In-House Workshop on

Strengthening Organisational Resilience for EECA Compliance

EECA: Energy Efficiency and Conservation Act 2024

Optimise
Optimal Systems Engineering Sdn Bhd
Engineering Sustainability

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Workshop Overview

This workshop equips organizations and their employees with the knowledge and tools to drive energy sustainability, ensure regulatory compliance, and improve cost-efficiency. It integrates key elements of sustainable energy management, energy policies and regulations, and organizational resilience, providing a unique, yet structured approach to achieving operational excellence.

Among the workshop **key highlights** include

- Imperatives for energy efficiency and conservation, and how it supports the nation's climate goals, the energy act and net zero initiatives.
- Preparing businesses for the Energy Efficiency and Conservation Act (EECA) 2024, providing clear understanding of the EECA components, business implications, and compliance requirements.
- Establishment of Energy Management Systems (EnMS) for EECA compliance covering energy policy, energy team, action plan, Energy Performance Indicators (EnPIs) and energy baseline to track and improve energy efficiency.
- The 6P Energy Sustainability Transformation (Energy-STAR) Program, a strategic framework that fosters resilient, innovative, and competitive energy management.
- Measures for employees and organizations to implement practical energy efficiency and conservation measures to reduce costs, lower greenhouse gas emissions, and enhance sustainability.

On top of its **comprehensive coverage of the EECA**, and being **energy management practice-driven**, the course provides **5 extra value additions:**

- Expert-led training with customisable contents, and practical applications.
- Exclusive insights from key experts involved in the drafting of EEC Acts, Regulations, Guidelines and Guides.
- First-hand insights from experts who led UTM to be an award-winning institution in Sustainable Energy Management.
- Interactive discussions and engagement with digital tools.
- Certificate of completion to enhance professional credentials, and access to digital copy of slide materials.

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Workshop Learning Outcomes

By the end of this workshop, participants are expected to:

- Understand energy sustainability and management systems:
  - Learn the key steps for transforming an organization through the 6P Energy Sustainability Transformation (Energy-STAR) Program.
  - Gain knowledge of Energy Management Systems (EnMS), including its types, benefits, and key elements.
  - Establish suitable energy performance indicators and energy baselines for energy performance measurements
- Gain awareness to practice energy efficiency and conservation measures:
  - Appreciate the key drivers and impacts of energy use on the organization, society, climate and the environment.
  - Apply systematic, practical steps to implement energy efficiency and conservation (EE&C) measures and manage GHG emissions for an organisation.
  - Understand the cost-benefits of implementing EE&C measures via simple cost savings analysis.
- Manage and ensure compliance with EECA 2024:
  - Grasp the key components of the Energy Efficiency and Conservation Act (EECA) 2024.
  - Understand regulatory requirements and identify necessary preparations for compliance.
  - Identify the necessary preparations to meet compliance standards

Target Participants

This workshop suits companies and professionals affected by the EECA, including energy managers, compliance officers, facility and operations managers and senior management responsible for regulatory compliance.

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Workshop Schedule

Day 1:

Time	Schedule
8.30 to 9.00	Registration
9.00 to 10.30	Energy use and impact on the GHG emissions, climate, environment and organisations
10.30 to 10.45	Break
10.45 to 12.00	Building Organisational Resilience via a Sustainable Energy Management System
12.00 to 13.00	Understanding the EEC Act and Regulations (Part 1)
13.00 to 14.00	Lunch Break
14.00 to 15.30	Understanding the EEC Act and Regulations (Part 2)
15.30 to 15.45	Break
15.45 to 17.00	Overview of Guidelines Applicable for Energy Consumers

EEC: Energy Efficiency and Conservation

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Workshop Schedule

Day 2:

Time	Schedule
9.00 to 10.30	Energy Management Systems under the EECA • Introduction to Energy Management Systems • Type of Energy Management Systems • Overview of Energy Management System (EnMS) concept and its key elements
10.40 to 10.45	Break
10.45 to 12.30	Establishment of suitable energy performance indicators and energy baselines for energy performance measurements
12.30 to 13.00	Practical EEC measures for employees and organisation (Part 1)
13.00 to 14.00	Lunch Break
14.00 to 15.30	Practical EEC measures for employees and organisation (Part 2)
15.30 to 15.45	Break
15.45 to 17.00	Cost-benefit analysis of implementing EEC measures

EEC: Energy Efficiency and Conservation

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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 Type 1 Type 2 REM (Registered 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 chaired the Academy of Sciences (ASM) Energy Committee, the ASM Net Zero Task Force and the Energy Efficiency and Conservation Act (Thermal Energy) Drafting Committee under the Malaysian Ministry of Energy. He founded and spearheaded the UTM Sustainable Energy Management initiative that led UTM to save over USD 7 million energy costs (2011-2022), to win the National & ASEAN Energy Awards, and to be ranked 1st globally by Time Higher Education on SDG7.

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 energy manager (Type 1 and 2) 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 Type 1 Type 2 REM (Registered 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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OPTIMISE Energy Audit, GHG Accounting and EnMS Track Records

- Led UTM to be globally ranked 1st on SDG 7 - Affordable and Clean Energy
- Co-developer of ASEAN EMGS Energy Management System Standards with MGTC.
- Led UTM to win the ASEAN Energy Award and EMGS 3 Star EMGS Gold Standard.
- Involved in certification of energy managers and energy end users for 15 years.
- Developer of award-winning energy audit and energy monitoring software.
- Led UTM to achieve over RM 30 million energy savings between 2011-2023.
- Over 20 years experience in energy audit and optimisation consultancy, R&D and professional training for over 500 national/multinational companies.
- Certified trainer, auditors & centre for training & certification of energy managers.

Selected References

- Shell, Middle Distillate Synthesis
- BP – Amoco
- MLNG
- Felda Proctor and Gamble
- MIMOS Semiconductor
- Riau Pulp and Paper Mill
- Qatar LNG
- Pertamina Engineering Group
- PT Titan Petrokimia Interindo
- Pan Century, IOI Oleochemicals
- BASF – Petronas
- MTBE – Petronas
- Huntsman Tioxide
- Ansell Malaysia
- Hershey Malaysia
- Malaysia Newsprint Industries
- Malaysia Palm Oil Board
- Malaysia Energy Commission
- Technip (M) Sdn Bhd
- PT Chandra Asri
- Petronas Penapisan (M) Sdn Bhd
- Petronas Gas Sdn Bhd
- Kaneka Malaysia
- UKM, UPM, USM, UM, UNIKL

20+
Years Experience in Energy Audit and Optimisation

#1
Global Rank in R&D on 'Heat Exchanger. Retrofitting and Design' Elsevier Scival 2014

500+
National & Multinational Companies Benefitted from our Energy Training Workshops

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