GERMAN SOLAR CORPORATION

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Thursday December 16, 2021

Ministry of Energy,
Office of the Minister,
77 Grenville Street, 10th Floor
Toronto, ON M7A 2C1

Re: Supporting Residential Roof-Top Solar and other renewable resources by clarifying eligibility of third-party leasing and financing net metering arrangements

To Whom it may concern,

We have reviewed the material presented by the Ministry of Energy and the Ontario Energy Board posted on the Environmental Registry of Ontario web site. The initiative by the Ontario Government is a long awaited and welcomed addition to the energy generation and delivery to the residents and businesses of Ontario. This initiative clarifies the regulation and responsibilities of Operators, Financiers, Developers, Customers and the Local Distribution Companies, unleashing the benefits of adopting a net metering approach that will result in an economic stimulus for the province and its constituents. Furthermore, this initiative will ignite a long dormant potential within the province to propel Ontario as a global leader in the de-carbonation of our globally recognized "clean" grid electricity through further Carbon Emissions reductions with greater uptake of distributed renewable (PV Solar) energy throughout the province in both the rural and urban communities.

German Solar Corporation (GSC) has actively participated in the Solar Industry for over 20 years, with its head office in London Ontario for over 12 Years. We have deployed over 20,000 kWp of solar throughout Ontario. These projects encompass a diverse range of project settings, conditions and jurisdictions.

German Solar Corporation is a solar photovoltaic Science and Engineering Development and Construction Company with it's Canadian Head Office and fabrication shop located in London Ontario and affiliate Office in Heilbronn, Germany. The company specializes in solar array development on commercial, industrial and mixed use land and rooftop spaces. The company is family owned and operated by its managers, who are uniquely experienced in developing, managing, constructing, financing, operating and maintaining solar systems. GSC and its partners take pride in developing solar systems efficiently and cost effectively. Our experience in the solar market predates the provinces FIT and RESOP programs and was developed through its partner's involvement in the solar industry, both locally and internationally over the past 20 years. GSC developed and constructed over 35 MWs of solar projects during the Provinces Feed In Tariff program between the years 2009 to 2018.

This project development in Ontario complements our main shareholder, DSG, who has developed and presently operates 20 MWs of Solar arrays in Europe. Today GSC is developing and constructing over 10

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MWs of solar projects under the current "Net Metering" and "Load Displacement" programs in the province. This allows individuals and businesses to self-generate their own electricity through non emitting clean and renewable solar power generation on their own buildings/properties. The new choices to municipalities, institutions, businesses and individuals will reduce energy costs and create another emissions free, distributed "point of use" generation component to our provincial energy grid. This energy generation contributes to the reduction of carbon emissions, an important step toward protecting our environment for future generations. The Solar projects that GSC has developed and constructed to date represent a net CO_2eq reduction of over 17,000 tonnes avoided carbon emissions. Projects currently in development represent another 8,000 CO_2eq in emissions reductions per year when constructed. Our International business partners have deployed Solar projects in Germany, France, Spain, Italy, Greece, and South Korea representing another 155,000 Tonnes in CO_2eq emissions reduction and will continue to offset carbon emission at a rate of over 13,000 Tonnes per year.

Proposal Summary

"The Ministry of Energy is proposing to make amendments to O. Reg. 541/05 (Net Metering), made under the *Ontario Energy Board Act, 1998*, to provide greater clarity on eligibility of a customer who is leasing or financing electricity generation equipment used for net metering."

"To inform the regulatory amendments, the Ministry would like to hear input from individuals and businesses interested in leasing and financing arrangements under the net metering regulation. This may include information about the types of leasing and financing arrangements that are of interest, the role of third-party leasing and financing providers, the role of customers that would be entering into leasing and financing arrangements with third-party providers, how lease or financing payments would be structured, how the operation of the equipment would be structured, and any other relevant terms of leasing and financing agreements for the purposes of the customer obtaining renewable generation equipment for net metering, as well as any consumer protection issues or concerns. Such feedback would help to inform the Ministry of Energy's assessment of issues of clarity in the regulation and approach to amending the regulation to clarify eligibility."

To date, German Solar Corporation has engaged with many individuals, businesses, Institutions and communities to develop Net Metering. The customers have ranged from many MWs of load to only a few kWs, and have included Class A, Class B, Tier1, Tier 2, and TOU electricity consumers. Across all categories of customers we have encountered a common theme, capital for project procurement and construction, operation and maintenance of the systems we deploy. One of the more challenging aspects of deploying net metering has been a misunderstanding of the solar net metering interaction with the grid that has led to denial of connection through perceived capacity limitations on the local distribution system.

Specific to this request for comment, German Solar Corporation has the following input:

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A) *the types of leasing and financing arrangements that are of interest*

In the solar industry there are several approaches to leasing and financing arrangements available to customers. GSC has seen these arrangements deployed very effectively in other jurisdictions that have stimulated the local economy and created jobs as well as cost reductions for the customers. The following are arrangements that could be adopted to a greater degree in Ontario with the proposed amendment by this government.

1) Equipment Leasing(EL);

This form of financing is common and equipment leasing companies are ready to participate and provide the capital needed to deploy a solar net metering project. Equipment financing is dependent on the financial strength of the customer, which determines the leasing and finance terms for the arrangement. The scale or scope of the net meter project will also have a role in the fiancé terms offered.

2) Solar Power Purchase Agreements (SPPA); and

This arrangement is common in other jurisdictions where third party ownership is permitted. A solar power purchase agreement (PPA) is a financial agreement where a developer arranges for the design, permitting, financing and installation of a solar energy system on a customer's property at little to no cost. The developer sells the power generated to the host customer at a fixed rate that is typically lower than the local utility's retail rate. This lower electricity price serves to offset the customer's purchase of electricity from the grid while the developer receives the income from the sale of electricity as well as any tax credits and other incentives generated from the system. PPAs typically range from 10 to 25 years and the developer remains responsible for the operation and maintenance of the system for the duration of the agreement. At the end of the PPA contract term, a customer may be able to extend the PPA, have the developer remove the system or choose to buy the solar energy system from the developer.

3) Solar Services Purchase Agreements (SSPA)

An SSPA is similar to a SPPA but with the addition of the maintenance of the solar system for the duration of the SPPA. Under a SSPA the customer pays only for the solar energy delivered to the facility. It is the responsibility of the SSPA provider to maintain the system at is optimum to continue to deliver energy. In addition to the energy delivered the customer retains any environmental attributes associated with the solar energy generated. Terms should be 20 year or greater. However, lesser terms can be negotiated and the rate adjusted to meet the financing hurdles of the developer and the third party financiers.

Under any of the above scenarios banks are logical financier of the projects, however, private financing is also an option with conditions that are beneficial to both the customer as well as the solar company deploying the project. In any case the strength of both the customer as well as the solar development company is an important consideration for any financier or bank. Most importantly, the capital

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deployed for this distributed generation within the province is from private sources and not the provincial tax base.

B) *the role of third-party leasing and financing providers;*

The primary role of the leasing or financing provider is simply to allocate the capital required to procure equipment and construct the project, at a competitive rate. Often the customers do not have the capital readily available to deploy for a net meter project. However, they have operating capital to pay their energy bills. Often customers choose to just continue to pay their bills and simply do not have surplus capital to deploy for a net meter project. Allowing third party ownership and financing can often help a customer move forward with a solar net metering arrangement to their benefit as well as the benefit of the people of Ontario, through environmental, and economic stimulus. Also, the benefits of distributed energy generation are often over looked, but must be recognised. Point of use generation benefits the local grid by reducing stresses during peak times of the day. Line losses of upto 30% can be eliminated by point of use generation and consumption.

C) *, the role of customers that would be entering into leasing and financing arrangements with third-party providers*

The role of the customer is relatively straight forward. First, they enter a power purchase agreement for the renewable energy, for a specified term, as noted previously. Second, they provide the space on the host facility to accommodate the solar project and scale possible. And third, they provide access to the solar system to ensure the continued function and generation of the equipment for the duration of the agreement.

D) *how lease or financing payments would be structured,*

The best approach of the leasing or finance payments are "sculpted" to match the generation of the net metering project. In the case of solar energy the financing or lease payments are sculpted to match the monthly energy production observed for the solar system deployed. In Ontario we see a very consistent solar energy generation profile for the year. This is a simple approach to the payments on a monthly basis with the greatest payments in the summer months and lower payments in the winter months.

E) *how the operation of the equipment would be structured*

Solar generation has the lowest operations cost of any form of electricity generation. The sun shines and the solar panels generate, it is that simple. However, as with any equipment preventative maintenance will ensure the continued generation is at its optimal. The equipment including Inverters and SCADA systems are self-operational. Remote monitoring alerts the operators to any disruption to generation that can be readily addressed. The EL, SPPA and SSPA, should all include a long term Operations and Maintenance agreements often the solar development company that developed,

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engineered, procured the equipment and constructed the project. The financing group will often require that a known and reputable group maintain the systems for the duration of the financing agreement to ensure financing terms and obligations are fulfilled.

F) *any other relevant terms of leasing and financing agreements for the purposes of the customer obtaining renewable generation equipment for net metering*

The certainty of connecting solar net metering is critical to the uptake of net metering in the province. The local distribution companies and the acceptance of solar net metering varies across the province, either because of a lack of understanding of the technology, or antiquated regulation and requirements for connection. Inverters are a highly sophisticated piece of protective equipment that shut down solar energy generation immediately upon sensing grid voltage perturbations many cycles before a fault occurs. Yet refusal of grid connection of the solar net metering is often cited based on the false interpretation of "Fault Contribution" of the solar system to the local grid. Solar systems are designed to deliver energy first and foremost to the host facility. Any disturbance in the grid is immediately sensed by the inverter, which then shuts down in milliseconds, within the time window required to avoid fault contribution.

G) *any consumer protection issues or concerns*

Consumer protection or issues that are a concern is the LDC desire to shut down solar generation at will. This must not occur unless there is an imminent health and safety threat to the local grid from the solar generation feeding the host building. If the power to the building stays on there is no logical reason to shut down the solar generation, because the energy from the solar array feeds the building first. Unless the system is producing more than is needed, in which case curtailment can take place with appropriate equipment, which is readily available in the industry.

GSC has seen situations where solar generation was interrupted by the LDC on a hot July day due to increased load on feeders in the area of the solar generation. Clearly this is a misconception. The demand for energy due to increased air conditioning and load requirements coincides with increased solar energy generation, because it is sunny. By generating solar energy at the location where the air conditioning demand is increasing alleviates the load on the feeders. If you are generating more energy at the point of use, you do not have to send more energy from distant generators along the feeders. Solar energy helps strengthen the grid by reducing the volume of energy flowing down the feeder and delivering to the point of use first.

Net metering is an excellent instrument to enable the people of the province to benefit; economically, environmentally, and socially from greater choice in their energy generation and supply. Solar energy is the most democratic form of energy generation available to society. Communities, businesses, and individuals want renewable zero emissions energy.

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Individuals, businesses, communities and institutions will be in greater control of the choice of their energy supply. This will also help economically by accessing lower cost solar energy for all consumers. Solar net metering leads to greater energy autonomy and is the most democratic form of energy generation we have.

By 2030 Ontario will have a supply issue where contracts will be up and new generation will be needed now, not 25 years from now. Solar energy is the most rapid, versatile and easily deployable form of energy generation we have at the lowest cost both economically and environmentally.

Distributed, net metered, solar energy generation strengthens the Ontario electrical grid by reducing the need to send electricity long distances down transmission lines by deploying energy generation at the point of use. With this adjustment Solar net metering will be more greatly distributed amongst communities and businesses across the province in the urban as well as the rural community.

New generation and the capital needed to deploy for the equipment and project construction will now come from private sources. This will be an economic benefit to the province as it will remove the burden on the province and the tax payers to pay for new provincially owned generators.

Greater uptake in solar net metering will result in job creation. Local economies will benefit from the addition of skilled labor for solar array design and installation. Long term operations and maintenance of systems will create service jobs also stimulating local economies.

Lastly, the environmental benefits of solar energy are globally recognized. The CO_2eq emissions reduction are well known and will act as a beacon to the province demonstrating our commitment to addressing climate change through greater support and deployment of renewable energy through the provinces net metering regulations.

CLOSING

German Solar appreciates the Government's initiative and is pleased to provide our comments on the province's proposed net metering regulatory adjustments to enhance the "Supporting Residential Roof-Top Solar and other renewable resources by clarifying eligibility of third-party leasing and financing net metering arrangements." If you have any questions or would like to discuss further, please don't hesitate to contact me directly.

Sincerely

Dennis German, P.Geo
President