Submission: EBR 012-8435 (O. Reg. 541/05)

1. Introduction

The Canadian Solar Industries Association (CanSIA) is a national trade association that represents the solar energy industry throughout Canada. CanSIA's vision for Canada's solar electricity industry is for solar electricity to be a mainstream energy source and an integral part of Canada's diversified electricity mix by 2020. CanSIA also intends for the solar electricity industry to be sustainable, with no direct subsidies, and operating in a supportive and stable policy and regulatory environment within a similar time frame.

The Ontario net metering regulation is intended to support small renewable generation facilities. Net metering in Ontario is currently available to renewable generation facilities with a nameplate capacity of 500 kW AC or less. Customers are only charged for their net electricity consumption between their total output and total gross consumption over the course of the billing period. Customers are still responsible for charges not calculated on the basis of the customer's consumption (i.e., monthly fixed charges or peak demand based charges). Excess renewable generation greater than consumption in a month creates a credit for the customer that can be carried forward for up to a rolling 10-11-month period. After a positive credit balance has been carried for that period, any excess generation credit is reduced to zero and lost by the customer.

The current net metering regulation has been in effect since 2005 and has seen relatively low uptake since that time. This is not surprising given the existence of the microFIT and FIT Programs, which offered more attractive financial returns for customers and the solar industry. The microFIT and FIT Programs are slated to end in 2018, however, after which net metering will be one of the primary mechanisms for installing distributed solar generation in Ontario. As relayed previously by CanSIA through our Distributed Generation Task Force (DGTF), CanSIA envisions a transition for the Ontario distributed solar industry to move away from the current microFIT and FIT regime and into a net metering based framework. This transition, and the resultant net metering framework, is envisioned to be more responsive to electricity customer demand and to shift more of the investment and performance risk to the market. Making this transition will allow the private sector to design and deliver projects efficiently within a timeline driven by economics and investment decisions rather than centralized procurement cycles.

The revised net metering regulation provides one of the central pillars to implementing this transition and as such CanSIA is pleased to respond to the Ministry of Energy's request for comment on revisions to Ontario's Net Metering Regulation (O. Reg. 541/05). The Ministry's proposal represents an improvement on the existing regulation, however, additional modifications both to the regulation, as well as to other supporting systems and legislation are required in order to establish a robust and successful net metering framework in Ontario that supports customer choice and the ability to access net metering projects at a reasonable cost.

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2. Ministry of Energy Proposed Revisions

2.1 Compensation

CanSIA is supportive of the Ministry's proposal to maintain compensation/settlement for excess generation at the same rate as the customer is charged for electricity.

Retail rate compensation remains the most prevalent method in North America for compensating net metering customers for excess generation. Recent regulatory decisions from the California Public Utilities Corporation (CPUC) re-established retail rate compensation as the basis for their net metering program (and mandated moving to Time of Use (TOU) rates in the near future. Retail rate compensation also provides a reasonable approximation for the benefits of distributed renewable generation which avoids line losses, can reduce the need for future distribution system build out, reduces carbon emissions, avoids use of the bulk transmission system, and reduces fuel price risk.

2.2 Excess Generation Credit Accumulation Period

CanSIA is supportive, in general, of the Ministry's proposal to extend the period in which excess generation credits. CanSIA recommends, however, that this section of the regulation be further modified, as described below.

The Ministry should ensure that the revised net metering regulation specifies the conditions under which an LDC is permitted to retire excess generation credits i.e**. that an LDC is only permitted to retire excess generation credits when the account has had a positive balance of excess generation credits for a period of 12 months** (rather than 11 months). In any month that the balance of excess generation credits has been entirely used by the customer (i.e. used to offset their billable electricity demand), the 12 month "clock" starts again.

This revision will provide net metering customers greater flexibility in applying their excess generation credits against their billable electricity demand. This will allow generators to be compensated fairly for periods with high generation but low electricity consumption and periods of low generation but high electricity consumption.

2.3 Project Capacity Cap

CanSIA is supportive of the Ministry's proposal to remove the 500 kW installed capacity cap.

Net metering can serve different electricity customers in different ways. A residential customer may wish to reduce their electricity bill, while a commercial customer may wish to secure onsite green energy as an environmental objective or to provide a price hedge against distribution charges. There is no need to limit the options for consumers to meet their many objectives.

Net metering is intended to allow a customer to offset on-site consumption. As long as projects are sized appropriately with respect to the project sites' load (which will be enforced through the 12 month period for retirement of excess generation credits) the absolute size of a net metering project should not be arbitrarily limited. The capability of the distribution system to integrate the net metering generation facility should be the only other limiting consideration.

2.4 Single Entity Virtual Net Metering

CanSIA is supportive of the Ministry's proposal to allow single entity virtual net metering within the revised net metering regulation. CanSIA is not, however, supportive of the Ministry's proposal to impose a distance based restriction for eligible meters.

2.4.1 Restrictions on Meter Eligibility

Single entity virtual net metering is a positive step forward toward making the revised net metering regulation more permissible for new business models. Allowing new business models, and associated economies of scale, is important given the economic gap between the revenue requirement of solar systems and the available revenue from net metering that CanSIA's Distributed Generation Task Force (DGTF) has forecasted in our past Recommendations Report. This economic gap is further exacerbated by the Ontario Energy Board's (OEB) decision to fix distribution system related charges on residential bills (an approach to these charges that the OEB may replicate for commercial and industrial customers at the conclusion of their EB 2015-0043 process).

The already challenging economics of net metering requires developers to deliver solutions that drive greater efficiencies including improved economies of scale. A framework that permits a broader pool of eligible load accounts permits this cost saving model to lower project development costs (which can also be passed down to customers). Ruling out the ability of a customer to pass on savings to the accounts billed by the same LDC would severely limit the feasibility of a virtual net metering business case/value proposition.

In terms of an effective policy for implementation and customer participation, the number of potential clients that would have multiple facilities within a small radius such as 3 km would be lower than ones that have multiple facilities in the same LDC service territory. There is a strong possibility that this type of limitation could render the virtual net metering regulation impractical for the majority of clients who are most likely to invest in and benefit from virtual net metering, particularly for the corporate clients that are making sustainability a key corporate objective or that wish to take advantage of incentives arising from the forthcoming Climate Change Action Plan (CCAP).

CanSIA recommends allowing single entity virtual net metering to occur between two or more eligible meters anywhere within a Local Distribution Company's (LDC) service territory. This treatment has significant precedent in the United States for both virtual net metering and community net metering regulations/programs. For example, programs in Washington, Massachusetts, Colorado, Minnesota,

New York, California, Maine, Vermont all allow eligible meters to virtual or community net meter provided those meters are located within the same utility service territory. These programs do not further restrict meter eligibility based on location or distance. A larger pool of eligibility allows more customers to access net metering projects and creates a more level playing field amongst customers that have facilities that are more ideally configured for the installation of solar and those that do not.

CanSIA also strongly recommends similar treatment for community net metering if implemented following the Ministry's additional consultations.

2.4.2 Settlement Provisions

Within single entity virtual net metering (and eventually with regards to community net metering) each of the different facilities that are being covered by net metering should have the ability to be settled based on the rate class of the account receiving the credits rather than based on the rate class of the account where the generation is occurring. For example, if a company owns a warehouse and generates electricity there, that warehouse might pay the lowest electricity rate which is Industry Rates Class A but its store location, where the credits are being transferred, might pay a higher electricity rate. The net metering customer should have the generation credited based on the rate class of the account receiving the credits.

While CanSIA is supportive of the proposal to allow single entity virtual net metering, CanSIA further recommends that the Ministry proceed quickly with the outlined subsequent consultations on community net metering and third party ownership to ensure that additional business models and associated cost efficiencies are available within the revised net metering regulation. Please see Section 3.6 below for more information.

2.5 Incorporation of Energy Storage

CanSIA is supportive of the Ministry's proposal to explicitly allow the combination of a net metered system with energy storage.

This revision will have particular significance for commercial and industrial electricity customers as it will allow them to firm up the generation from their net metering systems. This will allow commercial and industrial electricity customers to begin to impact a portion of their demand based charges which are normally not able to be reliably reduced from solar generation alone.

In most cases commercial and industrial customers are charged, in part, based on their peak demand over the course of the billing period. Readings from interval meters occur approximately every 15 minutes in order to establish a customer's peak demand. Using a standalone net metering system (i.e. one that is not integrated with storage) it is conceivable that the systems generation will not be consistent throughout every 15 minute interval throughout a billing period. Normal system maintenance, outages, or weather events will impact a solar system's ability to provide consistent

power to the customer. Even if the solar system provided a measurable peak demand reduction for the majority of the billing period, one 15 minute interval in which the system was not generating would cause the customer to be charged based on the peak demand recorded during that interval. The incorporation of storage will allow customers to help ensure that their peak demand is consistently reduced regardless of temporary declines in production from their net metering systems. Storage systems can also help customers effectively load shift, benefitting the distribution and transmission system as a whole.

The incorporation of storage with a net metering system will also allow residential customers to make better use of their net metered generation for self-consumption and back-up power during periods of grid outage.

In order to make this revision as effective as possible for both commercial/industrial and residential customers, two additional regulatory outcomes are required. While not the subject of this consultation, the Ministry of Energy should work to ensure that policy priorities that support a robust net metering framework are established for both:

1. Ensure that EB-2015-0043 (commercial and industrial rate design) incorporates aspects of time of use pricing for commercial and industrial customers. Time of use rates can reduce customer's peak consumption and their total energy consumption without compromising customer acceptance. Time of use rates can also contribute to peak load reductions of 0-50% and reduction in total energy consumption 0-10%.[1] This option would also ensure that those customers that are contributing more to a distributor's peak are charged more. Time of use charges in conjunction with a net metering project with storage incorporated should help to encourage peak shifting to a great extent and allow net metering customers to capture the full value of the energy they generate during peak times.

2. Ensure that net metered residential customers are able to access Time of Use rates. Please see section 3.4 for more information.

CanSIA also recommends that the Ministry ensure the net metering regulation is clear that energy can be discharged from the storage system into the grid and be compensated on the same basis as the customer is charged for electricity. CanSIA understands this to be the intent of the plain language revisions to the regulation and wishes to emphasize its importance.

[1] Aman Chitkara, Dan Cross-Call, Becky Li, and James Sherwood, A Review of Alternative Rate Designs, Rocky Mountain Institute, Pg. 6, http://www.rmi.org/alternative_rate_designs.

2.6 Eligibility of Existing Net Metering Customers

CanSIA is supportive of the Ministry's proposal to allow existing net metering customers to move under the revised net metering regulation.

This will allow customers that have currently undersized their systems, not incorporated storage, or who may have the ability to virtual net meter to do so once the new regulation comes into effect. This will allow these customers to make better use of their net metering systems than they might otherwise have been able. It could also result in greater bill savings for net metering customers and more generation being available to other customers located close by that will not incur line losses or make use of the transmission and distribution system to the same extent that centralized generation would.

2.7 Proposed Regulation In-Effect Date

CanSIA is supportive of the Ministry's proposal to bring the revised net metering regulation into effect on July 1, 2017.

The FIT and microFIT Programs have been the central mechanisms for installing residential and commercial scale solar PV systems in Ontario since their introduction in 2009. The microFIT Program is expected to end on Dec 31, 2017, after which no new applications will be accepted by the Independent Electricity System Operator (IESO). The FIT Program will likely end in 2018, as well, depending on the timing of the last 150 MW round of procurement (FIT 6). The Ministry has worked to ensure that the revised net metering regulation will be in effect in advance of the ending of the microFIT and FIT Programs to ensure there is a smooth transition between the mechanisms. This is of benefit to the Ontario solar industry and customers for a number of reasons, including:

1. Allows the solar industry to familiarize itself with the new net metering regulation (developing business models, negotiating financing, preparing marketing materials etc.) while still allowing companies to develop projects under the microFIT and FIT Programs, with which they are more familiar;

2. Allows customers multiple options for installing solar PV systems depending on factors including: risk tolerance, availability of capital and electricity consumption; and

3. Ensures that there is not a "drop off" of development at the ending of the microFIT and FIT Programs.

3. Additional CanSIA Proposed Revisions and Other Items

3.1 Specifying the Term of the Net Metering Agreement

CanSIA recommends that the new net metering regulation include language which specifies the term of the agreement between the LDC and the customer. Specifically, this language should clarify the period of time under which that customer will be subject to the regulation that was in effect at the time they installed their project.

For example, the Ministry has specified that they intend to regularly review the net metering regulation every 3 years in conjunction with the development of Long Term Energy Plans (LTEP). These reviews could result in changes to one or more provisions of the regulation which could affect the feasibility (economic or technical) of a net metering system. In order to give the solar industry and customers the long term visibility on the parameters of a project, it is necessary to specify the term for which they can expect to receive the same regulatory treatment as was in effect at the time the system is installed.

CanSIA recommends specifying a term of 20 years for which the customer is guaranteed to be subject to the regulation under which they installed the system. If the customer elected to continue to make use of the net metering system at the end of that 20 year term, they could be subject to whatever version of the regulation was in effect at that time. CanSIA further recommends that the regulatory treatment applicable to a particular system should be locked in at the time the generator receives an Offer to Connect from the LDC so the regulation is known before equipment is purchased and major project costs are incurred. The regulation would then be applicable provided the generator connected the system within the timelines of the Offer to Connect.

3.2 Specifying LDC Termination Conditions

The current net metering regulation specifies how a net metering customer, if desired, can terminate their net metering agreement with the LDC. It does not, however, specify the conditions under which an LDC could terminate the net metering agreement.

In order to provide the solar industry and customers certainty on the status of their project, the revised net metering regulation should specify when an LDC may terminate the agreement.

3.3 Transfer of Net Metering Projects from Customer to Customer and from FIT Contracts

CanSIA recommends that the Ministry specify that net metering customers are not required to terminate a net metering agreement and reapply for a new agreement in instances of home or building sales or transfers to new owners/entities. This is to ensure that the new owners are not bound by the 1

year cool-off period that would normally apply when a net metering agreement is cancelled. These situations should be treated as transfers rather than cancelling and reapplying.

Similarly, CanSIA recommends that the Ministry specify that a project that was previously the subject of a FIT or microFIT contract not be required to wait a 1 year cool-off period in order to re-establish the project as a net metering project. CanSIA understands this to already be the case, however, seeks clarity on this point.

3.4 Standardization and Available Information

CanSIA is supportive of having the Ontario Energy Board lead efforts to standardize the net metering application and agreement, to consider streamlining processes, and to make net metering data more readily available to the public.

Different processes and agreements for connection amongst Ontario's LDCs has been an ongoing issue with regards to the microFIT and FIT Programs. A lack of standardization leads to longer timelines for moving through the processes and thus to higher costs. The extent to which standardization can be achieved will be positive for the solar industry as well as for customers. CanSIA recommends ensuring that industry is consulted in the development of the standard process to help ensure business practicalities are taken into account.

3.5 Time of Use (TOU) Rates

One of the largest barriers to net metering project uptake from a financing and system economics perspective is transitioning the current use of tiered rates for net metered customers to TOU rates.

Currently if a load customer installs a net metering system they are required to move to tiered rates for both their electricity use as well as for the calculation of credits for exported generation. Tiered rates do not account for the difference in value between on-peak, mid-peak, and off-peak electricity and the majority of generation from a solar system occurs during on-peak hours. Using tiered rates for the calculation of consumed electricity and excess generation undervalues the generation of a solar system and lowers the revenue available to system installers due to that undervaluation. This undervaluation can be between 7 – 23% depending on the electricity demand of the net metering customer (ex. Whether the majority of their consumption falls within tier 1 rates or tier 2 rates).

Making the necessary IT and billing structure investments to allow the LDCs to settle net metered customers at TOU rates will:

1. Accurately value generation and consumption of the customer in the period in which it materializes;

2. Encourage net metering and thus encourage electricity generation close to load which allows LDCs to reduce distributions system costs over time;

3. Encourage net metering and thus Encourage electricity generation close to load which should allow ratepayers to reduce impacts of line losses on their bill;

4. Encourage net metering and thus encourage electricity generation close to load which should allow ratepayers reduce impacts of transmission costs on their bill;

5. Encourage net metering customers to respond to price signals based on the cost of peak energy;

6. As net metering continues to expand in Ontario, switching to TOU rates makes use of the investment that the province has already made in smart meters, rather than reversing it, for this group of customers (which is expected to grow over time).

3.6 Community Net Metering and Third Party Ownership

While not the direct subject of this specific consultation, the Ministry should take steps to implement the required legislative changes to facilitate community net metering and third party ownership under the net metering regulation.

Third party ownership arrangements should be facilitated by the new program/policy. As has been evidenced from experience under the microFIT Program in Ontario and in net-metering based markets in the United States, third party ownership of systems and third party financing arrangements have resulted in larger amounts of development than direct ownership alone. Allowing third party ownership and financing also results in more options for customers deciding whether to adopt solar to lower their energy bills by facilitating leasing arrangements for customers with lower access to capital. Increasing consumer choice was identified as the top priority by participants of the OEB's 2015 Energy Leaders Sector Forum and encouraging consumer choice should be a priority for the successor net metering program, as well.

Similarly, community net metering can allow access to solar for customers that would not otherwise be able to adopt it for financial reasons, or, because their properties are unsuitable for the installation of a solar system. Community net metering also allows the customers and the solar industry to capture the benefits of economies of scale by building systems at larger scales.

It is noted that Section 7(1)(a) of the net metering regulation would likely require modification if the Ministry incorporates community net metering and third party ownership. This section currently specifies that the generator must generate electricity primarily for their own use. In a community net metering or third party ownership framework, the generator would be a different entity than the associated load accounts and the generator would be generating electricity primarily for use by others.

3.7 Remove Capacity Cap per LDC Service Territory

While not the direct subject of this specific consultation, the Ministry should take to ensure that LDC service territory capacity caps are removed in-line with the in-effect date of the revised net metering regulation.

The Distribution System Code (DSC) requires distributors to make net metering available to all eligible generators until the cumulative generation capacity equals 1% of the distributors annual maximum peak load (averaged over 3 years). Net metering generation capacity in excess of the 1% can be offered at the distributor's choice. The OEB has indicated that it intends to remove this limit as fixed residential distribution charges are introduced.

There should be no arbitrary cap on the amount of solar generation installed in any particular geographic area or within any particular LDC service territory. CanSIA instead recommends a cap on the total financial support available province-wide in a given year. Should a net metered generator wish to connect to the grid without supplementary financial support, they should be permitted to do so, subject to grid capability. The DGTF would consider a provincial net metering cap of 5% as a reasonable trigger for revisiting the net metering policy, as was adopted in California by its regulator in 2013.

3.8 Applicability as CDM

Solar systems that are installed within an LDC's service territory should be applicable towards that LDC's conservation target provided the LDC is permitted to utilize a portion of their CDM budget in order to incent the construction of that system. In order to better incent the installation of systems during a transition period, LDCs should be permitted to offer up-front capital incentives to generators in the form of a one-time payment to the generator. Funding for this incentive could come from the LDC's existing CDM budget.

It is acknowledged that the provincial 7 TWh conservation target was set based on an assessment of achievable energy efficiency, and that behind the meter generation is not typically classified as such. It is also noted, however, that behind the meter natural gas generation is eligible as CDM and that section 7 of the Minister of Energy's March 31, 2014 directive to the then Ontario Power Authority (OPA) defines CDM as including small-scale behind the meter generation. For these reasons CanSIA does not see issue with allowing solar generation constructed under the successor net metering program to be eligible as CDM or allowing LDC's to use a portion of their CDM budgets to incent the construction of those systems.

4. Conclusion and Summary of Recommendations

The revised net metering regulation provides an important opportunity to affect the transition of the distributed solar generation industry in Ontario from a centralized procurement model to one based on consumer choice and market responsiveness. While the currently proposed revisions to the net

metering regulation go a long way towards accomplishing these goals, additional revisions, as well as associated legislative and regulatory changes are required. These include:

1. Maintaining the basis of compensation for exported generation on the same basis as the customer is charged for electricity.
2. Extending the excess generation credit accumulation period to a full 12 months (i.e. credits are allowed to accumulate for 12 months before being retired in month 13).
3. Removing the 500 kW project capacity cap.
4. Allowing single entity virtual net metering between any two or more eligible meters within an LDC's service territory and ensuring that credits are valued based on the consuming meter.
5. Allow energy storage to be combined with net metering systems and allowing energy exported from the storage system to be settled on the same basis as exported generation from a net metering system.
6. Allow current net metering customers to transition to the new net metering regulation, if desired.
7. Bring the new net metering regulation into force no later than July 1, 2017.
8. Specify the term of the net metering agreement.
9. Specify LDC termination conditions.
10. Ensure net metering agreements can be transferred from owner to owner, and from FIT Contracts, without requiring the 1 year cool-off period.
11. Standardize the application and connection processes and ensure standardized information with regards to the regulation is available across Ontario.
12. Launch consultations on Time of Use rates, Community Net Metering and Third Party Ownership, and implement these changes as soon as possible.
13. Remove the OEB imposed capacity cap per service territory.
14. Consider allowing LDCs to utilize net metering systems (and any associated incentives) towards their conservation targets.

CanSIA thanks the Ministry of Energy for the ability to provide feedback into this process and looks forward to continuing to work together with regards to further consultation items on Time of Use rates, Community Net Metering and Third Party Ownership.

Sincerely,

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