

NGTP Strategic Thrust 03

## HUMAN CAPITAL

Human capital forms a central component of the successful adoption of green technology. Just as the effective implementation of green technology entails a paradigm shift in operational frameworks and organisations' business models, it also requires new skill-sets and competencies of the people using these technologies. MGTC's efforts to advocate sustainable energy management extend to human capital development in order to address needs at both the leadership and working/operational levels.

### ENERGY MANAGEMENT PROGRAMMES

When organisations introduce green technologies, it is essential that they prepare their workforce for the new systems and equip them with the knowledge as well as skills to be able to realise the full potential of the innovations. One of the most basic fundamentals to be mastered is energy management. Over the past 10 years, MGTC has been running various programmes to upskill technical human capital in the different aspects of managing and reducing energy consumption.

#### Energy Auditor Training Course (EATC)

The Energy Auditor Training Course (EATC) provides structure to the practice of energy auditing and raises the professional standards of those engaged in energy auditing. This training programme covers the knowledge and skills required to inspect, survey and analyse energy flows for energy conservation in a building, process or system to reduce the energy input into the system without negatively affecting the output. The training also covers the use of energy audit tools and report writing skills. Led by experienced energy auditors and managers, trainees will be exposed to real-life examples of performing energy audits, and things to do and not do, with updated input from the industry.

#### Energy Water Management Training (EWMT)

This programme helps organisations to better manage their energy and water usage by establishing a Management Committee Utility (JPU). The JPU is entrusted to outline effective energy policies, and to develop programmes as well as procedures to reduce energy and water consumption.

The programme is designed to:



Introduce sustainable utility management principles to continuously reduce consumption



Introduce best practices to reduce energy and water waste in daily and operation and building maintenance

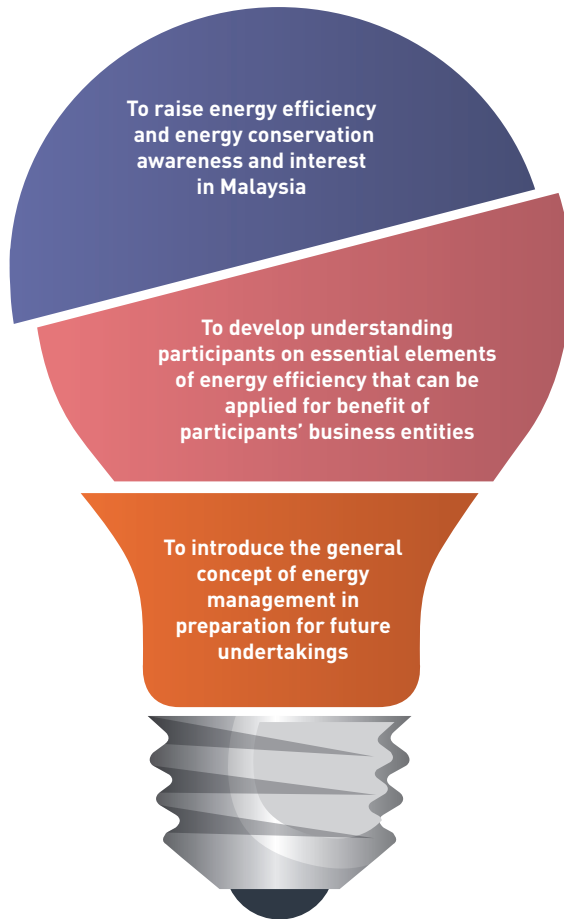


Provide participants with technical skills including knowledge of how electrical and mechanical systems functions, and how they should be maintained for optimal energy efficiency

## Have We Done Enough (HWDE)

This programme explores the essential elements of energy efficiency and conservation in a typical business entity. Participants are guided to understand and analyse energy consumption as well as to identify potential savings through the use of energy management systems. The programme assists the participants to prepare action plans on how to implement energy efficiency initiatives at the workplace.

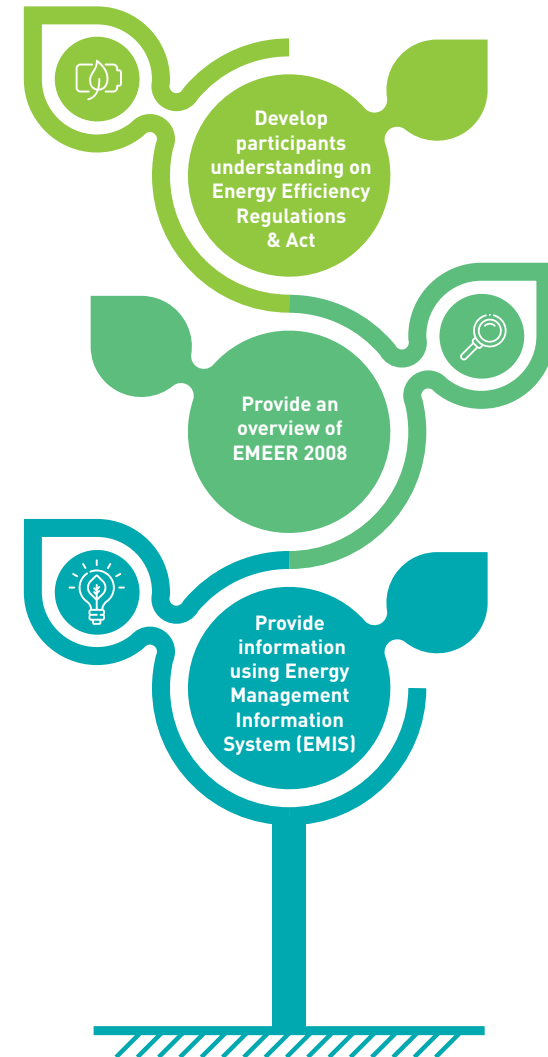
### Programme objectives:



## Registered Electrical Energy Manager (REEM)

A Registered Electrical Energy Manager (REEM) is an electrical energy manager who holds a valid certificate of registration from the Energy Commission (Suruhanjaya Tenaga). Half-day training is carried out on REEM guidelines under the Efficient Management of Electrical Energy Regulation (EMEER) 2008. The training assists energy managers to apply to become REEMs.

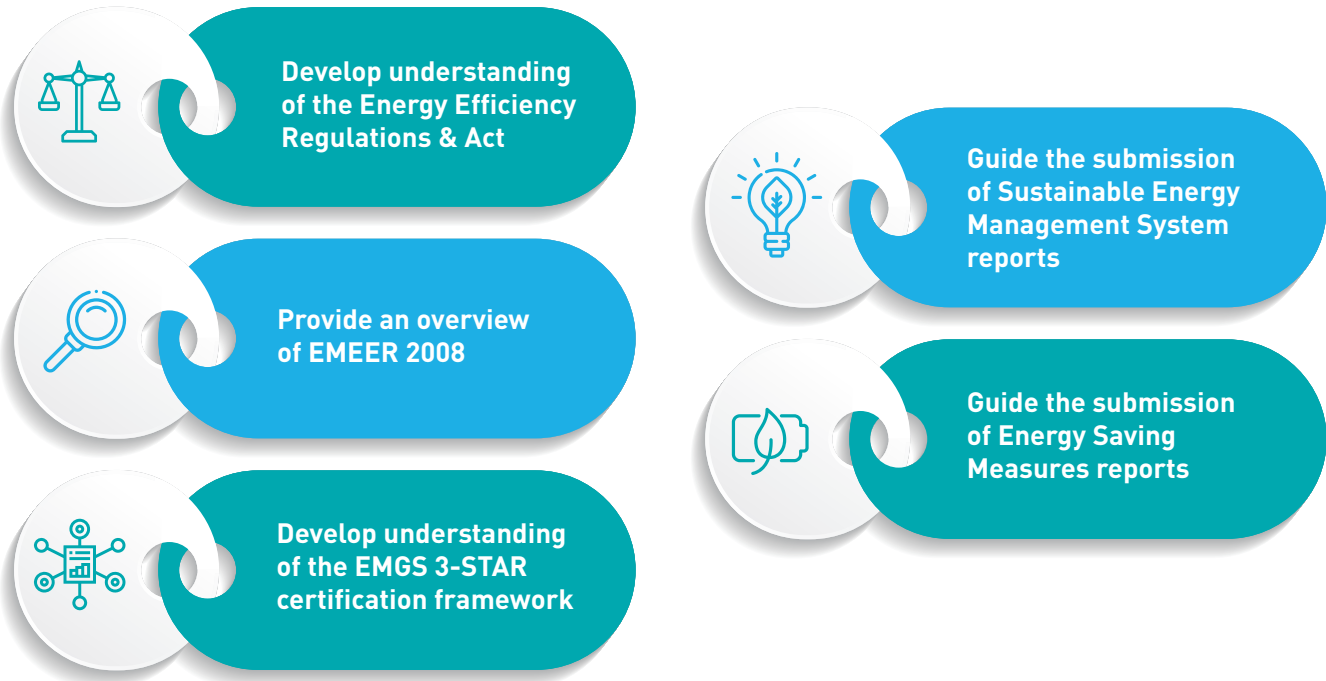
### Programme objectives:



## Professional Energy Manager (PEM)

The half-day Professional Energy Manager (PEM) training provides participants with the knowledge and skills to fulfil EMGS 3-Star requirements. Through the programme, PEMs will be able to further enhance the energy reduction achieved in 2-Star Assessment and integrate their organisation's energy management system with other standards and quality systems. PEMs help their organisations to become leaders in sustainable development.

### Course Objectives:



## Certified Professional in Measurement and Verification (CPMV)

CPMV is a certification training module that facilitates the end user or energy service company to develop strategies for their Sustainable Energy Management Systems (SEMS), and conduct measurement and verification activities for the energy saving programmes. The module covers the fundamental concepts of energy savings, available options for measurement and verification (M&V), planning and determining uncertainty using statistics. Upon successful completion of the programme, Certified M&V practitioners will have the knowledge and a structured framework to verify energy saving projects and produce energy savings reports. The course also provides individual capacity building skills.

In 2019, MGTC  
Conducted 5 CPMV  
Sessions and Trained  
**92 participants**

## AEMAS Energy Manager - Energy Manager Training Course (EMTC)

A key programme in preparing organisations to transform their energy management is the Energy Manager Training Course (EMTC). The five-day course is designed to equip young or experienced facility and maintenance officers, executives or engineers with the necessary knowledge to manage energy usage at their premises sustainably. The programme modules are developed and delivered by engineers and energy managers with decades of experience across industrial and commercial sectors.

At the end of the course, participants will be assessed through a written examination, a group presentation, and individual report writing. Upon passing the course, successful participants will be granted a certificate earning them the title of an AEMAS Certified Energy Manager (CEM). The training also provides a channel for participants to sign up as Registered Electrical Energy Managers (REEMs) with the Malaysian Energy Commission.

According to the Efficient Management of Electrical Energy Regulation 2018 by Suruhanjaya Tenaga (ST), organisations with large power consumption are required to employ REEMs.

### Background - AEMAS Energy Manager Programme in Malaysia



- AEMAS Programme started in February 2010
- AEMAS designed and developed the training curricula, energy management test procedures and simulation
- Implementation by ACE and 7 partners since 2010 in 8 ASEAN countries
- MGTC serves as the Country Coordinator for Malaysia

- MGTC is appointed by ACE to continue the AEMAS Programme in Malaysia as a Country Coordinator
- Two programmes for AEMAS – Energy Manager Training Course (EMTC) & Energy Management Gold Standard (EMGS)
- EMTC is authorised by Energy Commission to support the EMEER2018

- MGTC committed to continue AEMAS Training Programmes
- Adapting training and skills development to meet IR4.0 and COVID-19 Challenge

#### Training Method



Physical with computer assisted, blended learning integrated electronic formats



Using a mix of micro-learning, virtual sessions and simulations to leverage technology to meet learning needs



AEMAS EMTC session conducted in 2019 at MGTC.

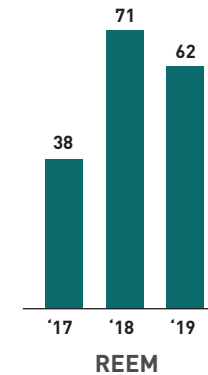
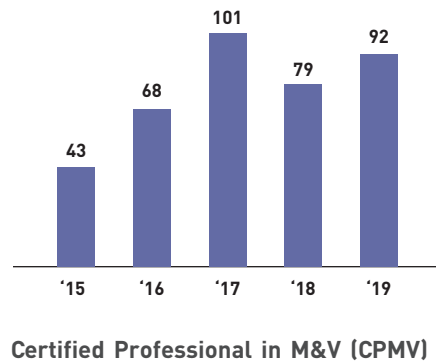
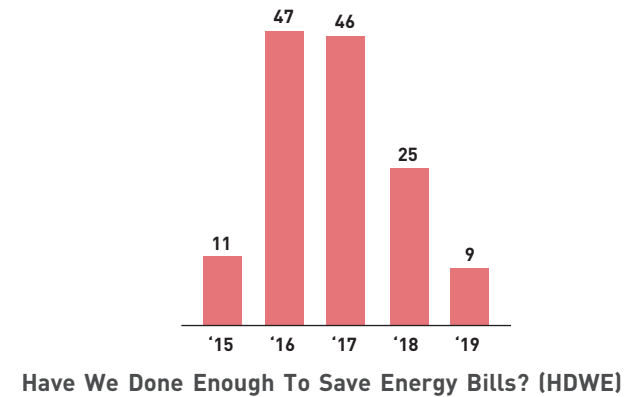
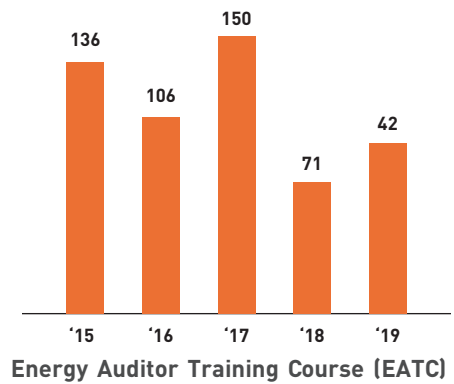
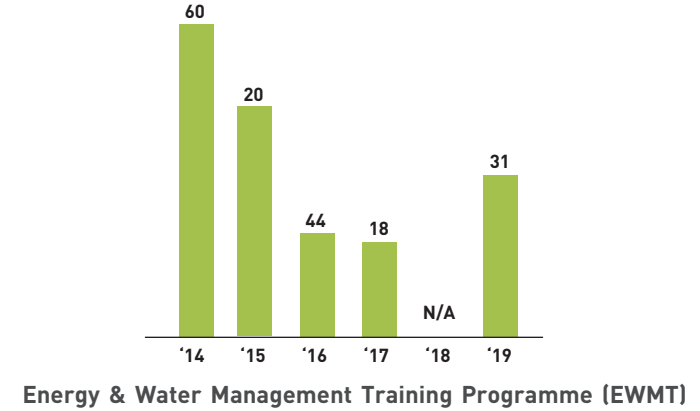
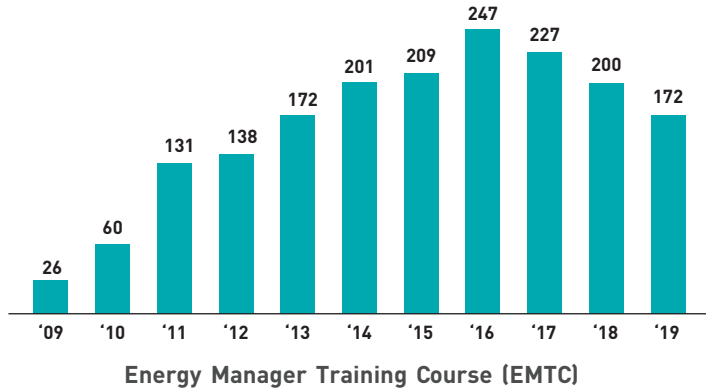


AEMAS EMTC session conducted in 2019 at Enderong Resort, Pahang.



## Achievements

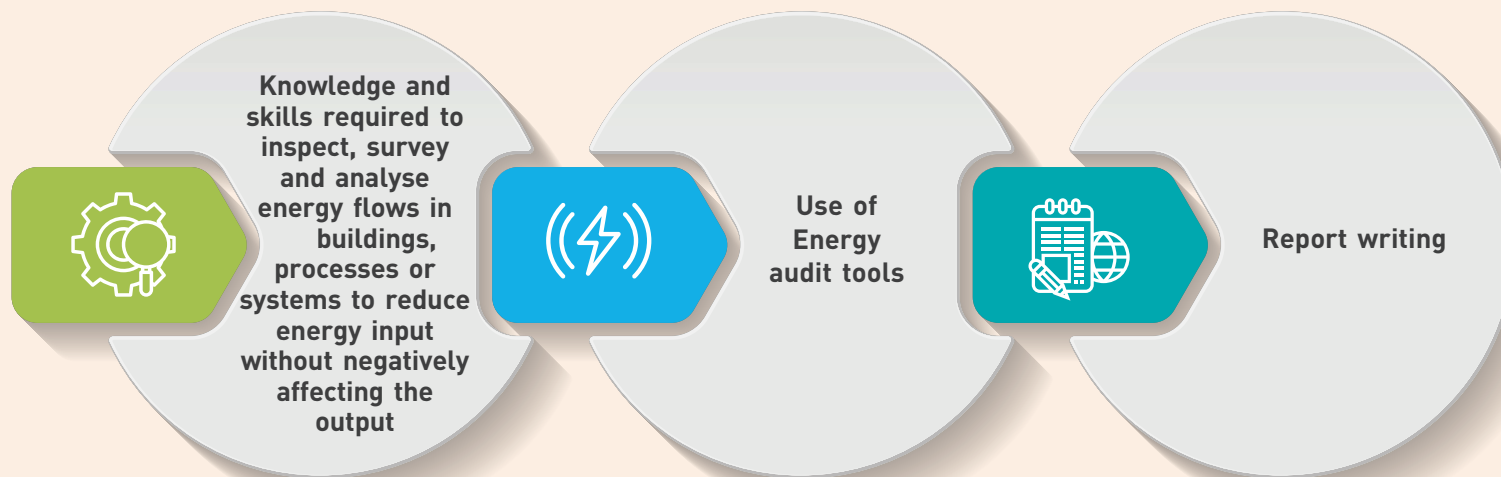
No. of Participants of the Different Training Programmes



## What's Next >>

In efforts to further expand energy management training and promote sustainable energy management, MGTC aims to organise a training programme specifically to develop Certified Energy Auditors (CEA).

CEA training will include:



Led by experienced energy auditors and managers, trainees will be exposed to real-life energy audits and receive updated industry input.

The programme will provide structure to energy audits and raise the professional standards of the practice. Certified Energy Auditors, acknowledged by Suruhanjaya Tenaga, will be qualified to audit any facility, especially those covered by EMEER 2008.

## LOW CARBON CITIES TRAINING PROGRAMME

Through capacity development, we hope to enable officers from local authorities to measure CO<sub>2</sub> emissions, develop emissions baselines, as well as draft and implement action plans.

### 2019 Highlights

Under the **ongoing Low Carbon Cities (LCC) programme, MGTC conducted training with three local authorities in 2019**. The two-day sessions offered a two-way approach for authorities to adopt the Low Carbon Cities Framework in their areas of jurisdiction. A **total of 140 participants** from Majlis Daerah Kuala Langat, Majlis Daerah Hulu Selangor and Majlis Perbandaran Kuantan participated in the training.

MGTC also conducted **two Townhall sessions** to explain the Low Carbon Cities Framework to **170 participants** from Majlis Perbandaran Batu Pahat and Majlis Perbandaran Kajang.



*Pictures from MGTC's Townhall session on Low Carbon Cities Framework*

### What's Next >>

MGTC aims to conduct more training and Townhall sessions for local authorities in order to facilitate the rapid roll-out of the Low Carbon Cities Framework to address climate change and ensure Malaysia stays true to its commitment to the Paris Climate Agreement. MGTC will also continue with the one-time fee for universities, industrial and other buildings, parks and companies to register under low carbon zones. LCC programmes such as LCC Help Desk @ MGTC, Meet & Greet Day and Clinics will continue to be conducted.

## GOVERNMENT GREEN PROCUREMENT TRAINING PROGRAMME

To promote green procurement within the government and its agencies, MGTC has been organising training, workshops and seminars for officials to introduce them to the green procurement framework and equip them with knowledge on green product and service specifications.

2017

All **25 ministries** and agencies in the **Federal Government** had implemented government **green procurement (GPP)**.

2013

Focused training of **officers** from **ministries** began.

## 2019 Highlights

**MGTC** conducted **15 GPP workshops and seminars** targeting government agencies, government linked companies and government suppliers/contractors.

Refer to page 140 for the list of seminars conducted.



*Seminar on Green Purchasing and Industry Development at MGTC, Bangi*



## 2019 Highlights



*Seminar on Green Purchasing and Industry Development at MGTC, Bangi*

Seminar on Green Purchasing and Industry Development in Malaysia  
(Malaysia Association of Cleaning Contractors)

MGTC also organised a Regional Workshop to share Malaysian practices with Indonesian and Philippine stakeholders on Green Public Procurement, Eco Labelling and Supporting Processes. In addition, MGTC was involved in regional training on Government Green Procurement and Sustainable Public Procurement.



Monthly MyHIJAU Business Clinics and Coaching Session were organised for companies to create greater awareness of the various components of the green procurement ecosystem and green technology industry development. **A total of 13 Business Clinics on MyHIJAU Mark, GITA, GITE and GTFS 2.0 were conducted.** In addition, two awareness seminars on Thermal Energy Efficiency & Solar Thermal Application were organised for suppliers and vendors, and financial institutions respectively.



*MyHIJAU Clinics Organised by MGTC*

## International Capacity Building on GGP



### MARCH

Workshop on Knowledge Sharing on EPC, Mydata NAMA Project and Green Public Procurement (Bangkok, Thailand)



### JUNE

International Conference and Training Workshop on Green Public Procurement - 10 Countries (Seoul, Republic of Korea)



### SEPTEMBER

"Reduce! Rethinking Circular Economy" Global Knowledge Exchange on SDG 12 Policy Tools (Bangkok, Thailand)



### DECEMBER

Workshop on Supporting Decision Making on Sustainable Consumption and Production (SCP) through Training on Sustainable Procurement (Bangkok, Thailand)



"Reduce! Rethinking Circular Economy" Global Knowledge Exchange on SDG 12 Policy Tools (Bangkok, Thailand)

## 2019 Highlights

### CONFERENCE & THOUGHT LEADERSHIP PROGRAMME

The annual IGEM is one of the main platforms used to engage government and industry leaders on the potential of green technology. At the event, participants are presented with technology updates, new business models and government initiatives.

For the **10<sup>th</sup> IGEM**, MGTC **collaborated with 10 partners to organise 11 conferences relating to energy**, green buildings, and the circular economy. A range of topics – from planning, solutions and best practices in green technology – were delivered by local and global thought leaders while experts from the different disciplines shared the stage to discuss efforts to nurture a green technology-ready workforce.



The 10<sup>th</sup> IGEM also saw the **launch of two MGTC-initiated programmes**, namely the **Climate Change Conversations™ Forum** and **Energy Management Convention**.

Event	Host	No. of Participants	Event	Host	No. of Participants
International Urban Sustainability Green Building Conference (IUSGBC)	MalaysiaGBC	100	Energy Manager Convention 2019	ACE, EC, MAREEM	168
Grassroots Innovation Dialogue	Yayasan Inovasi Malaysia	65	How to get Your Project Bankable and Get Approved by Funders	Technology Park Malaysia	48
Climate Change Conversations™ Forum	GreenTech Malaysia & Shell	191	Financing the Green Energy Sector	Capital Markets Malaysia	130
Sustainable Waste Management Seminar	Embassy of Netherlands	100	Seminar Promosi Sijil Kemahiran Malaysia	GreenTech Malaysia	103
KL Towards Low Carbon Society Forum	City Planning Department of DBKL	100	MCY Coaching & Mentoring	Technology Park Malaysia	30
Circular Economy and Energy Forum	The Nordics	160	Sustainable Energy Management Forum	Canada High Commission	63
KL Eco Film Festival: Film Screening	EcoKnights	32	MCY Ministerial Dialogue	Yayasan Inovasi	200
MDBC Innovation and Sustainability Awards (MISA)	Malaysian Dutch Business Council	70	KLEFF 2019 Award Ceremony	EcoKnights	70
Conversations with YB Yeo: MESI 2.0	MESTECC & TNB	200	Sustainable Innovation Awards (SIA 2019)	ProTemp	54

## The Climate Change Conversations™ Forum

The Climate Change Conversations™ Forum, themed “Future of Corporations: Climate Change Risks & Opportunities”, was aimed at corporate C-suites. Organised in partnership with Shell Malaysia and MESTECC, it featured two local speakers and one international speaker, and **attracted 191 participants**, including **65 corporate leaders**, representing **115 organisations**.



*The Climate Change Conversations™ Forum aimed at corporate C-suites.*

## The Energy Manager Convention



*The Energy Manager Convention featured six speakers from Malaysia, Thailand, the Philippines, Indonesia and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ).*

The **Energy Manager Convention** was a **joint collaboration with ACE, Suruhanjaya Tenaga and MAREEM**, sponsored by Concord Group, Tadau Energy Sdn Bhd, TNB and TNB Energy Services. Featuring six speakers from Malaysia, Thailand, the Philippines, Indonesia and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), the **objectives** were **to inspire and generate ideas related to energy management** while providing a platform for regional practitioners and interested parties to network. The convention attracted 168 participants including students, government officers and members of the public.

### What's Next >> —

MGTC will continue to collaborate with partners and develop more thought leadership platforms covering a wide range of green technology and climate change subjects. The Climate Change Conversations™, for example, will be organised quarterly as part of efforts to enhance awareness of climate change among corporations and government leaders.