

**Workshop on**

# **Energy and Emission Management for All**

**Building A Sustainable Corporate Culture**



MyHS00015/22-E002

## Overview of the Awareness Course

This awareness workshop empowers organisations and their staff to embrace a sustainability culture. It highlights sustainable energy and carbon footprint (CFP) management as a key element of an Environmental, Social and Governance (ESG) program, and guides all staff of an organisation to implement practical daily energy efficiency and conservation (EE&C) and carbon footprint reduction measures. These efforts can enhance cost efficiency while strengthening organisational excellence and resilience.

## Workshop Outcomes

At the end of the course, it is expected that participants will be able to:

- Acknowledge energy use and emissions' impact on people, the planet, and profit.
- Evaluate energy consumption and carbon footprint at home and in the office.
- Implement daily energy efficiency and carbon footprint reduction strategies.
- Align sustainability efforts with corporate goals and cost-saving opportunities.

## Workshop Materials & Delivery Methods

- **Mode of Delivery: Online**
- **Presentation slides** on energy efficiency & carbon footprint.
- **Case studies** on corporate sustainability success stories.
- **Interactive quizzes & games** for engagement.
- **Brainstorming & group exercises** for actionable takeaways.

The workshop has been designed to ensure an engaging and informative session, balancing **theory, practical applications, and interactive activities** to inspire staff to contribute to the company's sustainability goals.

**Target Participants** All staff of an organisation.



## Course Schedule

Time	Topic	Course Tutor
9:00 – 9:15 AM	<b>Welcome &amp; Introduction</b> <ul style="list-style-type: none"> <li>Opening remarks by management - Workshop objectives/outcomes and agenda overview</li> </ul>	Company Representative
9:15-10:15 AM	<b>Imperatives for Energy and Emission Management</b> <ul style="list-style-type: none"> <li>Basics of energy consumption &amp; carbon footprint emissions</li> <li>Impacts of energy and carbon footprint on people, climate, environment and organisations.</li> </ul>	Prof Ir Ts Dr Zainuddin Manan; Prof Ir Ts Dr Sharifah Rafidah Wan Alwi
10:15 - 10:30 AM	Tea Break	
10:30-11:15 AM	<b>Corporate Sustainability &amp; ESG Goals</b> <ul style="list-style-type: none"> <li>Company's sustainability vision &amp; strategy - Role of staff in achieving corporate ESG targets - Case studies of successful initiatives</li> </ul>	Company Management
11:15-1:00 PM	<b>Carbon Footprint Reduction Strategies</b> <ul style="list-style-type: none"> <li>Understanding carbon emissions in business operations</li> <li>Reducing carbon footprint in daily activities</li> <li>The Energy and Emission Management Hierarchy</li> </ul>	Prof Ir Ts Dr Zainuddin Manan; Prof Ir Ts Dr Sharifah Rafidah Wan Alwi
1:00-2:00 PM	Lunch Break	
2:00-3:15 PM	<b>Energy Efficiency &amp; Conservation (EE&amp;C) at Work</b> <ul style="list-style-type: none"> <li>Are we energy &amp; environment friendly? Check Your Score!</li> <li>Identifying energy-wasting habits - Practical ways to reduce energy consumption – “Energy Waste Challenge”</li> <li>Practical EE&amp;C Measures for Employees with Cost Benefits.</li> </ul>	Associate Prof Ir Dr Lim Jeng Shiun
3:15-3:30 PM	Tea Break	
3:30-4:30 PM	<b>Interactive Group Exercise: Action Plan for the Workplace</b> <ul style="list-style-type: none"> <li>Brainstorming session on sustainability initiatives - Staff create action plans for their departments - Sharing &amp; discussion</li> </ul>	Prof Ir Ts Dr Sharifah Rafidah Wan Alwi; Associate Prof Ir Dr Lim Jeng Shiun
4:30-5:00 pm	<b>Interactive Group Exercise: Action Plan for the Workplace</b> <ul style="list-style-type: none"> <li>Brainstorming session on sustainability initiatives - Staff create action plans for their departments - Sharing &amp; discussion</li> </ul>	Trainers and Participants Closing by Management

## TRAINERS' PROFILES



TRAINER 1

### **PROF. IR. TS. DR. ZAINUDDIN ABDUL MANAN**

A professor of chemical and energy engineering, the founder of UTM Process Systems Engineering Centre, 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 started career as an engineer at PETRONAS and Hume Industries and has been an 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 500 publications that include books, refereed journals and conference proceedings on energy and resource conservation. He is a co-author of the globally referred book on Sustainable Process Integration–Saving Energy, Water and Resources. 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 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 the Energy Efficiency and Conservation Act (EECA–Thermal Energy) Drafting Committee under the Ministry of Energy. He founded and spearheaded the UTM Energy Management initiative that led UTM to save over USD 7 million energy costs (2011–2022), to win the ASEAN Energy Award, and to be ranked 1st globally on SDG-7 by the Times Higher Education.



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.

## TRAINERS' PROFILES



TRAINER 2

### **ASSOC. PROF. IR. DR. LIM JENG SHIUN**

Associate Professor Ir Dr Lim Jeng Shiun is the Director of Products and Service, OPTIMISE Sdn Bhd. He was also the ex-Deputy Director of Process Systems Engineering Centre (PROSPECT), UTM. 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 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 Managers. 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.



# UTM Achievements in Energy Management spearheaded by advisors and experts from OPTIMISE



## ASEAN Member Countries



Developer of MGTC ASEAN  
EMS Gold Standard

- Ranked 1st Globally on Affordable & Clean Energy
- 1st ASEAN-EMGS 3-Star Energy-Efficient Facility
- Winner of ASEAN/National Energy Award 2012, 2022
- RM30 Million Energy Saving 2011-2022
- 10 Registered Energy Managers
- 50 Certified Energy Managers (CEMs)
- A Centre for Energy Managers Certification
- Centre for Continuing Education in SEM
- Certified ASEAN/ISO50001 Trainers/Auditor
- R&D Leader in Thermal Energy Efficiency

# WHAT OUR TRAINEEES Said



the course provides a very good understanding on how, by selecting the right equipment, we tend to save the power consumption which eventually helps the environment and sustainability as well.

**MERA JANE**  
TRAINING SPECIALIST  
DYSON MALAYSIA

Now, Everyone Can Contribute Toward Energy  
Efficiency and Conservation participants



This course explains the concept of energy in an easy to understand way. It includes practical tips on energy saving which I can practice in daily life

**CHRIS CHEAR**  
IT MANAGER  
DYSON MALAYSIA

Now, Everyone Can Contribute Toward Energy  
Efficiency and Conservation participants



It is good that the presenters prepared the slides based on the audience's job background.

**MUHAMMAD IQBAL HASSAN**  
SENIOR MECHANICAL ENGINEER  
DYSON MALAYSIA

Now, Everyone Can Contribute Toward Energy  
Efficiency and Conservation participants

## 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 EnMS 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

**700+**

National & Multinational  
Companies Benefitted  
from our Energy Trainings  
and Consultancy Services