Optimise

Optimal Systems Engineering Sdn Bhd

ENGINEERING SUSTAINABILITY

MyHS00015/22-E002

Registered Energy Manager (REM) - Type 1

2024/2025

19 - 23 May 2025
22 - 26 September 2025
01 - 05 December 2025

Time: 8:30 am - 5:00 pm
Physical (Putrajaya or Kuala Lumpur area)

*Date subject to changes. For latest date, refer to website.

RM8,000 per pax (Normal Rate)
RM7900 per pax (Register 30 days before workshop, or Group of 3)

**Price excluding 8% SST charges*

Register Now!

https://shorturl.at/klvXb

+6016-7167248

inquiry@optimalsystems.my

www.optimalsystems.my

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Workshop **Overview**

The Registered Energy Manager (REM) - Type 1 workshop is a focused 5-day training program designed to equip participants with the essential skills and knowledge required to achieve REM certification under **Malaysia's Energy Efficiency and Conservation Act (EECA)**. This certification targets professionals managing facilities with energy consumption between **21,600 GJ/year and 50,000 GJ/year**, ensuring they meet regulatory requirements and promote sustainable energy practices.

The course covers a comprehensive range of topics, providing both theoretical and practical training on energy management principles, energy efficiency strategies, and regulatory compliance. Participants will also undergo a certification examination on the final day to validate their readiness for REM Type 1 certification.

Workshop **Objective**

- Equip participants with the knowledge and skills needed to manage energy resources effectively in medium energy-consuming facilities.
- Prepare participants for the REM Type 1 certification under Malaysia's Energy Efficiency and Conservation Act (EECA).
- Enhance understanding of the governance and regulatory framework of the energy sector in Malaysia.
- Build competence in conducting energy audits and implementing energy-saving measures (ESMs).
- Develop the ability to analyze and manage the financial aspects of energy projects.
- Enable participants to prepare and present individual energy management projects.
- Promote compliance with Malaysian energy regulations and policies.

Who **Should Attend?**

This workshop is ideal for:

- Facility managers and engineers responsible for energy management in medium-sized facilities with annual energy consumption between 21,600 GJ/year and 50,000 GJ/year.
- Professionals seeking REM certification to fulfill regulatory requirements under Malaysia's EECA.
- Energy auditors and consultants aiming to deepen their expertise in energy management practices.
- Other stakeholders involved in energy management, policy development, and implementation within commercial buildings, industrial facilities, and educational institutions.

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Certification **Level Overview**

The REM Type 1 certification is designed for individuals managing facilities with medium energy consumption. This certification validates a professional's ability to oversee energy efficiency projects, implement energy-saving measures, and ensure compliance with EECA regulations. Certification is awarded upon successful completion of the workshop and passing the REM Type 1 examination, covering the core areas of energy management, energy audit processes, financial analysis, and regulatory compliance.

Course **Outline**

- Overview of Energy Scenario and The Governance of Energy Sector in Malaysia Legislation In Malaysia
- Fundamentals As Energy Manager (Safety)
- Fundamentals As Energy Manager (Technical)
- Fundamentals As Energy Manager (Financial)
- Energy Management System (EnMS)
- Energy Audit (as per ST Guideline)
- Common Energy Saving Measure
  - ESM for Lighting System
  - ESM for Compressed Air System
  - ESM for Air Conditioning System
  - ESM for Motors, Pumps and Fans
- Assessment
- Theoretical Test
- Individual Project Presentation

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Trainers' **Profile**

TRAINER 1

PROF IR TS DR ZAINUDDIN ABDUL MANAN

Zainuddin Abdul Manan is a professor of chemical and energy engineering, the founding director of UTM Process Systems Engineering Centre (PROSPECT), founding Dean of UTM Faculty of Chemical and Energy Engineering, founder of UTM Sustainable Energy Management Program and the CEO and founder of the UTM spin-off company OPTIMISE Sdn Bhd. He began his career as an engineer in PETRONAS and Hume Industries and has been an academic leader, educator, researcher, consultant and professional coach for over 25 years. He completed over 100 R&D & consultancy projects serving local and multinational companies, has numerous patents and over 450 publications that include 20 books/ chapters, 230 refereed journals and 250 conference proceedings on energy and resource conservation using process integration techniques. He is a co-author of the globally referred Book on Process Integration and Intensification – Saving Energy, Water and Resources. Zain is a UK/EU chartered engineer, a Fellow IChemE (UK), Fellow of Academy of Sciences Malaysia, a professional engineer, a professional technologist, a certified energy manager, a registered electrical energy manager and a certified trainer for ASEAN energy managers. He has coached professionals from over 500 organisations and delivered over 400 invited talks in professional courses, conferences and seminars worldwide. Zain is the chair of Academy of Sciences (ASM) Energy Committee, the Chair of ASM Net Zero Task Force and the Chair of the Energy Efficiency and Conservation Act (Thermal Energy) Drafting Committee under the Ministry of Energy and Natural Resources. He founded and spearheaded the UTM Sustainable Energy Management initiative that led UTM to save over USD 7 million energy costs between 2011 and 2020, and to win the National and ASEAN Energy Awards.

TRAINER 2

PROF IR TS DR SHARIFAH RAFIDAH WAN ALWI

Prof Ir Ts Dr Sharifah Rafidah Wan Alwi is a Professor in the Faculty of Chemical and Energy Engineering, Universiti Teknologi Malaysia. She previously helmed as the Director of Process Systems Engineering Centre for ten years (2011 to 2021). She is an expert resource minimisation consultant for multiple industries and is among the leading researchers in resource integration technique development. Prof Sharifah is also the co- founder and Director of Optimal Systems Engineering Sdn Bhd, a UTM Spin-off company. She has been extensively involved in 80 research projects, 17 industrial based projects for various companies and government agencies and has trained engineers from more than 300 companies in the field of sustainable engineering design and management. Together with her team, they have developed 7 resource minimisation software. Sharifah has won various international and national awards such as Green Talents 2009 (Germany), IChemE Highly Commended Sir Frederick Warner Prize 2011 (UK), ASEAN Young Scientist and Technologist Award 2014, National Young Scientist Award 2015, ASEAN-US Science Prize for Women 2016 in Energy Sustainability, Malaysia Research Star Award 2016, 2018, 2019, Top Research Scientists Malaysia 2018 and Sarawak State - International Women Award 2021. She was listed as 'Asian Scientist 100' in 2017 and 'Asia's Rising Scientists' in 2020, and '8 Women Scientists from Asia You Should Know' in 2021 by AsianScientist.com. Sharifah is also the Associate Editor for Journal of Cleaner Production and UTM Sustainable Energy Management System advisor. She has also served as the Chair for the Science Leadership Working Group under Young Scientist Network, Academy of Sciences Malaysia (YSN-ASM) and Chair for Malaysia IChemE Young Engineer Group (YEG). Sharifah is also a professional engineer, a professional technologist, a UK/EU chartered engineer, a certified energy manager, a registered electrical energy manager and a certified trainer for ASEAN energy managers.

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Trainers' **Profile**

TRAINER 3

ASSOCIATE PROF IR DR LIM JENG SHIUN

Associate Professor Ir Dr Lim Jeng Shiun is the Director of Products and Service, Optimal Systems Engineering Sdn Bhd, a UTM spin-off company specialising in providing solutions related to energy conservation and GHG emissions reduction. He is also the Deputy Director of Process Systems Engineering Centre (PROSPECT), Universiti Teknologi Malaysia. His core expertise is in the area of innovative development and application of process systems engineering techniques for resource conservation, and energy and carbon planning. He is also a professionally Certified Energy Manager, Certified Energy Auditor, Accredited Energy Measurement & Verification Professional and a Registered Electrical Energy Manager certified by the Energy Commission of Malaysia.

He is the trainer of the Energy Management Trainer Course conducted by MGTC to certify the Energy Manager. He is also the instructor for MSc Energy Management in UTM, sharing knowledge related to energy efficiency and energy management. As an engineer in practice, he has applied the output of his research work to consultancy projects for the industrial community. He has been extensively involved in more than 35 industrial-based projects for various companies and government agencies. The key clients include local industries and multinational companies such as BERNAS, FABER MEDISERVE, SHELL, OLEON in Malaysia and PERTAMINA in Indonesia.

He has assisted those companies to identify energy-saving opportunities worth millions of dollars and GHG reduction opportunities through the use of process integration and process systems engineering approaches in the energy audit and GHG emissions accounting projects. He has shared his project experience in his co-authored book titled Pinch Analysis for Energy and Carbon Footprint Reduction, published by the Institution of Chemical Engineers (IChemE). He has been invited to share his experience on Net Zero carbon for industry and facilities, including on Net Zero Carbon for Palm Oil Industry organised by IChemE.

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Workshop **Schedule**

Day 1:

Time	Module
8.30 - 9.00	Registration
9.00 - 10.00	Overview of Energy Scenario and The Governance of Energy Sector in Malaysia
10.00 - 10.45	Legislation In Malaysia (Part 1)
10.45 - 11.00	Break
11.00 - 13.00	Legislation In Malaysia (Part 2)
13.00 - 14.00	Lunch Break
14.00 - 15.30	Legislation In Malaysia (Part 3)
15.30 - 15.45	Break
15.45 - 17.00	Legislation In Malaysia (Part 4)

Day 2:

Time	Module
9.00 - 10.45	Break
10.45-11.00	Overview of Energy Scenario and The Governance of Energy Sector in Malaysia
11.00-13.00	Fundamentals As Energy Manager (Technical)
13.00-14.00	Lunch Break
14.00-16.00	Fundamentals As Energy Manager (Financial)
16.00 - 16.15	Break
16.15 - 17.00	Energy Management System (EnMS) • Part 1

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Workshop **Schedule**

Day 3:

Time	Module
9.00 - 10.45	Energy Management System (EnMS) • Part 2
10.45-11.00	Break
11.00-13.00	Energy Management System (EnMS) • Part 3
13.00-14.00	Lunch Break
14.00-15.15	Energy Management System (EnMS) • Part 4
15.15-15.30	Break
16.15 - 17.00	Energy Audit (as per ST Guideline)

Day 4:

Time	Module
9.00 - 10.00	Common Energy Saving Measure I • ESM for Lighting System
10.00-10.15	Break
10.15-11.30	Common Energy Saving Measure II • ESM for Compressed Air System
11.30-13.00	Common Energy Saving Measure III • ESM for Air Conditioning System (Part 1)
13.00 - 14.00	Lunch Break
14.00 - 15.15	Common Energy Saving Measure III • ESM for Air Conditioning System (Part 2)
15.15 - 15.30	Break
15.30 - 17.0	Common Energy Saving Measure IV • ESM for Motors, Pumps and Fans

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Workshop **Schedule**

Day 5:

Time	Module
9.00 - 12.00	Theoretical Assessment
12.00 - 14.30	Lunch Break
14.30 - 17.00	Individual Project Presentation