

# Getting it Right – Not Quite – Ontario’s Green Energy Act

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## Abstract

In 2009, Ontario passed its *Green Energy and Green Economy Act*. By almost any measure of performance - applications, investment, jobs, industrial development, it has been a great success, but so far, few feed in tariff contracts are in commercial operation. What was right and what has gone wrong? This paper will explore the gap between policy and implementation with an examination of how politics frustrates policy; how public sector organizations can impair public policy and how self-interest trumps the greater good. The author has been engaged in Canada's energy sector for more than 30 years and was content coordinator for the Green Energy Act Alliance.

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## Introduction

In October 2003, the Ontario electricity sector was in shambles:

- After almost 7 years of study, an ideologically based market design that promised competition, lower prices, privatization and secure supply failed in less than 7 months.
- Generation capacity fell by 6% while demand had grown by 8.5%
- Over 1800 MWs were taken out of service – equivalent to Niagara Falls going dry.
- Investment in transmission and distribution systems was almost nonexistent as first, Ontario Hydro was disassembled and second, as local distribution companies had to invest significant capital in information systems to get ready for market opening – investments that they were unable to recoup given that their rates were frozen.

- The uneconomic 4.3 cents price cap resulted in an increase in Ontario Hydro's stranded debt and took away all incentive for consumers to conserve.
- Having to sell power below its production cost left Ontario Power Generation in virtual bankruptcy.
- Cost overruns at Pickering A - Unit 4 resulted in a \$1 billion expenditure.
- Consumers were confused with "unbundled bills" and energy marketers with a plethora of offers at their door.
- No conservation programs existed; only a few pioneers had ventured into new renewable energy in spite of worldwide developments in wind, solar, geothermal and bio-energy
- The August 2003 blackout served as a wakeup call on just how fragile the system was. Although the initial cause was a problem in Ohio, bringing back Ontario's system to full power was problematic despite heroic efforts by workers as well as by consumers of all sizes who voluntarily reduced their loads to enable the system to be re-stabilized.

In October 2003, Ontario voters elected a government whose electricity platform included the following elements.

- Will not sell off the electricity transmission grid or any publicly owned generating stations.
- Keep electricity power rates frozen at 4.3 cents/kWh until 2006.
- Phase out coal-burning generation by 2007, and replace with cleaner energy sources.
- Require all electricity suppliers to get five per cent of their power from renewable sources by 2007 and 10 per cent by 2010.
- "Reward" those who reduce their energy consumption, and charge more to those who consume more than an average household
- Promote "smart meters," which track what time of day the energy is used, and charge accordingly.
- Create program to help consumers cut consumption by five per cent by 2007
- Expand generating capacity, such as the station at Niagara Falls.
- Build transmission link with Manitoba, representing 1,000 MW in a plan to add to the province's generating capacity of 30,702 MW.
- Create incentives for production of renewable energy sources; Reduce red tape for clean-energy projects.
- Work with businesses, commercial and institutional customers to reduce electricity consumption.
- Make all publicly owned power entities subject to freedom of information and salary disclosure laws.

- Create "truly independent watchdog" to regulate prices, utilities, and suppliers.

In January 2004, an Electricity Conservation and Supply Task Force confirmed that the market design implemented by the previous government had failed and that major reforms were required. These reforms were aimed at protecting the interests of Ontarians and achieving the following objectives:

- **Creating a "conservation culture" in Ontario** : Making conservation, demand management and demand response strategies a cornerstone of Ontario's long-term energy future;
- **Reliability, diversity and affordability**: A reliable, sustainable and diverse supply of competitively priced power;
- **Effective consumer protection** : Consumers, especially residential and small business consumers, will be protected from excessive price volatility;
- **A stronger investment climate** : The government will encourage new investment in conservation, generation and transmission;
- **Cleaner Air**: The government will contribute to the cleanup of our air by eliminating coal fired generation and replacing it with other, cleaner sources of energy.

## Background

Ontario's electricity sector has developed and evolved over more than a century. Ontario's settlement and development was closely tied to the distributed energy resource of running water that powered the grist mills and sawmills that fed and housed the pioneers that created Ontario. Historian Donald Swainson documented the origins of Ontario's critical role in Canada under Premier Sir Oliver Mowat from 1872 to 1896.

*Under Mowat's leadership, Ontario came of age economically, socially and politically. Agriculture was modernized, the importance of industry recognized, educational and scientific areas cultivated, urban problems addressed and trade unions accepted as part of the society. Substantial government regulation became part of Ontario life and numerous social programs were introduced. Mowat and his government also contributed to the definition of Canadian federalism. He was Canada's first important provincial-rights advocate and, through a series of successful legal and political battles with John A. Macdonald and the federal Conservative government, altered Macdonald's concept of Canada as a highly centralized state with the provinces weak and dependent. Moreover, Mowat and his colleagues established Ontario as the dominant province within Confederation. Ontario's resources were increased by expansion into northern territories and its boundaries substantially enlarged after a protracted dispute with the federal government. Good management of the key economic sectors of agriculture, industry and resources made it the richest province, and it is fair to describe Mowat's tenure of office as the era of the emergence of modern Ontario.*

## Finding a New Paradigm

By 2008, it was clear that the McGuinty government had brought Ontario's electricity sector back from the brink of disaster. But there remained a gap between policy and reality. Ontario was still running the risk of setting up the same conditions for failure which gave rise to Ontario Hydro's financial crisis in the early 1990s. It was also clear that Ontario was missing an incredible opportunity to transform Ontario's energy sector into a model of sustainability, an engine for economic growth and rural development, a catalyst for First Nations' participation, and foundation for consumer empowerment.

On September 16 2008, over 100 people came together to envision what a Green Ontario would be like. These people were representatives of First Nations, farmers, local distribution utilities, municipalities community organizations, environmental groups, gas companies, energy management firms, anaerobic digester firms, solar developers, manufacturers, wind developers and conservation practitioners. They had responded to an invitation from the Green Energy Act Alliance that was formed in June 2008 by the First Nations Energy Alliance, the Ontario Federation of Agriculture, the Community Power Fund, the David Suzuki Foundation, the Pembina Institute, the Ivey Foundation and Environmental Defense and the Ontario Sustainable Energy Association. The individuals from these organizations identified the opportunities for Ontario to enact a *Green Energy Act* (GEA) for Ontario modeled on Germany's very successful *Renewable Energy Sources Act*.

With the advent of a new energy minister, these suggestions found a champion in George Smitherman. He tabled Bill 150 on February 23, 2009 and the Act was passed into law on May 14, 2009. By any measure, this was a significant feat, given that it also changed 11 other Acts of the Ontario Legislature, was accompanied by a streamlined environmental assessment process for renewable energy and redefined the energy landscape in Ontario to be green and sustainable. Most dramatically, the Act paved the way for including aboriginal Canadians, both First Nations and Métis, in the development, ownership and operation of electricity projects.

Most of the early international attention on Ontario's *Green Energy Act* related to the relatively high feed in tariff rates. After all 80 cents (Canadian) for solar PV is on the high side, but that is only for rooftop projects less than 10 kW. Other rates are more reasonable and more in line with those in other jurisdictions.

More recently, as the result of Japan taking Ontario's *Green Energy Act* procurement policies to the World Trade Organization on the basis that Ontario's content requirement violates international trade agreements, the international attention has stepped up. Japan may be more concerned with the deal that the government has negotiated privately with the Korean based Samsung Corporation, which was outside of the *Green Energy Act*, but has put many in the global industry on tilt in any event, including players in Ontario.

The truth is Ontario's *Green Energy Act* is about so much more than these two issues. The Green Energy Act Alliance's vision included the following:

- ✓ **Community Energy:** Empower all Ontarians, farmers, First Nations, community groups, municipalities, homeowners, institutions and companies to become generators and conservers of green electricity and to make a reasonable profit in doing so.

- × **Conservation:** Ensure a continuous improvement approach in conservation programs.
- ✓ **Renewable Energy:** Ensure that all forms of renewable energy such as sunlight, wind, rain, flowing water, bio energy and geothermal heat—which are naturally replenished, are harvested.
- ✓ **Clean Distributed Energy:** Enable communities and consumers to take advantage of clean distributed energy and make use of its significant aggregate contribution to security of supply.
- ✓ **Procurement and Connection:** Change the electricity procurement process to grant priority procurement and obligatory grid access via feed in tariffs for green energy.
- ✓ **Grid and Market Evolution:** Transform the grid to be “smart”, “green” and “healthy”.
- ✓ **Environment:** Streamline environmental approvals, and permitting for green energy.
- ✓ **Vulnerable Consumers:** Protect low income and other vulnerable customers from unaffordable energy prices through consumer protection, conservation and bill assistance.
- ✓ **Green Economy:** Make Ontario the leading jurisdiction in the world for green collar jobs, green energy policy green buildings and installed green energy and conservation projects.
- ✓ **First Nations & Metis:** Ensure the participation of, as well as the consultation with First Nations and Metis.
- × **Governance:** Use a triple bottom line process to manage and regulate Ontario’s energy sector and broaden the role of the local distribution companies to enable the full range of energy resources. Base energy related government policy, legislation, taxation, regulations, codes and standards on a transparent application of the total societal cost test.

## The Jury is Still Out

The actual legislation included all of the desired elements but implementation has fallen short particularly on conservation and governance. On governance, some piecemeal changes were added, but the public agencies have clung to the status quo for the most part, frustrating the full implementation of the policy.

While much lip service has been given to conservation, the government has failed to establish a robust framework for electricity conservation.

With respect to renewable energy, Ontario’s recent election ensured the short term future of feed in-tariffs but as long as wind farms are owned by absent corporate giants, there will be opposition. However, fundamental political and organization inertia remains to achieve the vision of community ownership of renewable energy.

Two areas where the jury is still out on how effective the feed in tariffs will be to deliver results embraced by urban and rural groups are:

1. The mechanisms to realize the benefits of the advances in the smart grid technology, particularly with over 80 local electric distribution companies.
2. Building out the distribution and transmission grid to enable the connection of renewable energy from the far reaches on Ontario's 1 million plus square kilometers.

## Smart Grid Issues

Ontario's Independent Electricity System Operator (IESO) had already started consideration of the role and need for a smart grid in 2008. In a York University Seminar<sup>1</sup> on integrating renewables into the grid later that fall, IESO CEO Paul Murphy, indicated his strong support for inclusion of the Smart Grid in the Act, but noted that the two gaps in the original smart metering plan: in-home displays and two-way communications, remain a barrier to realizing the full potential of smart metering for consumers. With respect to the Smart Grid, he noted that Ontario's aging distribution systems needs replacement anyway, but that should now be done in concert with the smart grid development. He also indicated that Ontario's participation in North American wide standards for smart grid communications was critical.

Most importantly, he also suggested that a stronger relationship among the smart grid strategy, electric vehicles and Ontario's automotive policy framework would be a very significant opportunity given the major role the automotive sector has played in Ontario's manufacturing sector. This idea was supported by a major Ontario workshop<sup>2</sup> in which the topic of smart grid technology and how it can integrate electric vehicles was debated. Many agreed that the technologies are complementary and that further research and collaboration was needed to ensure that the two develop in parallel. In the workshop, organized by Andrew Bowerbank, former Executive Director of the World Green Building Council, participants raised the following issues:

- The need for communication protocols and meters that provide for energy demand and time-of-use data; facilitation of billing based on peak, mid-peak and off-peak periods; and providing a reference against which consumers can gauge and reduce the cost of their energy use.
- The need for vehicles to communicate with the power grid in response to peak load demands. These vehicles can then be recharged during off-peak hours in the evening at cheaper rates when demand is low.
- The need for in-vehicle communication applications with GPS technology to inform EV users of the closest charging station and best way to get there.
- With respect to the having the transmission and distribution capacity, the provincial regulator has issued proposed guidelines for development of such expansion programs, including competitive procurement of transmitters, but, has according to most proponents of renewable energy has set up processes which will lengthen rather than

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<sup>1</sup> Advancing Smart Grids and Feed-in Tariffs in Ontario - Learning from the Spanish Experience

<sup>2</sup> [http://www.ec3initiative.com/fileadmin/pdf/EC3ElectricVehicle\\_Report.pdf](http://www.ec3initiative.com/fileadmin/pdf/EC3ElectricVehicle_Report.pdf)

shorten the time frame for new facilities. Traditional generators, who already have transmission connections, have expressed satisfaction for the proposed process. No surprise there!

While many of the smart grid solutions for electrical vehicles will also assist in the visibility and control of distributed renewable energy, one wonders which will get the most attention in the next five years.

## Grid Connection Issues

A telling example of the difficulties in transforming any jurisdiction into a welcoming environment for distributed and renewable energy is the tale of Hydro One and its failure to live up to its requirements under the Ontario Energy Board’s Distribution System Code for connecting micro embedded generators.

Although one could argue that the Act was passed in 2009 and Hydro One and the Ontario Energy Board needed time to gear up for the flow of applications. In fact, these connection issues were identified by the previous conservative government in 2003. The following timeline summarizes policy development and government direction on this matter:

<b>Ontario’s Renewable Energy Policy Timeline</b>	
June 2003	Ministerial Directive (John Baird) to Ontario Energy Board regarding regulatory reform to enable “private sector” investment in alternative energy forms
Aug 2003	Power Blackout in Ontario and north eastern US- in IESO Board Room presenting to the Conservation and Supply Task Force with respect to Smart Meters
Oct 2003	Liberals elected with platform including 2700 MW of renewable energy and phase out of coal generation by 2010; recruited by Liberals to ensure sustainability was key element of energy policy – focus on conservation and renewable energy
Jan 2005	OPA established; and procurement process for 1000 MW of renewable energy transferred from Ministry to OPA
May 2005	OSEA released <i>Powering Ontario Communities: Proposed Policy for Projects up to 10 MW</i> ; initiated by OSEA but became a Ministry driven project to develop ways to enable local community involvement.
Aug 2005	Ministerial Letter (Dwight Duncan) to Ontario Energy Board and Ontario Power Authority regarding a standard offer program for clean and renewable energy citing the need to remove regulatory barriers and address connection issues
Dec 2005	OEB and OPA delivered draft RESOP, applicable to small projects, connected to the distribution grid, but without much pricing differentiation.
Mar 2006	Premier McGuinty and Dr. Suzuki announced RESOP to facilitate individuals, farmers, First Nations and communities to generate renewable energy connected to local distribution grids
June 2006	Supply Mix Directive doubled renewable energy and conservation targets suggested by OPA
Nov 2006	Orange Zone (connection limitations areas) announced after IESO changed the effective capacity factor for wind from 10% to 30%. Hydro One’s recalculation of statistically available transformer and transmission capacity reduced dramatically in areas where wind farms already installed – Bruce/Southwestern Ontario. Eastern Ontario.

### Ontario's Renewable Energy Policy Timeline

Nov 2006	RESOP Program launched eight months after Premier's Announcement: projects under 10 MW connected to the distribution grid; Subdivision of projects waiting for next RFP resulted in queue issues with Hydro One. Major difference between RESOP and FIT/MicroFit was the sequence of events. RESOP started with LDC – but no centralized tracking process, no transparency; secrecy with respect to priority of projects within queues linked to transmission links
Apr 2007	OPA issued First Quarter Report: 36 contracts representing 238 MW executed; only after projects got a Connection Impact Assessment from LDC did proponent go to OPA for contract
Nov 2007	OSEA released <i>Renewables without Limits</i> (Advanced Renewable Tariffs) identifying deficiencies with RESOP such as lack of community, First Nations, Farm projects and lack of connection capacity; subdivision of large projects affecting queue, plus a review of best practices in other jurisdictions where obligation connect and feed in tariffs were in use, including the demonstrated success in achieving results and in particular in achieving significant levels of community and farm ownership which reduced social friction.
Dec 2007	Ontario fell short of the original Liberal election platform target for renewable energy by 835 MW
Jan 2008	OPA issued First Progress Report: 262 contracts executed representing 1,025 MW; projects less than 10 MW, connected to the LDC grid.
May 2008	OEB initiated EB-2008-0102 to amend DSC to ensure timely connections
May 2008	OPA issued revised RESOP rules essentially shutting it down, claiming "target" of 1000 MW had been met although less than 30 MW were connected. In fact, 1000 MW was never a target, but a value used in estimating rate impacts. Furthermore total new renewables (planned and contracted projects) including 1393 MW of RESOP projects expected in service was 400 MW below the original Liberal election platform of 2700 MW.
May 2008	OSEA called for a Green Energy Act to embed ARTS in legislation including obligation to connect, streamlined environmental approvals and differentiated rates
June 2008	Hydro One raised concerns in meeting timelines for connection in EB-2008-0102
June 2008	Green Energy Act Alliance (GEAA) established
Sept 2008	GEAA issues Vision for a Green Ontario
Sept 2008	Minister Smitherman sends IPSP back to OPA to determine if more conservation and renewable energy is possible
Oct 2008	GEEA meets with Minister Smitherman
Nov 2008	Fifth Estate airs Gospel of Green, which among other things illustrated customer frustrations with Hydro One, including one farmer from Cobden who sent over hundreds of emails to Hydro One
Dec 2008	OSEA issued <i>Recommendations for Procuring Sustainable Energy: An Addendum to Renewables Without Limits</i>
Jan 2009	GEEA issues <i>Proposal for a Green Energy Act for Ontario</i>
Jan 2009	Hydro One is generally supportive of OEB amendments to DSC in EB-2008-0102
Feb 2009	Minister Smitherman introduces Bill 150 – <i>Green Energy and Green Economy Act</i>
Feb 2009	Last RESOP Report: 438 contracts executed representing 1,412 MW; Less than 400 MW which are connected as of June 30.
May 2009	Legislature passed Bill 150.

<b>Ontario's Renewable Energy Policy Timeline</b>	
May 2009	Marion Fraser was invited to make a presentation to Hydro One entitled "From Blue Print to Reality – The Green Energy Act and Opportunities for Hydro One". I compared the opportunity equal to building the CPR railway across Canada. Basic message: "This does not have to be "just another thing that the government is making you do!" "Hydro One has the potential to be VITAL to the social, economic and environmental SALVATION of Ontario".
Sept 2009	Hydro One includes its Green Energy Plan in its distribution rates submission which clearly identifies Hydro One's understanding of the expected ramp up of applications given the higher prices in the FIT and MicroFit programs – focus of 5 year plan was 2010 to 2014.
Oct 2009	FIT and MicroFit Program Launched (Data below are related to MicroFit only)
June 2010	16,756 applications with a capacity of 154 MW - Contracts Executed 522/3 MW
Sept 2010	19,891 Applications/182 MW - 894 Contracts Executed/6 MW
Nov 2010	Hydro One advised OEB that it was in non-compliance on timelines
Apr 2011	Hydro One filed application for exemption
June 2011	OEB initiated EB-2011-0118
Aug 2011	34,976 Applications/322 MW - 6780 Contracts Executed/59 MW

## Hydro One – An Example of Organizational Inertia

In April 2011, Hydro One applied to the Ontario Energy Board for a six month exemption from the required timelines to connect micro-embedded generation facilities<sup>3</sup> to Hydro One's distribution system. Hydro One stated the volume of requests to connect micro-embedded generation projects has been well beyond its expectations and that it expected the volume of connection requests to continue to increase. Hydro One also requested an immediate interim stay of obligations as of the date the application was filed and until the Board renders a final decision on the matter.

The timelines Hydro One and all local distribution companies is required to meet are found in sections 6.2.6 and 6.2.7 of the Ontario Energy Board's Distribution System Code ("DSC"). Those sections require a distributor make an offer to connect or provide reasons for refusing connection of micro-embedded generation facilities within:

- 15 days if the applicant is located at an existing customer connection (aka indirect connections)<sup>4</sup>; or
- 60 days if the applicant is not located at an existing customer connection (aka direction connection).

In either case, the distributor is not permitted to charge for the preparation of the offer to connect; must give the applicant at least 30 days to accept it and is not permitted to revoke the offer to connect until the 30 day period has expired.

<sup>3</sup> The generators are 10 kW or less – equivalent to the power needed for 4 average hairdryers!

<sup>4</sup> While not included in the Distribution System Code, Hydro One considers indirect applications in two categories – those that do not require a site visit and those that do – the latter category is more likely to be out of compliance.

The DSC requires the distributor to connect the applicant’s micro-embedded generation facility to its distribution system within 5 days of an applicant informing the distributor that it has:

- Received all necessary approvals;
- Provided the distributor with a copy of the authorization to connect from the Electrical Safety Authority;
- Entered into a Connection Agreement; and
- Paid the distributor for the connection costs, including costs for any necessary new or modified metering.

### Hydro One’s Position

Hydro One contended that these requirements were more onerous than those for connecting new load and asked that its exemption be held to those standards. Clearly Hydro One would prefer to see the Distribution System Code revised to reflect the less onerous standards.

**Ironically, one major issue was that Hydro One field staff were not aware of the differences in requirements until May of 2011, 20 months after the MicroFit program was launched.**

Hydro’s initial application and evidence did not provide much detail on the flow and disposition of the applications that it was dealing with. Through cross examination and through undertakings, a clearer picture of the situation emerged. Since the beginning of MicroFit on October 1, 2009, until July 29<sup>th</sup>, 2011 (22 months), some 15,630 project applications have gone to Hydro One as of July 29, 2011. Although the average was just over 700 per month, the flow was not “average” given the batch staging of the program by the Ontario Power Authority, most likely to increase the political visibility of a large number of small projects. In particular, the volumes in the latter months of 2010 were significant even if the projects were small.

<b>Hydro One’s disposition of MicroFit Applications</b>			
	In-direct (15 days)	Direct (60 days)	Total
Offer to Connect	8,585	1,858	10,443
Rejected	2,681	1,488	4,169
Being Processed	411	607	1,018
Total	11,677	3,953	15,630
Disposition (offer to connect/rejection.)	Within timeline	Exceeded timeline	Total
In-direct	8302	2964	11,266
Direct	2045	1301	3,346

As can be seen from the table above, for every 1000 applications Hydro One approved, it rejected about 400. And similarly for every 1000 applications that are handled within the prescribed timelines, almost 400 are not.

Hydro One filed information about how it went about trying to deal with these delays which in October 2010, one year after the start of the program.

### 1. Developed an Automated Screening Tool

In October 2010, a manual but Excel-based screening tool was developed and implemented. The tool was a stand-alone application that required data input for each screening. Until then, the company did not have a standard screening tool for assessing micro-embedded generator connection proposals. Minor improvements were made to the stand-alone application in December 2010. In June 2011, the screening tool was further automated and integrated to retrieve information from the Hydro One databases containing the required information. In June 2011, the screening tool was also made available online for customers to use themselves.

Since October 1st 2009 until June 29th, Hydro One rejected about 27% of all applications. After the screening tool was deployed in October 2010, Hydro One has reject 38% of all applications.

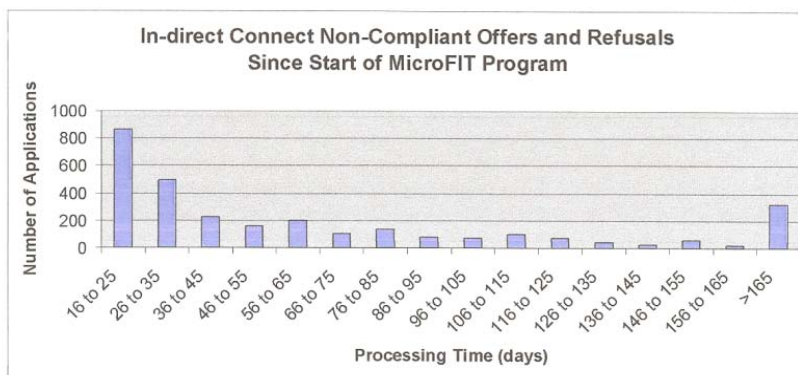
### 2. Customer Communication

In December 2010, Hydro One started proactively informing customers that there would be delays in processing their applications even though many applications were by this time, long past the compliance limit.

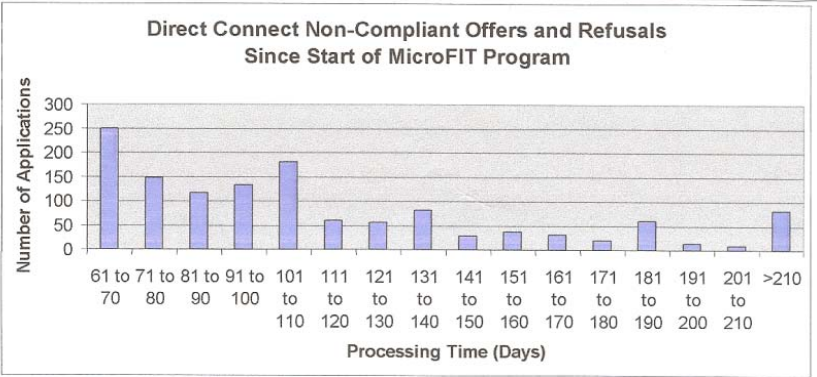
### 3. Work Program Management Priorities

- In November 2010 Hydro One automated releasing work packages to the field.
- In February 2011 work program management instructed staff to prioritize DG connections above all other work other than power restoration/emergencies.
- **In May 2011, clarification was provided to field staff regarding compliance with section clarifying the distinction between the requirements of section 7.2.1 and 7.2.2 which applies to load connections and section 6.2.7 for micro-embedded generation. (Two years after the Green Energy Act was passed!)**
- In May 2011, Hydro One made modifications to databases to improve tracking capabilities of projects through the connection process.

## When Hydro One is late, it is very, very late

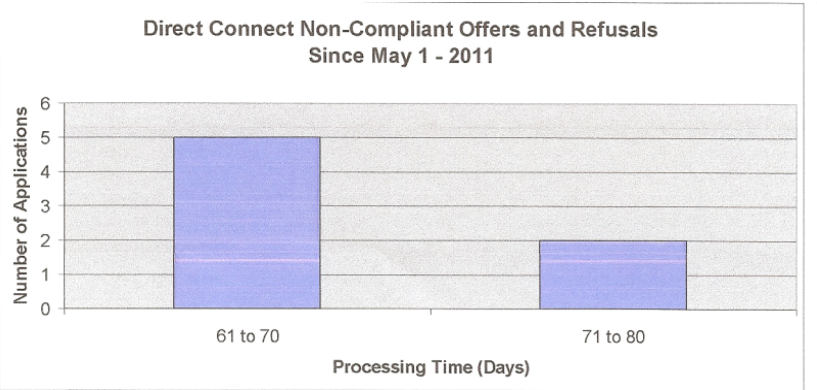


Graph 1: Processing Time of In-direct Connect Non-Compliant Offers/Refusals since Start of MicroFIT

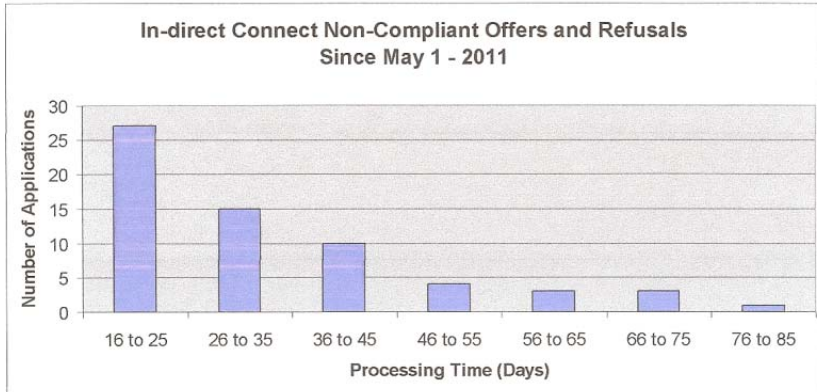


**Graph 2: Processing Time of Direct Connect Non-Compliant Offers/Refusals since start of MicroFIT**

**But Hydro One Is Improving**



**Graph 6: Processing Time of non-compliant Direct Connect Non-Compliant Offers/Refusals since May 1<sup>st</sup>, 2011**



**Graph 5: Processing Time of In-direct Connect Non-Compliant Offers/Refusals since May 1<sup>st</sup>, 2011**

The Bad News is that Hydro One anticipates that there will be more refusals in the future as its capacity gets used up! It appears that the technical screen has increased the number of refusals and now that it is automated, refusals will come faster.

## Impact of Political and Organization Inertia

### Identifying the Root Causes of the Delays

The major issue was the fact that Hydro One field staff had not been given clear direction on the applicability of the Code. And, while some of the delays in processing MicroFit applications appear to have resulted in the sheer volume of applications as well as the lumpiness of the throughput from the Ontario Power Authority, there is not much sympathy from the customers or the industry given that the experience of RESOP applicants was not much better with Hydro One involved in virtually all connection impact assessments and was a major bottleneck for those projects moving forward.

Frustration was expressed about lack of timeliness but also about poor communication, uncertainty and arrogance. The following is a sample excerpt from a Customer's Submission in this regulatory proceeding.

*The Green Energy Act and the Feed-in Tariff program were created to off-set the pollution producing generation of electricity and provide our later generations with a start to ending our dependency on fossil fuels. More power from the sun touches the earth in a single hour than we use in a year. Harnessing the sun's energy is our path to a clean environment.*

*Hydro One appears to be using stalling tactics until the political climate changes. It appears Hydro One does not support a clean and bright future, but rather wants status-quo. - The old paradigm.*

*Hydro One is not the only LDC in Ontario and therefore cannot state that the total number of applications affects their operations. I would like to see OPA show the number of connections that are Hydro One versus the other LDC's.*

*Hydro One has known about the Green Energy Act since its inception and is totally aware of the number of applications processed by the OPA which is all public knowledge. Surely, with the size of this company, have they not yet realized that with a program such as MicroFit a certain number of the households in Ontario would make applications? There are 3 million households in Ontario. 30,000 applications over the first 20 months and 5000 connections over the same period must surely have been expected.*

*When we look at the Feed-in Tariff programs of the other 19 countries that created a FIT program before us, surely Hydro One would have looked at the impact this has had on these other countries and would have accounted for a similar impact here?*

*Hydro One should not be allowed to stall any longer.*

What is clear is the reality is not living up to the promise. The immediate challenge is to deliver on the promise.

## Technical Bottlenecks: Hydro One's Technical Screen

The MicroFit program did not require a connection impact assessment consistent with the Ontario Energy Board's amendments to the Distribution System Code in 2009 reflecting an assumption that there was sufficient capacity to connect micro-embedded generators with affecting safety and reliability.

Hydro One, however has instituted a technical screen – a mini connection impact assessment and in the testimony of Hydro One witnesses, the technical screen was all about assessing the impact on the system.

The most disappointing part of about this recent proceeding was that the Hydro One asked that the technical requirements be considered out of scope for the hearing and the Ontario Energy Board accepted that in spite of the fact that OSEA, CanSia and Sustainable Energy Technology, among others counselled that it should be within scope as it was central to the exemption. This is a perfect example of public agencies thwarting public policy. How can politicians or even bureaucrats argue with the technical experts in the province, when they have the monopoly on expertise and a "hand on the switch"?

Hydro One put the technical screen in place a year into the program. It appears the screen was developed so applications could be processed clerically. Until the screen was automated and made available on Hydro One's website in June of 2011, the industry and likely the Minister was not aware of the technical requirements or the screening. No review was done with stakeholders. Hydro One did advise the Ontario Energy Board and the Ontario Power Authority at an unnamed date. There was no evidence tabled whether the Ministry or the Minister were advised of these changes.

As far as the Ontario industry knows, no other LDC uses such a screening tool and there is little dissatisfaction with the response times, communications and working relationships with other LDCs. A key element of that was better access to information, compared with a high level of frustration among intervenors with respect to the Hydro One call centre.

Hydro One's screening tool analyzes, at the project level, each application, tests it against a number of technical criteria, and, dependent on the outcome, provide as "pass" leading to an offer to connect, or "fail" and reasons for refusal to connect. The tool is based on the following criteria:

- **Feeder limitations:** Total current shall not exceed 200A for Hydro One feeders operating below 13.8kV. Total current shall not exceed 400A for Hydro One feeders operating at or above 13.8kV.
- **Generation connected to a Transmission Station (TS) or Distribution Station (DS).** Total generation shall not exceed 60% of maximum MVA rating of the Hydro One single transformer and the minimum station load.
- **Total Generation Connected to a Distribution Line Section:** Total generation shall not exceed 7% of the annual line section peak load (excludes generators that cannot export power from a customer's site) on F-class feeders. Total generation shall not exceed 10%

of the annual line section peak load (excludes generators that cannot export power from a customer's site) on M-class feeders

- **Short Circuit limits:** Short Circuit limits at the TS High or Low voltage bus shall not be exceeded by the addition of the generation facilities.

Hydro One claims that criterion #3 is based on the Institute of Electrical and Electronics Engineers (IEEE) standard, which is the source for the United States Federal Energy Regulatory Commission's rule. **This may be the source of the issue.** Industry participants note that the Hydro One interpretation of the standard is at worst wrong or at best exceedingly conservative. In California, using the same rule, the limit is 15%, which is consistent with statements put forward by Michael Carten, CEO of Sustainable Energy Technologies.

If this interpretation was accepted, most of the refused projects could be connected resulting in \$400 million more investment in MicroFit Projects.

## Conclusion – Feed-In Tariffs a Route to Decentralized Energy

Ontario's Green Energy Act has created over 13,000 jobs and so far has brought online 2,000 megawatts of renewable energy, about five per cent of the province's installed electricity generation.

*The IEA<sup>5</sup> concluded that feed-in renewable tariffs are both more effective at developing renewable energy as well as less costly to consumers than quota systems (known as renewable portfolio standards in North America.)*

The big challenge for the renewable energy industry has been to make the cost of clean energy competitive with heavily-subsidised conventional energy<sup>6</sup>. Householders or energy companies who want to install wind turbines or solar panels are faced with lengthy pay-back times. They have been forced to make a choice based on ethics rather than economics. If in the 1950s and 1960s, the manufacturers of coal or nuclear power plants had been faced with the same barriers that the renewables industry is now confronted with, they may not have built a single power plant. Without increased consumer demand and political measures to facilitate access to the market, manufacturers of, for example, wind turbines and solar photovoltaic (PV) panels, cannot produce the unit volumes needed to bring prices down and drive technological innovation.

The Feed-In Tariff (FIT) has proven to be the most effective policy instrument in overcoming these barriers. It may just be the effectiveness of feed-in tariffs that is the source of discontent from the traditional energy industries who like the profitability of the status quo.

*The international accounting firm, Ernst & Young<sup>7</sup> has concluded that Germany's system of advanced renewable tariffs delivers more renewable energy at lower cost to consumers than Britain's Renewable Obligation and its certificate trading system. The*

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<sup>5</sup> International Energy Association: Deploying Renewables, October 7, 2008

<sup>6</sup> World Future Council: Feed-in Tariffs - Boosting Energy for our Future,

<sup>7</sup> Ernst & Young's [Renewable energy country attractiveness indices for the first quarter of 2008](#), October 6, 2008.

*conclusion turns on its head the common misperception that feed-in tariffs cost consumers more than so-called "market-friendly" policies, such as tendering and certificate trading systems. Despite the significantly better wind resource in Britain, Germany produced four times more renewable energy than Britain at one-fifth the relative (per kWh) cost.*

Anti-renewable rhetoric usually contains the notion that feed-in tariffs for electricity are higher than the market rates and therefore responsible for increasing electricity prices. Electricity prices are increasing but any new generation will cost more than electricity North America's existing generating fleet. Albertans experienced this first hand when prices spiked earlier in the decade with the addition of new supply and the government was forced to give consumers subsidies.

In Ontario, power from the existing Niagara Falls costs about one cent per kWh.<sup>8</sup> And while new natural gas fired generation plants bid into the hourly Ontario market, their capacity payments flow whether they run or not. Solar and wind resources are only paid for when they generate electricity.

Feed-in tariffs support decentralized energy which generates a multitude of benefits beyond the energy itself: local economic activity, loss of leakages from the local economy, social cohesion and improved efficiencies that go far beyond the energy equation.

Without feed in tariffs, communities, farmers, First Nations and homeowners can never participate in the energy market. Without their participation, the isolation of energy production from its use will continue with resulting resistance to new projects and a lack of attention to conservation – the cheapest energy resource we have. Without their participation, the economic benefits accrue to large, mostly multi-national corporations, and resources are squandered in the name of multinational profits.

In the past, Canadians were known as "hewers of wood and drawers of water", a quote that has its origins as a *curse* in the Holy Bible. In the future, will we be only known as "exporters of energy", cursed with a crumbling manufacturing infrastructure, environmental degradation and still rising energy costs at home?

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<sup>8</sup> Ironically when the generating plant at Niagara Falls was first built, the cost per kWh was about 12 cents in the dollars of the day. At the same time butter was 29 cents a pound and wages were about \$500 per year.