

Management and Finance of Solar Projects

NEW

PDUs to be awarded by Professional Engineers Board, Singapore

Date : 21 & 22 September 2011

Time : 9.00 am to 5.00 pm

Venue : Hotel Re!
175A Chin Swee Road
Singapore 169879

Solar energy, wind energy, hydropower, biomass and geothermal energy – these are the energy sources of the future since, unlike oil, coal, gas or uranium, these renewable energies are virtually inexhaustible and environmentally friendly.

The globally available amount of renewable energy is enough to cover the Earth's total power needs. In just a single hour the sun transmits more energy to the Earth as is consumed in a whole year. That is the reason why solar energy will be one of the main pillars for the energy supply of the future.

Side-by-side with the use of the sun to produce heat energy (solar thermal), solar energy will also be used to generate electricity directly. This process is called photovoltaics (PV).

Using photovoltaics will be indispensable in the future energy mix:

- The PV potential is enormous, the supply of solar energy practically endless
- Applications are scalable, from the smallest systems right through to utility scale solar power stations
- Decentralized power available directly at point of use, without expensive distribution networks and associated transmission losses
- As the market and manufacturing methods are developing great cost reductions could already be realized and are still moving quickly toward cost competitiveness with conventional sources
- Economic benefit for local economies, mitigating financial outflows
- No environmental damage, reduction of greenhouse gases, noise and exhaust-free
- Short energy payback periods of less than two years depending on technology and site
- Proven, reliable and durable technology
- Low maintenance costs

Objectives

At the end of the workshop, participants will:

- Have received in-depth insight to the know-how needed to manage complex projects or to assess project proposals
- Understand the most crucial technical aspects and risks in PV projects without being an engineer
- Have an excellent overview how successful PV projects are managed from the first idea to full operation
- Be able to estimate life-cycle costs, revenues in a PV project and its profitability
- Understand financing strategies and know how to identify the best financing sources
- Have learned about the specific challenges in PV projects and how to solve them

Target Audience

This seminar addresses professionals who are new to PV project development or who would like to deepen their knowledge in this area. It addresses Business Development Managers, Decision Makers, Engineers, Entrepreneurs, Policymakers etc. related to

- Project development and engineering in the renewables or conventional power sector
- Utilities
- Financing and insurance
- Industry Associations
- Construction industry and architecture
- Government authorities
- Non-governmental organizations

Programme Outline

Photovoltaic markets and technical introduction

- The Solar resource
- PV markets worldwide and outlook
- PV market segments (off-grid, residential, commercial & industrial, utility)
- Which PV technologies are on the market and how the technology is developing
- Typical PV systems and an overview to their components
- Introduction to the main components (modules, inverters, structure, etc.)
- Sources for meteorological data
- Yield estimation and yield forecast

Management of solar projects (with case studies)

- Overview of project phases from initial concept to operation and maintenance
- Developing PV project plans: Planning and commissioning, approvals, logistics, construction, grid-connection
- Project implementation, coordination and controlling
- The installation process
- Grid-connection
- Technical project risks and how to avoid them
- Risk management of PV projects
 - Identification (planning, construction and operation)
 - Allocation and mitigation (Contracts, Insurance)
- Engineering, Procurement and Construction (EPC) contracts and contractors

Economics and Financing of PV projects (with case studies)

- 10 good reasons and investment case
- Feed-in-tariff
- Solar Power Purchasing Agreement (SPPA)
- Capital investments in PV projects incl. cost of components
- OPEX and CAPEX
- Net Present Value
- Pay-back period
- Project Internal rate of return (IRR)
- Leverage effect
- Understanding solar costs
- Business plan
- Cash flow behavior in the project life-cycle
- Financing requirements and project financing
- Financing sources (international examples from commercial banks, other sources of financing, equity financing)
- Taxation
- Practical work with an Excel based cash flow/financing model;
- Modeling of a MW PV project
- Sensitivity analysis: important sensitive parameters

Organised by:



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About SEAS

Sustainable Energy Association of Singapore (SEAS) an industry association launched in 2006, today has 160 members in the area of Energy Efficiency, Solar, Wind, Biomass, Carbon and Clean Energy Financing. SEAS aims to be the voice of sustainable energy industry and promote the business of its member companies.

Today, SEAS is also specializing in running trainings, courses and conferences only in the area of sustainable energy. SEAS aims to be the one stop, information and training provider, in the area of sustainable energy. Our trainers and lectures are not only highly qualified academic professionals but also industry specialists and professionals that are successful and sought after practitioners in the area of Sustainable Energy. Majority of Key Qualified Personnel(KQP) and Accredited Energy Services Companies are members of SEAS. They have, as a group successfully executed a multitude of energy projects with varying complexities both locally and regionally.

About the Trainer

Mr. Uwe Juergen Bauer has over 20 years experience (incl. 7 years in Photovoltaics) in senior positions in Europe, Hong Kong and USA. He works at The Renewables Academy (RENAC), based in Berlin, Germany, is one of the leading international providers of trainings in the fields of renewable energy and energy efficiency. Since its founding in January 2008 over a thousand participants from more than 96 countries worldwide have benefited from our expertise in the technology, financing, management and market development in these sectors.

Through its training programs, RENAC aims to propagate the know-how for the growth of sustainable energy markets. RENAC's courses cover the whole value chain of renewable energy technologies and are directed towards engineers and technicians but also managers, economists, policy makers etc.

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Registration Form

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

	Early Bird (Registration with payment made on/before 21 July 2011)	Normal Fee (Closing date: 07 September 2011)	Group Fee (Closing date: 07 September 2011)	No. of Delegates	Fee Payable
<input type="checkbox"/> SEAS Member	S\$750	S\$950	-		
<input type="checkbox"/> Non Member	S\$950	S\$1200	S\$800		
			Total		

- * Fees include refreshments, lunch and programme collateral.
- * Enjoy group discount for 4 or more delegates registered at the same time from the same organization and same billing source.
- * Only one type of discount scheme is applicable at any one time.
- * Please print and complete additional sheets where necessary.
- * Important: Walk-in delegates will only be admitted on the basis of space availability and with full payment made on site.

Participant's Details

1 Name (*Dr/Mr/Mrs/Ms): Designation:
HP No: Email: PEB

2 Name (*Dr/Mr/Mrs/Ms): Designation:
HP No: Email: PEB

3 Name (*Dr/Mr/Mrs/Ms): Designation:
HP No: Email: PEB

*Please delete accordingly

Organization's Details

Company Name:
Company Address:
Postal:
Contact Person's Name : (*Dr/Mr/Mrs/Ms)
Tel: Fax:
Email:

Administrative Information

Registration and Payment

Please complete the enclosed registration form and forward it together with your **cheque at least 7 days** before the commencement of the programme to

**Sustainable Energy
Association of Singapore
2 Bukit Merah Central
#18-02, Spring Building Singapore
Singapore 159835**

Crossed cheque should be made payable to
"Sustainable Energy
Association of Singapore"

Application will close on **07 September 2011**.

Cancellation

SEAS reserves the right to change programme venue, cancel or reschedule the programme if necessary or warranted by circumstances beyond our control.

There will be no refund of fees for withdrawal. However, if the registration participant is unable to attend, a representative may be allowed to attend at no extra cost. Please inform us of the changes by fax or via email 3 days before the commencement of the programme.

Confirmation of Registration

Confirmation of registration will be given 5 working days before the commencement date via email. Registration is confirmed only upon receipt of payment.

If you do not hear from us
Please contact Ms Queenie Heng at:
Tel: 63388578
Email: training@seas.org.sg
Fax your registration form to 62764257