



**Society of Power & Energy
Professionals (SOPEP)**

introduces

ONE YEAR DIPLOMA IN ENERGY ENGINEERING, ENERGY CONSERVATION AND ENERGY MANAGEMENT

Energy is one of the major inputs for the economic development of any country. It is known that both, in the short run and in the long run, it is the growth in electricity energy consumption that fuels economic growth. The GDP of the country is directly linked to growth in Energy consumption. It is estimated that globally the energy demand is increasing @1.5% every year.

Transformation of energy from its natural form to usable form and its transmission and distribution up to the load centres, involve cost intensive processes. At the load centres, conversion of energy to suit the requirements also involves machinery, tools and processes. All these add to the cost of energy available to the consumer. High-cost hampers growth and creates high impact on economic and social development. Non-scientific and haphazard usage of energy also creates environmental and health problems. Hence at every stage it is required to enforce energy management in systematic manner. It is observed that, in our country, on one hand, commercial energy use is growing fast and on the other hand, volatile energy prices, in the absence of systematic energy management, are causing strong impacts on economic growth.

This is the reason that in the case of all developing countries, the energy sector assumes a critical importance in view of the ever-increasing energy needs which call for huge investments to meet them. Energy conservation, therefore, plays an important role, since usable energy saved and energy extracted from waste, avoids production needs for more energy. This is the main reason that, there should be a thrust to conserve energy as well as to look out for alternative sourcing.

A proactive assessment and management of energy systems allows for successful economic and environmental results. An energy conscious manager strategically evaluates energy use, with a view to make changes in an iterative manner, which create a more efficient system.

Due to these facts, energy engineering along with its conservation and management has become a growing field of study which provides an exciting career path.

This one year diploma includes –

- o 2-hour of virtual theoretical session – **16** such sessions
- o E-mail assignments, its correction and discussion on them – **12** sessions of 1hour each
- o **One** exclusive doubt clearing session (before the Final Examination)
- o Online Interim Unit Tests on each – **04 Nos.**
- o One **“Meet the Expert”** session (virtual seminar) to provide opportunity to interact with the industry experts
- o Master Class on special subjects – **04 Nos.**
- o Project work on Energy Management
- o One on-line **Final Examination**
- o Valedictory session
- o **Complimentary Individual Life Membership to Society of Power & Energy Professionals (SOPEP)**



**Admission is
OPEN now for
the Annual
Academic
Session 2022**

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Course Objectives

This course will help the participants to –

- o understand the concept of energy in details
- o achieve and maintain optimum energy procurement and utilisation
- o minimise energy costs/waste without affecting production & quality and to minimise environmental effects
- o conserving energy in their home, office and work places
- o aware of the energy & environment related technologies
- o prepare for Energy Auditor Examination
- o overall understanding of electrical power generation, transmission and distribution system
- o become aware of the Energy Management System (EnMS) – ISO 50001 and its implementation

This course will also provide an overview of the critical role played by the energy consuming equipment in eroding profitability of the organization and will establish a guideline for their improvement.

The course is divided into 4 Main Modules and 4 Special Modules as follows:

- **Module-1: (Theory Module) 5 Sessions**
Introductory: (Energy, its different forms, Procurement, Areas of use)
- **Module-2: (Engineering Module) 4 Sessions**
Implementation of Energy conservation
- **Module-3: (Management and Commercial Module) 4 Sessions**
Management of Energy conservation, Its Economics, Benefit calculation
- **Module-4: (Statutory and Regulatory Module) 3 Sessions**
International standards and their compliance, Statutory and Regulatory requirements
- **Special Module/Master Class (each of 2-3 hours session):**
 - 1) Impact of RE on grid and mitigation measures: Intermittency, generation following, generation forecasting, RTC, Types of storage, Tesla storage business model, inertia constant, distributed grids, companies active in India
 - 2) Electrical Power Quality and its impact on energy efficiency: Power Quality improvement to improve energy efficiency
 - 3) Hydrogen, generation, transportation & its use cases: The technology for the future
 - 4) Solar PV DC field design: Use of solar power for energy conservation and reducing environmental impact

Who Should Attend?

Anybody with some knowledge of English & General Science can attend this course. However, it is most recommended for the -

- o Degree & Diploma Engineers from the disciplines Electrical, Mechanical, Chemical, Energy, Power Plant, Petroleum, Agricultural etc.
- o BBA/BMS/MMS/MBA/PGDM or equivalent qualification with Energy Management as one of the subjects
- o Science Graduate or Post Graduate with Physics/ Chemistry as principal subject
- o Plant and O & M Managers & Supervisors
- o Persons working in energy related areas
- o Persons in charge of utilities
- o Energy assessors
- o Engineering and Equipment/System Design personals who would like know more about energy
- o Persons looking for cost saving initiatives



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Course Outline

Module 1: (Introduction to “Energy”) Total 5 sessions

Energy Scenario, different forms of Energy, Generation, Procurement, Areas of use

- 1) **Module 1 – Unit No. 1 Energy Scenario (1 session)**
 - o Energy Scenario – Global and Indian
 - o Various Forms of Energy
 - o Impact of Energy on economy, development and environment
 - o Energy Intensity and Energy Reserve to Production Ratio
 - o Overview of Energy policies and Energy strategy
- 2) **Module 1 – Unit No. 2 Energy Generation (2 sessions)**
 - Basics of Energy Efficiency
 - o Overview of various sources of Energy
 - o Transformation of Energy, Units of Energy and Energy Efficiency
 - o Benefits of achieving energy efficiency
 - Energy Generation
 - o Energy reserve and commercial production of energy
 - o Conventional Power generating Plants
 - o Solid Fossil Fuel – Coal
 - o Fossil Fuel – Oil and Natural Gas
 - o Renewable Energy: Solar, Wind, Mini Hydro plants
 - o Renewable Energy: Bio fuels, Agro products, Energy from Waste
 - o Comparison of Conventional and Renewable energy generating plants
 - o Magnetohydrodynamics (MHD)
 - o Impact of Energy on economy
- 3) **Module 1 – Unit No. 3 Utilisation of Energy (2 sessions)**
 - o Transmission of Electrical Energy
 - o Quality, Availability and Reliability of Energy supply
 - o Energy Distribution, Classification of Consumers
 - o Load curves and their importance
 - o Base load, Peaks and Valleys in load curve
 - o Technical and Commercial Losses in Energy Distribution and Utilisation

Module 2: (Engineering Module) – Total 4 Sessions

Implementation of Energy conservation

- 1) **Module 2 – Unit No. 1 Energy Efficiency at Non-Industrial Areas (2 sessions)**
 - Urban Residential and Commercial establishments
 - o Energy Conservation Opportunities
 - o Energy Conservation Measures
 - Public service Utilities and Public premises
 - o Energy Conservation Opportunities
 - o Energy Conservation Measures
 - Rural Areas (Residential, Agricultural)
 - o Energy Conservation Opportunities
 - o Energy Conservation Measures



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2) Module 2 – Unit No. 2 Energy Efficiency at Industrial Establishments (2 sessions)

- o Energy Performance parameter of various plant equipment
- o Energy Conservation Opportunities and Energy Conservation Measures
- o Managing use of energy – energy efficient plant
- o Energy economics and Practical focus on energy efficiency
- o Reduction in carbon emissions
- o Energy conservation technologies – cogeneration – Waste heat recovery – Combined cycle power generation
- o Heat Recuperators – Heat regenerators – Heat pipes – Heat pumps
- o Thermodynamic Energy Conservation Opportunities in chemical process industry

Module 3: (Management and Commercial Module) - Total 4 Sessions

Management of Energy conservation, Its Economics, Benefits, Audits

1) Module 3 – Unit No. 1 Energy Management (2 sessions)

- o Conceptually understanding energy performance
- o Energy Management – Definitions, objectives and significance
- o Management Principles, their application and potential benefits
- o Energy Management program
- o Energy strategies and energy planning

2) Module 3 – Unit No. 2 Energy Audits (2 sessions)

- o Energy Monitoring system, Instrumentation and Energy Audits
- o Energy Audit – Types and Procedure
- o Optimum performance of existing facilities for Energy Management

Module 4: (Statutory and Regulatory Module) – Total 3 Sessions

Statutory and Regulatory requirements

1) Module 4 – Unit No. 1 International standards and their compliance (2 session)

- o EnMS audits based on the “Process Approach”
- o Purpose and benefits of an Energy Management System - ISO 50001
- o Interpretation and understanding the requirements of the ISO 50001

2) Module 4 – Unit No. 2 Statutory and Regulatory requirements (1 session)

- o Understanding Statutory & Regulatory Requirements, Orders, Directives
- o Compliance with statutory and Regulatory requirements

Administrative Partner

On behalf of the Society of Power & Energy Professionals (SOPEP), the entire course will be managed administratively by M/s Learners & Winners Training & Consultancy Private Limited.

Course Fee

Entire course fee has to be paid in advance at the time of admission.

For Individual SOPEP Members: INR 40,000/- plus 18% GST (per member)

For Corporate SOPEP Members: INR 40,000/- plus 18% GST (per nomination)

(The corporate members can nominate any number of persons)

For the overseas participants: USD 1150 plus 18% GST for each participant

For Non-members: INR 55,000/- plus 18% GST for each participant



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For Payments –

Online Transfer:

Account Name: Learners & Winners Training & Consultancy Private Limited

Bank Name: ICICI Bank Limited

Bank Branch: Sanpada, Navi Mumbai

Account Type: Current Account

Income Tax PAN Number: AACCL7146F

GST Number: 27AACCL7146F2ZH

Account Number: 095605000359

IFSC/NEFT/RTGS: ICIC0000956

MICR Code: 400229093

Swift Code: ICICINBBNRI

Remarks –

- 1) Payments to be done through NEFT or RTGS.
- 2) According to Income Tax norms, if payment is done upto ₹30,000/- no TDS shall be deducted under section 194J.

How to Register?

- 1) Fill out the enclosed admission form
- 2) All corporate entries must furnish their organisation details at www.lwtcpl.com/organisation-details

About SOPEP

The “Society of Power and Energy Professionals” (SOPEP) is a registered Non-profit Organization professional body constituted in August, 2015 and registered with ‘The Charity Commissioner office, Thane’, Maharashtra.

The Society aims to play an important role in bridging the existing knowledge gap prevailing in industries in the Energy related fields. Its objectives are to work –

- (A) as a **professional body** of –
 - Practising power engineers
 - Power professionals in the field of generation, transmission & distribution
 - Energy managers and energy auditors
 - Process plant professionals
 - Significant energy users
 - Academicians
- (B) To support and encourage the members for taking up Training and Consultancy jobs
- (C) To impart, promote and spread education in the relevant areas
- (D) To encourage conservation of the natural resources of the environment by organizing and conducting lectures, talks, projects in schools, colleges and other educational institutions

SOPEP also intends to play an important role by assisting in ushering in ‘Renewable Energy Systems’ in the Indian Industrial scenario. SOPEP is focussed more on ‘Energy Saving Methodologies’ in Power Plants, Process Industries and the likes, where we come across ample opportunities for optimization. This, ultimately, results in saving of Time & Money. Efficiency improvement becomes a by-product, automatically.

The long-term plans of SOPEP include certification of Energy Professionals in a big way so as to bridge the existing gap in professional expertise.

SOPEP is committed to provide an open platform for professionals in achieving personnel satisfaction by imparting their expertise to the present generation of Power & Energy Professionals.



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