

A Progress Report on Contracted Electricity Supply



2013
Third
Quarter



ONTARIO
POWER AUTHORITY



Preface

The Ontario Power Authority (OPA) was established by the Ontario government under the *Electricity Restructuring Act, 2004* (amending the *Electricity Act, 1998*), as Ontario's long-term energy planner to ensure a clean, reliable, cost-effective and sustainable supply of electricity for Ontarians.

Together with our partners, we ensure that electricity needs are met for the benefit of Ontario both now and in the future. We plan and procure electricity supply from diverse resources and facilitate the measures needed to achieve ambitious conservation targets.

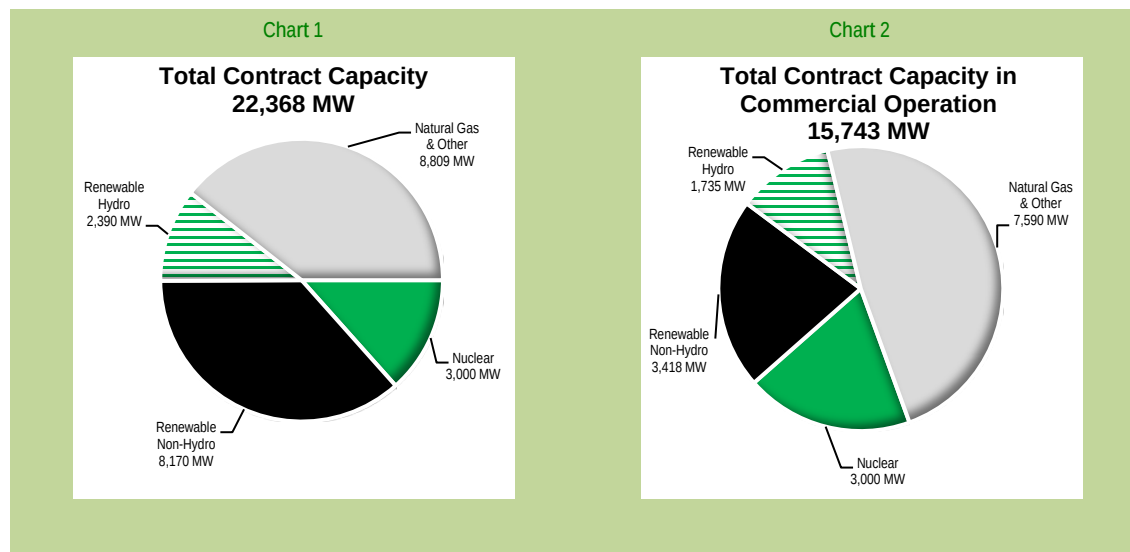
In accordance with the Ontario Energy Board (OEB) Order EB-2005-0489, dated March 3, 2006, the OPA posts regular updates on its website on the progress of procurement initiatives, including the progress of selected projects, subject to confidentiality constraints. *A Progress Report on Contracted Electricity Supply* is updated quarterly to provide the status of the OPA's contracted electricity supply projects and procurement initiatives. The numbers and information provided in this report include only electricity projects and initiatives in Ontario contracted by the OPA.

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Report Summary

Overview



As of the end of the third quarter of 2013, the OPA administered contracts for 22,368 megawatts (MW) of electricity supply generation, of which 15,743 MW or 70.4 percent were already in commercial operation.

Of the 22,368 MW of supply capacity, 4,668¹ MW were procured from existing generating facilities, which required minimal or no new capital investment. The remaining capacity of 17,753 MW was procured from new development, expansion, redevelopment or refurbishment of existing facilities. This new capacity represents about \$37 billion of capital investment in power generation in Ontario's electricity system since 2005. Facilities resulting from \$15 billion of the investment have already reached commercial operation.

Since the last reporting period, the overall contracted capacity increased by 134 MW. This mainly resulted from the addition of new contracts under the second version of the Feed-in Tariff (FIT 2) Program and one new non-utility generator (NUG) contract entered between the counterparty and the OPA following the expiration of the existing NUG contract.

By the end of the reporting period, the OPA had 8,170 MW of renewable non-hydroelectric, 2,390 MW of renewable hydroelectric, 8,809 MW of natural gas and other fuel sources, and 3,000 MW of nuclear capacity under contract (see Chart 1).

Of this total capacity, 3,418 MW from renewable non-hydroelectric, 1,735 MW from renewable hydroelectric, 7,590 MW from natural gas and other fuel sources, and 3,000 MW from nuclear

¹ Includes the existing Smoky Falls Generating Station with a capacity of 53 MW which will be decommissioned in January 2015.

generation were in commercial operation, for a total of 15,743 MW (see Chart 2). The remaining 6,678 MW of the OPA's contracted capacity were in various stages of development. Within the total renewable generation capacity, about 1,710 MW were contracted with Aboriginal participation and 209 MW were contracted with community and municipal participation. This represented about 8.6 percent of the OPA's total procured generation capacity. Chart 3 below illustrates the contracted generation by fuel type.

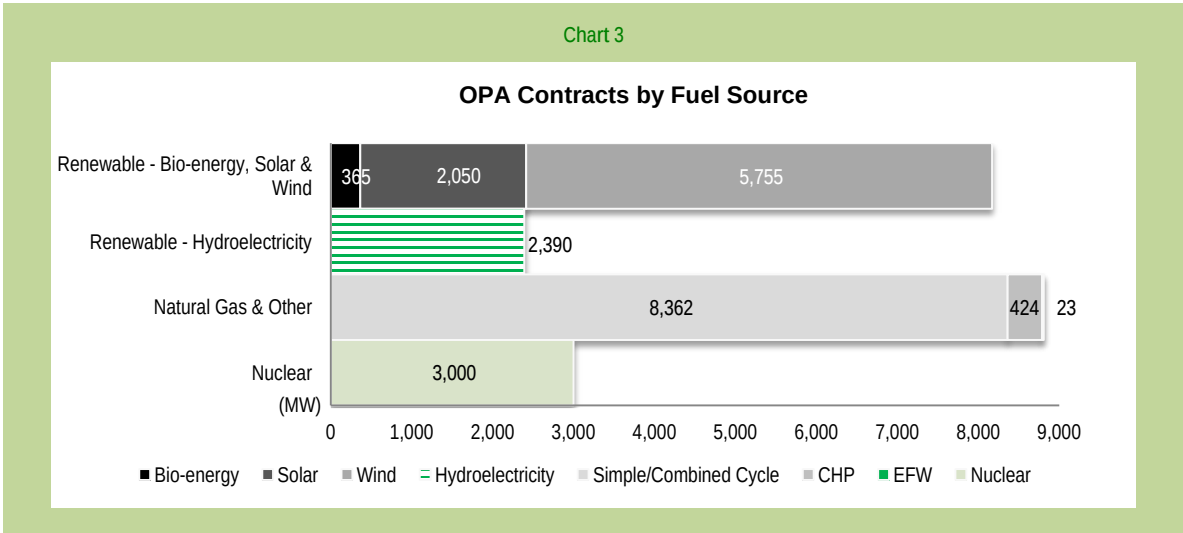


Table 1: Breakdown of Total Contract Capacity as of September 30, 2013

	Total	Under Development	Commercial Operation
Renewables			
Bio-energy	365	254	111
Solar	2,050	1,125	925
Wind	5,755	3,374	2,382
Non-Hydroelectric – Subtotal (MW)	8,170	4,752	3,418
Hydroelectric	2,390	707	1,735 ²
Renewables – Subtotal (MW)	10,560	5,460	5,153
Natural Gas and Other Fuel Sources			
Combined Heat and Power (CHP)	424	10	414
Simple Cycle and Combined Cycle (SC/CC)	8,362	1,189	7,173
Energy-from-Waste (EFW)	23	20	3
Natural Gas and Other – Subtotal (MW)	8,809	1,219	7,590
Nuclear			
Bruce A	3,000	0	3,000
Nuclear – Subtotal (MW)	3,000	0	3,000
Total Contract Capacity (MW)	22,368	6,678	15,743

New Contracts

Renewable Energy – Non-Hydroelectricity

Bio-energy

Within the reporting period, 1.3 MW of combined capacity was contracted through the FIT 2 Program.

Solar

Within the reporting period, 8.1³ MW of combined capacity was contracted through the micro Feed-in Tariff (microFIT) Program and 56.6 MW of combined capacity was contracted through the FIT 2 Program.

Waterpower

Within the reporting period, 0.1 MW of combined capacity was contracted through the FIT 2 Program.

² Includes existing Smoky Falls Generating Station with a capacity of 53 MW which will be decommissioned in January 2015.

³ The capacity of the executed microFIT contracts is in-service capacity.

Renewable Energy – Hydroelectricity

The OPA entered into two new Hydroelectric Contract Initiative (HCI) contracts for a combined capacity of 0.8 MW. These are: Bracebridge Generation Limited for its existing 0.6-MW York River Generating Station located in Bancroft and KRIS Renewable Power Ltd. for its existing 0.2-MW Little Burgess Generating Station located in Bala.

Natural Gas

Under a directive from the Ministry of Energy dated November 23, 2010, within the third quarter of 2013 the OPA successfully negotiated and executed a 20-year non-utility generator (NUG) contract with TransAlta Cogeneration LP, for an existing natural gas generation facility. The Ottawa Health Sciences Centre Generating Station, with a combined capacity of 73.7 MW, is a combined-cycle cogeneration facility located in Ottawa.

In addition, 4.2 MW were also contracted through two contracts under the Combined Heat and Power Standard Offer Program (CHPSOP). These are: Rosa Flora Growers Limited for 4.0 MW in new capacity and Villa Charities Inc. for its existing 0.2-MW Villa Colombo Vaughan Generating Station. The Rosa Flora Growers Limited facility is located in Dunnville and is under development with a scheduled commercial operation date of Q4 2014. The existing Villa Colombo Vaughan Generating Station is located in Kleinburg in the City of Vaughan and has been in service since 2008.

Contracts That Reached Commercial Operation

Renewable Energy – Hydroelectricity

The 3.9-MW Stanley Adamson Powerhouse facility under the HCI Program completed a redevelopment and expansion project in June 2013. This facility is located in Peterborough and was upgraded by Trent Energy Inc.

Renewable Energy – Non-Hydroelectricity

Bio-energy

Within the reporting period, 2.1 MW of combined capacity came into commercial operation, from two projects under the FIT Program.

Solar

Within the reporting period, further to the 8.1 MW of combined capacity from the new microFIT Program, 102.4 MW of combined capacity came into commercial operation under the FIT Program.

Wind

Within the reporting period, 224.0 MW of capacity came into commercial operation under the FIT Program.

Contract Amendments

Renewable Energy – Non-Hydroelectricity

Solar

Within the reporting period, capacity was decreased by 10.8 MW through contract amendments under the FIT Program. Capacity also decreased by another 1.5 MW under the Renewable Energy Standard Offer Program (RESOP) through the amendment of one contract.

Wind

Within the reporting period, capacity was increased by 8.4 MW through contract amendments under the FIT Program.

Contract Terminations

Renewable Energy – Non-Hydroelectricity

Bio-energy

Within the reporting period, 0.5 MW of capacity from one FIT contract was terminated.

Solar

Within the reporting period, 0.5 MW of combined capacity from two FIT contracts was terminated due to contract counterparties failing to meet contract requirements.

Wind

Within the reporting period, 5.6 MW of combined capacity from two FIT contracts was terminated due to contract counterparties failing to meet contract requirements.

Contract Capacity – Progress Table

The following table shows the OPA-contracted capacity that has achieved commercial operation since 2005, and the capacity that will reach commercial operation in accordance with the milestone commercial operation dates.

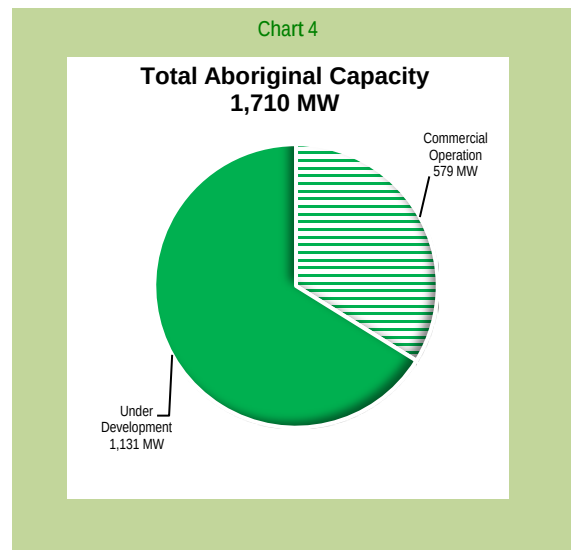
Table 2: Contract Capacity – Commercial Operation Progress Table as of September 30, 2013

Energy Supply	2005-2010	2011	2012	2013 Q1-Q3	2013 Q4	2014	2015	2016	2017	2018	TOTAL (MW)
Renewable	3,348	776	313	713	555	3,231	1,222	103	0	300	10,559
Natural Gas and Other Fuel Sources	7,260	0	393	(63) ⁴	0	10	0	20	289	900	8,809
Nuclear	1,500	0	1,500	0	0	0	0	0	0	0	3,000
Total (MW)	12,108	776	2,206	649	555	3,141	1,322	123	289	1,200	22,368
Cumulative Total (MW)	12,108	12,883	15,090	15,739	16,294	19,535	20,757	20,879	21,168	22,368	

Aboriginal and Community Participation

Aboriginal Participation

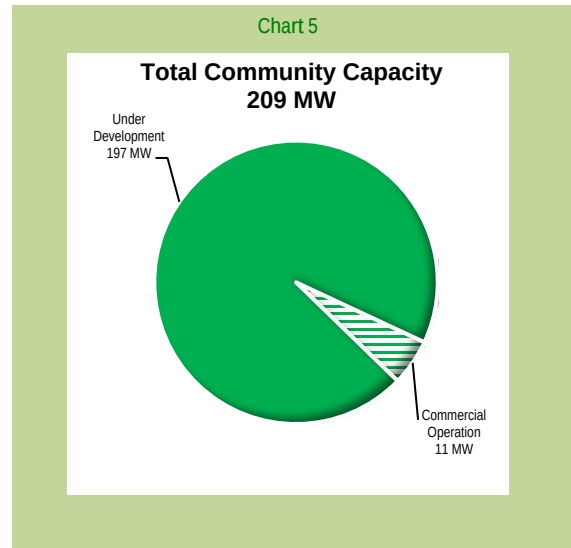
By the end of the reporting period, First Nations and Métis communities were participating in 74 contracts to develop 84 renewable generation facilities throughout Ontario. This included 17 MW of solar, 534 MW of wind and 1,159 MW of hydroelectric generation projects.



⁴ The new contract capacity of the Lennox Generating Station for its 10-year contract is 2,000 MW, a reduction of 140 MW from the original contract. In the same period, the OPA also entered into an Energy-from-Waste pilot contract with Plasco Trail Road Inc. for the 2.8-MW Plasco Trail Road Energy-from-Waste facility. A new NUG contract was signed for 73.7 MW. The net change in capacity was therefore -63 MW.

Community Participation

By the end of the reporting period, Ontario communities were participating in 145 renewable generation projects throughout Ontario. This included 13 MW of bio-energy, 51 MW of solar, 139 MW of wind and 5 MW of hydroelectric generation projects.



Additional Details and Related Links

For further information on the OPA's electricity supply projects, visit <http://www.powerauthority.on.ca/current-electricity-contracts>.

For further information on the OPA's FIT and microFIT programs, visit <http://fit.powerauthority.on.ca>.

For further information on programs offered to First Nations and Métis communities, visit <http://www.powerauthority.on.ca/first-nations-metis-relations/aboriginal-energy-partnership-program>.

Renewable Energy

Non-Hydroelectric Projects

By the end of the reporting period, the OPA was managing 8,170 MW of combined capacity from renewable non-hydroelectric energy projects, of which 3,418 MW were in commercial operation and 4,752 MW were under development. The breakdown is shown in Charts 6 and 7 below.

Chart 6

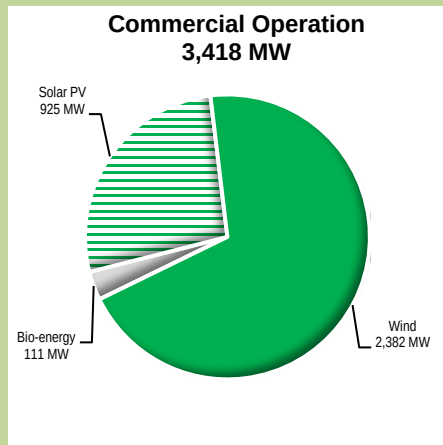
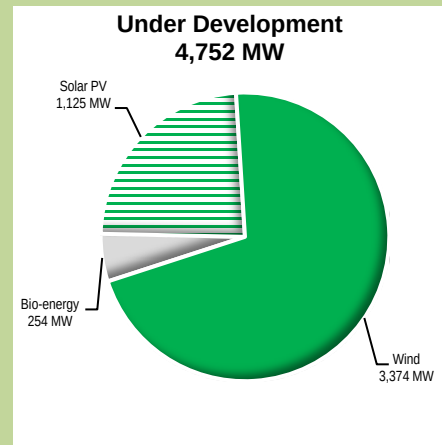


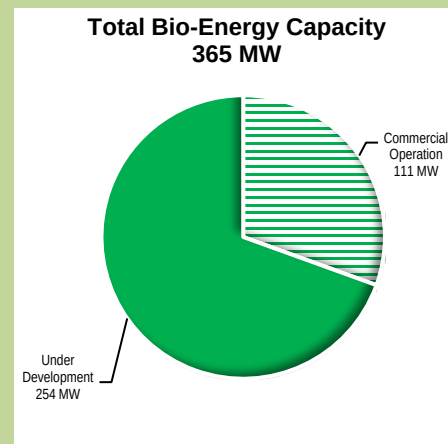
Chart 7



Bio-Energy

By the end of the reporting period, the OPA was managing 365 MW of combined capacity from bio-energy projects. Of the total capacity, 111 MW were in commercial operation and 254 MW were under development. All of the capacity from projects that were under development is scheduled to be in service at or before the end of 2016.

Chart 8



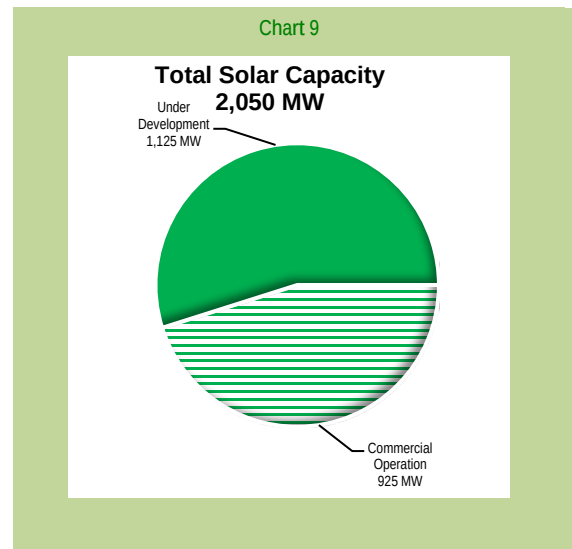
The status of these non-FIT bio-energy projects as submitted by the developers to the OPA is set out in Table 3.

Table 3: Progress Status of non-FIT Bio-Energy Projects as of September 30, 2013

Developer	Project
Ontario Power Generation	Atikokan Generating Station Conversion, Atikokan Capacity: 205 MW Status: - Installation of silo helix chute, cable trays, transfer towers chutes, pulverizer modification, and work on fuel and combustion systems continued - Silo roofs were completed - Major material components were delivered on site and preparation for commission testing commenced
	Becker Cogeneration Plant, Hornepayne Capacity: 8 MW Status: - Biomass and ash handling systems were commissioned. Instrumentation, turbine governing and controls systems are being commissioned - Testing of the boiler pressure and caustic boil-out was completed - Biomass storage piles were prepared for operation

Solar

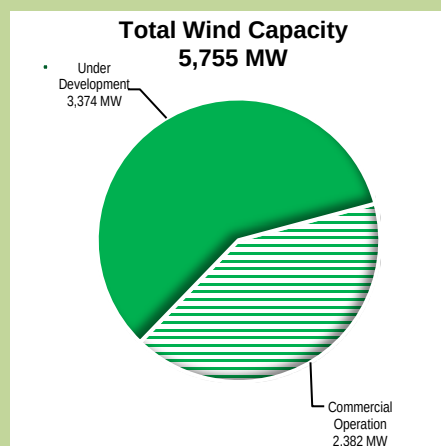
By the end of the reporting period, the OPA was managing 2,050 MW of combined capacity from solar projects. Of the total capacity, 17 MW were developed with Aboriginal participation. All of the capacity from projects that were under development is scheduled to be in service at or before the end of 2016.



Wind

By the end of the reporting period, the OPA was managing 5,755 MW of combined capacity from wind projects. Of the total capacity, 534 MW included Aboriginal participation and 3,374 were under development. All of the capacity from projects that were under development is scheduled to be in service at or before the end of 2018.

Chart 10

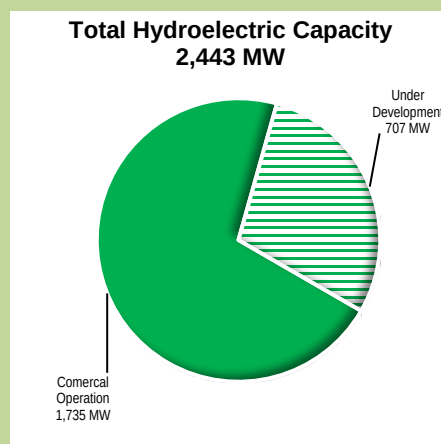


Hydroelectric Projects

Hydroelectricity

By the end of the reporting period, the OPA was managing 2,443⁵ MW of combined capacity from hydroelectric projects. Of the total capacity, 1,159 MW included Aboriginal participation and 707 MW were under development. All of the capacity from projects that were under development is scheduled to be in service at or before the end of 2016.

Chart 11



⁵ Including the existing Smoky Falls Generating Station with a capacity of 53 MW which will be decommissioned in January 2015.

The status of these non-FIT hydroelectric projects as submitted by the developers to the OPA is set out in Table 4.

Table 4: Progress Status of non-FIT Hydroelectric Projects as of September 30, 2013

Developer	Project
Ontario Power Generation and Moose Cree First Nation Partnership	Lower Mattagami Hydroelectric Station Expansion, Kapuskasing: Mattagami River Capacity: 516 MW (station expansion/redevelopment 491 MW; runner upgrade 25 MW) Status: Harmon GS - Removal of the cofferdam was completed - Work continued on turbine and generator component assembly and installation - Generator step-up transformer was placed on its pad and backfeed at Unit 3 forecasted for the end of 2013 Kipling GS - Turbine embedded parts were assembled and installed in the new unit. Draft tube gates were installed - Work area behind the cofferdam was watered up - Work on the removal of the earth berm commenced Little Long GS - Work was focused on completing pre-operational testing and commencing operational testing of the new unit - Backfeed of the unit was successfully achieved in July, and the new unit was watered up for operational testing - First synchronization of the unit was achieved in September and the forecast in-service date is late 2013 Smoky Falls - Concrete was poured in the service bay, intake, powerhouse areas and for the scroll case soffit of unit 3 - Unit 1 stator was placed in the generator pit and stator winding continued. Rotor assembly for units 1 and 2 continued - Assembly of the steel superstructure over unit 3 continued. Powerhouse architectural work and electrical component installation continued - Installation of retaining walls to protect the east and west tailrace walls from erosion commenced
Renfrew Power Generating Inc.	Thomas Low Generating Station, Renfrew: Bonnechere River Capacity: 3.5 MW Status: - Demolition of the outer canal wall and dewatering of the outer dam were completed - Construction proceeded on the canal, headworks and tailrace

H2O Power Limited	Twin Falls Expansion, Iroquois Falls: Abitibi River
	Capacity: 27.0 MW
Yellow Falls Power Limited Partnership	Status:
	• Refurbishment of the G5 rotor, stator and exciter was completed • Pre-shutdown capacity testing was completed on G2 and G3 • Reassembly of the G5 turbine and generator was mostly completed and commissioning is planned for late 2013 • New runner and refurbished turbine components were received at the site
	Yellow Falls Generating Station, Smooth Rock Falls: Mattagami River
	Capacity: 16.0 MW
	Status:
	• Stakeholding activities in progress • Design and procurement activities in progress

Renewable Program Projects – Development Status

Renewable Energy Standard Offer Program

A total of 851 MW were contracted through the Renewable Energy Standard Offer Program; 802 MW or 94.3 percent of the contracted capacity was in service by the end of the reporting period, and the remaining 48 MW have milestone commercial operation dates prior to the end of 2014.

Feed-in Tariff Program

By the end of the reporting period, 4,541 MW of combined capacity was contracted through the FIT Program, of which 59 MW were from bio-energy, 1,225 MW from solar, 3,072 MW from wind, and 185 MW from hydroelectricity. Of this total capacity, 950 MW or 20.9 percent of the contracted capacity was in commercial operation. In addition, 151 MW of combined contract capacity from solar generation was in commercial operation under the microFIT Program.

Furthermore, 1,176 MW or 25.9 percent of the contracted capacity reached the notice to proceed (NTP) stage of development. Of these, 21 MW were from bio-energy, 582 MW were from solar, 522 MW were from wind and 51 MW were from hydroelectric generation. The remaining 2,415 MW or 53.2 percent of the contracted capacity was in the pre-NTP stage of development, of which 15 MW were from bio-energy, 334 MW were from solar, 1,947 MW were from wind and 118 MW were from hydroelectric generation.

Feed-in Tariff Projects – Progress Table

The status of selected large FIT projects as submitted by their developers to the OPA is set out in Table 5.

Legend

Reg EA	Regulatory Environmental Approvals	SIA	System Impact Assessment
CIA	Connection Impact Assessment	DCP	Domestic Content Plan
FIN	Financing Plan	NTP	Notice to Proceed
CON	Construction		

Progress

C	Complete	U	Under Way
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Table 5: Progress Status of Selected Feed-in Tariff Projects (including Korean Consortium Projects) Under Development as of September 30, 2013

Developer (total capacity under development)	Project Name	Location	MW	Pre-NTP								Achieved NTP	CON	
				Reg EA		SIA/CIA		DCP		FIN			U	C
				U	C	U	C	U	C	U	C			
Algonquin Power	Amherst Island Wind Project	Stella	75	✓			✓		✓	✓				
Capital Power GP Holdings Inc.	Port Dover/ Nanticoke Wind Project	Walpole	105		✓		✓		✓		✓	✓	✓	
China Longyuan Power Group Corporation Limited	Dufferin Wind Farm	Shelburne	100		✓		✓		✓		✓	✓	✓	
DP Energy (60 MW)	Bow Lake Phase 1 (wind)	Montreal River Harbour	20	✓			✓	✓		✓				
	Bow Lake Phase 2a (wind)	Montreal River Harbour	20	✓			✓	✓		✓				
	Bow Lake Phase 2b (wind)	Montreal River Harbour	20	✓			✓	✓		✓				
Henvey Inlet First Nation	Nigig Power Corporation (wind)	Pickerel	300		✓	✓			✓	✓				
Invenergy Wind Canada ULC.	Conestogo Wind Energy Centre 1	Drayton	69	✓			✓	✓		✓				
NextEra Energy (469 MW)	Adelaide Wind Energy Centre	Middlesex County	60		✓		✓		✓		✓	✓		
	Bluewater Wind Energy Centre	Zurich	60		✓		✓		✓		✓	✓		
	Bornish Wind Energy Centre	Keyser	74		✓		✓		✓		✓	✓	✓	
	East Durham Wind Energy Centre	Priceville	23	✓			✓	✓		✓				
	Goshen Wind Energy Centre	Dashwood	102	✓			✓	✓		✓				
	Jericho Wind Energy Centre	Thedford	150	✓			✓	✓		✓				

Developer (total capacity under development)	Project Name	Location	MW	Pre-NTP								Achieved NTP	CON	
				Reg EA		SIA/CIA		DCP		FIN			U	C
				U	C	U	C	U	C	U	C			
Niagara Region Wind Corporation	Niagara Region Wind Farm	Smithville	230	✓			✓		✓	✓				
Northland Power (160 MW)	Grand Bend Wind Farm	Zurich	100	✓			✓		✓					
	McLean's Mountain Wind Farm 1	Little Current	50		✓		✓		✓		✓	✓	✓	
	McLean's Mountain Wind Farm 3	Little Current	10		✓		✓		✓		✓	✓	✓	
Pic Mobert First Nation and White River Hydro Limited Partnership (a wholly owned subsidiary of Regional Power Inc.) (19 MW)	Gitchi Animki Bezhig Generating Station	Brothers Township	9		✓		✓		✓		✓	✓	✓	
	Gitchi Animki Niizh Generating Station	Brothers Township	10		✓		✓		✓		✓	✓	✓	
Korean Consortium: Samsung C&T Corporation and Korea Electric Power (1,070 MW)	Armow (wind)	Kincardine	180	✓			✓	✓		✓				
	Grand Renewable Energy Park (wind)	Haldimand County	149		✓		✓		✓		✓	✓	✓	
	K2 (wind)	Ashfield-Colborne-Wawanosh	270	✓			✓	✓						
	South Kent (wind)	Chatham-Kent	270		✓		✓		✓		✓	✓	✓	
	Grand Renewable Energy Park (solar)	Haldimand County	100		✓		✓		✓		✓	✓		
	Sol-Luce Kingston Solar Energy Project	Kingston & Loyalist Township	100	✓			✓							
Suncor Energy Products Inc.	Cedar Point Wind Power Project Phase II	Forest	100	✓			✓	✓		✓				
Veresen Inc.	Grand Valley Wind Farms Phase 3	Grand Valley	40	✓			✓		✓					
wpd Canada Corp.	White Pines Wind Farm	Milford	60	✓			✓	✓		✓				

Natural Gas and Other Fuel Sources

Chart 12

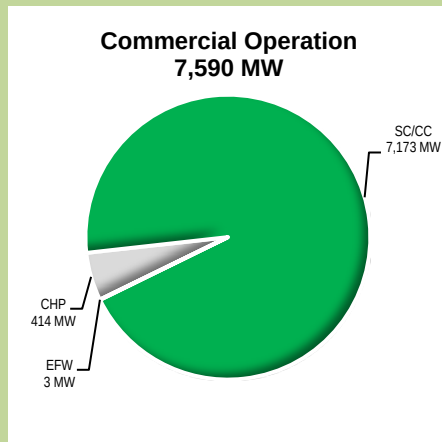
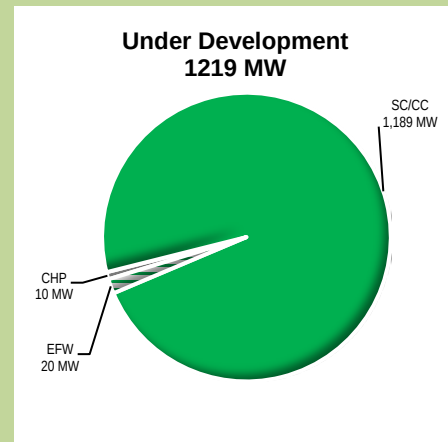


Chart 13



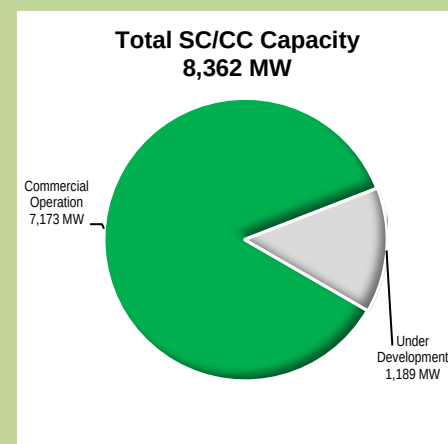
By the end of the reporting period, the OPA was managing 8,809 MW of combined capacity from natural gas-fired projects and projects with other fuel sources. This capacity included 8,362 MW from simple cycle and combined cycle facilities, 424 MW from combined heat and power contracted facilities and 23 MW from energy-from-waste facilities. Of this capacity, 7,590 MW were under commercial operation and 1,219 MW were under development.

Simple Cycle and Combined Cycle Projects

Simple Cycle and Combined Cycle

By the end of the reporting period, the OPA was managing 8,362 MW of combined capacity from simple cycle and combined cycle projects. Of this capacity, 7,173 MW were already in operation and 1,189 MW were under development.

Chart 14



The status of the combined cycle projects as submitted by their developers to the OPA is set out in Table 6.

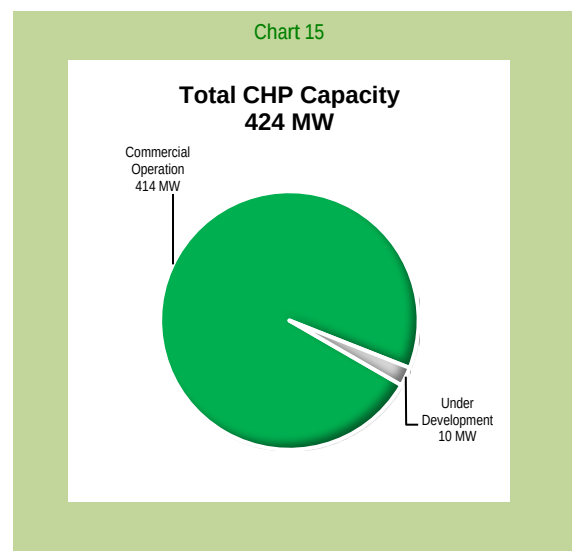
Table 6: Progress Status of Combined Cycle Projects as of September 30, 2013

Developer	Project
Greenfield South Power Corporation	Green Electron Power Plant, Sarnia Capacity: 289 MW Status: • Pre-construction activities in progress • Connection cost estimate agreement for transmission work was executed • Procurement activities in progress
	Napanee Generating Station, Napanee Capacity: 900 MW Status: • Environmental and municipal permitting in progress. Severance and minor variance approvals being sought from municipal Committee of Adjustment • Stakeholder activities continued with Amherst Island residents and Aboriginal groups with the sharing of environmental assessment findings • Detailed plant engineering continued and procurement of engineering equipment commenced • Turbines and generators were placed in storage at the fabrication facilities • Feasibility study completed for connecting the new plant to the Lennox switchyard. System impact assessment study submitted to the IESO. Connection cost estimate agreement for transmission work executed
TransCanada Energy Ltd.	

Combined Heat and Power Projects

Combined Heat and Power

By the end of the reporting period, the OPA was managing 424 MW of combined capacity from combined heat and power contracted projects. The 10 MW of capacity from the three projects listed in the following table is scheduled to be in service by 2014.



The status of the CHP projects under development as submitted by their developers to the OPA is set out in Table 7.

Table 7: Progress Status of Combined Heat and Power Projects as of September 30, 2013

Developer	Project
Markham District Energy Centre Inc.	Birchmount Energy Centre, Markham Capacity: 2.6 MW Status: • Generator set and supporting equipment delivered and set into place • Mechanical and electrical installation work continued.
Markham District Energy Centre Inc.	Bur Oak Energy Centre, Markham Capacity: 3.3 MW Status: • Generator set and supporting equipment were delivered to the site • Mechanical and electrical installation work continued
Rosa Flora Growers Limited	Rosa Flora Growers, Niagara Capacity: 4.0 MW Status: • A new contract was signed with the supplier in August 2013

Energy-from-Waste Projects

By the end of the reporting period, the OPA was managing 23 MW of combined capacity from energy-from-waste projects. Of this capacity, 3 MW were already in operation and 20 MW were under development. The 20 MW of capacity from the project listed in the following table was scheduled to be in service by mid-2016.

The status of the energy-from-waste project as submitted by its developer to the OPA is set out in Table 8.

Table 8: Progress Status of Energy-from-Waste Project as of September 30, 2013

Developer	Project
Regional Municipality of Durham-York	Durham York Energy Centre, Clarington Capacity: 20 MW Status: • Civil construction, concrete pouring, masonry and brick work continued. The majority of underground work and foundations were completed. Stack has been erected • Electrical construction in switchyard completed. Final testing and commissioning of components commenced in preparation for connection to the grid • Major mechanical components were procured and delivered on site

Nuclear

Bruce A Restart and Refurbishment Projects

The OPA had 3,000 MW of nuclear energy supply capacity under contract; 1,500 MW were from the restart of units 1 and 2, which was completed at the end of October 2012. The other 1,500 MW were from units 3 and 4, which were in operation prior to contract execution and continued operations during the reporting period. Planning activities for refurbishment of units 3 and 4 commenced.

For additional information on the Bruce A Restart Project, visit:

- <http://powerauthority.on.ca/nuclear/bruce-restart-and-refurbishment-project-3000-mw-tiverton>
- <http://www.brucepower.com/>.

Photo Gallery

Atikokan Generating Station



Photo 1 – Silo internals installed and roof cement poured



Photo 2 – Transfer tower construction continued

Becker Cogeneration Plant



Photo 3 – Cladding of boiler penthouse installed



Photo 4 – Bark in-feed chutes installed on boiler

Durham York Energy Centre



Photo 5 – An aerial view of Durham York Energy Centre construction site



Photo 6 – Stack has been erected

Lower Mattagami Hydroelectric Station Expansion

Harmon Generating Station



Photo 7 – Rotor welding

Kipling Generating Station



Photo 8 – Work area behind cofferdam watered up

Little Long Generating Station



Photo 9 – Discharge ring inspection

Smoky Falls Generating Station



Photo 10 – Unit 1 stator lift

McLean's Mountain Wind Farm (FIT)



Photo 11 – Concrete pouring for control building support piers



Photo 12 – Stacking tower sections by installing lower-mid section onto tower base

Port Dover and Nanticoke Wind Project (FIT)



Photo 13 – Two of the 30 turbines that achieved mechanical completion



Photo 14 – Construction continuing on the remainder of turbine bases

South Kent Wind



Photo 15 – Main crane assembly in preparation to lift turbine blades



Photo 16 – Several of the turbines that achieved mechanical completion

Twin Falls Generating Station (Runner Upgrade)



Photo 17 – Installation of the new runner for Generator 5



Photo 18 – Reassembly of the Generator 5 rotor, stator and exciter

Appendices

Appendix I: OPA Contracts and Contract Capacity

Table 9: All Contract Capacity as of September 30, 2013

Energy Source	Contract Type	Number of Contracts			New Capacity (MW) Post-OPA Inception		Total Capacity (MW) Pre- and Post-OPA Inception		In Service and Under Development (MW)
		Total	In Service	Under Development	In Service	Under Development	In Service	Under Development	
Bio-energy	FIT 1	48	29	19	22.4	35.4	22.4	35.4	58
	FIT 2	4	0	4	0.0	1.3	0.0	1.3	1
	microFIT	0	0	0	0.0	0.0	0.0	0.0	0
	RESOP	19	18	1	39.7	4.0	39.7	4.0	44
	CHP III	2	1	1	40.0	8.0	40.0	8.0	48
	RES	3	3	0	9.3	0.0	9.3	0.0	9
	Atikokan	1	0	1	0.0	205.0	0.0	205.0	205
	Subtotal	77	51	26	111.4	253.6	111.4	253.6	365
Solar	FIT 1	1,520	751	769	308.5	859.8	308.5	859.8	1,168
	FIT 2	374	0	374	0	56.6	0	56.6	57
	microFIT	17,347	17,347	0	151.0	0.0	151.0	0.0	151
	RESOP	57	56	1	465.2	8.5	465.2	8.5	474
	KC	2	0	2	0.0	200.0	0.0	200.0	200
	Subtotal	19,300	18,154	1,146	924.7	1,124.9	924.7	1,124.9	2,050
Wind	FIT 1	70	12	58	602.8	2,469.0	602.8	2,469.0	3,072
	microFIT	5	5	0	0.0	0.0	0.0	0.0	0
	RESOP	37	33	4	269.4	36.0	269.4	36.0	305
	RES	15	15	0	1,509.4	0.0	1,509.4	0.0	1,509
	KC	4	0	4	0.0	868.6	0.0	868.6	869
	Subtotal	131	65	66	2,381.6	3,373.6	2,381.6	3,373.6	5,755
Renewable Non-Hydro Subtotal		19,508	18,270	1,238	3,417.6	4,752.0	3,417.6	4,752.0	8,170
Hydroelectricity	FIT 1	44	3	41	16.5	168.9	16.5	168.9	185
	FIT 2	1	0	1	0.0	0.1	0.0	0.1	0
	RESOP	16	16	0	28.2	0.0	28.2	0.0	28
	RES	3	2	1	31.0	16.0	31.0	16.0	47
	HCI	53	52	1	10.5	6.5	1,086.7	6.5	1,093
	HESA	4	3	1	62.9	516.0	573.0	516.0	1,036
Renewable Hydro Subtotal		121	76	45	149.1	707.5	1,735.4	707.5	2,390 ⁶

⁶ The existing Smoky Falls Generating Station with a capacity of 53 MW will be decommissioned in January 2015.

Energy Source	Contract Type	Number of Contracts			New Capacity (MW) Post-OPA Inception		Total Capacity (MW) Pre- and Post-OPA Inception		In Service and Under Development (MW)
		Total	In Service	Under Development	In Service	Under Development	In Service	Under Development	Total
Natural Gas, Other Fuel and Nuclear									
Natural Gas (SC/ CC)	CES	5	3	2	1,672.0	1,189.0	1,672.0	1,189.0	2,861
	ACES	3	3	0	2,030.6	0.0	2,030.6	0.0	2,031
	EMCES	5	5	0	985.3	0.0	1,003.6	0.0	1,004
	NUG	1	1	0	73.7	0.0	73.7	0.0	74
	Lennox	1	1	0	0.0	0.0	2,000.0	0.0	2,000
	PGS	1	1	0	393.0	0.0	393.0	0.0	393
	Subtotal	16	14	2	5,080.9	1,189.0	7,172.9	1,189.0	8,362
Natural Gas(CHP)	CHP I & CHPSOP	11	8	3	414.2	9.9	414.2	9.9	424
Other	EFW	2	1	1	2.8	20.0	2.8	20.0	23
Natural Gas and Other Subtotal		29	23	6	5,497.9	1,218.9	7,589.9	1,218.9	8,809
Nuclear	Bruce	1	1	0	3,000.0	0.0	3,000.0	0.0	3,000
Nuclear Subtotal		1	1	0	3,000	0.0	3,000	0.0	3,000
Subtotal			18,370	1,289	12,065	6,678	15,743	6,678	22,368
Total			19,659		18,743		22,368 ⁷		

Table 9 Acronyms

ACES = Accelerated Clean Energy Supply

CES = Clean Energy Supply

CHPSOP = Combined Heat and Power Standard Offer Program

EFW = Energy from Waste

EMCES = Early Movers Clean Energy Supply

HCI = Hydroelectric Contract Initiative

HESA = Hydroelectric Energy Supply Agreement

KC = Korean Consortium

PGS = Peaking Generation Supply

RES = Renewable Energy Supply

⁷ The existing Smoky Falls Generating Station with a capacity of 53 MW will be decommissioned in January 2015.

Appendix II: Non-Standard Offer Program Contracted Facilities in Commercial Operation

Table 10: Renewable Energy – Bio-energy as of September 30, 2013

Contract Facility	Contract Capacity (MW)	Commercial Operation/Term Commencement Date	Contract Expiry Date
Eastview Landfill Gas Energy Plant	1.7	18-Aug-05	Q3 2025
Hamilton (Digester Gas) Cogeneration Project	1.6	10-Jul-06	Q3 2026
Trail Road Landfill Generating Facility	6.0	31-Jan-07	Q1 2027
Thunder Bay Condensing Turbine Project	40.0	20-Mar-13	Q1 2023
Subtotal	49		

Table 11: Renewable Energy – Wind as of September 30, 2013

Contract Facility	Contract Capacity (MW)	Commercial Operation/Term Commencement Date	Contract Expiry Date
Enbridge Ontario Wind Farm	181.5	19-Feb-09	Q1 2029
Erie Shores Wind Farm	99.0	24-May-06	Q2 2026
Gosfield Wind Project	50.6	16-Sep-10	Q4 2032
Greenwich Wind Farm	98.9	14-Oct-11	Q4 2031
Kingsbridge I Wind Power Project	39.6	16-Mar-06	Q1 2026
Kruger Energy Chatham Wind Project	99.4	01-Jan-11	Q4 2031
Kruger Energy Port Alma Wind Power Project	101.2	31-Oct-08	Q4 2028
Melancthon I Wind Plant	67.5	04-Mar-06	Q1 2026
Melancthon II Wind Plant	132.0	24-Nov-08	Q4 2028
Prince I Wind Power Project	99.0	21-Sep-06	Q3 2026
Prince II Wind Power Project	90.0	19-Nov-06	Q4 2026
Raleigh Wind Energy Centre	78.0	29-Jan-11	Q1 2031
Ripley Wind Power Project	76.0	22-Dec-07	Q4 2027
Talbot Wind Farm	98.9	16-Dec-10	Q4 2031
Wolfe Island Wind Project	197.8	26-Jun-09	Q2 2029
Subtotal	1,509		

Table 12: Renewable Energy – Hydroelectricity as of September 30, 2013

Contract Facility	Contract Capacity (MW)	Commercial Operation/Term Commencement Date	Contract Expiry Date
Andrews Generating Station	47.0	1-Dec-09	Q4 2029
Appleton Eco Power Centre	1.4	1-Jan-11	Q4 2030
Aubrey Falls Generating Station	162.0	1-Dec-09	Q4 2029
Ayton Mills NUGS	0.3	1-Apr-13	Q2 2033
Barrie Small Hydro Limited	0.1	17-Jul-10	Q3 2030
Bracebridge Falls Generating Station	2.6	1-May-10	Q2 2030
Brewers Mills	0.9	1-May-10	Q2 2030
Burk's Falls	1.1	1-May-10	Q2 2030
Calm Lake Generating Station	9.0	1-Dec-09	Q4 2029
Campbellford-Seymour Electric Generation Inc. – Plant No. 1	2.0	1-Jan-10	Q4 2029
Casselman Generating Station	0.5	1-Nov-11	Q4 2031
Chaudiere No. 2. Generating Station	8.4	1-Apr-10	Q1 2030
Chaudiere No. 4 Generating Station	9.3	1-Apr-10	Q1 2030
Clergue Generating Station	52.0	1-Dec-09	Q4 2029
Conestogo Dam Generating Station	0.6	1-Jan-13	Q1 2033
Current River Hydro	0.5	1-Mar-10	Q1 2030
Devil's Gap Generating Station	0.5	1-Jun-10	Q2 2030
Domtar, Espanola Mill	18.0	1-Jan-12	Q1 2032
Drag River GS	0.3	11-Mar-13	Q1 2033
Dunford Generating Station	45.0	1-Dec-09	Q4 2029
Enerdu Power Systems Ltd.	0.3	1-Mar-11	Q1 2031
Fort Frances Generating Station	10.0	1-Dec-09	Q4 2029
Galetta Eco Power Centre	1.6	1-Jan-11	Q4 2030
Gananoque	0.7	1-May-10	Q2 2030
Gartshore Generating Station	23.0	1-Dec-09	Q4 2029
Glen Miller Generating Station	8.0	19-Dec-05	Q4 2025
Harmon Generating Station	141.0	22-Jun-10	Q4 2065
Harris Generating Station	12.0	1-Dec-09	Q4 2029
Healey Falls Generating Station	15.7	7-Apr-10	Q2 2060
Heywood Generating Station	7.2	1-Jan-10	Q4 2029
High Falls Generating Station #1	0.8	1-Oct-10	Q3 2030
Hogg Generating Station	18.0	1-Dec-09	Q4 2029
Hollingsworth Generating Station	23.0	1-Dec-09	Q4 2029

Hound Chute Generating Station	9.5	27-Oct-10	Q4 2060
Hurdman Dam	0.6	1-Jun-11	Q2 2031
Iroquois Falls Generating Station	29.0	1-Dec-09	Q4 2029
Island Falls Generating Station	38.0	1-Dec-09	Q4 2029
Jones Falls	2.4	1-May-10	Q2 2030
Kagawong Generating Station	0.8	1-Jan-10	Q4 2029
Kenora Generating Station	6.0	1-Dec-09	Q4 2029
Kingston Mills	1.9	1-May-10	Q2 2030
Kipling Generating Station	157.0	22-Jun-10	Q4 2065
Lac Seul/Ear Falls Generating Station	29.3	18-Feb-09	Q1 2059
Little Burgess Generating Station	0.2	1-Aug-13	Q3 2033
Little Long Generating Station	133.0	22-Jun-10	Q4 2065
London Street Generating Station	4.1	1-Jan-10	Q4 2029
Long Slide GS	0.7	1-Mar-13	Q1 2033
Lower Sturgeon Generating Station	14.0	27-Oct-10	Q4 2060
MacKay Generating Station	62.0	1-Dec-09	Q4 2029
Maple Hill	0.6	1-Dec-10	Q4 2030
Marmora GS	1.0	27-Jul-13	Q2 2033
Matthias Generating Station	3.0	1-Jan-10	Q4 2029
McPhail Generating Station	13.0	1-Dec-09	Q4 2029
Minden Generating Station	4.0	1-Jan-10	Q4 2029
Mission Generating Station	16.0	1-Dec-09	Q4 2029
Moose Rapids Generating Station	1.4	1-Jan-11	Q4 2030
Norman Generating Station	10.0	1-Dec-09	Q4 2029
Parry Sound PowerGen Corporation – Cascade Street Generating Station	1.2	1-Mar-10	Q1 2030
Rayner Generating Station	46.0	1-Dec-09	Q4 2029
Red Rock Falls Generating Station	41.0	1-Dec-09	Q4 2029
Renfrew Power Generation Inc. – Lower Plant	1.0	1-Jan-10	Q4 2029
Renfrew Power Generation Inc. – Upper Plant	1.0	1-Jan-10	Q4 2029
Rideau Falls	2.0	1-May-10	Q2 2030
Sandy Falls Generating Station	5.5	27-Oct-10	Q4 2060
Saugeen Generating Station	0.3	1-Aug-12	Q3 2032
Scone Generator	0.1	1-Jan-10	Q4 2029
Scott Falls Generating Station	22.0	1-Dec-09	Q4 2029
Shand Dam Generating Station	0.7	1-Sep-10	Q3 2030
Smoky Falls Generating Station	53.0	22-Jun-10	Q4 2065
Stanley Adamson Powerhouse	3.9	16-Jun-13	Q2 2033

Steephill Generating Station	16.0	1-Dec-09	Q4 2029
Stewart Generating Station	0.2	5-Jun-10	Q2 2030
Sturgeon Falls Generating Station	7.0	1-Dec-09	Q4 2029
Swift Rapids Generating Station	7.9	1-Jan-10	Q4 2029
Tembec, Smooth Rock Falls Facilities	8.0	14-Mar-10	Q1 2030
Truisler Chute Generating Station	0.6	1-Jun-11	Q2 2031
Tweed Generating Station	0.2	1-Nov-10	Q4 2030
Twin Falls Generating Station	22.0	1-Dec-09	Q4 2029
Umbata Falls Generating Station	23.0	12-Nov-08	Q4 2028
Washburn	0.2	1-May-10	Q2 2030
Water Street Pumphouse	1.3	1-Mar-13	Q1 2033
Wawaitin Generating Station	15.0	27-Oct-10	Q4 2060
Wells Generating Station	239.0	1-Dec-09	Q4 2029
West Nipissing Power Generation	6.5	1-Mar-10	Q1 2030
Wilson's Falls	2.9	1-May-10	Q2 2030
York River Generating Station	0.6	1-Sept-13	Q3 2033
635294 Ontario Inc.	0.5	1-Feb-10	Q1 2030
1149377 Ontario Limited	2.3	1-Jan-10	Q4 2029
Subtotal	1,691		

Table 13: Natural Gas and Other Fuel Sources – Simple Cycle and Combined Cycle as of September 30, 2013

Contract Facility	Contract Capacity (MW)	Commercial Operation/Term Commencement Date	Contract Expiry Date
Brighton Beach Power Station	541.3	01-Jan-06	Q3 2024
Goreway Station	839.1	04-Jun-09	Q2 2029
Greenfield Energy Centre	1,005.0	16-Oct-08	Q4 2028
GTAA Cogeneration Plant	90.0	01-Feb-06	Q1 2026
Halton Hills Generating Station	641.5	01-Sep-10	Q3 2030
Lennox Generating Station	2,000.0	01-Jan-13	Q3 2022
Ottawa Health Sciences Centre	73.7	1-Jan-14	Q1 2034
Portlands Energy Centre	550.0	22-Apr-09	Q2 2029
Sarnia Regional Cogeneration Plant	444.0	01-Jan-06	Q4 2025
St. Clair Energy Centre	577.0	30-Mar-09	Q1 2029
Sudbury District Energy Cogeneration Plant	5.0	01-Jan-06	Q4 2024
Sudbury District Energy, Hospital Cogeneration	6.7	01-Jan-06	Q4 2024
Trent Valley Cogeneration Plant	6.7	01-Jan-06	Q4 2015
York Energy Centre	393.0	09-May-12	Q2 2032
Subtotal	7,173		

Table 14: Natural Gas and Other Fuel Sources - Combined Heat and Power Contracts as of September 30, 2013

Contract Facility	Contract Capacity (MW)	Commercial Operation/Term Commencement Date	Contract Expiry Date
Durham College District Energy Project	2.3	11-Mar-08	Q1 2028
East Windsor Cogeneration	84.0	06-Nov-09	Q4 2029
Essar Cogeneration Facility	63.0	13-Jun-09	Q2 2029
Great Northern Tri-Gen Facility	11.3	31-Oct-08	Q4 2028
London Cogeneration Facility	12.0	31-Dec-08	Q4 2028
Thorold Cogen	236.4	28-Mar-10	Q1 2030
Warden Energy Centre	5.0	04-Jun-08	Q2 2028
Villa Colombo Vaughan	0.2	1-Aug-13	Q1 2030
Subtotal	414		

Table 15: Natural Gas and Other Fuel Sources – Energy-from-Waste as of September 30, 2013

Contract Facility	Contract Capacity (MW)	Commercial Operation Date	Forecasted Contract Expiry Date
Plasco Trail Road Facility	2.8	1-Jan-08	Q4 2014
Subtotal	2.8		

Table 16: Nuclear Energy as of September 30, 2013

Contract Facility	Contract Capacity (MW)	Term Commencement Date	Contract Expiry Date
Bruce A Units 1 – 4	3,000.0	31-Oct-05	Q4 2037
Subtotal	3,000		

Appendix III: Non-Standard Offer Program Contracted Facilities Under Development

Table 17: Renewable Energy – Bio-energy as of September 30, 2013

Contract Facility	Contract Capacity (MW)	Scheduled Commercial Operation Date	Forecasted Contract Expiry Date
Atikokan Generating Station	205.0	Q2 2014	Q4 2023
Becker Cogeneration Plant	8.0	Q4 2013	Q4 2033
Subtotal	213		

Table 18: Renewable Energy – Solar as of September 30, 2013

Contract Facility	Contract Capacity (MW)	Scheduled Commercial Operation Date	Forecasted Contract Expiry Date
Grand Renewable Energy Park	100.0	Q1 2014	Q1 2034
Sol-Luce Kingston Solar Energy Project	100.0	Q4 2014	Q4 2034
Subtotal	200		

Table 19: Renewable Energy – Wind as of September 30, 2013

Contract Facility	Contract Capacity (MW)	Scheduled Commercial Operation Date	Forecasted Contract Expiry Date
Armow Wind Project	180.0	Q4 2014	Q4 2034
Grand Renewable Energy Park	148.6	Q1 2014	Q1 2034
K2	270.0	Q4 2014	Q4 2034
South Kent Wind Project	270.0	Q1 2014	Q1 2034
Subtotal	869		

Table 20: Renewable Energy – Hydroelectricity as of September 30, 2013

Contract Facility	Contract Capacity (MW)	Scheduled Commercial Operation Date	Forecasted Contract Expiry Date
Harmon Generating Station (Expansion)	78.0	Q4 2015	Q4 2065
Harmon Generating Station (Runner Upgrade)	17.6	Q4 2016	Q4 2065
Kipling Generating Station (Expansion)	78.0	Q4 2015	Q4 2065
Little Long Generating Station (Expansion)	67.0	Q4 2015	Q4 2065
Little Long Generating Station (Runner Upgrade)	7.5	Q4 2017	Q4 2065
Smoky Falls Generating Station (Redevelopment)	267.9	Q4 2015	Q4 2065
Thomas Low Generating Station	1.5	Q1 2014	Q4 2029
Twin Falls Generating Station (Runner Upgrade)	5.0	Q1 2014	Q4 2029
Yellow Falls Hydroelectric Project	16.0	Q3 2016	Q3 2036
Subtotal	538		

Table 21: Natural Gas and Other Fuel Sources – Simple Cycle/Combined Cycle as of September 30, 2013

Contract Facility	Contract Capacity (MW)	Scheduled Commercial Operation Date	Forecasted Contract Expiry Date
Green Electron Power Plant	289.0	Q3 2017	Q3 2037
Napanee Generating Station	900.0	Q4 2018	Q4 2038
Subtotal	1,189		

Table 22: Natural Gas and Other Fuel Sources – Combined Heat and Power Contracts as of September 30, 2013

Contract Facility	Contract Capacity (MW)	Scheduled Commercial Operation Date	Forecasted Contract Expiry Date
Birchmount Energy Centre	2.6	Q3 2014	Q3 2034
Bur Oak Energy Centre	3.3	Q3 2014	Q3 2034
Rosa Flora Growers	4.0	Q4 2014	Q4 2034
Subtotal	10		

Table 23: Natural Gas and Other Fuel Sources – Energy-from-Waste as of September 30, 2013

Contract Facility	Contract Capacity (MW)	Scheduled Commercial Operation Date	Forecasted Contract Expiry Date
Durham York Energy Centre	20.0	Q3 2016	Q3 2036
Subtotal	20		

Appendix IV: Summary of RESOP and FIT Contracts

Table 24: Renewable Energy Standard Offer Program and Feed-in Tariff Programs as of September 30, 2013

Program	Fuel Source	Under Development (MW)	Commercial Operation (MW)	Total (MW)
RESOP	Bio-Energy	4	40	850
	Hydroelectric	0	28	
	Solar	9	465	
	Wind	36	269	
	Subtotal	48	802	
FIT 1	Bio-Energy	35	22	4,483
	Hydroelectric	169	17	
	Solar	860	309	
	Wind	2,469	603	
	Subtotal	3,533	950	
FIT 2	Bio-Energy	1	0	58
	Hydroelectric	0	0	
	Solar	57	0	
	Wind	0	0	
	Subtotal	58	0	
microFIT	microFIT Solar Contracts (Total 17,352)	0	151	151
Total (MW)		3,639	1,903	5,542



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