

## **CERTIFICATION COURSE FOR ENERGY MANAGERS:** Implementing an Energy Management System in Your Company



**LEARN ENERGY MANAGEMENT SYSTEM BEST PRACTICES FROM  
UNIDO-DOE NATIONAL EXPERTS AND AEE CERTIFIED PROFESSIONAL**



### **INTRODUCTION**

Following the EEC law and its implementing rules and regulation (IRR), the designated establishments (above 500,000 kWh consumption per year) must nominate their Energy Manager and/or Conservation Officer. The IRR had detailed the qualification requirements (experience, license, education, etc.), roles/responsibilities, and the need to undergo regular/capacity-building training on energy management (final training regulations and standards are still being developed by DOE/TESDA/CHED).

Equally important, the energy manager must regularly submit to DOE an annual report beginning this April. There are already proposed templates developed/released by DOE; However, this report must be done carefully, properly, and judiciously as there are significant repercussions if done erroneously or incompletely. Anything you submit to the regulators may later be used against you or worst will serve as a baseline for the company's performance which will be hard to revert and correct later. Hence, we need to be careful in the reporting and must truly reflect the current conditions of the company.

The IRR also requires the energy manager/conservation officer must integrate/adopt an energy management system following ISO50001 in their company (or equivalent). DOE knows very well that for the program to be sustainable, there must be a system or process! This is MPA's competitive edge given our partnership with PIEMPI and access to the UNIDO national experts who had undergone a very comprehensive energy management program (both technical and management) following ISO50001 framework.

## MERALCO POWER ACADEMY'S STRATEGIC APPROACH TO ENERGY MANAGEMENT

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### The Energy Management System

**Certification Course for Energy Managers** - consisting of 4 modules, this lays the basic foundation of an Energy Management System in a company towards institutionalizing and maintaining a sustainable energy management program for the long term. We consider this as the foundation course for Energy Managers, Conservation Officers, Energy Practitioners, and Energy Auditors. This program takes into consideration the best global practices on Energy Management following the ISO 50001 framework, UNIDO EnMS practice guide, ISO 50002 on Energy Audit, the Association of Energy Engineers (AEE) body of knowledge/best practices and the Philippine's Department of Energy latest department circular on Training Regulation for Energy Management.


### Holistic and multi-disciplinary:

- Importance of having an energy management system (policy, process, system, and methods) covering the management/leadership, organization, process & practices, culture, performance, improvements, and key result areas.
  - Covers technical aspects of energy management (from energy sources, equipment specification, purchasing, production process, operation and maintenance, meter data collection/retrieval, technical/financial analysis, forecasting, and trending, etc.
  - Considers and integrates various disciplines impacting energy performance, system stability/reliability, and economics such as renewables/embedded generation, energy supply sources, load profile, production process, electrical/mechanical equipment design, and proper/plant equipment operation and maintenance.
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**MERALCO POWER ACADEMY**  
**A Trusted Partner in Energy Efficiency & Conservation**

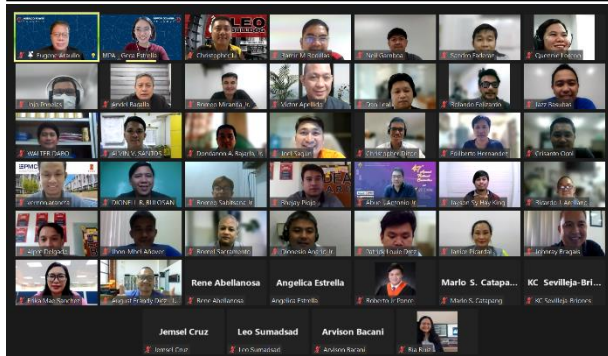


**350+**  
Professionals



**200+**  
Companies

Graduates of our Certification Course for Energy Managers and Auditors



Meralco Power Academy, in support of the DOE's EEC Program, has been at the forefront of Energy Efficiency & Conservation in the Philippine Power & Energy Industry by conducting Energy Efficiency & Conservation capacity building; our program had been attended by at least 350 professionals from more than 200 companies across industries in 2022.

This 2023, MPA, with the aim to create more value for its C&I clients, will continuously strengthen

Energy Efficiency & Conservation programs namely: (1) Certification Course for Energy Managers, (2) Certification Course for Energy Auditors, and (3) other Renewable Energy & Energy Efficiency programs following global certification standards (ANSI, IEC, ISO, AEE, EMA, etc.) This is to prepare the C&I market for a more mature implementation of energy management following best global practices.

Companies who trained under MPA's Energy Efficiency & Conservation Course:



Among others+

## PROGRAM OBJECTIVES

Certification Course for Energy Managers - consisting of 4 modules, lays the foundation of an Energy Management System in a company towards institutionalizing and maintaining a sustainable energy management program for the long term. We consider this as the foundation course for Energy Managers, Conservation Officers, Energy Practitioners, and Energy Auditors.

At the end of the session, the participants will be able to:

- Explain the EEC Law and its IRR, including its impact, opportunities, and how to best support regulatory requirements and create value and savings for the company
- Apply the ISO50001:2018 energy management framework, the global gold standard on energy management system
- Establish a business case for action and support an integrated implementation of an energy management system in the company
- Support a systematic energy audit, assessment, and long-term improvement
- Conduct overall energy performance monitoring, sustainable efficiency improvement, cost savings, and regulatory report compliance

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## RECOMMENDED SKILLS/KNOWLEDGE TO HAVE BEFORE THE TRAINING

- Basic MS Excel
- Basic knowledge on RA11285: Energy Efficiency & Conservation
- Preferably on managerial/supervisory level, or technical consultant, senior engineering officer, maintenance officer or in-house energy specialist, or equivalent position.

## ENROLLMENT PRE-REQUISITES

- With a college degree in engineering, architecture, and related sciences
- Minimum of 3 years of related experience in engineering/ design/ operation/ maintenance/ project management/ facilities management and or similar activities related to energy and power resources

## PROGRAM COVERAGE

*Compliant with the requirements of the Philippine Department of Energy*

### Common Knowledge & Competencies Required:

1. Energy Management System Basic Awareness (ISO50001 Framework)
2. Energy Audit Basic Awareness (ISO50002 Framework and ASHRAE Standard)
3. Industry Rules and Regulation Awareness (EPIRA, RE ACT, EEC Act, RPS, GEOP, DOE/ERC rule, etc.)
4. O&M of Audit Tools and Equipment (use, specification, standard, maintenance, and safekeeping)

### Core Knowledge & Competencies Required:

1. Energy Management System Development and Implementation (EnMS framework, Planning and Organizing, Energy Review Process, Program Implementation, Operation, Monitoring, and Continuous Improvement)
2. Basic Energy Audit (Plan and Organize Energy Audit, Implementation, Programs, and Action Plans to Improve Energy Efficiency)
3. Technical Competency - Electrical System
4. Technical Competency - Mechanical System
5. Technical Competency - Lighting System

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## PROGRAM OUTLINE

7 days of Blended Learning (Online & Onsite)  
from July 31 – August 4, 7-8, 2023

### Module 1: Energy Management Awareness Workshop

*This will cover the common competencies under items 1 and 3 thru lectures, class discussions, samples, and assignments.*

- The local power industry, the energy issues, and its impact on social, economic, and environment
- The EEC Law and its salient provisions, the role of an Energy Manager, Conservation Officer, and Energy Auditor, and the reportorial requirements
- Interplays of energy conservation, energy efficiency, and renewable energy; what are the consumption and cost drivers of energy use and efficiency in the realms of Energy Management
- Energy Management system (EnMS) following the ISO 50001:2018 standards and framework overview
- The Energy Ecosystem - from source, conversion, transport, transformation to utilization (the starting point and management scoping)
- Energy cost drivers and Power Economics (electricity, fuel, water, gas, etc.)
- Greenhouse gas emission and environmental impact
- Key success factors and success stories

## **Module 2: Implementing an Energy Management System in Your Company**

*This will be a deep dive into core competency item 1 coupled with technical competencies on electrical, mechanical, and lighting (items 3, 4, and 5) thru lectures, class discussions, samples, and assignments.*

- Energy Management system (EnMS) following the ISO 50001:2018 standards and framework
  - High-level structure of EnMS and the PDCA Cycle
  - Context of the Organization
  - Importance of Leadership
  - Planning, Support, Operation, Performance Evaluation, and Improvement
- Review of Key Concepts
- Organization, Roles, Policies, and Responsibilities
- Implementation Planning, Data Gathering, Energy Reviews, Baselineing, Performance Indicator, Trending, Analysis, Technical Audit, and Opportunity lists
- Eight (8) steps Energy Review process and insights generation
- Basic Technical Analysis
  - Building Envelop (insulation, air leaks, weatherproofing, thermal efficiency, etc.)
  - Electrical Systems (Lighting use/design philosophy, lighting technologies, motors, and drive systems, use of HEMs/VFD, observed practices, electric distribution systems efficiency, Distributed energy resource, maintenance program, savings, and loss calculation, etc.)
  - Mechanical Systems (HVAC systems, observed practices, air handling, cooling/heating requirements, efficiency measures, pumps/steams, heat recovery, hot water, available technology, and applications, etc.)
- Actions to address Risks or Opportunities and Establish Energy Efficiency Measures (EEM)
- Objectives, targets, performance indicators, baselines
- Energy reviews and reporting
- Implementation of Support requirements
- Resources, competence, awareness, communication, documentation, and control of document
- Operational planning, energy-efficient design, procurement consideration, measurement, and verification
- Performance evaluation and internal audit
- Improvements and next steps

## **Module 3: Energy Audit and Post-Energy Management System Implementation**

*This will cover the common competency under items 2 and 4 and a deep dive into energy audit under core competency item 2 thru lectures, class discussions, samples, and assignments.*

- Energy Management System Audit (definition, process, methods, and reference guides/standards) following ISO50002 guidance and practices
- Energy audit team, roles, responsibilities, and skills/competencies
- Audit planning and types of audit
- Communication plan
- Data Collection
- Measurement Plan and measurement verification
- Conducting the site visit
- Analysis and insight generation
- Energy audit reporting

- Templates, forms, checklist requirements, and other technical audit standard reference
- Energy Audit Tools, Equipment, PPE, and data preparation
  - Importance of data, measurement, and verification
  - Common energy audit tools/equipment, specification, proper use, maintenance, and safe keep (PQ meter, thermal scanner, flue gas tester, air quality tester, ultrasonic/ultrasound testing, air velocity tester, rpm tester, lux meter, etc.)
  - Basic PPE needed during the audit (hard hat, safety shoes, working gloves, etc.)

#### **Module 4: Process Integration and Next Steps**

*This will summarize and integrate all learnings, and lessons learned covering all competency areas and will also include supplemental topics to enhance participants' knowledge.*

- Energy Management System recap and the strategic approaches to implementation
- Renewable Energy option - requirements, benefits, impact, risks, and technical/financial considerations
- Building/facilities design and retrofit taking into consideration the new green building code, occupational safety, and health requirements
- Operation and maintenance programs - strategies, programs, and best practices towards greater savings, higher production efficiency, and productivity in the plant
- RE/EE Program and project development process and considerations
- Planning for a sustainable EnMS program and team development towards success
- Other complementary technical disciplines for Energy Management

## LEARNING INVESTMENT

Enroll and be an MPA-certified Energy Management professional!

**19,900**

Standard Rate

**17,910**

Special rate  
for group of 3+

To enroll, please click this [link](#).

If you want an **in-house batch** for your group, you may email [learn@meralcopoweracademy.org](mailto:learn@meralcopoweracademy.org).

After sending your enrollment request, please expect a reply from us within 24 hours containing the payment process and other reminders.

You may also contact us at +639608674624 if you need further assistance.

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