NOVA SCOTIA APPRENTICESHIP AGENCY

COMPLIANCE BULLETIN

Installation of Solar Photovoltaic (PV) Systems

The demand for the installation of photovoltaic systems as a source of alternate energy has been growing, and with it so has the concern for proper installation and maintenance of these electrical systems.

The requirements for an individual permitted to install the Solar Photovoltaic (PV) Systems falls under the *Construction Electrician Trade Regulations*. ***This is a compulsory certified trade***. Under the authority of the *Apprenticeship and Trades Qualifications Act* (Act), a trade that is specified as compulsory certified means that the person performing the work of the trade must:

- be a registered apprentice in that trade;
- hold a certificate of qualification in that trade;
- hold a temporary permit issued by the Director; or
- hold a certificate recognized by the Director pursuant to the regulations.

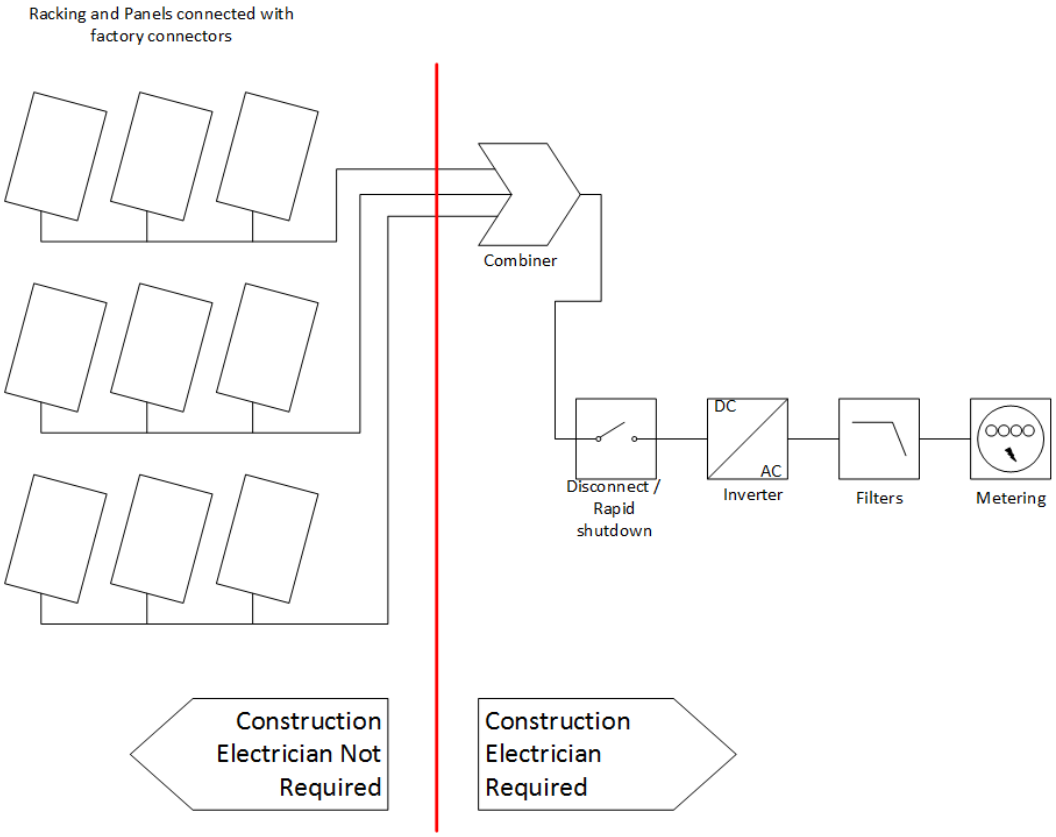
The specific work that falls within the scope of trade for the Construction Electrician during the installation of Solar Photovoltaic (PV) System is outlined below (also see Figure 1):

- A construction electrician **is required** to perform electrical connections that include combiner boxes, panel boards, and micro-inverters that are not assembled with factory installed connectors, utility switches (lock out) rapid shutdowns and meter bases. This includes the grounding of the systems and bonding of the frames to ground.
- A construction electrician **is required** where a separate ground or bond wire is a requirement for the PV system.
- A construction electrician **is not required** for the mounting of micro-inverter PV modules (panels) as the associated supports, frames and racking whether they are ground-mounted or mounted on the building and/or roof.
- A construction electrician **is not required** to install the interconnective wiring with pre-assembled factory-installed insulated connectors making the connections from module to module, or module to converter and to a common junction box associated with a microinverter or DC-optimizer system.
- A construction electrician **is not required** to perform the bonding of modules (panels) to frames where the bonding connections are approved as snap-in connections mounted on the frames.

All other work is required to be performed by a construction electrician.

The major factor in determining the applicability of the *Construction Electrician Trade Regulations* is whether the PV modules or micro-inverters are approved with pre-assembled factory-installed insulated connectors to make the connections from module to module, or module to micro-inverters. (see Figure 1)

Figure 1.



It is important to note that anyone found to be out of compliance with the *Construction Electrician Trade Regulations* is subject to a penalty of up to $5,000 for a first offence and $10,000 for a second offence.

If you have any question regarding this or any other matter relating to apprenticeship, please contact us at 1-800-494-5651 (within Nova Scotia), apprenticeship@novascotia.ca or visit our website at www.nsapprenticeship.ca.

In addition to the above, The *Electric Code Regulations* covers the installation of Solar Photovoltaic (PV) Systems and therefore, an electrical permit is required prior to the starting the installation of any solar or associated electrical installation. As part of the permit application, please note the following:

1. Drawings shall be submitted in accordance with the electrical inspection departments plans review criteria and inspections scheduled in accordance with the Electrical Code Regulations.
2. No solar installations or electrical work shall be covered up until an inspection has been performed or permission has been granted by the electrical inspection department. Failure to have any solar or electrical work inspected prior to covering it up or permanently energizing it will result in the installation failing and the system may be ordered disconnected.
3. All installations shall be installed in compliance with the 2015 Canadian Electrical Code or future editions.

For further information on the Electrical Code Regulations, please visit https://novascotia.ca/lae/electricalsafety/.