



Recent Developments Arising under Ontario's Green Energy Act

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Historically, Ontario's electricity supply has relied almost exclusively on hydroelectricity, nuclear energy and fossil fuels. Today, more than 25% of the province's electricity generation originates from renewable energy sources as the government seeks to phase out its coal-fired plants by the end of 2014. Since 2003, Ontario has already brought more than 1,300 MW of new renewable energy online. At the same time, investments in new renewable energy projects already in place or under construction have exceeded \$5 billion. Despite these recent successes, there is still much opportunity for investment, growth and development in Ontario's renewable energy sector.

On May 14, 2009, the Province of Ontario legislature enacted the *Green Energy and Green Economy Act, 2009* (the "*Green Energy Act*") with the objective of making Ontario the North American leader in renewable energy policy and creating 50,000 new "green" jobs. Today, the Province of Ontario has become a great place for investment in on-shore and off-shore wind, solar, biogas, hydro, and biomass energy projects and many foreign investors are flocking to Ontario in order to participate in the renewable energy "gold rush".

The following primer provides a high-level overview of the recent developments arising under the *Green Energy Act* in relation to the approval, financing, project development and grid connection of renewable energy power generation facilities in the Province of Ontario. We also provide an overview of the Ontario Power Authority's feed-in tariff program and related domestic content requirements. Finally, we provide a cursory overview of a number of policy changes that have been introduced by the *Green Energy Act* for the purpose of increasing energy conservation and efficiency.

Feed-in Tariff Program

One of the highlights of the *Green Energy Act* is the creation of a feed-in tariff program, which has been divided into two streams: FIT for renewable energy projects that generate more than 10 kilowatts ("kW") and microFIT for projects that generate 10 kW or less. The feed-in tariff program establishes standard rules, contracts and pricing and is administered by the Ontario Power Authority ("OPA"). Inspired by Germany's *Renewable Energy Sources Act* (Erneuerbare-Energien-Gesetz), the feed-in tariff program is precedent setting in North America in terms of its application to a wide range of renewable energy technologies, the rates being offered, as well as the fact that anyone - from the private homeowner to the large developer - is eligible to participate in the program. As each rate is guaranteed for a period of 20 years (40 years for waterpower), the introduction of the feed-in tariff program is designed to help increase investor confidence and facilitate the financing and development process for renewable energy projects.



In an effort to promote community and aboriginal renewable energy projects, feed-in tariffs involving these groups will be increased up to an additional 1.5 cents/kWh (as outlined in the table below), depending on the nature of the renewable energy source used, as well as the equity share that the community or aboriginal group holds in the renewable energy project. For technologies other than solar photovoltaic, 20% of the price will escalate annually based on increases in Canada's Consumer Price Index.

The OPA's feed-in tariff rates effective as of August 13, 2010 are as follows:

Technology	Proposed size	Cents/kWh*
On-Shore Wind**	Any size	13.5
Off-Shore Wind**	Any size	19.0
On-Farm Biogas**	Less than or equal to 100 kW	19.5
On-Farm Biogas**	Greater than 100 kW and less than or equal to 250 kW	18.5
Biogas**	Less than or equal to 500 kW	16.0
Biogas**	Greater than 500 kW to 10 MW	14.7
Biogas**	Greater than 10 MW	10.4
Biomass**	Less than or equal to 10 MW	13.8
Biomass**	Greater than 10 MW	13.0
Ground-mounted Solar PV	Less than or equal to 10 kW	64.2
Ground-mounted Solar Photovoltaic (PV)**	Greater than 10 kW to 10 MW	44.3
Rooftop Solar PV	Less than or equal to 10 kW	80.2
Rooftop Solar PV	Greater than 10 to 250 kW	71.3
Rooftop Solar PV	Greater than 250 to 500 kW	63.5
Rooftop Solar PV	Greater than 500 kW	53.9

* All rates are in Canadian currency. ** Eligible for aboriginal or community feed-in tariff adder.

The above table merely provides an overview of the FIT price schedule for certain select renewable technologies. Please visit the OPA's website located at <http://fit.powerauthority.on.ca> in order to obtain a comprehensive and current price schedule. The following technologies were omitted from the OPA's FIT price schedule: solar thermal electric; hydro power greater than 50 MW; solar PV power greater than 10 MW; geothermal; and energy storage.

The OPA intends to review and amend the FIT and microFIT programs and the feed-in tariff rates at regular two-year intervals or as market conditions warrant. Such changes will not affect any executed contracts. It is worth noting that the OPA announced the reduction of the feed-in tariff



rate for ground-mounted solar plants equal to or less than 10 kW on August 13, 2010 from 80.2 cents/kWh to 64.2 cents/kWh. Eligible ground-mounted solar applications submitted prior to noon on July 2, 2010, will continue to receive the original feed-in tariff rate of 80.2 cents/kWh. Following the aforementioned rate reduction, the OPA established a microFIT program advisory panel for the purpose of boosting investor confidence, improving communication and increasing transparency in regards to the evolution of the program, including the two-year feed-in tariff review process. The panel is comprised of industry, consumer and academic representatives. A similar advisory panel is under development for the FIT program.

Domestic Content Requirements

The OPA has also controversially introduced minimum domestic content requirements for FIT and microFIT contracts with a view to fostering growth in Ontario's green manufacturing, construction and installation sectors. As a result, applicants must ensure that a minimum percentage of their goods and services for their FIT and microFIT projects originate from Ontario. A number of foreign governments, including the European Union and Japan have voiced their concern that the domestic content rules violate World Trade Organization (WTO) rules. On September 13, 2010, Japan launched dispute settlement proceedings against Canada at the WTO on the basis that Ontario's domestic content requirements are protectionist and violate the provisions of the General Agreement on Tariffs and Trade. Nevertheless, it is unlikely that the domestic content requirements will be abandoned in the foreseeable future as WTO trade disputes generally take many years to resolve.

Domestic Content Percentage Requirements

The domestic content percentage requirements are summarized in the table below.

Project	Proposed size	For projects that reach commercial operation	Minimum Required Domestic Content Level
Wind Power Project	Greater than 10 kW	by December 31, 2011	25%
Wind Power Project	Greater than 10 kW	on or after January 1, 2012	50%
Solar PV	Less than or equal to 10 kW	by December 31, 2010	40%
Solar PV	Less than or equal to 10 kW	on or after January 1, 2011	60%
Solar PV	Greater than 10 kW	by December 31, 2010	50%
Solar PV	Greater than 10 kW	on or after January 1, 2011	60%



The OPA has created tables for the FIT and microFIT contracts outlining the components and designated activities that count towards fulfilling the above domestic content project requirements. [Exhibit D of the FIT contract](#) outlines the percentage requirements and provides, for instance, that using wind turbine blades that have been cast in a mould in Ontario and include instrumentation assembled in Ontario, will qualify a wind power project with a name plate capacity in excess of 10 kW as having a domestic content level of 16%. Similarly, [Appendix C](#) of the microFIT contract stipulates that all labour and services provided in relation to a solar photovoltaic project generating less than 10 kW would qualify the project as having a domestic content level of 27%.

Meeting the Domestic Content Requirements: Scaling Up Production and Supply in Ontario

One of the concerns of many project developers is that a viable supply chain has yet to be established in Ontario for the purpose of meeting the domestic content requirements of the FIT and microFIT contracts. So far, it is too early to predict whether this will become an issue as most of the major industry players, including module, inverter and racking system manufacturers in the solar industry, have announced their intention to manufacture or assemble their products in Ontario for the purpose of meeting the domestic content requirements. Industry experts predict that early investors can expect to benefit significantly from the domestic content rules as demand for equipment will likely exceed available supply given the volume of FIT and microFIT contracts that have been awarded to date by the Ontario Power Authority.

Approved Projects

Since the launch of the FIT and microFIT programs in October of 2009, the OPA has contracted for more than 2600 MW of generating capacity. This is double the 1300 MW of renewable generation that has been developed in Ontario since 2003. The microFIT and FIT contracts offered were deemed to be projects that can be successfully connected to the electricity grid in Ontario.

On December 16, 2009, more than 700 small-scale renewable energy projects were approved under the microFIT program. On March 10, 2010, 510 FIT contracts totaling 112 MW were offered to developers of projects with a generation capacity of less than 500 kW. To view the OPA press release, visit www.powerauthority.on.ca/news/ontarios-landmark-green-energy-plan-delivers. Most of these green energy projects were solar rooftop power installations. On April 8, 2010, the OPA announced that a further 184 energy contracts for large-scale projects were offered, totaling just under 2,500 MW of generation capacity. To view the OPA press release, visit www.powerauthority.on.ca/news/ontario-announces-184-large-scale-renewable-energy-projects. The OPA received approximately 17,000 microFIT and 1,300 FIT applications from the launch of the FIT program through the end of the second quarter of 2010.

For investors seeking to acquire renewable energy projects, it is worth noting that prior to the launch of the FIT and microFIT programs, renewable energy projects were approved under the OPA's Renewable Energy Standard Offer Program ("RESOP"). The OPA approved 149 contracts



greater in size than 10 kW under the RESOP, representing 997 MW of total energy generating capacity. Of this total, 371.3 MW are wind energy projects, 525.2 MW are solar photovoltaic projects, 28.3 MW are hydro-electricity projects and 71.8 MW are bioenergy projects. Of the total 997 MW contracted by the OPA, only 26 percent of projects or 258 MW, had achieved commercial operation as of the second quarter of 2010.

The RESOP was replaced by the OPA's FIT and microFIT programs as of October 1, 2009. Nevertheless, any of the projects that were approved under the RESOP will continue to be honoured by the OPA. Renewable energy projects approved under the RESOP are not required to comply with the domestic content requirements of the FIT program. Under the RESOP, solar PV generators are paid 42 cents per kWh for a 20 year term. Generators of biomass, waterpower and wind energy will be paid a base rate of 11 cents per kWh for a 20 year term.

Project Financing – Projected Return on Investment of 11%

According to the OPA, the FIT contract prices were developed for the purpose of covering capital, operating, maintenance and connection costs and generating a reasonable pre-tax rate of return on equity investment of 11 percent. The payback period is estimated to be between 9 and 11 years. The OPA has not guaranteed that every project will earn an 11 percent return on investment or that every project will fall within the aforementioned payback period due to variances in project costs, as well as operation and maintenance requirements. In establishing FIT and microFIT rates, the OPA took into account typical project capital costs, operating and maintenance costs, financing costs and expected electricity production over the life of the project. A 70/30 debt to equity split was assumed and debt borrowing costs were assumed at 7 percent.

Currently, one of the greatest challenges to bringing a renewable energy project to commercial operation is securing project financing. To date, most investments in Ontario's renewable energy market have been made by Canadian investors, including Manulife Financial, Middle Eastern firms, American private equity players, or European financial institutions with many years of experience in the renewable energy sector. Canadian banks have started to show their interest in the renewable energy sector. However, they remain reluctant to finance larger renewable energy projects due, in part, to their lack of experience in this industry, as well as the additional degree of lending conservatism that has marked the financial services industry since the advent of the global credit crunch. Nevertheless, there are some positive developments to report as TD Canada Trust announced in April of 2010, that its lending businesses are financing rooftop solar power systems developed under the OPA's microFIT program. Meanwhile, the Canadian Imperial Bank of Commerce has formed an investment team focused on the green energy and clean technology markets. Scotia Capital has announced that it will be looking to finance renewable energy projects in Ontario after financing roughly \$1.6 billion in renewable sector investments elsewhere in the NAFTA region in 2009.



It is important to understand the financing disclosure obligations of a project owner under the FIT program. After the FIT contract has been awarded to the applicant, the project owner will need to submit a financing plan in the form prescribed by the OPA. The plan must list all sources of equity or debt financing for the development of the renewable energy project. The project owner must also include signed commitment letter(s) from sources of financing collectively representing at least 50 percent of the expected development costs. The letters must include an agreement in principle to provide the necessary financing.

Project Acquisition, Divestitures and Restrictions on Changes of Control

Most parties will have their ownership structure in place before a FIT application is made to the OPA. However, there may be instances where a party wishes to acquire or sell a renewable energy project after the application has been filed with the OPA. Where this is the case, the FIT contract currently precludes a third party from acquiring a 100% interest in a project prior to the commercial operation of the project without the prior written consent of the OPA. It is our understanding that the OPA would be very reluctant to grant such consent. Nevertheless, the FIT contract does allow for the acquisition of up to 75% of a project prior to commercial operation without the consent of the OPA provided the original majority owner maintains a minimum 25% equity interest in the project. The OPA merely needs to be notified in writing of the change of control. Once the project is commercially operational, it is possible to acquire the remaining 25% interest in the project.

Industry experts have estimated the capital cost per MW of installed capacity to be \$2.8 million for on-shore wind, \$4.75 million for off-shore wind, \$5 million for large ground-mounted solar projects, \$5.5 million for rooftop solar photovoltaic, \$3.75 million for biomass and \$5.5 million for biogas.

Streamlined Approval Process

Previously, investors in renewable energy projects in Ontario had to deal with multiple provincial and municipal authorities in order to obtain permits and approvals indicating compliance with a wide range of regulations and by-laws. The government has created a streamlined Renewable Energy Approval (“REA”) process, allowing investors to bring their projects to market faster. The Ontario government has guaranteed to make decisions on renewable energy projects within six months after a complete REA application is filed, compared to previous waiting times in excess of one year. The Ontario government has established a *Renewable Energy Facilitation Office* (“REFO”) to assist developers, communities and investors in navigating the project approval process by providing access to information, connecting applicants with the appropriate resources at partner ministries, agencies and governments and setting up a coordinated meeting to discuss project requirements. For more information, visit the REFO’s website at www.ontario.ca/refo.

Projects that receive a REA will be exempt from certain certificate requirements under the *Environmental Protection Act* and permitting requirements under the *Ontario Water Resources Act*. In addition, as a result of certain amendments to Ontario’s *Planning Act*, land use by-laws and



official plans no longer apply to renewable energy generation projects. Instead, these matters are now dealt with at the REA stage. In addition, renewable energy project leases that have a term of 21 years or more but not more than 50 years are also exempt from the *Planning Act's* subdivision and part-lot controls.

Renewable Energy Approval Requirements

The REA process is designed to ensure transparent decision making and provides opportunity for public participation. Thus, at an early stage of the project planning process, the applicant must notify landowners within 120 meters of the proposed project location and publish at least two consecutive notices in a local newspaper. Once the project concept is clear, the applicants must also hold at least two community consultation meetings at the beginning of the process to ensure that the community understands how the requirements set out under the regulations are being met, how potential impacts will be mitigated, and to raise awareness about the benefits of the project. At least 60 days before a REA application is made, the applicant must make available for public review any studies related to the project that have been carried out. A final public consultation meeting is required once the applicant has gathered all of the information needed to make a REA application to the Ministry of the Environment. Consultation with the municipality (or municipalities) in which the renewable energy facility requiring a REA will be located must also take place at least 90 days before submitting a REA application for the purpose of discussing matters including road access, remediation of areas disturbed or damaged by construction work, and emergency management procedures related to the ongoing management of the renewable energy facility. All projects for which a REA application has been submitted will be posted on the Environmental Registry for public comment by the Ministry of the Environment at the time of application and upon the issuance of a final decision.

Regardless of the renewable energy source used to generate electricity, all applications for a REA require a standard set of reports: a project description report, a construction plan report, a design and operations report, a technical report, a decommissioning plan report, and a consultation plan report. Additional documents will generally be required based on the project location, equipment or technology being used. For more information about the REA process, please visit: www.ene.gov.on.ca/en/business/green-energy/docs/REP_Guide.pdf. To obtain a copy of the REA application form, please visit www.ene.gov.on.ca/publications/7216e.pdf.

The following table provides an overview of the circumstances where a REA is required.

Technology	Proposed size	REA Required?
Rooftop or wall-mounted solar PV	Any size	Exempt from REA
Small ground-mounted solar PV	10 kW and under	Exempt from REA



Ground-mounted solar PV	Greater than 10 kW	Requires an REA and also requires a noise study demonstrating that the project does not exceed a 40 decibel noise level.
Bio-energy	Any size	A REA is generally required. Power facility projects must use biogas or biomass source material as defined under the <i>Electricity Act</i> . Bio-energy projects that are located on a farm and are already subject to an approved Nutrient Management Strategy under the <i>Nutrient Management Act</i> are exempt from obtaining a Renewable Energy Approval.
On-Shore Wind	Less than or equal to 3 kW	Exempt from REA
On-Shore Wind	Greater than 3 kW but less than 50 kW	Requires an REA. There are no mandatory setbacks.
On-Shore Wind	50 kW or more	Requires an REA. Wind facilities generating a noise level of 102 dBA or louder must also meet a minimum 550 metre noise setback from buildings and other noise receptors.
Off-shore Wind	Any size	Requires an REA. There is no province-wide standard setback at this time although a minimum 5 km setback from the shoreline is currently being proposed.
Water Power	Any size	Exempt from REA.

Priority Access & Right to Connect to Power Grid

The *Green Energy Act* also addresses a major obstacle faced by developers of renewable energy projects, namely obtaining timely interconnection rights. In the past, requests to connect to the electrical grid were assessed on a first come, first served basis using the *Levelized Unit Energy Cost* approach. Under this model, energy sources with the lowest cost per kilowatt-hour, such as hydro (\$0.04) and gas-fired generation (\$0.10) would be connected to the electrical grid in priority over wind (\$0.13) and solar (\$0.53). Many renewable energy project developers burned through financing while waiting in the interconnection queues. The *Green Energy Act* amends the *Electricity Act* by making it mandatory for local transmitters and distributors to grant priority access and to connect renewable energy projects to the power grid within a time limit of 120 days, provided certain technical, economic and regulatory requirements are met. Thus, the cost-effectiveness of the renewable energy as a source of electricity is no longer a consideration or an obstacle to obtaining interconnectivity rights.



Expansion of Distribution and Transmission System

One of the greatest challenges associated with bringing a renewable energy project to commercial operation in Ontario is that the current transmission or distribution systems may not have the capacity to accommodate certain larger projects at this time. A FIT contract will only be awarded by the OPA where sufficient grid capacity is available to connect the proposed project to the transmission or distribution systems by the project's milestone date for commercial operation. Therefore, prior to beginning the FIT application process, the local electricity distribution company or transmitter (depending on the size of the project) in the location of the project should be contacted to determine whether a connection can be made to the electricity grid. Projects with a nameplate capacity of 10 MW or less generally connect to the distribution system while projects with a nameplate capacity in excess of 10 MW typically connect to the transmission system.

The good news for renewable energy investors is that the *Green Energy Act* requires distributors and transmitters to expand their systems to accommodate renewable power generation facilities. The Ontario government has already committed to spending \$2.3 billion by September of 2012 in order to upgrade transmission and distribution lines so that more renewable energy projects can be connected to the power grid. Hydro One Networks (the operator of the Ontario's main electricity grid) has begun work on 20 transmission and distribution projects across the province that will add approximately 1,500 MW of grid capacity. It is expected that the government will make additional financial commitments to the improvement and expansion of the province's transmission and distribution systems in the near future. Despite the foregoing, project developer should be aware that all new construction needed to connect a renewable energy project to the existing power grid will generally be their responsibility.

Incentive programs

The Ontario government has created a number of incentive programs to assist with the costs related to developing renewable energy projects in the province. These incentive programs currently include the *Aboriginal Energy Partnerships Program*, the *Aboriginal Loan Guarantee Program*, the *Community Energy Partnerships Program* and the *Municipal Renewable Energy Program*.

Smart Grid System

The *Green Energy Act* also calls for the modernization of Ontario's electricity distribution system to a "smart grid" system in order to accommodate renewable energy facilities, smart appliances, electric cars and other "green" technologies. A smart grid is an electricity system that uses software, two-way communications and automation to manage the flow of electricity more reliably and efficiently – from power generation, to transmission and distribution, and all the way to homes and businesses. Hydro One is now deploying a smart grid system, which will serve 1.3 million customers in the province of Ontario by the end of 2010.



Renewable Energy Cooperatives

In an attempt aimed at fostering the development of more community-based renewable energy projects, the *Green Energy Act* amends the *Co-operative Corporations Act* to authorize the incorporation of renewable energy co-operatives. A renewable energy co-operative is a co-operative whose articles of incorporation restrict its business to generating and selling electricity produced from renewable energy sources. The co-operative is then authorized to distribute its surplus in any way it chooses in accordance with its by-laws.

Energy Conservation and Efficiency

The *Green Energy Act* not only makes the province a great place for investment in renewable energy projects, it will also create significant opportunities for businesses that specialize in providing goods or services designed to increase energy conservation and efficiency.

Ontario's buildings consume a significant amount of energy due, in part, to the climate of the province. In fact, the cost of energy constitutes a major portion of every household budget. The cost to the planet is even higher.

The City of Toronto, for example, estimates that 25% of Toronto's greenhouse gas emissions originate from the residential sector. Under the provisions of the *Green Energy Act*:

- energy conservation and efficiency plans will be developed for prescribed industry sectors as well as the broader public sector, including municipalities, universities, schools and hospitals;
- Ontario's *Building Code* has been amended, thus requiring builders to attain higher standards of energy efficiency; and
- household appliances will have to be certified under the *Energy Star* efficiency standard.

Conclusion

The enormous potential of the *Green Energy Act* places Ontario firmly ahead of other North American jurisdictions in the quest for a greener economy. Now that the *Green Energy Act* has been enacted, there will be much opportunity for investment, growth and development in Ontario's renewable energy sector. There will also be significant opportunities for businesses that specialize in providing goods or services designed to increase energy conservation and efficiency.



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- Project financing, security documentation and creditor agreements.
- Real estate acquisition, including solar rooftop leases and wind park leases and easement/option registrations.
- Power purchase agreements and Ontario Power Authority feed-in tariff contracts.
- Operation and maintenance agreements.
- Product manufacturing and supply agreements.
- Engineering, procurement and construction agreements.
- Permitting and licensing.
- Dispute resolution and litigation.

For more information, we encourage you to contact a member of our Renewable Energy & Independent Power Production Practice Group.

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