



21 October 2016

Town of Shaftsbury Planning Commission
and
Town of Shaftsbury Selectboard
61 Buck Hill Rd., PO Box 409
Shaftsbury, VT 05262.

Bennington County Regional Commission
111 South Street, Suite 203
Bennington, VT 05201

Regarding: Proposed Solar Project – 200kW (AC) Southshire Community Solar Phase II, at 697 Buck Hill Road in Shaftsbury, Vermont. 45-Day notice of application to be filed with Public Service Board under V.S.A. §§ 219a and 248.

Dear Councilors and Commissioners:

Pursuant to 30 V.S.A. §§ 219a and 248(f), and Public Service Board ("PSB") Rule 5.110(C), Southshire Community Solar LLC ("SCS") is pleased to submit the following pre-application notice concerning its proposed Solar Project – Southshire Community Solar Phase II ("the Project") on the property of Curtis Merrow at 697 Buck Hill Road in Shaftsbury, Vermont. SCS anticipates that it will file its application for a Certificate of Public Good no sooner than December 1, 2016.

SCS will seek PSB approval to develop and operate a 200 kilowatt (AC) net-metered solar electric generation project on a leased portion of a property (the "Site") located on Buck Hill Road in Shaftsbury, Vermont. The location would be behind the existing 75kW (AC) Phase I of Southshire Community Solar.

The following letter briefly describes: (1) the Project, plans for its construction and operation, including how equipment and materials will be transported to the site; (2) the expected benefits of the Project; (3) a preliminary assessment of environmental and aesthetic impacts; (4) the expected date a Section 219a application will be filed with the PSB; and (5) the rights of the local and regional planning commissions to comment on the project plans in accordance with PSB Rule 5.402(A). Included with this letter are the following Enclosures:

- A. Site Development Plan
- B. Environmental Impact Information
- C. Solar Module Specifications
- D. Inverter Specifications

I. Project description and construction plans

The attached Site Development Plan (Enclosure A) diagrams SCS's proposal for the Project. The Project here described is an extension of up to 200kW (AC) – a phase II to the original 75kW (AC) for which the PSB issued a Certificate of Public Good and an Order on 10 December 2015.¹ The phase I application was for a 75kW (AC) project on the southern boundary of the same site. An application was made to Green Mountain Power (GMP) prior to the net metering cap for a phase II project of up to 472kW (AC). GMP's Fast Track Analysis dated 14 March 2016 approved the application subject to the condition that the project be reduced by 75kW(AC) to comply with interconnection requirements at the site. The phase II project has been reduced from 472kW (AC) to 200kW (AC).

The Project Site is approximately 2 acres of an approximately 89 acre parcel of land on Buck Hill Road that includes an old farmhouse, barns and outbuildings. The Solar Arrays will occupy approximately 1 acre of the Project Site behind the existing site. The Project will be located on the eastern portion of the parcel to the north of Buck Hill Road, approximately 600 feet northeast of the farmhouse.

The Project will be constructed using low-impact construction techniques utilizing modular metal supports, fixed tilt modules, and posts comprising helical piles. Additional low-impacts of the Project include:

- Limited grading and excavation. Though a portion of the Site is sloped, the design of the array layout will minimize necessary grading and fill at the Site. Only the area immediately below the arrays shall be graded. Excavation and fill shall be limited to that required for removal of tree stumps in the area under the arrays.
- Though the Project Site is currently wooded, it is mostly third growth softwood and scrub vegetation, not suitable as a woodlot. Clearing will occur with minimal impact to the Site and underlying soils.
- The Project Site is not suitable for agricultural use and therefore does not pose any soil conservation concerns.

A. Description of Solar Array

SCS proposes to install approximately 864 solar modules in 6 arrays of 144 modules each, with each array containing modules 4 high x 36 wide in landscape format. Each array will be approximately 210' long. The arrays will be set on an aluminum racking system that will hold the modules at an optimal 30 degree tilt to optimize solar radiance collection.

¹ See PSB reference "CPG #NM-6862" issued 12/10/2015

SCS proposes to use the Suniva OPTIMUS 285 Watt Solar Photovoltaic ("PV") Modules, manufactured in the USA. See Enclosure C - Solar Module Specifications. The arrays will be supported by posts set into helical piles, installed by our subcontractor Solar Foundations, Inc.

Year-round daily access to the array is not required. Therefore no on-site water or septic systems are necessary. The solar array production will be monitored remotely so that should a need arise, technicians can be easily dispatched from the SCS headquarters in North Bennington. Regular maintenance of the Project will be performed periodically. Technicians will access the Site from an access road through the host property on Buck Hill Road.

B. Inverter Information

SCS proposes to use 6 x SolarEdge SE33.3KUS 33.3kW inverters. See Enclosure D – 33.3kW Inverter Specifications. The inverters will be mounted below the arrays on unistruts joining the posts. The inverter outputs would be combined with those of Phase I in an AC Combiner and the combined output of 275kW (AC) would be sent to a fused AC Disconnect and thence to the final point of interconnection at a new pole installed by Green Mountain Power ("GMP") during phase I. GMP plans to replace the existing 3-phase 480V transformer with an upsized one, once the project is completed.

C. Site Access and Equipment Delivery

Standard trucking methods will be used to transport project components (modules, wire, conduit, and construction materials) to the site. Equipment delivery trucks will transport material via Interstate 91, Vermont Route 9, Vermont Route 7A, and Buck Hill Road.

Typical tractor trailer and box truck vehicles will be used to transport materials to the site for construction, The Project will not require any oversized loads. If necessary, construction matting will be used for trucking to the Project Site during construction.

II. Project Benefits

The Project will provide a number of economic benefits, including payment of municipal and other taxes and employment of local Vermont businesses and workers for development, installation, operations and maintenance. Further, the Project is in close proximity to a substantial electrical load, and will increase the availability of clean, reliable, and local electricity for the residents of Bennington county. The output of the array will be available to residents and businesses at a very favorable rate, helping to reduce operating expenses.

In addition to economic benefits, the solar energy produced by the Project will result in significant environmental benefits. Once commissioned, the Project will supply enough solar

energy to completely power approximately fifty Vermont homes and businesses, significantly reducing Vermont's reliance on energy sources that emit greenhouse gases and pollutants.

III. Preliminary impact assessment

A. Environmental

Based on initial natural resources review, the Project will avoid impacts to environmental resources. Key elements of the site plan include the following:

- The Site will be cleared, as it has on many occasions prior, of minimally valuable softwoods and scrub vegetation.
- A first-order perennial stream (a stream which does not have any other recurring or perennial stream feeding into it) has been identified on the northern boundary of the Project Site on a field visit by representatives of the Vermont Agency of Natural Resources. A 51' vegetated buffer from the centerline of the stream will minimize any impacts to this resource.
- No other rare/endangered plants or animals, significant natural communities, wetlands, or critical wildlife habitat have been identified in the Project Site.
- It is unlikely the project will require any municipal services such as fire or police, and will not impact the ability of the town to provide educational services.

SCS will provide additional environmental impact information in its Section 219a application.

B. Aesthetic

The first visual access to the Project occurs as an east bound driver on Buck Hill Road comes down a hill and around a curve at the western boundary of the Merrow property. A view across the meadow and horse pastures, and behind the house, allows a partial view of the Project, some 800' in the distance.



Figure 1 - View across meadow to Project, approximately 800' distant.

Driving east on Buck Hill Road, the Project can be viewed about 500' away, via the Construction Entrance.



Figure 2 – At the Construction Entrance.

Further east, at Pole 20 which is nearest the point of interconnection, there is a gap in the hedge, through which the Project can barely be viewed.



Figure 3 – At the Point of Interconnection

A driver from the opposite direction, close to the Point of Interconnect at the corner of the property and the driveway of the adjacent property, will have an overview of the Project from the road. The view of the Project from this location will be below the line of sight, as the landscape drops considerably.



Figure 4 – From the neighbor’s driveway

All impacts will be attenuated by the natural vegetation growth at the edge of the road, as seen in the existing view.

As the existing vegetation and topography of the Project Site create a natural screen to visual impacts, so the views and aesthetics of the farmland remain significantly unchanged. The Project will not have an undue adverse effect on aesthetics and the scenic and natural beauty of the area.

C. Archaeological or Historical Significance

There are no known historic or archeological resources on the Project site. In a letter from the Vermont State Division for Historic Preservation dated 10 November 2015 in regards to the phase I project, the State Historic Preservation Officer stated,

"The proposed project is located on the [...] Farm which is likely eligible for the State Register of Historic Places. The project will be visible from the house and barn at the property, however the project is sited at a considerable distance from the resource and visual effects will be minimal. Therefore, the project as proposed will not have an adverse effect on any standing historic structures. A desk review and a site visit performed by Scott Dillon on October 30, 2015 did not identify archaeologically sensitive areas. Accordingly, the Division concludes that the proposed project will have **No Adverse Effect** on historic sites that are listed in or eligible for inclusion in the State Register of Historic Places." A comment letter for phase II is expected shortly.

IV. Expected petition filing date with the PSB

SCS expects to file a Section 219a application and supporting materials with the PSB no sooner than December 1, 2016.

V. Opportunities to file inquiries or comments

You may file inquiries or comments with respect to the Project by contacting SCS at:

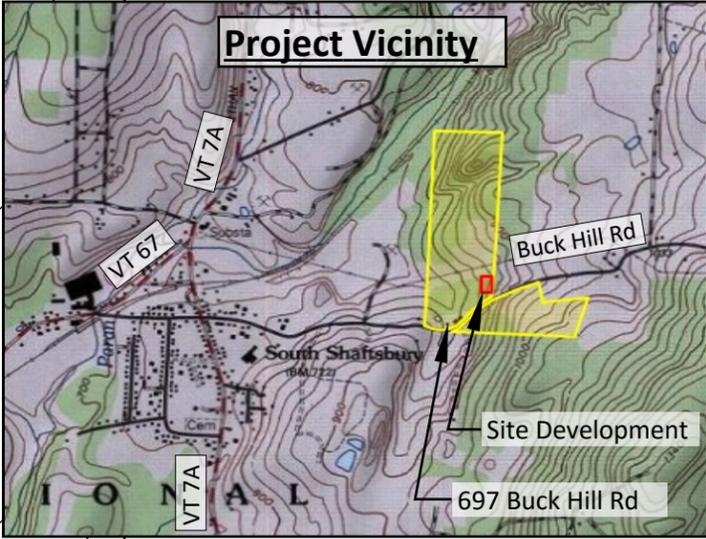
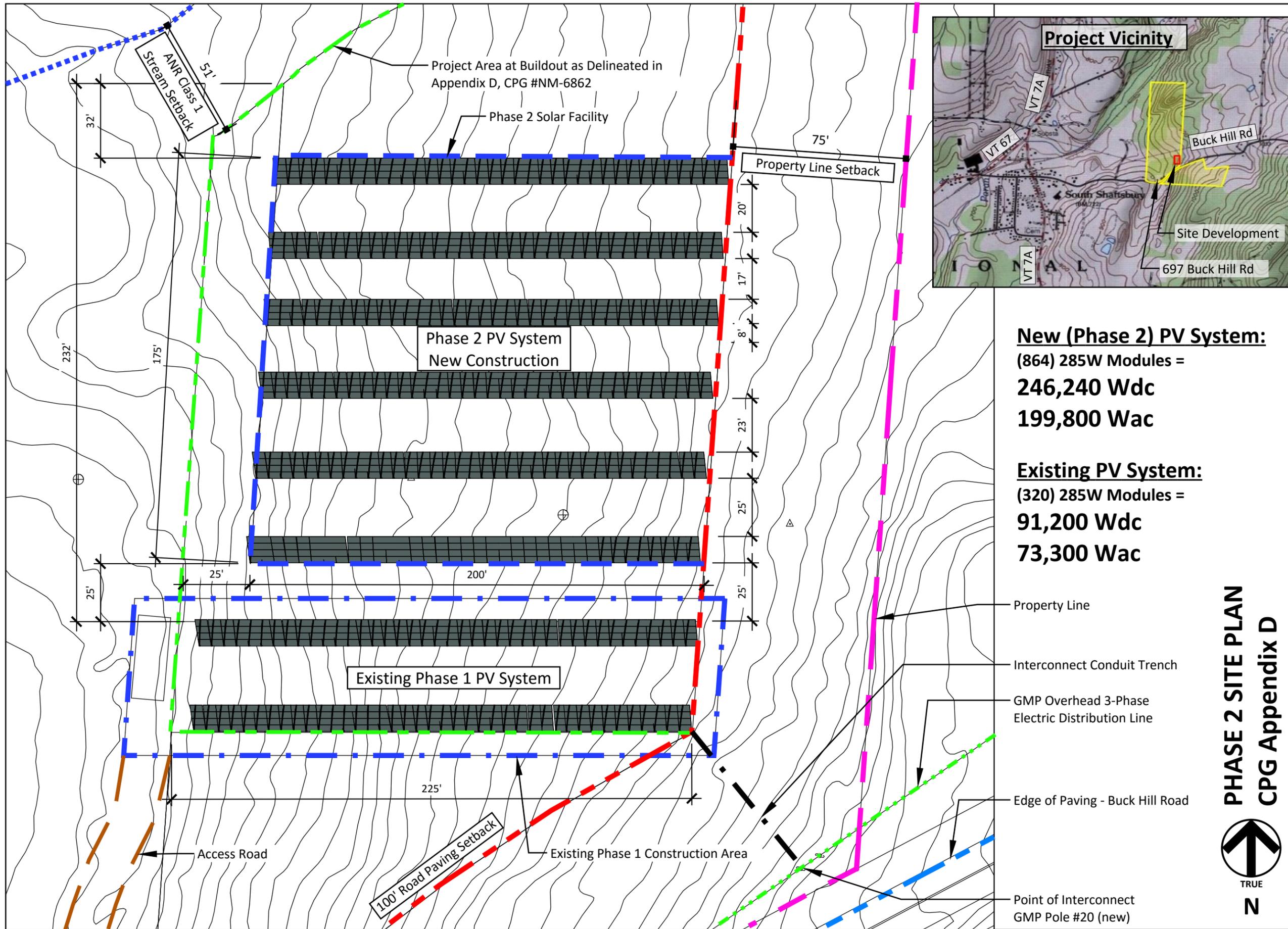
Bhima Nitta
President, Power Guru LLC
5 Bank Street, P.O. Box 507
North Bennington, VT 05257
802-379-9973
bhima@power-guru.com

You will also have the opportunity to file comments with the PSB once the application is filed. Thank you for your attention to this matter. We look forward to progressing through the Section 219a process, and welcome your input and suggestions to make this Project a success.

Sincerely,



Timothy Marr
President, Southshire Community Solar LLC



New (Phase 2) PV System:
 (864) 285W Modules =
246,240 Wdc
199,800 Wac

Existing PV System:
 (320) 285W Modules =
91,200 Wdc
73,300 Wac

- Property Line
- Interconnect Conduit Trench
- GMP Overhead 3-Phase Electric Distribution Line
- Edge of Paving - Buck Hill Road
- Point of Interconnect GMP Pole #20 (new)

PHASE 2 SITE PLAN
CPG Appendix D

TRUE
 N

Power Guru

5 Bank St | PO Box 507
 No. Bennington, VT 05257
 802-379-9973
 power-guru.com

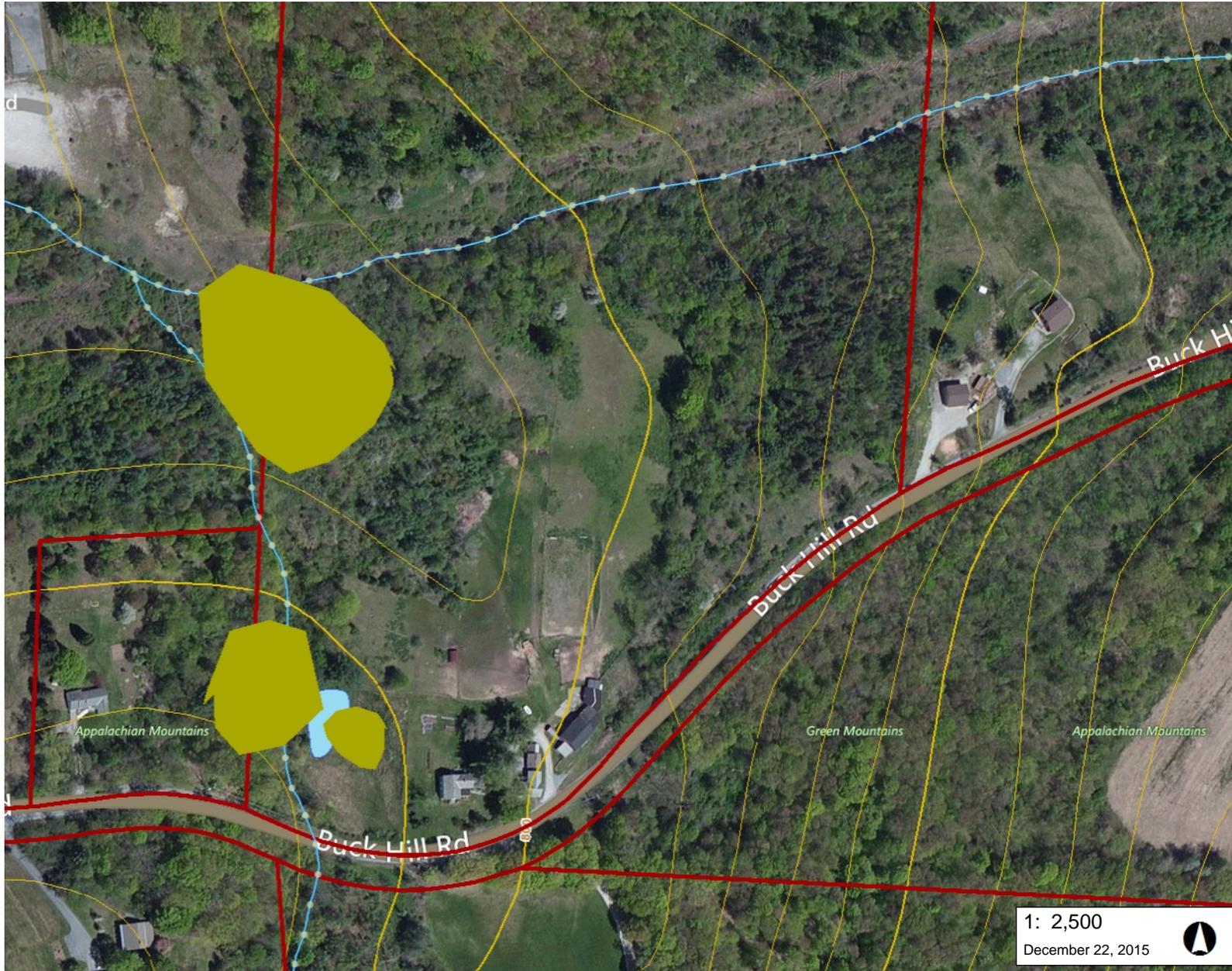
REV	MM/DD/YY	REMARKS
1		
2		
3		
4		
5		

Three Line Diagram

Installer: Bhima Nitta
 Power Guru LLC
 5 Bank St. | PO Box 507
 No. Bennington, VT 05257

Date Created: September 20, 2016
 Date Printed: September 23, 2016
 Drawn By: D.R. Young

Southshire Community Solar, LLC
 SCS - PHASE 2
 246.24 kWdc Ground Mount
 In Situ @ The Merrow Farm Property
 697 Buck Hill Road, Shaftsbury, VT 05262



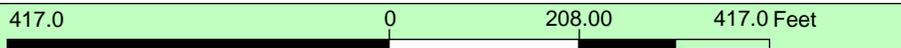
LEGEND

- Wetlands - VSWI**
 - Class 1 Wetland
 - Class 2 Wetland
- - - Small Streams - 50ft Setback
- Soils - Hydric
- Rare Threatened Endangered**
 - Threatened or Endangered
 - Rare
- Significant Natural Community
- Uncommon Species and Other**
 - Animal
 - Plant
 - Natural Community
- Waterbody
- Stream
- Parcels (where available)

1: 2,500
December 22, 2015

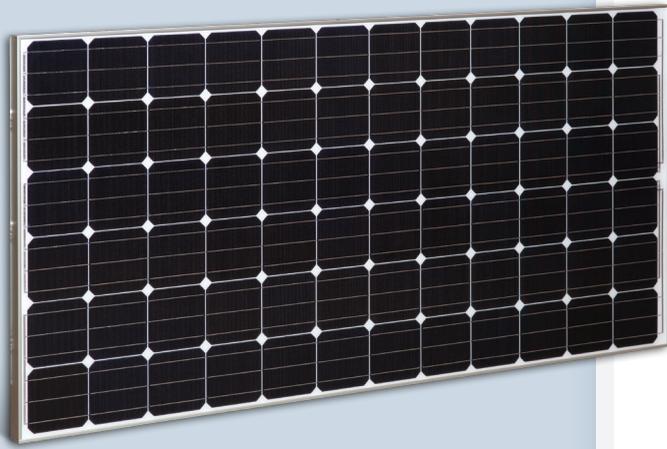
NOTES

Map created using ANR's Natural Resources Atlas



WGS_1984_Web_Mercator_Auxiliary_Sphere 1" = 208 Ft. 1cm = 25 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.



SUNIVA OPTIMUS® SERIES MONOCRYSTALLINE SOLAR MODULES

OPT SERIES: OPT 72 CELL MODULES (SILVER FRAME)

ENGINEERING EXCELLENCE

- Built exclusively with **Suniva's premium ARTisun Select cells**, providing one of the highest power outputs per square meter at an affordable price
- **The leading US-born, US-owned crystalline silicon cell and module manufacturer**, spun out of Georgia Tech's University Center of Excellence in Photovoltaics; one of only two such research centers in the U.S.
- Suniva's state-of-the-art manufacturing and module lab facilities feature the most advanced equipment and technology

QUALITY & RELIABILITY

- Suniva Optimus modules are manufactured and warranted to our specifications assuring consistent high performance and high quality.
- Rigorous in-house quality management tests beyond standard UL and IEC standards
- Performance longevity with advanced polymer backsheet
- UL1703 listed Type 2 PV module
- Passed the most stringent salt spray tests based on IEC 61701
- Passed enhanced stress tests¹ based on IEC 61215 conducted at Fraunhofer ISE²
- PAN files are independently validated

Optimus® modules are known for their superior quality and long-term reliability. These high-powered modules consist of Suniva's premium ARTisun® Select cell technology and are designed and manufactured in the U.S.A. and North America using our pioneering ion implantation technology. Suniva's high power-density Optimus modules provide excellent performance and value.

FEATURES

- ☀ Utilizes our premier American-made cell technology, ARTisun Select®
- ☀ Superior performance and reliability; enhanced stress tests conducted at Fraunhofer ISE
- ☀ Module families ranging from 325-340W
- ☀ Positive only power tolerance
- ☀ Marine grade aluminum frame with hard anodized coating
- ☀ Certified PID-free by PV Evolution Labs (PVEL)
- ☀ Made in North America
- ☀ Qualifies for Ex-Im Financing
- ☀ 1000V UL
- ☀ 25 year linear power warranty;
10 year product warranty

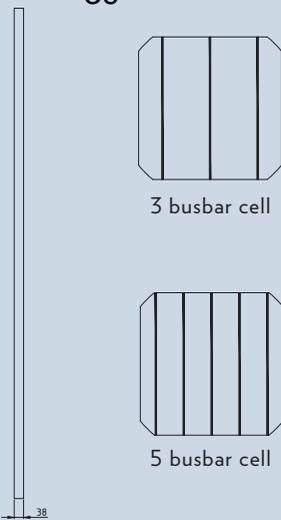
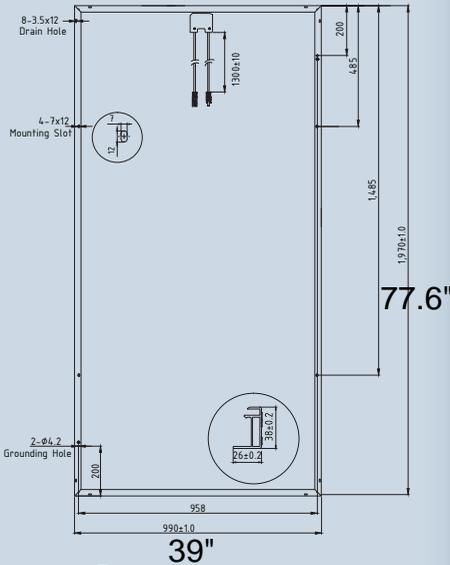


MANUFACTURED IN
Georgia & Michigan

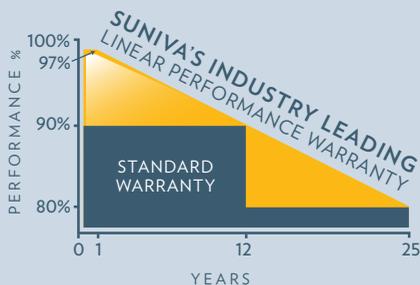
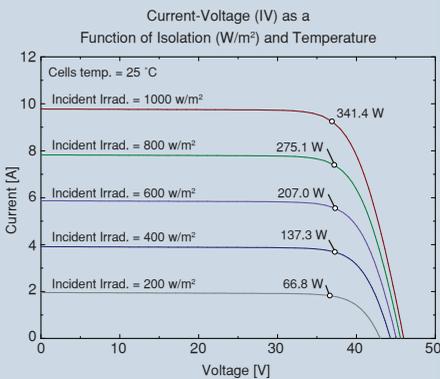
CERTIFICATIONS



www.suniva.com



PV module: Suniva, OPT340-72-4-100



PLEASE RECYCLE
JULY 9, 2015 (REV. 5) [SAM_D_0051]

OPTIMUS SERIES: OPT 72 CELL MODULES

ELECTRICAL DATA (NOMINAL)

The rated power may only vary by -0/+3% and all other electrical parameters by ± 5%

Module Type	OPT325-72-4-100	OPT330-72-4-100	OPT335-72-4-100	OPT340-72-4-100
Power Classification (Pmax)	325 W	330 W	335 W	340 W
Module Efficiency (%)	16.66%	16.92%	17.18%	17.43%
Voltage at Max. Power Point (Vmp)	37.5 V	37.6 V	37.7 V	37.8 V
Current at Max. Power Point (Imp)	8.67 A	8.78 A	8.89 A	8.99 A
Open Circuit Voltage (Voc)	45.8 V	45.9 V	45.9 V	46.0 V
Short Circuit Current (Isc)	9.42 A	9.54 A	9.66 A	9.78 A

The electrical data apply to standard test conditions (STC): Irradiance of 1000 W/m² with AM 1.5 spectra at 25°C.

CHARACTERISTIC DATA

Type of Solar Cell	High-efficiency ARTisun Select cells, 3 and 5 busbar options available
Frame	Silver anodized aluminum alloy
Glass	Tempered (low-iron), anti-reflective coating
Junction Box	NEMA IP67 rated; 6 internal diodes
Cable & Connectors	12 AWG (4 mm ²) PV Wire with multiple connector options available; cable length 1300 mm

MECHANICALS

Cells / Module	72 (6 x 12)
Module Dimensions	1970 x 990 mm (77.6 x 39 in.)
Module Thickness (Depth)	38 mm (1.5 in.)
Approximate Weight	23 kg (50.7 lbs.)

TEMPERATURE COEFFICIENTS

Voltage	β , Voc (%/°C)	-0.335
Current	α , Isc (%/°C)	+0.047
Power	γ , Pmax (%/°C)	-0.420
NOCT Avg	(+/- 2 °C)	46.0

LIMITS

Max. System Voltage	1000 VDC for IEC, 1000 VDC for UL
Max Series Fuse Rating	15 Amps
Operating Module Temperature	-40°C to +85°C (-40°F to +185°F)
Storm Resistance/Static Load	Tested to IEC 61215 for loads of 2400 Pa (50 psf); hail and wind resistant

Suniva® reserves the right to change the data at any time. View manual at suniva.com.

¹UV 90 kWh, TC 400, DH 2000. ²Tests were conducted on module type OPT 60 silver frame.

Please read installation manual before installing or working with module.

Product	Modules per pallet:	Modules per full 53 ft. truck load, double stacked
OPT - 72 cell	22	660

HEADQUARTERS
5765 Peachtree Industrial Blvd.,
Norcross, Georgia 30092 USA
Tel: +1 404 477 2700
www.suniva.com

Suniva®
The Brilliance of Solar Made Sensible®



SolarEdge Three Phase Inverters for the 277/480V Grid for North America

SE10KUS / SE20KUS / SE33.3KUS



INVERTERS

The best choice for SolarEdge enabled systems

- Integrated arc fault protection for NEC 2011 690.11
- Rapid shutdown for NEC 2014 690.12
- Superior efficiency (98.5%)
- Outdoor and indoor installation
- Built-in module-level monitoring
- Internet connection through Ethernet or Wireless
- Small, lightweight and easy to install on provided bracket
- Fixed voltage inverter, DC/AC conversion only
- Integrated Safety Switch and DC fuses (plus & minus)



Three Phase Inverters for the 277/480V Grid for North America

SE10KUS / SE20KUS / SE33.3KUS⁽¹⁾

	SE10KUS	SE20KUS	SE33.3KUS	
OUTPUT				
Rated AC Power Output	10000	20000	33300	VA
Maximum AC Power Output	10000	20000	33300	VA
AC Output Line Connections	4-wire WYE (L1-L2-L3-N) plus PE			
AC Output Voltage Minimum-Nominal-Maximum ⁽²⁾ (L-N)	244-277-305			Vac
AC Output Voltage Minimum-Nominal-Maximum ⁽²⁾ (L-L)	422.5-480-529			Vac
AC Frequency Min-Nom-Max ⁽²⁾	59.3 - 60 - 60.5			Hz
Max. Continuous Output Current (per Phase)	12	24	40	A
GFDI Threshold	1			A
Utility Monitoring, Islanding Protection, Country Configurable Set Points	Yes			
INPUT				
Maximum DC Power (Module STC)	13500	27000	45000	W
Transformer-less, Ungrounded	Yes			
Maximum Input Voltage DC to Gnd	490			Vdc
Maximum Input Voltage DC+ to DC-	980			Vdc
Nominal Input Voltage DC to Gnd	425			Vdc
Nominal Input Voltage DC+ to DC-	850			Vdc
Maximum Input Current	13.5	26.5	40	Adc
Max. Input Short Circuit Current	45			Adc
Reverse-Polarity Protection	Yes			
Ground-Fault Isolation Detection	1MΩ Sensitivity			
CEC Weighted Efficiency	98	98.5		%
Night-time Power Consumption	< 3	< 4		W
ADDITIONAL FEATURES				
Supported Communication Interfaces	RS485, Ethernet, ZigBee (optional)			
Rapid Shutdown – NEC 2014 690.12	With installation of rapid shutdown kit ⁽³⁾			
STANDARD COMPLIANCE				
Safety	UL1741, UL1699B, UL1998, CSA 22.2			
Grid Connection Standards	IEEE1547			
Emissions	FCC part15 class B			
INSTALLATION SPECIFICATIONS				
AC output conduit size / AWG range	3/4" minimum / 12-6 AWG			
DC input conduit size / AWG range	3/4" minimum / 12-6 AWG			
Number of DC inputs	2 pairs	3 pairs (with fuses on plus & minus) ⁽⁴⁾		
Dimensions (HxWxD)	21 x 12.5 x 10.5 / 540 x 315 x 260			in/mm
Dimensions with Safety Switch (HxWxD)	30.5 x 12.5 x 10.5 / 775 x 315 x 260			in/mm
Weight	73.2 / 33.2	99.5 / 45		lb/kg
Weight with Safety Switch	79.7 / 36.2	106 / 48		lb/kg
Cooling	Fans (user replaceable)			
Noise	< 50	< 55		dBA
Operating Temperature Range	-40 to +140 / -40 to +60			°F/°C
Protection Rating	NEMA 3R			

⁽¹⁾ For 208V inverters refer to: <http://www.solaredge.com/files/pdfs/products/inverters/se-three-phase-us-inverter-208v-datasheet.pdf>

⁽²⁾ For other regional settings please contact SolarEdge support.

⁽³⁾ Rapid shutdown kit P/N: contact SolarEdge.

⁽⁴⁾ Field replacement kit for 1 pair of inputs P/N: DCD-3PH-1TBK.



RoHS