2nd Successful Run in Asia!

SOLAR ENERGY PROJECT & FINANCIAL FEASIBILITY FRAMEWORK

30 NOVEMBER – 4 DECEMBER 2015, SINGAPORE

TOPICS COVERED

Overview of Solar Markets and Technologies
Types of Solar Power Developments
Solar Project Development Phases
Major Solar Analysis elements
Financial and Sensitivity Analysis
Organizational Analysis for structuring Solar Projects
Financing Strategies for small solar projects
Success factors to financing Solar Projects

Expert Course Faculty Leader
Frederic Pouyot
**About This Training Course**

This 5 day interactive training course will provide a thorough understanding of solar PV systems in operation around the world including the technologies in use, the motivating factors driving their development and how they can be evaluated, financed and built. This course will provide a sound grounding in solar PV project development that will help tackle similar projects your organization may be currently considering or that you may have to deal with in the future.

Additionally, you will gain a wide-ranging appreciation of the various elements that make up effective solar PV project development from identification of their viability potential to the range of solar PV technologies available or soon to be on the market, how to ensure buy-in from stakeholders, supporting the projects through to construction and operating and maintenance.

**Learning Outcomes**

This course has been designed to give engineers and other professionals a sound grounding and understanding of solar PV project development:

- Understand the market for solar PV, current solar PV project types and best suited corresponding technologies
- Gain knowledge of the holistic process to evaluate the viability of current and emerging solar PV projects in the context of Asia and the developing world
- Find out how to evaluate the initial and operating costs using models and industry data on solar PV projects
- Assess the potential technical, financial, regulatory, construction and operational risks of PV projects
- Learn how PV projects can be financed and what can increase the business case for it
- Learning from case history examples and extrapolating them to the needs of your own country/organization

**Who Should Attend**

This course has been designed for the following delegates:
Engineers, managers and other professionals working in organisations interested in evaluating PV projects

**Unique Features with powerEDGE Training**

- Pre-Course Questionnaire to help us focus on your learning objectives
- Detailed Course & Reference Manual for Continuous Learning and Sharing
- Practical Exercises & Case Studies to better understand the principles
- Limited class size to ensure One-to-One Interactivity
- Assessment at the end of the course to help you develop a Personal Action Plan
5 Day Course Outline

Day 1
Introduction to the course
- Overview of the global Solar Markets
  - Growth area in Solar Development
  - Introduction to solar Project Feasibility Analysis
  - Background on Solar project development

- Types of Solar Power Developments
  - Solar PV technologies
  - Concentrating PV
  - Solar Thermal Power
  - Aggregated Distributed PV developments
  - Hybrid Power Developments

Day 2
- Overview of Solar Project Development Phases
  - Solar Project Civil Work
  - Electrical and mechanical equipment
  - Cost Analysis: statistical data
  - Pre versus full feasibility cost
  - Initial costs
  - Due diligence
  - Development
  - Engineering
  - Operating costs
  - Labor
  - Equipment
  - End of project costs/credits

Day 3
- Major Solar Analysis elements
  - Technical Solar Analysis:
  - Technological Solar Analysis: aspects
  - Regulatory, Environmental and Political considerations
  - Environmental Solar Analysis:
  - Major Solar Computer Models: RETScreen, PVSys, System Advisor, and other popular Solar Models
  - Understanding the RETScreen GHG worksheet and how to model with Carbon credits

Day 4
- Financial and Sensitivity Analysis Overview
  - Financial Analysis with RETScreen
  - Method 1 versus Method 2
  - Financial input parameters
  - Understanding the output parameters and cash flow graph
  - Various method to perform a Financial Sensitivity
  - Evaluating Risks
  - General approach
  - Quantitative solar Project Risk Analysis

- Organizational Analysis for structuring Solar Projects
  - Role of key stakeholders
  - Sponsor, Developer, Lender, Investor, Power purchaser, Contractor

- Financing Strategies for small solar projects
  - (In-house funds, Bank loans/balance sheet financing, Co-development with strong partner, Limited recourse financing, Leasing, Build Own Operate
  - Power Purchase Agreement
  - Suppliers’ credit
  - Factors that affect Solar project financing strategy
  - Current status of solar financing
  - Financing conditions

- Success factors to financing Solar Projects
  - Strategies to improve the ability to finance solar projects
  - Solar versus other power projects (Fossil fuel, Renewable energy)

Day 5
- RETScreen Solar Project Model in practice: 3 case studies (Case studies for various type of projects)
Frederic Pouyot

Frederic has been involved in the renewable energy and Solar Industries for over three decades. He was president of the non-profit association Solar Service International in the 1980s, became president of The Green Power Network in 2001, and then since 2002 has been the CEO of GPEKS Constructions in 2002 (GPEKS is an acronym for Green Power Environment Knowledge Systems). He has initiated and managed dozens of renewable energy feasibility studies since the creation of GPEKS, and has been very active on projects in developing countries. Frederic has delivered Solar courses every year for over 10 years training hundreds of professionals from all over the world, and has written curriculum for a number of professional organizations including Leonardo Energy Academy in 2013.

Frederic is the original author of a series of solar courses that have been delivered in partnership with various associations such as IEEE, Association of Energy Engineers and with colleges, at industry conferences and for government sponsored workshops. He has also worked extensively with renewable industry Association in France and Canada on various outreach and technical education projects. He was commissioned by Canadian Association to co-develop a national certification curriculum for solar professionals, and developed the first set of exams for that certification. Frederic has provided consulting and training services to over 11,000 government staff and professionals, mostly in small workshops of a week or less.

Frederic has a multi-disciplinary university background in Business (MBA level - University of Limoges, France), Technology (Energy & Solar Technologies - University of Perpignan, France), International Trade (University of Nice - Institute for Export) and Public Policies (Certificate of the European Institute for High International Studies based in Brussels, Belgium), Information Technology (Microsoft Certified Solution Developer and trainer), Project Management (Learning Tree International - Certified Project Management Professional and Certified IT Management Professional; on the last stretch of the Masters in Project Management at University of Quebec). He is also a Comptia certified Technical Trainer, ColdFusion certified technical trainer, Productivity Point International Certified Trainer, a top leading expert RETScreen International Certified Trainer Clean Energy Institute Professional Certification in Project Analysis for 10 technological areas (Solar, Wind, Hydro, Geothermal, Bio-energy, CHP).
### Courses Available

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<th>Advanced Project Finance for Power</th>
<th>Making IPP &amp; Renewable Energy Projects Contract Frameworks Bankable</th>
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<tr>
<td>Advanced Technical Report Writing &amp; Presentation Skills</td>
<td>Managing Complex Projects for Power and Utilities Professionals</td>
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<td>Advanced Turnaround Shutdown &amp; Outage Management</td>
<td>Medium Voltage &amp; High Voltage Switchgear</td>
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<td>Ancillary Services in Competitive Electricity</td>
<td>Metallurgy for Engineers</td>
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<td>Asset Management for the Power Industry</td>
<td>Mechanical Engineering for Non-Mechanical Engineers</td>
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<td>Best Practice Renewable Energy Capital &amp; Project Management</td>
<td>Mini Hydro Project Analysis</td>
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<td>Biomass Power Generation</td>
<td>MKV Speedtronic Control System</td>
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<td>CFB Combustion for Boiler Operations</td>
<td>MK VI Speedtronic Control System</td>
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<td>Clean Development Mechanism and Carbon Markets</td>
<td>Nuclear Energy Project Planning &amp; Economics</td>
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<td>Coal Contracts</td>
<td>Nuclear Power</td>
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<td>Combined Cycle Power Plants Operation</td>
<td>Offshore Platforms Electrical Systems Design &amp; Illustrations</td>
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<td>Combined Heat &amp; Power (CHP) and Co-Generation Plant Operations</td>
<td>Operations of Coal Fired Power Plants</td>
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<td>Competency Management System for the Power Industry</td>
<td>Power Generation Commissioning, Operations &amp; Maintenance</td>
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<td>Design &amp; Operations of Circulating Fluidized Bed Boiler</td>
<td>Power Generation Operation, Protection &amp; Excitation Control</td>
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<td>Developing &amp; Structuring Public-Private Partnership (PPP) for Infrastructure</td>
<td>Power Plant Chemistry for Chemist &amp; Chemical Engineers</td>
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<td>Effective Tender Process Management for Power &amp; Utilities</td>
<td>Power Purchase Agreements</td>
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<td>Electrical Hazop (eHazop) Studies for the Power Industry</td>
<td>Process Control Methods</td>
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<td>Electricity Demand-Side Management</td>
<td>Programmatic CDM</td>
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<td>Electricity Industry Design</td>
<td>Project Management for Power and Utilities</td>
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<td>Electricity Network Planning</td>
<td>Relay Protection in Power Systems</td>
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<td>Electricity Retail Contracts</td>
<td>Reliability Centered Maintenance Masterclass</td>
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<td>Electricity Theft</td>
<td>Reliability Engineering</td>
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<td>Electricity Trading Essentials</td>
<td>Renewable Energy Development &amp; Investment</td>
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<td>Energy Efficiency</td>
<td>Renewable Energy Integration</td>
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<td>EPC Contract Management for Power &amp; Utilities</td>
<td>Risk Based Inspection</td>
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<td>Essentials of Coal Markets and Trading</td>
<td>Risk Management in Power Markets</td>
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<td>Essentials of Power Trading</td>
<td>Root Cause Analysis</td>
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<td>Excitation Systems</td>
<td>Rotating Equipment Maintenance &amp; Reliability Excellence</td>
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<td>Feed-In Tariffs for PV Systems</td>
<td>SCADA &amp; Power Systems</td>
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<td>Financial Modelling for Project Finance in Power &amp; Utilities</td>
<td>Smart Grid</td>
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<td>Fitness-For-Service AP1 579 &amp; High Energy Piping Life Management</td>
<td>Solar Energy &amp; Photovoltaic Power</td>
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<td>Fundamentals of Geothermal Energy</td>
<td>Spare Parts Optimisation</td>
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<td>Fundamentals of Power Generation</td>
<td>Supercritical and Ultra-Supercritical Coal-Fired Power Plant</td>
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<td>Gas &amp; LNG Contract Negotiation</td>
<td>Technical Report Writing &amp; Presentation Skills for Power &amp; Utilities Professionals</td>
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<td>Gas Turbine Generator Selection, Operation &amp; Maintenance</td>
<td>Ultra Low NOx Gas Turbine Combustion</td>
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<td>Gas Turbine Hot Gas Paths, Rotors &amp; Failure Analysis</td>
<td>Uninterruptible Power Supply</td>
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<td>Gas Turbine Major Inspection &amp; Overhaul</td>
<td>Vibration Analysis &amp; Condition Monitoring</td>
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<td>GE Gas Turbine Operations Simulation Based</td>
<td>Waste to Energy Plant Operations</td>
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<td>HRSG Design, Operations &amp; Understanding, Controlling of HRSG Damage Mechanisms</td>
<td>Water Treatment and Corrosion Control for Steam Generation and Power Production</td>
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<tr>
<td>HV Substation Design &amp; Construction</td>
<td>Writing Effective Standard Operating Procedures (SOP) for Power &amp; Utilities Professionals &amp; Engineers</td>
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<td>IEC for Utilities</td>
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Frequently Asked Questions (FAQs)

1. Does PowerEdge have other programmes than those listed?
   We have more than 200 programmes that we are capable of running. All we need is for you to contact us and request for the preferred programme and we will able to develop it.

2. Where is PowerEdge based?
   PowerEDGE is headquartered in Singapore but we run our training programmes in different venues around Asia.

3. What does PowerEdge do?
   We are a Power & Utilities Training Specialist.

4. Can this course be done in our city?
   It absolutely can. Get in touch with us to request for a training programme to be carried out in your city.

5. Can you reduce the price of our preferred course?
   While our price has been reduced before it is even launched, we are always happy to help you with further discounts.

6. Can you change the dates of the course?
   If you have a special requested date, let us know and we will arrange another session for you.

7. Who are the companies that will be participating?
   This varies from a diversity of Power Operators, Regulators, Financiers, to Vendors in the Power & Utilities industry.

8. Where is the venue for the course?
   We usually engage a 4 to 5 star hotel meeting room to ensure the comfort of our participants.

9. How many delegates should we expect for each course?
   This varies from 15 to 20 participants. Class sizes are kept small to allow trainers to focus better on each participant.

10. What are the different payment modes?
    We accept Visa/MasterCard, cheques, bank transfers and cash on site.

11. Is accommodation included when I sign up for a course?
    Accommodation is not included in the course fee but we are always happy to advise on available accommodations.

12. Can I get a cheaper accommodation through PowerEdge?
    We will be pleased to help you negotiate a better rate with hotels.

13. Is lunch provided during the course?
    We provide lunch and 2 tea breaks every day during our training programmes.

14. Are the training materials included once I have signed up for a course?
    Yes, training and course materials are included in the course fee.

15. Will there be a certificate for the course?
    Yes, there will be a certificate of participation upon completion of a course.

16. Who are PowerEdge trainers?
    They are expert consultants and practitioners with many years of experience in the subject matter that they deliver on.

17. Are PowerEdge trainers competent?
    We have received numerous favourable feedbacks on our trainers from past participants.

18. Can PowerEdge assist with Visa travel applications?
    We can assist in advising you on the relevant procedure(s) and embassies/consulates that provide Visa for travel purposes.

19. Can we purchase training materials without attending a course?
    Unfortunately this option is not available as training materials are specially developed for courses.

20. Can course content be tweaked to cater to our needs?
    Of course! Just let us know your request and we will get the trainer to assist in carrying it out.
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<table>
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<tr>
<th>5 Day Programme</th>
<th>Normal Price</th>
<th>Early Bird</th>
<th>Group Of 3 or More</th>
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<tr>
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<td>SGD 3, 999</td>
<td>SGD 3, 799</td>
<td>SGD 3, 499</td>
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<td>Per Participant</td>
<td>(*GST Exclusive)</td>
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<td>SGD 4, 278.93</td>
<td>Per Participant</td>
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ATTENDEE DETAILS

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COMPANY DETAILS

Organisation name .............................................................................................. Industry.................................................................
Address .................................................................................................................................
Postcode......................................................................................................... Country.................................................................
Tel ................................................................................................................................. Fax.................................................................................................

PAYMENT METHOD

By Cheque/Bank Draft: Make Payable to PowerEdge Pte Ltd.
By Telegraphic Transfer: Please quote AE1 with the remittance advise
Account Name: PowerEdge Pte Ltd.
Bank: OCBC, 7339 Branch code: 686
Swift Code: OCBCSGSG
Address: 65 Chulia Street, OCBC Centre, Singapore 049513
All bank charges and payment in Singapore dollars (SGD) to be borne by payer. Please ensure that PowerEdge Pte Ltd receive the full invoiced amount.

PAYMENT TERMS

Payment is due in full at the time of registration. Full payment is mandatory for event attendance. I agree to PowerEdge Pte Ltd. payment terms.

*C gadget exclusive price is only applicable for overseas corporate customers subject to qualifying conditions.

CANCELLATION & TRANSFER

You may substitute delegates at any time. POWEREDGE PTE LTD does not provide refunds for cancellations. For cancellations received in writing more than seven (7) days prior to the training course you will receive a 100% credit to be used at another POWEREDGE PTE LTD training course for up to one year from the date of cancellation. For cancellations received seven (7) days or less prior to an event (including day 7), no credits will be issued. In the event that POWEREDGE PTE LTD cancels an event, delegate payments at the date of cancellation will be credited to a future POWEREDGE PTE LTD event. This credit will be available for up to one year from the date of issuance. In the event that POWEREDGE PTE LTD postpones an event, delegate payments at the postponement date will be credited towards the rescheduled date. If the delegate is unable to attend the rescheduled event, the delegate will receive a 100% credit.

www.poweredgeasia.com