Selangor Human Resource Development Public Training

TITLE OF TRAINING PROGRAM

SEDA Malaysia Off-Grid Photovoltaic (PV) Systems Design Course

TARGET GROUP

This course is offered to those who want to:

- Learn and enhance knowledge about off-grid solar PV systems.
- Design Off-Grid PV systems which include solar PV modules, inverter and associated equipment that is suitable for Malaysia climate condition.

(Note: the electrical connection between the inverter to the electricity supply (AC side) can only be undertaken by licensed electricians issued by Suruhanjaya Tenaga).

OVERVIEW

The course is based on the manual: "Off-Grid Photovoltaic (OGPV) Design Course". To successfully complete the course, each participant must show that they are competent in all skills and tasks as defined by this training course.

The course covers:

- Design of off-grid PV systems which include solar PV modules, inverter and associated equipment that is suitable for Malaysia climate conditions.
- Information about off-grid solar PV systems.
- Relevant Malaysian requirements and standards for an off-grid PV system.

PRE-REQUISITES FOR COURSE ADMITTANCE

Pre-requisites for participants:

- I. age above 21 years of age;
- II. minimum Diploma in Engineering or Degree in Applied Science (Physics); and

EVE

III. proficient in English.

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As a minimum all course participants should have the following skills:

□ some knowledge of safe work practices;

- □ mathematics for solving standard problems; and
- □ reading for comprehending technical subject matter.

All course participants must be able to read, understand and converse comfortably in English. It is preferred that the participants already have knowledge and skills in:

□ electricity, electrical terms and common formulae;

□ working knowledge of tools and meters used in the installation and

maintenance of electrical systems; and

□ basic customer education and service practices.

Although having these skills is preferred, the participants can learn these skills during the course or with extra work prior to attending the course.

Requirements of the Participant

Each participant shall:

- bring a notebook and/or paper, writing paraphernalia and calculator for taking notes and doing exercises; and
 - u wear suitable attire and correct footwear for physical activities.

Note: Participant can bring his/her own multi-meter and other tools if needed.

TRAINING METHODOLOGY

This 10-day course will encompass both theoretical and practical sessions, ending with a competency examination. The candidates will be assessed based on these skills and each candidate will be given a status of "PASS" or "FAIL". This status is given to each candidate by the evaluators when the evaluators are satisfied that the candidate has met the minimum criteria for passing.

DURATION 10 days (9am-5pm)

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TRAINING PROGRAM OUTLINE

DAY	TIME	SUBJECT	DESCRIPTION
	0900 ~ 0930	Lecture	Welcoming and Course Outline
	0930 ~ 1030	Lecture	Fundamental Chapter 1: Safety Practices Chapter 2: Basic Electricity Chapter 3: Introduction to Photovoltaic system
	1030 ~ 1045	Break	Refreshment is provided
1 (Monday)	1045 ~ 1300	Lecture	Fundamental Chapter 4: Basic Solar Engineering
	1300 ~ 1400	Break	Lunch is provided
	1400 ~ 1530	Lecture	Fundamental Chapter 5: Photovoltaic Technology
A'	1530 ~ 1545	Break	Refreshment is provided
Sna	1545 ~ 1700	Lecture	Fundamental Chapter 5: Photovoltaic Technology
•	0900 ~ 1030	Lecture	Fundamental Chapter 6: Mounting structure
S	1030 ~ 1045	Break	Refreshment is provided
LA	1045 ~ 1300	Lecture	Fundamental Chapter 7: Other BOS components
2 (Tuesday)	1300 ~ 1400	Break	Lunch is provided
	1400 ~ 1530	Lecture	Fundamental Chapter 8: End of life issues
1	1530~ 1545	Break	Refreshment is provided
	1545 ~ 1700	Lecture	Fundamental Chapter 9: Concept of lightning protection system
	0900 ~ 1030	Lecture	Design & Sizing of OGPV Chapter 1: OGPV system Chapter 2: Energy Storage
3	1030 ~ 1045	Break	Refreshment is provided
(Wednesday)	1045 ~ 1300	Lecture	Design & Sizing of OGPV Chapter 3: Charge Controller
	1300 ~ 1400	Break	Lunch is provided

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	1400 ~ 1530	Lecture	Design & Sizing of OGPV Chapter 4: OGPV Inverter	
	1530 ~ 1545	Break	Refreshment is provided	
	1545~ 1700	Lecture	Design & Sizing of OGPV Chapter 5: Generator and battery charger	
	0900 ~ 1030	Lecture	Design & Sizing of OGPV Chapter 6: Matching load resource, battery and PV	
	1030 ~ 1045	Break	Refreshment is provided	
	1045 ~ 1300	Lecture	Design & Sizing of OGPV Chapter 6: Matching load resource, battery and PV (Continue)	
4 (Thursday)	1300 ~ 1400	Break	Lunch is provided	
(marsday)	1400 ~ 1530	Lecture	Design & Sizing of OGPV Chapter 6: Matching load resource, battery and PV (Continue)	
47	1530~ 1545	Break	Refreshment is provided	
PUS	1545 ~ 1700	Lecture	Design & Sizing of OGPV Chapter 6: Matching load resource, battery and PV (Continue)	
•	0900 ~ 1030	Lecture	Design & Sizing of OGPV Chapter 7: Sizing of other BOS	
SE	1030 ~ 1045	Break	Refreshment is provided	
FR	1045 ~ 1300	Lecture	Design & Sizing of OGPV Chapter 7: Sizing of other BOS (Continue)	
5 (Friday)	1300 ~ 1400	Break	Lunch is provided	
	1400 ~ 1530	Lecture	Design & Sizing of OGPV Chapter 7: Sizing of other BOS (Continue)	
	1530 ~ 1545	Break	Refreshment is provided	
	1545~ 1700	Lecture	Design & Sizing of OGPV Chapter 7: Sizing of other BOS (Continue)	
	0900 ~ 1030	Lecture	Design & Sizing of OGPV Chapter 8: Design using all-in-one inverter	
6	1030 ~ 1045	Break	Refreshment is provided	
(Monday)	1045 ~ 1300	Lecture	Design & Sizing of OGPV Chapter 8: Design using all-in-one inverter (Continue)	
	1230 ~ 1430	Break / Friday Prayer	Lunch is provided	

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	1430 ~ 1530	Lecture	Design & Sizing of OGPV Chapter 9: Design of water pumping system without energy storage	
	1530 ~ 1545	Break	Refreshment is provided	
	1545 ~ 1700	Lecture	Design & Sizing of OGPV Chapter 9: Design of water pumping system without energy storage (Continue)	
	0830 ~ 0900	Break	Refreshment is provided	
	0900 ~ 1300	Practical	Solar assessment; PV module measurements; Testing and commissioning; Acceptance test; Operation and maintenance	
-	1300 ~ 1400	Break	Lunch is provided	
(Tuesday)	1400 ~ 1530	Practical	Solar assessment; PV module measurements; Testing and commissioning; Acceptance test; Operation and maintenance	
	1530 ~ 1545	Break	Refreshment is provided	
'Sna	1545~ 1700	Practical	Solar assessment; PV module measurements; Testing and commissioning; Acceptance test; Operation and maintenance	
	0830 ~ 0900	Break	Refreshment is provided	
SE	0900 ~ 1300	Examination	Practical [one-on-one candidate demonstrates and interviewed]	
8	1300 ~ 1400	Break	Lunch is provided	
(wednesday)	1400 ~ 1530	Examination	Practical [one-on-one candidate demonstrates and interviewed]	
	1530 ~ 1545	Break	Refreshment is provided	
	1545 ~ 1700	Examination	Practical [one-on-one candidate demonstrates and interviewed]	
	0900 ~ 1030	Lecture	Tutorial	
	1030 ~ 1045	Break	Refreshment is provided	
9	1045 ~ 1300	Lecture	Tutorial	
(Thursday)	1300 ~ 1400	Break	Lunch is provided	
	1400 ~ 1530	Open	Q & A	
	1530 ~ 1545	Break	Refreshment is provided	

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		1545 ~ 1700	Open	Q & A		
		0830 ~ 0930	Break	Refreshment is provided / Documentation		
	10 (Friday)	0930 ~ 1230	Examination	OGPV Design - Comprehensive Open Book (3 hours)		
		1230 ~ 1400	Break	Lunch is provided		
		1400 ~1600	Examination	Fundamental – Comprehensive Open Book (2 hours)		
		1600 ~1630	Break	Refreshment is provided		

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COURSE ADMINISTRATION

Fee:

Date:

Venue:

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630 **TRATION** RM 7,560.00 for Malaysian (Inclusive SST 8%) RM 8,100.00 for Non-Malaysian (Inclusive SST 8%) 14-18, 21-25 April 2025 Selangor Human Resource Development Centre, No. 1, Ground Floor, Block 2, Pusat Perniagaan Worldwide, Section 13, 40100 Shah Alam, Selangor, MALAYSIA.

Please contact En Kamal further assistance

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