



ONTARIO POWER AUTHORITY

Standard Offer Program – Renewable Energy

For Small Electricity Generators

An Introductory Guide

The Standard Offer Program in Summary

The intent of the program is to help Ontario meet its renewable energy supply targets by providing a standard pricing regime and simplified eligibility, contracting and other rules for small renewable energy electricity generating projects.

Eligibility

- Projects must generate electricity from wind, solar photovoltaic (PV), thermal electric solar, renewable biomass, biogas, biofuel, landfill gas or waterpower.
- Projects must be located in Ontario with an installed capacity of not more than 10 megawatts (MW) and connected to an eligible electricity distribution system in Ontario at a voltage of 50 kilovolts (kV) or less.
- To be eligible, projects must have begun operation after the restructuring of Ontario's electricity sector took effect.
- In some areas of the province, the Ontario Power Authority (OPA) may impose limits on eligible projects because of transmission system constraints.

- Applicants must meet certain requirements, including a connection impact assessment, environmental assessment and demonstrated site access, as well as other contractual terms.

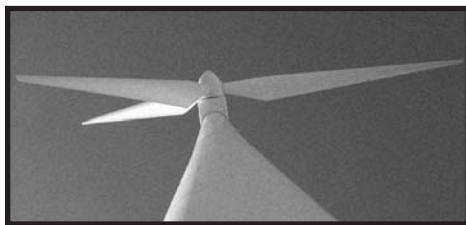
The Standard Offer Contract

- Generators must enter into a contract with the OPA for a term of 20 years.
- Initially, all generators except solar PV projects will be paid a base rate of 11.0 cents per kilowatt hour (kWh) for electricity delivered to the local electricity distribution company. Starting May 1, 2007, 20 percent of the base rate will be indexed annually for inflation.
- Projects that demonstrate that they can operate reliably during peak hours will be paid an additional 3.52 cents per kWh for electricity delivered during peak hours.
- Solar PV generators will be paid a fixed price of 42.0 cents per kWh for the full 20-year term of the contract.

Is Standard Offer for you?

1. Are you interested in helping Ontario meet its electricity needs with power from renewable energy sources?
2. Do you have access to a renewable energy source? This could be wind, waterpower, solar or biomass.
3. Are you or your community (co-op, partners, municipality, etc.) interested in developing an electricity generating project using a renewable source of energy?
4. Are you interested in a 20-year contract to sell electricity to the grid at a guaranteed price?

If you answered yes to these questions, then the Standard Offer Program may be for you.



What is a small renewable energy generating project?

These are projects that use a renewable energy source, such as wind, waterpower, solar or biomass, to generate 10 MW (10,000 kW) or less of electricity.

Some examples include:

- one or more wind turbines
- rooftop-mounted solar PV panels
- a waterpower project on a river or waterfall
- a generator fueled by biomass on a farm.

If you are interested in developing a project using a renewable energy source that will generate 10 MW or less of electricity, you will find this booklet useful. It contains information on the Standard Offer Program, along with some resources you may find valuable. More information is available on the Ontario Power Authority's Web site at www.powerauthority.on.ca/SOP.

Making Renewable Energy Targets a Reality

It's an enticing and exciting prospect: virtually unlimited, everlasting, clean and sustainable energy from nature, without having to burn non-renewable hydrocarbons or use other fuels with higher environmental impacts. After all, energy is all around us, in the wind, in flowing water, in sunlight and in plants and other biological matter that can be converted to yield clean-burning liquids or gases. Ontario is rich in all these natural resources, and we can harness them in ways that are proven and economically viable.

The technologies for using wind, water-power, solar and biomass to generate electricity exist. Now, home and property owners, farmers, cooperatives, small businesses, community groups and other entrepreneurs can generate energy to contribute to Ontario's electricity system, helping to meet the province's power needs and, at the same time, improving the environment.

That is the vision and the growing reality in many places around the world. Ontario is now taking leadership to ensure that Ontarians also gain the economic, environmental and social benefits that renewable energy has to offer.

As a practical matter, however, a number of barriers exist that can make developing small facilities to use renewable energy sources to generate electricity more challenging. Facilities, hardware and

construction costs can be high, and there are challenges to adapting our electricity grid to accommodate decentralized generation. Also, because energy prices can be difficult to predict, the financial returns can be uncertain.

Large-scale and established project developers benefit from economies of scale and have the financial and other resources to cope with complex regulations and approval processes. People considering smaller projects, however, often don't have those resources.

Ontario's Standard Offer Program for small renewable energy generating projects aims to remove these barriers by simplifying the pricing, eligibility, contracting and other rules to support these projects. This brochure provides a basic description of the program.

What is the Standard Offer Program?

The Standard Offer Program makes it easier for the operators of small renewable energy generating facilities to participate in meeting Ontario's electricity supply needs by supplying power through their local electricity distribution company and being paid a fair and stable price for the power they provide.

At the same time, it is not the intent of the program to have Ontario electricity ratepayers support any and all renewable energy projects, regardless of their value to the system. The Standard Offer Program strikes a balance between the renewable energy available from small projects, the government's renewable energy generation targets and the value of electricity to the Ontario ratepayer. Projects are expected to range in size from residential rooftop generation of one kilowatt or less up to projects of 10 MW.

Renewable energy projects provide value to Ontarians—as citizens, taxpayers and ratepayers. The fixed price paid to the generator contributes certainty and stability to future energy prices, protecting ratepayers from fossil and other fuel price increases. By distributing renewable energy generation projects throughout the province, our grid is made stronger and more reliable. Producing electricity

close to where demand is located reduces transmission losses and can decrease the need for new investments in expensive transmission infrastructure. Economic investments and benefits are distributed throughout our communities. We all benefit from cleaner air, water and soil.

If you are considering undertaking or investing in a renewable energy generating project that might qualify under the Standard Offer Program, start your research at the Ontario Power Authority Web site, www.powerauthority.on.ca/SOP. It contains a wealth of information for prospective generators, including some of the pitfalls and potential drawbacks, case studies and links to other valuable Web sites, as well as details on the program rules and contract terms. You may also want to contact the industry association for the fuel source of your choice (see page 17).

What projects qualify for the Standard Offer Program?

To be eligible for the program, renewable energy projects must generate electricity from any one of the following sources: wind, thermal electric solar, solar PV, renewable biomass, biogas, biofuel, landfill gas or waterpower.

Capacity requirements

Projects must be located in Ontario, with installed generating capacity of no more than 10 MW. Eligible projects are those that declared commercial operation after the restructuring of Ontario's electricity sector took effect.

Sub-zone restrictions

Certain areas of the provincial transmission grid are currently limited in their ability to accept new generation. Such transmission system constraints may limit the ability of the transmission system to accept all of the generation that project developers might want to offer, even if there is no constraint that would prevent it from becoming connected to the electricity distribution system. For this reason, the OPA may have to restrict participation in the Standard Offer Program in certain designated geographic areas. The locations of these restricted areas and the rules on how the OPA will treat applicants from these areas are posted on the OPA Web site. These will be updated from time to time for changes in available capacity.

Connection and metering requirements

The generating facility must be connected via a single connection at a voltage of 50 kilovolts (kV) or less to an electricity distribution system located in Ontario that is both licensed by the Ontario Energy Board (OEB) and connected to the Independent Electricity System Operator-controlled grid. Output from the generating facility must be metered in accordance with the requirements of the OEB's Distribution System Code for settlement purposes. The generator will be solely responsible for any costs associated with this connection and the related metering.

By connecting your project to the electricity distribution system, you become a new generator as well as a new customer with your local distribution company. Even if the project uses the electricity connections at a site that already has an electricity account, the new generator/customer will have its own

electricity meter, its own connection, and its own distinct customer account and payment arrangements. The local distribution company sees the electricity user and the electricity generator as two separate entities. The OPA only has a relationship with the generator.

Phased projects

The program allows for projects that are to be completed in two or more phases. However, only those phases that are brought into commercial operation by the third anniversary of the contract date can be eligible for payment under the program.

Incremental projects

As well, “incremental” projects that either increase electricity output from existing facilities or bring previously abandoned facilities back into service are also eligible. An incremental project can be eligible only if the combined installed capacity of the incremental and the pre-existing facility does not exceed 10 MW. Moreover, only the increase in output resulting from the incremental capacity will be eligible for payment under the Standard Offer Program.

Project ownership

The Standard Offer Program is not available for individual facilities that:

- (i) have been the subject of a previous contract with Ontario Hydro, Ontario Electricity Financial Corporation or the Government of Ontario relating to electricity generation in Ontario, or
- (ii) are associated in any material way with Ontario Power Generation, Inc., or its affiliates.

In general, the program rules do not impose restrictions on who can own eligible generating facilities, or on where facilities can be located, other than those transmission sub-zone restrictions previously discussed. Nor do they place a cap on the total number of eligible facilities that proponents can own or the total kW of their combined capacity.



What does the Standard Offer Program pay for electricity?

The pricing system under the Standard Offer Program is designed to be simple and to minimize administrative costs for both generators and the OPA. It provides a fixed price to be paid to generators per unit of energy produced, plus a performance incentive for generators who can control their output to meet peak demand requirements reliably over time. A feature allowing for price escalation to cover rising operations and maintenance costs is also included for all technologies except solar PV.

Solar PV systems have great potential. However, at this point there is insufficient data regarding the costs and performance of PV technology in Ontario. As a result, the program provides a different pricing structure for PV-generated power, which will be revisited on an ongoing basis as more information becomes available.

Payments for solar PV projects

Solar PV projects will be paid 42.0 cents per kWh but will not be eligible for inflation adjustment or the peak-hour premium for the full term of the Standard Offer Program Contract.

Base rate payments for projects other than PV projects

Initially, all generators directly connected to the local distribution company, except PV generators, will be paid a base rate of 11.0 cents per kWh for electricity actually delivered. That is, payment will not be based on the installed capacity of the facility, but on the amount of electricity actually delivered to the local distribution company as determined by the generator's metering.

Escalation for inflation

Starting May 1, 2007, 20 percent of the base rate will be adjusted for inflation according to the year-over-year change in the Ontario Consumer Price Index (CPI). In any year when the CPI change is negative (i.e., deflation), there will be no change in payment. The formula and an example of this escalation provision can be found in the Standard Offer Program Rules on the OPA Web site.

Additional payment for peak-hour generation

If a project can control its generator output and/or store fuel or energy to operate reliably during peak hours, it will qualify for an additional 3.52 cents per kWh for electricity delivered during those peak hours. Eligibility is defined as the ability to generate electricity during 80 percent of peak hours each year. Peak hours are defined as 11 a.m. to 7 p.m, Eastern Standard Time, on business days. Projects whose generation is intermittent will not be eligible for this additional payment.

How payments are made

Payments to the generator under the Standard Offer Program will be made by the OPA through settlement between the generator and the local distribution company. Settlement will be made according to the requirements of the regulatory codes within which the local distribution companies work.

Pricing review

Pricing under the Standard Offer Program will be reviewed periodically and may be modified according to changing technological or market conditions, but modifications will apply only to future contracts, not to existing contracts already executed.

Standard Offer Program

Fuel Source/ Technology	Contract price paid per kWh	Inflation Index	On-peak eligibility (3.52 cents/kWh)
Solar Photovoltaic	42 cents	No	No
Renewable Biomass	11 cents	20% of the Contract price increases by the Consumer Price Index	If able to generate during 80% of peak hours
Waterpower	11 cents	20% of the Contract price increases by the Consumer Price Index	If able to generate during 80% of peak hours
Wind	11 cents	20% of the Contract price increases by the Consumer Price Index	No

Considerations in Developing a Renewable Energy Project

Estimated capital cost	Typical lead time	Some Required Approvals			Location/ Resource	Industry Association Web sites
		Environmental Assessment	Municipal/Other	Electrical Connections		
\$10,000 to \$14,000 per kW installed	1 to 6 months	None	Building permit Zoning	OEB license Electricity Distributors' Connection Agreement Electrical Safety Authority	South-facing, inclining approximately 45 degrees	Canadian Solar Industry Association (CanSIA) www.cansia.ca
\$2,400 to \$6,200 per kW installed	2 years	None for <5 MW Environmental screening for ≥5 MW • Community consultation • Certificates of approval for air emissions, possibly waste handling from the Ministry of the Environment	Municipal permits Official plans and zoning by-laws	OEB license Electricity Distributors' Connection Agreement Electrical Safety Authority	Proximity to renewable biomass	Canadian Bioenergy Association (CANBIO) www.canbio.ca Canadian Biogas Association www.biogas.ca Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) www.omafra.gov.on.ca
\$4,000 to \$7,000 per kW installed	4 to 7 years	All projects require Environmental Screening process • Community consultation • Fish habitat • Waterways impact on other uses	Ministry of Natural Resources Water supply issues Zoning Building permits	OEB license Electricity Distributors' Connection Agreement Electrical Safety Authority	Where there are steep rivers, streams, creeks or springs flowing year-round, such as in hilly areas with high year-round rainfall	Ontario Waterpower Association (OWA) www.owa.ca Ministry of Natural Resources www.mnr.gov.on.ca
\$2,000 to \$2,750 per kW installed	3 to 4 years	None for ≤2 MW Environmental Screening for all projects >2 MW • Community consultation • Noise levels • Bird impacts	Municipal permits Navigation Canada Transport Canada Possible official plan and zoning amendments Possible by-law changes Building permits Property tax reclassification	OEB license Electricity Distributors' Connection Agreement Electrical Safety Authority	The strongest winds are found along the shores of the Great Lakes and areas with high elevations and exposure to prevailing wind directions	Canadian Wind Energy Association (CanWEA) www.canwea.ca Ontario Sustainable Energy Association (OSEA) www.ontario-sea.org

How do I get a Standard Offer Program Contract?

If you are considering submitting an application for the Standard Offer Program with the OPA, you must meet specific requirements before your application will be considered. In each case, you must provide evidence that the requirement has been met, and the OPA reserves the right to confirm compliance with the relevant party or authority. These requirements are as follows:

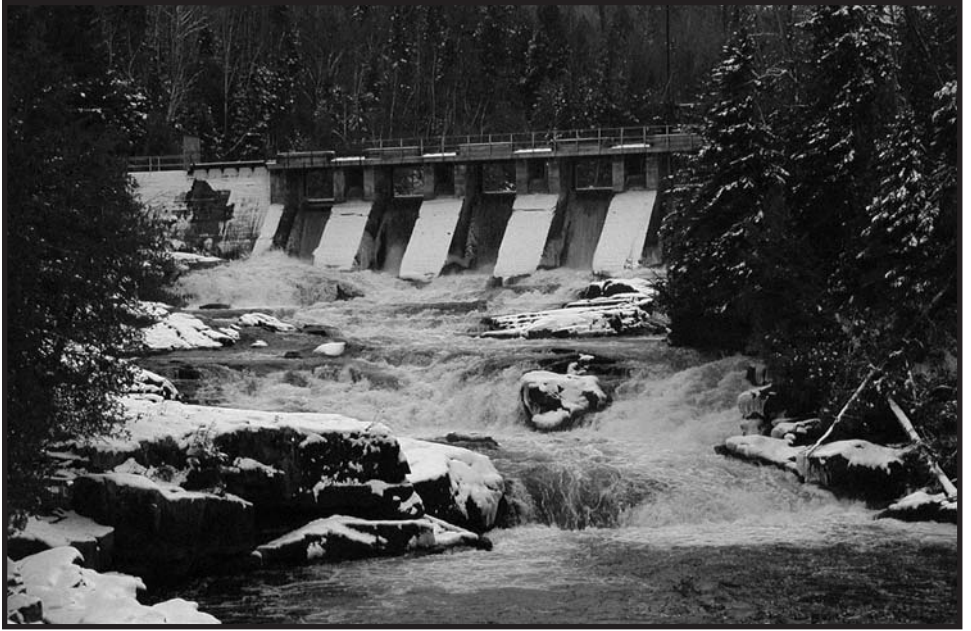
1. Connection Impact Assessment

You must provide a recently completed Connection Impact Assessment for the proposed facility, provided by the local distribution company, confirming that the proposed project will not have an installed capacity of more than 10 MW. This requirement will not apply to projects of 10 kW or less. Note that all phases of a phased-in project must be approved under the same Connection Impact Assessment.

2. Environmental Assessment

You must include a statement identifying the category to which the proposed project belongs according to the Ontario Ministry of the Environment's "Guide to Environmental Assessment Requirements for Electricity Projects," and it must confirm that the Environmental Assessment process is underway.





3. Demonstrated site access

Applicants must either be the registered owner of the land or site in question, have a leasehold interest, have the written consent of the landowner or other access rights necessary to complete the proposed project.

Other requirements

In addition to the above document requirements, applicants must be willing to provide other information, subject to the terms and conditions of the

Standard Offer Program Contract.

Applicants may be required to provide clarifications or additional confirmations at the OPA's request.

Also, your application must be prepared at your sole cost and expense, including your review of the Standard Offer Program Rules and Contract. If your application is rejected, the OPA will not be responsible for reimbursing any of your costs.

Getting a Standard Offer Program Contract is one step on the road to building your renewable energy project. You must also meet all of the other requirements needed to build your project, and these will vary depending on the renewable energy fuel source you will use. More information can be found on page 8–10.



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Other terms of the Standard Offer Program Contract

Your Standard Offer Program Contract with the OPA will include a number of other terms and conditions, such as:

The OPA is paying the generator for the power that is delivered through the meter. The generator may not sell the power to any other party. All related products are owned by the OPA. A definition of “related products” can be found in the Standard Offer Program Rules on the OPA Web site.

Responsibility for metering

As a generator, you will be solely responsible for coordinating metering configuration and requirements with your local distribution company, and for all connection and metering costs. Projects that are greater than 10 kW will require internal meters, and metering must be consistent with OEB requirements and be sufficient for program settlement.

Three-year start-up requirement

All projects other than waterpower projects are required to achieve commercial operation within three years of the effective date of the contract. For waterpower projects, within the same three-year period the generator must

obtain a Location Approval under Section 14 or 16 as applicable under the *Ontario Lakes and Rivers Improvement Act* and/or an Interim License issued under the *Dominion Waterpower Act (Canada)*. This provision recognizes the special regulatory constraints on waterpower facilities under Canadian and Ontario legislation.

“Force majeure” provisions

The Standard Offer Program Contract includes “force majeure” provisions. These essentially relate to events beyond the generator’s control that may affect the project and may include weather events, fires, strikes, court judgments, delays in equipment deliveries, etc. A generator may be entitled to rely on “force majeure” to receive an extension to their three-year start-up requirements. However, all projects must achieve commercial operations within eight years of the effective date of the contract.

Freedom of information

Information provided to the OPA in Standard Offer Program applications are subject to the *Freedom of Information and Protection of Privacy Act (Ontario)* and could, in some instances, become available to the public. For more detail on the confidentiality of information provided to the OPA, or information provided by the OPA to applicants, see the Standard Offer Program Rules.

Review of applications

Standard Offer Program applications will be reviewed by the OPA to confirm that all eligibility requirements have been met. However, acceptance or rejection of an application will be solely at the discretion of the OPA, which may reject any application for any reason. The applicant will be provided with reasons for the rejection and will be able to reapply once the reasons for rejection are resolved.

Other provisions

The contract will also contain provisions relating to termination and assignment rights, compliance with regulations, dispute resolution and other matters. Prospective applicants are advised to obtain professional advice in reviewing the specific terms and conditions of the Program Rules and the Contract before submitting an application.



What to do next

For more information, please consult the Standard Offer Program section of the OPA Web site, www.powerauthority.on.ca/SOP. There you will find the application form, Program Rules, the Contract, a list of suggested steps to take depending on the renewable energy technology of your project and further instructions on how to apply.



The screenshot shows a web browser window with the URL <http://www.powerauthority.on.ca/SOP>. The page header includes the OPA logo and navigation links for Planning, Generation, Conservation, and Initiatives. The main heading is "Ontario's Standard Offer Program". A search bar is located on the right. The content area is titled "Renewable Energy Standard Offer Program" and includes a sub-heading: "The Standard Offer Program helps Ontario meet its renewable energy supply targets by providing small electricity generators a standard pricing regime and a streamlined process." Below this, there are four columns, each representing a different renewable energy source:

- Wind Energy:** Learn how the SOP can help small wind generators.
- Solar Energy:** Learn how the SOP can help small solar PV installations.
- Water Power:** Learn how the SOP can help "run of river" hydro projects.
- Biomass Energy:** Learn how the SOP supports a variety of biomass projects.

A sidebar on the left contains the following links: Standard Offer Program, Phase 1: OPA and OEB Recommendations, Phase 2: Draft Rules for Renewable Energy SOP, Phase 3: Draft Contract for RESOP, Program Development, News Updates, and Info for Renewable Generators.

Other links you may find useful:

- Canadian Biogas Association
www.biogas.ca
- Canadian Bioenergy Association
(CANBIO) – www.canbio.ca
- Canadian Solar Industry Association
(CanSIA) – www.cansia.ca
- Canadian Wind Energy Association
(CanWEA) – www.canwea.ca
- Ontario Energy Board
(OEB) – www.oeb.gov.on.ca
- Ontario Ministry of Agriculture,
Food and Rural Affairs
(OMAFRA) – www.omafra.gov.on.ca.
- Ontario Ministry of Energy
www.energy.gov.on.ca
- Ontario Ministry of Natural Resources
www.mnr.gov.on.ca
- Ontario Sustainable Energy Association
(OSEA) – www.ontario-sea.org
- Ontario Waterpower Association
(OWA) – www.owa.ca



The need for renewable energy projects

The Government of Ontario is committed to making the maximum practical use of renewable sources of energy in meeting the considerable challenges facing the province's electricity sector. Adequate, reliable, secure and affordable electricity is fundamental to economic activity in Ontario and to the comfort, well-being and standard of living of all Ontarians. As population and economic growth continue, demand for electricity is also expected to increase.

Over the next 20 years, about 80 percent of our existing electricity supply will need to be replaced with some combination of new supply and reduced demand.

Renewable energy facilities can help close that gap – improving the reliability of supply while at the same time contributing to cleaner air and a healthier environment. The government has set a target of having 2,700 MW of electrical power generated by new renewable sources by 2010.

Procurement processes implemented by the Ministry of Energy and the Ontario Power Authority have led to a number of large renewable energy project proposals that, when completed, will result in substantial progress toward the target.

The government recognizes that small renewable energy projects connected to the electricity distribution system also make a valuable contribution, both individually in their local communities and in aggregate across the province. Many types of renewable energy are ideally suited to smaller, decentralized generation facilities. They should be supported wherever it makes practical and economic sense to do so. The Standard Offer Program provides a standard pricing regime and simplified eligibility, contracting and other rules to support these projects.

To find out more, please consult the Standard Offer Program section of the Ontario Power Authority Web site at www.powerauthority.on.ca/SOP.

Removing barriers to small developers

The Ontario Power Authority (OPA) was established by the government with a mandate to address Ontario's electricity conservation and supply challenges. In looking at renewable energy opportunities, the government recognized that while large projects were successful in the complex, competitive procurement processes, many potential smaller projects were prevented from proceeding.

Complexity, costs and the administrative burden of developing project proposals under the procurement processes favoured larger projects.

To remove these barriers, the Minister of Energy requested that the OPA and Ontario Energy Board (OEB) design a Standard Offer Program for small renewable energy generation projects that would provide a standard pricing regime and simplified eligibility, contracting and other rules.

The OPA and OEB carried out extensive research and consultation. Renewable energy programs implemented in other countries and jurisdictions were examined. The analysis took into account the complexities of the electricity transmission and distribution systems in Ontario, as well as a variety of financial, pricing, contracting and other options. Also, in line with the OPA's commitment to stakeholder consultation and transparency, virtually all individuals, groups and industries with an interest or concern for Ontario's electricity sector, including consumers, were consulted at every stage of the process and invited to comment on the proposed rules and terms for the program.

The OPA has published detailed Program Rules and a detailed Contract for the Standard Offer Program in separate documents, both of which can be found on the OPA's Web site at www.powerauthority.on.ca/SOP. This introductory guide discusses the Program Rules in "plain language." It is intended as a summary for potential applicants and others with an interest in the program. Any conflict between this summary and either the Program Rules and/or the Contract will be resolved in favour of the Program Rules and/or Contract.

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