

## **WSQ Perform Design and Installation of PV Systems & WSQ Perform Maintenance of PV Systems - 2 WSQ Statement of Attainment in 10 days**

**Date:** 25, 26, 27, 28, 29 Nov, 02, 03, 04, 05, 06 December 2013

**Time:** 8.30 am to 5.30 pm

**Venue:** ITE College East, Singapore

The Singapore Workforce Skills Qualifications (WSQ) system is a national framework developed by the Singapore Workforce Development Agency (WDA) and the industries for adult workers to increase their competency and add value to the industries by taking up continuing education and training modules. WSQ caters to adult workers and aims to make skills upgrading accessible to the workforce as well as assist them in the advancement and development of their career.

SEAS is accredited by the Singapore Workforce Development Agency (WDA) to conduct two WSQ modules. They are “Perform Design and Installation of Photovoltaic Systems” and “Perform Maintenance of Photovoltaic Systems”. SEAS will be offering these two modules as a single programme and the candidate will only need to take one integrated assessment to achieve 2 Statement of Attainment (SOAs).

### **Objective of module**

On completion of this unit, learners will have the basic knowledge and ability

- to design, install, test and commission PV systems
- to inspect and maintain PV systems

### **Target Audience**

- PMEs (i.e. contractors, M&E consultants, academics and researchers) who are currently employed in Construction, Real Estate Management & Maintenance and Process industries, and whose work focuses on design, installation, test, commission, inspection and maintenance of photovoltaic systems

### **Assumed Skills and Knowledge**

- preferably have knowledge of electrical installation work
- preferably have knowledge of SS CP5:1998 Code of Practice for Electrical Installation
- have basic knowledge and skills in handling common tools
- be able to listen and speak English at a proficiency level equivalent to the Employability Skills System (ESS) level 4;
- be able to read and write English at a proficiency level equivalent to ESS level 4; and
- be able to process numbers at a proficiency level equivalent to ESS level 4

### **Mode of delivery**

Lectures, in-class exercise and practical sessions

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## Career Opportunities

- PV system integration business in Singapore and regionally, with very high market growth rates starting from a low base

## Module outline

| WSQ Perform Design and Installation of PV Systems   | WSQ Perform Maintenance of PV Systems  |
|---|--|
| <ol style="list-style-type: none"> <li>1. Develop PV system designs               <ol style="list-style-type: none"> <li>1.1 Determine PV system siting.</li> <li>1.2 Design PV systems according to client's requirements.</li> <li>1.3 Select PV system equipment.</li> <li>1.4 Prepare drawings for PV installation.</li> </ol> </li> <li>2. Plan the installation of PV systems               <ol style="list-style-type: none"> <li>2.1 Check work site for hazards before work commences.</li> <li>2.2 Select and use appropriate access equipment.</li> <li>2.3 Apply safe practices for working on PV equipment.</li> <li>2.4 Isolate and restart system safely.</li> </ol> </li> <li>3. Install and commission PV systems               <ol style="list-style-type: none"> <li>3.1 Prepare tools and equipment for installing and commissioning PV system.</li> <li>3.2 Install supporting racks and PV array.</li> <li>3.3 Wire and terminate PV modules to associated equipment.</li> <li>3.4 Inspect, test and commission the completed installation.</li> <li>3.5 Prepare testing and commissioning reports according to organisational requirements.</li> </ol> </li> </ol> | <ol style="list-style-type: none"> <li>1. Prepare for Maintenance of PV systems               <ol style="list-style-type: none"> <li>1.1 Use appropriate personal protective equipment.</li> <li>1.2 Check work site for hazards before work commences.</li> <li>1.3 Select appropriate access equipment.</li> <li>1.4 Take precautions against shock hazards when working on PV systems in daylight conditions.</li> <li>1.5 Isolate and restart system safely.</li> </ol> </li> <li>2. Plan the maintenance of PV systems               <ol style="list-style-type: none"> <li>2.1 Determine the types of PV systems to be maintained.</li> <li>2.2 Interpret technical particulars of the system components and characteristics.</li> <li>2.3 Plan the maintenance tasks for the identified PV systems</li> </ol> </li> <li>3. Perform maintenance works on PV systems               <ol style="list-style-type: none"> <li>3.1 Conduct visual inspections for physical damage or deterioration of all system components</li> <li>3.2 Carry out cleaning of PV modules.</li> <li>3.3 Shutdown and isolate PV system from mains and restart PV system.</li> <li>3.4 Complete general inspection and maintenance reports according to organisational requirements.</li> </ol> </li> </ol> |

## About the Trainer

Mr Geoffrey James Stapleton has more than 20 years of experience in solar energy: solar cell design and PV application. He is the founder of Southern Solar Australia Pty Ltd (formerly Southern Solar) which specialises in the design, sales, installation and maintenance of remote power systems within rural New South Wales (NSW). At the same time, he is also the Managing Director of Global Sustainable Energy Solutions Pty Ltd and a part-time senior lecturer at University of NSW.

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