



**Submission on the Ministry of Energy's Net  
Metering/Self-Consumption Advisory Working Group**

**October 23, 2015**

**Canadian Solar Industries Association (CanSIA)**  
[www.cansia.ca](http://www.cansia.ca)

## Contents

Introduction .....	1
Policy Statement.....	1
Recommended Changes to the Net Metering Regulation .....	3
Determining Compensation .....	3
Program Design Elements .....	4
Implementation and Meeting Targets .....	6
Locational Adders .....	7

## Introduction

CanSIA is a national trade association that represents the solar energy industry throughout Canada. CanSIA's vision for Canada's solar energy industry is for solar electricity to be a mainstream energy source and an integral part of Canada's diversified electricity mix. CanSIA is also targeting the solar electricity industry to be sustainable, with no direct subsidies, and operating in a supportive and stable policy and regulatory environment as quickly as is feasible.

As has been evident in the past, the willingness of the Ministry of Energy (MOE) to elicit and incorporate the feedback of industry stakeholders has shown marked benefit in the quality and design of programs for Ontario's power sector and particularly the development of renewable procurement in the province. As Ontario continues to further its commitments to renewable energy, CanSIA is pleased to provide meaningful feedback to the MOE, providing accurate and timely information for consideration in the development of a net metering/self-consumption based successor to standard offer procurements.

This submission on the MOE's Policy Proposal has been structured around the guiding questions released during the public engagement activities, however, additional feedback has also been included where required.

## Policy Statement

CanSIA supports the MOE's plan to transition the procurement of micro scale renewables from the standard offer microFIT Program to a net metering/self-consumption based mechanism in the 2018 time-frame. CanSIA is also supportive, in principle, of examining the feasibility of extending this mechanism to projects that are greater than 10 kW. In the absence of firm information on what values would be included in a Value of Solar Tariff (VOST) or a Locational Adder, however, a recommendation on extending this mechanism to projects larger than 10 kW cannot be made at this time. CanSIA, however, is also investigating alternative mechanisms or "off-ramps from the FIT Program" that could be considered for larger scale distributed generation projects through our Distributed Generation Task Force (DGTF). Recommendations coming out of this process are expected to be finalized in late 2015/early 2016 and we look forward to sharing this analysis with the Ministry of Energy at that time.

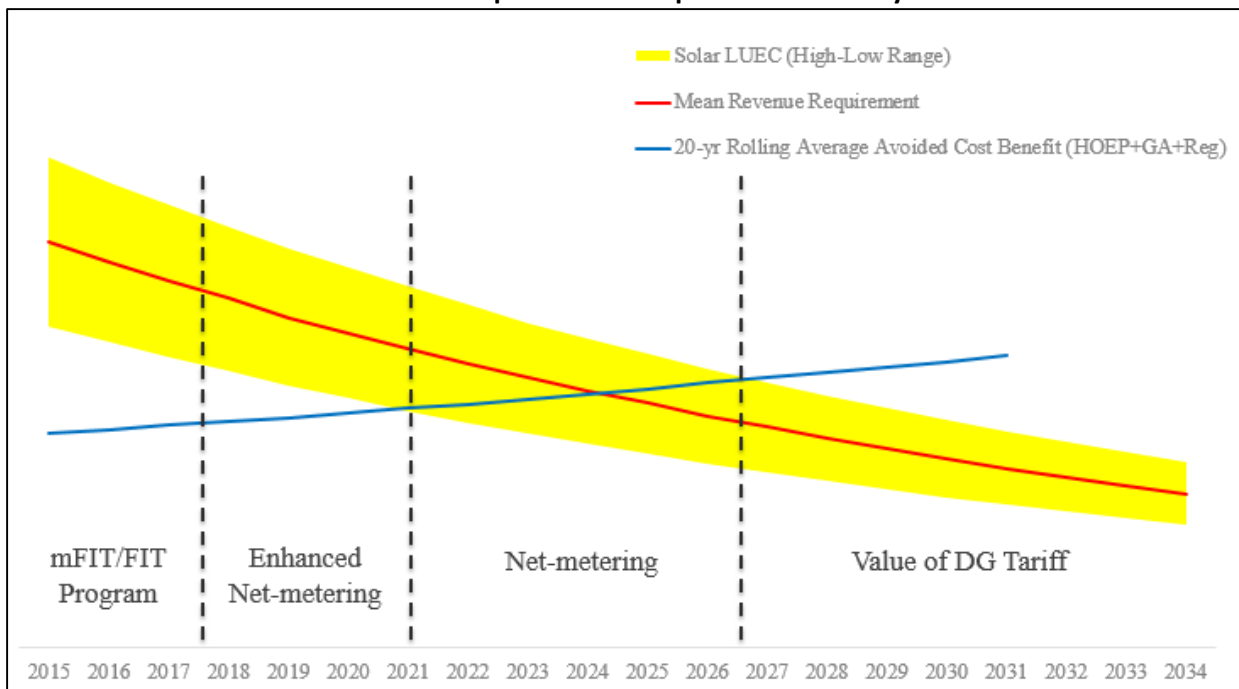
In order to facilitate a transition from the standard offer procurement model that is feasible and achievable for industry, the transition must be conducted in a predictable and stable manner. It also must take account of the current and future market realities in Ontario including: current and forecast project development costs, current and forecast electricity rates, and program design restrictions as they are currently contemplated in the MOE's Policy Proposal and the existing net metering regulation.

This transition should be implemented in a structured manner over the next five years to enable the solar industry in Ontario to plan ahead and make investment decisions based on pre-set milestones. These milestones (laid out in brief below) should be set based on overarching direction established within the upcoming Long Term Energy Plan (LTEP). In advance of the release of the next LTEP, quick action on the existing microFIT and FIT Programs is required in the short-term to re-focus ongoing renewables procurement on cost efficient projects as the overall strategy moves towards more market based mechanisms.

1. In late 2015 the MOE and IESO should make programmatic changes to the microFIT Program that focus on streamlining and expanding eligibility in order to have these changes in place before the next round of microFIT procurement begins in early 2016.
2. In early 2016 (and well in advance of the next FIT Application Period) the MOE and IESO should make similar changes to the FIT Program, focusing on removing requirements that unnecessarily increase the cost of project development such as Contract Capacity Set-Asides and DC/AC overbuild restrictions.

3. Following the conclusion of the next two directed rounds of procurement under the FIT and microFIT Programs, the MOE should implement the rollout of the successor net metering/self-consumption based mechanism which should include the ability for LDCs to utilize a portion of their Conservation and Demand Management (CDM) budgets in order to incentivize project development. This mechanism should be based on Time-of-Use (TOU) rate compensation and the ability to bank credits at TOU rates for a reasonable period of time.
4. In roughly the 2020/2021 time-frame, once project development costs in Ontario decline to an appropriate level and grid penetration has increased the MOE should reevaluate system costs and could consider removing any additional incentives (such as access to CDM budgets) and functioning simply based on TOU based net metering with a Locational Adder.

**Solar Revenue Requirement Compared to Electricity Rates**



CanSIA’s DGTF is currently in the process of determining the revenue gap that will exist for solar generators under a net metering framework in the residential and commercial sectors. Initial results suggest that once a net metering mechanism is in place that a funding gap will exist between the cost of the system and the stream of revenue available from a net metered customer based on the cost of electricity being offset. Further details on the extent of this revenue gap, and how it can be addressed without additional cost to ratepayers, will be provided to the Net Metering/Self Consumption Advisory Working Group once it has been finalized.

In order to address the gap, CanSIA has provided feedback below which supports the implementation of a net metering/self-consumption based mechanism with a Locational Adder, rather than a VOST, as well as access to CDM funding/programs. Feedback has also been provided, however, on how a VOST should be implemented as many of the MOE’s guiding questions relate to how the underlying net metering regulation should be structured.

## Recommended Changes to the Net Metering Regulation

The basis of any change to the procurement strategy for micro renewables should start with modifying the existing net metering regulation. CanSIA's proposed amendments to the base regulation are outlined below.

1. Ensure that compensation for consumed and exported energy is calculated based on TOU rates rather than tiered rates (which is the current practice due to data transfer limitations between generators, LDCs, and the IESO).
2. Ensure that netting continues to occur over the course of a billing period rather than instantaneously.
3. Ensure that credits accrued to a generator based on exporting more energy than is consumed during a billing period are permitted to "roll over" into subsequent billing periods. This will allow generators to be compensated fairly for generation at the time it is produced and to offset periods with high generation but low electricity consumption with periods of low generation but high electricity consumption.
4. If credits exist at the end of a 12 month cycle, those credits should be paid out to the generator based on the value accrued at the time of generation. Right sizing systems can be addressed through other means (addressed below) that do not affect the revenue stream for generators.

## Determining Compensation

As discussed above, CanSIA has provided feedback on the guiding questions below, which generally relate to the setting of a VOST, due to aspects of the response being applicable to the setting of a Locational Adder. For clarity, CanSIA supports making revisions to the existing net metering regulation and establishing a Locational Adder, not a VOST, at this time.

### What costs and benefits should be included, and why? Are there any other factors that should be included?

All benefits accrued by the connection of distributed generation should be included in the calculation including:

- Avoided Energy Cost (assume this includes avoided fuel costs)
- Avoided Generation Capacity Cost
- Avoided Reserve Generation Capacity Cost
- Avoided NG Pipeline Cost
- Avoided Transmission Cost (including losses)
- Avoided Distribution Cost (including losses)
- Voltage Regulation
- Net Social Cost of Carbon
- Net Social Cost of SO<sub>2</sub>
- Net Social Cost of NO<sub>x</sub>
- Avoided Fuel Price Uncertainty
- Societal benefit (economic development, health benefits, encouraging a diversified supply mix away from nuclear and natural gas)

Costs that should be included in the calculation:

- Solar Integration Cost
- Cost of Program Administration/Delivery

### How often should values be recalculated to reflect updated system needs? Should these new values apply to all net metering generators that are installed under the successor net metering/self-consumption program or apply to new installations only?

Values should be set for a reasonable period of time in order to give generators a level of certainty over their revenue stream when making investment decisions. A set amount established for a 10 or 20 year period would provide a clear signal to generators about the value of a system in a particular area allowing more rapid uptake to fill the need. Additionally, a set amount that remained constant would provide a more consistent revenue stream for excess generation which could be forecast more easily. Greater visibility of future revenue streams de-risks the investment, to a certain extent, and generally provides generators with easier access to capital on better terms.

It would also be beneficial to provide a certain amount of forward looking visibility on future rates offered to generators in order to facilitate rational project development behavior. The Ministry should consider building in a forward looking estimate of the expected future rate of any Locational Adder so customers and project developers can have a reasonable level of certainty on the level of compensation they would receive for exported energy if they connected their system in a given year. An estimate (which could include an estimated variance) should be provided for at least 2 years out from the current applicable rate.

When a generator locks in the applicable rate for a particular system, they should not be subject to any future rate changes. CanSIA recommends that the rate applicable to a particular system should be locked in at the time the generator receives an Offer to Connect from the LDC so the rate is known before equipment is purchased. The rate would then be applicable provided the generator connected the system within the timelines of the Offer to Connect.

### How can the customer experience, as it relates to compensation, be streamlined and straight forward for the customer to understand?

Compensation for generation should be based on two inputs, (1) the avoided electricity consumption based on the Time of Use (TOU) rates, and (2) the electricity injected into the grid based on TOU rates plus the Locational Adder.

Compensation for any electricity injected into the grid should be accounted for on the customer's existing electricity bill. Two bills/statements could be cumbersome and possibly lead to errors with calculation or timing mismatches of credits vs avoided cost of consumption. The bill should include an additional line which shows the credits accrued based on the amount of generation injected to the grid, as well as the applicable Locational Adder.

## Program Design Elements

### How should net excess generation credits be treated to ensure systems are appropriately sized to the customer's load? Should other factors be used to determine a project size limit? For example, demand or some other objectively measured factor?

The Ministry's proposal to utilize "instantaneous netting" would not adequately compensate generators for production in the situation where a VOST was less than retail rates. Netting should occur over the billing period and any excess credits for generation that is in excess of the commodity charges should be permitted to "roll over" from billing period to billing period (i.e. credits in excess of the commodity charges should not be retired). This will allow periods of high generation and low use to offset periods of low generation and high use. Excess credits that remain at the end of the year should be paid out to the generator at the conclusion of the year.

Right-sizing a system could be based upon the principles considered by the OEB in developing the rate design options under the EB-2012-0410 process for residential customers. For example the system size in kWac could be limited to a certain number based on the size of the electrical connection of the customer or the peak load of the customer.

Alternatively the system size could simply be a predetermined number of kWac regardless of the size of the load the customer has. This simple approach has been considered by the OEB in determining the portion of the fixed distribution charges to be borne by a customer and a similar approach could be adopted here.

Alternative approaches to right sizing a system could be using the historical load of the customer (or building) as an individual customer may move and thus not have a historical load from which to determine the appropriate system size. This would, of course, prove difficult to implement in “new-build” situations where no historical load exists.

### Should other program design elements be considered to meet the Conservation First objective?

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.

### Should other participant arrangements be considered, beyond having a single electricity account holder as an eligible participant? If so, please specify and provide rationale.

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.

Evidence from the microFIT Program is illustrative of the ability of third party financing to facilitate increased levels of development. Uptake in the microFIT Program has, since price reductions instituted in 2012, declined significantly up until 2015 in which a marked improvement in uptake has occurred (see below). The decreases in procurement in 2012-2014 were due largely to homeowners having insufficient access to capital or debt financing to undertake a project given the lower prices offered and a rejection rate reported by solar system providers of approximately 75-80% from banks. Progress in 2015 is currently in-line with coming close to or meeting the full 50 MW Procurement Target due mainly to financing options offered by solar provider companies who are able to finance system costs over a larger portfolio of projects, essentially acting as a bank to the customer.

### Progress Against microFIT Procurement Targets 2012-2015

Year	mFIT Procurement Target (MW)	MW Procured (MW)	% of Procurement Target Procured
2012	50	31.8	64%
2013	30	4.9	16%
2014	65.3	14.2	22%
2015	50	32.8	66%

## Implementation and Meeting Targets

What barriers exist that are necessary for the micro-solar industry to transition from a standard offer procurement style framework to a net metering/self-consumption framework?

The following barriers exist which will need to be overcome in order to successfully transition the micro-solar industry from a standard offer procurement framework to a net metering/self-consumption framework:

1. Implementation of TOU Rates
  - a. Perhaps the largest barrier 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 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.
2. Access to Aggregate Load Profile Data
  - a. Access to aggregate load profile information for different classes of customer in Ontario is very limited. While a solar system provider can obtain access on a customer by customer basis if given permission to do so by the load customer, this process can be very time and resource intensive and does not provide high-level aggregate data quickly or efficiently. Access to aggregate information is important at the outset of any transition to a net metering framework as it would allow system providers to perform cash flow analysis and determine the business case for a particular market segment. The ongoing efforts of the IESO's Foundation Project to make data from the MDMR available to third parties could remedy this issue if it is completed in time for the rollout of the successor net metering program.
3. Financing Risk
  - a. Moving from a government backed Power Purchase Agreement (PPA) to a net metering framework significantly affects the solar industry's ability to cost effectively finance projects. In order to lessen this impact the successor net metering framework should go as far as possible to solidify the available revenue stream from a solar system. For example, implementing the recommendations contained in this submission as they relate to making TOU rates effective for systems, allowing the rolling over of excess generation credits, paying out excess generation credits at the end of the year,



and allowing access to CDM funding in the form of up-front capital incentives would lessen the risk associated with the move away from government backed PPAs.

Considering all program objectives, how could the net metering program interact with: (1) Ontario's Conservation and Demand Management frameworks and conservation targets (2) Ontario's regional planning process (3) Ontario's renewable energy targets?

1. Conservation and Demand Management Framework
  - a. As outlined above, reduced energy consumption on a net metered basis should be applicable towards an LDC's CDM target and should be eligible for funding from an LDC's CDM budget.
2. Ontario's Regional Planning Process
  - a. Ontario's Regional Planning process could be utilized as the mechanism through which Locational Adders are set. The Regional Planning process would identify those areas of the province which would benefit from increased penetration of distributed generation and use that determination to set the appropriate Locational Adder based on the avoided costs/benefits of the addition of that capacity.
3. Ontario's Renewable Energy Targets
  - a. Targets for continued procurement of renewable generation past 2017/2018 should be established through the provinces upcoming Long Term Energy Plan (LTEP). Any capacity that is not procured through the mFIT, FIT, or LRP programs should be added to these new targets. This should also include any capacity which has been procured against the existing 10,700 MW target but which is not constructed due to program attrition. Capacity developed as a result of the successor net metering/self-consumption program should be counted as applicable towards these new targets.

These targets should also take account of any forecast electricity demand increases that come as a result of the forthcoming Climate Action Plan and Strategy and Cap and Trade Mechanism.

## Locational Adders

What rate base components are credited? For example are transmission costs included in the credit?

A similar rationale for the inclusion or exclusion of costs and benefits should be used in the calculation of a Locational Adder. If a benefit is captured from the addition of the generation, it should be captured in the setting of the adder.

How should regions be defined?

Regions should likely be defined based on either (1) the regions used by the IESO for regional planning purposes as these would likely relate to the avoided required system upgrades required in the absence of a certain uptake level of distributed generation, or (2) on an LDC by LDC basis to enable them to set those areas where the Locational Adder would be appropriate based on avoided costs determined through their rate case filings with the OEB.