



# FMM INSTITUTE (Centre for Professional Development)

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## FMM Certificate in Energy Management

52 CDP Points Awarded by ST

Individual Module Available

SBL SCHEME



**Energy Manager** is a professionally qualified person with expertise in energy management, project management, financing and implementation of energy efficiency projects, as well as policy analysis to enable firms to make more profit. Energy management starts or fails with energy managers. In line with the Efficient Management of Electrical Energy Regulation 2008 which came into effect on December 15, 2008, this programme represents a unique effort of FMM Institute to produce a pool of qualified energy manager for the industry towards the noble vision of utilising energy efficiently.

### COURSE OBJECTIVES

- Be made aware of the importance of energy conservation and energy efficiency issues
- Be able to use the knowledge and skills gained to execute energy efficiency practices in their working place, which may include HVAC systems, electrical systems, steam generators, furnaces and internal combustion engines
- Be able to conduct energy audit and implement energy saving programmes
- Gain knowledge on new technologies and advances in the efficient utilisation of energy
- Prepare participants to be registered Certified Energy Manager

### ENTRY REQUIREMENTS

Candidate who wishes to sit for the assessment conducted by the (Suruhanjaya Tenaga) Energy Commission must meet the following requirement:

- holds a certificate of registration as a Professional Engineer under the Registration of Engineers Act 1967 [Act 138] and possesses at least six months of working experience in the efficient management of electrical energy at an installation; or
- holds a degree in Science, Engineering, Architecture or its equivalent and possesses at least one year working experience in the efficient management of electrical energy at an installation; or
- holds a Certificate of Competency issued by the Commission as an Electrical Services Engineer or a Competent Electrical Engineer and possesses at least nine months of working experience in the efficient management of electrical energy at an installation.

### COURSE STRUCTURE

Contact Days / Hours : 15 days / 99 hours  
 Lecture Days : Saturday & Sunday  
 Number of modules : Seven (7) + Project

#### Evaluation

The evaluation will consist of a 2-hour written examination after the completion of the lecture sessions.

A compulsory project paper will have to be completed within two months after the completion of the course.

### WHO SHOULD ATTEND

This programme is specially designed for: Factory / Facility / Maintenance / Service Managers and Engineers, Senior Managerial Production and Technical personnel who are involved in managing, and operating energy-related matters in their organisations.

### ADMINISTRATIVE DETAILS

Date: **March 2 - July 20, 2019**  
 Time: 9.00 am – 5.00 pm  
 Venue: **FMM Institute**, Wisma FMM  
 No.3, Persiaran Dagang, PJU 9  
 Bandar Sri Damansara  
 52200 Kuala Lumpur

Fees: Member **RM3,900 per pax**  
 Non-Members **RM4,500 per pax**  
*(Fees do not include meals)*

*All cancellations must be made in writing. There will be no charge for cancellation received 14 or more working days before the start of the programme. Cancellation received 7-13 working days before the start of the programme is subjected to a cancellation fee of 50% of the course fees. Cancellation received 65 working days and below before the start of the programme is subjected to cancellation fee of 100% of the course fees. If the participants fails to attend the programme, the full course fees are payable. However, replacement can be accepted at no additional cost. The FMM Institute reserves the right to cancel or re-schedule the above programme and all efforts will be taken to inform participants of the changes. Training grant from PSMB can be applied through the SBL scheme PRIOR to the commencement of the programme.*



## FMM Certificate in Energy Management

### COURSE CONTENTS

#### Module 1 : Introduction to Energy Efficiency

- Law and Regulations in Efficient Management of Electrical Energy
- Introduction to Energy Management
- Introduction to Energy Auditing
- Save Energy Programme
- Basic Energy
- Energy Sector in Malaysia
- Energy Efficiency
- Energy Management
- Energy Conservation
- Registration of Electrical Energy Manager
- Application for Electrical Energy Manager

#### Module 2 : Energy Efficiency in HVAC Systems

- Introduction
- Air Conditioning System
- Air Conditioning Energy Saving Opportunities
- Refrigeration System
- Refrigeration System Energy Saving Opportunities
- Fans and Blowers
- Fans and Blowers Energy Saving Opportunities
- Cooling Tower
- Cooling Tower Energy Saving Opportunities

#### Module 3 : Energy Efficiency in Electrical Systems

- Introduction
- Lighting System
- Lighting System Energy Saving Opportunities
- Motors
- Motors Energy Saving Opportunities
- Transformers
- Transformers Energy Saving Opportunities
- Power Cables
- Power Cables Energy Saving Opportunities
- A Systems Approach to Calculating Energy Efficiency

#### Module 4 : Energy Efficiency in Mechanical Systems

- Introduction
- Pumps
- Energy Efficient Pumps Energy Saving Opportunities
- Steam Boilers
- Boilers Maximum Efficiency and Energy Saving Opportunities
- Waste Heat Recovery
- Waste Heat Recovery Energy Saving Opportunities
- Cogeneration

- Evaluating Cogeneration Opportunities
- Air Compressors
- Air Compressors Energy Saving Opportunities

#### Module 5 : Energy Audit

- Introduction
- Types of Energy Audit
- Methods of Energy Audit
- Criteria of an Effective Energy Audit
- Energy Audit Instruments
- Roles and Duties of Energy Auditors/Energy Saving Opportunities
- Energy Audit Reporting

#### Module 6 : Energy Analysis

- Introduction
- Financial Analysis for Energy Efficiency Projects
- Financial Sources / Options
- Time Value of Money Concepts
- Economic Analysis

#### Module 7 : Advances and New Technologies in Energy Efficiency

- Introduction to Renewable Energy
- Biomass Energy
- Wind Energy
- Solar Energy
- Water Energy
- Geothermal Energy
- Fuel Cells
- Case Study – Regenerative Energy

#### Project Briefing and Project Presentation

- Introduction
- Requirements for Project
- Project presentation from each participant

### CERTIFICATION

Participants are required to meet the 80% attendance requirement to qualify to sit for FMM Institute's internal examination. Participants who have attended at least 80% of the programme will be awarded a Certificate of Attendance and those who pass the internal assessment of this programme will be awarded the FMM Certificate in Energy Management.



**REGISTRATION FORM**

**FMM CERTIFICATE IN ENERGY MANAGEMENT**

Saturday & Sunday, Date: \_\_\_\_\_, Venue : FMM Institute, Kuala Lumpur

(To be completed in BLOCK LETTERS)

**A. PERSONAL PARTICULARS**

Full Name (Mr/Ms) : \_\_\_\_\_ NRIC No. \_\_\_\_\_  
 Designation : \_\_\_\_\_ Name of Company : \_\_\_\_\_  
 Permanent Address : \_\_\_\_\_  
 Correspondence Address : \_\_\_\_\_  
 (if different from permanent address)  
 Tel No. (H) : \_\_\_\_\_ (O) : \_\_\_\_\_ Fax No. : \_\_\_\_\_  
 E-mail Address : \_\_\_\_\_ H/P No: \_\_\_\_\_  
 Date of Birth : \_\_\_\_\_ Sex : \_\_\_\_\_ Age : \_\_\_\_\_ Nationality : \_\_\_\_\_ Race : \_\_\_\_\_

**B. EDUCATIONAL BACKGROUND**

Name of School / Institution	Years Attended From To	Highest Qualification Obtained
Secondary : _____	_____	_____
College / University : _____	_____	_____
Any Special Professional Course : _____	_____	_____

**C. SPONSORSHIP**

Company Sponsored       Self Sponsored      Please Tick (√)

**D. SUBMITTED BY** (To be filled if sponsored by company)

SBL       Non Contributor      Please Tick (√)

Name : \_\_\_\_\_ Designation : \_\_\_\_\_  
 Company Name: \_\_\_\_\_  
 Company Address : \_\_\_\_\_  
 Tel No. : \_\_\_\_\_ Fax No. : \_\_\_\_\_ E-mail Address : \_\_\_\_\_  
 FMM Membership No: \_\_\_\_\_ My Corporate Identity No : \_\_\_\_\_ GST Registration No: \_\_\_\_\_

**E. DECLARATION**

**I hereby declare that the information provided is correct and complete.**

Signature of Participant: \_\_\_\_\_ Date: \_\_\_\_\_

**Payment Advice:**  
 Enclosed cheque/bank draft No. \_\_\_\_\_ for RM \_\_\_\_\_ being payment for \_\_\_\_\_ participant(s) made in favour of "FMM Institute".