

# **REFGOV**

***Reflexive Governance in the Public Interest***

## ***Services of General Interest***

**ELECTRICITY MARKET REFORMS AND GOVERNANCE MODELS**

**By Birgit Armstrong, Burkard Eberlein, and John Kenney,**

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**Canada Energy Case Study**

**ELECTRICITY MARKET REFORMS AND GOVERNANCE MODELS**

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**Overview**

The Canadian case study of reflexive governance investigates market reform and governance models in the Canadian electricity sector, with a special focus on institutional reform processes in the three Canadian provinces of Ontario, Quebec, and Alberta. These reform processes offer a promising window on the nature and development of “post-hierarchical” governance models. In how far do recent reforms facilitate a transition towards governance models that encourage participation, deliberation and collective learning processes?

This report will use a multi-level governance (MLG) frame, as developed mainly in the political science literature, to approach reform processes in the Canadian case. Canada is a highly decentralized federal jurisdiction in which key responsibilities for electricity market reform and design are held by sub-national governments, the provinces. At the same time, regional market integration with the US under NAFTA is an important feature of broader energy governance.

MLG includes the horizontal layering of regulatory regimes as well. On a given territorial level, the market governance of electricity intersects with the environmental regulatory regime. Hence, the MLG perspective captures both the territorial and functional differentiation and layering of regulatory regimes.

In principle, the transition from a utility model of vertical integration and hierarchical regulation to a more decentralized governance model increases the opportunities for participation and collective learning. However, both federal energy policy and the three case studies of Ontario, Quebec and Alberta show little evidence of more advanced models of social learning. Out of the four theoretical models proposed in the REFGOV context, the **model of institutional economics** most clearly captures governance processes in Canadian energy policy. More precisely, the analysis reveals a **hybrid governance model** that blends elements of a decentralized, market-driven logic (*institutional economics model*) with legacies of the vertically-integrated or monopoly utility model (*hierarchical governance model*).

We note substantial continuity in the scope and patterns of participation and potential for collective learning in the three provinces, although the provinces show some significant differences in how public interest concerns and participation are defined and organized. In Ontario, British-style executive decision-making combines with the strong legacy of incumbent dominance (“Hydro-Model”) to produce governance structures that favor the representation of industry interests over consumer and environmental concerns, and hence limit participation. In Quebec, by contrast, the statist tradition embeds energy governance in a corporatist social pact built around the notion of a sovereign Quebec, master of its “energy destiny”. However, beyond the accommodation of First Nations interests in the construction of hydro-dams, the true extent and depth of participation and learning remains an open question. In Alberta, finally, an individualist and populist political culture and the strong business and market orientation of political elites largely reduces citizen participation to consumer choice, although market regulation continues to protect residential consumers from price volatility in an electoral perspective. This approach has contributed to impeding broad consultation and participation in market reform processes.

The report is organized as follows. A short first part will sketch the broader institutional framework of energy governance in Canada, using a multi-level governance frame.

A second part will first preview and then present in detail the three case-studies of Ontario, Quebec and Alberta. The common focus is on the institutional dimension of electricity market reforms, and on how these reforms relate to governance models.

## **I. Multi-Level Governance and the Institutional Framework of Energy Market Governance in Canada**

The institutional framework of energy market governance in Canada is characterized by a high degree of vertical (territorial) and horizontal (functional) differentiation. Doern and Gattinger (2003: 23) note: “Compared with other Western federal countries, Canada probably has the most divided and decentralized jurisdictional arrangement for making energy policy.”

The multi-level governance approach, as widely used in the political science literature offers itself as the most appropriate framework to study the interaction between different actors, layers and processes of governance. MLG as a concept originated in the study of the EU as a novel type of multi-level polity that is less than a state but more than a complex international organization or regime. At the heart of the MLG concept is the dispersion of political authority across multiple centres as part of a larger reconfiguration of political authority (Grande and Pauly 2005). Multi-level governance is best defined as non-hierarchical, negotiated exchange between different actors across multiple, interdependent and overlapping (functional) arenas or territorial levels (Bache and Flinders 2004; Hooghe and Marks 2003; Peters and Pierre 2001).

To better understand the dynamics of energy governance in Canada, it is important to note that Canada’s national governance structure is centred in a system of Cabinet-Parliamentary government where majority governments are historically the norm and where the Senate (or second chamber) is not elected and only nominally is based on it somehow being a representative body for the provinces/regions.<sup>1</sup> As a result, both energy and other policy and political disputes must be fought out in some kind of combined arenas of partisan party politics and direct federal-provincial and inter-provincial negotiations via so-called “executive federalism” (Doern and Gattinger 2003).

Canadian energy policy is also forged in a federal constitution where *most of the jurisdiction over energy policy resides with the provinces which both own most of the reserves of oil and natural gas or of hydro power and which have primary regulatory jurisdiction*. Federal jurisdiction centres mainly on inter-provincial energy trade, energy in the northern territories, and on energy imports and exports. Federal jurisdiction is the primary one for

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<sup>1</sup> This part draws on joint work of Bruce Doern and Burkard Eberlein

nuclear energy safety and also regarding uranium and international nuclear proliferation. The main federal authorities involved in energy policy are departments such as Natural Resources Canada and Environment Canada between which turf and policy wars are the norm rather than the exception (Doern and Gattinger 2003; VanNijnatten and MacDonald 2003), and the two main energy sectoral regulators, the National Energy Board, the Nuclear Safety Commission. But, of crucial importance, each province and territory also has a separate sectoral energy regulator as well as environmental regulator making up a total of over 30 “energy” regulatory bodies.

When environmental and other framework rules are added to the policy and regulatory mix, the jurisdictional split and overlap is even more complex. Environmental policy is de facto an area of concurrent powers between the federal government and the provinces with both operating environmental assessment processes and also rule-making regarding air and water and both needing each other regarding any ultimate efficacy on climate change commitments.

Competition policy and regulation is mainly a federal responsibility though the provinces can still build barriers and thus lessen competition in Canada’s internal market. Trade policy is a federal responsibility but also depends on some reasonable level of provincial agreement when trade agreements include subjects under provincial jurisdiction. The Canada-US Free Trade Agreement and the later NAFTA agreement which added Mexico were centrally based on a core energy bargain between the oil and gas producing provinces of Canada (Alberta in particular) and the federal government (and the U.S.). It ensured energy pro-market free trade and pro-rated security of supply for the U.S. For Alberta, the initial Canada-U.S. free trade agreement provided a guarantee that the previous 1980-84 interventionist federal National Energy Program (NEP) could never occur again. It virtually “constitutionalized” North American energy free trade between Canada and the U.S. (but not between Mexico and the U.S. where Mexico insisted on more protection for its largely state-owned oil and gas industry (Hufbauer and Schott 2005).

Canada’s energy policy has gone through four main phases of evolution and change (Doern 2005; Doern and Toner 1985; Brownsey 2007). From the 1950s to the late 1970s, federal energy policy was broadly market oriented and geared also to nation building activities such as pipeline construction, nuclear reactor technology and northern development. The period from 1980 to 1984, following the oil crisis of 1979 was characterized by massive federal intervention via the Trudeau Liberal’s National Energy Policy (NEP), a policy

strongly opposed by energy interests in Alberta and Western Canada overall. From 1985 to about 2001, federal energy policy was decidedly pro-market in nature but augmented by the discourse, if not the actions, of sustainable development. The period since 2001 has seen federal policy take on what looked like stronger commitments to climate change but also strong federal support for oil and gas exports.

Canada's internal energy politics has always been influenced profoundly by conflicts between major energy *producer* regions/provinces (and related energy business interests whose centre of power has been in the oil and gas sector and now in particular, the oil sands sector) and other more populous consumer regions, provinces and interests (especially Ontario and Quebec). These clashes have been especially important when energy prices have risen suddenly and sharply as they did in 1973 and 1979 and again in recent years. They have also surfaced in a very central way over Canada's climate change policies and the issue of burden sharing among provinces and their main industries (Doern 2005). Inter-regional pressures also have arisen over nuclear energy. Canada's CANDU reactor was developed through federal support for R&D and development but actual reactor sales and use have been overwhelmingly confined to Ontario, Canada's main nuclear province (Bratt 2006; Doern, Dorman and Morrison 2001).

As stressed above, Canada's energy industry business lobby has been very much oil and gas-centred in keeping with the dominance that oil and gas has in overall Canadian energy production (Brownsey 2006; Krywulak 2007). Seventy-five percent of production comes from the oil and gas sector and in 2005, of the total of 2.5 million barrels per day (bd), 1.36 million were from conventional oil and 1.14 million barrels (bd) were from the oil sands (Brownsey 2007). Atlantic Canada offshore oil amounted to about 313,000 barrels (bd). Production from the Alberta oil sands looms ever larger and will soon surpass conventional oil. In addition, Alberta accounts for about 77 percent of Canada's natural gas production.

The oil and gas industry overall is very much Alberta-centred with extremely strong links to the Alberta provincial government where the governing Conservative Party has been dominant for decades. The oil and gas lobby group, the Canadian Association of Petroleum Producers (CAPP) is based in Calgary, Alberta as is the main national energy regulator, the National Energy Board (NEB).

The Canadian energy business lobby is also characterized by some divisions between powerful multinational oil companies (the majority U.S. foreign owned) and the more numerous smaller oil and gas companies which tend to operate at the exploration phase of oil

and gas development. Core links to the U.S. energy industry lobby are thus built in within Canada's energy politics, all the more so as the U.S. government and American multinational oil firms have their eye firmly on Alberta's oil sands as a key part of current and future strategic energy supply for the U.S. The ever growing level of Canadian natural gas exports to the U.S. also ensures a central U.S. market and lobbying presence in Canada's internal energy industry politics.

Canadian energy policy and regulation is also very much influenced by the different energy endowments of its diverse regions and provinces. Provinces such as Quebec, Manitoba and British Columbia have major hydro-electric resources whereas Alberta has oil and gas riches. Moreover, it is of importance to note that Canada has very little inter-provincial electricity trade or east-west connecting grids. Provinces typically have greater grid and trade links with immediate sub-regional U.S. border states. As a result, the provincial system of electricity markets is highly differentiated and fragmented, with hardly any "Pan-Canadian" character.

When one adds the international level to the multi-level energy regulatory governance picture, it is bilateral relations with the U.S. which are dominant. The U.S. has seen Canada historically as its hinterland supplier of oil and gas, all the more so now that the vast Alberta oil sands have now been established as officially confirmed and recognized reserves. Canada-U.S. energy relations were once characterized by U.S. protectionist policies, but for the last three decades they have been dominated by guaranteed policies and rules about free trade and secure trade. For its part, Canadian policy (with the brief exception of the 1980-1984 NEP) has needed U.S. energy markets, U.S. energy capital, and often U.S. energy regulatory approval before key energy projects could proceed.

In recent years, the extent of cross-border energy interdependence has increased in several ways, including the growing application of U.S. rules by the Federal Energy Regulatory Commission (FERC) to Canadian gas and electricity markets, the need to better manage the reliability of North American electricity grids (in the wake of the massive August 2003 blackout), and the need to have Canadian climate change policies and actions or lack of action take into account the fact that the U.S. was not a Kyoto signatory and thus its industries had a comparative economic advantage over Canadian firms which were being asked (albeit very gradually) to comply with Canada's Kyoto signatory obligations.

## **Implications of the federal and continental framework for electricity market reform processes on the provincial level**

*Firstly*, provinces enjoy extremely broad discretion to formulate and implement electricity market policies: they have jurisdiction over generation, transmission and distribution within their boundaries. This includes market restructuring and the setting of electricity prices. Provinces differ significantly in size, resource endowment, and (external) market access, but also in economic structure and social and political orientation, which results in a wide spread of provincial sector and policy profiles.

*Secondly*, the federal level has deliberately withdrawn from any active role. Federal jurisdiction over inter-provincial and international trade (and offshore and northern resources) as well as nuclear safety and, indirectly, environmental protection hold significant potential for federal leverage. However, since the resounding failure of the 1980-84 “National Energy Policy” (under Pierre Trudeau), the federal level has avoided any course of action that could have been interpreted as an intrusion into provincial energy affairs. This has resulted in a very cautious and negotiated approach to inter-provincial and international trade – the federal powers over exports and trade are, in effect, not fully exercised by the National Energy Board.

The historically antagonist federal-provincial dynamics in energy policy and the strong influence of the (regionally concentrated) energy producer lobby has made it very difficult for any federal government to play a constructive, pan-Canadian role. This has impoverished the federal debate (and collective learning processes) on energy policy as many options are off the political table (this is changing only recently with the rise in prominence of the climate change issue that requires a coherent federal strategy). Also, there is no adequate political-institutional forum to discuss the concerns and needs of Canadian, as opposed to provincial energy policy. (The Premiers’ Conference has been unable to go beyond lowest common denominator positions, as evidenced by recent failures to agree on climate change policies; the relatively new Council of the Federation is too weak to constitute a collective, Canadian clearing-house for energy policy.

*Thirdly*, a constant concern of the Canadian resource-based and export-oriented economy has been to secure access to the US market (85 per cent of Canada’s exports go to the US.) The “constitutionalization” of free trade with the U.S. under NAFTA favours direct market links between individual Canadian provinces and the larger North American market,



with the federal government limiting itself to a policy of keeping the borders open for exports, which again results in substantial differences in provincial reform profiles. In a sense, provincial electricity market policies are institutionally more driven by the continental market logic (insofar as provinces participate as exporters of energy) than a pan-Canadian federal energy policy (Again, the climate change issue may introduce significant changes in this respect.)

Against this background, it is thus at the provincial level that we decided to investigate patterns of electricity market governance and their evolution. In a ‘most-similar-system design’ (Przeworski and Teune 1970), the constant federal and continental context (while size, resource endowment, and US market access differ) allows for a reasonably controlled comparison between different provincial models of electricity market governance. We chose to study the three provinces of Ontario, Quebec, and Alberta since they represent three different trajectories of governance transformation (in addition to being the most prominent provinces, economically and politically, next to British Columbia). This choice also reflects different patterns of resource endowment for electricity generation: a fossil-rich Alberta, Quebec with ample hydro resources, and Ontario with a more ‘European’ mix of coal, nuclear, and gas. Finally, we also capture variance on public service values, with Alberta receptive to market-liberal concepts whereas Quebec represents a much stronger public service tradition.

## **II. Three Case-Studies of Market Reform**

### **A. Electricity Governance and Market Reforms in Ontario, Quebec, and Alberta: Overview**

Traditionally, electricity governance in the provinces followed a vertically-integrated, monopolistic utility model. In most provinces, electric utilities were provincially owned Crown corporations that served as instruments for regional and economic development. In fact, the vertically-integrated corporations Ontario Hydro and Hydro Québec were the major players in Ontario and Quebec, where relatively weak formal regulatory oversight and adjudication (rate-of-return utility regulation) was exercised by provincial Energy Boards.

Alberta differed from Ontario and Quebec in that there was municipal and investor ownership and operation of electricity generation, along the US model of investor-owned utilities.

It is tempting to read recent developments as a transition from the traditional command-and-control system (vertically-integrated Crown corporations) to a new system of markets and competition (unbundling and wholesale/ retail market access). Closer analysis reveals a more complex picture. What seems to emerge from inter-provincial comparison is a picture of *‘divergent convergence’ towards complex hybrid regimes that mix different governance techniques but largely reflect the institutional economics model.*

A first important observation is, of course, that one should be very careful to equate formal command-and-control hierarchies with effective governmental control. In the Canadian case, the crown corporations were not effectively controlled by the Boards or by the government executive. Information and expertise asymmetries resulted in a substantial degree of ‘self-steering’ by the corporation. A major criticism of the traditional model was indeed that entities such as Ontario Hydro imposed their narrow organizational logic (driven by professional values) on their political masters, rather than the other way round, as will be discussed in more detail later. This can be considered to be the major deficiency of the traditional model: not excessive (and presumably) effective hierarchy, but self-referential and self-interested steering by the incumbent utility, without regard to negative externalities.

It is undeniable that, since the late 1990s, pro-competition electricity market restructuring has gained a major foothold in the Canadian provinces. Two causal factors stand out: first, major moves towards electricity deregulation in the US which impacted Canadian exporting provinces in particular; and the global neo-liberal agenda of infrastructure liberalization and privatization that promised higher efficiency and lower consumer prices.

The extent of restructuring varies across the country (Pineau 2005). Alberta and Ontario have moved furthest in restructuring their markets (Deweese 2005), with unbundling of vertically integrated utilities and full wholesale and retail access, whereas Quebec has implemented wholesale access and retail access to large industrial users only.

Alberta and Ontario have experimented with rather radical market reforms. It is striking that in both cases the experience of high and volatile consumer prices and supply shortages in a ‘deregulated’ market has led governments to re-introduce traditional regulation,

resulting in a system of highly “managed competition” (Doern and Gattinger 2003). In the Ontario case, the government reacted to the public outcry over price spikes after full market opening with the reversal of retail competition.

The resulting regulatory regimes are more fragmented and complex than previous arrangements and they combine different modes of governance and instruments. The Ontario case is particularly instructive in this respect. On the one hand, the wholesale market is competitive (but in practice dominated by the incumbent that controls 75% of installed generation capacity), but regulation mitigates undesirable effects such as price volatility for residential consumers. The government actually pays for the difference between the wholesale market price and the lower residential rates.

While the Ontario Energy Board exercises reinforced regulatory oversight over market participants and processes, the government has also created a new arm’s length body, the Ontario Power Authority (OPA), which is in charge of long-term planning of adequate generation capacity, a function normally associated with a public monopoly system. On the instrument level, the public body OPA is mandated to use contractual instruments to attract private investment in supply. It contracts for new generation through Requests for Proposals (RFP). The Ontario government has launched several RFPs for renewable energy supply in particular.

Hence, what we see is quite heavy government involvement, in order to ensure adequate and sustainable supply, but also to guarantee ‘politically sustainable’ electricity tariffs, while market competition continues to govern the wholesale market. At the same time, contractual instruments and devices play a more important role in a hybrid system.

Quebec has responded to the reciprocity requirements for exports into the U.S. market by unbundling its Crown Corporation (that continues to be wholly owned by the government) into three main entities (generation, transmission, distribution). A so-called Heritage electricity pool was introduced whereby the generation unit must supply the distribution entity with a certain amount of capacity at a low, fixed price –essentially a mechanism to protect Quebec consumers from the higher price level that Quebec can charge for its exports to the US or other Canadian provinces. The current set-up seems to continue much of the traditional regulatory system with a strong public service orientation, even if we find convergence in areas such as unbundling and wholesale market arrangements.

## **B. ONTARIO**

### **1. Provincial Profile**

Ontario is the second largest Canadian province (after Quebec) – covering more than one million square kilometres (double the size of France) - and is located in east-central Canada. To the west the province borders Manitoba, to the north Hudson’s Bay, to the east Quebec, and to the south the United States, with a boarder defined primarily by the waters of the Great Lakes and St Lawrence Seaway. Ontario is often referred to the “Land of Water” as within its boarders there are more than quarter million lakes, countless rivers, and streams containing approximately one-third of the world’s fresh water resources. Since most of the rivers flow north into James Bay and Hudson’s Bay, such resources are often economically unsuitable for hydro-electric development as the population is concentrated in the southern part of the province.

The province’s intricate natural transportation corridors provided by the network of rivers and lake- in particular the Great Lakes- has made the province the economic hub of the country. Traditionally, Ontario’s economy is rooted in natural resource extraction and export. Ontario’s economic activity originated on the staples of fur, timber and minerals and associated secondary manufacturing industries, which demand a great deal of electrical power. Much of the province’s northern economy remains dependent on natural resource extraction and industries; where southern Ontario, with its proximity to American markets has developed a strong manufacturing based economy in areas such as automobile manufacturing, iron and steel production, chemical manufacturing, and pulp and paper.

Ontario is the largest province by population (12.5 million), and contributes 39 per cent of Canada’s GDP. Its capital city, Toronto, is the financial and services centre of the country. While making a transition to a more service and knowledge-based economy, Ontario continues to be the industrial engine of Canada (while over-shadowd by Alberta in the oil and gas industry). To a large extent, this is attributed to the relatively cheap, steady electrical resources that have powered the province’s energy-intensive sectors. However, as Ontario faces the end of an era of low-cost and reliable electricity many energy-intensive industries

within the province have noted concerns of competitiveness with other jurisdictions (CME 2005).

The Province of Ontario is governed based upon the British Westminster parliamentary model, with a first past the post electoral system that typically produces single-party majority governments. Public policy in the electricity sector is characterized by a long history of government involvement in and responsibility for providing electricity as a public service and at stable prices to Ontario consumers. In other words, government has long been the protector of public service provision (Nethertan 2006). As we will see below, when government attempted to break this relationship (in 2002), political outcry from the public enticed politicians to instate price-caps that led to artificially low end use prices and undermined the confidence of potential investors.

## **2. Energy Profile of Ontario**

In comparison to the rest the energy resource rich nation of Canada, Ontario is somewhat poor when it comes to sources for electricity generation. Without careful planning, Ontario will be increasingly dependent upon foreign resources (NEB 2005). The exception to this is Ontario's access to resources of uranium. This in part explains province's historic reliance, and renewed interests in nuclear energy technologies for providing electricity (Hopewood et.al, 2004). Ontario has dominated Canada's nuclear industry, containing the vast majority of that country's nuclear energy capacity. The Ontario Power Authority (OPA) calculates nuclear power to be the most cost-effective, available, and accessible domestic source for fuel to provide an appropriate balance between supply and demand. Nuclear generation currently provides approximately 37 percent (11, 379 MW) of the province's generation capacity (OPA 2005).

Nuclear power has not always been the primary resource in supply power to Ontario. There is a long history of hydroelectricity in the province, based on the resources of Niagara Falls and rivers throughout the province. Ontario continues to employ its economically feasible resources to their maximum contributing approximately 27 percent (7,855 MW) of the provinces generation capacity in 2005. Policy provisions have been set to encourage hydroelectric station upgrades, and the development of "run of the river" resources.

Coal also plays an important role in ensuring the reliability of the province's electricity system, providing 21 percent (6,434 MW) of the generating capacity as of 2005 (OPA, 2005). For environmental and health reasons, the Government of Ontario under Premier Dalton McGuinty is committed to phase out coal-fired generation by 2014. The remaining portion of the province's capacity is provided by natural gas, oil which accounts for approximately 15 percent of the provinces capacity. There is a relatively minute amount of wind and solar power currently online, however it is expected that "green" electricity will play a greater role in the supply-mix in the future (OPA 2005).

### **3. Electricity Industry**

Ontario's electricity demand is almost evenly split between commercial, industrial and residential power users. There are similar peak demands between winter and summer seasons, although the wide-spread use of residential air-conditioners has more recently increased summer demand.

Ontario Power Generation (OPG), a Crown corporation, supplies the large majority (85 per cent) of the province's electricity (OPG 2006). The majority of the remaining generating capacity is held by British Energy, a private consortium that owns and operates the Bruce Nuclear power station.

Ontario's transmission infrastructure is extensively concentrated in establishing east-west connections to Quebec in the east, to Michigan in the south, and New York in the south-west (NEB 2005: 46). Transmission interconnections with other jurisdictions ensure the employment of the most cost-effective generating resources, while enhancing the overall reliability of the system in periods of supply constraints. This is particularly true during the summer months when Ontario electricity demand greatly increases. The extensive high-voltage transmissions system is owned and operated by Hydro One- a crown corporation that emerged from the restructuring of Ontario Hydro (further below). Hydro One controls approximately 28,600 km of transmission lines, linking large industrial customers, local distribution companies, and its own low-voltage distribution system.

Ontario's electrical distribution infrastructure is mostly concentrated within the southern portion of the province. The low-voltage power distribution system in Ontario is mostly comprised of local utility companies, governed by the Ontario Energy Board (OEB) that regulates the rates distributors can charge for their services.

## **4. Electricity Governance: Reforming the Ontario System**

### *a. History – Pre-Reform System*

Ontario's electricity system and structure of governance has dramatically evolved since the industry's formal inception in 1906 when the government of Ontario created the Hydro-Electric Commission of Ontario, later renamed Ontario Hydro. As Ontario's manufacturing industry boomed and urbanization transformed the demographics of the province from its rural roots, the creation of Ontario Hydro led to the centralization of the industry under the public auspice, to maximize the benefits of a system based on economies of scale. Cheap, clean electricity generated from Niagara Falls, and the efficacy of the concept of public power, tied to industrial interests, brought Ontario out of a position of pre-industrial development, to the central hub of the nation's industrial activity (Swift and Stewart 2004). Thus, Ontario Hydro became an essential catalyst to the industrialization of Ontario (Freeman 1996). The government-owned vertically integrated utility also provided a framework of governance and sector management for many other provinces of Canada (Doucet and Heyes 1997).

Ontario Hydro also served in meeting the general public's demands for electrical power- at low-cost and offering universal access. This success of Ontario Hydro entrenched a certain perception and norm in the general public: cheap and accessible electricity as a public service that citizens are entitled to (Nethertan 2006).

More recently, the *Power Corporation Act of 1972* "modernized" Ontario's electricity sector by formalizing the manner in which Ontario Hydro, and ultimately the sector itself, was governed (Freeman 1996). Furthermore, it also institutionalized the idea of providing "power at cost", and formally exempted Ontario Hydro from having to produce profits, or paying corporate taxes. In response to long-term planning concerns that arose during the early 1970s the Ministry of Energy was established (1973) as the lead government agency responsible for ensuring the integrity of the province's electricity system.

However, some would suggest that, in practice, Ontario Hydro as an enterprise was free to operate as it saw fit, while the Ministry of Energy and other governing agencies had little influence in directing the sector. This includes the end-use price rates, development and operation of generation facilities, and to some degree controlling the entire public purse of the province as the corporation could spend public monies at will and with no accountability



mechanisms (Deweese 2005).<sup>2</sup> True to this point was the fact that Ontario Hydro had a provincially guaranteed debt of approximately \$38.1 billion, or about one-third of the province's debt (Ontario Hydro Financial Corporation 2000).

Ontario Hydro's political influence and strength in managing the sector can be seen from its extremely ambitious expansionary nuclear capacity programs during the 1970s that contradicted government policies to include conservation efforts within the mandate of the corporation (Freeman, 1996).

### *b. Reform Drivers and Momentum*

With sector mismanagement born from its monopolistic stature, escalating operational costs associated with its nuclear operations and growing fiscal problems, Ontario Hydro faced pressures to be overhauled. Ontario Hydro had become an institution incapable of providing end-use electricity at competitive rates without relying on the public purse. Further the political "arrogance" and "irresponsible" spending of Ontario Hydro, has led to the conclusion that the corporation, ultimately in itself, triggered its eventual demise (Adams 2000). In particular, Ontario Hydro did not successfully manage its nuclear projects, experiencing over-expansion and massive cost-over runs in constructing facilities (Doucet and Heyes 1997). Though this in part explains Ontario Hydro's end, part can also be attributed to external forces outside of Ontario- such other jurisdictions experimenting with their own "deregulation" projects, and the fact the newly elected Conservative government (1995) had a political mandate that reflected the norms of neoliberalism.

By the mid 1990s, Ontario Hydro was becoming evermore financially and operationally dysfunctional. Within months of taking office in 1995, the Progressive Conservative government initiated an investigation aimed to study the province's electricity sector in terms of its competitiveness, reliability, affordability (end use price), and security of supply. This initiative, known as the Macdonald Committee,<sup>3</sup> provided a set of recommendations to guide the development of the Government's White Paper entitled *Direction for Change: Charting a Course for Competitive Electricity and Jobs in Ontario* (1997). The White Paper was the primary government policy publication that became the foundation for the *Energy*

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<sup>2</sup> For information on Ontario Hydro, see Daniels and Trebilcock (1996) and the MacDonald Advisory Committee on Competition in Ontario's Electricity System (1996).

<sup>3</sup> Macdonald Committee. *A Framework for Competition*. (May 1996).



*Competition Act, 1998*, that brought about the restructuring of Ontario's whole-sale and retail electricity markets between 1997-2002.

It was proposed that wholesale and retail competition would provide electricity consumers with lower prices because “provinces and states are restructuring their electricity sectors and are expecting lower prices” (Ontario 1997). Subsequent regulation outlined in the *Energy Competition Act* responded to the White Paper and the recommendations proposed by the Macdonald Committee and the Market Design Committee<sup>4</sup> (MDC)- which transformed Ontario Hydro and reformed the regulatory structure of the electricity sector.

Ontario thus embarked on a project to restructure or unbundle its electricity sector from its highly vertically regulated, monopolized regime to a structure driven by market competition. This required the unbundling of the assets and services that had for so long been provided by Ontario Hydro into new agencies that would allow for a influx of private investment into generation services, and create a retail market industry.

As a public policy issue electricity governance discussions had been sparked by economic recession, cost overruns in Hydro's nuclear facilities, and growing debt within Ontario Hydro associated to increased service costs and reduced revenues.<sup>5</sup> This is representative of the dysfunctional nature of the traditional governance system of the sector. Further drivers of reform included the political ideology of the Progressive Conservative government, with its self-titled “Common Sense Revolution”, which evidently was hostile to public monopolies. The reforms in governance can also in part be explained with introduction of novel technologies, in particular the generation technologies of combined cycle gas turbine, facilitating new market entry by reducing the costs of entry (Deweese 2005).

## **5. Reform Trajectory: The Failure of Retail Competition**

After the release of the White Paper, the government established the Market Design Committee and strengthened the regulatory mandate of the Ontario Energy Board (OEB). The OEB's mandate as a regulatory agency was to be based on performance and “incentive-based regulation rather than the utility-cum-adjudicative system” that existed previously (Doern and Gattinger 2003). A key task for OEB was to implement the *Energy Competition*

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<sup>4</sup> An advisory group was established to flesh out the market rules and fitting regulatory policies to guide a competitive market place.

<sup>5</sup> Between 1983 and 1993 the price of electricity almost doubled, while debt and other liabilities increased from \$12 billion in 1980 to more than \$38 billion by 1999.

*Act 1998*. This legislation effectively removed the state's obligation to provide electricity (i.e. to ensure service) that Ontario Hydro formally fulfilled. In contrast, privately owned companies were expected to provide electricity to consumer at the lowest cost possible, based upon the idea that market competition would ultimately result in lower electricity prices, and thus better represent the interests of the public than a vertically integrated utility model.

The market character of the new system was reflected in the following components: the establishment of a wholesale spot market coordinated by the Independent Market Operator (IMO); the freedom for consumers to choose suppliers, and the incentives set for consumers and suppliers to conclude long-term price contracts that in turn would attract appropriate levels of investment in new supplies. The wholesale and retail markets were expected to act as an indicator of supply and demand conditions. This meant that during period of high demand and supply constraints the end-use price of electricity would be allowed rise accordingly to spot price level. The assumption was that high price levels would be sufficient to entice appropriate supply development and demand-side management responses.

Upon opening of the sector to competition in May of 2002, Ontario consumers became subject to spot market prices - unless they had a pre-arranged contract with retailers for a fixed price. In the summer of 2002, Ontario was hit with extreme heat waves and drought, pressuring market prices up to \$4.71/kWh; a price over a hundred times higher than its normal level. To make a bad situation worse, the peak hourly price hit \$10.28/kWh by September.

By December 9, 2002 the government passed legislation<sup>6</sup> to put a price freeze on the commodity price of electricity to 4.3 cents/kWh for residential customers and most small business customers. This regulation was retroactive to May 1, 2002, and thus government refunded the difference consumers had paid during the short period of market competition. Consumers that signed a contract that set a higher price than 4.3 cents/kWh were refunded for the excess amount paid between May 1 and November 30 (OEB 2002).

In doing so, government re-instated itself as a governing body to protect Ontario electricity consumers from highly volatile electricity prices, but at the same time this thoroughly undermined the confidence of potential private investors.

As much as policy focused on market liberalization, little consideration was given to addressing long-term planning issues. As a result, the new Liberal Government that took office in 2003 ushered in a new era of electricity policy and planning. The *Ontario Electricity*

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<sup>6</sup> The formal title of this act is *The Electricity Pricing, Conservation and Supply Act, 2002*.

*Restructuring Act* in 2004, plus other recently passed legislation, heralds a hybrid model of governance which has been characterized as a “regulated-competitive model” (NEB 2006). The new legislation does not roll back market reforms entirely but it embeds market instruments and incentives in a comprehensive regulatory structure under clear governmental guidance. This reflects an *institutional economics approach to governance under which certain externalities of decentralized market competition are being addressed by regulatory measures*.

On the one hand, the legislation maintains market-based mechanisms to encourage private investment in generation capacity. On the other hand, government controls end-use prices for consumers and guides the policy of bringing new generation supply on-line. This governance structure can be attributed to many factors, including the unbundling of the former Ontario Hydro, pressures to integrate the Ontario market with surrounding liberalized markets (within the USA), and the looming electricity crunch now facing the province.

## **6. Electricity Governance: From Vertical Integration to Hybrid Governance**

The regulatory reforms that brought about the unbundling of the former Ontario Hydro resulted in a number of new agencies and crown corporations responsible for electricity services throughout the province. While this gave a greater role to private enterprises within the generation and retail segments, the 1995-2002 reforms also encouraged the development of a complex regulatory framework with a larger variety of players. Under the old system (Figure 1), Ontario Hydro along with some small municipal utilities generated, transmitted and distributed electricity to customers throughout the province and the electricity price was regulated by the provincial government- specifically as set by the Ministry of Energy. The amount of energy used was billed at a fixed rate per kWh. This fixed rate included the costs of generation, transmission, distribution and billing.

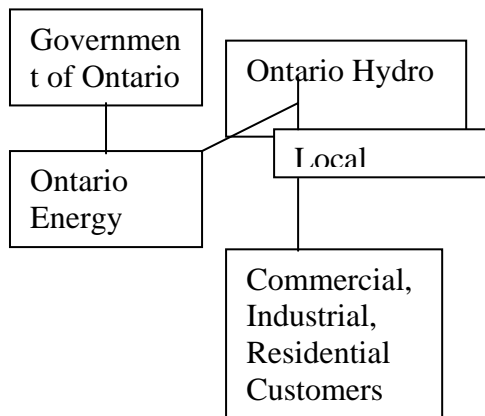


Figure 1. Ontario's traditional Institutional Framework

As we will see the post-reform regulatory governance of the electricity sector was structured in a way that retained the state as the primary shareholder of the agencies that were born from Ontario Hydro.

In line with government's vision, and the rules developed MDC and OEB, generation as well as investment decisions were exposed to competition. The idea was that investment decisions would be based on market forces rather than government policy initiatives or the internal decision-making processes of the bureaucracy and board of directors of Ontario Hydro, thus increasing the role of market forces

The 1998 legislation (Bill 35), implemented on April 1, 1999, dismantled Ontario Hydro into two separate companies to provide generation and transmissions services; which were incorporated under the Ontario *Business Corporations Act*: Hydro One, and Ontario Power Generation (OPG). Three other agencies created were as well, most importantly the Independent Market Operator (IMO).



Figure 2. The Successor Crown Companies and regulatory agencies born from Ontario Hydro

### *Ontario Power Generation*

Ontario Power Generation (OPG) became the owner of all the former Ontario Hydro power generation assets. OPG was established as a crown corporation, and the government remained the primary shareholder of generation services, with a mandate to maximize value for the taxpayers as a business. As the incumbent of Ontario Hydro's generating stations, OPG retained a dominant position within the sector holding approximately 90% of all generation capacity. This market positioning was to be diluted over a structured time frame to encourage an environment friendly to private investment, as stipulated under the measures of the Market Power Mitigation Agreement. For example, in June 2000 OPG leased – based on a long-term contract and memorandum of understanding - the Bruce Nuclear Power Plant to a consortium led by British Energy. This process of dilution was to be under the supervision of the OEB; however, OPG was not formally mandated to do so (Doern and Gattinger 2003).

### *Hydro One*

Hydro One became the successor crown company, which retained ownership and operational responsibilities of the province's electricity transmission grid. The original plan was to privatize Hydro One. However, this plan hit a major roadblock when the Canadian Union of Public Employees, and the Communications, Energy and Paper Workers Union had halted the crown corporation's initial public offering. These two unions took the Conservative government to court, arguing that it was not within the government's authority to privatize Ontario Hydro. The basis of the challenge was that the new Electricity Act, under which the privatization process was to occur, permitted the government only to hold and acquire shares of Hydro One; with no provisions to sell them. Further, this was supported on the grounds that in virtually every other example of privatizing a Crown Corporation in Canada and Britain the decision had been backed by specific provisions to allow governments to sell shares (Mullan and Ceddia 2003). Although, Premier Eves had the legal authority to adopt a law to push the initiative forward, the mounting political opposition prevented the government from selling off Hydro One.

### *Independent Market Operator*

The Impendent Market Operator (IMO) now titled the Independent Electricity Systems Operator (IESO) was established as a key actor of the regulatory regime of Ontario. As a not for profit agency, it is responsible for managing the majority of the power system,

ensuring the system balance (of supply and demand) and reliability and organizing a spot market price system for the wholesale market (Doern and Gattinger 2003). Consumers were given an opportunity to either purchase electricity based upon the spot market prices as set by the IMO, or consumers could enter contracts of varying lengths- and pre-arranged prices- with competitive suppliers (retailers) to meet their demands. The intent of the second option was to protect consumers from the risks of volatile spot prices. Also, contracts were to provide stable prices for generating companies; and thus ensure revenue to support/ direct investment decisions.

### *Ontario Energy Board*

As of 1998, and under the Power Competition Act and Ontario Energy Board Act, the Ontario Energy Board (OEB) was given an increased mandate and greater responsibility in ensuring the overall integrity of the competitive market place- and ensure that the consumers interests were protected, including the regulation and approval of transmission and distribution rates. Thus it is now an “independently” operated regulatory agency informed by performance based and incentive- based regulation, reporting to the Ontario Legislature (Doern and Gattinger 2003). Additionally upon the unbundling of Ontario Hydro the OEB became responsible to regulate the monopoly segments of the electricity market by setting transmission and distribution rates.

### *Ontario Hydro Financial Corporation*

The Ontario Hydro Financial Corporation (which retained the Ontario Hydro name) was created to deal with the substantial problem of Ontario Hydro’s debt of \$30 billion. A significant portion of this debt is the ‘stranded debt’, which could not be serviced as a part of a commercial entity in a competitive market.

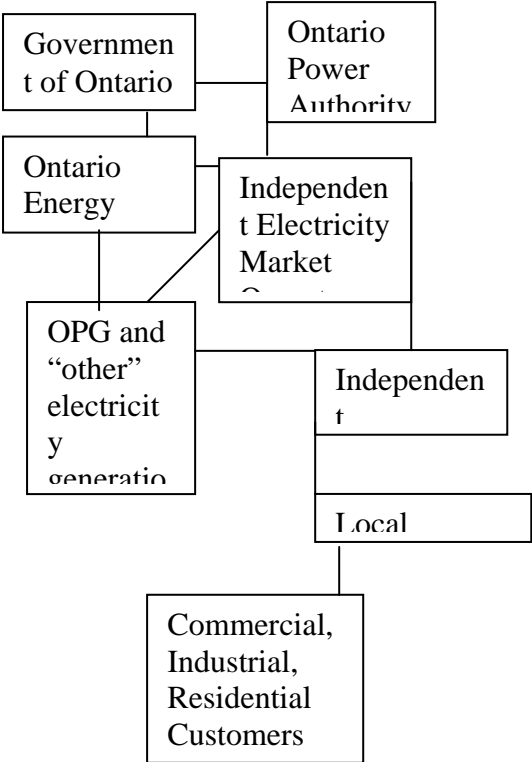
### *Ontario Power Authority*

As of 2004, Ontario has seen the establishment of a new public body, the Ontario Power Authority (OPA). The OPA has been established to assume some of the roles previously held by the IMO/IESO, in particular: long-term forecasting and planning to ensure an adequate supply of electricity. It is also responsible for providing predictable pricing that reflects the full cost of supply to the Ontario consumers. The OPA is mandated to use contractual instruments to attract private investment in supply. It contracts for new generation

through Requests for Proposals (RFP). The Ontario government has launched several RFPs for renewable energy supply in particular.

Thus the OPA can be seen as an agency that begins to fill the need for a central agency to take the contracting function and secure that private investments are financially beneficial (Trebilcock and Hrab 2005). In addition, OPA's Conservation Bureau will develop and coordinate the implementation of conservation and demand management programs.

Figure 3. The Current Institutional Framework of Ontario’s Power System



The unbundling of Ontario Hydro and the subsequent institutional reform in the governance structure for Ontario’s electricity sector were often viewed as a process of “deregulation”. However, as suggested earlier, the reforms put forth in Ontario are more reflective of a movement from the self-regulation of Ontario Hydro itself and setting its own rates, to one reflective of a stronger regulatory regime that seeks to reduce self-regulation, and strongly regulates enterprises that intend to enter the market. Furthermore, as mentioned above, the institutional framework established by Bill 35 did little to actually remove the state as market actor - as it remained the primary shareholder of assets of the former Ontario Hydro. With the market opening failing to produce the desired (and politically viable)

outcomes (lower prices), the government, via the Ministry of Energy, “re-instated” itself by enacting price caps to protect consumers from the price volatility seen during the short period of a market opening.

**7. Governance Techniques and Instruments**

The transition from a vertically-integrated utility model to a hybrid „post-hierarchical“ structure can also be viewed through the lens of governance instruments.

In the pursuit of the magic triangle of electricity market policy (security of supply, environmental sustainability, and market efficiency), governments retain and acquire significant executive and regulatory powers, especially with regard to current price levels and to long-term planning of future investments. However, on the other hand it has become a central theme within Ontario to increase the role of private actors to ensure adequate supply in an efficient, yet sustainable manner.

Table 1: Governance Instruments in the Ontario Electricity Sector

<i>Goal</i>	<i>Security of Supply</i>	<i>Efficiency</i>	<i>Sustainability</i>
<i>Player</i>			
Public	<ul style="list-style-type: none"> <li>Regulated Price Plan- (Legislation- with Price Hedging)</li> <li>Education and Moral Suasion to promote conservation and reduce demand.</li> </ul>		<ul style="list-style-type: none"> <li>Environment Impact Assessment (Legislation)</li> <li>Energy Conservation Responsibility Act, 2005 (legislation)</li> <li>Education and Moral Suasion to promote conservation</li> <li>Nuclear Safety Act</li> </ul>



<i>Goal</i>	<i>Security of Supply</i>	<i>Efficiency</i>	<i>Sustainability</i>
<i>Player</i>			
Private		· Competitive Spot-Market Prices for large consumers	
Public/Private	· Long-term contracts with Bruce Power	· Smart Meters · Net Meters · Long-term Power Purchase Agreements (pre-reform)	· Renewable Energy RFP · Fiscal Instruments to encourage small-scale renewable energies · Standard offer contracts
Public/ Public (OPG)	· Memorandum of Understanding and regulation to ensure that OPG operates as a “competitive” entity and supplies power from available capacity	· Regulated Market Mitigation Agreement	· Coal Phase Out Policy- not guided by regulation but by circumstances of supply and demand and government intentions under Memorandum of Understanding.

This overview of governance instruments reflects an attempt to build and strengthen relationships between public and private actors. Key goals are: to attract new investment (generation capacity), encourage the development of renewable energy technologies, and to stabilize end use price, including a diversity of techniques to influence consumption habits.

***Goal: Promote sustainable yet a secure source of supply.***

*Instrument: Public-Private Contract/ Co-regulation*

Throughout the era of reform, there was little consideration given to long-term planning issues. Ontario electricity system is now in need of new investment to increase the generation capacity to meet expected growth in demand in the foreseeable future. This is only exacerbated with the policies in place to phase out all of Ontario's coal-fired power plants by 2014. Many sector reports, in particular the Ontario Power Authority's (OPA) report in 2005, indicate there is a need for large-scale investment to ensure the future supply within the system. Recognizing this, under Bill 100, Ontario now puts forward mechanisms to increase the role private investment into the generation market.

The OPA is to assess long-term planning issues and appropriately respond to contract for new generation via a Request For Proposal (RFP) process. The OPA now contracts directly with the private sector, including OPG, to attract the needed investment to increase generating capacity. This process can be viewed as public-private partnership formalized by legal contracts, intended to make the development of new generating capacity more efficient.

Since the beginning of 2004, the Government of Ontario has launched four RFPs to increase the province's electricity generation capacity; the first being for approximately 300 megawatts (MW) of renewable electricity capacity, in which the 10 winning projects total 395 MW. In April 2005, it was announced that two more renewables RFPs were going to be issued. The first calls for up to 1,000 MW of new renewable energy supply from generation facilities between 20 MW and 200 MW. The other RFP seeks up to 200 MW of new renewable energy supply from generation facilities with contract capacities less than 20 MW (OMOE 2006).

***Goal: Security of Supply***

*Instruments: Long-term contracts/ co-regulation*

The government of Ontario has re-signed a long-term contract with the Bruce Power Corporation to ensure the refurbishment of two laid-up nuclear reactors, which together represent more than 1,500 MW of additional capacity to the grid. The Bruce Power Nuclear Facility currently produces 4,700 MW of capacity to Ontario's grid, and upon the completion of upgrading the two reactors, will represent up to 25% of the province's capacity (Bruce Power 2006).

The Memorandum of Agreement (MOA) serves as the basis of agreement between OPG

and the Government of Ontario on OPG's mandate, governance, performance and communications. Under this agreement, OPG is returning one nuclear unit at Pickering A to service very shortly. On the hydroelectricity front, it has begun construction on the Niagara tunnel, a \$985-million project which, by the time it is completed in 2009, will increase the average annual energy output of the Sir Adam Beck hydroelectric station by 14 per cent. OPG could yet choose to expand the hydroelectric generating stations on the Mattagami River in northeastern Ontario, which could add up to 380 MW of generating capacity.

***Goal: Market efficiency - Decrease the market power of OPG***

*Instrument: Regulation*

The Government of Ontario has legislated OPG to “decontrol” or relinquish the control of some of its generating capacity. OPG can decontrol its assets through various transactions, including the outright sale or lease of power generating stations, or entering other legal arrangements to transfer the control of OPG’s power stations to private hands. This process is required, and guided by the *Market Power Mitigation Act*; although is somewhat contradictory to some aspects of the MOA between OPG and government, in regards to OPG increasing/refurbishing its capacity.

***Goal: Coal-phase out from OPGs assets***

*Instrument: Government legislation- upheld through Memorandum of Understanding with OPG*

The Government of Ontario has prioritized to rid of all coal-fired power plants within the province. As OPG owns and operates all of the coal-fired generating stations, government and OPG have established a memorandum of understanding. The details of this agreement remain vague as the feasibility of taking this amount of generation off-line by 2014 can be questioned if adequate new capacity is not brought online to replace the former. The coal phase-out is only likely to occur if all other instruments outlined in this report prove effective in increasing supply and/or reducing demand accordingly.

***Goal: Sustainability - Increase the role of renewable energy and promote conservation***

*Instruments: Tax incentives, public-private contracts and market-mechanisms to encourage renewable energy*

A diversity of fiscal measures is in place to encourage the development of renewable

electricity supply sources. These measures include the use of tax breaks, public-private contracts, and the application of technological tools to support market efficiency. The intended outcome of these initiatives is to increase the development of small-scale renewable energy projects.

Recently the province established a new net metering program to allow those who generate their own electricity from renewable sources, to send any excess electricity produced back to the grid for credit on their electricity bill.

Smart Meters are a different program to that of the Net Metering program above. Smart Meters are a technology that is to be implemented to encourage demand-side management conservation. Once installed the Smart Meter will help consumers manage their energy consumption patterns, save energy, and save money. The meter will enable consumers to see consumption patterns, in relation to time of use rates and critical peak price. The incentive for consumers to use this technology is to be able to control energy costs by lowering consumption, particularly avoiding the use of electricity during high cost peak times.<sup>7</sup> The Energy Conservation Leadership Act puts in place the tools to implement smart metering in Ontario. Ontario's Local Distribution Companies will play a critical partnership role in the installation and management of the smart meters (OMOE, 2006).

Complementary to this program the government has established a standard offer contract system that subsidizes qualifying renewable energy projects for a certain amount of time; with the intent of closing the price gap between conventional energy sources, to those which are more environmentally benign (OPA, 2006).

The government has also established several tax incentive programs to encourage the development of new renewable generating capacity. These mechanisms are intended to reduce the capital costs associated with the construction of a new facility. For example, there are capital tax exemptions; retail tax rebates for construction materials; and residential tax incentives to encourage the residential application of solar and wind technologies (OMEO 2006).

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<sup>7</sup> It remains unclear how the incentive for consumers will be created under the province's regulated price plan. A consumer using a smart meter should be subject to higher price volatility.

***Goal: Security (Affordability) of Supply - End-Use Price Stability with Sustainability Incentives***

***Instrument: Legislation- with Price Hedging***

The prices for electricity in Ontario are set in two ways: part of the supply price is regulated by the OEB, through the regulated price plan (RPP), based on legislation. The other part of the price is determined in part by a “competitive” spot-market price.

Under the regulated price plan there is an established threshold for residential consumers, to reflect changing consumption patterns throughout the year (IESO, 2006).

Residential users:

- 5.8 ¢/kWh for the first 600 kWh in a month.
- 6.7 ¢/kWh for each additional kWh

For non-residential consumers such as businesses and industry that are classified as low-volume business users, the year-round price thresholds are set at 750 kWh per month. Industry or business consumers consuming more than 250 000 kWh of electricity a year are subject to hourly price fluctuations.

There is an option to contract with an electricity retailer. The price that the consumer pays is typically guaranteed, by contract, for a number of years (OEB, 2006). However, since the government has legislated specific price plans for consumers the feasibility (and likely the popularity) of using an electricity retailer seems impractical.

***Goal: Market Efficiency***

***Instrument: (Limited) Competitive Spot-Market Prices***

Only a limited number of consumers who have a special (interval) meter, are able to take part in the competitive spot-market price system. Under this system, supply produced by OPG nuclear and base load hydroelectric assets receive regulated prices, initially established by the government, but subject to annual review and approval by the OEB. These generation facilities operate most efficiently when they run continuously, and they would continue to do so and receive regulated prices. These regulated prices would be passed through to consumers. The costs for existing and new contracts for generation would also be passed through to consumers. The price for other electricity generated in the province would be set by a competitive market, as currently through the Independent Electricity System Operator (IESO), (OEB 2006).

***Goal: Sustainability and Security of Supply***

*Instrument: Education and Moral Suasion; complemented with regulatory measures*

A central policy initiative of the current government is to encourage the development of a culture of conservation. Although in its earlier stages of development, to date the government has implemented various education and advertisement campaigns to encourage consumers to “reduce the juice”. Further to this, the government has committed to installing at total of 800 000 Smart Meters by 2007 (OMOE 2006).

The Energy Conservation Leadership Act of 2005 (enacted March 28, 2006) has formalized and initiated this program. Smart meters allow consumers to determine the amount of electricity they consume, and to monitor the price of fluctuations throughout the day, thus provide incentive to manage consumption- for example, avoiding consumption during peaking periods of the day (OMOE).

*This review of governance instruments underscores previous evidence for the increased differentiation of the governance system: the closed public dyad Ontario Hydro-Government has made way to a more fragmented interplay of different public agencies with more specific regulatory mandates, and has opened the system to private, market actors who play an increasing role in the generation realm (although the publicly owned OPG remains the main market player.) The key links between public and private (as well as between some public) actors are contractual arrangements, including tendering for generation capacity or memoranda of understanding. This new landscape is adequately captured by the institutional economics model.*

*The opportunities, presented by the break-up of the old system, for a more collaborative or relational approach to social learning, designed to facilitate participation and deliberation among stakeholders, have so far not been exploited. The reasons for this will be examined in the next section.*

## **8. Reform Politics: Limits to Stakeholder Participation and Collective Learning**

To gain a better understanding of how and why the post-reform Ontario system puts limits on stakeholder participation and collective learning processes, we need to take a closer look at both formal and informal dimensions of decision-making in the electricity sector, and how they have changed – or not – in the context and aftermath of the break-up of the vertically-integrated utility model.

The new, more decentralized governance landscape post-reform potentially increases transparency and allows for more open points of access by various interests. The (reformed) Ontario Energy Board, for example, is not only responsible for consumer protection and offers assistance if consumers have concerns or complaints about their electricity providers that need to comply with a code-of-conduct. As an adjudicative tribunal it carries out its regulatory functions through public hearings. OEB notes: “These provide a forum for individuals, or groups of individuals who may be affected by the Board's ruling, to express their comments and opinions to the Board and to participate meaningfully in the Board's decision making process. The public's participation helps ensure that the Board makes an informed decision”.<sup>8</sup> Beyond the legal requirement of holding hearings, the OEB seeks to consult broadly with stakeholders, through working groups, consultatives, and research initiatives. The Board has also made funding available to facilitate the participation of consumer groups and other stakeholders. Stakeholder satisfaction with OEB performance is surveyed, resulting in a “Stakeholder Perception Index”.

The newly established Ontario Power Authority launched an extensive consultation process on its 2005 Supply Mix Report, in preparation of its first “Integrated Power System Plan” (IPSP), that sets out the target supply mix for the next 20 years (with, as mentioned, a prominent role foreseen for nuclear power). In the process, submissions from a great variety of stakeholder groups were canvassed, ranging from First Nations to industry and consumer representatives. OPA received 161 written submissions and claims to have heard the views of over 2,200 Ontarians. In August 2007, the Plan was filed with OEB that will now review the Plan's adherence to government policy direction and its economic prudence (a public interest test rather narrowly circumscribed by government legislation) (<http://www.powerauthority.on.ca/ipsp/>)

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<sup>8</sup> <http://www.oeb.gov.on.ca/html/en/abouttheoeb/index.htm>

However, the question is how meaningful (and consequential) stakeholder participation actually is. To begin with, it is important to note that Ontario follows the UK tradition of parliamentary governance, with, as the REFGOV UK Energy Team (Adlard and Prosser 2007: 3) notes, “the role of the minister and Parliamentary scrutiny being seen as the major means of participation and accountability”. In this tradition, “collaborative or participatory arrangements have traditionally been weak”. To be sure, and not unlike in the British system of utility regulation, the newly created or reformed public agencies (OEB and OPA) have been active to encourage consultation. Yet, this has not resulted in deliberative processes *between* different stakeholder groups. Rather, the agencies have acted “as the passive recipient of information from other actors in the process” (Adlard and Prosser 2007: 3), and it is far from clear how they assess and prioritize this input.

Actually, if the policy outcomes that can be observed so far are taken as indicator, it is striking that with regard, for example, to the key issue of reinvesting in nuclear energy, there is a clear alignment between the government’s policy directions, OPG’s priorities for investment, and OPA’s Supply Mix Advice and IPSP (the OEB public interest assessment lies still ahead), while critical voices from environmental groups in particular were registered but are not reflected in the IPSP. The argument is not that the nuclear choice (or the coal phase-out plus some moderate investment in gas-fired plants, renewables and some conservation efforts, as foreseen in the IPSP) are necessarily bad policy. However, the concern is that the choices are not the results of reasoned deliberation but may reflect the resilience of the old Hydro connection. Also, the question arises in how far government has truly delegated decision-making powers to purportedly independent agencies or if maintains traditional, “hierarchical” steering ambitions – even if it may in fact rather be captured by industry interests, as under the old system.

As previously noted, under the Hydro model electricity governance had in fact been dominated by the Crown Corporation Ontario Hydro. Although the government set the overall policy agenda(s) for the sector via legislation on policy priorities and the financing of infrastructure development, it was Ontario Hydro, driven by professional and industry logics of expansion that evidently controlled the directions which Ontario’s power system would take. As noted by Freeman (1996), “...the minister was given the power to request that Hydro submit plans for scrutiny; to issue policy statements to which Hydro was required to



report on implementation; and to appoint inquires under the Public Inquires Act, (170). However, Hydro's mandate to ensure reliable, and "affordable" electricity to Ontario consumers, inherently put Hydro's internal management at the top of the hierarchy in directing the sector. For instance, the internal interests of the former crown corporation explain much of the province's development of nuclear technology throughout the 1970s and 1980s. This often conflicted with the formal attempts of government to improve energy efficiency via conservation measures (Freeman 1996). With respect to new supply or reduced demand, Ontario Hydro had been the driving force and the principal controller of directing initiatives within the system. Yet, Hydro neither directly paid to develop new supply nor provided incentives to customers to reduce demand- this came from the public purse and with little oversight from government. As former Premier Bob Rae (1996) recalls in his biography, *From Protest to Power*, many senior people at Ontario Hydro had too often regarded the government as an inconvenience to how executives wished to run the operations of Ontario Hydro.

The formal powers of government to set policy priorities in the sector were arguably not fully exercised until 1995 when the Progressive-Conservative Harris government took power, with a quite radical neo-liberal agenda to overhaul the type of public service delivery that had been built up in welfarist fashion from the 1960s on. With its policy to liberalize the sector, power system issues and prospects for its management became ever more politicized, as it challenged the traditional hierarchical form of electricity governance. Greenberg (2005) illustrates this point by noting the large increase of media coverage in newspapers pertaining to the issue of electricity restructuring. Some commentaries have suggested that the liberalization of the market was rooted in political motivations associated with "opening Ontario for business" and putting the interests of corporate profit before the public interest (see for example Skene 1996, Urquhart, 1998, and Hampton 2003). Government policy was accused of reducing public interest protection to consumer protection, as evidenced in the mandates given to OEB and IMO.

In the process of dismantling Ontario Hydro the electricity policy community expanded in a manner that allowed for a greater number of agencies to participate in the unbundled industry, with clearer corporate separations between generation, transmission and distribution, in contrast to the deeply rooted vertical integration of the former Ontario Hydro.

Although this process was an attempt to “depoliticize” the operations and governance of the sector, thus giving more room to efficient contractual arrangements between public and private actors, evidence would suggest otherwise. Many of the former employees of Ontario Hydro remained politically influential as they dispersed throughout the offspring companies. To this day, some of the “ghosts” of Ontario Hydro remain important players in the direction of the province’s electricity system.

Initially outlined in the Ontario White Paper (1996), there was an attempt made to reduce the role of the state in guiding the planning processes of the power system; which in turn would be guided by the market, with IMO and OEB in charge to ensure system reliability and operation. The new approach actually combined more regulation with less central planning. Further, the intention was to depoliticize these agencies, which were to act independently from government and its priorities. Doern and Gattinger (2003) note this was not the case as many former employees of Ontario Hydro were employed under the hat of OPG, Hydro One, the OEB, and other agencies. They retain political clout within the Ontario power industry, as they have been able to secure executive level positions within these new entities that are involved in long-term planning (Wells 2003). Conversely, other stakeholders that do not belong to the Hydro core of electricity governance remain excluded from effective decision-making processes, notwithstanding their access to formal stakeholder consultations.

Ontario’s short experience with market liberalization has been anything but depoliticized: the attempt to introduce a pro-market system failed as end use prices became extremely volatile leading to a massive outcry from the public and large energy consumers. This ultimately led to the instatement of legislated price caps and rebates, and the closing of the open (retail) market system; opposition members of Provincial Parliament suggested that the rebates to be provided were simply a pre-election (2003) buy-off to harness votes towards the direction of the government (Findlay 2003).

Furthermore, post-reform sector management is characterized by quite heavy government involvement reminiscent of the “hierarchical model”, involvement that is based on limited and skewed consultation of relevant interests.

By effectively closing the market system in 2002, the Ontario Government and its Ministry of Energy took on a greater decision-making role with regard to the planning of Ontario

power system. The OEB was not intended to be a central planning institution, and OPG was not investing into new capacity- as they were under memorandum to reduce their market share; hence, long-term system planning became a rarity within Ontario. As such, the IMO (2003) initiated concern over the future reliability as the demand and supply gap was continually increasing- especially during peak hours, and warnings of rolling brownouts and blackouts frequented new headlines (2003).

This supply crunch was exacerbated when the incoming Liberal Government, elected in October 2003 on a platform that included a promise not to reopen retail market competition, pledged to take coal-fired power generating plants offline. The government commissioned the *Electricity Conservation and Supply Task Force Report* (2004) that was to guide public policy with regard to long term planning and investment decisions in particular. The most important outcome of the report was the creation of a new permanent central planning agency, the Ontario Power Authority (OPA). A key OPA report entitled *Supply Mix Report* (2005) suggested that the province should once again pursue the development nuclear power facilities. It is somewhat difficult to understand this policy position unless the following is considered:

- The Liberals came into power with a mandate to take 100% of the province's coal power offline by 2009 (later pushed back to 2014), based on environmental and health reasons. This is almost one third of the existing total generation capacity- with no clear plan on how this capacity was to be replaced.
- A year later, the Liberal government created OPA and staffed it with a number of former Ontario Hydro employees; nuclear advocates are also strongly represented in the agency (Piatkowski 2005).
- In the OPA's first major report the agency recommended the development/re-development of the nuclear industry. Yet, at the same time the OPA is responsible to contract with investors to build new generators in accordance with a government-dictated power mix.
- Specifically the power authority's report calls for a dozen or more nuclear reactors that would replace or refurbish reactors at a cost of \$30 billion to \$40 billion.
- OPG has been given the go ahead via a government-OPG Memorandum of Agreement signed in 2005- with respect to investment in generation - to improve

operation by refurbishing the mothballed nuclear plants in Pickering and Darlington.

The OPA's *Supply Mix Advice Report* and the pursuit of restoring the province's nuclear industry raises important institutional questions: Is OPA simply following government directions, which would lead to question its independence. As a matter of fact, OPA is in an awkward position vis-a vis the government, as its twenty-year investment plan (IPSP) has to respond to quite specific Government directives on supply mix targets, so that its ability to offer independent advice is substantively limited.

Or does the fact the OPA's report dovetails both with the government position as well as with OPG's investment priorities rather demonstrate the vitality of old Hydro connections across the new fragmented institutional landscape? To speak of continued regulatory capture by the industry might be an extreme conclusion. However, at the very least, OPG's market dominance, political clout at Queens Park and its enthusiastic response to the OPA's 2005 supply mix advice report invite a reading that would see OPA and the government responding to Hydro-style leadership by OPG (Erwin, 2005).

Prominent industry commentaries, such as Tom Adams (2006), warn that OPA is running the risk of recreating Ontario Hydro, while forgetting why Ontario rid of the old one. *In essence the governance of the current system is one that looks all too familiar to the traditional vertically-integrated traditional Ontario Hydro, but now functioning within a more horizontally dispersed institutional framework.*

*In sum, government policy thus oscillated between addressing the public (interest) as consumers of electricity, re-framed as commodity, and addressing the public (interest) as voters in the electoral competition. The strong sense of entitlement to cheap electricity as a public service, a legacy effect of decades of Hydro model experience, fundamentally undermined the introduction of market mechanisms. However, government policy failed to create new platforms or procedures for meaningful stakeholder participation and deliberation that could help define the "public interest" in a post-Hydro age, beyond consumer or voter preferences on the price of electricity.*

## **C. QUEBEC**

### **1. Provincial Profile**

Quebec is the largest Canadian province, almost three times the size of France. It is located in the centre-northeast of the country. The large majority of its 7.7 million inhabitants live in the St. Lawrence River valley (3.6 million live in Greater Montreal alone). The vast centre and north of the province is very sparsely populated; it is home to the aboriginal peoples of Canada and boasts rich natural resources: the pulp and paper and lumber industry as well as hydroelectricity continue to feature prominently in the Quebec economy.

Quebec has a special status within the Canadian federation, as a distinct society or nation of French Canadians. This has impacted Quebec politics and governance in many ways. For example, Quebec operates under a civil law system, in contrast to the common law effective in all other provinces. There is also a tradition of stronger government intervention in the economy and a more developed welfare state.

Since the 1950s, Quebec politics has been shaped by strong nationalist movements. Two referenda on sovereignty (1980 and 1995) brought Quebec to the brink of secession from Canada, but they narrowly failed to win a majority. As we will see below, energy governance in Quebec is deeply embedded in the pursuit of Quebec as a sovereign nation in North America.

### **2. Energy Profile of Quebec and Overview: A Hydro Province**

Quebec's importance as a case study of public service or the service of general interest lies in its adherence to a dirigiste approach by the state while adjusting its electricity policy to adapt to a new North American integrative drive under a neo-liberal rubric. The regulatory changes that have occurred in an effort to streamline the formerly top-down public service delivery arrangement have been applied to Quebec, however rather than introducing a true market model to the electricity market it has transformed the Quebec electricity sector into a quasi-monopoly with a competitive fringe (Clark and Leach 2005: 31). The drive towards privatization of social services and infrastructure industries, like the electricity sector, has been taken up by the Quebec government, but turned into a commitment to the communitarization (White 1997: 39) of services in the general interest. While the restructuring of the electricity sector has occurred in Quebec it can be described as an adaptation to a new continental environment rather than a true reform. Moreover, the new

institutional mechanism that outwardly seeks to introduce market signals should be considered window dressing for a regulatory governance process that continues to function under a quasi command-and-control regulation. Several factors play a role in this development, most importantly Quebec's rich resource endowment in hydropower and its history and development as a distinct society.

### **3. Electricity Governance in Quebec: Reforming the System**

#### a. History: The pre-reform structure

Quebec has undergone two phases of nationalization in its electricity sector. Up until the 1940s electricity was provided by a number of privately owned companies. Due to concerns over rising prices, the Quebec government "expropriated ownership of the monopoly provider in Montreal and formed a provincial crown corporation – Hydro Québec" (Clark and Leach 2005: 23) in 1944. However, the rural areas were still serviced by the Rural Electrification Agency. The second phase of nationalization concurred with the Quiet Revolution and the rise of the nation-state along welfare state lines. In 1963 Hydro-Quebec acquired forty-five of the forty-six electricity cooperatives and remaining municipal distribution systems through takeover bids. Now free to follow the mandate given to the vertically integrated utility, Hydro-Quebec went ahead to develop the province's substantial natural resource endowment of hydropower. Furthermore, as these natural resources were to benefit all residents of Quebec equally, uniform rates were implemented at a cost-of-service price.

Hydro Québec (HQ) as a vertically integrated utility served as a national symbol for Quebec concurrent with its function as wealth creator. In order to understand this phenomenon one has to look at the rise and importance of nationalism and its relationship to the public sphere. As Deena White states, "to empower the state is to empower [Quebec] society as a whole" (White 1997: 23). With HQ as a major national symbol, the functional unbundling that took place in 2000 with the adoption of Bill 116, was the result of massive public consultation process. HQ was a crown corporation that functioned as a monopoly up until this point. In the 1996 energy policy statement the government described Hydro-Quebec's mission as a public utility "to supply power and pursue endeavours in energy-related research and promotion, energy conversion and conservation, and any field connected with or related to power or energy; the act thus defines Hydro-Quebec's mission

in a broad manner, providing the public utility with all the latitude needed to perform its operation” (Quebec 1996: 68).

Until restructuring Hydro Québec operated under the “obligation to serve”, this followed from the Hydro-Quebec Act and was adopted by the new legislation. This specifically meant that Hydro Québec must ensure a connection and service to any person within its territory of exclusive distribution right. This “obligation to serve” stems from electricity’s role as essential service. In the new energy policy this obligation was to be given a new framework in which some market principles could be applied. Hydro-Quebec in its function as a national symbol was given a dual role. Hydro-Quebec was to continue its traditional role of providing an essential service and developing Quebec’s hydro wealth, the company was also given the responsibility of redeploying and strengthening the energy industry overall and providing the mainstay of Quebec’s industrial strategy domestically and internationally. The close interaction and interconnection between state and industry was reconfirmed in the 1996 policy paper “Energy at the Service of Quebec: a Sustainable Development Perspective”. Privatization of the state-owned company was never on the agenda.

In Quebec the notion of a public service or the service of the general interest continues from a dirigiste approach. However, this does not mean that Quebec reforms are handled unilaterally from the top down or in an autocratic manner, but rather that reforms that have been implemented are handled in a “more reflexive style [meaning] that policies tend to require meticulous justification in terms of their long-term impact on different social groups, in addition to consultation with the full range of other [interest groups]” (White 1997: 26). The regulatory challenges that have arisen out of the global movement towards deregulation have been answered with a statist approach.

The neo-liberal economic theories that were developed in the 1980s initiated a process of liberalization that caused reinterpretation of public services. While a pro-competition trend has moved infrastructure industries like electricity towards market models, the question of electricity as an ‘essential service’ and the consumers-citizens dynamic have created systems in where we find varying degrees of “managed competition” (Doern and Gattinger 2003: 5) rather than truly open markets. Different provinces have positioned themselves on this scale of market reform, with Quebec in a quasi-monopoly position on one end and Alberta with the most pro-market system on the other. In Quebec, a reform of the regulatory framework



followed in order to allow for an adaptation to the new continental as well as global approach toward electricity in its role as a public service, without giving up the continuing statist attitude toward this essential service. As Quebec dissolved its vertically integrated crown corporation into six independent companies with the state as sole shareholder and an energy board as an independent regulatory body, it has implemented neo-liberal reforms while retaining its character as a *dirigiste state*.

#### b. Drivers of Reform

“US imperialism is an easily recognized fact in the oil and gas sectors” (Cohen 2005:2), however the impact that same imperial drive for dominance over electricity production has been less obvious. While Marjorie Griffin Cohen makes a strong argument for US imperialism, the Quebec case actually shows a province that has used the forces of this phenomenon to its advantage. When analysing the Canadian electricity governance reform it is undeniable that the regulatory changes in the US have forced Quebec to adapt individual provincial regulatory design to fit the new ‘continental’ or integrative drives towards a North American electricity markets. Prior to George Bush’s vision of a seamless continental energy market, the US Federal Energy Regulatory Commission (FERC) issued Order No. 888 in 1996 that required market participants to open up of transmission grid through open access transmission tariffs. For the analysis of the restructuring of the Quebec governance regime Order No. 888 has the most significance, since it had a reciprocity requirement attached to it. In Quebec’s case the provincial government had to separate its transmission division from Hydro Québec in order to ensure power marketer status in the US, creating Hydro-Quebec TransEnergie. Under a neo-liberal pro-market rubric the crown corporation stated that “Hydro Québec had to offer credible, reliable and reciprocal conditions to other producers and marketers...the utility cannot allow itself to derive any unfair commercial benefit from its integrated structure at the expense of other market players. If it did, it would put itself in a conflict of interest situation and would not be able to benefit from reciprocal advantages” (Cohen 2005: 6). Since electricity has always been a major export commodity in Quebec the reciprocity agreement has served Quebec well. Sales outside Quebec, mainly into the US Northeast have risen from \$1,084 million for 14,4 TWh in 2004 to \$1,464 for 15.3 TWh in 2005 (Hydro-Quebec, Financial Profile 2005-2006:3). The restructuring of the crown corporation that followed resulted in keeping the company state owned, but functionally unbundled. Thus the domestic reform process stayed on a course close to the welfare state



principles of the vertically integrated utility while taking advantage of new international opportunities.

*c. Main features of reform*  
*Market design*

The *Act respecting the Regie de l'énergie* in June of 1997 legislated for the formal separation of HQTransEnergy from Hydro Québec. This separation was necessary for continued competition in the US market. As a result, Hydro Québec has a power license to compete on the US market through its subsidiary HQ Energy Services (US) (Cohen 2002: 33). This was the first step in the opening of the energy market in Quebec, although this market liberalization only pertains to the wholesale market and is spoken of in terms of adaptation rather than opportunity. In 2000 an energy-trading floor was set up by Hydro Québec in Montreal. The result was a greatly increased volume of energy trade on all markets outside Quebec (ibid). Beyond the US, HQ Technologie et développement industriel is actively involved in the development of power generation all over the world, especially in China and Central America.<sup>9</sup>

Inside Quebec market opening meant only competition on the generation side of the supply chain. Clark and Leach content that the Quebec electricity market is evolving towards a “monopoly market with a competitive fringe” (Leach and Clark 2005: 31). Since Hydro Québec Production is required to supply Hydro Québec Distribution with 165 TWh of electricity a year at a fixed price into the Heritage Pool, only additional load is subject to a tender solicitation process. Clark and Leach further argue that these tenders are not necessarily open as they are constrained to a “particular type of generation or to a particular location” (Clark and Leach 2005: 31). Although the Quebec government has allowed the private sector into the wholesale market through access to hydraulic resources, these sites are restricted to a capacity below 50 MW. Since Quebec’s energy supply comes mainly from large-scale hydro projects, competition is curtailed that way. Hydro Québec Production still owns most of energy capacity (77%), while 10.3% is privately owned; municipalities own 0.1% and 12.4% is contracted capacity from the Churchill Falls (Labrador) Corporation. This capacity is treated as domestic capacity (MRNF 2003). Quebec’s aggressive move towards wind energy however, might open a window of opportunity in terms of competition. In fact

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<sup>9</sup> See Griffin Cohen (2002) “From Public Good to Private Exploitation: Electricity deregulation, privatization and continental integration” for more detail.

the most recent calls for tender were to increased capacity through wind energy (Clark and Leach 2005: 31). The consideration over supply security has led Quebec to make an historic agreement with its First Nations people in order to ensure access to further development (further below).

### *Regulatory design*

With the *Act respecting the Régie de l'énergie* an Energy Board was established on June 2, 1997. The Régie de l'énergie replaced the Régie du gaz naturel as the agency responsible for regulating the energy markets in Quebec. Its mission is to reconcile “the public interest, consumer protection, and the fair treatment of Quebec’s electricity carrier and energy distributors” (Quebec 2004: 30). Complete functional unbundling of the vertically integrated Hydro Québec into six agencies was achieved in 2000 when Bill 116 (later the *Act to amend the Act respecting the Régie de l'énergie*) created the regulatory structure under which Quebec currently operates.

Hydro Québec now operates through six unbundled divisions of which generation, transmission and distribution are of the most interest. As stated in its annual report of 2004 the company now competes “freely with other power producers, while its transmission and distribution activities remain regulated” (Hydro Québec 2004:1). Hydro Québec has thus evolved from a vertically integrated utility to a functionally unbundled entity (NEB 2005: 53). Hydro Québec is governed by a board of directors and despite being a crown corporation abides by the corporate governance guidelines established by the Canadian stock exchange. Furthermore, the *Hydro-Quebec Act*, the *Companies Act* and the energy policies of the Quebec government mandate HQ to supply power and to pursue endeavours in energy-related research and promotion and energy conservation (NEB 2005: 53; Hydro-Quebec 2004: 114). The three main divisions are Hydro Québec Production, Hydro Québec TransÉnergie and Hydro Québec Distribution, three other divisions deal with technological innovation, project construction and gas exploration. Hydro Québec Production generates electricity, sells it on wholesale markets after it supplies Hydro Québec Distribution with a heritage pool of electricity for the Quebec market up to 165 TWh per year at a fixed price of 2.79 cents per KWh. Distribution has the exclusive obligation to provide electricity to Quebec customers with the exception of one cooperative and nine municipal networks that together serve about four percent of the market. Hydro Québec Distribution’s operations and those of Hydro Québec TransÉnergie are regulated by the Régie de l'énergie on a cost-of-service basis (NEB

2005: 53). The governance of electricity supply is subject to the *Code of Ethics on Conducting Calls for Tenders*, which Hydro Québec Distributions functions under, and is meant to ensure that calls for tender that met needs beyond the Heritage pool are fair to all electricity suppliers (Hydro-Quebec 2004:114). Hydro Québec TransÉnergie operates and administers Hydro Québec's extensive transmission grid.

#### **4. Quebec's Electricity Governance in the Post-Reform Era**

Quebec's statist approach directed regulatory reforms in a way that allowed for considerable more state intervention post-reform than other reformed provinces<sup>10</sup>. The fact that Quebec is the only Hydro province in this study should be kept in mind. Thus post-reform regulatory governance of the electricity sector was structured in a way that retained the state as the sole shareholder of the unbundled version of Hydro Québec.

The government of Quebec has approached the drive towards restructuring as an adaptation to the global and continental context. Thus the state sought to regulate the electricity sector in a way to allow for some market signals in the wholesale market without giving up state control. Hydro Québec continues in its function as economic leverage for the province as both a job and wealth creator and thus receives special consideration and protection from the state.

By far the most important change to Quebec's regulatory structure in 1996 was the establishment of an Energy Board, the *Régie de l'énergie*, which was passed into law on December 23, 1996 through the *Act respecting the Régie de l'énergie*. It allowed the state to add a degree of separation between itself and the restructured crown corporation Hydro Québec. Another important development in the 1997 reform was the separation of the transmission division from Hydro Québec by forming an independent company, Hydro Québec TransÉnergie. This separation was a direct result of the reciprocity requirement of US wholesale market regulation. Regulatory reforms were continued in 2000 with the *Act to amend the Act respecting the Régie de l'énergie* and an amendment to the *Hydro-Quebec Act*, which created the current regulatory design as discussed earlier.

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<sup>10</sup> For more details on this classification of Canadian provinces see Pineau 2005 "An Integrated Canadian Electricity Market: The Institutional Bargaining Game to Play" as part of the CCGES Transatlantic Energy Conference, September 2005, York University, Toronto

## **5. Formal Institutions and Actors**

### *Régie de l'énergie*

The Régie de l'énergie mission is to reconcile the public interest, consumer protection, and fair treatment of Quebec's electricity carrier and energy distributors. In its Annual Report 2002-2003 it describes itself as a "multi-functional economic regulation agency with administrative and quasi-judicial functions" (Régie de l'énergie 2003:12). It aims to ensure that energy needs are met in a way that is consistent with sustainable development and equity for individuals and groups. To achieve its objectives, the Régie sets or modifies the conditions and rates governing electricity transmission and distribution, and those governing the supply, transportations, delivery and storage of natural gas by distributors (Quebec 2004: 30) after holding public hearings. It ensures that consumers are adequately supplied with electricity and natural gas. The Régie "favours the use of incentive to improve the performance of the electricity carrier [and] the electricity distributor ...to promote the satisfaction of consumer needs" ([www.regie-energie.qc.ca](http://www.regie-energie.qc.ca)). Furthermore, the Régie approves supply plans and commercial programs set by electricity distributors. It approves investment projects, the construction of immovable or the acquisition of assets intended for the transmission or distribution of electric power (Régie de l'énergie 2001:4). The Régie has sole authority over examining consumer complaints and requiring carriers and distributors to apply to an internal complaint examination procedure.

The Régie de l'énergie was created to align Quebec with other provinces and the US whose regulatory approach has been through the use regulatory boards. These boards are quasi-judicial institutions whose *raison d'être* is to ensure arbitration between consumers, producers, electricity carriers and distribution companies. The independence of these boards allows for credibility for all stakeholders. The use of public hearing enables public participation and the involvement of all interested parties.

The Régie de l'énergie is an independent agency funded by duties and fees paid on a user-pay basis by the regulated distributors (Régie de l'énergie 2006:1). A Chairman who also acts as a commissioner along with six other commissioners and three supernumerary commissioners heads it. Ultimately the chairman reports to the Minister of Resources, Wildlife and Parks. Besides the regulation of the electricity and the natural gas sector, the Régie also monitors the prices of petroleum products and steam. The regulatory reforms following the 1996 new energy policy produced another agency concerned with energy

efficiency and demand side management, the Agence de l'efficacité énergétique. This agency's role in working towards a sustainable future for Quebec will be discussed later on.

The primary role within the institutional setting of Quebec electricity governance belongs to the crown corporation Hydro Québec. As stated in the 1996 energy policy "Hydro Québec must also exercise another more general responsibility, resulting directly from the power it has acquired. Given its size, the economic and financial clout it has amassed and the initiatives available both inside and outside of Quebec, Hydro Québec is called upon to play a fundamental role in redeploying and strengthening the Quebec energy industry...Hydro Québec now represents the mainstay of the government's industrial strategy as defined in the new energy policy" (Quebec 1996: 69).

### *Hydro Québec*

A board leads the company according to the *Hydro-Quebec Act*, the *Companies Act* and the energy policies of the Quebec government. The most important of these policies is the 1996 energy policy "Energy at the Service of Quebec: a Sustainable development perspective". The board functions include the analysis and adoption of the Strategic Plan, which outlines the company's main objectives, and the annual Business Plan, which list the company's annual performance. The board operates through 11 committees. The de-integration of Hydro Québec's organizational structure in 1997 allowed for the individual divisions to work independently from each other while remaining part of the same company, through the process of unbundling. The operations of these units are subject to set rules of ethics. The electricity supply process is governed by the *Code of Ethics on conducting Calls for Tenders* with the main purpose of ensuring that call for tenders are conducted fairly. However, as mentioned earlier, the restrictions placed on place and type of generation effectively restricts the level of competition.

In autumn 2004 Hydro-Quebec amended the *Standards of Conduct* describing the unbundling of Hydro-Quebec's transmission from the merchant function to reflect the changes in the Federal Energy Regulatory Commission's rules. These standards are now known as the *Transmission Provider Standards of Conduct*. In June 2004, the Régie de l'énergie approved the Transmission Provider Code of Conduct issued by HQ TransÉnergie at the Régie request. This code governs the relations between the Transmission Provider and Hydro Québec affiliates.

Following the changes made in recent years, Hydro-Quebec has adapted well to the new, deregulated continental energy industry. According to the 2004 annual report

profitability has grown and Hydro-Quebec remains the strongest wealth provider for the province, which still upholds a social contract with its citizens. Thus, while the rules governing the electricity sector in Quebec are market based on the generation end, although only to a certain degree, they remain set in a regulatory framework that does not differ from the pre-reform framework in substance. Therefore, the natural monopolies in transmission and distribution, which are governed by HQ TransÉnergie and HQ Distribution, are subject to scrutiny by the Régie de l'énergie. While HQ Production operates in a competitive market place and is not under the jurisdiction of the Régie (Quebec 2004:31) the establishment of a reserved, legislated supply at fixed prices (heritage pool) ensures adherence to statist principles. The functions of the different division of Hydro-Quebec are as follows<sup>11</sup>:

#### *HQ Production*

This unit is on the generation side of the electricity supply chain. It generates power and supplies HQ Distribution with a heritage pool of electricity for the Quebec market. It is also active on markets inside and outside Quebec and carries out arbitrage and purchase/resale transaction (Hydro Québec 2004, Annual Report).

#### *HQ TransÉnergie*

This division operates the most extensive transmission system in North America and makes it available to customers inside and outside Quebec. It is active abroad, especially in South America where it operates transmission systems, markets its system management products and develops construction projects (ibid).

#### *HQ Distribution*

The unit is responsible for supplying Quebecois with electricity and a range of high-quality products and services. The division has access to annual heritage pool that was established following Bill 116. This pool functions like a price cap, to ensure Quebecois the access to cheap electricity at a fixed price. To meet needs beyond this pool, HQ Distribution issues calls for tenders from power produces, predominantly HQ Production (ibid).

#### *HQ Équipement and Société d'énergie de la Baie James*

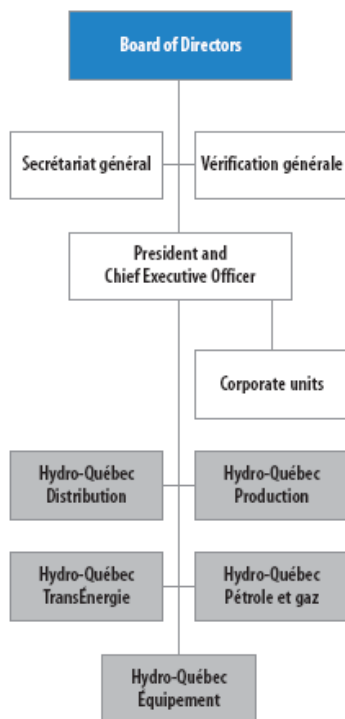
This division as a subsidiary of Hydro-Quebec are the prime contractors of construction project for HQ Production and HQ TransÉnergie. They are known worldwide for their expertise, particularly in the areas of hydroelectric power generation and high-voltage transmission (ibid).

#### *HQ Technologie et développement industriel*

They are in charge of technological innovation, including research and technical support, industrial development of HQ technologies and capital venturing (ibid).

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<sup>11</sup> Taken from the 2004 annual report of Hydro Quebec



## **6. Political Dynamics, Participation and Collective Learning**

The nationalization of Hydro Québec was closely linked to Quebec’s Quiet Revolution and strive for a national identity. As Deena White argues, the state is thought of differently in Quebec compared to Anglo-Saxon societies. She points towards the mutual embeddedness of the state in society but also society in the state, thus we see closer interaction between the state and civil society and a generally higher level of (at least formal) public participation. Quebec’s welfare reforms have been conducted following the concept of a “social economy” (White 1997: 39) which has created a different energy policy from other Canadian provinces. The Quebec government has always placed great value in the public consultation process. The word equity and transparency are frequently used in the 1996 energy policy paper. Quebec’s recent energy strategy has been based on large public consultation that was made user-friendly to citizens and civil society groups through extensive information (see information documents like “*The Energy Sector in Quebec – Context, Issues and Questions*”) and the internet. The stages and direction of Quebec’s energy policy is structured in a way that allows for “citizens, businesses and local communities as well as civil society groups like native communities to be informed and have their concerns taken into



account” (Quebec 2005:5). We will probe later in how far these corporatist patters of public participation can be said to facilitate deliberation and collective learning processes.

Although Quebec’s electricity sector reforms have taken on a more pro-market approach, they are thought of as adaptations to the new North American context in which Quebec has to function. Furthermore, the term pro-market is applied differently in Quebec as it refers not necessarily to opening the electricity market to higher levels of competition, but rather sees Hydro Québec, which is still a crown corporation, as a market participant outside of Quebec. On the provincial level competition is controlled through the means of regulating the location and size of market participants in hydro production. Since 96% of capacity is hydroelectric this means managed competition at best. Chaton and Doucet actually argue that Quebec “plans to retain a monopoly over its production resources” (Chaton and Doucet 2003: 60). The production of alternative energy, especially wind energy is opened to a larger degree. When analysing the political processes of electricity policy the actors to consider are the state and its relationship to Hydro Québec. Hydro Québec as a crown corporation needs to be examined. Furthermore civil society as represented by the First Nations plays a significant role. Other market participants like private electricity producers play a relatively small role.

### *State, Parties and Electricity Pricing*

In 1997 a study on the role of electricity prices in provincial elections by Jean-Thomas Bernard, Stephen Gordon and Josee Tremblay resulted in the conclusion that governments manipulate Hydro-Quebec’s pricing policies for electoral gains (Bernard, Gordon, Tremblay 1997: 524) although the statistical evidence was fairly weak. Since then institutional reforms have added a degree of separation between the state and Hydro-Quebec in form of the Régie de l’énergie. Prior to the institutional reforms electricity prices schedules were proposed by Hydro Québec and approved by the government after public hearings held by a commission of the National Assembly on a yearly basis (Bernard, Gordon, Tremblay 1997: 506). The venue of electricity pricing has been changed, now the Régie de l’énergie approves rates and conditions although prices are still set by Hydro Québec. Public perception however continues to connect political parties with electricity pricing as pointed out by George Springate in his column in “The Chronical” on March 14, 2006. In commenting on the price hikes of April 1<sup>st</sup>, 2006 he writes:



The “province’s monopoly has already announced it will be seeking a 10.1 percent raise in 2007. Greed known no bounds. As West Island Quebecers, your patrimony includes the province’s natural resources – electricity. The Parti Québécois understood this and placed a freeze on all possible Hydro rate increases for five years, 1998 to 2003. The Liberals see electricity in another light – as a provincial money-maker – as an indirect tax.

Springate highlights two important roles that Hydro Québec plays. For one, Hydro Québec is a national symbol that represents the province’s establishment of a national identity and its status as a distinct society. As this society is embedded within the state, its major natural resource, electricity, is presented and seen as a public good. Every policy document since 1997 has reiterated the position that “energy strategy will be a lever for prosperity in Quebec” (Quebec MRNF 2005:3). The function as a wealth creator for the province that Springate associates with the Liberal Party has been a generally understood concept and to connect it to partisan strategy is a misguided notion. The re-evaluation of electricity pricing has been mentioned in recent policy papers as a way to address supply security, as Quebec is experiencing a tightening of the supply-demand balance (Burleton 2005: 8). Nevertheless, Quebec still has the lowest electricity prices in North America. Although an independent energy board sets prices, the role of Hydro Québec and its integration with the state needs to be kept in mind.

#### *Hydro Québec as the major market participant*

The government of Quebec is the sole shareholder in Hydro Québec. The company in turn has a 100 percent control over its six divisions. But beyond this first tier of participation in the energy market, Hydro Québec holds substantial shares in or outright owns numerous subsidiaries, making Hydro Québec a major player in the international electricity market. Only 10.3 percent (Clark and Leach 2005: 24) of generation capacity is privately owned and the level of market participation has been restricted by regulation. In 2002 Jacques Brassard, Minister of Natural Resources, announced the conditions for market opening. Independent producers can operate hydroelectric power plants of 50 MW or less. However, once authorization is obtained, “the government will grant the required rights to operate the site for a period of 25 years” (MRNF 2003, Press Release, [www.mrn.gouv.qc.ca](http://www.mrn.gouv.qc.ca)) but at the end of the

lease “the government will be able to recover the hydraulic right, the leased land and the facilities erected by the lessee without compensation” (ibid). This policy change was subject to community consultation, involving regional county municipalities, but especially First Nation communities. This level of managed competition contradicts the predominant ideology of neo-liberal economic theory that forms the aegis of energy reform throughout the developed countries today.

### *Neo-liberal critique and Social Pact on Electricity*

Economists like Marcel Boyer at the University of Montreal look at the electricity market in Quebec and warn of a collective impoverishment by not capitalising on the “real economic cost”, without the cross-subsidization by the state. The critique highlights the development of energy-intensive development and the relatively high consumption of electricity in Quebec due to the low electricity prices. Boyer advocates the use of price signals in order to create a supply and demand balance. When looking at the high levels of consumption there is a case for need to consider sustainable development benefits from this economic perspective. The government is currently addressing the need for price signals from its traditional statist stance through the increase of electricity prices as seen in price increase of April 1, 2006. The public outcry and extensive debates that have followed, point to the social contract that still dominates Quebec’s electricity market and the unwillingness to adopt more pro-market practises. A neo-liberal economic critic does not totally disregard the social pact that still exists in Quebec but seeks to address inequality through income redistribution, rather than the practise of price equalization that is currently in place. Why then do the state, business as well as labour in Quebec form a consensus on the current energy policy of cheap electricity, industrial development in heavy industry and cost equalization throughout the province? Aside from Quebec’s distinct social state-society embeddedness, the real price of electricity is lower due to the rich resource endowment of hydropower. Thus the option of adhering to a ‘social market economy’ in the electricity market is still viable.

### *Implications of Hydropower for Electricity Governance in Quebec*

The main factor of Quebec’s adherence to a quasi-monopoly structure through managed competition within a tightly regulated institutional set-up is the fact that Quebec’s electricity market is dominated by hydropower. Large complexes on individual river systems

provide a substantial portion of generation power. A hydro-dominated market does not have the flexibility of a market that is served by smaller, independent producers that have a lower cost point for production, and distribute power by bidding into a power pool system. As Clark and Leach (2005:33) observe, hydro-dominated markets lack an interdependency of input supply and market power. The risk of market power abuses is greater in hydro-dominated markets. There is the possibility of storing water in dams and thus adjusting the output of electricity by controlling hydro flow and subsequently the sales. The inability to distinguish market power from water resource management is a further detracting factor in full market restructuring, since no value is attached to the role in water management. Apart from market power abuses the cost factor of hydro-dominated generation need to be taken into account. Since hydro-producers can generate electricity at marginal cost after the initial installation cost, the use of a power pool as a clearing station of variable cost would lead to a distinct disadvantage for hydropower producers. Earlier installations would benefit from this low cost, while new installation would not be able to recoup the initial investment, creating a market distortion.

Furthermore, the ability to maximize individual profit could lead to a disregard for social cost. Since water systems provide other benefits to communities aside from the ability to produce cheap electricity, the application of full market logic in hydro production could mean disastrous ecological results. In order to fully evaluate the impact of market restructuring from a neo-liberal economic paradigm in Quebec, comparisons between the electricity market reform in other hydro-dominated markets like Norway or Brazil would be beneficial. Up to date, Quebec's statist approach in the governance of its electricity market circumvents many of these concerns. Furthermore, the role of the First Nations as a significant group in Quebec's civil society needs to be taken into consideration in the analysis to the governance of the electricity industry.

### The State and the First Nations

Quebec's direction toward the development of its hydropower over other forms of electricity during the second half of the twenty century led to an unprecedented social contract with the First Nations-Cree and the (aboriginal) Inuits, whereby the state established rights and responsibilities with these First Nations in the governing and development of the James Bay territory in 1975. This cooperation with Quebec's First Nations people was further signified in an historic agreement on February 7, 2002 with the Council of the Crees, opening

the path for two major hydroelectric projects at James Bay (Quebec 2006:2)<sup>12</sup>. The tightening supply situation in Quebec has made these agreements with the First Nations necessary and the aggressive plan by the government to develop new domestic sources of supply in hydropower rests partially on this agreement. This is the most explicit element of direct civil society participation in electricity governance.

### Wind power in Quebec

While Quebec is clearly a hydro-dominated market, the government has recognized the need for diversification. This has led to market opening in the electricity market through the development of wind power generation. In 2003 Quebec had just over 100 MW of installed wind generating capacity. Since then a 2 block of 1000 MW and 2000 MW of wind energy was opened up to a bidding process through calls for tenders in 2003 and 2005 respectively. The area that has been opened to the development of wind power is the Gaspé Peninsula. The Gaspésie-Îles-de-la-Madeleine administrative region and the Matane regional county municipality will be developed. By 2013 expected wind generation capacity should be at 3500 MW or 10 percent of peak demand, making Quebec a leader in wind generation in Canada. And while these pro-market developments allow for active market participation by private actors, the government still mandates location as well as conditions of the contracts effectively curtailing the free market. The projects must have the following Quebec content (Hydro Québec, Press release, October 31, 2005):

- A minimum of 60% of the total cost of each wind farm must be incurred in Quebec.
- A minimum of 30% of all wind turbine cost must be incurred in a region defined as the regional county municipality of Matane and the administrative region of Gaspésie-Îles-de-la-Madeleine.

Furthermore, the development and inclusion of Native communities through these projects is encouraged. Thus, Quebec's development of wind power generation provides a window of opportunity of private generation to develop; the level of market entry is still strictly regulated through legislation. The question of governance tools and techniques does not clash with Quebec's statist approach.

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<sup>12</sup> Quebec 2006:2. These projects are Eastmain-1 generating station, to be followed by Eastmain-1-A and the Rupert River diversion.

### ***Summary: Participation in a Statist-Corporatist Model***

The province of Quebec has approached its energy policy from a different perspective than Ontario or Alberta. The marked difference is the insistence on collectivity, which leads to a perception of electricity as a ‘collective, public good’, which is more than just an ‘essential service’. The rich resource endowments in hydro-electricity contribute to the view of electricity as a wealth creator for the province. But it stands out that this wealth should be shared collectively and any energy policy has to adhere to collective values<sup>13</sup>. The changes in energy policy that swept North America and Europe during the mid-1990s produced a different context in which Quebec had to conduct its energy policy. Policy shifts were subject to a large public consultation process and resulted in a policy paper called “*Energy at the Service of Quebec: A Sustainable Development Perspective*”. Since then Quebec’s ongoing energy strategy has been structured to allow for citizens as well as businesses, local and native communities’ information and input. The White Paper “Energy for Prosperity in Quebec” from November 2005 is a stage in Quebec’s current energy policy. The consultation process began with the publication of the information document “The Energy Sector in Quebec – Context, Issues and Questions” on November 17, 2004. This document not only described the current situation and key issues, but also raised a number of questions surrounding equity and supply security as well as sustainability. A first set of hearings in December of 2004 as well as general hearings from January to April 2005 were organized by the Committee on Labour and the Economy at Quebec’s National Assembly. The committee received 169 briefs and heard a total of 138 individuals, businesses, organizations and groups (Quebec 2005:5). The White Paper published in November of 2005 is part of the consultation process which sets out government objectives. In order to allow for optimum participation and transparency the government has opted for online consultation. As mentioned earlier, the government of Quebec attaches high value to the principles of equity and transparency and invites broad participation.

However, it is difficult to discern the true scope and depth of stakeholder participation and influence in this statist-corporatist model. To begin with, Quebec-Hydro traditionally enjoys a powerful position similar to Ontario-Hydro in the sector. Information asymmetries

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<sup>13</sup> The creation of a Heritage Pool to ensure low electricity prices for Quebecers is an example of the language and values of this attitude.

can be expected to result in a high degree of “self-steering”, driven by professional and organizational logics, rather than by broader public policy or public interest considerations. Secondly, effective inclusion in terms of decision-making seems to be restricted to the core duo of the Quebec government and the Crown corporation, with little room for a truly independent regulatory authority, as the process of electricity price setting indicates. Quebec Hydro accepts its role as key instrument in government industrial policy, as provider of a collective good and public service, and as wealth and job creator for the province; and the government, as the shareholder, grants Hydro-Quebec broad operational discretion, including its business operation outside the province. However, and in contrast to the situation in Ontario, this arrangement does not produce dysfunctional results and enjoys a high level of societal legitimacy because of the win-win character of the electricity game in Quebec. The riches of hydroelectricity do not only guarantee security of supply but also allow a broad distribution of benefits to all groups in society, in the form of low electricity tariffs to both industrial and residential consumers (through cross-subsidization), and, more indirectly, in terms of export incomes for the provincial budget and jobs. **Hence, organized groups are incorporated in a broad social pact that grants sector leadership to Quebec Hydro in exchange for equitable distribution of benefits to society.**

Again unlike in Ontario, the *negative externalities of this strategy are limited*. In economic terms, there are some opportunity costs of providing electricity below US-market cost to the Quebec industry and population, instead of maximizing the more profitable export business. (But there are economic benefits for the energy-intensive Quebec industry.) In environmental terms, large hydroelectric projects have considerable but localized environmental impacts. They do not raise generalized environmental concerns in the same way as coal-fired and nuclear generation plants do. As the consent of native and aboriginal communities is required for new hydro-dam construction projects, these communities have indeed been included in the decision-making process on the siting and planning of new dam projects. Yet, the participation of other stakeholder groups seems to be limited to sharing in the benefits and providing legitimacy to this state-led industrial development concept. There is little evidence of deliberation between different groups of society on the merits of the current model.

## **7. Electricity Governance: Techniques and Instruments**

As in the Ontario case, we can empirically map the specifics and dynamics of the electricity governance model through the lens of governance instruments, as they are deployed to serve the three key goals of electricity governance. This exercise highlights the dominance of public actors, and the preponderance of supply security and affordable access, in the context of a broader industrial strategy designed to further Quebec sovereignty.

<i>Goal</i> <i>Player</i>	<i>Security</i>	<i>Efficiency</i>	<i>Sustainability</i>
Public	-Heritage Pool (Law) - Supply Contracts with Hydro Québec (Law) -Electricity Supply Plan		-Price freeze and subsequent hikes (Law) -Agence de l'efficacite energetique (Info)
Private			
Public/Private	-Supply Contracts for Hydropower with firm under 50MW capacity (Law) -Supply Contracts for alternative power (Law) -Agreements with the First Nations (Law) -Churchill Falls Contract 1969, (Law)		-Tax Credits for wind power generation (Money) -Mail-in-rebate for Energy Star labeled appliances (Money) -Energy Efficiency Plan 2005-2010 (Info and Money)

Quebec's continues to function as a quasi-monopoly with a competitive fringe. Therefore, the instruments and governance techniques employed tend to fall into the public sphere. The restructuring of the electricity market however has made this structure somewhat opaque. Several public-private partnerships have been added to the overall hierarchical



approach to electricity governance. Quebec's energy policy of 1996 laid out several goals. Electricity governance was then adapted to fit those goals. A new policy paper in 2005 further augmented the goals set out in 1996. The continental pro-market and integration initiatives had to be integrated into Quebec's overall statist approach to the services of general interest. Quebec energy policy puts supply security and advantageous, affordable pricing as the primary objective, followed by sustainability. Due to Quebec's resource endowments in hydropower, techniques used to address supply security are not in conflict with sustainability but rather serve to further both goals. Efficient market signals for an open electricity market are not part of Quebec's energy policy on the provincial level, however on the international electricity market Quebec is a significant market actor. A further objective that is of considerable importance is the relationship with the First Nations, especially the Cree and Inuits.

### *The Heritage Pool*

#### *Goal: Price cap on set amount of electricity for the domestic market*

The Heritage Pool, established on June 2000 with Bill 116, *An Act to amend the Act respecting the Regie de l'energie*, was enacted to ensure adequate supply for the Quebec market at low cost. Under Bill 116, HQ Production is required to supply 165 TWh of electricity to HQ Distribution at the low average cost of 2.79 c/kWh. The goal of Bill 116 was to "harmonize the regulation of the Quebec electricity market to bring it into line with practices in North America, while preserving the social contract in Quebec"<sup>14</sup>. Besides legislating a minimum supply the heritage pool ensures continuous low prices for consumers in keeping with the overarching goal that electricity is a "basic component in social and economic development" of Quebec. As demand has since outstripped the supply legislated in heritage pool, additional supply is based on market prices via a tender solicitation process. However, market prices here do not mean opportunity costs, but rather the production costs of electricity when averaging out cost of new as well as existing installations.

### *Electricity Supply Plan 2005-2014*

#### *Goal: Ensure Supply Security*

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<sup>14</sup> Government du Quebec, (2004), *The Energy Sector in Quebec: Context, Issues and Questions*, Ministere des Ressources naturelles, de la Faune et des Parcs, p. 31



In November 2004 the Electricity Supply Plan 2005-2014 was filed with the Regie de l'énergie. The plan forecast the electricity needs of the province for the next ten year as well as the nature of the contracts that Hydro Québec Distribution plans to enter into in order to meet demand above the 165 TWh that are available through the Heritage Pool. In the 2005-2014 Electricity Supply Plan, Hydro Québec Distribution stated that supply requirements are lower than anticipated in 2003 when Quebec experienced a tightening of its supply-demand balance. It provided for average sales growth of 1.2%, which is about 2 TW per year. Hence arrangements were made to acquire short-term supplies between 2005 and 2008. Short-term calls for tenders have been issued to meet demand to date (3.5 TWh in 2005, 6 TWh for 2006)<sup>15</sup>. In 2007 another long-term call for tenders is planned as well as further calls for tenders for wind power in 2009-2014, subject to new government regulation. Since Hydro Québec Production takes part in the call for tenders, the Act respecting the Regie de l'énergie requires that Hydro-Quebec Distribution ensure the fair treatment of all participating power producers. Hydro Québec Distribution is therefore subject to a *Code of Ethics on Conducting Calls for Tenders, a Call for Tenders and Contract Award Procedure and a Call for Tenders and Contract Award Procedure for Electricity Supply Contracts of One Year and Less*. As laid out in the 2005 White Paper, Quebec's focus is on the further development of hydro projects as well as the development of wind power generation. Other alternative supply sources include biomass and cogeneration facilities. On the other hand the government's new policy seeks to limit nuclear power. Demand-side management has taken a more prominent role in any government policy and a 1.5 TWh energy savings were already reported in 2004.

### *Energy Efficiency Plan 2005-2010*<sup>16</sup>

#### *Goal: Sustainability*

In the 2006 budget Hydro Québec raised its energy-savings target to 4.1 TWh by 2010. In 2005 energy savings reached 438 GWh, which exceeded the target of 422 GWh. The tools used included 263,978 *EnergyWise Home Diagnostic questionnaires* that were completed by residential consumers looking for ways to reduce electricity consumption. Furthermore, 475,219 electronic thermostats were installed in 2005 replacing bi-metallic

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<sup>15</sup> Melnbardis, Robert, "Quebec Plans \$25 Billion Boost to Hydro, Wind Power" by Planet Ark world environmental News, Reuters News Service 2005

<sup>16</sup> Hydro Quebec, September 27, 2005, [www.hydroquebec.com/4d\\_includes/of\\_interest/PcAN2005-184.htm](http://www.hydroquebec.com/4d_includes/of_interest/PcAN2005-184.htm) 5/27/2006; Hydro Quebec, [www.tequsim.com/sustainable\\_development/exemple/energy.html](http://www.tequsim.com/sustainable_development/exemple/energy.html) 5/27/2006.

thermostats. Additionally 26,891 pool filter timers were sold in 2005. A new initiative in May of 2006 by Hydro Québec is the offer of a mail-in-rebate of \$50 on Energy Wise refrigerators. Energy savings programs exist for various customer categories. The *EnergyWise diagnostic questionnaire* is also used for small service companies. In addition there is the *Empower Program for Building Optimization* (commercial and institutional customers), the *Empower Program for Industrial Systems*, and the *Traffic Light Optimization Program* (the replacement of incandescent bulbs with light emitting diodes – LEDs) Hydro Québec Distribution’s budget for 2006 allowed for \$176 million for those programs.

### *Supply Contracts for Hydropower*

#### *Goal: Supply security/Economic Development*

Supply that exceeds the heritage pool is subject to market prices via a tender solicitation process. These market prices however do not reflect a fully open wholesale market, since HQ Production retains the exclusive right to produce hydroelectricity in plants above 50 MW capacities. Hydro capacity in Quebec is characterized by large hydro projects, in particular the La Grand and Manic-Outardes river systems, which account for 40% and 21% respectively<sup>17</sup>. 39% of hydropower is provided by other hydrologic systems including small projects through public-private partnerships. Long-term supply contracts that resulted from Call for Tenders since 2001 include 350 MWh from hydropower originating at the Robert-Bourassa generating facility, 250 MW originating at La Grande-1 generating station signed in 2002.

### *Supply contracts from Hydropower under 50MW*

#### *Goal: Supply security*

In an effort to adapt Quebec’s electricity sector to market forces while keeping the social contract intact, the government implemented a program to grant waterpower rights to small hydro power plants (50 MW or less). In May of 2001 the government designated 36 sites on public land as part of this new program under the hydraulic forces allocation plan, which establishes the conditions for the sale of their electricity production to Hydro Québec. A public-private partnership has been established on three projects up to date, namely Nagpie Dam, Riviere-Saint-Jean, Minganie MRC; Matawin Dam, Baie-de-le-Bouteille, Matawanie MRC; Rapides-des-Quinze Dam, Angliers, Temiscamingue MRC. As mentioned earlier, the

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<sup>17</sup> Clark and Leach, p. 25

leased site will revert to the state after a 25-year period. The goal of this plan as stated by Jacques Brassard was “to achieve fundamental government goals such as security of supply under competitive conditions, regional development, community management of development, participation by the First Nations, development of small hydraulic forces, a clean and renewable source of energy, and the maintenance and development of Quebec expertise”<sup>18</sup>

### *Agreements with First Nations*

#### *Goal: Supply security*

The public-private partnership on small hydropower projects is also geared towards the support and participation of the First Nations. In Quebec the issue of rights of Aboriginals living in the province has traditionally played an important role in the development of hydro power plants. As stated in the 2004 discussion paper “Quebec also believes the Aboriginal communities have an extremely important role to play in the development of regional natural resources. Its goal is to foster social and economic development in the communities by offering them an opportunity to participate more fully in the resource development process”<sup>19</sup>. The main tool used by the government to ensure this participation is the signing of agreements with the First Nations. These agreements can be framework agreements, declarations of mutual understanding and respect, special agreements or sector-based agreements. The most important agreement in recent history has been signed with the Cree of Quebec (the *Peace of the Braves*) and the Partnership Agreement between the Quebec and the Inuit on Economic and Community Development in Nunavik (the *Sanarrutik* agreement). Prior agreement that had an impact on the development of hydro projects were the James Bay and Northern Quebec Agreements with the Cree, Inuit and Naskapi of Quebec. Without these agreements large-scale hydro-developments like the James Bay project could not be realized, thus a continuous commitment to the involvement of the Native communities is a part of energy policies in Quebec.

#### *Supply contracts for alternative power*

#### *Goal: Supply security*

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<sup>18</sup> Quebec, Ministry Ressources naturelles et Faune 2002, [www.mrn.gouv.qc.ca/english/press/press-release-detail.jsp?id\\_1409](http://www.mrn.gouv.qc.ca/english/press/press-release-detail.jsp?id_1409), 04/04/06

<sup>19</sup> Quebec, 2004 “The Energy Sector in Quebec: Context, Issues and Questions” p. 41

The process of stimulating new generation capacity from wind power is decidedly different from new hydropower generation. In March 2003, the government of Quebec published the *Regulation respecting wind energy and biomass energy*, which requires Hydro-Quebec Distribution to purchase wind power from an installed capacity of 1,000 MW (total available capacity in 2003). In 2004 the government announced that it intended to increase wind-generating capacity substantially in the short-term. Consequently, Call for Tenders in 2003 resulted in eight bids for a total of 990 MW accepted in 2004 through public-private partnerships. The government then asked HQ Distribution to purchase an additional 1,000 MW of capacity from wind power bringing the total amount of required (regulated) purchases up to 2,000 MW. Delivery dates range from December 2006 to 2012. In 2005 the government issued a Call for Tender for additional 2000 MW of wind power. No contracts have been awarded since the Deadline for submission of bids is on April 17, 2007. Including this latest call for tenders Quebec will have a total installed wind power capacity of approximately 3,500 MW by 2014.<sup>20</sup>

As with the public-private partnerships in the development of small hydraulic sites, the development of wind farms is based on a bidding process for the **land rights** on which to build wind farms. The government introduced a program to allocate public land for wind farm construction; nevertheless, restrictive conditions on time and location exist, similar to small hydraulic development. One significant difference is the non-involvement of Hydro Québec Production in the bidding process. As an additional tool the government has introduced two refundable tax credits to support the development of wind power.

As a result of a Call for Tender following the first Electricity Supply Plan in 2001 Hydro Québec Distribution awarded one contract to TransCanada Energy for 507 MW of baseload electricity generated from natural gas besides the two contract that went to Hydro Québec Production.

#### *Price freeze and subsequent hikes*

#### *Goal: Demand-side management and sustainability*

Electricity prices in Quebec are based on a cost-based regulatory regime that calculates the average between the heritage pool prices and the higher cost for new supply. To avoid any price fluctuation following the initial restructuring period, the government decided to freeze rates between 1999 and 2003. Since 2004, however, a number of rate increases have

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<sup>20</sup> Hydro Quebec, Press release, October 31, 2005

been implemented to somewhat adjust the subsidized price to the actual cost. In January and April of 2004 there was a 3 percent and a 1.4 percent increase. In April of 2005 there was a further increase of 1.2 percent. The latest price hike was implemented in April of 2006 with further increases planned for 2007. Pricing mechanisms that were implemented by the state serve two purposes. On one side the government's overarching goal is to provide affordable prices to its citizens as a way to provide a service that enhances Quebec as a society. Furthermore the low cost of electricity has been used to stimulate industrial development. A large part of Quebec's industry is founded on this price advantage. In recent years the government has been indicating that price increases are a way to achieve some form of demand side management that was largely absent from Quebec electricity policy prior to restructuring. Price hikes since 2004 are set out to scale down on the high consumption of electricity in Quebec, especially during the winter month. Electric space heating constitutes a substantial part of electricity consumption and new sources for heat like natural gas are starting to be considered. At this time initiatives for energy efficiency are isolated and lack coordinated or concerted actions.<sup>21</sup> These price hikes, however, do not address the concerns of lost opportunity cost of hydropower as argued by Marcel Boyer. The business community in Quebec in response to the discussion paper "The Energy Sector in Quebec: Context, Issues and Questions" made advantageous pricing of electricity a priority<sup>22</sup>. Another point the Montreal Board of Trade made was the continuous development of new generation capacity beyond domestic demand as a means to create revenue through electricity exports. Supply security is thus the main goal of government and business alike. Opportunity cost should be realized internationally, not domestically.

#### *Agence de l'efficacité énergétique*

#### *Goal: Sustainability and Supply security*

Energy supply security is one of the overarching concerns of governments, provincial as well as federal. The Agence de l'efficacité énergétique followed an earlier body, the Bureau des économies d'énergie, which was set up in 1977 when energy supply security first became an issue. The Agence de l'efficacité énergétique was established in 1997 following the policy review paper "Energy in the Service of Quebec: a Sustainable Development Perspective" of 1996 which focused on energy security. The Agency falls under the authority of the Minister

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<sup>21</sup> Quebec, MRNF, "Energy for Prosperity in Quebec: Objectives and Orientations of the energy Strategy" November 2005, p. 16

<sup>22</sup> Board of Trade of Metropolitan Montreal, 2005, "Energy as a source of development for Quebec", p. 5

of Natural Resources, Wildlife and Parks and has a board of directors made up of representatives from the various players involved in energy efficiency that is responsible for setting its objectives (Quebec 2004: 28). Funding for the Agency comes from various partners like Hydro-Quebec Distribution (41.8 million), Gaz Métro (5.0 million) and Gazifère (0.4 million). According to the Ministry for Natural Resources, Wildlife and Parks the actions of the Agency have resulted in considerable energy savings by March of 2004 it amounted to \$40 millions for consumers. In the 2005 policy paper the government plans to broaden the mandate of the Agency.

Supply security is the overarching goal in Quebec's electricity policy, however supply security does not only mean the domestic supply-demand balance, but addresses the need of supply excess. Electricity export is a dominant part of Quebec's new policy and the tightening of the demand-supply balance in 2002/03 highlighted the need for renewed development in both hydro and wind power capacity as a means to realize the high price of electricity on the US market. "Energy strategy will be a lever for prosperity in Quebec" in the words of Pierre Corbeil, Minister of Natural Resources and Wildlife.<sup>23</sup>

### *Summary*

As this mapping of instruments and techniques demonstrates, Quebec's energy policy in regard to electricity is geared towards **Supply Security**. Included in this notion of supply security is the government's continued commitment to its citizens to ensure advantageous pricing as well as equity for all consumers. Supply security further means the continuum of electricity as an export commodity. Wealth creation through electricity production is a priority for the province. Sustainability is a goal that is fairly easy to achieve in Quebec due to its status as a hydro province. The further development of hydro power (smaller as well as larger projects) is part of the new energy policy. Ambitious projects for wind power generation serve both purposes as well as the need to diversify energy sources. Market restructuring on the other hand has been carried out as an adaptation to the new continental environment.

Market efficiency has not been a goal of Quebec's energy policy, as Quebec is staying committed to a dirigiste approach towards the electricity market. Hydro Québec with

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<sup>23</sup> Quebec, MRNF, 2005, p. 1

revenues of \$10.9 billion in 2005 (Hydro Québec 2005) is seen as a means to increase the prosperity of the province and is therefore protected by the state.

As Deena White points out, “Quebec has traced a path between the neo-liberalism and neo-conservatism of most Anglo-Saxon states, a path that has its origin in a fundamentally different view of the state-society relation and in the perception of the state’s responsibilities” (While 1997:37). In a corporatist fashion, the state guides the development of the electricity industry in concert with business interests. Tax breaks, guaranteed demand and the encouragement of an indigenous participation in large and small-scale projects highlight the different approach of the state in Quebec. The social contract that has been formed in Quebec in the post-war years is still being upheld and supported by all groups in society.

## **D. ALBERTA**

*TO BE COMPLETED*



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