

This is the peer reviewed version of the following article: Jegen, Maya, and Xavier D. Phillion. 2017. "Power and Smart Meters: A Political Perspective on the Social Acceptance of Energy Projects". Canadian Public Administration 60(1): 68-88, which has been published in final form at DOI 10.1111/capa.12202. This article may be used for non-commercial purposes in accordance with Wiley Terms and Conditions for Self-Archiving.

Power and smart meters: The social acceptance of energy projects¹

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Abstract: Social acceptance has become a key consideration for promoters, government officials and citizens when instituting new energy infrastructures and technologies. Often theorized in normative terms, it is not clear whether and when social acceptance matters. This article explores the rollout of smart meters in Quebec, which proceeded despite significant opposition from municipalities, community groups and unions. Drawing on the literature on policy monopolies and policy venues, we argue that this opposition had no policy venue to express its grievances. Quebec's electricity sector, with a stable policy environment controlled by a policy monopoly buttressed by a strong policy image, provided few opportunities to expand the conflict. Public administrators should consider power when defining social acceptance in political processes.

As part of the smart grid revolution, the deployment of smart meters aims to "monitor, analyze and regulate energy production and consumption" (Wolsink 2013: 10). By the end of 2014, the United States had installed more than 50 million wireless smart meters in the residential sector (Institute for Electric Innovation 2014). The European Union has committed to roll out nearly 200 million electric smart meters by 2020 (Institute for Energy and Transport 2015). Their installation is driven by considerations such as security of supply, the advantages of remote meter reading and accurate electricity billing, demand-side management, the promotion of energy efficiency and micro-generation (Römer et al. 2012; Wolsink 2012).

¹ The authors thank Evert Lindquist, Alexandra Mallett and four anonymous reviewers for their helpful comments on a first version of this article. They also thank James Meadowcroft and Ian Rowlands, the principal investigators of a partnership development grant, *Unlocking the Potential of Smart Grids: A Partnership to Explore Policy Dimensions*. They acknowledge the support of the Social Science and Humanities Research Council.

Despite the fact that companies install smart meters without much consideration for public concerns, they often face hardly any opposition (Hess and Coley 2012). For example, the rollout of smart meters went smoothly in several American States (Maryland, Nevada, Texas) and in Ontario. By contrast, there has been opposition in California and British Columbia and Quebec (Hess 2014; Jegen and Pillion 2014). Opponents express concerns about risks for health associated with the electromagnetic fields of smart meters; economic costs and low financial incentives expected from these new technologies; privacy matters, data management and cyber security; injustice for low-income households resulting from time-of-use tariff systems; inadequate communication of electric utilities during the rollout phase; and users' lack of control over the technology (Faruqui, Hledik and Lessem 2010; Kranz, Gallenkamp and Picot 2010; McGann and Moss 2010; AlAbdulkarim, Lukszo and Fens 2012; McKenna, Richardson and Thompson 2012). To date, North America seems to be the region of the world where opposition to smart meters has been the most vocal (Hess 2014), although some opposition has also been observed in the United Kingdom and in the Netherlands (Stephens et al. 2013). But in most places the rollout is underway.

This begs the question of whether and when public acceptance matters in the deployment of energy technologies and infrastructures. Looking at the case of smart meter rollouts in Quebec, this article argues that social acceptance is not an obstacle for decision-makers when potential opponents have limited formal access to the policy process. In Quebec, the state-owned public utility aims to install about 3.8 million remote reading meters in the residential sector between 2012 and 2018. Despite the promise of environmental and economic benefits, the meter rollout triggered opposition: homeowners objected to the installation of meters on their property, grassroots movements mobilized in different regions and petition the National Assembly, the trade union of the public utility questioned the foreign supply of the devices, and municipalities called for a moratorium on smart meters. But the government decided that implementation was up to the public utility, which largely ignored these reactions. At the request of the *Régie de l'énergie*, the provincial energy regulator, a single concession was made to opponents, with the offer of a cheaper opt-out option for residential customers.

To understand why the opposition failed to turn smart meters into an “issue of social acceptance,” we draw on two strands of literature, which are outlined in the first section. We review, on the one hand, the literature on social acceptance and social licence and, on the other hand, core concepts from punctuated equilibrium theory such as policy monopolies and policy venues. The second section describes the interaction between the “policy monopoly,” held by the public utility and the government, and opponents to smart meters. We argue that opponents were not able to challenge the electricity sector’s “policy image” based on economic development. Even if their grievances found an echo in the larger public, it proved difficult for them to build up pressure for change. Unable to expand the conflict or find a policy venue where to express their grievances, this significant opposition failed to have an impact on the smart meter rollout, which proceeded more or less unencumbered.

In the conclusion, we advise public administrators to include the power dimension if they want to get a more adequate picture of social acceptance. To be transparent about our normative stance, we believe in the environmental and efficiency-enhancing potential of smart grids. Our objective in this article is not to oppose their development. But as controversies over the Energy East and the Northern Gateway pipelines demonstrate, social acceptance has become an important consideration for decision-makers, both private and public – not only for normative reasons, but also because it may facilitate or hinder implementation. For example, both Alberta and Quebec have recently issued white and green papers on social acceptance. In these discussions, the problem is often addressed in terms of information, inclusion and consultation, trust or legitimacy (or lack thereof). This focus on deliberative criteria, however, neglects the power structure that underlies the policy process. It takes for granted that the ineffectiveness of opposition equals consent, when in fact it may simply mean an inability to access relevant policy venues. By focusing on the power dimension, our empirical study complements normative approaches that question current definitions of social acceptance (see Fast 2013).

Social licence, social acceptance, and public policy

While opposition to energy technologies and energy infrastructure is not a new phenomenon – nuclear power plants, hydro dams and power lines faced social mobilization in the 1960s and 1970s (for example, Kitschelt 1986; Koopmans and Duyvendak 1995) – it is now on the political agenda: developers of oil and gas infrastructure face “blockadia,” and even promoters of “new” renewable energy technologies such as wind or solar struggle to get their projects through. NIMBY-dubbed citizens, environmental movements and First Nations try to be heard and claim their rights, whereas governments publish papers on social acceptance and look for ways to arbitrate conflicting demands.

Conceptual efforts to deal with social acceptance are not new either. But they remain fragmented. In the context of corporate social responsibility practices in the extractive industries, government and industry officials often talk in terms of social licence to operate (Raufflet et al. 2013). Tracking the history of the concept of social licence to operate, Colton et al. (2016) observe that it has now migrated from the mining to the energy sector, broadening its scope beyond corporate social responsibility. Its appeal derives from the necessity to address calls for inclusiveness and fairness among the public. But the hasty institutionalization of what remains a blurry concept, they argue, carries the risk of increasing political and regulatory uncertainty.

Lacking a clear definition, social licence is “an industry response to opposition and a mechanism to ensure the viability of the sector” (Owen and Kemp 2013: 29), highlighting the need for firms to consider the non-commercial implications of their investments, especially when they alter the physical and social environment. Over the years, different conceptual models have been proposed that focus on firms’ need to go “beyond compliance” to ensure the legitimacy of their projects; they evolve around concepts of legitimacy, credibility, trust or social contract (Thomson and Boutilier 2011; Black 2013; Morrison 2014). The underlying assumption is that firms have a responsibility towards their social and physical environment that they can discharge through dialogue with communities.

In the context of the deployment of renewable energy technologies, the academic literature tends to frame these issues rather in terms of social or public acceptance, which is described as a potential barrier for the achievement of projects that require numerous siting decisions (Wüstenhagen, Wolsink and Bürer 2007). Case studies inform us about what went right or wrong on particular sites, seeking to identify “social gaps” and to infer more general conditions to improve policy processes (Bell et al. 2013). The purpose of most studies is to increase the probability of success or to “foster social acceptance of new infrastructure” (Cohen, Reichl and Schmidthaler 2014: 5) for the benefit of sustainable energy transitions. The subtext is that there are solutions to social acceptance problems like there are technical solutions to “birds and bats” or noise problems when building wind farms.

Like their colleagues in the social licence literature who deal with extractive industries, scholars interested in the social acceptance of renewable technologies put emphasis on the notion of trust (Aitken 2010). Some seek to better qualify the concept of social acceptance by distinguishing tacit acceptance and passivity from active support (Batel, Devine-Wright and Jangeland 2013).² A particularly influential approach is the “triangle model” elaborated by Wüstenhagen, Wolsink and Bürer (2007), which resonates outside academia (Horbaty, Huber and Ellis 2012).³ The model distinguishes three dimensions of social acceptance, each “talking to” different stakeholders. First, socio-political acceptance is the most general dimension covering the public at large, policy makers and key stakeholders; second, community acceptance refers to local stakeholders such as residents or local authorities affected by specific projects; and, third, market acceptance refers to costumers, investors and intra-firms. The basic triangle model has been widely used and adapted by adding more specific attributes to the three dimensions (for example, Sovacool and Ratan 2012).

While the literature on social license and public acceptance embraces multiple stakeholders and seeks to understand the deliberative and normative sources of their

² This is not without recalling the distinction made by organizational theorists like Chester Barnard (1968) or Herbert Simon (1976) who distinguish between zones of acceptance and zones of indifference. In their vein, Roe (1989) counts 17 types of acceptance or forbearance that can be observed within a complex organization.

³ For example, the International Energy Agency Task 28, Social Acceptance of Wind Energy Projects, takes this triangle as point of departure (www.socialacceptance.ch, accessed May 13, 2016).

support at different levels, it has failed to address how power and institutions may condition social acceptance. Social acceptance is assumed to be based on the quality of the relationship between planners (be they governments or firms) and the population affected by a project, as if it were unmediated by politics. But what if the power structure excludes some stakeholders in the political process? Bachrach and Baratz (1962: 948) observed that power is not only exercised when A takes decisions that affect B. Power is also exercised when A creates or reinforces social and political values and institutional practices that limit the scope of the political process and prevent B from bringing to the fore issues that go against A's preferences. This suggests that social acceptance may be wrongly inferred when citizens are simply unable to express their grievances. That is why there is a need to analyze power relations when assessing social acceptance.

Baumgartner and Jones' (1993) punctuated equilibrium theory, which focuses on drivers of stability and change in public policy, is one way to address the question of power relations in the policy process. This approach argues that policy change is rare because the policy process tends to be shaped by a "policy monopoly" of key public officials and interest groups, whose power is buttressed by a stable "policy image" and a limited number of "policy venues" from which outsiders are excluded. In other words, if one looks at the policy process, social acceptance is the norm and not the exception. The policy image refers to the ideas, norms and values that are rarely successfully contested because they are taken for granted in a given policy domain. The policy venues refer to the institutional arenas where the policy discussion is allowed to take place.

In general, it is difficult for excluded groups and new ideas to challenge the policy monopoly and the status quo, and thus to turn a policy proposal into a social acceptance issue. The implication for energy infrastructure and technology projects is that opponents either need to have veto power inside a policy venue or be able to initiate major conflict outside of it (Cobb and Ross 1997). Challenging the policy monopoly may depend on the ability of contenders to expand the scope of the conflict and involve new stakeholders or the public at large. Opponents may also seek to shift the policy venue, that is, the institutional locus (for example, courts, regulatory agencies, legislative committees) where policy discussions take place (Baumgartner and Jones 1993: 32-37). If opponents

are unable to do that, whether the public accepts a project (or not) may not matter very much because they have no way to express their grievances.

As we will see, this description of a stable policy domain under the sway of a policy monopoly captures the situation of the electricity sector in Quebec, where a few key government and public utility actors rely on a policy image that emphasizes the uncontested role of Hydro-Quebec in technological and siting choices. This policy monopoly also benefits from the way in which policy venues are structured. While there are two policy venues where the public can be heard, each is limited to a narrow institutional mandate, namely economic regulation (*Régie de l'énergie*) and environmental protection (*Bureau d'audiences publiques sur l'environnement*). As a result, contentious collective action is difficult outside these two venues. In the case of smart meters, Parliament played a marginal role, as the government shifted decision-making responsibility to the *Régie* and implementation to Hydro-Quebec.⁴ Limited access to policy venues means that opposition to smart meters, which only marginally concern the economic regulation or the environmental protection mandate, can be largely ignored by the policy monopoly.

Research strategy

We use these insights from the literature on social acceptance and public policy to explain why, despite opposition from different stakeholders, the policy monopoly in Quebec's electricity sector is not seriously challenged in its technology-related projects. Answering this question about decision-making is important to evaluate the political conditions under which subsequent implementation takes place. The empirical case is based on the issue of smart meters. Methodologically, we use three kinds of data to reconstruct the narratives of the policy monopoly and its different contenders: documentary analysis, media analysis and stakeholder interviews. The documentary analysis includes the main electricity related official documents from the government and the public utility, smart meter related documents from the *Régie* as well as from the

⁴ When asked about the "smart grid controversy," Premier Philippe Couillard retorted: "That's up to Hydro-Quebec to manage this." Julien Arsenault, "Québec réitère sa confiance en Hydro-Québec," *Le Devoir*, February 3, 2015. Available at <http://www.ledevoir.com/politique/quebec/430762/quebec-reitere-sa-confiance-en-hydro-quebec> (accessed October 28, 2016).

federal agency CanmetENERGY. For the media analysis, 104 articles related to smart grids and smart meters were retrieved from Quebec's two major newspapers between 2003 and 2012, and coded through NVivo. These analyses were completed by 16 semi-structured interviews with stakeholders from electric companies, industry, research and innovation, the government and community groups, conducted between November 2013 and February 2014 (see Phillion 2014 for methodological details).

The electricity policy monopoly

Hydro-Quebec, the provincial government and the *Régie* hold a policy monopoly within the electricity sector of the province (Doern 2005), framing the understanding of how and by whom electricity is generated and distributed, and of why this is important for Quebec's economic development. The policy monopoly is quite stable over time and over changing governments. The policy image generated in the 1960, linking hydroelectricity to the economic emancipation of Francophones, is still dominant, although it has recently been branded as a "green choice" as well.

Hydro-Quebec's role in the *policy* monopoly is based on its *market* monopoly. One of the largest hydropower producers in the world, Hydro-Quebec is the state-owned utility in charge of electricity generation, transmission and distribution. Autonomous in terms of business management, planning and strategic orientations, it dominates the domestic market and is a major contributor to the revenue of the provincial government. Hydro-Quebec's activities were unbundled in the 1990s (Bernier 2014), but domestically its market monopoly was never seriously challenged. Whereas the electricity sector of neighbouring jurisdictions was affected by privatization and liberalization since the 1990s, and while Quebec economists occasionally raised the issue, there was never any political follow-up.

There is a widely shared *political* understanding of the firm's role as a key driver for economic development and, consequently, for the modernization of state and society. Since 1944 when it was created, and especially since the 1960s when electricity was nationalized, Hydro-Quebec is the main actor when it comes to energy policy and politics (Savard 2013). During the so-called Quiet Revolution, the emancipation movement of French-speaking Quebecers summed up by the slogan *Maître chez nous* (Masters in our

own house), electricity generation was nationalized to reduce energy dependence, control electricity prices and support the economic development of the province. Once nationalized, Hydro-Quebec became a leader of infrastructural and technological projects, such as the construction of hydroelectric dams in the North (James Bay Project, Churchills Falls) and the 735 kV power line. Completed in 1965, this alternate current power line was the first of its kind worldwide, which in the view of many Quebecers contributed to build the international reputation for its electric industry.

The second key actor of the policy monopoly is the Government of Quebec's Ministry of Energy and Natural Resources. Constitutionally, the province has authority over electricity management, generation and conservation. Defining energy policy, the government also controls the operations of its public utility and defines its mission and rules of governance. In the 1960s and 1970s, the government provided political coverage for Hydro-Quebec to develop the major hydroelectric dams. In the 2000s, the government pushed for wind energy to support economic development in peripheral regions of the province (Jegen and Audet 2011). In 2012, the government decided to permanently shut down the only nuclear power plant. A political promise of the incoming government, the decision was also in line with Hydro-Quebec's analysis indicating that the refurbishment would lead to prohibitive costs.

The *Régie de l'énergie* is the third important player of the policy monopoly. Established in 1996 with a quasi-judicial status, the *Régie* supervises the transport and distribution of electricity and gas and regulates tariffs, but not production. It seeks to reconcile the public interest, the protection of consumers and a fair return for transport and distribution. Its mandate is focused on the economic regulation of the energy sector, which limits the way issues can be framed in public hearings (<http://www.regie-energie.qc.ca/>). Those who denounced the government regulating Hydro-Quebec's activities, being thus both judge and jury, welcomed the creation of the *Régie* as an independent agency. Several elements indicate, however, that the government, the electric utility and the *Régie* are all part of the policy monopoly, even if they occupy different roles.

For example, by not regulating the production of energy and by concentrating on economic issues only instead of social or environmental concerns, the government's Act on the *Régie* was rather accommodating for Hydro-Quebec from the beginning (Simard 2010). Furthermore, the government appoints regulators without well-established criteria, and critics point to the proximity between regulators and regulated companies or the party in power. Finally, the regulator decides on who is allowed to participate in the hearings and whose expenses will be covered. In place for almost two decades, the *Régie* seems to operate within a small world of a limited number of selected stakeholders, with Hydro-Quebec as an influential actor (Simard 2014).

In sum, three key actors make up the policy monopoly: the public utility dominating the electricity market but also influencing policy making; the government, whose main energy policy orientations change little from one government to the other; and the regulator, an independent agency in principle, but *de facto* with a close proximity to the other two members of the policy monopoly. All three actors share the policy image that electricity generation is an essential driver for the economic development of the province. The *Régie*, the institutional venue for public participation on energy matters, has a narrow focus on economic concerns and the discretion to select participants.

The policy monopoly and smart meters

How does the policy monopoly play out on matters of smart meter deployment? As for most energy related projects, Hydro-Quebec has taken the lead on the so-called *Remote meter-reading project*. The \$ 1 billion investment is framed as an upgrade of the electric grid aiming at savings of \$ 200 million over 20 years (Régie de l'énergie 2012). The public utility expects from smart meters a more direct and accurate reading of electricity data for issuing invoices; they should also facilitate the detection of outages, increase energy efficiency and reduce greenhouse gas emissions (Hydro-Quebec 2015). After conducting three pilot projects in 2011, Hydro-Quebec presented the *Remote meter-reading project* before the regulator for public hearings. The first phase of the project was approved in 2012 and, by the end of 2014, more than 2.5 million smart meters were installed in the province (Hydro-Quebec 2014a).

The smart meter rollout was initiated by the electric utility and mostly disconnected from the political agenda. There was no mention of such meters in any official document of the Ministry of Energy and Natural Resources until 2016, when it was finally added to the Energy Strategy 2016-30. Only on one occasion did the government take a stance on smart meters: following a parliamentary motion adopted unanimously by the National Assembly, the government ordered the *Régie* in 2013 to take economic, social and environmental concerns into account and to lower the costs regarding the opt-out option. When approving the second and third phases of the *Remote meter reading project* in 2014, the *Régie* followed up on the government's last request and ordered Hydro-Quebec to substantially decrease its rates for clients who refuse smart meters in their house (Régie de l'énergie 2014).

Administratively, there are two policy venues where the public can voice its concerns about energy infrastructures and technologies. *The Bureau des audiences publiques sur l'environnement* (BAPE) is mandated by the government to provide advice on environmental impacts of infrastructure projects and to conduct public hearings. The BAPE has only a power of recommendation and, in the case of smart meters, was given no mandate. As for the *Régie*, it is given decision-making power and decides also who has standing to join the public hearings. During the first phase of the *Remote meter-reading project*, 12 organizations participated, while 10 were present during the hearings for the second and third phase. Several of these organizations are regular participants to the *Régie*'s hearings. The majority of the arguments echoed economic concerns: budget overspending, returns, and the high cost of the opt-out option. Some participants mentioned social acceptance concerns like health or privacy issues. In the analytical part of its decision, the *Régie* noted that the project is “badly accepted, but does not reflect on it in the decision itself (Régie de l'énergie 2012: 55).

Contestation outside the policy monopoly

Outside the policy monopoly, however, there was opposition to smart meter development. Concerns with smart meters were raised for different reasons and through different channels. They emerged on the media agenda from 2011 on, starting with the pilot projects and taking off with their rollout.

Figure 1 about here

Figure 1 from our media analysis shows that, in the public debate, smart meters in Quebec were more often framed in negative than in positive terms: more than 50% of the newspaper articles expressed negative views, whereas positive statements were identified in only 19% of the articles. Likewise, Hydro-Quebec's smart meter pilot program was framed negatively in 12% of the articles compared to only 3% with positive statements. Interestingly, Ontario's and other smart meter initiatives – covering U.S. and international smart meters programs – were hardly covered, but were framed somewhat more positively than negatively.

Two opinion polls by the Canadian pollster *Léger Marketing* confirm the negative mood that emerges from the media analysis. In the first survey conducted in 2011 after the pilot projects, 48% of the respondents disagreed somewhat or strongly with the installation of smart meters, while 32% somewhat or strongly agreed. Following the smart meter rollout, a second survey in 2014 found that the disagreement increased to 50%, but agreement also increased to 35%. Of major concern was that smart meters would lead to increased electricity bills (82%) and could allow for time-of-use rates and lead to higher prices (73%); that radio frequencies of smart meters would lead to health issues (62%); and that data gathering would allow to infer on habits (52%) (*Léger Marketing* 2011, 2014).

In the political sphere, four petitions with 22,009 signatures were submitted to the National Assembly, asking for a moratorium on smart meter rollouts as well as the abolition of opt-out fees (*Assemblée nationale du Québec* 2012, 2014). There were a few short-lived debates in the parliamentary commission that focused on health, security and cost issues. In Questions Period, a left-wing MNA from Québec Solidaire, Françoise David, asked Energy Minister Martine Ouellet about the opt-out fees. The minister answered that the government and Hydro-Quebec were working together to find an “administrative or a technological solution,” but that the decision belonged to the *Régie* (*Journal des débats de l'Assemblée nationale* 2013).

Smart meters also triggered opposition from trade unions. The *Canadian Union of Public Employees*, the *Syndicat des Employés de Techniques Professionnelles et de*

Bureau d'Hydro-Quebec and the *Quebec Federation of Labour* feared that the replacement of conventional metering devices by smart meters would cause the loss of nearly a thousand direct and indirect jobs. Before the *Régie*, they also cast doubt on the economic cost-effectiveness of smart meters presented by Hydro-Quebec (SCFP 2011). The workers unions' arguments got some support from the official opposition in 2011. Learning that Hydro-Quebec had awarded by public tender the supply contract for the smart meters to the Swiss company Landis+Gyr, the spokesman of the official opposition criticized the public utility as follows:

By awarding the contract to Landis+Gyr, Hydro-Quebec fails in its mission of economic development for Quebec. This company [Landis+Gyr] intends to create only 75 jobs in Quebec and assemble smart meters in Mexico. Yet, other Quebec firms were bidding for the supply contract in order to develop the technology here, in Quebec, and create many more jobs (Parti Québécois 2011).

This argument is not a criticism from outside of the policy monopoly, but targets its political understanding and its policy image, which closely links energy with the economic development of the province. An interviewed stakeholder from the industrial sector also deplored Hydro-Quebec's decision by saying that "we must be protectionist to a certain level. As to [smart meters], we have chosen a foreign technology even though there was a local one. We did not set up the parameters to encourage local purchases."

Municipal authorities across the province added their voice to express their concerns about Hydro-Quebec's smart meters project. Since 2012, 124 municipalities, out of a total of 1112, representing almost 2.5 million people, asked for a moratorium and/or the abolition of opt-out fees. Among the arguments put forward by the municipalities were the infringement of costumers' freedom of choice by Hydro-Quebec's compulsory installation of smart meters and potential health risks due to radio frequencies. For some, the need to replace the conventional meters had not been proven by the public utility and the replacement costs were not justified (CQLPE 2015; Refusons les compteurs 2015a).

Finally, in reaction to the deployment of smart meters, a grassroots movement – called *Refusons les compteurs* (stop smart meters) – emerged across the province.

Citizens formed the first of these local associations, *Villeray Refuse*, in 2011, when Hydro-Quebec launched the smart meters pilot project in their Montreal neighbourhood. Over 50 local groups across the province followed *Villeray Refuse* in its effort to oppose the installation of smart meters (Refusons les compteurs 2015b). Again, the arguments made were diverse, but expressed distrust both towards the technology of smart meters and of the policy monopoly. An stakeholder from the research and innovation sector pointed to the suspicion among the population with regard to its public utility:

Hydro-Quebec is an opaque institution. Everything Hydro-Quebec is doing becomes suspect within the population. We are asking ourselves: what are they up to? A week ago, I received the letter telling me they will soon change my meter. I found it extremely awkward, almost rude. It was saying: ‘whether you like it or not, we will change your meter, we will know everything about you, and as we change it from outside the house, you don’t even need to be present. And if you want to keep your old meter, it will cost so much’. [...] It is always the ambiguity that they want to get a maximum of cash out of consumers.

In the same vein, an interviewee from a community group mentioned that: “Hydro-Quebec, in this situation [the *Remote meter-reading project*], is not transparent. It is part of the corporation’s practice to work in closed circuits, to see itself, in the context of its monopoly, as the king and master and to do whatever it wants without any consideration for the people.” Another representative from civil society considered that Hydro-Quebec “is known for its lack of transparency.”

The media analysis indicates that, as in British Columbia, and in contrast with Ontario (Mallett et al. 2014, health and safety are the main issues among perceived risks in the public debate about smart meters. Figure 2 shows that health and safety risks were the subject of 27% of the coded articles, followed by 16% that focused on economic risks such as cost overruns and fear of higher electricity bills. The grassroots movement mobilized around both of these risks. For example, residents reported headaches, insomnia, skin rashes, heart palpitations and tinnitus symptoms after the installation of smart meters. Hydro-Quebec always denied any risk for health, arguing that smart meters

radio frequencies are 55,000 times lower than Health Canada's threshold (Hydro-Quebec 2014b).

Figure 2 about here

To some extent, the arguments put forward by the grassroots movement resonated with established environmental organizations such as the *Association québécoise de lutte contre la pollution atmosphérique (AQLPA)*, *Sécurité énergétique (SÉ)* and consumers associations such as the *Union des consommateurs (UC)* and *Option consommateurs (OC)*. Together with Hydro-Quebec's trade union and the Quebec Union of Municipalities, these organizations had standing before the *Régie* and intervened in one or both phases of the public hearings. The municipalities and the trade union were present in the first phase only and argued in terms of cost overruns and loss of jobs respectively. Likewise, UC insisted on the risk of cost overruns, but also criticized the way the public utility dealt with the opt-out option. More general concerns of social acceptance were addressed by OC and SÉ-AQLPA. The former did not oppose smart meters, but asked Hydro-Quebec to pay more attention to population's preoccupations and to improve its communication. The latter asked the *Régie* in the first hearings to put the file on hold until the pilot projects were adequately assessed, and explicitly addressed concerns of social acceptance and risks for health (Régie de l'énergie 2011, 2013).

Social acceptance and the policy image

As mentioned, the mandate of the *Régie* is the economic regulation of energy related activities. The regulator gives standing to a limited number of organizations and reimburses them based on the assessment of their contribution. In this context, it comes as no surprise that the main concerns put forward before the *Régie* were framed in economic terms. In the context of the smart meter hearings, several participants addressed the fees for the opt-out option. Since the beginning of the smart meter rollout, residents could waive the new devices by paying an opt-out fee of \$17 per month for the manual reading of the meter plus an initial amount of \$85 for the installation of the digital meter (this amount increased to \$137 if customers waited more than 30 days before filing a request to Hydro-Quebec).

Unions, consumer and environmental organizations opposed the opt-out fees charged by the public utility. Petitions against the fees were submitted to the National Assembly and found support among decision-makers of all the political parties. At the end of the day, the government asked the regulator to ask “Hydro-Quebec to evaluate other options in order to not financially penalize customers who do not want smart meters and offer them the choice of another type of meter without imposing punitive costs [...]” (Assemblée nationale du Québec 2013: 747). The 2014 decision of the *Régie* following the public hearings of the second and third phase of the Remote meter-reading project followed the government’s request and fixed the monthly fee for the opt-out option at \$5 plus \$15 for the installation of a digital meter (or \$85 if the client asks for the opt-out option after 30 days) (Régie de l’énergie 2014).

Stakeholders such as UC welcomed the decision, commenting that the *Régie* had positively responded to their filed requests. Nonetheless, they regretted that the decision did not consider the concerns of low-income households and did not address issues of radio frequencies and health risks (Union des consommateurs 2014). Pierre Arcand, the minister of energy and natural resources, also welcomed the decision (Newswire 2014). In sum, even if challengers of the policy monopoly endorsed the regulator’s decision, this concession did not deviate from the sector’s policy image framed in economic terms. An interviewed opponent from a community group thought that Hydro-Quebec had provided this concession to silence the opposition: “They [Hydro-Quebec] made a good strategic move by offering the right to opt-out because it is a way to silence the opposition by saying that if you are not happy, we are offering you a non-communicating meter.”

Discussion

There is a perceivable unease among many Quebecers with regard to the rollout of smart meters. Opinion polls, grassroots mobilization, and petitions submitted to the National Assembly indicate an “issue of social acceptance.” When 124 municipalities representing one Quebecer out of four are skeptical of smart meter installations, we may have expected that the public utility in charge of the deployment or the government responsible for the provincial electricity policy would be put under pressure to respond.

But the concession they eventually made was symbolic and remained well within the limits of the policy monopoly's own objectives and the sector's policy image.

To explain this puzzle, we linked social acceptance to the established power relations and institutions that shape policy venues. In Quebec's electricity sector, we identified a policy monopoly composed of three key actors – the government, the public utility and the regulator – who control and frame energy related debates about technologies, fuels and infrastructure. Outsiders have only two venues to put forward their concerns: the environmental hearings office and the energy regulator. In the case of smart meters, the Quebec government gave no mandate for environmental public hearings. The only venue left for opponents was the *Régie*, where the regulator restricts the number and type of participants and delineates the scope of discussions in economic terms. This is in line with Schattschneider's (1960) observations that actors holding the policy monopoly seek to confine the scope of conflict and restrict participation of other actors, whereas outsiders who challenge the monopoly try to expand the conflict and gain the attention of potential allies.

This is not an isolated case. Over the years, the policy monopoly of the electricity sector has been questioned on different grounds. Influential economists called for the privatization of the public utility in 2007 and 2014, First Nations and environmental groups contested the expansion of hydropower, NGOs asked for more energy efficiency and consumption reduction, and the development of wind energy raised controversies (Jegen and Phillion 2014). But the policy monopoly was mostly able to contain the debate to tariffing issues, even when making some concessions as in the case of granting the development of community wind power or, as mentioned above, cheaper opt-out fees for digital meters.

There is one notable exception in recent history where challengers had some success: following the strong mobilization against the planned gas-fired combined cycle power plant in Suroît, the government asked the regulator to reassess the anticipated energy deficit for the period 2007-2010. Based on the regulator's conclusion that the project was "desirable, but not indispensable," the government abandoned the project in 2004. This move can be interpreted as the successful expansion of conflict by the

environmental movement, which weakened the policy monopoly somewhat. That said, with the lower energy requirement and the shift to wind energy that occurred at that time, giving up this project was costless for the policy monopoly.

Conclusion and policy recommendations

In political processes involving the deployment of infrastructures and technologies, social acceptance has become a key criterion for promoters, government officials and citizens concerned with the integrity of their habitats. While practitioners and academics have identified concepts underlying the notion of social acceptance – information, consultation, dialogue, trust, legitimacy – it is not clear whether and when social acceptance matters for the development of infrastructure and technology projects. In this article, we have explored a case where the project proceeded despite significant opposition from municipalities, community groups and unions. We argued that this fragmented opposition had resonance in the media and in parliamentary politics, but no policy venue to file its grievances. A stable policy environment controlled by a policy monopoly, as is the case with the electricity sector in Quebec, gave the opposition few opportunities to expand the conflict.

Our focus on the power dimension of social acceptance carries two policy implications. In general, social acceptance may be less of a problem for decision-makers than is usually acknowledged when opponents have few policy venues to express their grievances. If the policy monopoly remains in control of the policy process, public hostility is a weak indicator of the ability of organized groups to derail an infrastructure or a technology project. While normative theorists are right to deplore administrative and political barriers to the expression of preferences, this scenario is, analytically, a relatively comfortable one for decision-makers. Conversely, social acceptance may be wrongly inferred by decision-makers when opponents are able to expand the conflict and shift the policy debate outside “legitimate” policy venues. This is likely to happen when the policy environment is in flux and the policy monopoly is losing its grip. The fact that it did not happen in the case of smart grids does not mean that this scenario is impossible, as the successful opposition of First Nations to several projects illustrates. An “issue of

social acceptance” is then a weak term to describe what others have defined as “blockadia” (Hoberg 2015).

Scholars and public administrators need to acknowledge that policy venues matter when defining social acceptance in political processes. By doing so, public administrators will develop a more sophisticated and politically relevant understanding of social acceptance that goes beyond normative considerations and opinion surveys. In the past few decades, institutions have been created to channel economic and environmental concerns. By virtue of their narrow mandates, they do not always seem well-adapted to channel societal preferences or hear concerns that cut across sectors. For scholars, a comparison with other Canadian provinces would be useful. Although citizen opposition in Quebec reached similar levels to British Columbia’s, the contrast with Ontario is striking. Toronto developed a formal policy framework and set up institutional venues such as the Smart Grid Working Group or the Smart Grid Forum. In this decentralized electricity sector, stakeholders had access to more policy venues. And yet the smart meter rollout proceeded more rapidly and more smoothly (Winfield and Weiler 2014). This suggests that an open and inclusive decision-making process does not necessarily lead to a more difficult implementation phase.

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Figure 1. Positive and negative statements about smart meters in the media

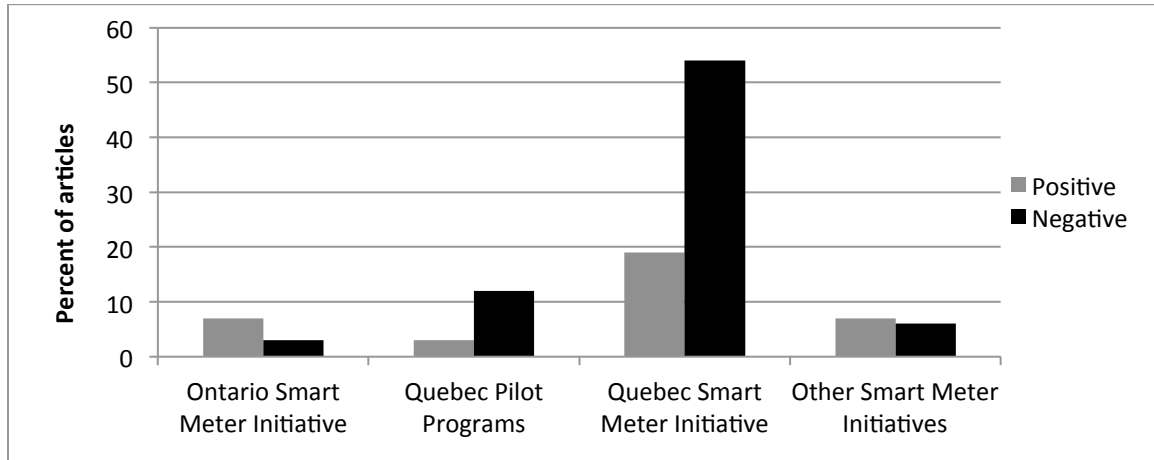


Figure 2. Risks and benefits of smart meters

