

COURSE OVERVIEW NE0305
Introduction to Energy Economics & Policy

Course Title

Introduction to Energy Economics & Policy

Course Date/Venue

Session 1: February 16-20, 2025/ Boardroom 1,
 Elite Byblos Hotel Al Barsha, Sheikh
 Zayed Road, Dubai, UAE
 Session 2: August 18-22, 2025/Fujairah Meeting
 Room, Grand Millennium Al Wahda
 Hotel, Abu Dhabi, UAE



Course Reference

NE0305

Course Duration/Credits

Five days/3.0CEUs/30 PDHs

Course Description



This practical and highly-interactive course includes real-life case studies and exercises where participants will be engaged in a series of interactive small groups and class workshops



This course is designed to provide delegates with a complete and up-to-date overview on renewable energy economics and finance. It covers the basics of electricity, utility bills, net metering, utility bill analysis, efficiency, PV components and modules, meter testing, series and parallel, the peak sun hours, and solar site analysis.



The course will also covers mounting PV's modules, grid-direct inverters, grid-direct sizing, inverter and array configuration, grounding, wiring, disconnecting, over current protection, commissioning and safety, load analysis, battery basics, lead acid battery basics, battery safety, battery bank design, battery charging, inverter basics, electrical integration, economic analysis, calculation of present and future costs, comparing energy-production systems based on total-life costs; and determining whether a PV system can pay back its cost against an alternate energy source.

Course Objectives

Upon the successful completion of this course, each participant will be able to:-

- Apply and gain a comprehensive knowledge on renewable energy financing
- Discuss the basics of electricity, utility bills, net metering and utility bill analysis
- Implement efficiency and explain the various PV components and modules
- Carryout meter testing and recognize the series, parallel, peak sun hours and solar site analysis
- Mount PV's modules and identify the grid-direct inverters, grid-direct sizing, inverter and array configuration
- Illustrate grounding, wiring, disconnecting, over current protection, commissioning and safety
- Carryout load analysis and explain the basics of battery and lead acid battery
- Employ battery safety, battery bank design and battery charging
- Describe the basics of inverters, electrical integration and economic analysis
- Calculate present and future costs and compare energy-production systems based on total-life costs
- Determine whether a PV system can pay back its cost against an alternate energy source

Exclusive Smart Training Kit - H-STK®



Participants of this course will receive the exclusive “Haward Smart Training Kit” (H-STK®). The H-STK® consists of a comprehensive set of technical content which includes **electronic version** of the course materials conveniently saved in a **Tablet PC**.

Who Should Attend

This course provides an overview of all significant aspects and considerations for renewable energy economics and finance for those who have to evaluate the benefits of adopting renewable energy technology, managers and directors intending to invest in the renewable energy sector including financial directors.

Training Methodology

All our Courses are including **Hands-on Practical Sessions** using equipment, State-of-the-Art Simulators, Drawings, Case Studies, Videos and Exercises. The courses include the following training methodologies as a percentage of the total tuition hours:-

- 30% Lectures
- 20% Practical Workshops & Work Presentations
- 30% Hands-on Practical Exercises & Case Studies
- 20% Simulators (Hardware & Software) & Videos


In an unlikely event, the course instructor may modify the above training methodology before or during the course for technical reasons.

Course Certificate(s)


Internationally recognized certificates will be issued to all participants of the course who completed a minimum of 80% of the total tuition hours

Certificate Accreditations

Certificates are accredited by the following international accreditation organizations: -

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British Accreditation Council (BAC)

Haward Technology is accredited by the **British Accreditation Council** for **Independent Further and Higher Education** as an **International Centre**. BAC is the British accrediting body responsible for setting standards within independent further and higher education sector in the UK and overseas. As a BAC-accredited international centre, Haward Technology meets all of the international higher education criteria and standards set by BAC.

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The International Accreditors for Continuing Education and Training (IACET - USA)

Haward Technology is an Authorized Training Provider by the International Accreditors for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this authority, Haward Technology has demonstrated that it complies with the **ANSI/IACET 2018-1 Standard** which is widely recognized as the standard of good practice internationally. As a result of our Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for its programs that qualify under the **ANSI/IACET 2018-1 Standard**.

Haward Technology's courses meet the professional certification and continuing education requirements for participants seeking **Continuing Education Units (CEUs)** in accordance with the rules & regulations of the International Accreditors for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

Haward Technology Middle East will award **3.0 CEUs** (Continuing Education Units) or **30 PDHs** (Professional Development Hours) for participants who completed the total tuition hours of this program. One CEU is equivalent to ten Professional Development Hours (PDHs) or ten contact hours of the participation in and completion of Haward Technology programs. A permanent record of a participant's involvement and awarding of CEU will be maintained by Haward Technology. Haward Technology will provide a copy of the participant's CEU and PDH Transcript of Records upon request.

Accommodation

Accommodation is not included in the course fees. However, any accommodation required can be arranged at the time of booking.

Course Fee

US\$ 5,500 per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.



Course Instructor(s)

This course will be conducted by the following instructor(s). However, we have the right to change the course instructor(s) prior to the course date and inform participants accordingly:



Mr. Karl Thanasis, PEng, MSc, MBA, BSc, is a **Senior Process & Mechanical Engineer** with **45 years** of extensive industrial experience within the **Oil & Gas, Refinery** and **Petrochemical** industries. His wide expertise includes **Control Valve** Maintenance & Testing, **Advanced Operational Skills**, **Operations & Maintenance for Gas Processing Plant, Oil & Gas Processing Facilities** Operations, **Applied Natural Gas Processing**, **Dehydration & Advanced Rotating Equipment, Gas Processing & Compression, Process Equipment Design & Troubleshooting, Process Plant Optimization & Continuous Improvement, Production Process Optimization, Operations Planning Optimization, Process Equipment Design, Process Plant Performance & Efficiency, Process Integration & Optimization, Root Cause Analysis (RCA) Methods, Root Cause Analysis, Process Equipment & Piping System, Rotating Equipment Reliability Optimization & Continuous Improvement, Material Cataloguing, Mechanical & Rotating Equipment Troubleshooting & Maintenance, Rotating Equipment for Process Industry, Rotating Machinery Best Practices, Centrifugal Pumps Operation, Positive Displacement Pumps Repair, Pump Maintenance & Troubleshooting, Heat Exchanger Maintenance & Repair, Heat Exchanger Inspection & Troubleshooting, Fin-fan Coolers, Fundamentals of Engineering Drawings, Codes & Standards, P&ID Reading Interpretation & Developing, Boiler Design, Boiler Inspection & Maintenance, Boiler Operation & Control, Boiler Troubleshooting & Inspection, Boiler Instrumentation & Control, Steam Boiler Maintenance, Boiler & Steam Generation System, Boiler Failure Analysis & Prevention, Boiler Burner Management, Boiler Water Treatment Technology, Machinery Failure Analysis, Preventive & Predictive Maintenance, Condition Monitoring, Root Cause Analysis (RCA), Root Cause Failure Analysis (RCFA), Reliability Centred Maintenance (RCM), Risk Base Inspection (RBI), Metallurgical Failure Analysis, Corrosion Failure Analysis, Steam Generation, Steam Turbines, Power Generator Plants, Gas Turbines, Combined Cycle Plants, Boilers, Process Fired Heaters, Air Preheaters, Induced Draft Fans, All Heaters Piping Work, Refractory Casting, Heater Fabrication, Thermal & Fired Heater Design, Heat Transfer, Coolers, Pumps, Turbo-Generator, Turbine Shaft Alignment, Lubrication, Mechanical Seals, Packing, Blowers, Bearings, Couplings, Clutches and Gears. Further, he is also versed in **Wastewater Treatment Technology, Networking System, Water Network Design, Industrial Water Treatment** in Refineries & Petrochemical Plants, **Piping System, Water Movement, Water Filtering, Mud Pumping, Sludge Treatment and Drying, Aerobic Process of Water Treatment** that includes **Aeration, Sedimentation and Chlorination Tanks**. His strong background also includes **Design and Sizing** of all **Waste Water Treatment Plant Associated Equipment** such as **Sludge Pumps, Filters, Metering Pumps, Aerators and Sludge Decanters**.**

Mr. Thanasis has acquired his thorough and practical experience as the **Project Manager, Plant Manager, Area Manager, Maintenance Manager, Engineering Manager, Technical Consultant & Trainer, Head of Capital Projects, Refractory Specialist, Construction Superintendent, Maintenance Supervisor, Project Engineer, Process Engineer, Maintenance Engineer and Thermal Design Engineer** of various companies worldwide in the **USA, Germany, England and Greece**.

Mr. Thanasis is a **Registered Professional Engineer** in the **USA and Greece** and has **Master's and Bachelor's** degree in **Mechanical Engineering with Honours** from the **Purdue University and Southern Illinois University (USA)** respectively as well as an **MBA** from the **University of Phoenix (USA)**. Further, he is a **Certified Instructor/Trainer, Certified Internal Verifier/Trainer/Assessor** by the **Institute of Leadership & Management (ILM)**, a member of the **American Society of Heating, Refrigeration and Air-Conditioning Engineers** and delivered various trainings, courses, seminars and workshops worldwide.



Course Program

The following program is planned for this course. However, the course instructor(s) may modify this program before or during the course for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

Day 1

0730 – 0800	Registration & Coffee
0800 – 0815	Welcome & Introduction
0815 – 0830	PRE-TEST
0830 – 0830	Basics of Electricity
0830 - 0930	Utility Bills
0930 – 0945	Break
0945 – 1100	Net Metering
1100 – 1230	Utility Bill Analysis
1230 – 1245	Break
1230 – 1330	Efficiency
1330 - 1420	Implementing Efficiency
1420 - 1430	Recap
1430	Lunch & End of Day One

Day 2

0730 – 0830	PV Components
0830 - 0930	PV Modules
0930 – 0945	Break
0945 – 1100	Meter Testing
1100 – 1230	Series & Parallel
1230 – 1245	Break
1245– 1330	Peak Sun Hours
1330 - 1420	Solar Site Analysis
1420 - 1430	Recap
1430	Lunch & End of Day Two

Day 3

0730 – 0830	Mounting of PV's Modules
0830 - 0930	Grid- Direct Inverters
0930 – 0945	Break
0945 – 1100	Grid-Direct Sizing
1100 – 1230	Inverter & Array Configuration
1230 – 1245	Break
1245 – 1330	Grounding
1330 - 1420	Wiring
1420 - 1430	Recap
1430	Lunch & End of Day Three





Day 4

0730 – 0830	Disconnects & Over Current Protection
0830 - 0930	Commissioning & Safety
0930 – 0945	<i>Break</i>
0945 - 1100	Load Analysis
1100 - 1230	Battery Basics
1230 - 1245	Lead Acid Battery Basics
1230 – 1245	<i>Break</i>
1245 - 1330	Battery Safety
1330 – 1420	Battery Bank Design
1420 - 1430	Recap
1430	<i>Lunch & End of Day Four</i>

Day 5

0730 – 0830	Battery Charging
0830 - 0930	Inverter Basics
0930 – 0945	<i>Break</i>
0945 – 1100	Electrical Integration
1100 - 1140	Economic Analysis
1140 – 1230	How Present & Future Cost are Calculated
1230 – 1230	<i>Break</i>
1330 - 1315	Comparing Energy -Production Systems Based on Total Life-Cycle Costs
1315 – 1345	Determine whether a PV System can Pay Back its Cost Against an Alternate Energy Source
1345 – 1400	Course Conclusion
1400 – 1415	POST-TEST
1415 – 1430	<i>Presentation of Course Certificates</i>
1430	<i>Lunch & End of Course</i>

Practical Sessions

This practical and highly-interactive course includes real-life case studies and exercises:-



Course Coordinator

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