

ONTARIO ENERGY ASSOCIATION

THE NEED FOR GOVERNANCE REFORM OF ELECTRICITY PLANNING IN ONTARIO

Discussion Document

April 25, 2017

INTERNAL OEA DISCUSSION DRAFT

To shape our energy future for a stronger Ontario.



Ontario Energy Association

ABOUT

The Ontario Energy Association (OEA) is the credible and trusted voice of the energy sector. We earn our reputation by being an integral and influential part of energy policy development and decision making in Ontario. We represent Ontario's energy leaders that span the full diversity of the energy industry.

OEA takes a grassroots approach to policy development by combining thorough evidence based research with executive interviews and member polling. This unique approach ensures our policies are not only grounded in rigorous research, but represent the views of the majority of our members. This sound policy foundation allows us to advocate directly with government decision makers to tackle issues of strategic importance to our members.

Together, we are working to build a stronger energy future for Ontario.

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“I’m not singling out any one political party, but collectively and individually, these government interferences have slowly added to the cost of electricity through programs or policies designed to achieve objectives that were not really related to the delivery of electrical power. It’s our opinion that if Ontario Hydro is allowed to get back to the basics of wholesale electricity supply, instead of being used as an agent of social policy, we’d all be a lot better off.”

- Keith Matthews, President, Municipal Electric Association. 1993

INTRODUCTION

This discussion document makes the case that governance reform is required in the electricity planning process in Ontario. It begins with a review of the history of electricity planning in Ontario, which provides some insights as to how we got to the unfortunate situation we are in with respect to electricity decision making and resulting prices in Ontario. It concludes with some recommendations for possible reforms to improve electricity planning governance in Ontario going forward.

PUBLIC POWER AT COST

It all started in the early 1900s with the creation of the Hydro-Electric Power Commission of Ontario HEPCO, which ultimately became Ontario Hydro. The public sentiment at the time was that hydro-electric power was a public resource. Premier James Whitney famously declared that “The water power of Niagara should be as free as the air”.

Adam Beck, the first Chair of HEPCO, started Ontario down the path of future mega-projects, all by one company: “Nothing is too big for us. Nothing is too expensive to imagine. Nothing is too visionary” Private participation in electricity generation was deterred. “Power at cost” became the mantra for hydro in Ontario.

The model worked to the satisfaction of successive governments right up until the 1980s. Ontario Hydro moved from mega-project to mega-project to meet growing demand, and electricity costs remained relatively low. Ontario Hydro became to be seen as a power unto its own.

As the province’s demand for electricity exceeded its hydro capacity, Ontario Hydro shifted to nuclear energy as the primary way to keep up with growing demand. However, nuclear energy began to very publicly fall short of its early promise of being “too cheap to meter”. At the same time, nuclear expansion was also politically motivated as it was viewed as an avenue of economic development through the partnership between Ontario Hydro and Atomic Energy Canada Limited (AECL) to promote CANDU nuclear technology for export.

The rate of electricity demand growth in Ontario had been falling beginning in the 1970s and through the 1980s and 1990s as economic growth slowed, the economy transitioned towards services and away from manufacturing, and conservation initiatives. However, Ontario Hydro continually made ambitious demand forecasts to justify mega-projects. This demand supply imbalance put tremendous pressure on controlling electricity rates.

Ontario's last new build nuclear project, the Darlington reactor, was started in 1981 but did not come online until 1990 because of successive starts and stops, many induced by political intervention. Initial cost estimates for Darlington were \$3.9 billion, but it ultimately came in at \$14.4 billion, largely due to politically mandated delays which drove up borrowing costs, which were high during the 1980s. The Darlington project came online during a major recession, when demand for electricity had declined significantly, so it immediately led to electricity price increases. The price increases attracted negative political attention.

SUBSIDIZED POWER ERA

The Bob Rae NDP moved to freeze electricity rates at 4.3 cents in 1993 (the freeze remained until market opening in May 2002), which was not high enough to pay for the costs of Darlington and take down Ontario Hydro's associated debt, which at this time was pegged at \$26 billion. And so began the era of subsidized power, where each government would pass on to the next an electricity rate-paying public that was not used to paying for the full cost of electricity, and taxpayers were left with the growing debt. Rate subsidization has continued, in various forms, up to today. Ontarians have not paid the full cost of electricity through rates for three decades.

"We cannot see our energy policies continue to be tossed around like political footballs, as they were under the previous government... It's simply too important to be continually subjected to political whims and whatever opinion polls show to be popular on any given day... This plan will take the politics and politicians out of electricity pricing and give that responsibility to an independent regulator."

- Honourable Dwight Duncan, Minister of Energy, 2003

Mike Harris's PC government lifted the price cap in an attempt to move to privatization and market opening. Moving to competitive markets was seen as a way to move away from having all electricity development done under the direction of politicians, by a vertically integrated company without any competitive pressures that bring alternatives to the table – it was an attempt to get politics out of electricity planning.

Prices increased shortly after the market opened, so the government moved to put the 4.3 cent cap back in place, and abandoned the move to competitive markets and the planned sale of Hydro One. The 4.3 cent cap was well below actual cost, so a government yet again passed on to future governments an uneconomic price and ballooning debt.

As a result, the McGuinty Liberals inherited an unsustainable and dysfunctional electricity system. Artificially low prices from subsidization along with political interference created an environment that was insufficient to attract investment in new generation (the collapse of the California market also hurt investment in the electricity sector), and Ontario faced a looming supply shortage. Energy Minister Dwight Duncan points to past political meddling as having created the mess, and commits to “take the politics and politicians out of electricity pricing. It's simply too important to be continually subjected to political whims and whatever opinion polls show to be popular on any given day.”

POLITICAL PLANNING REPLACES PROFESSIONAL PLANNING

Early moves were made to move toward full cost pricing by the new Liberal government which began by lifting the 4.3 cent cap. This resulted in immediate price increases, which attracted negative political attention. At the same time, the government moved quickly and aggressively towards the greening of electricity generation. In a period of ten years, through a series of directives and often ignoring the advice of system planners, the government moved to overhaul and replace the majority of the electricity generating fleet in Ontario. All the coal plants are shut down and replaced largely with natural-gas fired generation.

In 2004, the government put into motion its Smart Metering Initiative, which was designed to move all low volume electricity consumers to smart meters and onto time-of-use pricing. The government estimated the cost of this initiative at \$1 billion. However, the Auditor General's review of the program revealed that the government did not complete any cost-benefit analysis or business case prior to mandating the installation of smart meters and that the cost oversight role of OEB had been largely set aside.¹ The Auditor General also found that the actual costs of implementing the program had reached almost \$2 billion by the end of 2013 and that a subsequent cost-benefit analysis by the government overstated the benefits of smart metering by over \$500 million.

Further, significant amounts of renewables are added to the generation fleet, almost all without competition at prices well above market. FIT programs were open-ended, allowing generators to add capacity even when it is not needed through political direction, and resulting in additional distribution and transmission costs to accommodate the generation.

In the 2010 Long-Term Energy Plan, the government commits to refurbishing the entire nuclear fleet at a cost of \$26 billion, all without competition and exploration of alternatives. Generation capacity continues to be added even though the province has moved into an excess capacity position, further adding to increased prices.

¹ <http://www.auditor.on.ca/en/content/annualreports/arreports/en14/311en14.pdf>

Electricity rates continued to rise, and soon the McGuinty government faced political pressure to subsidize electricity rates increases caused which were largely as a result of the government's policy choices and political interventions. In 2011, the McGuinty government put in a place the Ontario Clean Energy Benefit (OCEB), which reduced bills for all commercial and residential customers by 10 percent, and was paid for by taxpayers at a cost of \$1 billion a year.

The OCEB expired at the end of 2015, leading to a sharp increase in bills and renewed political pressures to control rates.

Occurring at the same time as the large generation capacity increase were significant increases in government directed spending on conservation and demand management (CDM) programs. From 2006 to 2014, \$2.3 billion was spent on conservation programs and initiatives with a commitment to spend an additional \$2.6 billion to 2020.²

Between 2006 and 2014, the government issues 17 major directives relating to electricity planning. In the Auditor General's survey of former OPA board members, 83% of respondents felt that the Ministry's directives had negative impacts on the overall quality (i.e., accountability and transparency) of electricity planning. Political planning has diminished the input and effectiveness of the experts we depend on to advise on electricity planning.

Further, the government passes new legislation to significantly strengthen its control over energy planning in Ontario and eliminates both independent planning as well as independent review and approval of planning. In 2016, the government removes the requirement for the IESO (and previously the OPA) to develop an IPSP through passing Bill 135³, which gives even greater sector planning powers to the Minister of Energy without any independent review and/or approval. Bill 135 also gives the Minister the ability to direct and require the IESO and OEB to implement the Minister's long-term energy plans.

Altogether, the changes in legislation, directives, and policy actions of the government mean that ever since the turn of the century, political planning has replaced professional planning in the electricity system.

SUBSIDIZED ELECTRICITY CONTINUED

Altogether, a series of political mismanagement missteps, combined with a significant move to intermittent renewable generation and away from low cost coal, resulted in a dramatic increase in

² <http://www.auditor.on.ca/en/content/annualreports/arreports/en15/3.05en15.pdf>

³

http://www.ontla.on.ca/web/bills/bills_detail.do?locale=en&BillID=3539&isCurrent=&BillStagePrintId=7190&btnSubmit=go

the commodity cost on electricity bills. This is exacerbated by the attempt by the provincial government to end the OCEB electricity subsidy program. Even though it was offset by the concurrent expiry of the Debt Retirement Charge, it still results in an additional price increase, over and above shoes driven by planning decisions which were significant on their own. This reaches a political boiling point by late 2016, and the Wynne government announces an 8 percent reduction in electricity bills (also paid for by ratepayers) to commence on January 1, 2017.

The 8 percent reduction fails to quell media stories of high electricity bills. So the government moves in March of 2017 to yet another massive subsidy of electricity rates to be borne by taxpayers and future ratepayers. The announced plan includes additional 17 percent reduction in electricity bills, increased subsidies for rural distribution charges, an increase in support for the Ontario Energy Support Program (OESP), expanded eligibility for the Industrial Conservation Initiative, and the movement of OESP costs from ratepayers to taxpayers.

A more detailed review of Ontario's electricity planning history is provided in Appendix A.

TYPES OF PLANNING ERRORS

The short history above points to some obvious problems with the way electricity sector pricing and planning has been undertaken in Ontario for the past three decades under governments lead by each of the three major political parties in Ontario. What follows is a summary of some of the key problems that have developed in Ontario's electricity planning system.

POLITICAL PLANNING VERSUS PROFESSIONAL PLANNING

Ontario has moved to an electricity system that is now almost entirely politically planned and largely ignores least cost resource acquisition. Notwithstanding the attempts with market opening under the PCs and Dwight Duncan's pronouncements in 2003, electricity planning has been taken over by the politicians. The respective roles of the IESO and the OEB have been diminished (or ignored) in favour of politically driven planning decisions that sought to use the electricity sector to achieve economic development, social, and environmental objectives through shifting costs to ratepayers rather than taxpayers.

Between 2006 and 2014, the government issued 17 major directives relating to electricity planning. Further, the government has used legislation to significantly strengthen political control over energy planning in Ontario and eliminated both independent planning as well as independent review and approval of planning

In many cases, this politically driven planning resulted (and continues to result) in contradictory policy directions, such as increasing and subsidizing generation capacity while simultaneously subsidizing consumption and conservation. This lack of a coherent set of policies has led to perverse outcomes, most notably causing excess capacity to trigger electricity price increases.

LACK OF COMPETITION

Practically all the major generating decisions that have been made in Ontario in the last few decades have been made without competition. Whether it was building nuclear plants, making recent commitments to refurbish nuclear plants, proceed with new hydro projects, conduct side deals with Quebec, add new renewable generation, etc., the major decisions have been made without an open competition and comparison of alternatives.

Advice from the Macdonald commission was to reduce the dominance of OPG in the Ontario marketplace. However, OPG still accounts for about 50 percent of the supply of electricity in Ontario, and most of the planning decisions related to OPG are made without public scrutiny. This remains a barrier to proper competition in Ontario

LACK OF TRANSPARENCY

Most of the planning decisions are done with inadequate disclosure to the public about the long-term costs and opportunity costs of the decision, especially decisions to sole-source large amounts of generation capacity. Both the public and industry stakeholders are not provided the fulsome information needed to properly evaluate, critique and respond to government unilateral planning decisions.

IGNORING LEGISLATIVE AND REGULATORY REQUIREMENTS

As we have seen, the OPA, and now the IESO had a legislative requirement since 2004 to table regular 20-year technical plans with the OEB, which would allow for formal public input and scrutiny into the plan. In addition, the OEB has a legislative requirement to review and approve the technical plan. None of these things happened as witnessed by the OEB never requiring the OPA to produce a plan following the suspension of the initial IPSP hearing in 2008. Even when legislation requires it, planning rules have been ignored in Ontario.

Legislative requirements of OEB governance have also been ignored. The Ontario Energy Board Act requires the OEB to appoint a Chief Operating Officer (COO). However, the OEB eliminated the COO position in 2014. Yet the OEB Act, the OEB's MOU with the Ministry of Energy, and the OEB's own by-laws all continue have requirements for a COO.⁴

Further, the OEB is required by legislation to have 2 vice-chairs. However, it went approximately 3 years with only a single vice-chair.

The ignoring of legislative requirements by both the government and the regulator send negative signals about policy uncertainty and rule enforcement in the Ontario electricity sector to both

⁴ <http://www.thinkingpower.ca/CCRECaseStudy/CCRE%20-%20The%20Governance%20of%20Regulatory%20Agencies%20-%20A%20Case%20Study%20of%20the%20Ontario%20Energy%20Board%20by%20Robert%20B.%20Warren%20-%20January%202015.pdf>

regulated utilities and potential sector entrants. It sends a message to sector participants that laws and regulations will be ignored when they become inconvenient politically.

MEGA-PROJECT FOCUS

In Ontario's early history, mega-projects made sense and were successful. However, as Ontario shifted from hydro as a source of power to alternatives, it continued to focus solely on megaprojects, right up until today. Most recently, the province has made a decision to refurbish its nuclear fleet at a cost of \$26 billion, without competition or comparison of alternatives. These are 30 to 40 year capital commitments. These are yet more megaprojects at a time when the long-term future of grid demand over the same 30 to 40 year period is very uncertain as technology advances and small scale "distributed energy" alternatives continue to drop in cost at a fast pace.

The problem with mega-projects is that when they go wrong or fail, they fail in a big way. Introducing competition into procurement, as noted above, would help address Ontario's continued focus on mega-projects. The current lack of competition and open debate means we have not been exposed to what the alternatives may have been and what their various pros and cons would have been. This, in turn, leads to continued speculation by different stakeholders and advocates for their preferred alternative (e.g. a deal with Quebec) that has not been subjected to competitive scrutiny.

WHAT DO WE DO? THE WAY FORWARD

It becomes clear from a review of Ontario's history that better governance of electricity planning in Ontario would likely have resulted in lower prices for Ontario's consumers. Better planning governance would have helped Ontario avoid a number of costly planning mistakes. What follows are some suggestions for governance reform that would help Ontario avoid some of the mistakes outlined above going forward.

INDEPENDENCE OF PLANNING AGENCIES

A new comprehensive electricity planning framework should be enshrined in legislation that provides for the following:

- Repeal Bill 135 and restore independent sector planning and plan review
- A requirement for 20 year electricity plans to be developed by the IESO every three years
- A requirement that the plan must include a full cost-benefit analysis of alternatives, including public release of all background assumptions and expected consumer prices
- A requirement that each above electricity plan must be reviewed by the OEB
 - Public consultation by the OEB would be required
- A stipulation that the government should not intervene in the planning process
- The role of government limited to providing broad policy objectives to the IESO

- This would include an explicit restriction on the government's ability to issue any directives on supply mix
- As an example, the government would retain the ability to set environmental goals for the IESO, such as objectives for carbon emissions
- Government policy objectives, such as economic development, environmental, and income inequality, should be pursued and funded outside of the electricity system
 - For example, if a particular type of energy production is desired by the government for policy reasons, it could enhance the incentives for its production through the tax system, as is done by the federal government in the U.S. for wind and solar production

COMPETITION FOR ALL NEW CAPACITY

The government has sole-sourced a number of major supply decisions, involving OPG, Bruce Power, and Samsung. It has become widely accepted that the Samsung arrangement was not in the best interest of ratepayers. It is unknown whether a more competitive process would have resulted in better pricing in the cases of Bruce Power and OPG. A majority of renewables procured have also without competition and even without the need for additional capacity through various Feed-in Tariff programs.

Going forward, any new capacity planned for Ontario should be put out for open competition in a manner that allows for a comprehensive comparison of the costs and benefits of alternatives, including whether new capacity is needed at all. This competition should be agnostic towards the technology used to meet the capacity needs. Under this system, any proponent of new capacity would be required to compete. This includes OPG and Bruce Power. It also includes any arrangement with generators in another jurisdiction.

RESPECTING AND ENFORCING LEGAL REQUIREMENTS

The political will to commit to real governance reform requires that governments respect the regulations and legislation that they put in place (and require that government agencies do the same). The last 20 years has shown that governments are extremely quick to backtrack on any commitment to not interfere in the electricity sector. However, such a commitment is the only way out of the revolving door of the costly policy reversals, interference and missteps in which Ontario has found itself trapped for decades.

APPENDIX A

OVERVIEW OF THE HISTORY OF ELECTRICITY PLANNING IN ONTARIO: HOW DID WE GET HERE?

Ontario's electricity system planning has been problematic for decades, through the tenure of all three major political parties in Ontario.

A review of the history of electricity planning reveals that the core cultural elements of Ontario's electricity planning even today may relate back to its infancy. In the early 1900s, when significant potential for hydro (water) power seemed vast, the victorious politicians of the day characterized electricity generated through hydro as a public resource. During the 1905 election campaign, James Whitney declared that "the water power of Niagara should be as free as the air".

In 1906, when Adam Beck became the first Chair of the newly formed Hydro-Electric Power Commission (which later became Ontario Hydro), he famously declared "Nothings is too big for us. Nothing is too expensive to imagine. Nothing is too visionary."

And so Ontario embarked on a direction where for many years, one company continually expanded electricity generation capacity, through large projects, to match Ontario's growing economy, all done by Ontario Hydro. Ontario Hydro became a large and very influential construction company. The model worked largely to the satisfaction of governments until Ontario reached the 1980s.

By the 1950s, Ontario's topography meant it had run out of significant potential for new major hydro-electric projects. The province moved to both coal and nuclear to add capacity to keep up with growing demand. Three coal plants (Lakeview, Nanticoke and Lambton) were the major additions to capacity in the late 1950s and 1960s. Two nuclear plants, Pickering (1971) and Bruce (1977).

When Ontario reached the 1980s, Ontario Hydro's reputation was under stress, and electricity generation issues had become more controversial. Whether to proceed with construction of the Darlington Nuclear Station was controversial. The late 1970s planning budget was \$2.9 billion, but at construction start in 1981 this had increased to \$7.4 billion. Pickering station had a loss of coolant accident. Douglas Point nuclear station shut down after a history of unreliability and heavy water leakage. Because of the early 1980s recession and reduced demand, the Darlington project was started and stopped, which added huge interest costs to the project.

The David Peterson government moved to reign in Hydro One's monopoly power by requiring them to allow non-utility generators (NUGs) access to the grid, and making them subject to freedom of information legislation. A Select Committee of the Legislature report is negative towards Ontario Hydro's nuclear fixation and proposes smaller-scale generation in the future and more investment in energy efficiency.

By the time that Darlington station was commissioned its cost had ballooned to \$14.4 billion, with delays, many government requested, accounting for 70% of the increased costs. Darlington came online in 1990 when demand had dropped dramatically due to the recession. This lead to a 40% increase in prices in the early 1990s and negative media coverage for the government. The NDP government responds by freezing wholesale prices at 4.3 cents/kWh.

When Maurice Strong is appointed chair of Ontario Hydro in 1992, he declares it to be a “corporation in crisis”. Ontario Hydro’s debt at this time is pegged at \$26 billion and a growing concern. This leads to internal government discussions about breaking up Ontario Hydro and selling it, but the privatization option is not favoured by key NDP Cabinet Ministers and discussions are shelved.

The election of Mike Harris in 1995 brings in a government more open to privatization. The 1996 Macdonald Committee report recommends eliminating Ontario’s Hydro’s monopoly on generation and opening up the electricity market to competition, and reduction in the number of local distribution companies “of which there are far too many, over 300”.

In 1997, an independent assessment of Ontario Hydro’s nuclear reactors finds them “minimally acceptable” and Ontario Hydro comes close to losing its license. 7 of 20 reactors are immediately shut down due to safety concerns.

In 1999, Ontario begins the move towards market opening, following the direction given by the Macdonald Committee. Ontario Hydro is broken into five different organizations (OPG, Hydro One, IESO, ESA and OEFC), with a requirement to reduce its generation holdings by 65 percent, and to sell the distribution assets. Ontario Hydro’s stranded debt by this time is \$38.1 billion and given to the OEFC. The first step by OPG is to enter into a lease agreement with Bruce Power for one of its larger generation assets.

In May of 2002, the Harris government lifts the 4.3 cent/kWh price cap, which had been in place since 1993, for the launch of market opening. The launch initially goes well, with wholesale prices averaging 3.01 cents/kWh. However, for a variety of reasons, including a particularly hot summer, and a temporary reduction in domestic generating capacity, wholesale prices rise to 6.2 cent/kWh, leading to a negative public reaction to market opening. In response to this pressure, new Premier Ernie Eves responds in November by freezing the price of electricity at 4.3 cents/kWh, effectively abandoning the move to market pricing for electricity. The cost of maintaining the 4.3 cent cap is estimated at the time to cost up to \$135 million per month. This subsidy cost is financed through provincial debt, creating an unsustainable problem for the government.

The newly elected government of Dalton McGuinty inherits a costly price cap and an abandoned market reform. McGuinty and Energy Minister Dwight Duncan declare the price cap unsustainable, lift the cap and give the OEB authority to set pricing that reflects the true cost of electricity. Duncan points to past political meddling in the electricity system as the source of the problem. He tells the provincial legislature that he is committed to “take the politics and politicians out of electricity pricing. It’s simply too important to be continually subjected to political whims and whatever opinion polls show to be popular on any given day.”

The Ontario Power Authority is established in 2004 with a mandate to create regular 20-year “Integrated Power System Plans” or “technical plans” as they become referred to, and the OEB is given authority to review the plans. The government begins adding to generation capacity by

offering generators long-term fixed-price contracts. At first these are competitively tendered. This requires the introduction of the Global Adjustment Charge, to make up the difference between the IMO's "market price" the cost for the fixed price contracts.

In 2006, the McGuinty government expands its renewables program and offers 20 year feed-in tariff (FIT) programs for solar, wind, hydro and biomass projects. At this point, the Minister of Energy starts to issue supply mix directives to the IESO with increasing targets for renewable energy, which increasingly reduce the planning flexibility of the IESO.

In 2007, the OPA produces its first technical plan. In 2008, during the early stages of the OEB public hearing to review the IPSP, Minister Smitherman issues a directive to the OPA to revisit various components of the plan and submit a revised plan to the OEB within six months. The OEB suspends the hearing, pending a revised IPSP. However, a revised IPSP is never submitted to the OEB.

In 2009, Minister Smitherman introduces the Green Energy Act with an announced goal to create 50,000 direct and indirect jobs in the energy sector and expand green energy in the supply mix. Initial feed-in tariffs of up to 80.2 cents/kWh are offered for solar under the microFIT program, which attracts significant public attention. In 2010, the Minister issues a directive to the OPA to negotiate a sole-sourced 20 year power purchase agreement with a consortium led by Samsung Energy. The arrangement attracts significant media coverage. At Standing Committee on General Government, Smitherman indicates that "We anticipate about 1% per year of additional rate increase associated with the bill's implementation over the next 15 years."

In 2010, Energy Minister Brad Duguid announces the cancellation and relocation of an Oakville natural gas power plant to Napanee at a net cost to taxpayers and ratepayers of approximately \$675 million.⁵ The first Long Term Energy Plan (LTEP) is released this year, without any cost benefit analysis of alternatives. There is no requirement for the LTEP to be reviewed by the OEB. Electricity prices begin to rise at a very high annual rate, which continues through to today. Between 2010 and 2016, electricity commodity prices increase by 78 percent.

In 2011, another supply mix directive to the IESO, yet again increasing the target for renewables. As a result, Ontario continues to add generation capacity even though the 2008 recession resulted in significantly reduced demand. The OPA prepares a second technical plan, and this one also does not go for review by the OEB as required by legislation.

During the 2011 provincial election, all three parties campaign on closing a power plant under construction in Mississauga. The Liberal government announces the closure of the plant one week before the election date. The provincial auditor would later peg the net cost of the two gas plant cancellations and relocations at \$950 million. Electricity price increases continue to get media attention, and the government announces the Ontario Clean Energy Benefit, a 10 percent

⁵ http://www.auditor.on.ca/en/content/specialreports/specialreports/oakville_en.pdf

reduction in the total bill for residential and small business customers. The program runs until December, 2015.

In 2013, a second LTEP is issued, also without a cost benefit analysis of alternatives.

In 2015 the provincial Auditor General issues a scathing report on electricity planning in Ontario. The report documents a number of areas of mismanagement, including: ignoring legislative planning requirements; weakening of OEB oversight; excessive use of government directives; lack of public consultation; lack of cost-benefit analysis; lack of competitive procurement; project mismanagement; and a lack of transparency in decision making.

The Government responds to the Auditor's Report by introducing and then passing Bill 135, Energy Statute Law Amendment Act. The Bill essentially puts all control over electricity sector planning under the Minister of Energy, and reduces the role of the IESO and OEB to that of implementing the Minister's plans.

By 2016, media attention to rising electricity prices begins to escalate dramatically. The removal of the OCEB gets layered on top of regular OEB RPP price increases, leading to a particularly large price increase in 2016. The government responds by announcing an 8 percent reduction in electricity prices (equivalent to Ontario's portion of the HST) in its Throne Speech. The cost of this price reduction is estimated to be \$1 billion annually, subsidized by taxpayers. However, the 8 percent fails to quell media attention to rising prices. At the 2016 Liberal policy convention in Ottawa, Premier Wynne tells the crowd that "Our government made a mistake." "It was my mistake. And I'm going to do my best to fix it. In the weeks and the months ahead, we are going to find more ways to lower rates and reduce the burden on consumers." After the announcement, media stories of high hydro bills dominate provincial news coverage. Polls are published in the major news media that electricity bills have become the number one concern of Ontario voters.

In March, 2017, the government announces the Fair Hydro Plan. Among the many elements of the plan are the following: a 25 percent electricity rate reduction (including the already announced 8 percent) by spreading out the cost of 30 years; a cap on price increases of inflation for four years; increased assistance to offset delivery charges for rural and remote customers; and expansion of the Industrial Conservation Initiative (ICI) down to small businesses with monthly peak demand of 500 kW, down from 1 million kW; an increase in the income thresholds for eligibility and the amount of fixed subsidy under the Ontario Energy Support Program; and the removal of "social costs" from ratepayers to taxpayers. The plan would transfer an additional \$833 million from ratepayers to taxpayers, and result in an additional \$25 billion in interest charges. Recovery of the additional costs is planned to begin in 2027.

TABLE A1: CHRONOLOGY OF ELECTRICITY PLANNING IN ONTARIO

1900	Total capacity of 300,000 kW under development in Niagara. Public concerns expressed about whether this natural resource was being best exploited for public welfare
1903	Provincial government of George William Ross refuses to allow municipal councils to develop, transmit, buy and sell electrical energy
1905	During election campaign, ultimate victor James Pliny Whitney declares: “The water power of Niagara should be as free as the air”
1906	Publicly owned Hydro-Electric Power Commission of Ontario (HEPCO) established as a utility (Commissioners were Adam Beck, John S. Hendrie, and Cecil B. Smith). Beck promotes concept of “power at cost”. “Nothing is too big for us. Nothing is too expensive to imagine. Nothing is too visionary” – Adam Beck.
1907	19 municipalities approve contracts with HEPCO to construct distribution systems
1910	First transmission lines begin providing power
1922	Sir Adam Beck Hydroelectric Generating Stations opened (then called the Queenston Chippawa Power Station) at Niagara Falls
1926	Ferguson government approves Abitibi Power & Paper Co. to develop Abitibi Canyon dam (75,000 KW), with some questions about secret commitments to purchase the power and indemnification of HEPCO against losses
1932	Abitibi placed in receivership, and legislation passed to allow HEPCO to take control
1933	Dealings related to the acquisition came to be known as the “great Abitibi Swindle”. Seen as factor leading to the fall of the Henry government in the 1934 Ontario election to Mitchell Hepburn
1939	HEPCO given authority to regulate all electricity generators, and to acquire any utility not producing at capacity
1951	Leslie Frost officially opens Hearn Generating Station, Ontario’s first coal plant.
1953	First interconnects with other jurisdictions
1954	Significant expansion of Sir Adam Beck Niagara falls generator
1958	Lakeview Generating Station (coal) construction begins (2400 MW by 1968)
1960	Ontario Energy Board is created with responsibility to regulate local distribution companies.
1961	Construction planning begins for Douglas Point nuclear generating station (220 MW), Canada’s first full-scale nuclear power plant and second CANDU reactor.
1966	Pickering Nuclear generating station begins construction (2060MW in 1966) and begins operating in 1971.
1967	Nanticoke Generating Station construction announced (4,0000 MW) and becomes North America’s largest coal plant
1969	Lambton Generating Station (coal) opened (950 MW)
1970	Bruce nuclear generating station begins construction and is first commissioned in 1977. Construction continued until 1987. Current capacity of 6384 MW
1973	Ontario Ministry of Energy is created.
1974	HEPCO reconstituted as a crown corporation known as Ontario Hydro
1975	Solandt Commission reviewed transmission lines between Nanticoke and Pickering, and from Lennox to Oshawa
1975	Davis government launches Porter Royal Commission on Electric Power Planning
1978	Interim Porter Commission Report: <i>A Race Against Time</i> . It focuses on the highly controversial and divisive role of nuclear in Ontario issue and concludes that nuclear necessary to meet growing demand, and focuses heavily on safety. Recommends more “openness” in nuclear decision making in Ontario.
1980	Porter Commission final report released. Recommends Ontario Hydro change focus from capacity expansion to demand management
1981	Darlington Nuclear Generating Station begins construction. 1981 construction estimate is \$7.4 billion. Late 1970s planning estimate was \$3.9 billion.
1983	Pickering nuclear has a loss of coolant accident. Takes 2 weeks to stop leak.

1984	Douglas Point shut down after a history of unreliability and heavy water leakage
1985	Liberal/NDP Accord government. Ontario hydro has more than 40% more capacity than demand without Darlington (27,300 MW). Ontario Hydro predicts need for 30,000 MW by 2000.
1985	Ontario Legislature Select Committee on Energy recommends Ontario Hydro be allowed to complete Units 1 & 2 at Darlington
1986	Select Committee on Energy Final Report released. Report negative towards Ontario Hydro's fixation on nuclear. Proposes small-scale generation and more investment in energy efficiency. Still recommends proceeding with Darlington as \$7 billion spent already
1987	Throne speech promises more public accountability for Ontario Hydro. Attorney General Ian Scott makes Ontario Hydro subject to the Freedom of Information Act
1987	Power Corporation Act amended to: allow non-utility generators (NUGs); expand definition of conservation; require Ontario Hydro to make annual payments to government for expansion plans still on drawing board
1987	Premier David Peterson negotiates with Quebec Premier Bourassa and Newfoundland Premier Brian Peckford on plans to develop lower Churchill. Deal falls through.
1989	Ontario Hydro publishes first 25 year Demand Supply Report <i>Providing the Balance of Power</i> with scenarios for replacing ageing electricity infrastructure. Derailed when electricity demand declined with early 1990s recession
1990	Darlington Units 1-4 begin to come online from 1990 to 1993 (3,512 MW). Final construction cost was \$14.4 billion. Delays account for 70% of cost overruns: government kept starting and stopping the project as recession had decreased demand
1990	NDP throne speech announces moratorium on new nuclear construction and plans for ambitious energy conservation programs
1991	Electricity rates increase by 40% between 1990 and 1993 as Darlington comes online
1991	Power Corporation Act amended to increase accountability of Ontario Hydro and encourage conservation. Amendments gave Minister of Energy power to make directives to Ontario Hydro Board that Board had to implement. Deputy Minister of Energy also appointed to Board.
1991	NDP proceeds with previous Liberal plan to require Ontario Hydro to facilitate NUGs. NDP proud to be first in bringing in private sector generators, but still not rushing to a competitive market. Concern that private market would discriminate against green power
1991	Premier Rae appoints Marc Elieson Chair. Urges Rae not to hold back on rate increases, putting him at odds with Rae
1992	Ontario Hydro issues revised Supply/Demand Report, subject to environmental assessment, but withdrawn as recession drastically reduced electricity demand
1992	Maurice Strong appointed Chair of Ontario Hydro. Pronounces it a "corporation in crisis". Changes corporate strategy from being construction company to being an efficient operating company. Begins promoting privatization internally.
1993	Ontario hydro debt pegged at \$26 billion and a growing government concern. "Cut it loose" camp forms within civil service of those who suggest Ontario Hydro be broken up, sell shares and promote a private market. Strong internal opposition with some NDP members
1993	Report Hydro 21: options for Ontario Hydro; Present situation and options for the future released. Report suggests that the electricity system in Ontario should be restructured in a more market oriented direction.
1993	Electricity prices get increasing media attention. Government freezes wholesale electricity prices at 4.3 cents/kWh in response to rising electricity prices, below Ontario Hydro's average cost of about 4.5 cents, effectively eliminating investment in new generation or planning for new generation. Ontario Hydro lays off 30% of workforce.
1996	Report of the Advisory Committee on Competition in Ontario's Electricity System (Macdonald Committee) released. It recommended the elimination of Ontario Hydro's monopoly on managing generation capacity and that the electricity market be opened to competition. Report also suggests that electricity distributors "of which there are far too many, over 300" be encouraged to amalgamate into regional entities
1997	Independent Integrated Performance Assessment/ Systematic Assessment of Licensee Performance of Ontario Hydro's nuclear reactors finds them "minimally acceptable". Ontario Hydro shuts down 7 of 20 reactors due to safety concerns in response

1997	The report <i>Direction for Change: Charting a Course for Competitive Electricity and Jobs in Ontario</i> is released, outlining the government's plans to move to full competition in Ontario's electricity system and expand the mandate of the OEB to protect electricity consumers
1998	Market Design Committee created and releases its report in January, 1999. Among the recommendations are to reduce the planned OPG's market power from control of 90% of generation capacity to 35%; and to require that OPG refund any revenues above 3.8 cents per kWh to consumers
1999	Ontario Hydro restructured into 5 companies: Ontario Power Generation (OPG); Ontario Hydro Services Company (later Hydro One); Independent Market Operator (later to become the Independent Electricity System Operator (IESO)); Electrical Safety Authority; and Ontario Electricity Financial Corporation (OEFC). The OEB was given the mandate to oversee transmission and distribution. Ontario Hydro's stranded debt at this time is \$38.1 and transferred to the OEFC.
1999	OPG enters into a Market Power Mitigation Agreement (MPMA). Required OPG to pay a rebate to Ontario consumer on 90% of its domestic sales when the wholesale price exceeded 3.8 ¢/kWh. It also required OPG to divest 65% of its price-setting generation units with 3.5 years after market opening, and 65% of its core, or base load, facilities with 10 years of market opening.
1999	Government closes Lakeview coal generating station
2001	In December, Ontario government announces plans to sell Hydro One and use the expected \$5 billion to offset Ontario Hydro's \$38 billion debt
2001	Bruce Power enters into a lease agreement with OPG to reduce its holdings as part of the MPMA.
2002	In April, Ontario Superior Court Justice Arthur Ganz issues decision saying the legislation did not authorize the province to sell, delaying the Hydro One IPO. In June, Premier Eves pulls back from 100% privatization, suggestion only a portion may be sold. Legislation is subsequently amended to allow the sale. In December, Premier Eves announces the cancellation of the Hydro One sale. "We're making this decision because we want to protect consumers"
2002	In May, government removes the 4.3 ¢/kWh price cap for competitive market opening of both the wholesale and retail electricity markets. At first, wholesale prices averaged 3.01 ¢/kWh. However, for a variety of reasons including an especially hot summer, a reduction in domestic generating capacity, enron, natural gas price shocks, and an increasing reliance on a limited import capacity, prices began to rise sharply. By July, average wholesale price was 6.2 cents per kWh. A debt retirement charge of 0.7 ¢/kWh is added to bills to recover the "stranded debt" of the old Ontario Hydro
2002	In response to mounting public reaction to rising prices, on November 11 new Premier Ernie Eves announces a freeze on the price of electricity at 4.3 ¢/kWh until May 1, 2006, effectively abandoning the move to an electricity market. Cost estimates at the time peg the monthly cost of maintaining the freeze (the difference between the market prices and 4.3 cents) as high as \$135 million. This shortfall was financed through debt at the OEFC.
2003	Eves government appoints Jake Epp, a former federal MP, to head a review of ongoing cost overruns and delays at Pickering Station. The report finds a number of problems and notes, "given the size of the investment and the importance of the project, the Government as sole OPG shareholder, the Board, and senior management of OPG should have exercised greater oversight over the project's economics and execution and responded more quickly to emerging problems."
2003	Province-wide blackout on August 14
2003	During election campaign, Liberals and NDP promise to shut down all five of Ontario's coal plants by the end of 2007. The PC's promise a phase out by the end of 2014
2003	Minister Dwight Duncan announces creation of the Electricity Conservation & Supply Task Force to provide "recommendations on increasing the province's supply of electricity and enhancing conservation and demand management". Government announces commitment to keep all its generation assets in public ownership.
2003	Newly elected Premier Dalton McGuinty announces a lifting of the 4.3 cent price cap and move to "a price regime that better reflects the true cost of electricity". He announces the cost of the price cap to date at \$700 million, as true cost is closer to 6 cents. During the election campaign, the Liberal platform indicated they would maintain the current cap on electricity.
2003	OEB given legislative authority to set pricing that reflects the cost of electricity starting in April 2004.

2003	Energy Minister Dwight Duncan tells the provincial legislature he is committed to “take the politics and politicians out of electricity pricing. It's simply too important to be continually subjected to political whims and whatever opinion polls show to be popular on any given day.”
2004	Electricity Conservation & Supply Task Force report released. The report suggest a “looming electricity supply shortfall” needs urgent attention. They find that subsidized prices are insufficient to attract new investment. The recommendations are wide-ranging, and include “less reliance on the spot market as a signal for new investment” and “greater reliance on long term contracting between generators and large volume buyers” and “the IMO should develop a long-term integrated system plan.” They also recommend a new “central agency” to take on the contracting function.
2004	Ontario Power Authority (OPA) established with mandate for long-term supply planning. OPA required under <i>Electricity Act</i> to regularly prepare a 20 year “Integrated Power System Plan” or “technical plan”. Also included is a mandate to remove coal from Ontario’s supply mix.
2004	Electricity Act amended to require OEB to review and approve the OPA’s technical plan to ensure they comply with Ministerial directions and are fiscally prudent.
2004	Government begins smart metering initiative, replacing conventional electricity meters with time-of-use meters.
2005	New generation capacity stimulated by offering generators long-term fixed-price contracts
2005	Government directs the OEB to introduce the Regulated Price Plan (RPP) to provide stable predictable pricing for residential and low volume business customers.
2006	Global Adjustment Charge introduced to make up difference between IMO’s price clearing rates and fixed rates offered to generators
2006	Renewable Energy Standard Offer Program is created and offers 20-year feed-in tariffs for solar, wind, hydro and biomass projects
2006	Minister of Energy issues a supply mix directive requiring the OPA to increase renewable energy sources by 15,700 MW by 2025
2007	OPA prepares first technical plan.
2008	OEB suspends its review of the 2007 technical plan after Minister sends a revised directive asking the OPA to revise the plan in response to changes in government policy on supply mix, and to take the revised plan back to the OEB. However, the OPA does not submit a revised plan to the OEB; it forwards it directly to the Minister for review.
2008	Minister amends previous supply mix directive to establish new targets for renewables, amongst other changes
2009	Green Energy Act passed with the objective of creating green jobs and providing green power. It includes the Feed-in Tariff (FIT) Program which offers above market rates for renewable power. In addition to its green energy goals, the Act is part industrial strategy, with a goal to create 50,000 direct and indirect jobs. Initial tariff rates of up to 80.2 ¢/kWh are offered for solar power under the microFIT program. Minister George Smitherman tells the Standing Committee on General Government “We anticipate about 1% per year of additional rate increase associated with the bill’s implementation over the next 15 years.”
2010	Government directs OPA to proceed with Lower Mattagami hydro project even though initial cost estimate is \$1.4 billion is revised to \$2.56 billion. Average cost of electricity from this facility comes in at 13.5 ¢/kWh
2010	On October 7 th , cancellation of an Oakville natural gas generating plant is announced by Energy Minister Brad Duguid in response to local opposition. Full final value of the contract is paid out
2010	Minister issues directive to negotiate a 20 year power purchase agreement with a Korean consortium (the “Samsung deal”) for \$9.7 billion
2010	Ministry of Energy releases first Long-Term Energy Plan (LTEP) outlining long-term energy goals and supply mix. The plan has no cost-benefit analysis of alternatives. Unlike OPA’s technical plans, Minister’s LTEPs not subject to review by the OEB. The plan commits to refurbishing Ontario’s nuclear fleet.
2011	OPA prepares second technical plan. It also does not go forward for review by the OEB.
2011	Minister issues new supply mix directive to IESO. Among changes is a target of 19,700 MW of renewable energy by 2018. This significantly reduced the discretion of the OPA.
2011	Niagara tunnel project completed. It is 4 years late and \$600M over budget.

2011	During the 2011 provincial election, all three candidates in a Mississauga riding announce opposition to the completion. On September 28, one week prior to the election date, the Liberal party announces that it will cancel the gas plant if elected. The provincial auditor estimates the cost of the Oakville and Mississauga plant cancellations to be about \$1 billion.
2011	Ontario Clean Energy Benefit (OCEB) introduced and provides a 10% discount on total bill for residential customers and low volume business. Program stays in place until December 2015.
2013	Ministry of Energy releases second LTEP. Plan has no cost-benefit analysis of alternatives.
2014	Auditor General's review of Smart Metering Initiative finds that program lacked business case, more than a \$1 billion over the government's estimated budget, and that the oversight role of the OEB was set aside by government.
2015	OPA merges with the IESO.
2015	Ontario's Auditor General issues scathing report on Electricity Power System Planning. Among the many findings: legislative planning requirements ignored by government, including requirements to produce regular technical plans and have them reviewed by the OEB; excessive use of government directives; lack of public consultation; lack of cost-benefit analysis; lack of competitive procurement means province paid \$9.2 billion more for electricity from renewables than it should have; gas plant cancellation/relocation net cost \$950 million; continuing to procure even when capacity not needed added significant costs; lack of transparency in decision making
2015	Government announces that is renegotiated agreement with Bruce Power to refurbish and extend operation of Bruce units until early 2060. Fixed payments for output extended to 2048. No public input into decision making.
2016	OCEB expires on Jan 1. Ontario Electricity Support Program (OESP) introduced. It provides a sliding scale fixed \$ on-bill credit to low income households who apply for it
2016	Government pass Bill 135, eliminates IPSP and gives Minister authority to development long-term energy plans (LTEP). Gives Minister power to direct IESO and OEB to implement LTEP.
2016	OEB announces that RPP prices must increase because consumption was lower than expected, resulting in a revenue recovery shortfall.
2016	Throne speech announces an 8% reduction in electricity bills, equivalent to the provincial portion of the HST at a cost of about \$1 billion annually to taxpayers
2016	Media coverage of rising electricity prices and individual "high bill" anecdotal stories becomes frenzied. Premier Wynne makes a very public mea culpa at Liberal policy convention in Ottawa and promises action to reduce electricity bills.
2016	Government announces non-competed deal for power with Quebec Hydro saying that annual savings will be \$75 million. No public discussion or debate of merits.
2017	Government announces a 25 percent hydro rate reduction (which includes the previously announced 8% reduction) through rate "smoothing", a four year annual cap on rate increases of inflation, increased assistance for rural customers to offset delivery charges, an expansion of the ICI program, an increase in subsidy levels and income thresholds for the OESP, and the movement of "social costs" from the rate base to the provincial tax base. Rate reduction "smoothing" mechanism to be financed through debt on OPG's books. The government indicates the plan would transfer about \$833 million/year from ratepayers to taxpayers for social programs, and result in an additional \$25 billion in interest charges over the next 30 years for the GA portion.

BIBLIOGRAPHY

Bratt, Duane. *Canada, the Provinces, and the Global Nuclear Revival: Advocacy Coalitions*. McGill-Queen's University Press. 2012

Deweese, Donald N. *What Is Happening to Ontario Electricity Prices?* Sustainable Prosperity. Ottawa. March 2012

Electricity Conservation & Supply Task Force. *Tough Choices: Addressing Ontario's Power Needs*. Final Report to Minister. January 2004.

Freeman, Neil. *The Politics of Power: Ontario Hydro and Its Government, 1906-1995*. University of Toronto Press. 1995.

Hansard. <http://www.ontla.on.ca/pas/house-proceedings/house-documents.xhtml?locale=en>. Various dates.

<http://www.ontario-hydro.com/ontario-hydro>

Kupcis, Dr. O. Allan and Andognini, G. Carl. *Nuclear Report Card: Ontario's Reactors are Minimally Acceptable*. The IIPA/SSFI Evaluation Findings and Recommendations. A Report to Ontario Hydro Management. July 21, 1997.

Market Design Committee. *Final Report to the Honourable Jim Wilson, Volume 1*. The Committee. Toronto. January 29, 1999

Office of the Auditor General of Ontario. *Annual Report*. Queen's Printer for Ontario. 2014 & 2015.

Ontario Ministry of Energy. *Ontario's Long-Term Energy Plan*. 2010, 2013 and 2016.

Ontario Ministry of Energy, Science and Technology. *Direction for Change: charting a course for competitive electricity and jobs in Ontario* (the "Macdonald Advisory Committee" report). Ministry of Energy Science and Technology. Toronto. November 1997.

[Ontario Royal Commission on Electric Power Planning \("The Porter Commission"\). *A Race Against Time*. Interim Report on Nuclear Power in Ontario. J.c. Thatcher, Queen's Printer for Ontario. September, 1978.](#)

Ontario Royal Commission on Electric Power Planning ("The Porter Commission"). *Report of the Royal Commission on Electric Power Planning*. Volume 1: Concepts, Conclusions, and Recommendations. J.c. Thatcher, Queen's Printer for Ontario. September, 1978.

Select Committee on Energy. *Report on Ontario Hydro Draft Demand/Supply Planning Strategy, Volume II.* 1st Session, Thirty Fourth Parliament. Toronto. The Committee. 1989

Solar Share: <https://www.solarbonds.ca/news-events/solarshare-blog/2015/11/06/who-manages-our-electricity-in-ontario-a-brief-history>

Swift, Jamie and Stewart, Keith. *Hydro: The Decline and Fall of Ontario's Electric Empire.* Between the Lines. 2004

Wikipedia:

https://en.wikipedia.org/wiki/Abitibi_Power_and_Paper_Company

https://en.wikipedia.org/wiki/Bruce_Nuclear_Generating_Station

https://en.wikipedia.org/wiki/Darlington_Nuclear_Generating_Station

https://en.wikipedia.org/wiki/List_of_generating_stations_in_Ontario

https://en.wikipedia.org/wiki/Ontario_Hydro

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