

# INTRODUCTION TO SOLAR PV SYSTEMS

## COURSE OVERVIEW

With the growth of solar photovoltaic (PV) systems installed globally and in Singapore, we need more trained professionals to meet demand. This training course is a comprehensive 1-day introduction to help students understand the workings of solar PV energy systems and encourage them to pursue further solar PV and engineering studies.

This basic course covers fundamental topics such as energy and power, and the best ways to harvest sunlight. It explains the operation of key components in a PV system and the criteria for PV system design.

## LEARNING OBJECTIVES

- Clearly differentiate between power and energy
- Understand solar irradiance values and how they affect solar PV generation
- Calculate PV energy yields and performance ratio (PR)
- Understand the different PV cell technologies and learn which to select according to operating environment
- Learn how to install solar PV modules, based on key fundamentals of solar PV module orientation and tilt angle

**PCEM PDUs TO BE AWARDED BY INSTITUTE OF ENGINEERS, SINGAPORE**

**PDUs TO BE AWARDED BY PROFESSIONAL ENGINEERS BOARD, SINGAPORE**

**APPLICABLE FOR PRODUCTIVITY AND INNOVATION CREDIT (PIC)**

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## PROGRAMME OUTLINE

### Morning:

- Energy and power overview
- The components and properties of light
- Measuring and monitoring irradiance
- What is a grid connected solar system?
- PV cell & module technologies
- PV module warranties

### Afternoon:

- Inverter types
- PV system design basics
- Technical design details
- Solar energy generation (yield)
- Performance ratio (PR)
- Installing solar PV modules

SEAS represents the interests of companies in renewable energy, energy efficiency, carbon trading, clean development mechanism projects and the financial institutions to meet, discuss, collaborate and undertake viable projects together. The Association also extends its focus to include capacity building, technology strengthening and market intelligence leading to project access, assisting its members in achieving sustainable growth.

## ABOUT THE TRAINER



**Mr. Christophe Inglin** has over 20 years of experience in the field of photovoltaics. He is currently the Managing Director of Energetix Pte Ltd, which he co-founded in August 2015 as a specialist solar advisory and project development and construction company. He also chairs the Clean Energy Committee under SEAS. From October 2006 to July 2015, Christophe was Co-founder and Managing Director of Phoenix Solar Pte Ltd, a solar systems integrator.

Prior to that, he spent 10 years with Shell Solar Pte Ltd (formerly Siemens Showa Solar), a leading manufacturer of PV cells and modules. He is an invited trainer for the Green Mark Manager Programme held by the BCA Academy and the Tokyo-headquartered Asian Productivity Organisation. Christophe has a BSc in Electronic and Electrical Engineering from the University of Surrey in England, and an MBA from INSEAD in France.

## RATES

EARLY BIRD <i>(before 24 February)</i>	NORMAL FEE	GROUP FEE
S\$350.00 (SEAS Member)	S\$450.00 (SEAS Member)	S\$380.00 (4+ delegates from 1 organization)
S\$450.00 (Non Member)	S\$500.00 (Non Member)	

\* EENP member is entitled to SEAS member rate

\* Fees inclusive of GST

\* Payment to SEAS & Address: Please send a crossed cheque to:

the Sustainable Energy Association of Singapore, 1 Cleantech Loop, #02-16 Cleantech One, Singapore 637141

# CALL US AT 6338 8578 TO ENQUIRE!

## REGISTRATION FORM Yes! I would like to register for this programme I am unable to attend but please put me on your mailing list

PARTICIPANT'S DETAILS		Number of Delegates	Fees Payable
1	Name (Dr/Mr/Mrs/Ms)		NRIC No
	HP No	Email	Designation
			PEB <input type="text"/> SCEN <input type="text"/>
2	Name (Dr/Mr/Mrs/Ms)		NRIC No
	HP No	Email	Designation
			PEB <input type="text"/> SCEN <input type="text"/>
<b>ORGANISATION'S DETAILS</b>			
Company Name			
Company Address			
Contact Name			Tel
Email			Fax