

COURSE OVERVIEW NE0030
Understanding the Future of Energy

Course Title

Understanding the Future of Energy

Course Date/Venue

Session 1: January 26-30, 2025/Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE

Session 2: July 28-August 01, 2025/Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE



Course Reference

NE0030



Course Duration/Credits

Five days/3.0 CEUs/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 participants with a detailed and up-to-date overview of the future of energy. It covers the energy industry and its impact; the critical element of corporate success of energy and technology; the convention and unconventional oil and gas and LNG industry; the problem of climate change, global warming, clean air act, detrimental impacts and transforming energy future; the future of oil supply dynamics, natural gas supply dynamics and demand dynamics; the energy mix and oil demand dynamics; the energy demand-side and supply-side technologies; and the clean energy options and opportunities.



During this interactive course, participants will learn the trends in clean energy renewables; the wind, solar and wave energy, hydroelectric and geothermal power and waste to energy; the biomass and biogas, carbon capture and storage; the hydrogen fuel, hydrogen fuel cells, ammonia and ethanol; financing renewable energy; the basic problem and command and control solution; the nuclear energy-fission, fusion or modular; the benefits and costs, recent accidents and challenges; and the carbon footprint of space travel, the four 'C's of the energy transition and the fifth generation heat.

Course Objectives

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

- Apply and gain a good working knowledge on the future of energy
- Explain the energy industry and its impact as well as the critical element of corporate success of energy and technology
- Discuss convention and unconventional oil and gas and LNG industry
- Recognize the problem of climate change, global warming, the clean air act, detrimental impacts and transforming energy future
- Assess the future of oil supply dynamics, natural gas supply dynamics and demand dynamics, energy mix and oil demand dynamics
- Apply energy demand-side and supply-side technologies and identify the clean energy options and opportunities
- Evaluate trends in clean energy renewables and determine solar and wave energy, hydroelectric and geothermal power, waste to energy, biomass and biogas and carbon capture and storage
- Explain hydrogen fuel, hydrogen fuel cells, ammonia and ethanol, finance renewable energy, identify the basic problem and apply command and control solution
- Recognize nuclear energy-fission, fusion or modular, benefits and costs and the recent accidents and challenges
- Discuss the carbon footprint of space travel, the four 'C's of the energy transition and the fifth generation heat

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 is designed for electrical engineers, industrial & utility engineers, HSE personnel and other staff exposed to high voltages. Supervisors or managers concerned with the safety of electrical workers will find this course especially useful in providing an insight into electrical safety. Course participants are introduced to the hazards of electrical work and the philosophies of preventing accident and minimizing outage time due to improper safety or work practices. Also included as part of the curriculum are study materials participants may use at their own pace to continue their learning experience. This course addresses OSHA training requirements established in OSHA 29 CFR 1910.269 and other international standards.

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)

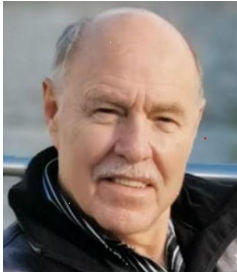
Haward Technology is an Authorized Training Provider by the International Accreditors for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this authority, Haward Technology has demonstrated that it complies with the **ANSI/IACET 2018-1 Standard** 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.

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. Fred Du Plessis is a **Senior Electrical Engineer** with over **30** years of extensive experience within the **Oil, Gas, Petrochemical, Refinery & Power** industries. His expertise widely covers in the areas of **Thermal Gas Power Generation, Power Station Operations, Power Generation Plant Outage Management, Power System Analysis, Power System Generation & Distribution, Electric Power System Design, Renewable Energy, Energy Storage Technologies, Maintenance, Testing & Troubleshooting, Transformer Protection, Transformer Problem and Failure Investigations, Power System**

Operation and Control, Fault Analysis in Power Systems, HV/MV Cable Splicing, High Voltage Electrical Safety, High Voltage Circuit Breaker Inspection & Repair, High Voltage Power System, HV Equipment Inspection & Maintenance, HV Switchgear Operation & Maintenance, Resin / Heat Shrink & Cold Shrink Joints, HV/LV Equipment, ORHVS for Responsible and Authorized Person High Voltage Regulation, Transformers Maintenance, inspections & repairs, Commissioning of LV & HV Equipment, Oil Purification and High Voltage Maintenance, HT Switch Gear -Testing, Safe Operating, Maintenance, Inspection & Repairs on LV & HT Cables - Testing (Pulse & Megger), Line Patrol in Low Voltage & Distribution, Transmission, Operating Principles up to 132KV, Abnormal Conditions & Exceptions, Commissioning & Testing, Transformer Inspections & Repairs, Live Line Work up to 33KV, Basic Power System Protection, High Voltage Operating Preparedness Phasing (110V to 132KV), HV Operating & Fault Finding (up to 132KV), Maintenance & Construction Supervision, VSD/VFD Installations & Testing, Electrical Panel Design, VSD/VFD Installations & Testing, Instrument Installation and wiring, AC/DC Supplies & Change Over Systems, AC & DC Winders and VLF Testing, Gas Turbines, Steam Turbine with a Station Generation, Project Management & Project Controls, Water Treatment & Reverse Osmosis Plant Management and Mechanical Maintenance Management.

During Mr. Du Plessis's career life, he has gained his practical experience through several significant positions and dedication as the **Project Manager/Owner, Maintenance Manager, Project Execution Manager, Commissioning & Operating Manager, Acting Operating Manager, Optimization/Commissioning Manager, Operating Support Manager, Operating Production/Shift Manager, Operations Lead Engineer, Electrical Engineer, Production/Maintenance Planner, Unit Shift Supervisor, Principal Plant Operator, Workshop & Maintenance Consultant, Assistant Electrical Supervisor, Trainee Motor Mechanic and Senior Instructor/Trainer** from various international **power station** companies like the Dunamis Energy, Peterhead Power Station, Lijaco Services, Eskom, Matla Power Station, Grootvlei Power Station, Ellisras Brick & Ceramic, Hlalisani Mechanical Contractor, Matimba Power Station, Matimba Power Station, Eskom Kriel Power Station and Transvaal Provincial.

Mr. Du Plessis has a **Bachelor's** (with Honours) degree in **Operations Management**. Further, he holds certification in Red & Silver Seal Accreditation Power Generation – (ESETA), a SAMTRAC & NOSA **Auditor** – (NOSA), a **Certified Instructor/Trainer** and has further delivered various trainings, seminars, conferences, workshops and courses globally.

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 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.

Accommodation

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

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	<i>Registration, Coffee</i>
0800 – 0815	<i>Welcome & Introduction</i>
0815 – 0830	PRE-TEST
0830 – 0900	<i>The Energy Industry & Its Impact</i>
0900 – 0930	<i>Energy & Technology – The Critical Element of Corporate Success</i>
0930 – 0945	<i>Break</i>
0945 – 1100	<i>Convention & Unconventional Oil & Gas & LNG Industry</i>
1100 – 1230	<i>The Problem of Climate Change</i>
1230 – 1245	<i>Break</i>
1245 – 1330	<i>What is Global Warming</i>
1330 – 1420	<i>The Clean Air Act</i>
1420 – 1430	Recap
1430	<i>Lunch & End of Day One</i>

Day 2

0730 – 0900	<i>The Detrimental Impacts</i>
0900 – 0930	<i>The Transforming Energy Future</i>
0930 – 0945	<i>Break</i>
0945 – 1100	<i>The Future of Oil Supply Dynamics, Natural Gas Supply Dynamics & Demand Dynamics, Energy Mix & Oil Demand Dynamics</i>
1100 – 1230	<i>Energy Demand-Side & Supply-Side Technologies</i>
1230 – 1245	<i>Break</i>
1245 – 1300	<i>The Clean Energy Options & Opportunities</i>
1300 – 1420	<i>Trends in Clean Energy & Renewables</i>
1420 – 1430	Recap
1430	<i>Lunch & End of Day Two</i>

Day 3

0730 – 0830	Wind, Solar & Wave Energy
0830 - 0930	Hydroelectric & Geothermal Power
0930 – 0945	<i>Break</i>
0945 – 1100	Waste to Energy
1100 - 1230	Biomass & Biogas
1230 – 1235	<i>Break</i>
1235 – 1300	Carbon Capture & Storage
1300 - 1420	Hydrogen Fuel & Hydrogen Fuel Cells
1420 – 1430	Recap
1430	<i>Lunch & End of Day Three</i>

Day 4

0730 – 0830	Ammonia & Ethanol
0830 - 0930	Financing Renewable Energy
0930 – 0945	<i>Break</i>
0945 – 1100	The Basic Problem
1100 - 1230	Command & Control Solution
1230 – 1245	<i>Break</i>
1245 – 1300	Nuclear Energy-Fission, Fusion or Modular
1300 - 1420	Benefits & Costs
1420 – 1430	Recap
1430	<i>Lunch & End of Day Four</i>

Day 5

0730 – 0930	Recent Accidents & Challenges
0930 – 0945	<i>Break</i>
0945 – 1100	The Carbon Footprint of Space Travel
1100 - 1230	The Four 'C's of the Energy Transition
1230 – 1245	<i>Break</i>
1245 – 1300	Fifth Generation Heat
1300 - 1400	Case Studies
1400 - 1415	Course Conclusion
1415 – 1430	POST-TEST
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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