2011-2015 aimed to double biomass space heating. The NWT Biomass Energy Strategy 2012-2015 builds upon the NWT Biomass Strategy 2010 which was designed to help an expanding biomass energy industry with a focus on local harvesting and sustainability.^{lxxx} The NWT Forest Industry and Biomass Initiative (FIBI) is a partnership with the Government of Canada focused on developing economic opportunities with First Nations and NWT communities. Outcomes of the FIBI included a negotiated Forest Management Agreement and the implementation of a General Development Plan (GDP) to support employment for industry and First Nations.^{lxxxi}

Nova Scotia: The government of Nova Scotia includes bioenergy as viable renewable energy source as part of its energy policy framework, which sets out in law 40% renewable energy by 2020.^{lxxxii}

Nunavut: Nunavut, along with Yukon and Northwest Territories participates in “A Northern Vision,” which is a “pan-territorial cooperation in support of healthy, sustainable communities.” A Northern Vision includes renewable energy development and features bioenergy (i.e., heating from biomass) as becoming a “cornerstone of energy” in the North.^{lxxxiii}

Ontario: The Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFR), the Ontario Ministry of Research and Innovation (OMRI), the Ontario Capital Growth Corporation (OCGC), and the Ontario Power Authority have several programs that are geared towards bioenergy research and development.^{lxxxiv} Those focusing most strongly on partnerships with communities include the Community Energy Partnership Program (grants up to \$200,000 per project) and the Aboriginal Energy Partnerships Program (grants up to \$500,000 per project through the Aboriginal Renewable Energy Fund).

Prince Edward Island: The Government of PEI established the Inter-Departmental Biofuels Committee (IDBC) in 2008 following the release of the Environmental and Renewable Industries Committee (ERIC) Final Report.^{lxxxv} In March 2017, Prince Edward Island approved the development of the Atlantic Bioenergy Corporation’s Biofuels Research and Development Facility.^{lxxxvi}

Québec: The government of Québec is aiming to increase bioenergy production by 50% by 2030.^{lxxxvii} In 2016, Québec and the Government of Canada promised \$76.5 million in funding to AE Côte-Nord Bioenergy Canada Inc. to produce bioenergy from forest residues at its Port-Cartier facility, the first of its kind in Québec.^{lxxxviii}

Saskatchewan: The Government of Saskatchewan lists biofuels as a key energy source that is locally produced.^{lxxxix} SaskPower (Crown corporation) aims to meet a 50% renewable energy target by 2030, which includes bioenergy from biomass.^{xc}

Yukon: The Government of Yukon released the first Yukon Biomass Energy Strategy in 2009, and released the latest update in 2016.^{xc} The 2016 strategy outlines a commitment to develop policies, standards, guidelines and programs that promote biomass use, including enhancing the Yukon Government’s Residential Biomass Heating Incentive Program.

5.3. International perspectives and guiding organizations

In 2005, the United Nations Conference on Trade and Development (UNCTAD) Biofuels Initiative was conceived of as a way to bring together a number of programs that were already underway in other organizations, and “to explore the complex field of bioenergy from a trade perspective.”^{xcii} The UNCTAD Biofuels Initiative is part of United Nations Energy and is guided by Sustainable Development Goals 7 (Affordable and Clean Energy) and 9 (Industry, Innovation and Infrastructure). The initiative examines bioenergy markets, provides interested countries with economic and trade policy analyses, designs and allocates capacity and consensus building tools and activities, and designs national strategies according to the different technical, political, economic and sustainability-related aspects of different nations and their biofuels production needs and aspirations.^{xcii} Much of the focus of the UNCTAD Biofuels Initiative is in the developing world, with their most recent 2016 report entitled “Second-Generation Biofuels Markets: State of Play, Trade and Developing Country Perspectives.”^{xciii} This report has been heavily criticized by environmental organizations, such as the Centre for Biological Diversity, as being misleading and inaccurate in the depiction of biofuels as commercially viable, citing that many of the companies touted in the report had declared bankruptcy.^{xciv}

5.4. The current status of bioenergy partnerships

There are currently 12 biomass energy projects in Canada involving Indigenous communities (Appendix F), 10 of which are in British Columbia, and the other two are in Ontario and Québec. Established in 1993, the earliest biomass energy projects involving an Indigenous community in Canada are the Ouje-Bougoumou Cree Nation (OBCN) District Energy System. The OBCN District Energy System currently provides the district with 75% of the district's thermal energy requirements (36 MW), providing heat to 135 homes and 16 public buildings.^{xcv} The corporate partner for OBCN District Energy System is FBV Power Inc., which is a Swedish company. The Atlantic Power Williams Lake Project (APWL) is a biomass energy project also commencing in 1993; however, formal consultation with the Williams Lake Indian Band (WLIB) did not commence until 2016.^{xcvi} Consultation with the WLIB resulted in a third party technical review, as well as permit amendments and extensions.^{xcvi} The Atlantic Power Corporation is a US-based company conducting business in Canada and the US, and is 100% owner of the APWL, which sells energy to BC Hydro under a long-term Electricity Purchase Agreement (EPA), which is set to expire in March 2018.^{xcvi}

Other biomass energy projects involving Indigenous communities have been established more recently (2011-2015). In January of 2017, the First Nations Forestry Council (FNFC) signed an MOU with four pulp and paper companies located in BC: (1) Catalyst Paper Company (domestic, based out of Richmond, BC) for the Crofton and Alberni biomass projects; (2) Nanaimo Forest Products (domestic company based in Nanaimo BC) for the Harmac Pacific Biomass project; (3) Paper Excellence Canada (domestic company based in Richmond BC) for the LP Golden Biomass project; and, (4) the Mercer International Group (multinational corporation with offices in Germany, Canada and the US) for the Zellstoff Celgar Limited Partnership and Celgar Green Energy Project.^{xcvii} The MOU promotes information sharing between industry and First Nations, and commits parties to support policies, projects and regulations that equally benefit First Nations and companies.^{xcvii} The largest project involving Indigenous people in Canada in terms of energy produced is the Celgar Green Energy Project (100 MW), which is part of the Celgar mill located in Castlegar in the BC interior.^{xcviii} In 2010, Celgar invested CDN\$64.9 million into developing energy efficiency upgrading the mill's bark boiler and steam facilities.^{xcviii}

Two other large biomass energy projects involving Indigenous communities in BC are the Gold River Power Project (90 MW) and Canfor Northwood Pulp Mill - PGP Bioenergy (55.4 MW). A First Nations Clean Energy Business Fund Revenue Sharing Agreement exists between Green Island Energy and the Mowachaht/Muchalaht First Nation for the Gold River Power Project, which exports energy to the BC Hydro grid.^{xcix} The Canfor Northwood Pulp Mill engages the West Moberly First Nations in the PGP Bioenergy project through new business relations that produce new training and employment opportunities.^c In Ontario, the only biomass energy project engaging an Indigenous community is White River Forest Products, which uses biomass energy (7.5 MW) for the operation of its mill. In February of 2016, Biigtigong Nishnaabeg (a.k.a., Pic River First Nation) purchased harvesting equipment and launched Mkwa Timber, a forestry company that negotiated an agreement to supply timber to the White River Forest Products mill.^{ci}

6. Frame Analyses

6.1. Interpretation and framing

Social framing analysis was conducted on a focused body of literature on Indigenous participation in forest and energy development. We therefore must acknowledge that the framing is derived from two distinct layers of interpretation. The first layer of interpretation is by the author(s) of the articles that were reviewed for this synthesis. The second layer of interpretation is by the research team who applied the frame analysis to the articles (as explained in Section 4.3). Therefore the perspectives that were

analysed were not directly belonging to parties who were the actors involved in forest and energy governance. Instead, they were reported findings “about” parties and their perspectives around the issues relating to Indigenous participation. The perspectives of parties involved in governance were more directly conveyed through articles that reported findings from research engaging participants in discussions around forest and energy development(s) and governance. In such cases, articles offered perspectives “by” parties. Other articles, which were policy or topic focused, provided syntheses and insights about a policy or issue linked to Indigenous participation in forest and/or energy development. Such articles were the most derivative and so they were not as effective with regard to providing access to perspectives of actors involved in issues around forest and energy developments.

6.2. Perspective and issue frames

Identifying the underlying perspectives surrounding energy and forest sector development was important for contextualizing the issues relating to Indigenous participation within such sectors. As described above (Section 6.2.1), perspectives were derived through the authors’ interpretations of the literature (including policy) and/or case studies that made up each of the articles that were reviewed for this knowledge synthesis work. The basic framing of identities (as reported by the authors) revealed some differences in support for development projects by different parties (proponents, government, communities, and NGOs) involved in governance (Appendix H). Proponents were always supportive of new development projects that would enhance their corporate revenue. Governments were mostly supportive of new resource developments as a way of strengthening regional and national economies. There were some cases where the government demonstrated uncertainty or a lack of support for energy and forestry development. For example one articles made mention to the scale of the development having an effect on whether the government would be supportive or not (i.e., Manitoba Conservation’s Forestry Branch having an aversion to small scale forestry).^{cii} Another paper by Krupa also referenced the issue of scale as playing a role in government support. This was in the context of bioenergy development where Ontario government officials were hesitant to embrace large biofuels developments because their region was still recovering from major losses in forestry and that the industry is still “fraught with major pitfalls.”^{xvii} (p. 119)

Understanding the diversity of identities relating to development is important for situating information about how issues are perceived (i.e., characterization frames).^{ciii} Identities and perspectives around issues can be complex and can shift depending on various factors relating to development projects, as well as the particularities about how business is done around such projects.^{ixvi} With resource development, community support for projects will often depend on the type and level of participation, as well as the potential for benefits to be received through participation. Benefits and incentives for participation in governance include influence on how projects take shape (including the assertion of rights), as well as socio-economic outcomes for communities, such as jobs and community infrastructure.^{civ, cv, cvi, cvii, cviii, cix} With regards to energy development, the articles reviewed were in the context of non-renewable resources (the literature on renewable resources and Indigenous participation was too scant), namely oil and gas production and transportation via pipeline infrastructure (Table 2). It is highly likely that this would have influenced the perspectives and support for existing and/or future developments. For example, several of the articles refer to the potentially severe impacts of oil and gas development on the environment and how such impacts could affect Indigenous livelihood strategies (e.g., hunting, fishing and trapping),^{cvi, cviii} as well as impact Indigenous rights and sovereignty.^{cx, cvi, cvii, cxi} However, in the context of oil energy development, Laurin and Jamieson highlight that developers are increasingly aware of such impacts and are increasingly required to modify their consultation and development practices to meet the needs and requests of Indigenous communities.^{cvi} This modification of practice, however, has in turn affected “above the ground risks” (i.e., legal, regulatory, financial, and reputation) for energy development companies.^{cvi} While looking at renewable energy production would

be likely to produce different perspectives, it is useful to look at non-renewable energy production towards gleaning information on the policy and governance structures that shape energy development across Canada.

Non-renewable energy development in Canada has produced a variety of different types of participation, ranging from direct conflict between communities and companies (i.e., within meetings and through protests)^{cxix} to participation in energy development consultation through impact benefit agreements (IBAs) and environmental assessments (EAs).^{cxvi} Participation through such processes facilitates companies social licence to operate (SLO), but is not legal consent to the development that is associated with the consultation tool.^{cxvi, cxii} Consent is an on-going issue relating to Indigenous participation in energy development, which is confounded by the fact that there is no single process for obtaining full legal consent from communities.^{cxvi} The same is true for forestry in Canada, however, forest governance systems have evolved structurally over the past few decades as a result of social and economic factors, such as the economic downturn impacting forestry in the early 2000s.^{cxix} Appendix G outlines the different types of Indigenous participation in energy and forest development accounted for in the literature. Additionally, authors have created typologies towards encapsulating the variety of consultation tools and arrangements for involving communities, governments and proponents.^{cxvii, cxii} In the context of forest management, Wyatt and colleagues' typology has 5 top-level categories (and additional subtypes): (1) *Treaties, agreements and memoranda of understanding (MOU)*; (2) *Aboriginal involvement in forestland planning, management and land use studies*; (3) *Influence on forest management decision-making, subtypes*; (4) *Aboriginal-held forest tenure*; and (5) *Economic roles and partnerships*.^{cxvii}

Within the types of participation and tools used to facilitate participation, Indigenous communities have varying degrees of ability to assert rights, values and aspirations, as well as varying abilities to reap socio-economic benefits.^{cxvii, cxvi, cxix, cxii, cxiii} The dynamic shifts in forest policy and management in Canada has also been influenced to some degree by national and international policy documents, such as the Royal Commission on Aboriginal Peoples^{cxiv} and the United Nations Declaration on the Rights of Indigenous Peoples.^{cxii} However, the sustainability and equity of a management system or development project can be negatively impacted if consultation tools (i.e., facilitating different types of participation) are designed only to suit government and industry proponents.^{cxv, cxvi} Despite the shifts in tenure arrangements and changes to types and level of participation, participation in forest management remains inequitable for Indigenous communities,^{cxv} especially those that might want to assert rights and visions that are perceived to be incompatible with development. Ultimately it is within the power of the government to change policy and what is possible for Indigenous participation in development, and they often do so for political reasons (changes in government) that are not connected to the successes of governance.^{cxix} Despite such challenges, companies, communities and governments are building collaborative agreements that are based on common interests and mutual benefit.^{cxiii, cxv, cxix} Collaboration as a solution to inequity, conflict, and environmental degradation is detailed further in the following section.

6.3. Problem and solution frames

The perspective and issue frames detailed above provide a context for understanding problem frames (i.e., diagnostic frames) and solution frames (i.e., prognostic frames) relating to Indigenous participation in energy and forest development.^{cxlvii} The focus was on problem and solutions frames relating directly to issues around indigenous participation (Appendix I). Other problem and solution frames relating to energy and forest development could be conducted (e.g., environmental sustainability), but were outside of the scope of this synthesis work. Assertions of responsibility relating to indigenous participation included governments, companies and communities as the primary actors in governance. Within the articles, both with energy and forest development contexts, there is resounding agreement

that governments are responsible for consulting with Indigenous communities because of their fiduciary responsibility laid out by the Crown, and that they are also responsible for setting the policy agenda for what types of participation (including partnerships) are possible.^{cvi, cviii} However, it is also explained that provincial and federal governments in Canada do not have ultimate authority because cases moving through the Supreme Court and provincial courts have the ability to affect federal and provincial policy relating to natural resources developments.^{cvi, cvii, cxvii} Governments are also accredited with facilitating the development of new policy tools and frameworks that have promoted Indigenous participation, facilitated partnerships and enhanced equity within agreements.^{cix, cxviii} Solution frames directed at the government relate to national and regional domestic policy development, as well as the need for the government to acknowledge international guiding frameworks such as UNDRIP.^{cvi} The tone with regards to government solutions frames was often explicit (directive). Connected to the call for policy supports and reform is the call for political will in association with acknowledgement of the rights and titles held by Indigenous peoples.^{cvi, cvii, cx, cxi, cxvii, cxviii}

The foundation of responsibility for Indigenous communities is their custodial role in the stewardship of the land.^{cv, cvi, cxi, cxiv} From this foundational responsibility, community leadership, as well as individual members and groups engage in environmental governance through different forms of action, which in turn relate to the solution frames that communities continue to put forward. Indigenous communities engage in forging solutions to participation through their on-going involvement in processes related to environmental governance (see Appendix G for a glossary on the types of participation). Such processes not only include forms of participation that reduce conflict, but also types of participation that enhance conflict, such as protest and the development of alternative structures for consultation.^{cxii, cxvii} A noteworthy example of governance outside of state politics is the development and actions of the First Nations Energy and Mining Council (FNEMC).^{cvii} The FNEMC was formed by British Columbia First Nations as an alternative organization (alternative to the Government of Canada) that would conduct “direct, independent and collaborative relations between indigenous peoples and [foreign] investors” with regards to energy development in Canada.^{cvii} The FNEMC represented an assertion of sovereignty and in 2011 initiated a strategy titled *First Nations & China: Transforming Relationships*. The strategy was meant to promote reciprocal investments and acknowledgement of development interests on Indigenous lands.^{cvii} The actions outside of the state taken by the FNEMC are an example of disruption and self-affirmation, and could act as a touchstone for Indigenous communities wishing to assert their sovereign interests with future foreign interests.

Companies operate within the legal and policy frameworks set forth by government, yet they maintain responsibility for how they engage Indigenous communities within what is possible according to policy.^{cvii, cx, cxvi, cxviii} This responsibility also applies to consultants that are hired by companies to consult with communities or engage them in development planning related processes, such as anthropological research.^{cxvii} Companies have the ability to create meaningful pathways and support capacity building for developing participation, and can divest responsibilities to communities that enable them to play a role in decision-making and receive direct returns from their involvement.^{cix} Solution frames connected to companies were often explicit and/or implicit (advisory) in tone. Most solution frames were directed towards companies in general, with no distinction between domestic and international firms. The importance of improving relationships with communities through genuine forms of engagement is stressed,^{cix, cx} and participatory spaces where communities are empowered to communicate on their own terms are promoted as having the greatest potential for working through conflict and facilitating the development of trust, among other relational qualities.^{cv, cix, cxii, cxix} Furthermore, the call for shared value initiatives where business success is connected to community prosperity is explicitly stated as a solution to issues around community wellbeing and participation in development projects.^{cvi}

More recent articles often suggested solutions that were based on different types of collaboration, including corporate partnerships involving companies and Indigenous communities.^{cv, cviii, cix} As mentioned above, divestment is an important part of such partnerships where communities are given the opportunity to take on leadership and decision-making roles.^{cix, cxviii} Regional governments often have a strong role to play in creating new spaces for collaboration through shifting tenure and other policy, and local government managers working directly with companies and Indigenous communities have a strong role to play in facilitating new collaborative agreements.^{cix} One example of a recent shared-tenure agreement is the Miitigoog Partnership Inc. in northwestern Ontario (est. 2010).^{cix} Miitigoog involves First Nations, domestic (i.e., Kenora Forest Products) and international (i.e., Weyerhaeuser) forestry companies, and small regional licence holders in a shared-tenure agreement (Sustainable Forestry Licence) for the Kenora Forest (1,225,536 ha).^{cix} Within the agreement, First Nations have redeemable and retractable shares and 50% of the seats within the board. As part of the agreement, First Nations were also supported by the parties to develop the fully First Nations owned Miisun Integrated Management Co., which sees over day-to-day operations in the land under the SFL. Miitigoog is an example of power-sharing and collaboration that was born out of regional conflict around forestry and relationship building during a time of relatively slow economic growth (following the economic downturn of the early 2000s).^{cix}

While it has been evidenced that collaboration can create structural changes that can enhance equity for all parties, it is not guaranteed.^{cv, cvi} Structural dynamics can account for the levelling of the playing field for participation, yet there is explicit language stating that relational (i.e., building understanding through interpersonal relationships and informal interactions) and affective (i.e., more emotional) interactions are important for building meaningful and long-term collaboration.^{cix, cxi} Several authors and communities call for a two-row approach to collaboration, which is built upon the common interpretation of the treaties as two distinct groups traveling a path of sharing where one does not aim to disempower the other for the other's sake.^{cxii, cxiv, cxiii}

7. State of knowledge

Strengths in the current state of knowledge include the breadth of research regarding participatory natural resource management in Canada, particularly with regard to northern and Indigenous communities and territorial lands. Our review indicates that even the limited bioenergy literature that exists now, when paired with that of allied sectors, can help analysts understand and make sense of energy and energy-related issues. In particular, existing research confirms what we know of typical resource development models in Canada, that is, that proponents support projects to generate corporate revenue, communities demand benefits from such projects, and governments support new resource development to strengthen economies. However, the rising importance of concepts and practices like social license to operate, community-led companies, and local/municipal intermediate facilitation in “higher order” structures and processes (i.e., like corporate-community collaboration) all highlight that conventional roles and agendas are shifting. This bodes well for Canadian communities and would-be national and international partners seeking to do business in Canada's sustainable and renewable natural resource industries.

There are **gaps** in our understanding of global and local framings of Indigenous bioenergy partnerships, which must be addressed to support a sustainable bioenergy sector. First, more empirical research with and by communities actually involved in biofuels development is needed. The bioenergy sector is expanding, so too is this area of research, which can be described as emerging at best.

We know, for example, that there are differences in how Indigenous and non-Indigenous groups frame their involvement in governance and their responsibilities; it would be helpful to know more about the interplay of these framings and fully grasping the differences in order to craft appropriate

policy will be crucial to developing policy for the expanding bioenergy sector, as well as any evolving role identities of various parties, from domestic or international firms, governments, or communities. Governance research to support decision making and social-economic development is needed to balance the focus on and government investment in renewable bioenergy technology and engineering research and development. There remains a need to fully document bioenergy policies, including conducting comparative policy analysis across the provincial and territorial resource sectors. This could include examining the implications of the language in existing policies relative to current framings emerging from literature on energy and forest sector developments.

Results are inconclusive with respect to specific Indigenous and non-Indigenous framings of bioenergy partnerships, whether regional, national or international. Other than broad statements about environmental and economic benefits, we do not have detailed information on how the distribution of benefits are structured, what specific benefits exist. Nor do we have detailed understanding or what environmental concerns exist among partners, the reasons for such concerns, and the perceived and actual linkages to expanding the bioenergy sector. Extrapolating, as we have done in this report, based on experiences with the non-renewable energy sector, has limitations. While convenient, the transfer of insights is likely to carry assumptions that may not hold for renewable energy.

However, as pointed out in this report (section 5.4.) there are a small number of biomass energy projects in Canada involving Indigenous communities, most of which are in BC. Further analysis of experiences in BC could be a useful next step to search for transferrable lessons, and in particular, analysis of evolving policy discourse and its alignment with community and broader natural resource strategies. There is also a need for definition regarding how international and national firms can properly engage Indigenous partners in bioenergy development. This could mean creating and making explicit the proper protocols, expectations, and roles of partners in sector activities and new projects. In addition, the question of what bioenergy-specific policies can be developed to build on lessons learned and also avoid the pitfalls of previous governance work remains to be answered. One step would be to consult national and international policy documents, such as the Royal Commission on Aboriginal Peoples and the United Nations Declaration on the Rights of Indigenous Peoples while developing bioenergy strategies and policies to direct Canada's future energy sector.

8. Knowledge Mobilization

8.1. Target knowledge users

Our knowledge dissemination approach will advance and synthesize information regarding Indigenous bioenergy issues and potential, and then engage main knowledge users to disseminate our findings. Targeted research users include a) those with direct natural resource management responsibilities and authority, including, decision makers in industry, provincial and federal government managers and policy makers, and Indigenous organizations, as well as b) groups that have an interest in renewable energy and forestry projects because they are affected by such projects, either as intended beneficiaries or by having some other professional interest in them (e.g., Indigenous community members, academics and students, and nongovernmental organizations with an environmental resource and/or Aboriginal mandate). Targeted individuals and groups represent various sectors (mainly energy and forestry) as well as diverse backgrounds, such as, natural resource management, Indigenous studies, planning and policy, business, law, economic development, and public health.

8.2. How results will be shared

Research synthesis findings will be refined in roundtables with community, industry, and government representatives, meetings which will also engage stakeholders to translate research findings into

practice and disseminate findings. Knowledge users will be further reached via briefing notes, in-person and online presentations and symposia. We will share advanced research summaries with partners and knowledge users to reflect on the suitability of the findings, as well as ask how to customize knowledge outputs for successful uptake. In addition to this synthesis report, a peer-reviewed article will be published. A briefing note based on the report will also be prepared for dissemination to lay people and professional audiences. To support direct contact with knowledge users and help promote the research findings, we will also host a report launch at UW as part of a round table.

In addition, results will be shared in the above described formats via our website and our partners' websites. Furthermore, an E-lecture could be given to provincial ministries to help us directly reach professional audiences. This venue will provide an additional direct link to policy makers, managers, and business representatives that could immediately use the findings.

Research assistants will organize a special session and present our findings at an international peer-reviewed conference in 2018. This will help to further showcase and disseminate our research findings among international academic and professional audiences and receive critical feedback. Our approach to knowledge exchange is multifaceted to maximize coverage and reach, and our ongoing collaboration with community groups and industry, non-government and government partners, as well as our leveraged support indicates that there is a good level of interest in, and potential uptake for, this research.

9. Conclusion

Canada holds a significant global energy role, which puts our country in a leadership position with respect to how it engages in international markets and, increasingly, energy partnerships. There is a need to better understand this global-local interface, in particular, how Indigenous communities, governments, and firms are engaging international markets and partners for energy partnerships. This research examined framings of Indigenous partnerships in Canada's growing bioenergy sector.

This knowledge synthesis initiative was designed to generate new knowledge through the gathering and mobilization of existing knowledge. We used framing theory and analysis to develop new understandings of Indigenous involvement in the forestry and energy sectors, analyze existing beliefs and issues related to forestry and energy development, and identify areas of agreement and disagreement among different interests for development of mutually beneficial energy partnerships.

A comprehensive search of research articles and grey literature was conducted using ISI Web of Science, which was then reviewed using systematic techniques and bibliometrics. This literature was supplemented with reports, policy briefs, websites, letters, for example, from government, industry and Indigenous groups and communities to capture, as best as possible, the complete portrait of bioenergy perspectives relevant to the Canadian context. The project team developed this report that critically analyzes dominant and marginalized framings of energy partnerships and explores paths to meeting truth and reconciliation priorities. The result is the production of much-needed policy and decision-making guidance to support partnership development strategies for local economic benefits, provincial and national policy, and international partnering.

Based on our review, bioenergy sector policy and participation models can be best described as emerging. Scant evidence of Indigenous perspectives on bioenergy exists. The well-known conventional roles of industry, communities and governments are still evident, namely that proponents support projects to generate corporate revenue, communities demand benefits from new projects, and governments support new resource development to strengthen economies. However, the rising importance of concepts and practices like social license to operate, community-led companies, and local/municipal intermediate facilitation in "higher order" structures and processes (i.e., like corporate-

community collaboration) all highlight that conventional roles are shifting. Evidence suggests that governments demonstrate uncertainty and hesitation around energy and forestry developments that are small scale, experimental, and/or occurring during periods of economic and social fluctuation. This could be a barrier to bioenergy proliferation.

Despite challenges, companies, communities and governments are building collaborative agreements that are based on common interests and mutual benefit. Identities and perspectives are complex and can shift depending on various factors relating to development projects, as well as the particularities about how business is done around such projects. Assertions of responsibility relating to indigenous participation included governments, companies and communities as the primary actors in governance. The foundation of responsibility for Indigenous communities is their custodial role in the stewardship of the land, whereas other governments hold fiduciary responsibility for consultation, as well as facilitating new policy tools and frameworks that promote Indigenous participation. Companies maintain responsibility for how they engage Indigenous communities within what is possible according to policy. Different positions of responsibility exist that should be acknowledged.

Solutions based on different types of collaboration, including corporate partnerships involving companies and Indigenous communities, are increasingly noted. International experience with advancing bioenergy, such as that of the United Nations, indicates that establishing and maintaining legitimacy is important among other usual considerations such as developing markets and fibre supply, and policy making for sustainability. Despite the breadth of partnership research in Canada, more empirical research with and by communities actually involved in bioenergy development is needed. Engaging international firms and Canadian governments in such research could be valuable. Overall, there remains a need to fully document bioenergy policies, including conducting comparative policy analysis across the provincial and territorial resource sectors, and other countries.

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Appendix A. ISI Web of Science search terms

ISI Web of Science, Search 1 - search terms

- **Canad* AND**
- **(Indigenous OR Aboriginal* OR "First Nation"* OR Métis) AND**
- **(biofuel* OR biomass OR bioenerg*) AND**
- **(participation OR engage* OR consultation* OR collaboration*) AND**
- **(compan* OR corporat* OR business* OR developer* OR proponent* OR industr*)**

ISI Web of Science, Search 2 - search terms

- **Canad* AND**
- **(Indigenous OR Aboriginal* OR "First Nation"* OR Métis) AND**
- **(biofuel* OR biomass OR bioenerg* OR energy OR forestry OR "forest* management" OR "forest planning" OR "forest governance") AND**
- **(participation OR engage* OR consultation* OR collaboration*) AND**
- **(compan* OR corporat* OR business* OR developer* OR proponent* OR industr*)**

*expands the search to longer forms of the short-form derivative

Appendix B. ISI Web of Science search results, Search 1

Close

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Record 1 of 1**Title:** Systems Approach to the Green Energy Strategy & Development in Canada**Author(s):** Yeh, MH (Yeh, Martin H.); Yeh, FC (Yeh, Franklin C.)**Edited by:** Jie XW; Xu EM; Zahra SA**Source:** ENVIRONMENT, LOW-CARBON AND STRATEGY **Pages:** 116-122 **Published:** 2011

Abstract: The impact of global warming is widespread, a number of factors have to be identified and analyzed. Causal factors include world population growth at present and growing exponentially. Increases of personal incomes and wealth have created more increased consumption of public/private housing transit and transportation which have in turn increased demand for raw materials, natural and mining resources such as gas, coal, oil sand and ocean oil/gas exploration.

The melting of the North Pole's glaciers has affected the ocean levels flooding of river and creeks and as well affected agricultural production on a major scale.

In order to have clean environment on earth, we need a flexible management to cope with global warming and its impact on our quality of life. An alternative to coal and fossil fuels which are directly causing climate change through heat-trapping gases that are warming the atmosphere must be technologically found and implemented as early as possible. A mix alternative and clean energy such as solar panels, hydro, wind-turbines and bio-mass energy system has to be developed and implemented. This requires a close cooperation among public institutions, private industry, technical experts, university researchers, financially and administratively, among all nations. Nuclear energy can be considered as an alternative clean energy and must be developed and also monitored for the safety.

According to the world wildlife fund Canada released a list of the ten top Canadian cities in terms of greenhouse gas emission reductions, municipal targets, green building codes and green transportation, Vancouver ranked first, with a score of 8.1 out of ten, followed by Toronto (7.2) and Montreal (6.2). Vancouver has reduced emission to 1990 is the only Municipality on track to meet Kyoto and has the greenest building code in Canada.

Some of the important Green Energy Strategy and Development in Canada have been designed and implemented by various Provinces listed as follows:

B.C. established the BC forest and range practices act (BCFRPA) which was one of the first in North America requiring tenure holders to pursue sustainable forest management planning and to provide measurable results.

Ontario Provincial Government passed a new green act to explore solar, wind, water and biomass new technological energy. The world's biggest solar farms as an example, is in Enbridge's 80-megawatt power project on 380 hectares near Sarnia, Ontario. The goal is to make solar cells more efficient. Electrovaya Inc. of Mississauga, Ontario has developed and advanced enough to get electric cars such as ChevyVolt onto the market.

Society on Earth must think about energy and be conscious of its use. People must understand that what they can do to conserve energy will have cumulative effect. Also, people need to act on their responsibility. And finally, it needs the participation of everyone, not just power plants, equipment manufacturers or public/private institutions. All society needs to take responsibility to be involved pulling together, all the time.

Accession Number: WOS:000309320400019**Conference Title:** International Conference on Strategic Management (ICSM 2011)**Conference Date:** DEC 21-23, 2011**Conference Location:** Phuket, THAILAND**ISBN:** 978-7-5614-5499-2

Close

Web of Science
Page 1 (Records 1 -- 1)

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Appendix C. ISI Web of Science search results, Search 2

Record 1 of 29**Title:** Meaningful and efficient? Enduring challenges to Aboriginal participation in environmental assessment**Author(s):** Udofia, A (Udofia, Aniekani); Noble, B (Noble, Bram); Poelzer, G (Poelzer, Greg)**Source:** ENVIRONMENTAL IMPACT ASSESSMENT REVIEW **Volume:** 65 **Pages:** 164-174 **DOI:** 10.1016/j.eiar.2016.04.008 **Published:** JUL 2017

Abstract: This paper explores the underlying practice-based challenges to meaningful and efficient Aboriginal participation in environmental assessment (EA) - participation that provides meaningful opportunities for Aboriginal communities to shape EA, yet assures a degree of efficiency for project proponents who need to obtain EA approvals in a timely and financially viable manner. We do so based on an analysis of the EA policy community's experience with uranium exploration and mining in Saskatchewan, Canada. Many of the challenges to meaningful and efficient Aboriginal participation that emerged are multi-dimensional, often concerning participation processes, decision-making, and relationships. Although scholars have explored many of these issues and have proposed numerous solutions, challenges persist in practice. Several other issues also emerged from our study that have received limited attention, including the non-commitment to early and ongoing participation by smaller project proponents, and the EA exemption of exploration projects; the limited availability of information to project developers on local right holders and Aboriginal interests; expectations about the integration of traditional knowledge and land use in EA not aligning with the information that is available to proponents; confusion about who is responsible for initiating early participation and consultation processes; the lack of early relationship building with potentially affected communities, particularly by governments; and the lack of other viable avenues, outside EA, for Aboriginal communities to raise more strategic issues of concern that affect traditional lands and treaty rights. (C) 2016 Elsevier Inc. All rights reserved.

Accession Number: WOS:000403513600018**ISSN:** 0195-9255**eISSN:** 1873-6432**Record 2 of 29****Title:** Trade, Tarsands and Treaties: The Political Economy Context of Community Energy in Canada**Author(s):** MacArthur, JL (MacArthur, Julie L.)**Source:** SUSTAINABILITY **Volume:** 9 **Issue:** 3 **Article Number:** 464 **DOI:** 10.3390/su9030464 **Published:** MAR 2017

Abstract: Governments today are increasingly looking to non-state and bottom up community actors to help achieve climate change mitigation targets. Canada is a resource rich state with one of the highest per capita greenhouse gas footprints in the world. It is also a state where issues of political will, geographic scale and incumbent industries contribute to a challenging context for broad community participation. Despite this, a long history of co-operative and municipal activity exists in the energy sector, exhibited in diverse ways across its provinces and territories. Provincial variation in energy sources and actors illustrates a far more nuanced picture than exists at the national level, providing a case rich with both promising and cautionary tales for the community energy sector. This article examines the emergence of community energy in the context of broader energy sector moves towards increasingly powerful trade agreements, privatization, and conflicts over Indigenous rights in Canada. It argues that significant potential exists to strengthen the role of local actors in Canadian energy governance, but that macro-level political and economic developments have also created significant challenges for widespread community energy transitions.

Accession Number: WOS:000398714100139**Author Identifiers:**

Author	ResearcherID Number	ORCID Number
MacArthur, Julie		0000-0003-4796-503X

ISSN: 2071-1050**Record 3 of 29****Title:** Collective action to save the ancient temperate rainforest: social networks and environmental activism in Clayoquot Sound**Author(s):** Tindall, DB (Tindall, David B.); Robinson, JL (Robinson, Joanna L.)**Source:** ECOLOGY AND SOCIETY **Volume:** 22 **Issue:** 1 **Article Number:** 40 **DOI:** 10.5751/ES-09042-220140 **Published:** 2017

Abstract: In 1993 over 850 people were arrested for engaging in civil disobedience to prevent the clear-cut logging of pristine ancient temperate rainforests in Clayoquot Sound, Canada. This was the largest incident of this type in Canadian history, and has arguably been Canada's most visible mobilization over a specific environmental issue. This study examines the factors that explain the ongoing participation of individuals in the environmental movement (more broadly, beyond participation in civil disobedience) to protect Clayoquot Sound during the period following the 1993 protest. We focus on the roles of interpersonal social networks and movement identification, and compare their statistical effects with the effects of values and attitudes on the level of participation of individuals in the movement. We compare survey data from members of Friends of Clayoquot Sound (FOCS), a key environmental organization in this protest, with data collected from several surveys of the general public, and also from members of a local countermovement group (a proforest industry group that mobilized against the environmental movement). Although values and attitudes statistically differentiate members of FOCS from the other groups, these variables do not statistically explain ongoing differential participation in the movement amongst FOCS members. Rather, individual level of participation in this environmental movement is best explained by ego-network centrality (the pattern of ties each respondent has to contacts in the movement), as measured by the number of ties FOCS members have to others in a range of environmental organizations, and by their level of identification with the movement. Implications of this research for more recent mobilizations, such as against oil pipelines, are discussed, as are avenues for future research.

Accession Number: WOS:000399397700033**ISSN:** 1708-3087**Record 4 of 29****Title:** Geo-politics of paddling: "Turning the Tide" on extraction**Author(s):** Bagelman, J (Bagelman, Jen)**Source:** CITIZENSHIP STUDIES **Volume:** 20 **Issue:** 8 **Special Issue:** SI **Pages:** 1012-1037 **DOI:** 10.1080/13621025.2016.1229191 **Published:** DEC 2016

Abstract: This paper contributes to a growing literature on affect that approaches emotion, mood and atmosphere not as peripheral to, but the beating heart of politics. While studies of affect have carefully illuminated how governments tap into emotions to shape and govern good' citizens loyal to the nation, here I examine how extractivist industries employ similar techniques to construct good' consumer-citizens. In particular, I explore how multinational oil-company Enbridge draws on the register of affect to promote its contested Northern Gateway proposal to transport bitumen from Alberta, Canada to tidewater. I analyse this through Enbridge's million-dollar Life Takes Energy' promotional campaign. While this campaign powerfully governs through affective citizenship, I contend that creative activism in the form of paddling presents a political challenge to this mode of governance. Based on empirical evidence gleaned from my participation in a paddle called Turning the Tide, I demonstrate how this intimate and embodied activity contributes to Indigenous-led ecojustice movements that challenge extraction.

Accession Number: WOS:000390671200006**ISSN:** 1362-1025**eISSN:** 1469-3593**Record 5 of 29****Title:** Aboriginal people and forestry companies in Canada: possibilities and pitfalls of an informal 'social licence' in a contested environment**Author(s):** Wyatt, S (Wyatt, Stephen)**Source:** FORESTRY **Volume:** 89 **Issue:** 5 **Pages:** 565-576 **DOI:** 10.1093/forestry/cpw034 **Published:** SEP 2016

Abstract: Industrial forestry in Canada commonly occurs on the traditional territory of Aboriginal people, and forestry companies often take actions to gain acceptance and approval of communities. Over the last two decades, the concept of 'social licence to operate' (SLO) has been increasingly used as a way of framing these actions in relation to regulatory licences and approval processes. Although Aboriginal views of forestry have been extensively researched, few attempts have been made to link this research to the developing concept of SLO. This article seeks to address this gap, using existing models to identify five groups of path elements that contribute to obtaining and maintaining SLO: socio-economic infrastructure, biophysical infrastructure, engagement processes, relationship building and recognition of rights. Previous research on five common forms of collaborative arrangement - impact benefit agreements, co-management, consultation processes, tenures and economic partnerships - is then reviewed to consider how these contribute to obtaining and maintain SLO. Canadian experiences demonstrate the potential benefits of direct negotiations and the advantages of combining arrangements, but also highlight the difficulty of addressing Aboriginal rights within an SLO framework.

Accession Number: WOS:000386123200009

ISSN: 0015-752X

eISSN: 1464-3626

Record 6 of 29

Title: First Nations and industry collaboration for forest governance in northwestern Ontario, Canada

Author(s): Zurba, M (Zurba, Melanie); Diduck, AP (Diduck, Alan P); Sinclair, AJ (Sinclair, A. John)

Source: FOREST POLICY AND ECONOMICS **Volume:** 69 **Pages:** 1-10 **DOI:** 10.1016/j.forpol.2016.04.003 **Published:** AUG 2016

Abstract: The focus of this paper is the move towards greater collaboration among First Nations and forestry companies for the governance of forests in northwestern Ontario, Canada. The economic downturn in the forest economy in Kenora, Ontario in the 2000s opened pathways for new collaborative partnerships to emerge in governance systems that include industry and local, provincial, federal and First Nations governments. In order to enhance our collective understanding of collaborative governance in the forest sector we set out to describe the institutions and institutional changes that made cross-cultural collaboration possible and explain cross-cultural collaboration in terms of meta-governance (values, norms, and principles), particularly in relation to substantive decision-making. Using a review of policy and management documents and semi-structured interviews with governance actors, we examined regional shifts in tenure, the governance system of a leading example of collaboration, and procedures, processes, and organizational structures that helped establish equal decision-making authority that facilitated collaborative relationships. We found that tenure reforms allowed for structural changes in the governance system for the Kenora Forest, these led to formal partnerships between First Nations and industry, and the new governance system involved power sharing in decision-making authority. Conclusions of the work include that future tenure reforms should continue to promote collaboration in the region, and that the case study represents a novel type of collaboration between industry and First Nations in Canada. (C) 2016 Elsevier B.V. All rights reserved.

Accession Number: WOS:000379365400001

Author Identifiers:

Author	ResearcherID Number	ORCID Number
Zurba, Melanie		0000-0001-8411-6083

ISSN: 1389-9341

eISSN: 1872-7050

Record 7 of 29

Title: What does "First Nation deep roots in the forests" mean? Identification of principles and objectives for promoting forest-based development

Author(s): Beaudoin, JM (Beaudoin, Jean-Michel); Bouthillier, L (Bouthillier, Luc); Bulkan, J (Bulkan, Janette); Nelson, H (Nelson, Harry); Trospen, R (Trospen, Ronald); Wyatt, S (Wyatt, Stephen)

Source: CANADIAN JOURNAL OF FOREST RESEARCH **Volume:** 46 **Issue:** 4 **Pages:** 508-519 **DOI:** 10.1139/cjfr-2015-0170 **Published:** APR 2016

Abstract: We often hear about the resistance of First Nation (FN) communities to the industrial model of forestry, but we hear less about what they wish to achieve. Translating FN perspectives into concepts that are understood by the mainstream society can help inform current and future forest policies. Such translation can support initiatives that seek ways to increase FN participation in the forest sector. This paper documents one process of translation. It identifies the principles and objectives for forest-based development of the Essipit Innu First Nation in Quebec, Canada, reflective of the deep roots that anchor the Essipit to their territory. Based on participatory research carried out between January and July 2013, we identify 34 objectives folded into three core FN principles: Nutshimiu-Aitun (identity-territoriality), Mishkutunam (sharing-exchange), and Pakassitishun (responsibility-autonomy). Our analysis shows that the economic aims of the dominant forestry model are too narrow for FN communities. This paper contributes to expanding FN engagement in forestry through management and economic approaches that are better adapted to their culture and values.

Accession Number: WOS:000375945800008

Author Identifiers:

Author	ResearcherID Number	ORCID Number
Bulkan, Janette		0000-0003-2261-484X

ISSN: 0045-5067

eISSN: 1208-6037

Record 8 of 29

Title: Governance transformed into Corporate Social Responsibility (CSR): New governance innovations in the Canadian oil sands

Author(s): Wanvik, TI (Wanvik, Tarje I.)

Source: EXTRACTIVE INDUSTRIES AND SOCIETY-AN INTERNATIONAL JOURNAL **Volume:** 3 **Issue:** 2 **Pages:** 517-526 **DOI:** 10.1016/j.exis.2016.01.007 **Published:** APR 2016

Abstract: In the contested space of energy production in Canada, tension and a series of disputes over land and rights have arisen between the state, industry and local Aboriginal communities. Canadian governments have long exploited the bountiful natural resources of the land, while at the same time attempting to reconcile a difficult relationship with its Aboriginal communities. This case study reveals how the government has yielded responsibility to industry to resolve the many governance challenges of Canada's extractive hot zone. Through substantial delegation of governance duties to industry, the Canadian Government has placed large parts of its regulatory toolbox in the hands of multinational Corporate Social Responsibility (CSR) departments, and hence turned social and environmental planning and programming into corporate stakeholder management. This article sets out to explain these dramatic changes in governance power play and practice by examining the case of the extractive hot zone in Alberta, according to three distinct but interlinked trajectories in governance and CSR scholarship, namely the change from "government" to "governance", the emergence of a claimed post-political condition and the evolution of CSR practices towards stakeholder management. (C) 2016 The Author. Published by Elsevier Ltd.

Accession Number: WOS:000375104100029

ISSN: 2214-790X

eISSN: 2214-7918

Record 9 of 29

Title: Growing deep roots: Increasing Aboriginal authority in contemporary forest governance arrangements

Author(s): Beaudoin, JM (Beaudoin, Jean-Michel); Bouthillier, L (Bouthillier, Luc); Chiasson, G (Chiasson, Guy)

Source: LAND USE POLICY **Volume:** 49 **Special Issue:** SI **Pages:** 287-295 **DOI:** 10.1016/j.landusepol.2015.08.004 **Published:** DEC 2015

Abstract: The governance literature highlights a shift away from "government" to new and more complex governing arrangements that involve a greater set of institutions

and actors in decision-making processes. According to a number of studies, this shift is ongoing in forestry. This article seeks a better understanding of contemporary forest governance by exploring the emerging role of Aboriginal peoples in the Canadian forest sector. It is well known that Aboriginal participation in forest management is crucial for achieving sustainable forestry. Yet we know little about how Aboriginal communities can induce a change in governing conditions. We examined the various governance arrangements through which the Essipit Innu First Nation in Quebec (Canada) was able to exercise authority over forest management. Using multiple qualitative data gathering techniques, our analysis shows that Essipit innovated in forest governance by creating a partnership with the forest company Boisaco and, thus, gained authority over forest management decisions at the operational level. Our analysis explains that this new governance arrangement is built on growing collaboration and interdependencies between these two parties. Common values, orientations, mechanisms and tools are also necessary conditions. Finally, this research highlights the need for greater cultural understanding. (C) 2015 Elsevier Ltd. All rights reserved.

Accession Number: WOS:000367105800027

ISSN: 0264-8377

eISSN: 1873-5754

Record 10 of 29

Title: Indigenous Peoples' Expectations for Forestry in New Brunswick: Are Rights Enough?

Author(s): Wyatt, S (Wyatt, Stephen); Kessels, M (Kessels, Marieke); van Laerhoven, F (van Laerhoven, Frank)

Source: SOCIETY & NATURAL RESOURCES **Volume:** 28 **Issue:** 6 **Pages:** 625-640 **DOI:** 10.1080/08941920.2014.970735 **Published:** JUN 3 2015

Abstract: This article considers how competing interpretations of rights upon forestland affect indigenous peoples' ability to derive benefits from forests, using interviews and an evaluation exercise in 13 First Nations communities in New Brunswick, Canada. We asked first what First Nations expect from provincial forest governance arrangements, and second, what is preventing them from attaining their expectations? Informants attached greatest importance to rights and environmental protection, but tangible outcomes fall far short of expectations. Economic benefits are promoted by the government, but are least important for informants and results are mediocre. Undertaking an access analysis, we observe that governance arrangements do not deliver the benefits sought by First Nations, that control mechanisms provide limited participation in governance, and that power remains firmly with government and private industry. We conclude that rights alone do not enable First Nations to access benefits and that governance arrangements do not provide certainty for sustainable management.

Accession Number: WOS:000354454700004

Author Identifiers:

Author	ResearcherID Number	ORCID Number
van Laerhoven, Frank	L-5913-2013	0000-0003-4282-7383

ISSN: 0894-1920

eISSN: 1521-0723

Record 11 of 29

Title: OIL, ENERGY, AND ANTHROPOLOGICAL COLLABORATION ON THE NORTHWEST COAST OF CANADA

Author(s): Menzies, CR (Menzies, Charles R.)

Source: JOURNAL OF ANTHROPOLOGICAL RESEARCH **Volume:** 71 **Issue:** 1 **Pages:** 5-21 **DOI:** 10.3998/jar.0521004.0071.101 **Published:** SPR 2015

Abstract: A veritable gold rush of oil and gas exploration and export development is washing along the coast of western Canada. This paper explores the contemporary setting and possibilities for collaborative research with Indigenous communities in the face of large-scale corporate interventions and the history of colonization. Drawing upon two decades of research and close collaboration with Indigenous communities on the North Coast of British Columbia, Menzies (himself an Indigenous scholar) argues that collaborative anthropology is both more necessary and more difficult than at almost any previous point in our history.

Accession Number: WOS:000351782200001

ISSN: 0091-7710

eISSN: 2153-3806

Record 12 of 29

Title: Manitoba's forest policy regime: Incremental change, concepts, actors and relationships

Author(s): Griffith, J (Griffith, Jodi); Diduck, AP (Diduck, Alan P.); Tardif, J (Tardif, Jacques)

Source: FORESTRY CHRONICLE **Volume:** 91 **Issue:** 1 **Pages:** 71-83 **Published:** JAN-FEB 2015

Abstract: In response to the emergence of Sustainable Forest Management (SFM), forest operations, policies, and governance have become more inclusive of multiple values and of the people holding these values. To assess the extent to which these types of changes have occurred in Manitoba, government legislation and policy documents were examined and semi-directed interviews were conducted with 29 key actors in Manitoba's forest policy regime. In Manitoba, objectives, principles and concepts relating to sustainability and ecosystem-based management have been incorporated into forest policies but not in forest legislation. Additionally, public involvement opportunities have expanded and more people are now involved in advisory capacities. However, a closed policy network and institutional stability have meant that the provincial government and the forest industry maintain primary policy-and decision-making responsibility in Manitoba's forest policy regime. As a result, parties who would need to be included for SFM ideals to be realized are excluded from the network. For SFM to take a deeper hold in Manitoba in both policy and in management practices, transformative change needs to occur. A broader array of interests needs a voice at the center of the network, and The Forest Act requires amendment to entrench SFM principles and core concepts.

Accession Number: WOS:000352101700020

ISSN: 0015-7546

eISSN: 1499-9315

Record 13 of 29

Title: Disrupting Canadian sovereignty? The 'First Nations & China' strategy revisited

Author(s): Montsion, JM (Montsion, Jean Michel)

Source: GEOFORUM **Volume:** 58 **Pages:** 114-121 **DOI:** 10.1016/j.geoforum.2014.11.001 **Published:** JAN 2015

Abstract: In response to foreign investors' growing interest in Canadian natural resources, British Columbia (BC) First Nations created the First Nations Energy and Mining Council (FNEMC) in 2006 in order to foster direct, independent and collaborative relations between indigenous peoples and investors. In 2011, the FNEMC launched the First Nations & China: Transforming Relationships strategy to facilitate two-way investment between First Nations and Chinese businesses, and to represent the interests of BC First Nations in cases in which they perceived the Canadian state and Canadian investors are not adequately representing their interests. This strategy is an interesting case of indigenous self-affirmation because it disrupts the narrative of Canadian state sovereignty. It does so to position BC First Nations as legitimate and central interlocutors for Chinese investors who are interested in resource extraction on traditional indigenous lands. To better understand the strategy's impact on Canada-China relations, I focus on the spatial dimensions of the First Nations & China strategy. Specifically, I situate the strategy in the context of BC First Nations' history of political organization, and analyze the discursive practices surrounding the strategy's launch. I draw from the various spatial dimensions associated with contentious politics - scale, place, network, positionality and mobility - to argue that the First Nations & China strategy opens Canada-China diplomatic relations for participation of BC First Nations by producing a 'third space of sovereignty' while also opposing Canada's sovereign claims and control over territory, resources and diplomacy. (C) 2014 Elsevier Ltd. All rights reserved.

Accession Number: WOS:000348260100013

ISSN: 0016-7185

eISSN: 1872-9398

Record 14 of 29

Title: ALIGNING ENERGY DEVELOPMENT WITH THE INTERESTS OF ABORIGINAL PEOPLES IN CANADA

Author(s): Laurin, WM (Laurin, William M.); Jamieson, JP (Jamieson, Joann P.)

Source: ALBERTA LAW REVIEW **Volume:** 53 **Issue:** 2 **Pages:** 453-479 **Published:** 2015

Abstract: Canada's economic future is dependent upon energy and natural resource development, and has therefore become inextricably linked to the rights and interests of Canada's Aboriginal peoples. These rights and interests include the desire to continue with their traditional ways of livelihood, to protect their many cultures and the environment, the need to foster healthy and thriving communities, and the opportunity to participate in and benefit from development on their traditional lands. In Canada, the rights of Aboriginal people are constitutionally protected. However, despite considerable advancements in domestic law on consultation and accommodation, growing unrest and dissatisfaction among Canada's Aboriginal peoples prevails.

Significant progress in international human rights law and international norms lend support to Indigenous aspirations and are creating pressure on energy and natural resource developers to embrace change and move beyond the consultation requirements under domestic law to obtaining the consent of Aboriginal communities to development on their traditional lands. This article posits that the willingness of Aboriginal communities to constructively engage with industry and consent to natural resource and energy development on their traditional lands can be facilitated by aligning the interests of the affected Aboriginal communities with those of project proponents through the proactive creation of thoughtful and innovative commercial relationships. These relationships can be structured to create value for the proponent while providing meaningful economic participation for the affected Aboriginal community by utilizing a combination of passive resource revenues, employment and procurement opportunities and direct equity participation in the development.

Accession Number: WOS:000215857900006

ISSN: 0002-4821

eISSN: 1925-8356

Record 15 of 29

Title: Crude 'Oil Mercantilism'? Chinese Oil Engagement in Kazakhstan

Author(s): McCarthy, J (McCarthy, Joseph)

Source: PACIFIC AFFAIRS **Volume:** 86 **Issue:** 2 **Special Issue:** SI **Pages:** 257-280 **DOI:** 10.5509/2013862257 **Published:** JUN 2013

Abstract: In 1991, the state-owned China National Petroleum Corporation (CNPC) commenced the first Chinese national oil company equity oil investment overseas when it invested in a UN-sponsored oil sands project in Canada. Since then, the CNPC and the other Chinese national oil companies (Sinopec and the CNOOC) have steadily increased their equity oil investments in developing nations, sometimes with the assistance of various Chinese party and government organs. Viewed in the context of China's burgeoning oil consumption and plateauing oil production, these investments have led to accusations by Western analysts and policy makers that China is engaging in "mercantilism" by "locking up" oil supplies from vulnerable developing nations to assuage their mounting energy-security woes.

Through examining Chinese oil engagement in Kazakhstan, this paper will analyze whether accusations of "mercantilism" can adequately capture the complexities and dynamics that drive Chinese oil company investment in developing nations. This will be achieved by first surveying contemporary debates regarding Chinese oil engagement abroad and then linking these debates to historical and contemporary conceptualizations of mercantilism. This will allow for a new multi-faceted definition of "oil mercantilist" behaviour, which will shift the label from a statement of ethical value to a statement of empirical fact that can be tested. This definition will then be used to examine the institutional contexts in China that support and counter contemporary accusations of oil mercantilism, and then to explore Chinese oil engagement in Kazakhstan from 1996 to the present day. This paper will contribute to emerging literature that suggests Chinese oil investment and diplomacy cannot be simply understood through mercantilist perspectives. Analyses of Chinese oil engagement need to recognize the important influence that China's institutional reforms have had on Chinese national oil companies' increasingly commercial approach to foreign investment, in addition to the unique host-country contexts China encounters through its oil investments.

Accession Number: WOS:000320210400003

ISSN: 0030-851X

Record 16 of 29

Title: An inventory of collaborative arrangements between Aboriginal peoples and the Canadian forest sector: Linking policies to diversification in forms of engagement

Author(s): Fortier, JF (Fortier, Jean-Francois); Wyatt, S (Wyatt, Stephen); Natcher, DC (Natcher, David C.); Smith, MA (Smith, Margaret A. (Peggy)); Hebert, M (Hebert, Martin)

Source: JOURNAL OF ENVIRONMENTAL MANAGEMENT **Volume:** 119 **Pages:** 47-55 **DOI:** 10.1016/j.jenvman.2013.01.005 **Published:** APR 15 2013

Abstract: This paper examines collaborative arrangements between Aboriginal peoples and the forest sector across Canada. Using a broad definition of collaboration, we identified 1378 arrangements in 474 Aboriginal communities in all Canadian provinces and territories, except Nunavut. We categorize these collaborative arrangements into five broad types: treaties and other formal agreements; planning and management activities; influence on decision-making; forest tenures; and economic roles and partnerships. Consistent data was available for only the first three types, which showed that close to 60% of Aboriginal communities use each approach. However, this masks significant differences between provinces. For example, economic roles and partnerships are in place in all New Brunswick communities and 74% of communities in British Columbia, but only 12% of Manitoban communities. The proportion of communities that have been involved in participatory processes in forest decision-making (such as advisory committees and consultation processes) is particularly high in Quebec with 88% of communities, but only 32% of communities hold forest tenures. We also find that three-quarters of all communities choose to engage in two or more approaches, despite the demands that this can place upon the time and energy of community members. We finally consider how policy environments in different jurisdictions affect the frequency of certain types of collaboration. This empirical study, and the typology that it demonstrates, can inform policy development for Aboriginal involvement in Canadian forestry and help guide future research into broader issues of collaborative governance of natural resources. (C) 2013 Elsevier Ltd. All rights reserved.

Accession Number: WOS:000317796600006

PubMed ID: 23454413

Author Identifiers:

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Wyatt, Stephen		0000-0002-6311-7025

ISSN: 0301-4797

eISSN: 1095-8630

Record 17 of 29

Title: Collaboration between Aboriginal peoples and the Canadian forest sector: A typology of arrangements for establishing control and determining benefits of forestlands

Author(s): Wyatt, S (Wyatt, Stephen); Fortier, JF (Fortier, Jean-Francois); Natcher, DC (Natcher, David C.); Smith, MA (Smith, Margaret A. (Peggy)); Hebert, M (Hebert, Martin)

Source: JOURNAL OF ENVIRONMENTAL MANAGEMENT **Volume:** 115 **Pages:** 21-31 **DOI:** 10.1016/j.jenvman.2012.10.038 **Published:** JAN 30 2013

Abstract: Over the last thirty years, Aboriginal peoples, forestry companies and governments in Canada have developed a wide variety of arrangements and mechanisms aimed at fostering collaboration and establishing an increasing Aboriginal role in managing and harvesting forestlands. This paper seeks to facilitate the analysis and investigation of various forms of collaboration by presenting a typology based upon institutional arrangements and desired outcomes. Development of the typology followed an iterative process of categorisation, description, testing and revision, using scientific and grey literature combined with testing against an ever-widening number of communities; firstly in six provinces and finally with 474 communities across the country. We identify five principal forms of collaborative arrangement, each with a number of sub-types: treaties and other formal agreements that establish roles and responsibilities; planning and management activities; influence on decision-making; forest tenures; and economic roles. The application and utility of this typology is illustrated through the examples of four communities, each of which is engaged in several different collaborative arrangements. The typology demonstrates the variety of arrangements that are available to encourage Aboriginal involvement in Canada's

forest sector while also provided a basis for future work in comparing the benefits of different arrangements or in analysing the effectiveness of policies. (C) 2012 Elsevier Ltd. All rights reserved.

Accession Number: WOS:000315546600004

PubMed ID: 23220654

Author Identifiers:

Author	ResearcherID Number	ORCID Number
Wyatt, Stephen		0000-0002-6311-7025

ISSN: 0301-4797

eISSN: 1095-8630

Record 18 of 29

Title: "SHOW-STOPPER": EFFECTIVELY MANAGING PROJECT SOCIAL RISKS; IMPROVED APPROACHES TO ABORIGINAL ENGAGEMENT AND CONSULTATION

Author(s): Mathewson, A (Mathewson, Andrew)

Book Group Author(s): ASME

Source: PROCEEDINGS OF THE 9TH INTERNATIONAL PIPELINE CONFERENCE - 2012, VOL 1 **Pages:** 275-281 **Published:** 2013

Abstract: A number of proposed pipelines in western and northern Canada have highlighted critical path social risks associated with effectively engaging and consulting with impacted Aboriginal rightsholders along pipeline rights-of-way. Opening up new markets for Canada's oil sands, shale and off-shore gas resources will require an expansion of the pipeline system in northern British Columbia, Alberta and the Northwest Territories. While navigating the regulatory approval process can be a formidable hurdle, a far greater challenge is how proponents manage the process of building relationships and consulting with affected Aboriginal communities. Failing to earn Aboriginal support for proposed projects can be a "show-stopper".

Exploration of new basins in Canada, driven by increased demand for energy in Asia, may compete with other land uses and constitutionally-protected rights and practices of indigenous peoples. Public, media and environmental response to new pipelines is often lead by the reaction of impacted communities. The task of identifying the social risks to a project, understanding the engagement process, fulfilling the regulatory consultation requirements of different jurisdictions, balancing impacts with benefits, managing issues and resolving disputes, communicating with the public and media effectively all require improved skills and approaches.

The paper surveys the stakeholder engagement experience and differences in approaches for recently proposed major arctic gas and western oil pipeline projects, as well as pipelines to service Liquefied Natural Gas export facilities on the Pacific north coast, providing practical insights with possibly international application. Utilizing decision and risk analysis and scenario planning methodologies, applied to development of an Aboriginal engagement and consultation strategy, the paper examines how multi-billion dollar investments in new pipelines can be better secured by integrating stakeholder engagement into a project's risk management design. With greater precision and improved approaches proponents can effectively manage social risks, reduce stakeholder conflict and associate project uncertainties.

Accession Number: WOS:000324220100032

Conference Title: 9th International Pipeline Conference (IPC 2012)

Conference Date: SEP 24-28, 2012

Conference Location: Calgary, CANADA

Conference Sponsors: ASME, IPTI

ISBN: 978-0-7918-4512-7

Record 19 of 29

Title: Employment of Indigenous Australians in the forestry sector: a case study from northern Queensland

Author(s): Loxton, E (Loxton, E.); Schirmer, J (Schirmer, J.); Kanowski, P (Kanowski, P.)

Source: AUSTRALIAN FORESTRY **Volume:** 75 **Issue:** 2 **Pages:** 73-81 **Published:** JUN 2012

Abstract: There are compelling reasons to encourage the employment of Indigenous Australians in the forestry sector. The benefits of, and constraints to, Indigenous employment in the sector were examined using a case study approach focused on Indigenous participation in 'Operation Farm Clear', an emergency response following Cyclone Larry in northern Queensland in 2006. The findings suggested that, given a supportive environment, there are opportunities for Indigenous people to benefit from employment in the forestry sector. These benefits included skill development and increased confidence, the opportunity for employment and participation in land management. The findings also highlighted constraints that could limit the delivery of these benefits. Constraints included an insufficient level of relevant skill or experience, lack of a supportive environment, the difficulty of balancing Indigenous and non-Indigenous cultures, and limitations related to the nature of the forestry sector. In the case study, the most important factors for the realisation of benefits were the provision of long-term support and opportunities for ongoing training and employment, and the peer support provided by other Indigenous employees.

Accession Number: WOS:000306684500002

Author Identifiers:

Author	ResearcherID Number	ORCID Number
Schirmer, Jacki		0000-0003-3443-4686

ISSN: 0004-9158

Record 20 of 29

Title: Expert opinion on the criteria and indicator process and Aboriginal communities: Are objectives being met?

Author(s): Adam, MC (Adam, M. -C.); Kneeshaw, D (Kneeshaw, D.)

Source: FORESTRY CHRONICLE **Volume:** 87 **Issue:** 3 **Pages:** 358-366 **Published:** MAY-JUN 2011

Abstract: Developed in the 1990s, the process of criteria and indicators (C&I) has been used to conceptualize, evaluate and implement sustainable forest management (SFM). However, to assess their effectiveness we explore whether their use in management leads to changes, especially at the local level in Aboriginal communities. More specifically, can C&I justify Aboriginal use of C&I? Since local-level C&I are a recent initiative, the effectiveness of the C&I process in assessing progress towards SFM was assessed via interviews with experts associated with the development of local-level Aboriginal C&I frameworks in Canada on use, integration and needs of Aboriginal communities for C&I. Our results suggest that C&I in Aboriginal communities are considered to be "just another reference point" because: 1) Aboriginal objectives are maintained at arm's length from the forest management process; 2) the use of C&I as a negotiating tool has not been sufficient to culturally adapt forest management for Aboriginal values and objectives and 3) Aboriginal values have been restricted to the elaboration of C&I and the Aboriginal definition of SFM, but they are not part of the evaluation nor the implementation of SFM. In contrast to the forest industry, Aboriginal communities identified the following objectives as motivation for using C&I: Aboriginal representation, Aboriginal engagement, capacity building and empowerment. Without explicitly acknowledging these Aboriginal community objectives, C&I becomes a tool restricted primarily to forest managers and thus sustainable forest management becomes unattainable. In effect, the underlying issue is not C&I in themselves but the limited role Aboriginal communities have been allowed to have in the SFM process.

Accession Number: WOS:000292123200015

ISSN: 0015-7546

Record 21 of 29

Title: Aboriginal/non-Aboriginal relations and sustainable forest management in Canada: The influence of the Royal Commission on Aboriginal Peoples

Author(s): McGregor, D (McGregor, Deborah)

Source: JOURNAL OF ENVIRONMENTAL MANAGEMENT **Volume:** 92 **Issue:** 2 **Special Issue:** SI **Pages:** 300-310 **DOI:** 10.1016/j.jenvman.2009.09.038 **Published:** FEB 2011

Abstract: This paper provides an overview of the emerging role of Aboriginal people in Sustainable Forest Management (SFM) in Canada over the past decade. The 1996 Royal Commission on Aboriginal Peoples (RCAP) provided guidance and recommendations for improving Aboriginal peoples' position in Canadian society, beginning with strengthening understanding and building relationships between Aboriginal and non-Aboriginal parties. This paper explores the extent to which advances in Aboriginal/non-Aboriginal relationships and Aboriginal forestry have been made as a result of RCAP's call for renewed relationships based on co-existence among nations. Such changes have begun to alter the context in which Aboriginal/non-Aboriginal relationships exist with respect to SFM. While governments themselves have generally not demonstrated the leadership called for by RCAP in taking up these challenges, industry and other partners are demonstrating some improvements. A degree of progress has been achieved in terms of lands and resources, particularly with co-management-type arrangements, but a fundamental re-structuring needed to reflect nation-to-nation relationships has not yet occurred. Other factors related to increasing Aboriginal participation in SFM, such as the recognition of Aboriginal and treaty rights, are also highlighted, along with suggestions for moving Aboriginal peoples' SFM agenda forward in the coming years. (C) 2009 Elsevier Ltd. All rights reserved.

Accession Number: WOS:000285661900007

PubMed ID: 19889497

ISSN: 0301-4797

eISSN: 1095-8630

Record 22 of 29

Title: Systems Approach to the Green Energy Strategy & Development in Canada

Author(s): Yeh, MH (Yeh, Martin H.); Yeh, FC (Yeh, Franklin C.)

Edited by: Jie XW; Xu EM; Zahra SA

Source: ENVIRONMENT, LOW-CARBON AND STRATEGY **Pages:** 116-122 **Published:** 2011

Abstract: The impact of global warming is widespread, a number of factors have to be identified and analyzed. Causal factors include world population growth at present and growing exponentially. Increases of personal incomes and wealth have created more increased consumption of public/private housing transit and transportation which have in turn increased demand for raw materials, natural and mining resources such as gas, coal, oil sand and ocean oil/gas exploration.

The melting of the North Pole's glaciers has affected the ocean levels flooding of river and creeks and as well affected agricultural production on a major scale.

In order to have clean environment on earth, we need a flexible management to cope with global warming and its impact on our quality of life. An alternative to coal and fossil fuels which are directly causing climate change through heat-trapping gases that are warming the atmosphere must be technologically found and implemented as early as possible. A mix alternative and clean energy such as solar panels, hydro, wind-turbines and bio-mass energy system has to be developed and implemented. This requires a close cooperation among public institutions, private industry, technical experts, university researchers, financially and administratively, among all nations. Nuclear energy can be considered as an alternative clean energy and must be developed and also monitored for the safety.

According to the world wildlife fund Canada released a list of the ten top Canadian cities in terms of greenhouse gas emission reductions, municipal targets, green building codes and green transportation, Vancouver ranked first, with a score of 8.1 out of ten, followed by Toronto (7.2) and Montreal (6.2). Vancouver has reduced emission to 1990 is the only Municipality on track to meet Kyoto and has the greenest building code in Canada.

Some of the important Green Energy Strategy and Development in Canada have been designed and implemented by various Provinces listed as follows:

B.C. established the BC forest and range practices act (BCFRPA) which was one of the first in North America requiring tenure holders to pursue sustainable forest management planning and to provide measurable results.

Ontario Provincial Government passed a new green act to explore solar, wind, water and biomass new technological energy. The world's biggest solar farms as an example, is in Enbridge's 80-megawatt power project on 380 hectares near Sarnia, Ontario. The goal is to make solar cells more efficient. Electrovaya Inc. of Mississauga, Ontario has developed and advanced enough to get electric cars such as ChevyVolt onto the market.

Society on Earth must think about energy and be conscious of its use. People must understand that what they can do to conserve energy will have cumulative effect. Also, people need to act on their responsibility. And finally, it needs the participation of everyone, not just power plants, equipment manufacturers or public/private institutions. All society needs to take responsibility to be involved pulling together, all the time.

Accession Number: WOS:000309320400019

Conference Title: International Conference on Strategic Management (ICSM 2011)

Conference Date: DEC 21-23, 2011

Conference Location: Phuket, THAILAND

ISBN: 978-7-5614-5499-2

Record 23 of 29

Title: Sustainable socio-economic development in mining communities: north-central British Columbia perspectives

Author(s): Nelsen, JL (Nelsen, Jacqueline L.); Scoble, M (Scoble, Malcolm); Ostry, A (Ostry, Aleck)

Source: INTERNATIONAL JOURNAL OF MINING RECLAMATION AND ENVIRONMENT **Volume:** 24 **Issue:** 2 **Pages:** 163-179 **DOI:** 10.1080/17480930903185107 **Published:** 2010

Abstract: The recent global commodities price boom prompted a significant growth in mineral exploration projects in British Columbia (BC). These now face the impacts of the recession in the global economy. The forests in BC where many of these projects are underway is also facing a massive, climate-change related, pine beetle infestation which along with the housing slowdown in North America is causing a collapse of the region's forestry industry. Mining development could create new jobs through economic development, reducing the exodus of skilled workers and nurturing the already fragile state of many rural communities, including First Nations. Recent issues over new BC mining projects and their impacts on surrounding communities prompt consideration of an approach to project planning that goes beyond simply aiming to mitigate environmental and social impacts. The opportunity exists to involve the participation of communities early in the planning process and to place greater consideration on the contribution of a project to building social capital in these mining communities. There is also the possibility to consider the role of a particular project in a more strategic sense, as part of regional development planning that deals with wider issues, time spans and synergies relating to socio-economic development in mining communities. This article stems from early research into the characterisation of social capital and the use of community-indicators to forecast specific social and economic outcomes for new mining projects. The overall objective is to evaluate an approach to mine planning that potentially takes greater account of opportunities to enhance community health and resilience. Reference is made to a current mining project in north-central BC, characteristic of the complex socioeconomic setting of contemporary mining developments in BC.

Accession Number: WOS:000294724400007

Author Identifiers:

Author	ResearcherID Number	ORCID Number
Banks, Tamara	G-3007-2012	
Brooks, Katya	J-4975-2014	

ISSN: 1748-0930

Record 24 of 29

Title: Guess who's (not) coming for dinner: Expanding the terms of public involvement in sustainable forest management

Author(s): Reed, MG (Reed, Maureen G.)

Source: SCANDINAVIAN JOURNAL OF FOREST RESEARCH **Volume:** 25 **Pages:** 45-54 **Article Number:** PII 925480218 **DOI:** 10.1080/02827581.2010.506785 **Supplement:** 9 **Published:** 2010

Abstract: How do processes for community engagement in forestry decision making in Canada serve the aims of sustainable forest management? This paper reports on

several studies of forest land-use and management planning processes in four provinces and a national survey of forest-sector advisory committees to determine who is selected to participate, what values participants bring to the table, and how participants are expected to behave in committee processes. The analysis suggests that participatory mechanisms are both shaped by and reinforce local norms, values and expectations of forestry communities. Thus, the focus is on understanding the social context within which communities become engaged rather than providing a technical assessment of specific initiatives. In particular, the study examines assumptions related to gender, class and racialized identities that operate in rural communities and shape the participation and influence of participants. These studies all suggest that forestry advisory committees remain elite organizations, dominated by individuals with economic stakes, constrained by priorities set by government and/or industry, and focused on technical issues. Women, Aboriginal people and those of lower socioeconomic status are less likely to participate and less likely to make substantive contributions when they do participate. Differences by gender are significant, but gender is not the only factor that explains the marginalization of some groups within these processes. The results suggest a need to examine how gender intersects with other sets of social relations such as class and racialized identity in order to better understand the social factors that will influence the achievement of sustainable forest management.

Accession Number: WOS:000282595600006

ISSN: 0282-7581

Record 25 of 29

Title: Negotiated settlements and the National Energy Board in Canada

Author(s): Doucet, J (Doucet, Joseph); Littlechild, S (Littlechild, Stephen)

Source: ENERGY POLICY **Volume:** 37 **Issue:** 11 **Pages:** 4633-4644 **DOI:** 10.1016/j.enpol.2009.06.018 **Published:** NOV 2009

Abstract: In Canada, settlements between oil and gas pipelines and users have largely superseded the litigation of major pipeline toll cases since 1995. Quantitatively, from the first half to the second half of the period 1985-2007 the average number of pipeline toll hearing days in Canada fell by three-quarters. On average, settlements last more than twice as long as litigated outcomes and have cut regulatory processing times by about one third for gas pipelines and by about two thirds for oil pipelines, with the result that regulatory processing times per effective toll-year have fallen to 13% and 27% respectively of previous levels. Qualitatively, settlements have been used to determine prices, operating and capital cost projections, return on equity, service quality improvements, risk-sharing investments and information requirements. They were the vehicle by which multi-year incentive agreements developed rapidly for all pipelines. They have also been used to introduce light-handed regulation. They have provided a mechanism for fruitful collaboration between pipelines and their customers and have changed attitudes in the industry. Two key actions of the National Energy Board have facilitated settlements by clarifying expectations and property rights: its generic cost of capital decision that removes the market power of the pipeline and enables effective negotiation with users, and its willingness to judge a settlement by the reasonableness of the process leading up to it instead of imposing the Board's own values on the outcome. (C) 2009 Elsevier Ltd. All rights reserved.

Accession Number: WOS:000271824600045

ISSN: 0301-4215

Record 26 of 29

Title: RESTORING PUBLIC TRUST WHILE TEARING DOWN SITE IN RURAL OHIO

Author(s): Schneider, J (Schneider, Jerry); Wagner, J (Wagner, Jeffrey); Connell, J (Connell, Judy)

Book Group Author(s): ASME

Source: ICEM2007: PROCEEDINGS OF THE 11TH INTERNATIONAL CONFERENCE ON ENVIRONMENTAL REMEDIATION AND RADIOACTIVE WASTE MANAGEMENT, PTS A AND B **Pages:** 239-247 **Published:** 2009

Abstract: In the mid-1980s, the impact of three decades of uranium processing: near rural Fernald, Ohio, 18 miles northwest of Cincinnati, became the centre of national public controversy. When a series of incidents at the uranium foundry brought to light the years of contamination to the environment and surrounding farmland communities, local citizens' groups united and demanded a role in determining the plans for cleaning up the site. One citizens' group, Fernald Residents for Environmental Safety and Health (FRESH), formed in 1984 following reports that nearly 300 pounds of enriched uranium oxide had been released from a dust-collector system, and three off-properly wells south of the site were contaminated with uranium. For 22 years, FRESH monitored activities at Fernald and participated in the decision-making process with management and regulators.

The job of FRESH ended on 19 January this year when the U.S. Secretary of Energy Samuel Bodman and U.S. Environmental Protection Agency Administrator Stephen Johnson - flanked by local, state, and national elected officials, and citizen-led environmental watchdog groups including FRESH - officially declared the Fernald Site clean of all nuclear contamination and open to public access. It marked the end of a remarkable turnaround in public confidence and trust that had attracted critical reports from around the world: the Cincinnati Enquirer; U.S. national news programs 60 Minutes, 20/20, Nightline, and 48 Hours; worldwide media outlets from the British Broadcasting Company and Canadian Broadcasting Company; Japanese newspapers; and German reporters.

When personnel from Fluor arrived in 1992, the management team thought it understood the issues and concerns of each stakeholder group, and was determined to implement the decommissioning scope of work aggressively, confident that stakeholders would agree with its plans. This approach resulted in strained relationships with opinion leaders during the early months of Fluor's contract. To forge better relationships, the U.S. Department of Energy (DOE) who owns the site, and Fluor embarked on three new strategies based on engaging citizens and interested stakeholder groups in the decision-making process.

The first strategy was opening communication channels with site leadership, technical staff, and regulators. This strategy combined a strong public-information program with two-way communications between management and the community, soliciting and encouraging stakeholder participation early in the decision-making process. Fluor's public-participation strategy exceeded the "check-the-box" approach common within the nuclear-weapons complex, and set a national standard that stands alone today.

The second stakeholder-engagement strategy sprang from mending fences with the regulators and the community. The approach for dispositioning low-level waste was a 25-year plan to ship it off the site. Working with stakeholders, DOE and Fluor were able to convince the community to accept a plan to safely store waste permanently on site, which would save 15 years of cleanup and millions of dollars in cost.

The third strategy addressed the potentially long delays in finalizing remedial action plans due to formal public comment periods and State and Federal regulatory approvals. Working closely with the U.S. and Ohio Environmental Protection Agencies (EPA) and other stakeholders, DOE and Fluor were able to secure approvals of five Records of Decision on time a first for the DOE complex.

Developing open and honest relationships with union leaders, the workforce, regulators and community groups played a major role in DOE and Fluor cleaning up and closing the site. Using lessons learned at Fernald, DOE was able to resolve challenges at other sites, including worker transition, labour disputes, and damaged relationships with regulators and the community. It took significant time early in the project to convince the workforce that their future lay in cleanup, not in holding out hope for production to resume. It took more time to repair relationships with Ohio regulators and the local community. Developing these relationships over the years required constant, open communications between site decision makers and stakeholders to identify issues and to overcome potential barriers.

Fluor's open public-participation strategy resulted in stakeholder consensus of five remedial-action plans that directed Fernald cleanup. This strategy included establishing a public-participation program that emphasized a shared-decision making process and abandoned the government's traditional, non-participatory "Decide, Announce, Defend" approach. Fernald's program became a model within the DOE complex for effective public participation.

Fluor led the formation of the first DOE site-specific advisory board dedicated to remediation and closure. The board was successful at building consensus on critical issues affecting long-term site remediation, such as cleanup levels, waste disposal and final land use. Fluor created innovative public outreach tools, such as "Cleanopoly," based on the Monopoly game, to help illustrate complex concepts, including risk levels, remediation techniques, and associated costs. These innovative tools helped DOE and Fluor gain stakeholder consensus on all cleanup plans.

To commemorate the outstanding commitment of Fernald stakeholders to this massive environmental-restoration project, Fluor donated \$20,000 to build the Weapons to Wetlands Grove overlooking the former 136-acre production area. The grove contains 24 trees, each dedicated to "[a] leader(s) behind the Fernald cleanup." Over the years, Fluor, through the Fluor Foundation, also invested in educational and humanitarian projects, contributing nearly \$2 million to communities in southwestern Ohio, Kentucky and Indiana. Further, to help offset the economic impact of the site's closing to the community, DOE and Fluor promoted economic development in the region by donating excess equipment and property to local schools and townships.

This paper discusses the details of the public-involvement program - from inception through maturity - and presents some lessons learned that can be applied to other similar projects.

Accession Number: WOS:000268927100035

Conference Title: 11th International Conference on Environmental Remediation and Radioactive Waste Management

Conference Date: SEP 02-06, 2007
Conference Location: Bruges, BELGIUM
ISBN: 978-0-7918-4339-0

Record 27 of 29**Title:** EVOLVING INNOVATIVE REACTOR DESIGN: PUTTING THE I INTO R&D**Author(s):** Duffey, RB (Duffey, Romney B.); Khartabil, H (Khartabil, Hussam)**Book Group Author(s):** ASME**Source:** PROCEEDINGS OF THE 17TH INTERNATIONAL CONFERENCE ON NUCLEAR ENGINEERING, VOL 2 **Pages:** 891-895 **Published:** 2009

Abstract: This paper traces the development path adopted for the SCWR, including the directions taken for innovative collaboration (R&D+i). In the pre-conceptual design work, instead of taking a fixed concept, the constraints and resulting design targets are defined first. By encouraging innovation, the motivation for the work is not just the size of the R&D funding for a single project, but rather the scale and opportunity of the technology challenge and the potential for attracting grass-roots support at all levels. From the beginning of the Generation IV ideas, the SCWR has taken a somewhat different path from other systems. Learning from the historical lessons of earlier unsuccessful designs of gas-cooled and liquid metal-cooled concepts, the SCWR targets the twin aims of increased efficiency and low cost by leveraging conventional thermal technology while also improving safety and avoiding open-ended development. By working with universities nationally, and other partners internationally, a wider R&D+i activity was possible that was not constrained by any early time-frame demonstration project. As a result, presently a number of unique and creative achievements stand out, where the collaborative SCWR R&D+i partnership is very different from other systems in approach, potential and scope by:

- Providing an open opportunity for some 30 countries to share their development efforts, while representing major global industrial and economic development (the 24 EU nations, plus Canada, Japan, Russia, China, India, Korea and others) without the impediments of any "national" demonstration projects;
- Allowing differing design concepts to flourish, from simple systems to more complex ideas, with process heat and hydrogen production applications emerging naturally, providing flexibility in application and design approach;
- Encouraging extensive educational research opportunities, ideas and contributions outside national laboratories, providing a unique framework for quality assurance that meets the needs of industry, universities and other partners worldwide, as well as a coordinated effort within the Generation IV International Forum and the IAEA cooperative research efforts;
- Examining many innovations (e.g., on alternate thermal cycles, fuel cycles and energy uses) without impacting any specific demonstration, so the testing and research are based largely on new capability development, without committing large funding to design teams with already fixed or unrealizable concepts.

This paper describes this new R&D+i concept and its potential directions and results.

Accession Number: WOS:000290372700107**Conference Title:** 17th International Conference on Nuclear Engineering**Conference Date:** JUL 12-16, 2009**Conference Location:** Brussels, BELGIUM**Conference Sponsors:** ASME, Nucl Engr Div, Japan Soc Mech Engineers, Chinese Nucl Soc**ISBN:** 978-0-7918-4352-9**Record 28 of 29****Title:** First Nations, forest lands, and "aboriginal forestry" in Canada: from exclusion to comanagement and beyond**Author(s):** Wyatt, S (Wyatt, Stephen)**Source:** CANADIAN JOURNAL OF FOREST RESEARCH **Volume:** 38 **Issue:** 2 **Pages:** 171-180 **DOI:** 10.1139/X07-214 **Published:** FEB 2008

Abstract: The term "aboriginal forestry" is used increasingly to describe the evolving role of First Nations peoples in Canadian forestry over the last 30 years. This paper reviews a diversity of experiences and identifies issues that have important implications for governments, forest planners, and First Nations: a forestry regime that reflects the interests of governments and industry rather than those of First Nations; variable implementation of aboriginal rights in forestry practice; benefits and problems of economic partnerships; limitations on consultation, traditional knowledge, and comanagement in forestry; and finally, different forestry paradigms. Among these experiences and issues, we recognise different visions for the participation of First Nations peoples in Canadian forestry. At one end of the spectrum, "forestry excluding First Nations" is no longer accepted. The most common form may be "forestry by First Nations," representing a role for First Nations within existing forestry regimes. Other options include "forestry for First Nations," in which forest managers seek to incorporate aboriginal values and knowledge in management activities and "forestry with First Nations," in which aboriginal peoples are equal partners in forest management. However, aboriginal forestry is better understood as a potential new form of forestry that uses knowledge and techniques drawn from both traditions and conventional forestry and is based on aboriginal rights, values, and institutions.

Accession Number: WOS:000253774000001**Conference Title:** 22nd World Congress of the International-Union-of-Forest-Research-Organizations**Conference Date:** AUG 08-13, 2005**Conference Location:** Brisbane, AUSTRALIA**Conference Sponsors:** Int Union Forest Res Org**Author Identifiers:**

Author	ResearcherID Number	ORCID Number
Wyatt, Stephen		0000-0002-6311-7025

ISSN: 0045-5067

eISSN: 1208-6037

Record 29 of 29**Title:** Institutional determinants of profitable commercial forestry enterprises among First Nations in Canada**Author(s):** Trospen, R (Trospen, Ronald); Nelson, H (Nelson, Harry); Hoberg, G (Hoberg, George); Smith, P (Smith, Peggy); Nikolakis, W (Nikolakis, William)**Source:** CANADIAN JOURNAL OF FOREST RESEARCH-REVUE CANADIENNE DE RECHERCHE FORESTIERE **Volume:** 38 **Issue:** 2 **Pages:** 226-238 **DOI:** 10.1139/X07-167 **Published:** FEB 2008

Abstract: This paper uses survey information to examine several common assertions about the institutional prerequisites for successful profitability when a First Nation enters an economic enterprise either independently or in joint effort with an outside firm. In the winter of 2004-2005, we interviewed managers on both the First Nations and private sides of joint ventures and other business alliances in Canada, to determine what affected their recent profitability experience. We gathered information on the ages, sizes, and activities of the firms. We also gathered information about the firms' management structures and relationship with the First Nation, and the characteristics of the government of the First Nation. With a sample size of 40 firms that responded, we found that several institutional characteristics affected profit positively: strong separation of management from band governance, participation in management planning, and the use of staggered terms in band council elections. We found that the likelihood of profitability decreased if the band had been in third party management as well as if there was formal participation of elders or hereditary chiefs in decision making. We offer interpretations of these results.

Accession Number: WOS:000253774000006

ISSN: 0045-5067

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Appendix D. Bibliometrics

A total of 23 papers published between 2008 and 2017 and relating to Indigenous participation in forestry and energy development (Box 3), were identified and analysed. Bibliometrics for the year of publication, article keywords, region of study and authorship are provided a portrait of the research. Over half of the papers resulting from our search were from the past 3 years (2015 - 2017; Figure 1).

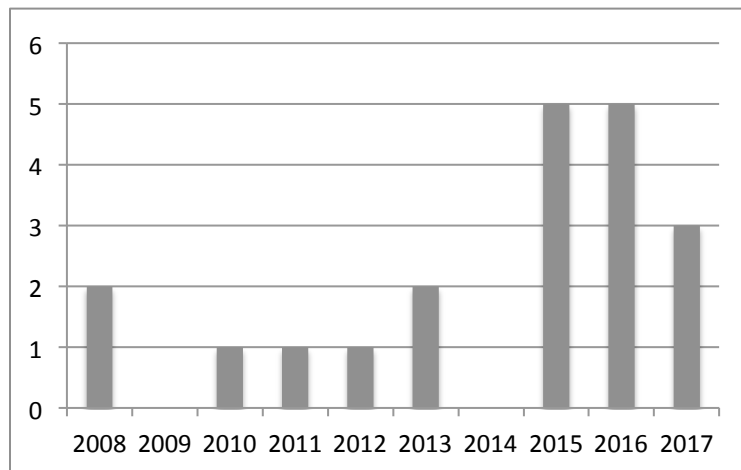


Figure 1. Year of publication for articles resulting from ISI Web of Science search (Box. 3).

A total of 88 different keywords were associated with the papers resulting from the broader (inclusive of other forest and energy development) ISI Web of Science search. The most common keywords were: “Canada” and “First Nation(s)” (occurring 4 times each); “governance,” “forest(s),” and “Aboriginal people(s)” (cited 3 times each); and, “Aboriginal participation,” “collaboration,” “forest governance,” “forest policy,” “Québec,” “sustainable development,” and, “sustainable forest management” (cited 2 times each).

9 of the articles broadly related to Canadian issues and policy, and were not focused on cases, issues or policy relating to a particular province, territory or region in Canada. Regional policies, programs and/or cases were discussed in such papers only as examples that would demonstrate the points being made about the broader issues around Indigenous participation in forestry and energy development in Canada. Figure 2 illustrates the provinces and territories that were the feature for articles that did focus specifically on regional policy, programs, or cases studies. Most cases were situated in British Columbia (4 articles), Québec and Alberta (3 articles each); followed by Ontario, New Brunswick, Saskatchewan and the Northwest Territories (2 articles each).



Figure 2. Provincial and territorial distribution of articles from the ISI Web of Science search (Box. 3) that were focused on particular regions.

Authors of the articles hail mostly from academic institutions, with the exception of one article that is authored by a member of a corporation. The institutional affiliation for each article was accounted (i.e., frequency relates to the institutional affiliations per article, rather than per author) and frequencies were counted (Appendix E). Articles were most commonly affiliated with the University of British Columbia (5 articles); the University of Moncton (6 articles); the University of Saskatchewan (4 articles); Laval University (4 articles); Lakehead University (3 articles); the University of Québec (2 articles); the University of Winnipeg (2 articles); and, York University (2 articles). Forest- and resource-based institutions that are located at these universities accounts for the frequency of articles that are produced. Several of the articles also had international co-authors (in some cases first author) from universities such as Cambridge University (UK), Utrecht University (Netherlands), University of Bergen (Norway), and University of Arizona (USA). A total of 14 authors were female and 40 were male. 7 of the 23 lead authors were female, and 16 were male.

Appendix E.

Table 1. Federal programs and policies supporting bioenergy development

ORGANIZATION	INITIATIVE	DESCRIPTION	IMPLEMENTED
Natural Resources Canada (NRCan)/ Canadian Forest Sector (CFS)	Pulp & Paper Green Transformation Program (PPGTP)	The program involved “\$1 billion in funding to improve the environmental performance of Canada’s pulp & paper mills and by doing so, help lay the groundwork for a more sustainable and prosperous future for the sector.” ⁱ	2009 - 2013
	Investment in Forest Industry Transformation (IFIT)	The program “offers non-repayable contributions to successful applicants in the Canadian forestry industry to implement innovative, first-in-kind technologies in their facilities,” and aims “to provide funding for projects at the pilot to commercialization phase, with the intent of helping technologies get to market.” ⁱⁱ	2010 - ongoing
	Indigenous Forestry Initiative (IFI)	Focuses on fostering Indigenous participation “in all natural resource sectors, especially forestry,” with the development of “clean technology and participation in the forest bioeconomy (e.g. a project that promotes using biomass for heat and power to reduce reliance on diesel fuel),” as a priority. ⁱⁱⁱ	2017
NRCan/ Office of Energy Research & Development	Program of Energy Research & Development (PERD)	Supports R&D “designed to ensure a sustainable energy future for Canada in the best interests of both our economy and our environment.” ^{iv} Including, “Supports R&D that optimizes the biomass feedstock supply including sustainability considerations, advances biomass processing technologies, & develops advanced liquid biofuels.” ^v	2013 - ongoing
	ecoEnergy Innovation Initiative	“Support a suite of demo projects focused on clean energy & efficiency: modular combined heat and power (CHP) systems using local woody biomass & waste, energy via anaerobic digestion, & biomass gasification” ^v	2011
	Clean Energy Fund: Smaller-Scale Renewable & Clean Energy Projects	Funded smaller-scale demo projects including bioenergy systems and buildings/community energy systems. ^{vi}	2009
Aboriginal Affairs & Northern Development (AANDC)	ecoEnergy for Aboriginal & Northern Communities Program	Program provided “funding to Aboriginal and northern communities for renewable energy projects,” and supported “the development and implementation of renewable energy projects that reduce greenhouse gas (GHG) emissions arising from electricity and heat generation in these communities.” ^{vii}	2011 - 2016

	First Nation Infrastructure Fund	Program “helps First Nation communities improve and increase public infrastructure [including energy systems] to improve quality of life and the environment for First Nation communities.” ^{viii}	2007 - ongoing
	Lands and Economic Development Services Program	In April 2014, “the Government of Canada combined five community-based economic and land management support programs into the Lands and Economic Development Services Program” to “increase Indigenous participation in the economy through laws and program, and allow communities greater control over land management.” ^{ix}	2014 - ongoing
National Research Council Canada (NRC)	Bioenergy Systems for Viable Stationary Applications (BSVSA) Program	The BSVSA program helps Canadian companies to capitalize on “national energy security priorities and regulatory measures designed to reduce greenhouse gas emissions” by “overcoming the technical and cost barriers involved in the integration of locally-sourced biomass into stationary energy (heat and power) systems.” ^x	2013 - 2019

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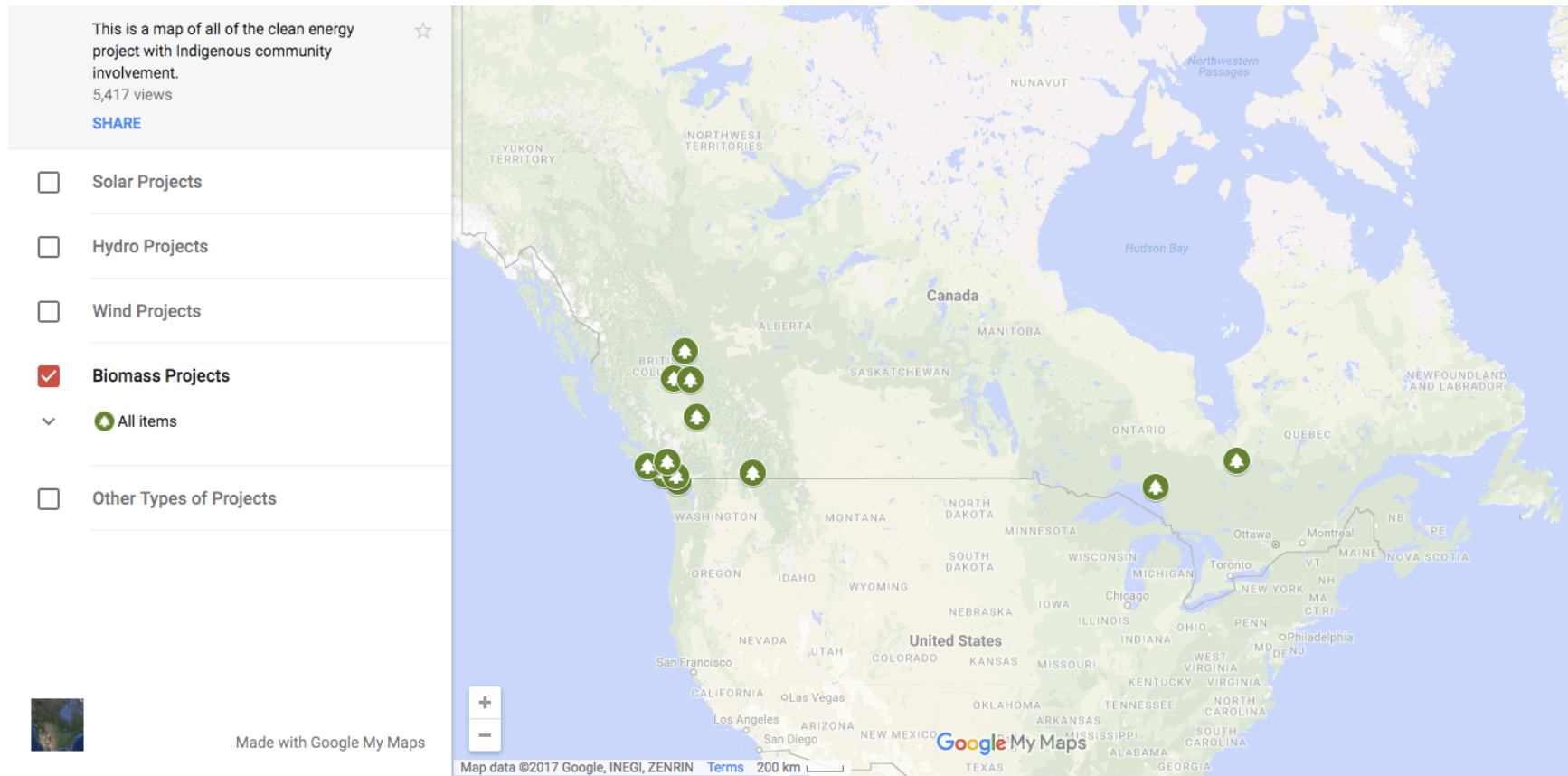
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Appendix F.

Table 2. Biomass projects in Canada involving Indigenous communities

Project name	Province / Territory	First Nation partner	Corporate partner	Size (MW)	Operational since
Ouje-Bougoumou Cree Nation	Québec	Ouje-Bougoumou Cree Nation	FVB Energy Inc. (Sweden)	2.7	1993
Atlantic Power Williams Lake Project	British Columbia	T'exelc/Williams Lake Indian Band	Atlantic Power Corporation (USA)	66	1993
Celgar Green Energy	British Columbia	First Nations Forestry Council (FNFC)	Mercer International Group (Germany, Canada, USA)	100	2011
Powell River	British Columbia	Sliammon First Nation	Catalyst Power	36	2012
Harmac Pacific Biomass	British Columbia	First Nations Forestry Council (FNFC)	Nanaimo Forest Products Ltd.(Canada)	31.5	2013
Nechako Lumber	British Columbia	Saik'uz First Nation	Nechako Lumber Co. Ltd. (Canada)	1.8	2013
White River Forest Products	Ontario	Biigtigong Nishnaabeg (a.k.a., Pic River First Nation)	Drayton Valley Power Ltd. (Canada)	7.5	2013
LP Golden Biomass	British Columbia	First Nations Forestry Council (FNFC)	Paper Excellence (Canada)	8	2014
Gold River Power Project	British Columbia	Mowachaht/Muchalaht First Nation	Green Island Energy (Canada)	90	2014
Catalyst Paper Port Alberni	British Columbia	First Nations Forestry Council (FNFC)	Catalyst Power (Canada)	17	2014
Canfor Northwood Pulp Mill - PGP Bioenergy	British Columbia	West Moberly First Nations	Canfor / Canadian Forest Products Ltd. (Canada)	55.4	2015
Catalyst Paper Crofton	British Columbia	First Nations Forestry Council (FNFC)	Catalyst Power (Canada)	38	2015

Figure 3. Biomass energy projects involving Indigenous communities in Canada



Source: ICE Projects, Google Maps, Retrieved from

<https://www.google.com/maps/d/viewer?mid=1XO911HEy7Vzcc9IyI9Ykr1OGiGo&ll=48.855655162793724%2C-99.36416995312499&z=4>

[Date accessed: October 11, 2017]

Appendix G. Glossary of terms for Indigenous participation in energy and forest development

Aboriginal forestry: “sustainable forestry incorporating respectful interaction between aboriginal peoples and the forest” (Wyatt 2008, p. 173).

Advisory committees: “in the 1990s, as sustainability became a more prevalent theme in public policy around forestry in Canada, different forms of engagement among government agencies, forestry companies and forestry communities emerged to address planning and management issues. Advisory committees formed as a means of ‘community-based public engagement, where local forest users (along with people involved in the forest sector for their livelihood, representatives of other local agencies such as educational establishments and the business community, and elected leaders) participate in discussions about forest management and provide input into local decision-making’ (Parkins et al., 2006, p. 1),” (Reed 2010, p. 45).

Criteria and indicators (C&I) process: “Developed in the 1990s, the process of criteria and indicators (C&I) has been used to conceptualize, evaluate and implement sustainable forest management (SFM)” (Adam and Kneesaw 2011). Adam and Kneesaw (2011, p. 358) found that “C&I in Aboriginal communities are considered to be “just another reference point” because: 1) Aboriginal objectives are maintained at arm’s length from the forest management process; 2) the use of C&I as a negotiating tool has not been sufficient to culturally adapt forest management for Aboriginal values and objectives and 3) Aboriginal values have been restricted to the elaboration of C&I and the Aboriginal definition of SFM, but they are not part of the evaluation nor the implementation of SFM.”

Collaboration: Collaboration is defined Zurba et al. (2016, p.1) “as a form of communicative action existing within a social-political space where autonomous parties work towards mutually favourable outcomes.”

Community energy: “The actors in the community energy sector may take the form of co-operatives, local trusts, non-profit associations, Indigenous benefit companies and municipal or city level agencies” (McArthur 2017, p. 3)

Community forestry: Reed (2010, p. 50) states, “According to the BC government, community forests were first introduced ‘to increase communities’ and First Nations’ participation in local forest management, to test new and innovative forest management models, to reduce conflict among various stakeholders’, and to maintain ‘forest-related community lifestyles and values, while providing jobs and revenue that contribute to community stability.”

Co-management: Wyatt (2016, p. 570) describes co-management as “a formal arrangement for sharing responsibility and control of resource management between Aboriginal nations and government, which has been promoted since the early 1990s. Co-management structures typically address issues such as devolution of decision-making authority, power sharing processes and the role of traditional knowledge and knowledge-holders.”

Consensus building: “Consensus building for planning involves two-way, iterative communication between Aboriginal communities/organizations and government departments to translate and mediate useful and usable knowledge into policy decisions. Consensus building seeks to achieve win–win outcomes achieved through co-management, collaborative resource management, and community-based initiatives. However, because these processes generally follow a series of well-defined steps that are often compatible with existing regulatory planning timelines, they have at

times been criticized for having little transformative power. In these cases, consensus building risks legitimizing the hegemonic power of the state and reduces power inequalities to simply “differences of opinion.” By precluding any real resistance against more dominant ideologies, consensus building may fail to recognize Aboriginal management epistemologies and to advance the territorial rights of Aboriginal peoples (Porter 2006; Maclean 2009).” (Maclean and Robinson 2014, p. 2)

Consultation: “Mining, forestry, and energy industries all have an increasing ‘duty to consult and accommodate’ Aboriginal peoples during both the exploratory and development phases (Labeau 2007; see also INAC 2006). Any major development project grows incrementally and has cumulative impacts (environmental, social, and political) from initial exploration through project completion. The Cabinet Directive on Implementing the Canadian Environmental Assessment Act (CEAA 2009) provides a framework for ensuring that unfavourable environmental effects are identified and proactively mitigated prior to approval of a development project. This important legislation helps diminish environmental injustices.” (Dylan et al. 2013, p. 60)

Declarations: “International tools indigenous peoples can now use to claim autonomy, including the right to self-determination” (Montsion 2015, p. 119), for example the United Nations Declaration for the Rights of Indigenous Peoples (UNDRIP).

Decision-making involvement: “Aboriginal influence on decision-making, also referred to as “consultation” or “participation”, is becoming increasingly common in Canada and can occur in a wide variety of ways (e.g.: co-management boards, advisory groups, etc.). This approach assumes that governments and/or companies remain responsible for managing forestlands. The key element is the amount of influence that an Aboriginal community has on decisions. This ranges from full decision-making authority to providing information without much decision-making influence” (Fortier et al. 2013, p. 49).

Employment: Indigenous communities may participate in resource development through seeking employment in project development and maintenance (Trosper et al. 2008; Zurba et al. 2016).

Environmental assessment (EA): “Environmental assessment in Canada is undertaken by multiple governments. The federal government undertakes its own process on projects defined by the Canadian Environmental Assessment Act (C-15.2) as being under their jurisdiction. The Act is overseen by the Canadian Environmental Assessment Agency (CEAA). Each of the ten provinces and the three territories also has their own environmental assessment acts, which cover provincial/territorial responsibilities and which vary widely in nature and scope. However, existing research demonstrates that Canadian First Nations have raised concerns about EA in all jurisdictions for similar reasons” (Booth and Skelton 2010, p. 216)

Forest certification: A commercial strategy, “Forest certification schemes are becoming increasingly important in Canada, particularly for First Nations. Of particular interest is Principle 3 of the Forest Stewardship Council, which states “the legal and customary rights of indigenous people to own, use and manage their lands, territories and resources, shall be recognized and respected” (Wyatt 2008, p 175)

Hearings and settlements: “First Nations, through landmark cases grounding Aboriginal title and establishing in Canadian law the Crown’s duty to consult and accommodate, developed a practice of creating and using province-wide political organizations to advance and promote through the judiciary system the recognition of indigenous rights and Aboriginal title in Canada” (Montsion 2015, p. 117)

Impact benefit agreement (IBA): “IBAs are privately negotiated agreements, typically between extractive industries and community organizations, in which government is relegated to an external observational role. Within the context of inequality, IBAs represent an opportunity for Aboriginal people to not only gain economically from resource extraction but also affect the trajectory and scale of development from an environmental governance platform. Within such alternative forms of influence exists an opportunity to address issues of historical colonialism, the language and cultural values people are forced to work under, and dominant economic institutions” (Wanvik 2016).

Indigenous tenure: “Aboriginal-held forest tenures refer to licences and permits that governments grant to Aboriginal communities and organizations that seek to obtain harvesting rights or forestlands management responsibilities. Forest tenures are primarily for timber harvesting, but other purposes could include non-timber forest products or carbon offsets” (Fortier et al. 2013, p. 49).

International negotiations: Indigenous communities may undergo separate (i.e., outside of Crown consultations) negotiations with international proponents towards asserting their sovereignty and values independent from the state (Montsion 2015).

Management and land use planning: “Most forestlands in Canada are managed by governments or private companies and so Aboriginal people have negotiated a variety of ways to engage in management. The degree of control that Aboriginal peoples may exercise over forest management activities varies from full Aboriginal management (which is very rare) to little or no management responsibilities (e.g. aboriginal land use and occupancy studies)” (Fortier et al. 2013, p. 49).

Non-participation: Indigenous communities may choose to abstain completely (e.g., not respond to calls for consultation) from participation in energy and forest development.

Partnerships: “For many Aboriginal peoples, the forest sector provides opportunities for income (for individuals and for the community), economic development, political autonomy, employment, partnerships and the ability to manage forestlands. It includes joint-venture as well as contractual relationships between aboriginal and non-aboriginal companies” (Fortier et al. 2013, p. 49).

Protest: A form of social action directly opposing development projects (Bagelman 2016).

Research involvement: Indigenous communities are often asked to participate in land use, anthropological, and knowledge-based studies that directly inform development planning (Fortier et al. 2013). Menzies (2015) suggests that collaborative research “with” and “for” Indigenous communities (i.e., over investigator-led) is the best way to engage communities in research.

Social enterprise: “can be based on community leadership in the planning, running and benefit allocation, or a community investment project or partnership with private and commercial developers” (McArthur 2017, p. 3)

Sustainable Forest Management (SFM): Indigenous issues were first mentioned in the 1992 revision of Canada’s *National Forest Sector Strategy* following the establishment of Royal Commission on Aboriginal Peoples, and reflected a shift of focus from only looking at sustainable timber yield in sustainable forest management (McGregor 2011).

Traditional knowledge (TK): “TK and traditional ecological knowledge refer to knowledge and beliefs held by indigenous peoples concerning the relationship among humans, other living beings, and the environment that is transferred from generation to generation” (Wyatt 2008, p. 175).

Treaties, agreements and MOUs: “Treaties, agreements and memorandums of understanding are used to establish the formal framework for relations between Aboriginal peoples, governments (federal

and provincial) and companies, clarifying the rights of each party and establishing how they will work together. Old treaties (until 1925) were excluded from this inventory unless they were accompanied by more recent agreements concerning forestlands concluded between 1999 and 2009” (Fortier et al. 2013, p. 49).

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Appendix G. Frame analyses tables for Indigenous participation in the context of energy development

Table 2. Perspective (identity) and issue (characterization) frames about Indigenous participation in the context of energy development

Perspectives on energy development	<p>Energy developments (in the context of oil and gas) can cause severe impacts to the environment (Mathewson 2012; Menzies 2015; Laurin and Jaimieson 2015; Montsion 2015; Bagelman 2016; Wanvik 2016; McArthur 2017)</p> <p>Energy development can impacts Indigenous rights, title and sovereignty (Mathewson 2012; Laurin and Jamieson 2015; Montsion 2015; Bagelman 2016)</p> <p>Indigenous community support of energy development is often based on the perceived and measured impacts of the project, as well as how they are able to participate in decision-making (Montsion 2015; Wanvik 2016)</p> <p>Energy development projects can impact Indigenous culture and livelihoods (Laurin and Jamieson 2015; Wanvik 2016)</p> <p>Energy development projects can provide direct socio-economic benefits to communities (Montsion 2015; Wankik 2016)</p> <p>Legal, regulatory, financial, and reputation risks (i.e., “above the ground risks”) are associated with modifying practice to meet the needs of Indigenous communities (Laurin and Jamieson 2015)</p>
Issues associated with Indigenous participation	<p>Energy developments (e.g., pipeline development) can marginalize Indigenous communities, infringe on Indigenous peoples’ rights, and require justification and a balance between impacts and benefits (Mathewson 2012)</p> <p>Research (i.e., anthropological) informing energy development has often excluded Indigenous peoples in decision-making (Menzies 2015)</p> <p>Indigenous communities who are marginalized from decision-making processes and participate through protest and other forms of social action (Bagelman 2016)</p> <p>Typical energy development consultation tools such as IBAs and EAs, when read critically, do not provide opportunities for equitable participation to communities and signing such policy documents can impact Indigenous rights and title (Wanvik 2016)</p> <p>Lack of equitable participation has led to the development of First Nations advocacy organizations (Montsion 2015)</p> <p>Local and international agreements can either facilitate or inhibit Indigenous participation in energy planning (Montsion 2015)</p> <p>New models for enhanced participation are arising, including different forms of community energy (McArthur 2017)</p> <p>Foreign interests in energy development can influence energy policy and impact the ability of communities to participate in planning (Montsion 2015)</p> <p>International policy frameworks (e.g., UNDRIP) are adding pressure to governments to change their consultation processes with regards to energy development (Laurin and Jamieson 2015)</p> <p>Indigenous communities are often required to engage with limited capacity (i.e., First Nation governments are often spread thin by needing to cover the breadth of community issues within limited terms) (Laurin and Jamieson 2015)</p>

Sources: Mathewson 2012; Menzies 2015; Laurin and Jaimieson 2015; Montsion 2015; Bagelman 2016; Wanvik 2016; McArthur 2017

Table 3. Perspective (identity) and issue (characterization) frames about Indigenous participation in the context of forest management and development

Perspectives on energy development	<p>Sustainable forest management (SFM) is unattainable if tools for consultation, such as criteria and indicator (C&I) processes, with Indigenous communities are designed only to suit the needs of forest managers from industry and government (Adam and Kneesaw 2011; Beaudoin et al. 2015; Wyatt, Kessel and van Laerhoven 2015)</p> <p>Equity for Indigenous communities has been improving over the years as a result of protocols such as the Royal Commission on Aboriginal Peoples (RCAP) (McGregor 2011); as well as Supreme Court (and lower court) decisions (Wyatt, Kessel and van Laerhoven 2015)</p> <p>The dominant model for forest governance in Canada is not equitable for Indigenous communities whom are not able to assert their values in a meaningful way (Beaudoin et al. 2016; Wyatt, Kessel and van Laerhoven 2015)</p> <p>Forestry can provide opportunities for economic development for Indigenous communities (Fortier et al. 2013; Beaudoin et al. 2015; Beaudoin et al. 2016; Zurba, Diduck and Sinclair 2016)</p> <p>Progress has been made in the past couple of decades towards enhancing environmental, economic and social outcomes of forest management (Griffith et al. 2015)</p> <p>Policy regimes go through different eras, with each having different qualities that influence the amount and level of community participation that is possible (Griffith et al. 2015)</p> <p>Looking at forest management and community values as being either compatible or incompatible (as a duality) does not permit for the development of a nuanced understanding of the different types of participation and how they can help or hinder communities and development (Beaudoin et al. 2016)</p> <p>Indigenous rights impact what is possible for forest users' ability to derive economic, social and environmental benefits from forests; however holding legal rights does not necessarily mean that people will gain benefit from the forest (Wyatt, Kessel and van Laerhoven 2015)</p> <p>International agreements (e.g. UNDRIP) are increasingly outlining rights of Indigenous people in resource governance (Wyatt, Kessel and van Laerhoven 2015)</p> <p>Social licence to operate (SLO) has increasingly been used by industry as a way of framing the community acceptance of development; however Indigenous rights are often ignored in this process (Wyatt 2016)</p>
Issues associated with Indigenous participation	<p>Forest governance often takes on the form of public-private cooperation between the state and market operators, with civil society occupying a secondary position (Wyatt, Kessel and van Laerhoven 2015)</p> <p>Aboriginal perspectives are often kept at arm's length through the use of consultation tools, such as the use C&I processes, which have not been sufficiently adapted to account for Indigenous cultural values and objectives (Adam and Kneesaw)</p> <p>Community participation can negatively impact the profitability of forest business ventures, especially if the community is under third party management (Trospen et al. 2008)</p>

The perceived outcome of the a community's involvement (or lack of involvement) in a forest partnership will impact whether the community is neutral, supportive or against a partnership and/or development project (Wyatt 2008, 2016; Beaudoin et al. 2015, 2016; Zurba, Diduck and Sinclair 2016)

Varying degrees of equity are associated with different types of Indigenous community participation (Wyatt 2008)

Gender is an important factor in building equitable participation in forest governance systems (Reed 2010)

Collaboration can enhance but does not necessarily create equity within forest governance (Fortier et al. 2013; Beaudoin et al. 2015)

Tools such as land use and occupancy studies can be important for enhancing Indigenous participation, equity and knowledge within forest management planning (Fortier et al. 2013; Beaudoin et al. 2015)

The type of collaboration and mechanisms used in collaboration can affect whether participation results in further conflict or a contribution reconciliation (Wyatt et al. 2013)

Involvement in forest governance is often culturally important, and is guided by cultural principles (Beaudoin et al. 2015, 2016)

Indigenous communities are interested social, environmental and economic concerns, in addition to the concerns with the assertion of rights (Wyatt et al. 2013; Wyatt, Kessel and van Laerhoven 2015)

Through understanding governance structurally, it is possible to account for participation and how power dynamics influence governance arrangements and the development of more participatory forms of governance, such as collaboration (Zurba, Diduck and Sinclair 2016)

The relational aspect of collaboration (e.g., building understanding through interpersonal relationships and informal interactions) is important for promoting and developing equity within governance (Zurba, Diduck and Sinclair 2016)

Sources: Troster et al. 2008; Wyatt 2008; Reed 2010; Adam and Kneesaw 2011; McGregor 2011; Fortier et al. 2013; Wyatt et al. 2013; Beaudoin et al. 2015; Griffith et al. 2015; Beaudoin et al. 2016; Wyatt, Kessel and van Laerhoven 2015; Wyatt 2016; Zurba, Diduck and Sinclair 2016

Appendix H. Problem and solution frames from the literature on Indigenous participation

Table 4. Problem (diagnostic) and solution (prognostic) frames about Indigenous participation in the context of energy development

Attributions of responsibility	Governments
	Governments have the fiduciary responsibility to consult with First Nations and determines the policy framework that either facilitates or hinders participation (Laurin and Jaimieson 2015; Wanvik 2016)
	Governments have played leading roles in facilitating Indigenous participation in energy development (McArthur 2017)
Who should act, and what are the solutions?	Companies
	Companies currently play a strong role in deciding the amount and level of Indigenous participation in decision making that occurs (Mathewson 2012; Montson 2015;McArthur 2017)
	Companies and researchers (working for companies or acting as independents) have often been coercive with regards to Indigenous participation in research (Menzies 2015)
	Communities
	Communities have custodial rights and responsibilities to govern their traditional territories (Laurin and Jaimieson 2015; Bagelman 2016)
	Governments
	Political will is important on the part of governments towards supporting greater and more meaningful forms of participation in decision-making around energy projects affecting Indigenous peoples and traditional territories (Mathewson 2012)
	Governments should change policy so that it has a stronger alignment with Indigenous rights and title, and has the ability to make pathways for high-level participation (Bagelman 2016; Laurin and Jaimieson 2015; Montsion 2015; McArthur 2017)
	Governments should acknowledge international policy frameworks such as UNDRIP, and put into place legal informed consent as a standard for Indigenous participation in energy development (Laurin and Jaimieson 2015)
	Companies
	Companies have the ability to improve relationships with Indigenous communities (Mathewson 2012)
	Companies need to rethink engagement and contribute to developing meaningful pathways for Indigenous participation beyond simply fulfilling the Crown’s “duty to consult” or including only some discretionary level of community investment (Mathewson 2011; Montsion 2015)
	Companies and governments should redesign environmental assessment and permitting protocols (Mathewson 2012)
	Companies should implement shared value initiatives and connect business success with community prosperity (Laurin and Jaimieson 2015)

Communities

Communities should be able to conduct research according to internal protocols, or should be a product of collaboration with communities (Menziés 2015)

Communities should play an active role in governance (Menziés 2015), including protesting development (Bagelman 2016)

Collaboration

All parties should be open to exploring more affective (i.e., emotional) ways of understanding and exploring issues around development (Bagelman 2016)

When communities and companies work together (i.e., equitable joint ventures) there is greater potential to forge solutions to governance (Laurin and Jaimieson 2015; Wanvik 2016)

Different types of community energy projects can be developed through divestment strategies, and are an important part of the response to environmental degradations caused by company-led energy developments (McArthur 2017)

Sources: Mathewson 2012; Menziés 2015; Laurin and Jaimieson 2015; Montsion 2015; Bagelman 2016; Wanvik 2016; McArthur 2017

Table 5. Problem (diagnostic) and solution (prognostic) frames in the context of Indigenous participation in forest management and/or development

Attributions of responsibility	Government
	The government holds most of the responsibility for what is possible in terms of Indigenous participation in forest development, including partnerships (Wyatt 2008, 2016; Adam and Kneesaw 2011; McGregor 2011; Fortier et al. 2013; Beaudoin et al. 2015, 2016; Griffith et al. 2015; Wyatt, Kessel and van Laerhoven 2015; Zurba, Diduck and Sinclair 2016)
	The government is responsible for developing policy, licences and protocols that affect the amount of level of Indigenous participation that is possible (Griffith et al. 2015)
	The government is responsible for designing new protocols and choosing to follow international protocols for engaging Indigenous communities (Adam and Kneesaw 2011)
	Companies
	Companies are responsible for <i>how</i> (level, amount, type of engagement) they choose to engage Indigenous communities (Wyatt 2008, 2016; Beaudoin et al. 2016)
	Companies can be negligent to communities, equity building and enhancing participation because their primary concern is harvesting the forest (Wyatt, Kessel and van Laerhoven 2015)
	Companies will only change protocols if it doesn't affect their bottom line (Wyatt, Kessel and van Laerhoven 2015)
	Communities
	Communities have a role to play and a responsibility to be stewards of the forest (McGregor 2011; Beaudoin et al. 2015)
Who should act, and what are the solutions?	Shared responsibility
	Communities, companies and governments are responsible (in different ways, and to varying amounts) for the profitability of a partnership venture (Trosper et al. 2008)
	The normative environment created by industry and government actors is the reason behind gender inequality in forest management, which in turn affects communities and the equity within the whole system (Reed 2010)
	The approach to collaboration will determine which parties are responsible, for example with Treaties, agreements and memorandums of understanding the government and the community share responsibility (Fortier et al. 2013)
	Government
	Governments should allow the space for self-determination and nation-to-nation negotiations so that Indigenous communities can enact their stewardship roles and responsibly (McGregor 2011)
	Governments should make space for collaboration between companies and Indigenous communities (Beaudoin et al. 2015, 2016)
Companies	
Companies should create the participatory spaces that enhance community participation (Reed 2010; Beaudoin et al. 2016;	

Wyatt 2016; Zurba, Diduck and Sinclair 2016)

Communities

Communities can bring forward solutions if their rights are established and maintained (Wyatt, Kessel and van Laerhoven 2015)

Collaboration

Collaboration is the most beneficial for communities and is best pathway for building equity and sustainable forest management (Wyatt 2008; Adam and Kneesaw 2011)

Collaboration can be described as a “two-row approach” where equity is built and knowledge is shared but parties are not assimilated (Wyatt 2008; McGregor 2011; Zurba, Diduck and Sinclair 2016)

Tools such as C&I processes should be and can be adapted through learning and collaboration towards enhancing Indigenous representation, engagement, capacity building and empowerment (Adam and Kneesaw 2011)

A single policy instrument cannot be expected to resolve all issues relating to forest governance (Wyatt, Kessel and van Laerhoven 2015)

Collaboration between Indigenous communities and companies have the greatest potential for building equity (Beaudoin et al. 2015; Zurba, Diduck and Sinclair 2016)

All parties have different roles to play in developing and maintaining collaborative governance, and such roles depend on each party’s capacity and power to participate in and influence the governance structures (Zurba, Diduck and Sinclair 2016)

Sources: Trosper et al. 2008; Wyatt 2008; Reed 2010; Adam and Kneesaw 2011; McGregor 2011; Fortier et al. 2013; Wyatt et al. 2013; Beaudoin et al. 2015; Griffith et al. 2015; Beaudoin et al. 2016; Wyatt, Kessel and van Laerhoven 2015; Wyatt 2016; Zurba, Diduck and Sinclair 2016