



ESVI
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Vancouver Island
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Small Solar PV System Installation Specification



Prepared for:

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Reference Number

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* Vancouver Island solar PV installer/trainer and community group subject matter experts

** Issued to BC Hydro, Fortis BC, New Westminster Electric Utility and Nelson Hydro for comment

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Statement of Limitation

This complimentary Small Solar PV System Installation Specification has been prepared by the Energy Solutions for Vancouver Island (ESVI) volunteer solar demonstration program prefeasibility assessment team with input from industry sources, specifically for our solar PV demonstration program. While many of the ESVI team members are professionals either directly involved in the solar/clean energy and energy efficiency industry or related sectors, and we believe the information presented in this standard has been prepared with a similar degree of skill, care and expertise as would be provided by other qualified technical service providers, the Owner is entirely responsible for ensuring that the Installation Vendor installs a solar PV system that complies with local statutes and suits the needs of the Owner. Neither Energy Solutions for Vancouver Island, its directors, its volunteers or any of its members provides any guarantee with regard to the accuracy or appropriateness of the information contained in this complimentary Small Solar PV System Installation Specification.

REFERENCED

1. Definitions

Agreement	The written contract between the Owner and the Installation Vendor outlining the scope of Work to be provided by the Installation Vendor, the timeline for completion of the Work, the consideration due to the Installation Vendor for completion of the Work and any other understandings between the Owner and Installation Vendor pertinent to the Work.
Description of Work	A written and detailed listing of tasks included in the Work and requirements of the Work, provided by the Owner and included as part of a Tender, Request for Proposals or other purchasing documentation.
Designer	The commercial entity (consultant, contractor etc) responsible for designing the Solar PV System. The Designer must employ technical personnel qualified, through training and experience, in Solar PV System and structural design. If qualified and permitted by the Owner, an Installation Vendor can also act as the Designer.
Final Acceptance	Written acknowledgement from the Owner that the Work is fully complete, accepted and approved for payment of all outstanding amounts laid out in the Agreement.
Grid-tied solar PV system	A solar PV system that is interconnected with a utility grid (or micro-grid) in a net metering configuration. A grid-tied system is equivalent to a "utility-interactive" system as defined by section 64 of the Canadian Electrical Code.
Grid-tied with battery backup solar PV system	A solar PV system that is interconnected with a utility grid (or micro-grid) in a net metering configuration but also has electricity storage batteries that can provide power when electricity is not available from the utility grid.
Installation Vendor	The commercial entity (contractor, builder etc) responsible for installing the Solar PV System. This includes management and supervision of sub-contractors where applicable.
Module Level Power Electronics	Module Level Power Electronics (MLPE) consists of a class of devices that are embedded in or attached to individual solar PV modules in order to increase performance under shaded and/or soiled conditions, mitigate module mismatch and provide module-level monitoring or other functionality. These devices typically perform maximum power point tracking (MPPT) to optimize the module's performance under shaded and/or soiled conditions. Examples of MLPE include, but are not limited to, microinverters and DC optimizers.
Net metering	Refers to a contractual agreement between an electrical utility and a customer that allows the customer to offset their electricity consumption by on Site generation and, if applicable, deliver surplus electricity not used on Site back to the utility for a credit.

Off-grid solar PV system	A solar PV system that is not interconnected with a utility grid (or micro-grid) in a net metering configuration. These systems normally rely on batteries for electricity storage. An off-grid system is equivalent to a "stand-alone" system as defined by section 64 of the Canadian Electrical Code.
Owner	The person or entity requiring and paying for the Solar PV System installation, as identified in the Tender, Request for Proposals, or other documentation.
Qualified Professional	A Professional Engineer (P.Eng.) or Engineering Technologist (AScT, CET)
Qualified Structural Professional	A structural Professional Engineer (P.Eng. or Struct.Eng.) or structural Limited Licensee (Eng.L.), employed by or retained by the Designer to review structural aspects of the Solar PV System design and provide design input where necessary.
Request for Proposals	A competitive goods and services purchase inquiry where the Owner's decision will be made on various criteria (including or not including price) that are listed in the Request for Proposals document.
Site	The location where the Solar PV System is being installed.
Solar PV System	The assembly of equipment, interconnecting service lines and support structures comprising a grid-tied or grid-tied with battery backup solar photovoltaic (PV) electricity generation system, from solar PV collection modules through to the tie to the host facility electricity distribution center and/or the utility distribution grid feeding the facility.
Substantial Completion	Written acknowledgement from the Owner that the Work is substantially complete as defined in the BC Builders Lien Act and that the 55 day waiting period for release of any Builders Lien Act holdback monies held by the Owner has commenced.
Supplier	The commercial entity (wholesaler, retailer etc) responsible for supplying the equipment or materials required for the Solar PV System. If permitted by the Owner, the Installation Vendor can also be the Supplier.
Supporting Structure	An existing host building, a new host building or a dedicated structure supporting the Solar PV System.
Tender	A competitive goods and services purchase inquiry where the Owner's decision will be made based substantially on the lowest bid price.
Work	The Work shall consist of supplying all materials, consumables, equipment, temporary facilities, tools, labour, supervision, overhead, and everything required to accomplish the Solar PV System installation as described in detail and called for in the Description of Work.

2. Scope and Purpose

This specification applies to the design, supply, installation and commissioning of small residential and commercial grid-tied or grid-tied with battery backup solar PV systems with nameplate capacity up to 100 kW, located on private land in British Columbia, Canada.

This specification is intended to be a standard companion document for a solar PV system Tender, Request for Proposals or other purchasing inquiry document which more fully details the Description of Work and Agreement between the Owner and the Installation Vendor.

More specifically, this specification was developed for use in ESVI's community solar PV demonstration program.

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