Proposal for a Green Energy Act for Ontario

Proposal for an Act Granting Priority to Renewable Energy Sources to Manage Global Climate Change, Protect the Environment and Streamline Project Approvals

prepared by the Ontario Green Energy Act Alliance

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** DRAFT **

The Founders of the Green Energy Act Alliance:

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1. Preamble

Ontario is a world leader in the effort to arrest global climate change and the protection of greenspace. In the face of predicted extraordinary population growth and development pressure over the next thirty years, strong action is needed to make Ontario a global leader in the development of green energy sources –i.e. renewable energy, clean distributed energy and conservation– creating thousands of jobs, economic prosperity, energy security, and climate protection. Public bodies, aboriginal communities, labour and most especially rate-payers share an interest in the generation of electricity and the conservation and management of energy demand that ensures the adequacy, safety, sustainability and reliability of electricity supply in Ontario for both present and future generations. The development of green energy sources should be possible by all Ontarians to enable community groups, first nations, municipalities, farmers as well as the commercial sector to benefit from this quickly emerging industry. The Proposed Green Energy Act for Ontario would serve as the basis for a green industrial strategy for Ontario increasing economic stimulus at the local level across the province, creating jobs that are distributed and diverse as well as provide Ontarians with a renewed sense of ownership in the power sector as they are enabled to participate directly as generators and conservers.

2. Purpose

The purpose of the Act should be to facilitate the development of a sustainable energy economy that protects the environment while streamlining and improving the environmental and planning approvals process, mitigating climate change, engaging communities and building a world-class green industrial sector. The Act must enable all Ontarians to participate and benefit from green energy as conservers and generators, at the lowest cost to consumers. The Act should facilitate green energy deployment by all developers, including the community power sector. The same process, procedures and rules apply to all developers although the Act should provide the community power sector financing support to enable projects to get started.

3. Definitions

Green energy refers to energy sources with low to no environmental impact and includes conservation, renewable sources of energy and clean distributed energy. Renewable energy refers to energy generated from natural resources that are replenished in perpetuity—sunlight, wind, rain, plant materials, ocean and earth energy. Renewable energy technologies include solar panels, wind turbines, small hydroelectric plants, bio-energy (biomass and biofuels), and geoexchange systems. Clean distributed energy sources include, district heating and cooling, combined heat and power, and local generation from waste heat, geothermal and atmospheric energy, (including recycled exhaust heat from gas pipeline compressor stations and energy produced on site at low pressure sources of natural gas currently being flared).

Community Power means energy projects that are locally sited with majority ownership by one or more members of a local community. This includes ownership by First Nations, farmers, public sector institutions, community organizations, co-operatives, remote diesel dependent communities, renters and homeowners, condominiums. Municipalities and local utilities enable Community Power by engaging local community members as owners in projects.

Advanced Renewable Tariffs (ARTs) are a market mechanism used to procure renewable sources of energy. ARTs specify the amount that renewable generators are paid for the electricity they generate and how long they will be paid. In most jurisdictions tariff prices are set by the regulatory authority through an open and transparent process involving all relevant stakeholders. Generally, tariff prices are established at a rate that enables developers to cover the cost of their projects and to earn a reasonable return on their investment. Tariff prices are set based on information from and relevant to the jurisdiction at hand. Tariff prices are adjusted on a regular basis to take into account changing costs. Each project is paid the relevant tariff rate on the basis of their output (per kWh of electricity produced), calculated in much the same way as electricity from conventional power plants have been regulated in North American for may decades. ARTs are usually include the following features: a) the right of a generator to connect to the grid; b) differentiation by technology, resource intensity and project size; c) projects are inflation index protected; d) no cap on project size and voltage. Although ARTs are generally used for renewable energy, such tariffs can also apply to clean distributed generation and possibly conservation.

Capacity factor refers to the ratio of the actual output of a power plant over a period of time and its output if it had operated at full nameplate capacity the entire time. To calculate the capacity factor, the total energy a plant has produced during a period of time is divided by the energy the plant would have produced at full capacity. Electrical energy is usually measured in kilowatt hours, or megawatt-hours. Kilowatts or megawatts alone are not units of energy. They are units of power. Energy is power multiplied by time. Capacity factors vary greatly depending on the type of fuel that is used and the design of the plant, for example, the capacity factor of a wind farm is between 20 and 40% depending on the location (i.e. wind resource).[1]

4. Targets

Ontario's economy should become the most energy efficient in North America. To achieve this, the Government of Ontario should build on the success of its world-leading Standard Offer Program for renewable electricity to help businesses and residents make the switch to renewable energy. Transmitters and the IESO shall immediately and as a priority connect plants generating electricity from renewable energy sources to their systems and guarantee priority purchase and transmission of all electricity from green energy sources at a reasonable cost to ratepayers consistent with the proposed methodology for valuing green energy in section 6.

[1] Taken from **http://en.wikipedia.org/wiki/Capacity_factor#Capacity_factor_and_renewable_energy**

The Green Energy Act will form an important basis of Ontario's Climate Change Strategy. In order to meet its goals while creating a world-leading industry, the Green Energy Act should set the following targets:

- 10,000 MW of new installed renewable energy by 2015, over and above 2003 levels
- 25,000 MW of new installed renewable energy by 2025, over and above 2003 levels
- 1,500 MW of new installed CHP by 2015, 3,000 MW by 2025, above levels already in place as of the introduction of this Act
- 6,300 MW of conservation by 2015 (beyond 2007 levels) with an additional 2.5% annual (compounding) reduction in energy resource needs from CDM between 2011 – 2027
- 30% reduction in end-use natural gas consumption by 2017

5. Procurement Order

Before committing to new conventional generation supply sources, The Government of Ontario and its designated authorities should pursue the following (in priority):

1. All economic conservation
2. All economic renewable generation
3. All economic waste heat recovery
4. All economic dispersed, high efficiency generation

6. Valuing Green Energy

The Green Energy Act should base policy and energy choices on the delivered costs of power. In valuing green energy, Ontario must determine what is "economic" by counting all system benefits including: peak and average loss reductions, transmission and distribution savings and externalities. The Ontario Green Energy Act should recognize the added value of distributed energy and conservation by:

- Including the value of avoided transmission and distribution capital investment when generation is local; and the value of reduced line losses associated with remote central generation that force the system to generate 18 to 20 per cent more power at peak than system demand
- Valuing the difference in redundancy requirements between a system of multiple smaller generators closer to load (three to five per cent to achieve comparable reliability) from a system of a few very large generating stations (18 to 21 per cent redundancy of generation and transmission)

7. Green Energy Procurement

The Ontario Green Energy Act must prioritize green energy development over other forms of new generation and obligate the responsible power purchase authority to grant priority purchase to green energy.

The Green Energy Act should establish Advanced Renewable Tariffs as the principle procurement mechanism for green energy. To ensure projects are economically viable in communities across the province, the tariffs must be based on the following key components:

1. Tariffs are differentiated on the basis of:
   - technology
   - resource intensity
   - project scale
   - location
2. Prices are set on the basis of cost and a reasonable return on investment with a minimum profitability index of 0.1 for lowest yield and 0.3 for highest yield green energy projects;
3. No cap on project size
4. No cap on program size
5. No cap on voltage – distribution and transmission connected projects
6. The tariffs payments will apply to all 'behind the meter' green energy projects
7. 100% inflation protection at 2 levels, at both the project level (within the power purchase contracts), and at the program level for future projects.

8. Tariffs

The Ontario Green Energy Act should establish the specific prices for the system of Advanced Renewable Tariffs through an open and transparent process that uses the Profitability Index Model for Setting Renewable Energy Tariffs that was developed for France by Bernard Chabot.[2] Tariff prices should be set for each technology proposed, based on the expected cost to a developer to develop and build a project (where price will be determined according to a variety of variables including technology, resource intensity, project scale, and project location). By providing project developers with increased certainty and the prospect of earning a reasonable rate of return, ARTs allow broad participation in and increased local benefits from renewable energy, create a stable investment climate attracting investment and creating jobs - the basis for a strong green industrial strategy.

Ontario's Advanced Renewable Tariffs should be reviewed by the Government of Ontario every two years to assure developers, investors, manufacturers and service companies program consistency, stability and continuity while avoiding overpayment. The goal will be to maintain the Profitability Index throughout the program as per those levels identified in the section above.

Ontario's Advanced Renewable Tariffs should be monitored to determine if the growth in green energy is sufficiently robust to meet the government's targets. Further, the review would determine if development is being overly concentrated in certain areas to the exclusion of others, and if opportunity for ownership is equitably available to all citizens. Monitoring should include:

[2] Profitability Index is the net present value of a project divided by the initial investment. It is a pricing system developed by the oil and gas industries and adopted by the Government of France in setting their tariffs. The oil and gas industries typically achieve a profitability index of 0.7 or 0.8. A core principle of this proposal for a Green Energy Act is that green energy projects make a reasonable profit at a reasonable cost to electricity consumers. The Green Energy Act Alliance is proposing a minimum profitability index of 0.1 for lowest yield and 0.3 for highest yield green energy projects in Ontario, the minimum necessary to spur significant green industrial development.

- Number of operating installations of each technology
- Amount of capacity installed relative to applications for grid connection
- Growth rate of new capacity
- Amount of renewable generation in kWh delivered
- Proportion of wind development owned by communities
- Proportion of solar development by homeowners, and
- Proportion of development in urban and rural areas

The Lieutenant-Governor-in-Council should be empowered to make Regulations respecting the setting of Advanced Renewable Tariffs for, but not limited to, the following technologies:

- Solar PV, Solar Thermal
- Bio-energy including on farm Biogas
- On Shore Wind, Off Shore Wind
- Geothermal
- Hydro
- Storage

Clean distributed energy such as district heating and cooling, combined heat and power, and local generation from waste heat, atmospheric energy, recycled exhaust heat.

In setting Advanced Renewable Tariffs, it is imperative that the authority charged with that task does so in an open and transparent process in consultation with all stakeholders. The process and calculation model for defining the tariffs is a critical factor in their success, which cannot be decided without a full and open discussion.

9. Obligation to Connect

Grid connection is essential for the successful application of an Advanced Renewable Tariff program. The Green Energy Act must provide:

1. **Priority Grid Access:** An obligation by transmitters, distributers and the IESO to grant priority grid access to green energy projects.
2. **Obligation to Connect:** An obligation by utilities to connect green energy projects to the grid (within a reasonable limit to be determined by relative costs and goals related to the successful implementation of the Green Energy Act). Transmitters, distributers and the IESO must give immediate priority to connecting installations for the generation of electricity from renewable energies to their grid and to transmitting all the electricity available from these installations.
3. **Recovery and Allocation of Costs:** Transmitters and distributers should be entitled to recover all related costs. Related costs are to be spread equally across the rate base. The grid upgrading costs must be declared to ensure the necessary transparency. This obligation aims, in the interests of consumer protection, to prevent costs being shifted unfairly to the electricity purchaser.

10. Financing Green Energy

The Ontario Green Energy Act should mandate the establishment of a Green Energy Debt Finance Program.

- **The Green Energy Debt Finance Program** would be mandated to raise the financial capital required to meet the financial market short falls in the development of eligible and viable projects (individual, community and commercial) to meet the Green Energy Act targets. The intent is that over time the market and community will meet all financial requirements for these projects. Vehicles such as Green Bonds could be implemented under this program to raise a portion of the required capital.

11. Community Energy

The Ontario Green Energy Act should recognize that:

1. Locally owned green energy and conservation activity creates greater economic benefits than centralized electricity generation and
2. Community actors are not eligible for the same tax benefits of private developers and therefore the Act should provide preferential tax treatment for private co-investment in community energy projects.

The Ontario Green Energy Act would enable or establish:

- **Community Energy Planning:** By selecting and configuring energy related activities, a community may structure a long-term strategy to reduce its fossil energy dependency and encourage local self-reliance as well as determine the optimum location and density for land intensive renewable energy developments. Just as ratepayers have funded the Integrated Power System Plan (IPSP), energy consumers should fund local energy planning. In many cases, resources are also required for small communities, First Nations and farmers in order to equip them with the technical resources to assist in planning and development.
- **Community Energy Ownership:** Community energy refers to energy projects that are locally planned and sited with majority ownership by First Nations, farmers, public sector institutions (e.g. schools), community organizations, cooperatives, remote diesel dependent communities, renters and homeowners, condominiums, municipalities and/or local utilities.
- **A Community Power Corporation** necessary to ensure the equal opportunity for participation of the community power sector in recognition of the additional social and economic benefits of these projects to Ontario communities and the people of Ontario as a whole. The mandate of the Corporation would be to build the capacity of local communities to undertake community energy planning as well as develop eligible and viable projects, provide funding for planning and project development, and to facilitate the develop of financing mechanisms. This corporation will require an initial investment of $50 million.

- **Expanded role for local distribution companies:** Participation of local distribution companies in planning, investment, management and operation of community energy systems and micro grids including the obligation to connect green energy projects, enable them to develop, own and expand local generation with a transparent cost recovery process.
- **Land pool leasing arrangements:** Where developers, community based or private sector, lease land to erect energy resources, the benefits of such leases should be spread across the affected community or landholders rather than only the landholders who host generation facilities.

12. Engaging First Nations and Métis Communities

The Green Energy Act must use Advanced Renewable Tariffs as the main procurement process for green energy. Using Advanced Renewable Tariffs as the main procurement process for sustainable energy will also go a long way to addressing the critical issues affecting both consultation with First Nations and their participation in projects.

With respect to consultation, any mechanism that facilitates discussion outside the pressures and competition of an RFP process would be a great improvement. With respect to participation, Advanced Renewable Tariffs will avoid the barriers inherent in an RFP process that create unique hurdles that prevent successful First Nations and Métis development of green energy projects.

13. Grid Upgrades and Evolution

To accommodate the increasing amount of green, distributed generation the Ontario grid will need to be upgraded and evolved in line with other jurisdictions. The Ontario Green Energy Act should:

- Enable the grid (transmission, distribution, system/market operation and energy storage) to become "smart", "green" and "healthy"
- Remove the barriers to green energy that currently exist in legislation, regulations, codes, standards and market rules
- Encourage and enable other transmitters to develop grid assets and provide them the same preferential status to transmission rights of way enjoyed by Hydro One
- Strengthen the transmission system to enable the achievement of the supply mix goals set out on in the directives and the Green Energy Act
- Promote system efficiency and congestion reduction and facilitate the integration of new supply, all in a manner consistent with the need to cost effectively maintain system reliability
- Provide incentives for operators of Advanced Renewable Tariff funded projects to agree on generation management with the grid operators in their mutual interest. This is especially relevant for grid upgrading and stand-by energy. Such an agreement can take the at

times fluctuating electricity supply into consideration in a way that enables the costs for grid upgrades, reserves and stand-by energy to be minimized. To facilitate better integration of renewable energies into the electricity system, there will be an obligation for developers to measure and report the capacity for installations with a capacity of 500 kilowatts or more

- Encourage storage, which is "green energy". Maximizing the use of storage will increase the availability, reliability and efficiency of green energy.

14. Conservation

Ontarians say overwhelmingly that they want it to be easier to practice conservation. The Green Energy Act must mandate the commitment to a continuous improvement approach to conservation programs, representing a minimum 2.5% annual (compounded) reduction in electricity resource need. With respect to gas conservation, the Act should require that the Ontario Energy Board regulate in a manner that requires the pursuit of all cost-effective conservation by the gas distribution utilities. The Green Energy Act would mandate the provincial government to regulate these improvements.

The Green Energy Act can support and enable a culture of conservation by:

- Empowering consumers to make informed decisions by providing them with information on rating systems, building labelling, energy performance benchmarks, and energy assessment tools. Ensure energy consumers receive regular feedback on their energy consumption and relative energy performance compared to their customer class
- Ensuring a portion of the net benefits of conservation are available for energy conservation programs covering research, development, education, market transformation, training, codes and standards, rating systems, implementation, monitoring and evaluation
- Providing financing for programs that help communities, individuals and businesses to improve energy efficiency and increase conservation in order to reduce their energy bills
- Tightening energy efficiency in the Ontario Building Code and the Energy Efficiency Act. Require all energy efficiency standards to be reviewed and brought up to the international best practice on a three-year cycle
- Educating Ontario students of all grades on environmental protection, energy efficiency and conservation as key elements of good citizenship
- Ensuring end users pay the real price of energy, which will result in a reduction in consumption so that energy costs represent a decreasing share of disposable income
- Ensuring that smart metering and billing infrastructure is in place for real-time pricing of energy (and water) and user pay principles are in effect through individual metering and sub metering
- Protecting vulnerable energy consumers through direct install conservation programs, bill assistance through universal service plans

and emergency assistance. These elements are necessary prerequisites to the ability of this customer class to benefit from sub metering

- Protecting energy intensive industries by providing a double rebate for annual energy savings through conservation in excess of 10 per cent
- Supporting greening programs (e.g. roofs, urban forestry etc.) through financing programs, incentives and building codes

15. Protecting the Environment

The purpose of the Green Energy Act is to protect the environment by establishing a sustainable energy system for Ontario that improves air quality and reduces greenhouse gas emissions. The Green Energy Act must recognize that the principles of environmental protection apply to every energy project and should not compromise human health, community values or natural heritage systems.

The Green Energy Act should amend the Environmental Assessment Act and Planning Act to:

1. Implement a "one project, one process" approach, in order to dispense with the need for green energy proponents to apply for and obtain Planning Act approvals and appear before the OMB for new or existing projects which:
   a. Have already been approved (or exempted) under the Environmental Assessment Act (EA Act); or
   b. Are subject to the prescribed planning, documentary and consultation requirements under the EA Act (e.g. individual EA, Class EA, or ESP under O.Reg. 116/01); and,
2. Amend the EA Act in order to impose enhanced public notice requirements for green energy projects to ensure that interested/affected municipalities, stakeholders, and First Nation/aboriginal communities receive timely and adequate notice of their opportunities to participate in the applicable environmental planning process (e.g. individual EA, Class EA, or ESP under O.Reg.116/01). In addition, the Lieutenant Governor in Council should be empowered to make regulations that:
   a. Contain clear, prescriptive provincial standards for the siting of green energy projects (e.g. "no go" areas, setback requirements, etc.) and that determine areas in need of protection. Restrictions should be technology specific and based on legitimate and peer-reviewed scientific data
   b. Provide exceptions for First Nations and Métis projects to the greatest extent possible
   c. Streamline and coordinate environmental assessments and where possible use Class Environmental Assessments. The purpose of a Class EA is to specify a planning process through which environmental impacts and benefits are considered in proposed projects. A Class EA will provide effective and efficient project assessment and public engagement processes that are appropriate for projects within the class. It will ensure that proponents take into account the potential

impacts and benefits of proposed projects as well as the interests of individuals, communities, agencies and organizations, as appropriate

d. Streamline and coordinate planning and building permit processes

With respect to streamlining approvals under the Class EA process, the Lieutenant Governor in Council should be empowered to make regulations:

- Adjusting project categories or thresholds under approved Class EAs and the ESP so that a greater number of renewable energy projects are fully exempt under the EA Act (but they must still obtain other federal or provincial approvals where applicable)
- Prescribing shorter timeframes e.g. six months, and clearer deadlines for the completion of the planning/review process under approved Class EAs and the ESP
- Limiting grounds for bump-up/elevation requests to matters of provincial interest (as opposed to matters that are essentially local in nature)
- Creating an independent, expedited process for determining bump-up/elevation requests (e.g. written hearing by a member of the Environmental Review Tribunal, or re-establishment of an EAAC-like entity to advise the Minister on such matters)

Depending on the technology and if it is a First Nations Community Energy Project, green energy projects should not be located in, nor cause adverse impacts upon:

- Critical habitat of species listed as endangered and threatened under the Endangered Species Act, 2007
- Provincially significant wetlands, valleys, woodlands or wildlife habitat
- Provincially significant areas of natural, agricultural and scientific interest
- Significant areas of cultural heritage or archaeological value, including First Nations' or aboriginal communities' sacred sites
- Lands designated as Escarpment Natural Area or Escarpment Protection Area under the Niagara Escarpment Planning and Development Act
- Lands designated as Natural Core Area or Natural Linkage Area under the Oak Ridges Moraine Conservation Act, 2001
- Provincial parks and conservation reserves, except in accordance with section 19 of the Provincial Parks and Conservation Reserves Act, 2006

16. Protecting Vulnerable Consumers

Ontario's Green Energy Act should address the matter of energy affordability for Ontario's vulnerable consumers such as seniors, medically infirm and infants and farmers by directing the Lieutenant Governor in Council to make regulations that may include:

1. **Conservation:** Programs specifically targeted to low-income households to reduce their energy expenditures on a sustained basis.
   - Conservation programs should address appliances, building envelopes, heating systems (efficiency & fuel switching to more efficient equipment), and cooling systems.
   - Conversion from Electric Heat to replace electric space heating units with thermal storage, or other fuels such as renewables, natural gas, oil etc. as long as the heating equipment is high efficiency.
2. **No cut-off policy:** Moratoriums on cut-off should include the following categories: medical, age, temperature and agricultural.
3. **Billing and collections:** Requiring all utilities to offer pay-as-you-go payment systems, utilities should develop arrearage payment plans with a certain amount of debt-forgiveness, if the customer keeps up with the payments. Bills will still provide actual consumption data and time of use billing and indicate whether the customer is using more or less energy than the year to date payments have accounted for.
4. **Security deposits:** Require all utilities to offer monthly collection of security deposits. [3]
5. **Protection from unscrupulous contractors, retailers and landlords:** Ensure consumer protection from high-pressure sales tactics for both commodity sales and energy services and landlords who do not share energy savings with tenants or who fail to maintain minimum conservation standards in their buildings.
6. **Bill assistance:** Allow the Ontario Energy Board to make energy more affordable for low-income households on an ongoing basis. Options to be enabled include:
   - **Fixed percentage discount:** Participants receive a fixed percentage discount off their energy bill. In the U.S., these discounts range from 7% to 40%.
   - **Fixed dollar amount:** Participants receive a fixed dollar reduction on their bill, regardless of how much energy they consume.
   - **Variable discount:** Participants' discounts reduce as consumption increases.
   - **Percentage of Income Payment Plan (PIPPs):** Participants pay a fixed percentage of the total income towards their energy bills. PIPPs reduce the energy burden of participants, but provides significant disincentive to conserve energy.
7. **Emergency assistance:** Require an ongoing emergency assistance program to address:
   - An impending energy service cut-off
   - A short term spike in energy prices
   - The need to replace or repair home heating equipment

[3] Where community and social services clients have their energy bills paid through direct deposit exempt them from security deposit requirements. Where clients pay their own energy bill and are advanced the security deposit from Community and Social Services, it should be treated as a loan and repaid.

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