



August 12th, 2019

Town of Hardwick Selectboard
Town of Hardwick Planning Commission
Northeast Vermont Development Association

**Re: ER Billings Road Solar, LLC's 45-Day Notice to Persons and Entities
Entitled to Notice Pursuant to Public Utility Commission Rule 5.402(A), for a
Proposed 1.62 MW Solar Array to be located at 464 Billings Road in Hardwick, VT**

Dear Sir or Madam:

ER Billings Road Solar, LLC (the "Applicant"), is pleased to provide you with this 45-Day notice in advance of filing a petition for a Certificate of Public Good with the Vermont Public Utility Commission ("Commission" or "PUC"), for a 1.62 MW solar electric generation facility to be known as the "Billings Road Solar Farm" (the "Project"). The Applicant will build and operate the Project under a Purchase Power Agreement with Hardwick Electric Department ("HED") for the benefit of its ratepayers. The Applicant proposes to construct the Project on a former gravel pit owned by HED located at 464 Billings Road in Hardwick, Vermont (the "Site"). This notice is provided in accordance with 30 VSA § 248, Vermont Statutes Annotated ("Section 248"), Public Utility Commission Rule 5.402.

Pursuant to Commission Rule 5.402, the following letter includes information sufficient to understand the overall Project including the location of the facility, a description of the proposed Project, construction plans and equipment to be used. This letter also describes the rights of the noticed parties to comment on the Project plans and participate in the Section 248 review process.

This letter contains descriptions of the following:

- I. 30 V.S.A. § 248 Process Information;
- II. Project Description;
- III. Site Selection and Consideration of Alternatives
- IV. Construction and Transportation
- V. Preliminary Assessment of Environmental and Aesthetic Impacts;
- VI. Project Benefits;
- VII. Expected Filing Date.

Included as attachments to this letter are:

- I. Location Map & Preliminary Site Plan
- II. Indicative Equipment Specifications

I. 30 V.S.A. Section 248 Petition and Notice

The state permitting process for electric generation facilities requires the Applicant to provide notice to certain entities and persons 45-days prior to a formal filing with the PUC. These include:

- The affected municipal legislative bodies;
- The affected municipal and regional planning commissions; and
- The Public Utility Commission.

The Applicant has also provided this 45 day notice to:

- The Department of Public Service; and
- The Agency of Natural Resources

Per Commission Rule 5.402(A), the municipal and regional planning commissions shall make recommendations, if any, at least seven (7) days prior to the intended filing date, which filing date is expected to be 45 days from the date of this notice.

Affected municipal and regional planning commissions may also provide revised recommendations within 45 days of the date on which the Applicant files its petition with the Commission, if the petition contains new or more detailed information that was not previously included in the original filing with the municipal and regional planning commissions pursuant to Section 248(f).

Recommendations made to the Commission pursuant to Section 248(f), or the lack of such recommendations, shall not preclude municipal or regional planning commissions from presenting evidence during technical hearings if granted party status.

Please send all recommendations during this 45-Day notice period to:

Vermont Public Utility Commission
c/o Clerk of the Commission
112 State Street
Montpelier, VT 05620-2701

AND

Encore Renewable Energy
Attn: Phillip D. Foy
110 Main Street

Second Floor, Suite 2E
Burlington, VT 05401
Tel: (802) 861-3023
phillip@encorerenewableenergy.com

For additional information regarding this process, including your commission's right to participate in the Public Utility Commission proceeding, please refer to the "Citizen's Guide to the Vermont Public Utility Commission's Section 248 Process," which can be found at <http://puc.vermont.gov/document/citizens-guide-vermont-public-service-commissions-section-248-process>.

II. Project Description

The Applicant is proposing a 1.62 MW project on property owned by HED located at the former gravel pit at the end Billings Road in Hardwick, Vermont. The array will occupy roughly 8 acres of the greater 320 acre parcel. The electricity generated by this Project will flow to HED electric grid for the benefit of HED and its rate payers.

The Site location, array footprint, and approximate property boundaries are shown in the preliminary site plan attached as Exhibit 1. Some tree clearing is proposed for the Project, however existing vegetation outside of the fence line will remain to assist in screening the Project from the west side of Hardwick Lake. In general, the site has extremely low visibility from the surrounding roads and properties. In summary, the Project will consist of:

- Approximately 6,000 solar panels installed on fixed, ground-mounted racking systems across 8.5 acres of the Site:
 - Coated with non-reflective glazing;
 - Sloped at a fixed angle between 20-30 degrees; and
 - Approximately 8-9 feet off the ground at their highest point.
- A network of string inverters dispersed across the array connected with underground cables installed in protective conduit;
- A 7-8 ft agricultural style perimeter fence;
- Temporary laydown area for delivery and short-term storage of materials; and
- An extension of 3-phase power to the Site for interconnection into HED's grid, from the existing distribution line that runs along Billings Road, along with any necessary network upgrades including a pad-mounted transformer with secondary containment.

III. Site Selection and Consideration of Alternatives

The Applicant's ability to locate renewable energy projects in HED's service territory is constrained due to the utility's relatively limited 3-phase grid access, its preferred location for projects within its Caledonia County load center, topography, environmental resources,

aesthetic impacts, population dispersion, and a scarcity of developable land that meets all of these criteria.

After considering other possible locations for a project of this type, the Applicant, along with HED, selected the Site to address those constraints and criteria listed above. Once the Site was selected, the Applicant worked with its consultants and local stakeholders to configure the Project in a way that would maximize the potential energy generation benefits while minimizing environmental and aesthetic impacts. The Applicant will continue working with all stakeholders prior to filing the CPG petition and thereafter to address remaining concerns.

IV. Construction & Transportation

The Applicant proposes to deliver materials for the Project using trucks which will access the site using Billings Road and the existing access road to the former gravel pit. Deliveries will also use other state and local roads, which are accustomed to the type of traffic representative of the proposed daily delivery of materials. Deliveries will be made to a temporary construction staging area on the Site, located off the existing access drive. Most all transportation activity will occur during the construction phase, which would last between two to three months.

The Project is not expected to require oversize or overweight deliveries. Access to and from the Site will be restricted by perimeter fencing in order to secure the Site and prevent the public from entering the facility. All equipment associated with the Project will be installed in accordance with all applicable regulations and electrical codes.

V. Preliminary Impact Assessment

i. Aesthetics

In preparation for this 45-Day Notice, the Applicant engaged T.J. Boyle Associates of Burlington, Vermont to perform a preliminary review of potential aesthetic impacts resulting from the Project. T. J. Boyles preliminary analysis indicates that the Project will not have an undue adverse impact on the visual resources of the area.

The proposed location is well suited to avoid significant visibility from Route 14, Route 15 and other roads throughout the town of Hardwick. The proposed site would be surrounded by existing vegetation. Although there is some limited clearing of vegetation proposed, and any views from the adjacent lake would be screened by intervening shoreline vegetation that would remain. It is anticipated that the vast majority of the surrounding area would not have visibility of the Project. If visible, the Project elements would be at least partially screened by intervening vegetation. Due to the surrounding screening, the Project

is not anticipated to cause undue adverse effects to the scenic and natural beauty of the surrounding landscape, and the need for landscape mitigation plantings is not anticipated.

The Applicant will continue to work with Hardwick, abutting property owners, and T.J. Boyle Associates in order to address any potential aesthetic impacts. The Applicant will file the complete TJ Boyle aesthetic report with the complete petition.

ii. Environmental

The Applicant has engaged Arrowwood Environmental (“AE”) to assess the Project’s potential environmental impacts. As currently proposed, the northern end of the Project is within a mapped FEMA flood-hazard zone. In addition, some minor clearing may be necessary within the 250’ Shoreland Protection Zone for Hardwick Lake. Finally, some very limited tree clearing may be considered along the border of the state-mapped Deer Wintering Area on the eastern side of the Project.

The Applicant will continue to work with AE to perform environmental due diligence as well as detailed natural resource assessments and mapping. AE’s environmental studies and report will be included in the final petition.

The Applicant will consult with state and federal agency staff as necessary pending results of the natural resource studies. This will inform Project design in order to avoid natural resource impacts where possible and/or secure necessary permits and approvals.

VI. Project Benefits

The Project is being developed under a Power Purchase Agreement with HED, resulting in a long term (25 year) stably priced renewable power resource for its ratepayers. Locating the Project within HED’s service territory also reduces some costs associated with importing power from outside HED’s territory.

Finally, the Project will help HED meet their current obligations for the purchase of locally generated renewable energy under Vermont’s enacted Renewable Energy Standard. Under this legislative mandate, the penalty for not meeting this requirement would result in burdensome cost to HED ratepayers. Further analysis of cost and benefits will be included in the final petition.

VII. Conclusion

The Project is not expected to result in undue adverse impacts to the applicable criteria. The Applicant looks forward to submitting the full Section 248 petition package, which will contain all of the information required by the PUC to evaluate the merits of the Project for potential award of a Certificate of Public Good and inform others of the Project’s impacts and value.

The Applicant intends to file a Section 248 Petition and supporting materials with the PUC soon after the expiration of the 45 day notice period, which is expected to be no sooner than September 10, 2019.

We look forward to receiving any input or suggestions you may have as we move through the Section 248 process. If you have any questions you may direct them to the Applicant by phone at 802-861-3023 or by email at phillip@encorerenewableenergy.com.

Sincerely,



Phillip D. Foy
General Counsel
Encore Renewable Energy

Attachments:

Service List
Preliminary Site Plan
Natural Resource Map
Specification Sheet for Solar Panels
Specification Sheet for Inverters
Specification Sheet for Racking

Copy to:

Hardwick Electric Department
PO Box 516
Hardwick, VT 05843

Vermont Public Utility Commission
112 State Street
Montpelier, VT 05620-2701

Department of Public Service
Commissioner June E. Tierney
112 State Street - Third Floor
Montpelier, VT 05620-2601

Planning Center, Agency of Natural Resources
Secretary's Office
1 National Life Drive, Davis 2
Montpelier, VT 05620-3901

Town of Hardwick Selectboard
20 Church Street
Hardwick, VT 05843

Town of Hardwick Planning Commission
20 Church Street
Hardwick, VT 05843

Northeastern Vermont Development Association
36 Eastern Ave, Suite 1
PO Box 630
St. Johnsbury, VT 05819



Hardwick Billings Road
Vermont Agency of Natural Resources

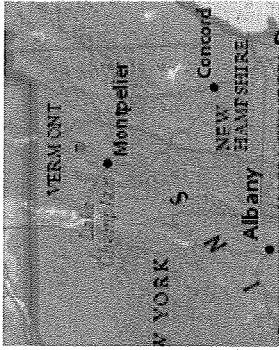
vermont.gov



1: 13,221
July 31, 2017

672.0 Meters 0 336.00 672.0 Meters
WGS_1984_Web_Mercator_Auxiliary_Sphere 1" = 1102 Ft. 1cm = 132 Meters
© Vermont Agency of Natural Resources THIS MAP IS NOT TO BE USED FOR NAVIGATION

DISCLAIMER: This map is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. ANR and the State of Vermont make no representations of any kind, including but not limited to, the warranties of merchantability, or fitness for a particular use, nor are any such warranties to be implied with respect to the data on this map.

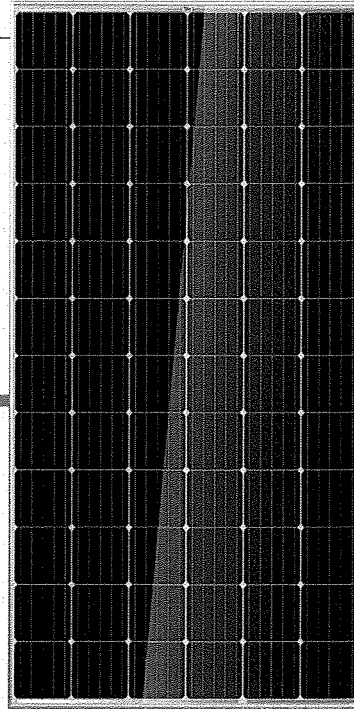


LEGEND

- Wetland - VSMI
 - Class 1 Wetland
 - Class 2 Wetland
 - Buffer
- Wetlands Advisory Layer
- Environmental Conservation M
 - Fee ownership
 - Easement
- Indiana Bat Summer Range
 - Observed
 - Potential
- Waterbody
- Stream
- Parcels (where available)
- Town Boundary

NOTES

THE
TALLMAX^M PLUS⁺
 FRAMED 72-CELL MODULE(1500V)



72 CELL
 MONOCRYSTALLINE MODULE

340-375W
 POWER OUTPUT RANGE

19.3%
 MAXIMUM EFFICIENCY

0~+5W
 POSITIVE POWER TOLERANCE

Founded in 1997, Trina Solar is the world's leading comprehensive solutions provider for solar energy. We believe close cooperation with our partners is critical to success. Trina Solar now distributes its PV products to over 60 countries all over the world. Trina is able to provide exceptional service to each customer in each market and supplement our innovative, reliable products with the backing of Trina as a strong, bankable partner. We are committed to building strategic, mutually beneficial collaboration with installers, developers, distributors and other partners.

Comprehensive Products And System Certificates

- IEC61215/IEC61730/UL1703/IEC61701/IEC62716
- ISO 9001: Quality Management System
- ISO 14001: Environmental Management System
- ISO14064: Greenhouse gases Emissions Verification
- OHSAS 18001: Occupation Health and Safety Management System



Ideal for large scale installations

- Reduce BOS cost by connecting more modules in a string
- 1500V UL/1500V IEC certified



Maximize limited space with top-end efficiency

- Up to 193 W/m² power density
- Low thermal coefficients for greater energy production at high operating temperatures



Highly reliable due to stringent quality control

- Over 30 in-house tests (UV, TC, HF, and many more)
- In-house testing goes well beyond certification requirements.
- 100% EL double inspection

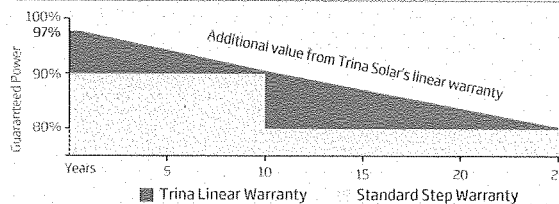


Certified to withstand the most challenging environmental conditions

- 2400 Pa wind load
- 5400 Pa snow load

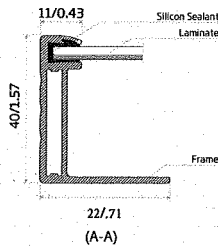
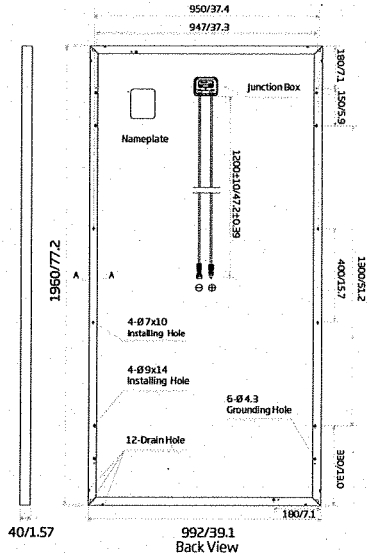
LINEAR PERFORMANCE WARRANTY

10 Year Product Warranty - 25 Year Linear Power Warranty

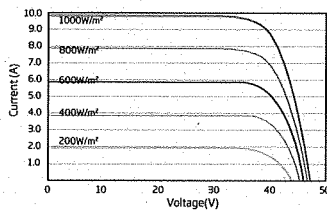


PRODUCTS	POWER RANGE
TSM-DE14A(II) STD MONO	340-350W
TSM-DE14A(II) PERC MONO	355-375W

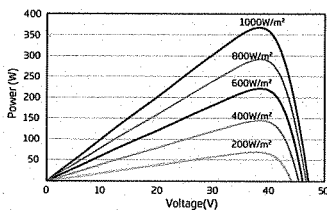
DIMENSIONS OF PV MODULE(mm/inches)



I-V CURVES OF PV MODULE(365W)



P-V CURVES OF PV MODULE(365W)



ELECTRICAL DATA (STC)

	340	345	350	355	360	365	370	375
Peak Power Watts- P_{MAX} (W)*	340	345	350	355	360	365	370	375
Power Output Tolerance- P_{MAX} (W)	0 ~ +5							
Maximum Power Voltage- V_{MPP} (V)	38.2	38.5	38.7	38.8	39.0	39.3	39.7	40.0
Maximum Power Current- I_{MPP} (A)	8.90	8.96	9.04	9.14	9.24	9.30	9.33	9.37
Open Circuit Voltage- V_{OC} (V)	46.2	46.7	47.0	47.4	47.7	48.0	48.3	48.5
Short Circuit Current- I_{SC} (A)	9.50	9.55	9.60	9.65	9.70	9.77	9.83	9.88
Module Efficiency η_m (%)	17.5	17.7	18.0	18.3	18.5	18.8	19.0	19.3

STC: Irradiance 1000W/m², Cell Temperature 25°C, Air Mass AM1.5.
*Measuring tolerance: ±3%.

ELECTRICAL DATA (NOCT)

	253	257	261	264	268	272	276	279
Maximum Power- P_{MAX} (Wp)	253	257	261	264	268	272	276	279
Maximum Power Voltage- V_{MPP} (V)	35.4	35.7	35.9	36.0	36.2	36.4	36.8	37.1
Maximum Power Current- I_{MPP} (A)	7.15	7.20	7.26	7.34	7.42	7.47	7.50	7.53
Open Circuit Voltage- V_{OC} (V)	42.9	43.4	43.7	44.1	44.3	44.6	44.9	45.1
Short Circuit Current- I_{SC} (A)	7.67	7.71	7.75	7.79	7.83	7.89	7.94	7.98

NOCT: Irradiance at 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s.

MECHANICAL DATA

Solar Cells	Monocrystalline 156.75 × 156.75 mm (6 inches)
Cell Orientation	72 cells (6 × 12)
Module Dimensions	1960 × 992 × 40 mm (77.2 × 39.1 × 1.57 inches)
Weight	22.5 kg (49.6 lb)
Glass	3.2 mm (0.13 inches), High Transmission, AR Coated Tempered Glass
Backsheet	White
Frame	Silver Anodized Aluminium Alloy
J-Box	IP 67 or IP 68 rated
Cables	Photovoltaic Technology Cable 4.0mm ² (0.006 inches ²), 1200 mm (47.2 inches)
Connector	Trina TS4
Fire Type	Type 1 or Type 2

TEMPERATURE RATINGS

NOCT(Nominal Operating Cell Temperature)	44°C (±2°C)
Temperature Coefficient of P_{MAX}	-0.39%/°C
Temperature Coefficient of V_{OC}	-0.29%/°C
Temperature Coefficient of I_{SC}	0.05%/°C

MAXIMUM RATINGS

Operational Temperature	-40 ~ +85°C
Maximum System Voltage	1500V DC (IEC) 1500V DC (UL)
Max Series Fuse Rating	15A (Power ≤ 350W) 20A (Power ≥ 355W)

(DO NOT connect Fuse in Combiner Box with two or more strings in parallel connection)

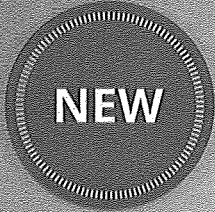
WARRANTY

- 10 year Product Workmanship Warranty
- 25 year Linear Power Warranty

(Please refer to product warranty for details)

PACKAGING CONFIGURATION

- Modules per box: 27 pieces
- Modules per 40' container: 648 pieces



THREE PHASE STRING INVERTER 50-66 KW

CSI-50KTL-GS-FL | CSI-50KTL-GS |
CSI-60KTL-GS | CSI-66KTL-GS

Canadian Solar's grid-tied, transformer-less string inverters help accelerate the use of three-phase string architecture for commercial rooftop and small ground-mount applications. An NRTL approved, cost-effective alternative to central inverters, these inverters are modular design building blocks that provide high yield and enable significant BoS cost savings. They provide up to 98.8% conversion efficiency, a wide operating range of 200-850 V_{DC}, and four MPPTs for maximum energy harvest.



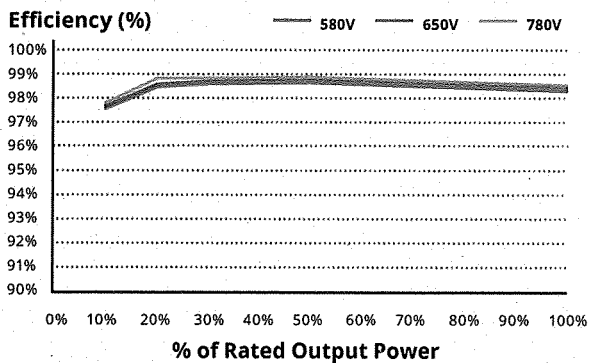
Standard warranty, extension up to 20 years

KEY FEATURES

- Maximum efficiency of 98.8%, CEC efficiency of 98.4%
- 4 MPPTs to achieve higher system efficiency
- Transformerless design
- High switching frequency and ultra fast MPPT (<5 sec.) for maximum efficiency over a wide load range

EFFICIENCY CURVE

CSI-66KTL-GS@480 V



HIGH RELIABILITY

- Advanced thermal design with fan assisted cooling
- Ground-fault detection and interruption circuit
- AFCI Integrated (per UL1699B, factory enabled option)

BROAD ADAPTIBILITY

- NEMA 4X (IP65), outdoor application
- Utility interactive controls: active power derating, reactive power control and over frequency derating
- Separable wiring box design
- Integrated DC and AC load rated disconnects
- Wide MPPT range for flexible string sizing
- 0-90 degree installation angle
- AC terminals compatible with copper and aluminum conductors (Al with bimetallic terminal)
- Supports up to 12 or 16 DC string inputs (3 or 4 per MPPT)

CANADIAN SOLAR (USA), INC. is committed to providing high quality solar products, solar system solutions and services to customers around the world. As a leading PV project developer and manufacturer of solar modules with over 27 GW deployed around the world since 2001, Canadian Solar Inc. (NASDAQ: CSIQ) is one of the most bankable solar companies worldwide.

*For detailed information, please refer to the Installation Manual.

CANADIAN SOLAR (USA), INC.

3000 Oak Road, Suite 400, Walnut Creek, CA 94597, USA | www.canadiansolar.com/na | sales.us@canadiansolar.com

SYSTEM/TECHNICAL DATA

MODEL NAME	CSI-50KTL-GS-FL	CSI-50KTL-GS	CSI-60KTL-GS	CSI-66KTL-GS
DC INPUT				
Max. PV Power	64 kW (16 kW/MPPT)	75 kW (22.5 kW/MPPT)	90 kW (22.5 kW/MPPT)	90 kW (22.5 kW/MPPT)
Max. DC Input Voltage	1000 V _{DC}			
Operating DC Input Voltage Range	200-850 V _{DC}			
Start-up DC Input Voltage/Power	200 V			
Number of MPP Trackers	4			
MPPT Voltage Range	568-850 V _{DC}		526-850 V _{DC}	579-850 V _{DC}
Operating Current (Imp)	88 A (22 A per MPPT)	114 A (28.5 A per MPPT)		
Max. Input Current (Isc)	137.2 A (34.3 A per MPPT)	178 A (44.5 A per MPPT)		
Number of DC Inputs	12 (3 per MPPT)	16 (4 per MPPT)		
DC Disconnection Type	Load rated DC switch			
AC OUTPUT				
Rated AC Output Power	50 kW	50 kW	60 kW	66 kW
Max. AC Output Power	50 kW	50 kW	60 kW	66 kW
Rated Output Voltage	480 V _{AC}			
Output Voltage Range*	422.4 - 528 V _{AC}			
Grid Connection Type	3 Φ/PE			
Nominal AC Output Current @480 Vac	60.2 A		72.2 A	79.4 A
Rated Output Frequency	60 Hz			
Output Frequency Range*	59.5 - 60.5 Hz			
Power Factor	1 default (±0.8 adjustable)			
Current THD	< 3 %			
AC Disconnection Type	Load rated AC switch			
SYSTEM				
Topology	Transformerless			
Max. Efficiency	98.8 %	98.8 %	98.7 %	98.8 %
CEC Efficiency	98.4 %			
Night Consumption	< 1 W			
ENVIRONMENT				
Protection Degree	NEMA 4X			
Cooling	Natural Convection Cooling	Intelligent Redundant Cooling		
Operating Temperature Range	-13 ° F to + 140 ° F / -25 ° C to +60 ° C			
Storage Temperature Range	-40 ° F to + 158 ° F / -40 ° C to +70 ° C			
Operating Humidity	0 - 100 %			
Operating Altitude	13,123.4 ft / 4000 m			
Audible Noise	<60 dBA @ 1 m			
DISPLAY AND COMMUNICATION				
Display	LCD + LED			
Communication	Standard: RS485 (Modbus)			
MECHANICAL DATA				
Dimensions (W / H / D)	24.8 x 40.7 x 13.9 in / 630 x 1034 x 354 mm			
Weight	165 lb / 74.8 kg	172 lb / 78 kg		
Installation Angle	90 degrees from horizontal	0-90 degrees from horizontal		
DC Inputs	15 A standard			
SAFETY				
Safety and EMC Standard	UL1741-SA, UL1699B, CSA-C22.2 No. 107.1-01, IEEI1547; FCC PART 15			
Grid Standard	IEEE1547, Rule 21			
Smart-Grid Features	Voltage-Ride Thru, Frequency-Ride Thru, Soft-Start, Volt-Var, Frequency-Watt, Volt-Watt			

*The "Output Voltage Range" and "Output Frequency Range" may differ according to specific grid standard.

The specification and key features described in this datasheet may deviate slightly and are not guaranteed. Due to on-going innovation, research and product enhancement, Canadian Solar Inc. reserves the right to make any adjustment to the information described herein at any time without notice. Please always obtain the most recent version of the datasheet which shall be duly incorporated into the binding contract made by the parties governing all transactions related to the purchase and sale of the products described herein.

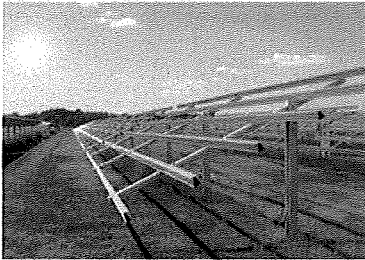
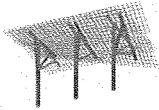
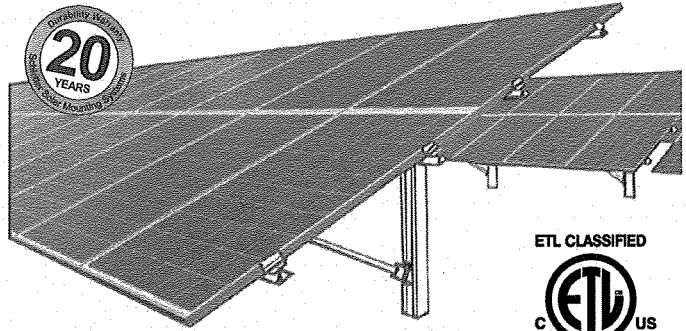
Caution: For professional use only. The installation and handling of PV equipment requires professional skills and should only be performed by qualified professionals. Please read the safety and installation instructions before using the product.



FS System™ Ground Mount System

FS System

- Conforms to UL SUB 2703¹
- Certified to ULC/ORD STD C1703
- High level of pre-assembled components
- Industry leading installation time
- Made of high quality sustainable aluminum
- Highly adjustable



What to Expect from Schletter

- When other mounting providers say it can't be done, with Schletter, it can
- 100% IBC 2006, 2009, 2012 code compliant systems, with PE wet stamps available in most states
- Exceeding the competition in providing quality steel and aluminum products
- Team of engineers offering full in-house services
- In-house geotechnical services
- Highly automated production for the fastest turnaround time in the industry
- Over 20-years solar mounting engineering and manufacturing experience

