

(Re)Producing Power: Analyzing the New Brunswick Energy Institute Roundtables¹

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Abstract

In this paper I examine the New Brunswick Energy Institute's roundtables for their ability to integrate citizen concerns about hydraulic fracturing, those concerns circulating within informal domains (e.g., within activist protest). Drawing on observational and transcription data, I reveal a set of value commitments held by those leading the NBEI, which invisibly defined a limited range of technological choices for roundtable members. These commitments also established energy decisions as the purview of technically trained experts. This study extends scholarly research on public engagements by making visible the possible role of value assumptions and conceptual frameworks in limiting their democratic potential.

Résumé

Dans le présent document, j'étudie la façon dont les tables rondes de l'Institut de l'énergie du Nouveau-Brunswick (IENB) ont été en mesure d'intégrer les préoccupations de la population à l'égard de la fracturation hydraulique, c'est-à-dire les préoccupations exprimées dans les milieux informels (p. ex. lorsqu'il y a une protestation militante). En m'appuyant sur des données d'observation et de transcription, je révèle un ensemble d'engagements fondés sur des valeurs que prônent les dirigeants de l'IENB, qui ont défini de manière invisible une gamme limitée de choix technologiques pour les membres de la table ronde. Ces engagements sous-entendent aussi que les décisions énergétiques sont du ressort des spécialistes ayant reçu une formation technique. La présente étude approfondit la recherche universitaire sur les engagements publics en rendant transparent le rôle que pourraient jouer les valeurs présumées et les cadres conceptuels dans la limitation de leur potentiel démocratique.

Introduction

Hydraulic fracturing is controversial across Canada, including in New Brunswick. Hydraulic fracturing, or "fracking," is a controversial method for extracting natural gas or oil from shale deposits deep underground (for a history of the method, see Montgomery and Smith). Fracking involves drilling into shale deposits up to five thousand feet underground and then blasting chemically treated water into the shale to create small fissures, through which natural gas might flow back up to the surface for extraction.

Although the practice of hydraulic fracturing has been used in so-called conventional wells since the 1940s, it is only within the past decade that drillers have begun to use a novel and more controversial method called directional or horizontal drilling (Mooney). There is public debate in New

Brunswick over possible governmental legislation of and investment in a fracking industry, and it is debate situated within wider conflicts, such as those over unsettled land claims. On 17 October 2013, a conflict between members of the Elsipogtog First Nation (a Mi'kmaq people) and U.S.-based SWN Corporation came to a violent standoff over the prospecting for shale gas and industrial development, which it likely precedes (for more details, see Howe). Fracking debates in the province are also situated against the backdrop of complex and historical interrelationships among science, technology, and workforce exposure from other industries like mining, as well as discontents over the operation of monopoly corporations, like Irving Oil Ltd., who have been responsible for energy industries (like coal mining) in the province since 1924.

In response to this heated public debate in New Brunswick, the previous (Conservative) provincial government established the New Brunswick Energy Institute (NBEI) in 2013, with the thought that both scientific data and “a...dialogue was needed to determine the viability and safety of a shale gas industry and other energy development in the province” (New Brunswick Energy Institute). The provincial government initially funded the NBEI, but the institute soon attained independent status as a non-profit in May 2013. The organization has a mandate to bring independently derived evidence to energy policies in the province, as well as to provide “a public forum for debate on energy development in NB” (NBEI). The original Chair of the NBEI, Louis LaPierre, who was himself a government appointee, selected and appointed the roundtable members. Louis LaPierre was chosen for this role based upon his experience as a consultant to governments—both federal and provincial—on the environmental impacts of large infrastructure projects.²

This paper focuses on the public dialogue mandate of the NBEI, which is advanced by its roundtable (see Figure 1 for the NBEI organizational structure and Table 1 for a list of roundtable members and their affiliations). Roundtable members were drawn from and are meant to represent the following “interest groups” or “stakeholders”: citizens, large oil and gas industry, government (in particular, Department of Energy and Mines and Department of Environment), local business community, First Nations, farmers, medical doctors, primary labourers/workers. Specifically, this paper investigates how citizen concerns that appear to be circulating outside of the roundtable processes were integrated into the NBEI roundtable dialogues. This analysis of the NBEI reveals the organization as providing much-needed and politically viable scientific information on hydraulic fracturing. However, textual analysis of NBEI roundtables reveals that these processes are structured to overemphasize technical issues related to fracking at the expense of social, political, and cultural issues relevant to energy decisions in New Brunswick that have been raised by activists in the province. Both executive members of the NBEI and technical experts invited to speak to roundtable members invisibly define what topics are brought to the table, demarcating a limited range of technological choices for energy development in the province and establishing boundaries as to what constitutes legitimate intervention into energy policy-making. As well, the textual data reveal that the roundtables have been organized within a conceptual framework that does more to maintain than disrupt current relationships of power in the province.

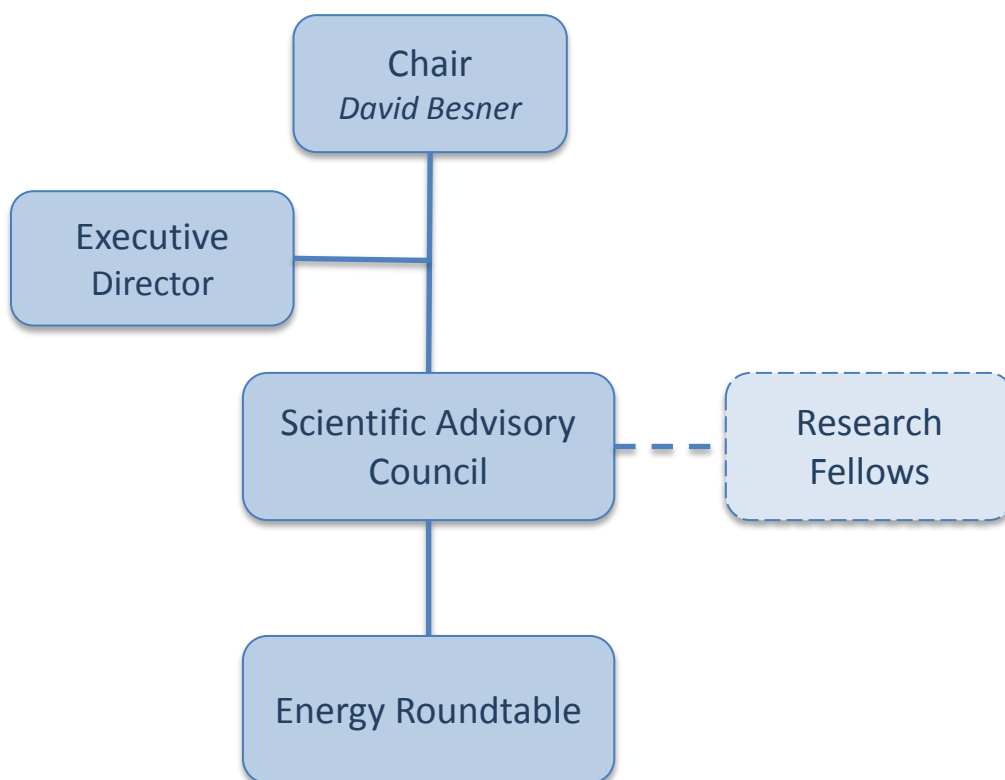


Figure 1. Organizational structure of the New Brunswick Energy Institute.

Table 1. Membership and Affiliations of the New Brunswick Energy Institute Roundtable

Name	Affiliation
Josée Albert	Agricultural Alliance of NB
Richard Blais	Worksafe NB
Glen Cleland	UNB
Léandre Desjardins	Citizen
Phil Desrosiers	Citizen
Frédéric Dions	Association francophone
Jamie Gorman	Tobique First Nation
Susan Holt	NB Business Council
Kathy Lambert	Esgenoopetitj First Nation
Donald MacPhail	Geologist/Economist
Stephanie Merrill	NB Conservation Council
Dena Murphy	Corridor Resources
Chad Peters	SWN Resources Canada
Sylvain Poirier	NB Community College
Michel Savoie	Ecologist (independent)
Dan de Yturalde	NB Medical Society

Background: Contours of the Fracking Debate in New Brunswick

There are many actors involved in the fracking debate in the province. The provincial Minister of Energy and Mines is of course responsible for energy policy directly (by setting research and development spending priorities) and indirectly (by encouraging certain kinds of corporate activity through tax incentives or discouraging it through regulation). The previous provincial government had a clear pro-shale gas stance, but that Conservative government lost to a Liberal one in the fall of 2014 in an election that split the electorate between those in favour of and those opposed to fracking. In December 2014, Liberal Premier Brian Gallant introduced the Prohibition Against Hydraulic Fracturing Regulation, which placed a moratorium on fracking in the province.

Even though the decisions about energy directions are ultimately the responsibility of politicians and bureaucrats, various interest groups have been trying to influence the conversation on fracking in New Brunswick. One interest group is the research community, which contains varying and often competing interests, including engineers and biologists, who appear cautiously in favour of fracking investment (Al et al.), and medical researchers and professionals, including New Brunswick's chief medical officer of health, who are concerned about the possible socioeconomic and health impacts of boom-and-bust industrial development (Office of the Chief Medical Officer of Health). Social scientists like me are concerned principally with engaging ordinary citizens in the imagination of the province's energy futures (see also Beckley). Other interest groups outside of the research community include members of the public and non-profit groups, who have been vocal about provincial policy directions. There are well established environmental groups (e.g., Conservation Council of New Brunswick) and unaffiliated environmental activists who express concern about the possible environmental and health impacts of fracking because it is a relatively new technical practice with dynamic technologies and methods, an unclear regulatory structure and inconclusive scientific evidence to support it (Conservation Council of New Brunswick; Hubner et al.). Political activists suggest that there is inherent inequity in the shale gas industry—egregious profiting for large corporations at the expense of community and environmental health. Members of First Nations have environmental, cultural, and land rights concerns (Howe). At the same time, many rural New Brunswickers are under-employed tradesmen and tradeswomen who support government investments in the industrial sector, including the shale gas industry (Carr), due to the potential for job creation. Finally, there are the corporations themselves: Corridor Resources, a resource extraction corporation who has been fracking in the province, and SWN, which is interested in more wide-scale resource exploration. This is undoubtedly a controversy, and one that has so far played out visibly within the mainstream and alternative media of the province (e.g., New Brunswick Media Co-op).

NBEI as a Response to Public Debate

The NBEI came about in the context of the complex public controversy over a possible fracking industry in New Brunswick described above. In 2011, the Conservative provincial government released the Energy Blueprint, which was meant to provide policy direction and a three-year action plan for the energy sector in New Brunswick (Department of Energy). One of their objectives was to gather stakeholder input (defined as input from citizens, industries, and other interest groups) in the production of another “blueprint,” this time more precisely dealing with oil and natural gas. That oil and gas investments in the province were an area of controversy became obvious during these input-gathering processes, which ended in May 2013 with the release of the Oil and Natural Gas Blueprint. The blueprint outlined guiding principles for the development of oil and natural gas policy decisions:

environmental responsibility, effective regulation and enforcement, community relations, First Nations engagement, stability of supply, and economic development (Department of Energy). The Conservative government founded the NBEI with the intention that it would further the objectives of this Oil and Natural Gas Blueprint in (1) producing a solid evidence base relating to the benefits and risks of fracking, and (2) providing a forum for roundtable dialogue between energy leaders and members of the public about these risks and benefits (NBEI).

NBEI Roundtables in Their Broader Policy Context

Policy-makers are increasingly dealing with controversial decisions by creating formal channels for debate. Innovations in the energy sector are especially contentious (Stankiewicz), and as a result the political bodies responsible for implementing energy innovations are more and more undertaking social dialogue with groups of interested actors or stakeholders. Dialogue-based policy tools, such as roundtables, are envisioned as formal mechanism by which governments can make decisions involving new practices and technologies for engaging members of the public in the anticipation and evaluation of the social, cultural, ethical, and political consequences of new technologies (Einsiedel; Rowe and Frewer; Joss and Brownlea; Durant; Irwin; Fischer; Morone and Woodhouse). In their ideal form, dialogues can enable democratic policies but also positive interconnections among science, technology, and society by (1) helping to understand the ethical, legal, and other social impacts of new technologies on individuals and society (Lewenstein); (2) enhancing social trust (Price and Cappella); and (3) reducing conflicts through the identification of common values and areas of policy agreement (e.g., International Risk Governance Council).

The increasing use of dialogical policy-making comes about as part of a broader shift within policy away from expert-driven policy decisions, where expertise has been defined as the propositional knowledge of credentialed scientists (Wynne), to decision processes that engage ordinary citizens. Wherever a policy decision involves technical elements, the question arises: how is technical knowledge to be deployed within the policy process? Historically, the dominant response to this question was to put mechanisms in place for the efficient translation of technical knowledge into public policies (Gregory and Locke), where policy-makers explain their decisions to citizens in publicly accessible language. This public understanding of science and technology (PUST) approach to policy-making involves members of the public by correcting for their lack of scientific or technical knowledge on policy-relevant issues through public education campaigns (Brossard and Lewenstein). For instance, the Canadian government and biotechnology industry have attempted for decades to educate members of the public on the established safety of genetically engineered foods in order to bring these publics on board with already-occurring governmental investment in the biotechnology economy (Bronson, "Reflecting").

For decades, academic critiques have been leveraged against the public understanding model, for the most part focusing on the inaccuracy and inefficacy of efforts informed by it. Academic analysis has revealed that those who are well educated in science and technology are just as likely to protest against it (Bronson, "What We Talk About"). A significant problem is that PUST approaches to policy-making ultimately make those with credentials the source of information and authority in the planning process and thus lead to what Daniel Sarewitz calls scientized governance arrangements, ones that marginalize citizen knowledge and concern when it cannot be made sense of as properly scientific. PUST leads to technocratic policy-making, or policies made by those with technical expertise like engineers (Postman). A scientized and technocratic decision process around fracking, for example, would marginalize activist

concerns that fracking in New Brunswick may lead to the concentration of corporate power in the province, thus exacerbating socioeconomic inequities.

A different response to the question, “How is technical knowledge to be deployed within the policy process?” has been put forward by science studies scholars and some policy actors, who suggest that mechanisms should be put in place to facilitate informed public debate as the basis for workable and also democratic policy-making (Gregory and Locke). Opening up policy decision-making to a variety of social groups (including technical experts, other experts, interest groups, and citizens) is a way of establishing socially sustainable policies that command general public confidence (Guston). More recent policy language uses the term social licence to describe such policies (Prno and Slocombe). Critiques of PUST have translated into new policy-making processes in Denmark, the UK, and increasingly in the U.S. and Canada (Brossard and Lewenstein). Governments have deployed specific public engagements in policy-making through citizens’ juries, consensus conferences, planning cells, citizens’ panels, town halls, and roundtable meetings, each of which, broadly, brings together groups of citizens for useful deliberation and seeks to feed back the results of such deliberation into policy processes (Guston). One of the first dialogical technology assessments was a consensus conference hosted in 1999 by the Danish Board of Technology on the topic of genetically modified technologies. These dialogues were structured “in response to the perception of a heated public debate on the issue, which the Danish Board of Technology believed could benefit from informed public input” (Joss and Kluver 38).

Despite the apparent enthusiasm for citizen engagement, existing empirical work on particular public engagements shows that their organization has to be considered with the utmost care to prevent the recapitulation of technocracy within engagement modes (Evans and Kotchetkova). The engagement exercises that came out of the Canadian Biotechnology Advisory Committee, as one Canadian example, failed to bring in democratic and robust policies because they privileged technical expertise over citizen participation in policy decisions (Prudham and Morris).

Research Question and Method

The historic dominance of scientized and thereby technocratic policy-making is the broader problematic within which this study is situated. The fracking debate in New Brunswick and the establishment of the NBEI provide an opportunity to explore the role of these specific roundtables in bringing citizen voices into energy policy-making. Specifically, I seek to find out how the NBEI’s roundtable processes account for the variety of issues raised by citizens outside of the roundtables—issues that may be relevant to energy policy-making in the province.

This research project arose from an invitation I received to participate in the NBEI; I declined the invitation because I had just moved to the province and was not familiar with the fracking debate or with local needs. As a researcher whose work focuses on maximizing democratic and sustainable outcomes from technologies, I was interested in the NBEI, and specifically its roundtable, as a possible object of research. The NBEI executive allowed me to observe two NBEI roundtable meetings (October 2013 and March 2014), and I use the observational data I gathered there as the foundation for this study. Further data for the study come from transcribed recordings of all the NBEI roundtable meetings (21 August 2013; 21 October 2013; and 28 March 2014). My goal is neither to discredit the possibility that fracking holds for New Brunswick, nor to discredit the NBEI as a potentially helpful policy institution. Rather, the paper aims to critically evaluate the value of the NBEI roundtables in particular as mechanisms for

democratic decision-making, with the assumption that the recommendations coming from the NBEI will play some role in shaping energy directions for the province.

Method

I use a textual analysis of the transcribed audio recordings of three NBEI roundtable sessions (21 August 2013; 21 October 2013; and 28 March 2014). The NBEI recorded the roundtable meetings, and their executives gave me the recordings in the form of digital audio files. As the organization is public and has transparency as one of its organizing principles, there was no requirement for me to guarantee the anonymity of the roundtable members or the NBEI executives. That said, in most scenarios the speakers did not identify themselves, and it did not seem necessary for me to use names in this paper. With the help of a research assistant, I transcribed the audio recordings, producing 161 pages of textual data for analysis.

I performed the analysis using the open-source coding software Tams. I coded data inductively with attention to the problematic and the ways in which different views on energy were being brought into interaction. During the analysis process, I asked the following questions when coding the data: What appears to be the conceptual framing of the roundtable processes? How does the structure of the roundtable either enable or constrain the participation of particular participants or particular views? How does the language used by the roundtable members enable or constrain the participation of non-normative forms of expertise? To what degree is the roundtable conversation dominated by technical rather than social, political, or cultural issues, needs, and concerns? What do participants' statements take for granted, or what do they say about assumptions and values at play in the roundtable process?

Theoretical Framework

I bring a reflexive politics of knowledge approach to this study, informed by critical theories of communication, critical cultural theories, and science and technology studies approaches (Hall; Grossberg; Jasanoff). I take seriously the power of language in shaping the relationship between science and society. More precisely, I am interested in how technologies achieve social stability through social struggles over the control and distribution of meaning, central to which is language. Significantly, language always connects to power and difference; particular texts empower some possibilities and disempower others. I am interested in how the NBEI roundtable processes may be legitimating particular visions of energy technologies in New Brunswick, authoring some visions as viable for the province's energy futures. My emphasis is on how those textual processes and the assumptions that appear to guide them may give power to particular actors and particular ways of approaching energy conversations.

Results

NBEI's Goal of Generating Integrity through Science-based Truths

One of the dominant categories to emerge from the data analysis was that of integrity. Integrity appears as a theme across the entire data set, though related categories of "trust" and "security" were also coded. At the first NBEI roundtable, held at the Chateau Moncton, the then-chair of the organization, Louis LaPierre, moderated the session. I did not attend this roundtable meeting, but the transcript begins with a presentation made to roundtable members by LaPierre. In outlining the mandate

of the institute, LaPierre described the NBEI as a neutral mechanism for delivering citizens the kinds of truths they expect to receive but are not getting from government:

The NBEI emerged from a recommendation I made to government and they accepted and we are here today. NBEI was initiated after a listening tour across the province....One of the main issues [that arose during the listening tour] is government integrity. Many citizens of NB don't believe that government will do what it says it's going to do [laughs]...they are convinced of that. What I did say [to government] is if there is a potential for a shale gas industry in New Brunswick then we should try to understand it.

It is well accepted that a lack of trust among citizens represents a legitimation crisis for policy-makers intent on making democratically accepted decisions (Habermas). Responding to citizens' lack of trust in political institutions in New Brunswick, LaPierre recommended that the provincial leaders form an organization that could help to shape energy policies independent of vested financial and political interests. From the textual data, I see evidence of genuine attempts on the part of the NBEI executive at developing formal independence from government and industry. For instance, the NBEI is legally independent from government and roundtable members are protected under a liability policy that presumably is meant to allow them to speak critically, even against government and powerful interest groups. At the first roundtable meeting, Louis LaPierre stated, "[The NBEI has] obtained liability insurance for the institute. We incorporated as an independent research institute and we have a policy for each of you."

Interestingly, if integrity is linked to independence, it is clear from the data that the NBEI executive and those who formed the organization view science as synonymous with independence. The belief that deliberations should be "science-based" was another dominant category that emerged from the data set, where similar codes included "objective," "evidence-based," "scientific," and "unbiased." A bureaucrat from the Department of Energy and Mines spoke to the roundtable members at the first meeting and described the role of the NBEI (including the roundtable) as one of fostering truths about possible energy directions through the production of "science-based" information:

It became clear to the [Conservative] government that in order to move forward, particularly for the development of the oil and gas resources in our province, independent research was needed in order to provide factual science-based and truthful information to both the public and government. Hence, the creation of the energy institution and its mandate, which is to study emerging issues in technology and to review, assess and inform the public and government.

Also at this meeting, LaPierre described the NBEI as "an independent body, separate from government, [whose goal is] to examine the science surrounding energy development in New Brunswick. So we have science focus; we will look at science, evidence-based science, peer-reviewed."

Even the structuring of the roundtable meetings speaks to this presumption that science will help to generate integrity around the policy advice produced by the NBEI. Roundtable members are not "average" citizens—that is, uneducated in the technical matters at hand. Rather, participants are well-educated professionals drawn from stakeholder groups involved in the wider provincial energy debates. These elite members are able to deal with discussion on technical matters. Despite their technical acumen, roundtable members are told at the first meeting that they are not experts compared to the

NBEI's Scientific Advisory Council (SAC), which is populated by hard and natural scientists who "are in charge of looking at the science" (LaPierre, August 2013). One could imagine a role for the roundtable members in helping to direct the research programs and data collection of this advisory council—say, identifying areas of public concern that need research attention. This sort of dialogue between citizens, researchers, and policy actors would follow from the broad aims of participatory policy-making. Louis LaPierre does hint at such a role during the August 2013 meeting:

The SAC are going to get issues that come forward to them from government, from industry, from the roundtable and general issues that would be collected from society....They're going to distill these and then with technical committees, expert committees, they are going to look at the risks and do peer-review, they're going to review the information and draft plans as to what needs to be done.

But at the same meeting, LaPierre also suggests that the advisory council is itself directing the collection of an evidence base for energy policies, calling it the "executive branch" of the entire NBEI:

The advisory council are the brains that sit around us and help move the institute along. They're the executive body of the institute, they initiate and provide direction of the research and monitoring activity, they ensure scientific accuracy and the integrity of the whole institute.

While there is clarity about the SAC's role in generating integrity around energy recommendations made by the NBEI, there is ambiguity across the roundtable meetings about the role of the roundtable members. Members are variously told that their role is to receive questions and concerns from members of the public, to review documents coming from the advisory council, to "assess" (assess what exactly is not specified), to "examine the science on fracking," to "understand the possibilities involved with shale gas industry," and to facilitate (again, what exactly is not made clear). Based on the principles of public engagement, one might imagine a role for the roundtable in facilitating democratic relations among industry, government, and civil society. At their first meeting, LaPierre does say that "industry has concerns and government has concerns and we need to see how we might integrate the science....Society has concerns." At this same meeting, LaPierre instructs the roundtable members to communicate the SAC's scientific research to their "constituents," a directive that appears to undercut his other claims at "facilitating democratic relations":

We would expect that most of you go back and share with your constituents....This is not confidential information but information you should share, you can get the information from the website. So this is part of our mandate....We do have a responsibility for conducting research and providing a flow of understanding to the public.

During my observations of roundtable activity there was little time made available for members to discuss issues among themselves; predominantly, discussion was initiated and highly directed by NBEI executives. Textual data also reveal less discussion among roundtable members than presentations to the members delivered by invited experts—either from government, industry, or academia. The roundtable meetings I attended followed a similar pattern of presentations to members by the executive, followed by presentations to members by an outside expert, after which there was a short question period. It was during this question period that roundtable members brought their issues and concerns forward, although from my observations, which are supported by the textual data, members largely

limited their questioning to asking for clarification. There was little substantive critique made and I find no evidence of deliberation—the incorporation of alternative perspectives—having occurred within the NBEI roundtables based upon my reading of the textual data. Supporting this reading, I never witnessed such deliberation—there were no raised voices—during roundtable meetings. Furthermore, there appears to have been no revision of behaviour or direction by the NBEI, including the SAC, based upon roundtable dialogue.

Roundtable members did challenge the lack of clarity regarding their specific role within the institute. At the first meeting one member asked, “Is there a communication linkage between different levels [of the NBEI]...like, will this roundtable ever see the actions and recommendations or the conversations of the SAC?” The chair, LaPierre, responded: “The conversations won’t be, but the recommendations will be.” By the third roundtable meeting, there is evident confusion among the members about the nature of their participation within the organization, particularly in relation to the work of the advisory council. One member said:

That’s the piece we haven’t talked about as much—the meshing between the SAC and the roundtable. It’s still not entirely clear...I have yet to have a sense for what we’re being asked to do as a roundtable with all the information we received today. I don’t know what SAC members will take from today and say, “Oh, clearly the roundtable wants us to pursue research on X,” because I don’t feel like we’ve achieved that...I’m still missing a gap between these two bodies.

Three meetings in, a roundtable member interrogates the director, now David Besner, regarding the NBEI funding of a two-year project to assess domestic well-water quality. They ask how decisions are made on SAC research, and questions the fact that the NBEI is not giving roundtable members a role in directing SAC priorities: “Sorry, but just in reference to this project, I was hoping to better understand the decision-making process for deciding which projects get funded or supported, versus, like, how you seem to be calling for projects and decide [sic] which one to move ahead with.”

Besner explained that this water research resulted from an “unsolicited proposal” brought to the NBEI by an academic researcher and SAC member (Dr. Kerry MacQuarrie) and that “it was a decision and if you’re asking how the decision is made, it is made by the SAC. Any other questions?” Dr. Maurice Dusseault, an environmental scientist and member of the SAC who was in attendance at this roundtable meeting, voiced a justification for the decision to fund this study:

Methane comes up in burps so you can sample a well one day and the methane content is quite low and you can sample it one hour later and the methane content is quite high....So this series sampling of fifteen sub-selected wells, is really quite fairly important to helping us in Canada and the U.S. understand *how* the deep methane does percolate up from these sediments. (participant’s emphasis)

Despite the fact that the study parameters appear to have been set before this roundtable meeting—the study was set to begin weeks after this meeting—there was an extended exchange between Dr. MacQuarrie, who was invited to the meeting as an expert presenter, and several roundtable members about sampling technique, possible privacy and access issues, and the public communication of results. It is not clear from the transcripts whether the advice of the roundtable members was taken up by the SAC. The textual data speak, then, to a policy organization aimed at growing democratic integrity

around energy commitments in the province, but one perhaps failing to fully empower roundtable members in this task.

A Shared Assumption: Risk as a Technical Issue

Even though roundtable members are told that science is being given separate consideration by the SAC, the textual data reveal that the majority of the roundtable dialogue focuses on risks associated with fracking, where risk is defined as a technical issue to be evaluated using highly reductionist scientific methods. This founding assumption about risk as a technical issue was never questioned or deliberated upon by roundtable members. A scientist and consultant, presenting to the roundtable members at the first meeting, describes the risk that the NBEI will evaluate this way: “L’évaluation des risques, c’est très importante parce que si on veut procéder à développer un programme scientifique, il faut être capable d’évaluer les risques.”

As director, LaPierre (August 2013) described risk as something assessable via “scientific data,” which then guides regulations and industry standards: “We [the NBEI] are looking at current industry practices and the scientific data associated with it....We need to know the impact of new technology on the assumptions of current industry practices.”

Another time (October 2013) he said, “Once we [the NBEI] obtain additional knowledge, it then should go back and interact with the rules and regulations that we have developed in the industry....We should test our rules and regulations to see if they work and we should address these science issues.”

In the conceptualizations given in these quotations, risk is something to be understood by science and managed by government regulatory mechanisms; risk is a measurable technical issue instead of an overall stance toward possible outcomes from technologies—the kinds of outcomes that cannot be measured in advance. Strictly speaking, the conception of risk at work within the NBEI dialogues might not square with the realities of fracking as an engineering process. Fracking might indeed be a classic example of “post-normal” science where “facts are uncertain, values disputed, the stakes high” (Funtowicz and Ravetz 739). Hydraulic fracturing is a relatively new and radically local technique where the attending possible impacts depend almost entirely on its very local geological and social context. What contamination has been reported in the peer-reviewed literature, which is just now surfacing, shows it being the product of very particular interactions of fracking contaminants with local organic matter (Volz et al.). Nonetheless, SAC members, roundtable members, and NBEI leaders appear to assume, as a starting point, that fracking is beneficial (just like any development) unless proven dangerous through a risk assessment founded on existing scientific measurements. What would likely be a controversial definition or framing of risk outside of the context of NBEI roundtables never arises therein as an object for dialogue, which suggests a shared assumption about the definition of risk among roundtable members.

That the NBEI dialogues are founded on an assumption that risk is technical issue is presumably what pre-empts the NBEI roundtable members from discussing other risks related to provincial energy developments that can less easily be made sense of as scientific. One concern circulating in the informal debates on fracking in the province, which does not get discussed at the NBEI roundtables, is the complex and socially determined health risks associated with fracking development—in particular, with “boom-and-bust” economies that bring large and transient populations into rural areas for short periods of time. Such risks include the high prevalence of sexually transmitted diseases among transient

industrial labourers, escalating rates of family dissolution and domestic violence and abuse, and stress-related illnesses expressed in industrial labourers (Office of the Chief Medical Officer of Health; OCMOH). The province's previous chief medical officer of health and other health workers in New Brunswick have raised concerns about over such socio-medical risk in the context of possible legislation of hydraulic fracturing (OCMOH).

Another citizen concern that is not brought into the roundtable dialogue is the possible cultural risk associated with fracking, such as those Indigenous peoples have raised regarding the threat fracking poses to water's cultural role for Aboriginal peoples. In fact, my textual analysis reveals that roundtable members share the assumption that water is a scarce "resource" with an economic value in its competing uses—namely industrial and recreational: "We have to pay attention to the impacts on water recreation" (SAC member). Cultural descriptions of water (e.g., as life force)—those that have been raised by Indigenous activists—however, do not appear in the roundtable dialogues.

Assumptions about risk may be shared among those present at roundtable dialogues but they are also actively shaped by those in positions of power at the NBEI. Presentations made by technical experts to roundtable participants clearly shore up the scientific conceptions of evidence by conditioning what is admissible as a valid subject for roundtable dialogue. As one example, in his invited presentation on hydraulic fracturing, a technically trained SAC member cautioned (March 2014) roundtable members against engaging in the telling of untruths that might compromise the capacity for economic and resource development in the province:

You know, the people [east of Red Deer, Alberta] live with gas wells on their property fairly easily and the gas wells do not create huge environmental or social problems there. My point is that there are issues, but let's talk about the real issues that we have to deal with, not issues that are made up by people that are ideologically driven. We have to deal with the truth, not phony issues, okay?

The preceding quotation reveals that members are being called upon as disseminators (not creators) of truths to their respective "constituents" at the same time that they are being given a model for understanding "real" risk issues, which do not include concerns over the possible social and environmental effects of fracking.

A Value Commitment: Technological Solutionism

The textual analysis also indicates that the NBEI roundtables have been organized within and are proceeding according to a technological, solutionist *Weltanschauung*—a foundational assumption that investments in technological innovations will lead to a progressively better social condition (Smith and Marx). The technological solutionism that frames the NBEI roundtable dialogues converges with its scientist logic by espousing science-led progress in service of economic, as opposed to widely democratic, goals. "Progress" was a dominant word coded from the data, and there is continual mention among the executive of "moving on" or "moving forward" with energy "development" after the "proper scientific assessment," or "stepwise process." An energy policy-maker, invited as an expert presenter to speak to the first roundtable, remarked to members:

After the listening tour we faced two choices, a moratorium or a stepwise process. The steps I suggested are: First, we need to see if there is a resource and if there is, then what follows from this business case?...Five, after all this we should move on to exploration.

Interestingly, the criteria for what would constitute progress are never explicitly brought forward as a topic for deliberation for roundtable members. Instead, the unstated and uncontested assumption that appears to be circulating at the roundtable is that investment in fracking technologies would constitute “moving forward” into an ideal future because of the economic gain that it will bring. A discussant from Siemens, a German-based engineering firm, opened with the following advice during the October roundtable:

Because at the end of the day it’s kind of figuring out how to maintain our quality of life, right?...A big mandate for the energy institute is to say while more and more innovation is becoming available, how do we help NB understand those in context of the total system capability and reliability?

Clarifying what he meant by innovation, the speaker asked rhetorically,

We’re globally competing, right? This region is in competition for business capability with the world....You can’t think you’re innovating if you’re inventing something that already exists. You need to think about innovating something that no one has but the world needs. I really do understand doing the right thing for NB because that’s why we are here.

Here, roundtable participants are encouraged to see their mandate as thinking innovatively, defined as mobilizing scientific “solutions” to energy qua economic “problems” on the basis of a technological solutionist understanding of the social good; participants are encouraged to see industrial innovation and market expansion as a panacea for New Brunswick citizens’ problems.

There is no apparent consideration given to who exactly stands to benefit from the “business case” for fracking, and there is no conversation about bringing the energy needs of New Brunswickers, as have been articulated by citizens themselves—say, in the public protests—into these dialogues. For example, green energy technologies, like those being advocated for by local environmental activists (see Coon and Couture), are never explicitly the subject of dialogue for roundtable members—neither are they built into the deliberation of roundtable members. During the October 2013 roundtable meeting, a member initiated a discussion on renewable energy technologies. The NBEI director, then David Besner, shifted the conversation toward one about the limitations of energy storage technologies upon which the success of renewables ultimately hinges:

Member: I’m just thinking...maybe gas isn’t necessarily what we should be putting all of our money into...because we’re actually in the centre...you know Quebec is selling energy for nothing to the States and we do have a nuclear power in NB....Maybe we’re putting too much on gas.

Director: That’s entirely possible....Maurice discussed yesterday a bit about some new research going on in energy storage and the limitations of this technology, which is something we need in order to use renewables...because the wind doesn’t always blow, the sun doesn’t always shine. Maurice, I don’t know if you want to mention...

As the meeting, this conversation about renewables goes no further. Additionally, two representatives from NB Power presented to the October 2013 roundtable, which I attended. This well-presented talk given by two junior, male employees at NB Power showcased a strategic plan to increase efficiency in the energy system through smart grids and other so-called green innovations. The presentation outlined possibilities for increasing the efficiency of the production and delivery system through renewables as well as the kinds of technological investments needed to make renewables feasible in the province:

NB Power Representative 1: And that's what this is all about...energy efficiency, energy conservation, energy efficiency as well as investment in smart grid.

NB Power Representative 2: How do we integrate renewable energy?...Before it was more or less unidirectional from the generation to consumption, now at the local level we have the generation feeding back into the system....We are working on the PowerShift Atlantic project to use the customers' loads to facilitate the integration and we believe with the help of smart grid infrastructure we can deliver new resources to the power system which will help the utilities as well as customers, and the customers may be able to participate in the service of utilities.

There was no conversation on renewables at this meeting, however, as the roundtable broke for food, skipping questions in, as David Besner put it, "an effort to get closer to lunch."

The textual data from the meeting in March 2014 speak to predetermined commitments—especially among those organizing the NBEI activities—to carbon-based energy investments as the technological solution to the province's economic vulnerabilities. A representative from TransCanada Corporation was invited to present to the roundtable members about a pipeline for shipping domestic crude oil for refinery production in Canada. His presentation turned on economic gain:

TransCanada rep: [The pipeline] displaces those higher-cost imports and also [allows] for expansion and upgrade opportunities for existing refineries. It increases the oil capacity from western Canada....We're looking at an increase of \$35.3 billion in gross domestic product for Canada during the development and construction in the first forty years of operation....What that means to NB, \$2.8 billion increase in gross domestic product...close to \$700 million in tax revenues for government agencies within the province of NB. These are some significant benefits.

This discussion of the proposed pipeline turns social problems—widespread poverty and inequity—into commercial opportunity: locally processed oil for commodity export. This problem framing simplifies issues that are wide and complex and historically produced, and it also has the effect of discounting alternative techno-economic solutions. Curiously, this framing of the proposed TransCanada pipeline in terms of economic gain gets taken up by roundtable members, even those representing "stakeholder" groups whom have otherwise contested the pipeline on environmental grounds:

Roundtable member: Okay, so I'm just trying to make sure that these are actual benefits that New Brunswick is going to get or if these are payments made to landowners that they are then going to turn around and pay their property taxes with....That's not really a gain to the government.

Ultimately, the results of this study raise further questions: Why are particular technological policy directions apparently being favoured over others? Why does this favouring go un-critiqued by roundtable members? Finding an answer to this is important, but beyond the scope of this data set; however, it is worth noting that the dominant techno-utopic vision at the NBEI supports existing power structures and already powerful actors, such as large energy oil and gas corporations.

Discussion

The intentions behind the development of the New Brunswick Energy Institute appear to align with the goal of public engagement efforts at large: to gather democratic input in the formation of technical policy-making in the hope of making decisions that prove robust against social criticism because they are perceived to respond to citizen needs. Unfortunately, this study's analysis suggests a scientization of the NBEI, which limits its democratic potential.

Roundtable meetings are dominated by technical concerns over the non-technical considerations that have been raised by citizens outside of these roundtables, such as the environmental activist concern about the political implications of fracking as support for monopoly corporate interests. It appears that the possibility of incorporating social, cultural, and political considerations into energy policy recommendations during the roundtables is closed off partly by the organizational structure of the dialogues: roundtable members are limited to distributing the technical advice given by invited experts and the Scientific Advisory Council to members of the public. The general selection of roundtable members appears well-considered to fulfill the task of communicating scientific information coming from the SAC, rather than for meeting the minimal criteria for democratic deliberation (Fung): there is an over-representation of the highly educated that does not reflect the high percentage of undereducated people in the province. Given this membership, and given that SAC members are present during roundtable discussions, it is unsurprising that the roundtable conversation turns on the technical issues that fracking raises.

Furthermore, NBEI roundtables are scientized in the assumptions circulating at roundtable dialogues. Notably, it appears that discussions of social needs and priorities vis-à-vis energy technologies have been pre-empted by a narrow conception of risk as hazards that can be known by technical measure. This conceptualization of risk is problematic from a democratic perspective because any consideration of the social and cultural risks of energy developments, such as those brought forward by Indigenous and environmental activists or health-care professionals, finds no epistemic space at the NBEI roundtables.

The NBEI's scientized structure is likely borne from the earnest desire among those who brought this organization into being to limit the controversy surrounding energy policy commitments. Scientization quite often emerges in policy situations—like the fracking controversy in New Brunswick—thought to be otherwise mired in environmentalist, economic and other extrinsic interests. This vision for the role of science in democracy—a scientific approach to democracy as opposed to a democratic approach to science (Sarewitz)—is premised on normative assumptions about science as value-neutral (Merton). In the common view, science is supposed to cut through self-interest, rhetoric, and short-term thinking because science seeks truth. According to this way of thinking, scientists take a “view from nowhere”—the so-called “God's eye view” (Haraway). Sarewitz describes the common assumptions behind scientized debates:

If politics is the arena of the irrational then science is the only rational player in the game and scientific truth must be a guiding parameter for wise political decision making. According to this perspective, science could resolve a multitude of thorny political problems that confront people and nations if only humanity would rely on facts instead of perception of the facts. (“Frontiers” 72)

Unfortunately, scientized energy policy-making is unlikely to result in policies that achieve social legitimacy and public support. The NBEI undoubtedly serves an important policy function in collecting some politically valuable information, and surely only the most anti-science zealots would argue against the value of evidence-informed policy. To be sure, Hübner, Horsfield, and Kapp suggest that a lack of “fact-based information about shale gas, especially regarding the potential environmental risks related to its production, is one reason behind the debate” (3921). But numerous case studies (e.g., Nelkin; Wynne) suggest that controversies with technical underpinnings, like the fracking debate in New Brunswick, cannot be resolved solely by technical means, through consideration of scientific information, or by so-called experts acting alone (Sarewitz, “Frontiers” 385). For one, there are almost always social, political, and cultural issues that cannot be addressed when the controversy is dealt with only on a technical register. Furthermore, treating a debate as if it is about technical matters alone actually works to make invisible the value commitments necessarily embedded within conversations that appear to turn on value-neutral science (Kinchy; Rayner). How the SAC deals with “facts” about water, for example, depends upon how water is conceptualized; in other words, factual treatment of water data is actually premised upon particular value commitments, like the commitment to treat water as a resource in the first place. Thus, not only are expressions of social, cultural, and political ideas, issues, needs, and concerns suppressed in a scientized debate, but value-based commitments—say, to monopoly industries—remain beyond reproach, hidden behind the perception that the debate is being carried out in unbiased terms. That particular energy commitments are dominating the attention of the NBEI at the expense of others (i.e., fracking versus renewables) is problematic, but it is further problematic that these commitments become hidden through the institute’s scientization, and are thus removed from the democratic scrutiny that the institute purports to further. In February 2016, the New Brunswick Hydraulic Fracturing Commission—established in 2014 by the newly elected Liberal premier—published a report that supports the findings of this study. The commission suggested that all previous public engagements on fracking in New Brunswick—including the roundtables of the NBEI—have been characterized by

expert panels that have studied the issue from a technical and scientific perspective, weighing the pros and cons of the scientific literature. Science-based research is critically important to understanding the technical aspects of this issue—and this report relies heavily on the work of the technical experts—but it alone cannot guide the development of effective public policy (2).

Conclusion

This study of a local public engagement process alerts us to a broader conclusion: public participation exercises can be implicated in producing (or reproducing) particular interests and relationships of power. The deployment of participatory initiatives within technical policy-making has received mixed reviews by social scientists. Some studies describe limitations on the extent to which the public is able to influence policy by these mechanisms. David Chandler suggests that public

participation in local governance is often merely a “therapeutic” exercise intended to garner public confidence in a system that remains essentially centralized (11). Thorpe and Gregory are concerned that engagements create spaces where the dust, like that thrown up by street protest and burning police cars, is actively settled through the norms of deliberation—such as reasonableness, moderation, and dispassion—in a way that discounts the concerns of the “unruly masses” (see also Elam and Bertilsson). This essay has attempted to extend existing critical examinations of public engagement exercises by making visible the possible limitations of engagement vis-à-vis the more hidden value assumptions and conceptual frameworks that comprise its constituent elements. The NBEI’s value commitments appear to have invisibly defined a limited range of technological choices for its roundtable members (and possibly their “constituents”) and to have established boundaries around energy policy-making as the purview of technically trained experts. The question now becomes, What can be done to construct the possibility for the shaping of alternative visions, both for technical policy-making as well as for this province’s energy futures?

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Endnotes

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² LaPierre also had close ties to industry and in particular to JD Irving Ltd., New Brunswick’s largest forestry corporation. LaPierre was the first ever Irving Chair at the Université de Moncton, in which position he advised the corporation on sustainable forestry practices. A side story to the one at issue in this paper, LaPierre was removed from the position of chair of NBEI after it was revealed that he had actively falsified his credentials for the forty years of his active science advisory career.

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