

December 13, 2011

Fareed Amin,  
Deputy Minister – FIT Program Review  
Ministry of Energy  
900 Bay Street, 4th Floor, Hearst Block  
Toronto, ON, M7A 2E1, Canada

Subject: **2011 FIT Program Review**

The Ontario Society of Professional Engineers (OSPE), the advocacy and member services body for Ontario's engineers, wishes to make a submission regarding the 2 year review of the Feed-In-Tariff (FIT) Program.

OSPE believes the following areas need to be improved:

1. "Overall Electrical Demand Constraint" needs to be part of the process.
2. "FIT and Micro-FIT Rates <sup>1</sup>" need to be adjusted annually to reflect current market costs.
3. "Alternate Technologies" that are not currently listed should be part of the process.
4. "Large Projects" require a separate competitive bidding process.
5. "Retroactive Changes" to the program should not occur.
6. "Capacity Allocation Exempt Projects" should follow the FIT process.

### **Overall Electrical Demand Constraint**

The generous FIT rates combined with an enterprising renewable energy business community have resulted in a surplus of applications. The volume was so large (45,601 applications not already connected or rejected) that they now significantly exceed the demand requirements of the electrical grid (21,112 MW of new generation applications). There needs to be a mechanism to stop the flow of applications when the electrical capacity additions for that annual cycle have been met. The Green Energy Act gave priority to renewable energy projects. However, the Ontario Power Authority (OPA) should not incent the construction of more capacity than is actually required. See appendix for more details.

To provide a healthier, long term business environment for the renewable energy industry, the capacity additions should be established and announced annually. It would be unfair to future applicants to leave these current applications in the queue for years ahead of new applications. Projects can be implemented over a longer time frame for that year's approved projects. The capacity additions should be consistent with the overall grid electrical demand and the transmission and distribution capacity that is being made available in various geographic zones. A number of the larger wind and solar applications in the current queue should be checked now and rejected if they are not required by electrical demand in the near term.

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<sup>1</sup> FIT and Micro-Fit rates are available at the OPA website at  
[http://www.fit.powerauthority.on.ca/Page.asp?PageID=122&ContentID=10543&SiteNodeID=1103&BL\\_ExpandID=](http://www.fit.powerauthority.on.ca/Page.asp?PageID=122&ContentID=10543&SiteNodeID=1103&BL_ExpandID=)

### **FIT and Micro-FIT Rates**

The schedule of long term FIT and Micro-FIT rates should be adjusted annually based on market conditions to discourage an excessive number of applications in the annual application cycle. The rates should be published at the same time that the required annual grid electrical capacity requirement is announced. The rates should not change during that application cycle.

### **Alternate Technologies**

The Green Energy Act assigns authority to the Minister to consider alternate technologies (such as fuel cells, storage systems, solar thermal, etc.) to those covered by the published FIT and micro-FIT schedule. However, the process for submitting alternate technologies for the Minister's consideration is not well known and the evaluation criteria are not understood. A more transparent set of evaluation criteria would be helpful in attracting interest in proposing technologies other than hydro, wind, solar, bio-gas, bio-mass and landfill gas. If the evaluation criteria were quantified and published, proponents of these alternate technologies could more easily determine if their applications would be favorably received by the OPA. See appendix for more details.

### **Large Projects**

The larger capacity projects (1MW or larger) should be selected using a competitive bidding process. Projects over 1 MW will typically run well in excess of 2 million dollars and its proponents should have the resources to enter into a competitive tendering process. The capacity requirements and deadline for applications should be established and announced annually. Competitive bidding will accelerate innovation and cost reduction for the larger projects that have the largest impact on electricity prices.

Electricity consumers may also benefit from corporations that are trying to develop a green image. These corporations may be willing to subsidize power production facilities in order to be seen as green by their customers. The competitive bidding process will allow them to move to the front of the line if they are prepared to offer electricity at lower prices.

### **Retroactive Changes**

There is considerable time, effort and expense required to prepare applications. It is unfair to applicants to change the rules or rates after they have submitted an application. Ideally, potential changes to rules and rates should be announced in advance for public input. That would provide applicants sufficient time to react to the changes and decide if it is in their interests to proceed with preparing an application.

### **Capacity Allocation Exempt Projects**

Capacity Allocation Exempt Projects were originally provided an exemption on being assessed for connection availability. The OPA proposed a rule change in December 2010 to remove this exemption. We support the OPA's rule change. Distribution systems in Ontario have not generally been designed to accommodate generation at the distribution level. Even small projects



can have significant technical impact at the local distribution level. These projects can adversely impact local electricity supply reliability if they are not technically assessed prior to contract approval and installation.

Additional supporting information is included in Appendix A. Please let me know if you require any further information.

Yours truly,

A handwritten signature in black ink, appearing to read 'Alourdes Sully', is written over a faint, light-colored signature line.

Alourdes Sully, ing., M. Eng. Mgmt., P. Eng.  
President and Chair, OSPE

**Information copies are provided also to:**

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## **Appendix A**

### **Additional Supporting Information**

#### **Overall Electrical Demand Constraints**

The OPA reported that as of Nov 14, 2011, there were 45,601 FIT and micro-FIT applications in the existing queue (not already connected or rejected) representing over 21,112 MW of proposed capacity. Ontario only had 26,450 MW of maximum demand in 2011. The government has already indicated its intentions to extend the operating life of hydraulic and nuclear units with a combined capacity of about 19,000 MW. Most of these units have limited capability to maneuver their electrical output. There are already over 1,400 MW of wind generation installed in the grid and there have been problems in 2011 to accommodate this modest amount of wind generation.

Unless nuclear units are modified to maneuver their electrical output, the maximum amount of wind and solar capacity that can be economically accommodated in Ontario is limited. The exact amount can be determined by system simulation studies but the value will likely fall around 4,000MW or about 15% of maximum demand for each of wind and solar generation.

The Independent Electricity System Operator (IESO) managed electrical demand has not grown in the past 5 years due to a weak economy including a contraction in the manufacturing sector, successful conservation programs, and higher electricity prices. There is also a growing amount of small distributed generation embedded into the distribution system that does not participate in the IESO administered grid and that reduces the demand that the IESO manages. The Ontario government has indicated that economic growth in the near future will not be robust, electricity prices will continue to rise and conservation programs will continue. This will keep electrical demand stagnant. Export markets are also not helpful because export prices for electricity are significantly lower than the cost of producing that power with new renewable generation.

Consequently, there is no reasonable expectation that the Ontario grid can accommodate all 21,112 MW of solar and wind generation proposed in those 45,601 applications. Also, it would not make economic sense to upgrade the distribution and transmission systems now to accommodate that capacity if the demand will not be there for many years.

The IESO is planning to dispatch (shut down) wind generation when the grid cannot accommodate its output. However, as wind generation capacity becomes more significant the amount of dispatching will increase. At some point wind generation will become uneconomic. We may have already reached this point in Ontario with those FIT applications that have already progressed well into the approval process.

Micro-FIT projects are easier to integrate into the electrical grid, represent only 278 MW of new capacity and account for the majority of applications (29,708) in the queue. These applications should probably receive priority and be processed in order to clear the backlog and minimize the number of proponents who will see their applications rejected. However, the OPA should review micro-FIT applications to ensure that FIT projects have not been partitioned into many smaller micro-FIT projects to circumvent the FIT process. The larger FIT applications should be checked

against the grid demand requirements and rejected if they are not needed now.

### **Alternate Technologies**

There are new advanced technologies (fuel cells, storage systems, solar thermal, residential co-generation, etc.) that will be developed in the future that will provide greater energy and environmental benefits than the current listed technologies in the FIT program. Establishing and publishing quantified evaluation criteria will help to encourage these technologies to be proposed to the Minister of Energy.

Some of the evaluation criteria that could be quantified as additional benefits and then credited and compared against the present prescribed renewable technologies would include:

- value of reduced volume of greenhouse gas emissions,
- value of reduced upgrades to transmission or distribution lines,
- value of generation during peak hours rather than base hours
- value of dependable and dispatchable generation
- value of reduced consumption of natural resources (water, materials, etc.),
- value of improved energy efficiency,
- value of reduced energy intensity.
- value of reduced transmission losses
- value of temporary or permanent jobs created in Ontario
- value of tax revenue to municipal, provincial or federal government

Evaluating technologies more broadly would recognize the additional value to the province in having a more holistic view of energy production and consumption. It would also allow some degree of competition among the various forms of energy to achieve the best evaluated life cycle cost for consumers and the environment.

Some of the alternate technologies that yield overall environmental and electrical system benefits may in fact increase electrical energy consumption. For example, thermal storage systems can flatten the daily electrical demand profile which would result in reduced need for expensive peak generation capacity. The current FIT program currently encourages the construction of high cost solar photovoltaic peak generation.

Other alternate technologies can make better use of existing energy sources. For example it is much more efficient to employ passive solar space heating rather than to build solar photovoltaic systems that supply power to heat pumps in order to heat space. The current FIT program currently encourages the later.

These alternate technologies deserve financial encouragement if they achieve the government's long term energy and environmental goals.