Transitioning The Nation Towards

Sustainable Energy

MALAYSIA

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Selangor State Environment, Green Technology, Science, Technology and Innovation and Consumer Affairs Committee

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ROADMAPPING THE FUTURE

Summit will be a knowledge-based platform specifically focusing on renewable energy and energy efficiency

LIFTING ROAD BLOCKS IN SOLAR TECHNOLOGY PUSH

SEDA has been relentless in exploring ways to ease the financing burden of potential solar investors

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EMPOWERING ENERGY TRANSITION

20TH-21ST APRIL 2020

Dewan Jubli Perak Sultan Abdul Aziz
Shah Alam, Selangor

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Selangor State Environment, Green Technology, Science, Technology and Innovation and Consumer Affairs Committee

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CHAIRMAN'S MESSAGE

A CLEAR RE PATH BECKONS FOR MALAYSIA

It is indeed encouraging that the government's renewable energy (RE) initiatives are paying off as Malaysia is now transitioning towards a cleaner future.

We at SEDA Malaysia will build on this success by continuing to promote, facilitate and develop sustainable energy (SE) in the form of RE and energy efficiency in the country. We have been spearheading the country's RE agenda for eight years since its establishment on Sept 1, 2011.

I am happy to note that after seven years of implementing the Feed-in Tariff FiT scheme at a fixed tariff, SEDA Malaysia progressed to improve price discovery of the tariff offered to RE developers by introducing competitive bidding. The inaugural e-bidding exercise for biogas was carried out in the fourth quarter of 2018 where there were 15 successful bidders with a basic bid tariff from RM0.2210 to RM0.2814/kWh.

The second e-bidding for biogas in July 2019 saw the basic bid ceiling tariff for successful bidders ranging from RM0.235 to RM0.2689/kWh. Phase 3 of the biogas e-bidding (30 MW) is slated for the first quarter of 2020.

The basic bid tariff for successful bidders for the first and second e-bidding has brought down the price. The savings from the e-bidding for the two tranches is estimated at about RM683 million throughout the power purchase agreement period.

On December 23, SEDA Malaysia announced the results of its inaugural e-bidding under the small hydro category where I am pleased to announce that the initial quota allocation for small hydro was 160MW. However, the e-bidding has resulted in award of 176.69MW of small hydro instead due to price efficiency of some of the high head technologies submitted.

I am encouraged by the rising tide of corporates with a strong commitment to meet their environmental, social and governance (ESG) obligations. As at end of November 2019, SEDA Malaysia had 128 registered PV service providers and 56 companies under registered PV investors directory.

There is also a huge potential for solar PV rooftop applications given that there are at least 4.12 million buildings with an estimated technical potential of 37,429MW in Peninsular Malaysia alone. I hope there will be greater public participation in the NEM programme.

Malaysia has also embarked on an inaugural pilot run of peer-to-peer (P2P) energy trading. Unveiled during IGEM 2019 by Minister of Energy, Science, Technology, Environment and Climate Change (MESTECC) YB Yeo Bee Yin, it is an initiative under the Renewable Energy Transition Roadmap (RETR) 2035 implemented by SEDA Malaysia and supported by MESTECC.

P2P energy trading is based on the concept of a sharing economy where owners of solar photovoltaic (PV) systems (prosumers) sell their excess solar electricity to other consumers through the grid at competitive rates.

We are proud that Malaysia is the second ASEAN country to initiate this trial run. Currently, the pilot run has a solar PV capacity in excess of 1,600kW.

Moving forward, the Government has embarked on the reform of the electricity market. This will enable RE suppliers to compete directly in the retail market.

In the longer term, a more transparent and competitive electricity market will ensure a lower cost of electricity for Malaysian consumers and fits in with the Government's ambitious target of achieving 20% RE in the national installed capacity mix by 2025 (excluding large hydro of more than 100MW). A total of 6,677MW is required from 2019 to 2025 to achieve this target and SEDA Malaysia is acting aggressively to achieve this.

Next year, we will be organising the 5th International Sustainable Energy Summit (ISES 2020) alongside the Selangor State Government on April 20-21. We welcome your participation and support. The two-day summit will focus on trends relating to RE and energy efficiency.

I would also like to thank the government for giving the solar industry a boost in Budget 2020. Besides the 70% income tax exemption of up to 10 years given to companies undertaking solar leasing activities, the Green Investment Tax Allowance (GITA) and Green Income Tax Exemption (GITE) incentives were extended to 2023.

As an agency under MESTECC, SEDA Malaysia will continue to advise government entities on RE. We are grateful to MESTECC Minister YB Yeo Bee Yin for her support as we progress towards our goal of a cleaner energy future.

Merry Christmas to those celebrating and a Happy New Year to all!

YB WONG KAH WOH
Chairman
Sustainable Energy Development Authority
(SEDA) Malaysia

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2. **Grid-Connected Photovoltaic (GCPV) System Course for Wireman & Chargeman**
3. **Grid-Connected Photovoltaic (GCPV) Installation and Maintenance Course**
4. **Introduction on to Grid-Connected Photovoltaic (GCPV) Systems Design for Non-Engineers**
5. **Off-Grid Photovoltaic (OGPV) Systems Design Course**
6. **Operation & Maintenance of Biogas Power Plant Course**

For more information, please visit our website:

www.seda.gov.my

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Chief Executive Officer
Sustainable Energy Development Authority (SEDA) Malaysia

LIFTING ROAD BLOCKS IN SOLAR TECHNOLOGY PUSH

SEDA Malaysia has been relentless in exploring ways to ease the financing burden of potential solar investors

Blessed with ample solar radiation, harnessing solar energy for electricity in Malaysia makes good sense. In fact, efforts to increase the use of solar energy have grown since the introduction of solar photovoltaic (PV) in the market more than 10 years ago.

Malaysia's renewable energy (including on and off-grid) as at end of 2018 was 2,057 MW (excluding large hydro >100MW) and this constituted 6% of the national installed capacity mix. Under the business as usual (BAU), Malaysia is expected to achieve around 4,904 MW of RE and this represents 12% of the national installed capacity mix in 2025. In order to achieve the aspirational national renewable energy (RE) target of 20% of RE by 2025 (8,734 MW), an additional 3,830 MW of RE is required of which solar PV is projected to contribute significantly to the gap.

A study conducted by SEDA Malaysia further revealed that Peninsular Malaysia has approximately 4.1 million buildings with an estimated technical potential of 37GW. Nevertheless, the awareness of solar programmes–notably net energy metering (NEM) and self-consumption (SELCO) – are still at infancy stage.

As a sunrise industry, all parties must be on board in the quest to promote the growth of Malaysia's PV market.

Government's vision on solar energy incorporation
To start with all government buildings (e.g. schools, hospitals, universities) and engage in aggregate procurement and lower financing cost of putting up solar PV.

PV service providers
To establish high standards of delivery and post sales customer service in the PV market in Malaysia and also encourage greater participation in the regional/global PV market.

Banks
To embrace sustainability or a green financing framework and offer attractive financing for PV projects.

2.5 MW Goodyear Malaysia Bhd, Shah Alam, Selangor- one of the largest projects under the Net Energy Metering programme

In this regard, SEDA Malaysia has been striving hard to promote solar energy as a viable form of renewable energy (RE) in the country with roadshows, open days, speaking engagements, approaching the local authorities and engaging with the public via digital platforms (social media, websites and dedicated microsites), among others.

SEDA Malaysia CEO Ir Dr Sanjayan Velautham pointed out two key challenges the solar industry in Malaysia faces:

- Lack of awareness both, among the Malaysian public and businesses on the benefits or financial returns from investing in solar PV.
- Bankers are not fully aware of solar technologies and solar PV-related financing: hence a reasonable loan interest rate and an easy application process are almost non-existent.

ENGAGING BANKS

"We need to take a holistic approach in addressing the penetration of RE into the energy mix (i.e. the whole government approach) as solar will continue to be a major contributor in our aspiration to generate more green energy," he told ***Sustainable Energy Malaysia***.

"Towards this end, the creation of a vibrant PV market and a healthy ecosystem are required to support the market."

After all, the solar business potential is domestically and globally huge. The ecosystem developed to nurture the PV industry today has the potential to help with the country's gross national income (GNI) in the future.

To fuel the growth of the PV industry, Dr Sanjayan stressed the need to have comprehensive, accurate and consolidated data for the energy sector which at present is lacking (this has led to the government kickstarting the Big Data Analytics initiative).

On a similar note, efforts must be directed at harnessing and establishing the various categories of PV service providers/ investors who will serve different categories of the PV market (e.g. domestic, industrial rooftop, ground-mounted/ water floating or rural) or simply to bring the needed value proposition to the market.

"As RE is still a relatively new field to many bankers, there is a need to further engage with the banking sector on the technical aspects of RE projects. This is to address the various financing and bankability issues related to securing financing," asserted Dr Sanjayan, who is also an Advisory Board Member for the Japan-based Asia Pacific Energy Research Centre (APERC).

"Moreover, a tie-up between the banking and insurance industries and PV service providers can enable them to become a one-stop centre especially for domestic customers."

CREATING MARKET VIABILITY

Delving on the lack of public awareness especially on the NEM scheme, Dr Sanjayan said SEDA Malaysia has initiated the launching of a new website with dedicated microsites on the scheme (including a NEM calculator) in addition to undertaking roadshows in different states.

"The perceived view is such that it (NEM) will be tedious to install," Dr Sanjayan pointed out. "To a certain degree, this could have some merit considering the whole process involves various bodies to interact closely to hasten and simplify the process."

On this account, SEDA Malaysia has initiated dialogues among the various bodies to forge better understanding and this has started to yield results.

For the record, NEM is a scheme where energy produced from the installed solar PV system is to be consumed first while the excess will be exported to Tenaga Nasional Bhd (TNB). However, effective January 2019, the mechanism was revised to a one-on-one basis where eligible consumers with excess energy (kWh) are allowed to export to the grid, hence offsetting the kWh at the same consumption tariff provided by TNB.

This revised programme which has a quota of 500MW ending in 2020, gives better returns on investment and increased electricity savings per month to owners of solar PV systems.

On the financing part – given the requirement for upfront capital cost of installation coupled with solar PV market pricing– the NEM scheme has spawned behind-the-meter (BTM) businesses such as the power purchase agreement (PPA) with solar investors, solar leasing programme or a hybrid of both.

"There are also schemes introduced to lower the cost of financing investments such as the RM2 billion Green Technology Financing Scheme (GTFS) coupled with financial incentives such as the Green Investment Tax Allowance and the Green Income Tax Exemption," enthused Dr Sanjayan.

In the recent Budget 2020 announcement, companies providing solar leasing will be eligible to apply for tax exemption if they fulfilled the criteria meted under this new incentive.

"However, we should continue to structure more innovative financing models to move the sustainable energy agenda forward."

As the country embarks on a journey to achieve 20% RE in the installed capacity mix by 2025 (excluding large hydro), SEDA Malaysia is developing a roadmap called the *Renewable Energy Transition Roadmap (RETR) 2035* to explore the possible strategies and action plans that hopefully offer solutions to overcome challenges in the fight against climate change.

How initiatives such as Feed-in Tariff (FiT), Net Energy Metering (NEM), Self-Consumption (SELCO) and Large-Scale Solar (LSS) are boosting the growth of the solar industry in Malaysia:

- Together, they help to bring down the cost of solar PV systems as the market scales up.
- They provide local PV service providers an opportunity to gain local experience so they can expand their PV businesses outside of Malaysia.
- As of end-2018, total solar PV projects reached an installed capacity of 736MW nationwide.
- As of November 2019, 128 PV service providers and 56PV investors in SEDA's registry (there is a need to ensure these companies continue to bring the needed value proposition to the public).
- According to a recent study on Global Energy Transformation: A Roadmap to 2050 by the International Renewable Energy Agency (IRENA), solar energy will dominate the RE mix with an estimated 8,500GW installed capacity by 2050, followed by wind (with 6,000GW). Together, these would account for 60% of global electricity generation.

SEDA Malaysia is currently exploring several options to further enhance the penetration of solar energy. They are:

- **RENEWABLE ENERGY CERTIFICATE (REC):** Has a potential of creating a vibrant market to trade renewable attributes especially for corporate and industrial power consumers albeit requiring the needed pre-conditions to be well-established. RECs will serve as evidence that energy has been generated from renewable sources.
- **P2P:** Introduction of a pilot run of P2P energy trading platforms (which facilitate trading between solar prosumers and electricity consumers) will leverage grid-edge technologies such as blockchain, Internet of Things, artificial intelligence and big data. Having a smart grid that is underpinned by digitalisation will promote the concept of sharing economy within the energy scape.
- **STORAGE TECHNOLOGY:** With the rise of intermittent renewables, energy storage is needed to maintain the balance between demand and supply. With a changing role for storage in the energy system, new business opportunities arise for energy storage. While most of these storage technologies have yet to mature, new entrants are already designing energy services solutions around storage and digital offerings. As such, there is a need to build convincing business models within the context of the local electricity landscape.

GRAB THE OPPORTUNITY TO REDUCE YOUR ELECTRICITY BILLS

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Net Energy Metering (NEM) is the right solution for you!

WHAT IS NEM?

Generate and consume your own electricity by installing solar photovoltaic (PV) system on your own rooftop via NEM programme. Any excess of energy generated by your solar PV system, can be offset on a **1 on 1 basis***.

WHAT'S IN IT FOR ME?

- Reduce electricity bills and enjoy more savings
- Generate own clean energy
- Reduce your carbon foot print
- Hedge against uncertainty in electricity tariff

WHAT ARE THE REQUIREMENTS?

- Registered consumer of TNB
- Not blacklisted by TNB

WHO CAN APPLY?

Open to below categories of TNB:

- Domestic
- Commercial
- Agricultural
- Industrial

HOW MUCH CAN I SAVE BY GOING SOLAR?

Let's find out through our investment calculator at:

www.seda.gov.my/nemcalculator

*1 on 1 offset - every 1kWh exported to the grid will be offset against 1 kWh consumed from the grid at gazetted tariff

HERE ARE THE OPTIONS OF SOLAR PV PURCHASING MODES THAT YOU CAN CHOOSE FROM

NEM
Net Energy Metering

OUTRIGHT PURCHASE

- Cash
- Credit Card
- Loan

LEASING

- Solar Power Purchase Agreement (PPA)
- Solar Leasing Programme

1. www.seda.gov.my/rpvsp
2. www.seda.gov.my/rpvi

Registered Solar
PV Service Provider (RPVSP)

The RPVSP will apply for NEM on behalf of customer.

Registered Solar
PV Investor (RPVI)

The RPVI will apply for NEM on behalf of customer.

3. Solar PV Installation

4. **NEM** Applicant (Site Owner)

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RENEWABLE ENERGY
SUSTAINABLE FUTURE!

ELECTRICITY BILL

RM 300

Method of Payment

1. Direct to Solar Investor

or

2. Direct to TNB via **SARE**
(Supply Agreement For Renewable Energy)

TNB will remit the payment to solar investor and collect a service fee.

For more info about **NEM**
www.seda.gov.my/reportal

NEM
Net Energy Metering

seda
MALAYSIA

Next year's International Sustainable Energy Summit (ISES 2020) will herald in a new era for Malaysia's renewable energy push. It will witness the launch of the nation's Renewable Energy Transition Roadmap (RETR) 2035.

This will be the first official policy on renewable energy post the National Renewable Energy Policy and Action Plan which was approved by the Cabinet back in April 2010.

A key feature of the roadmap will also be on how to achieve the government's 20% renewable energy (RE) target in the national installed capacity mix by 2025 which includes hydropower of up to 100 MW.

ROADMAPPING THE FUTURE

Summit will be a knowledge-based platform specifically focusing on renewable energy and energy efficiency

Participants at the 5th ISES 2020 can expect something different. The Summit will discuss issues underpinning the theme *Empowering Energy Transition* from the perspectives of technologies, business models, financing, and government policies, including sessions on exploring digital innovation in operationalizing a sharing economy in the future energy space, creating a vibrant Renewable Energy Certificate (REC) market, fostering urban development of low carbon cities, and exploring the role of green hydrogen in the energy transition.

The 5th ISES 2020, scheduled for April 20-21, is organised by the Sustainable Energy Development Authority (SEDA) Malaysia in collaboration with the Ministry of Energy, Science, Technology, Environment and Climate Change (MESTECC) and the Selangor Government, through its Environment, Green Technology, Science and Consumer Affairs Committee.

SEDA Chief Executive Officer Ir. Dr. Sanjayan Velautham said the 5th ISES 2020 will deep dive into specific mainstream renewable energy (RE) technologies such as solar photovoltaic (PV), hydropower and bioenergy. It will address existing issues such as integrating high variable REs in the grid, green financing and promoting energy efficient buildings through low carbon and the concept of Zero Energy Buildings.

"While we acknowledge that an energy transition for any nation will not be perfect, it is platforms like these that we can leverage on to sharpen our strategies through the lessons learned from other countries undergoing the similar transition," said Dr Sanjayan, who is also the Organising Chair for ISES 2020.

STRATEGICALLY DEVELOPED THEMES

The 5th ISES 2020, the 5th such Summit since 2012, will be a knowledge-based platform specifically focusing on renewable energy and energy efficiency. A biennial event, next year's summit will have two key components: the knowledge (conference) and business interactions via mini exhibition and business matching sessions.

Themes for ISES have always been strategically developed to reflect the core beliefs that are endearing to SEDA. It believes that sustainable energy will provide greater autonomy energy (Currency of Autonomy: Sustainable Energy [2nd ISES 2014]), and that the future of energy is here (Sustainable Energy: The Future is Here [4th ISES 2018]) when electricity is democratized (Democratizing Electricity Supply [3rd ISES 2016]) and nations are empowered with sustainable energy (Empowering Nations via Sustainable Energy [1st ISES 2012]).

The 5th ISES 2020 forward looking theme resonates with the key initiatives of the RETR 2035 which includes enhancing electricity consumers choices, providing alternative retailers and improving customers experience; and to support sustainable energy in low carbon development and climate change initiative.

The biennial ISES was mooted as part of SEDA Malaysia's official platform for insights on sustainable energy to be discussed and exchanged among thought leaders in this fraternity. It is also an avenue for networking among key stakeholders such as industry players from renewable energy, energy efficiency, power utilities, and financial sectors, relevant government bodies and academia encompassing local and international communities.

HOW THE BUSINESS COMMUNITY CAN BENEFIT

The business community in particular, will be able to know the government's strategies, comprehensive action plans and resources required to transit to the future electricity system and achieving RE targets. This will be very helpful as they map out their own strategies relating to RE.

"This summit is expected to spawn new knowledge and be a melting pot of great minds. We look forward to your participation. I wish to thank MESTECC, the Selangor State Government, esteemed speakers, exhibitors, sponsors, endorsers, media partners and my team who are dedicating their resources in furtherance of the energy transition agenda in Malaysia," said Dr Sanjayan.

The immense popularity of ISES can be seen from the growing number of delegates over the years which have more than tripled. The first ISES in November 2012 in Putrajaya was attended by 300 participants. The 2nd was held in Selangor with nearly 680 participants while the 3rd in Putrajaya in 2016 saw the official launch of its logo ISES with just over 700 participants. The 4th ISES in 2018 saw the first collaboration with a State government and was held in Sarawak with over 1,000 participants. A total of 77 thought leaders were invited as speakers and chairs and three plenary sessions and 10 deep dive workshops (DDWs). The 4th ISES was also the first time a B2B matching session was organized with support by the PV industry.

The 5th ISES 2020 is expected to be attended by 1,000 participants comprising international and local industry players, national financial institutions, policy makers, foreign related-governmental representatives, diplomats and ambassadors, non-governmental organizations and academicians from public and private higher learning institutions.

Minister of Energy, Science, Technology, Environment and Climate Change YB Puan Yeo Bee Yin and Selangor Menteri Besar YB Dato' Seri Amirudin Shari are scheduled to deliver keynote addresses at the Summit.

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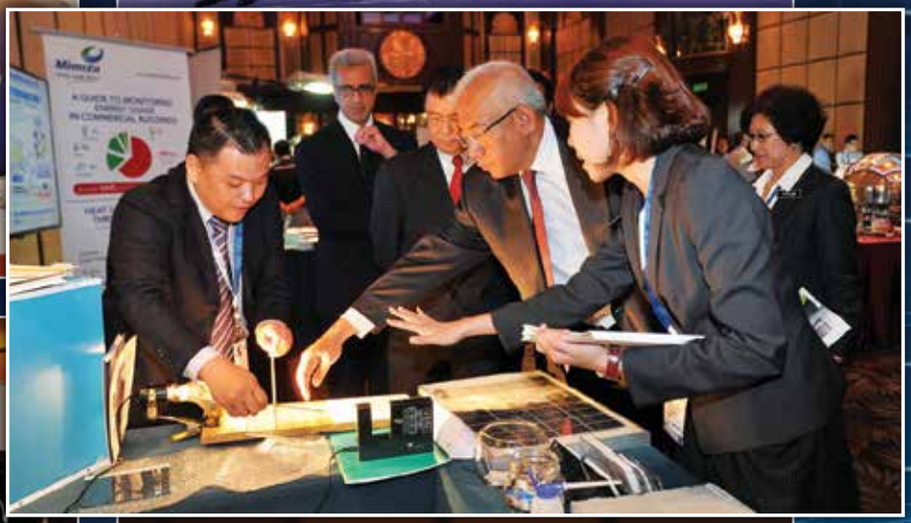
1. **Andrew Jeffries**
   Director
   Energy Division, Southeast Asia Department
   Asian Development Bank
2. **Dato Ir Dr Ali Askar Sher Mohamad**
   Managing Director
   Sher Engineering & Consultancy Sdn Bhd
3. **Tejpreet S. Chopra**
   Founder & CEO
   Bharat Light & Power
4. **Dr Dong Joo Kang**
   Chairman
   Energy Digital Transformation Forum in Korea Smart Energy Association (KoSEA)
5. **Leon Roose**
   Chief Technologist
   GridSTART
   Hawaii Natural Energy Institute
   University of Hawaii
6. **Jared Braslawsky**
   Secretary-General
   RECS International
7. **Sam Kimmins**
   Head of RE 100
   The Climate Group
8. **Bert Deprest**
   Head Business Development Renewables & B2B - South East Asia, ENGIE
9. **Dr Nuki Agya Utama**
   Executive Director
   ASEAN Centre for Energy (ACE)

AND MORE TO JOIN IN...

10. **Dr Edward Hsi**
    Senior Consultant
    Swiss Reinsurance Company Ltd.
11. **Ernest Navaratnam**
    Chief Executive Officer
    Cenergi Group of Companies
12. **James Eggleston**
    Senior Analyst
    Power Ledger Australia
13. **Professor Lam Khee Poh**
    Dean, School of Design and Environment
    National University of Singapore
14. **Professor Chinho Park**
    Managing Director of Energy Industry
    Office of Strategic R&D Planning
    Ministry of Trade, Industry & Energy
15. **Dato Leong Kim Mun**
    Managing Director
    Primer Group
16. **Bundit Sapianchai**
    President and CEO
    BCPG Public Company
17. **Frank Haugwitz**
    Director
    Asia Europe Clean Energy (Solar) Advisory Co. Ltd.
18. D**atuk Khairuddin bin Tan Sri Mohd Hussin**
    Managing Director
    Concord Green Energy Sdn Bhd
19. **Chin Soo Mau**
    President
    Malaysian Photovoltaic Industry Association

ISES 2012

Venue: **Putrajaya Marriott Hotel**
Date: **7-8 November 2012**
Theme: **Empowering Nations via Sustainable Energy**



ISES 2014

Venue: **Sunway Resort Hotel & Spa**
Date: **18-19 March 2014**
Theme: **Currency of Autonomy: Sustainable Energy**

ISES 2016

Venue: **Putrajaya Marriott Hotel**
Date: **5-6 April 2016**
Theme: **Democratising Electricity Supply**

ISES 2018

Venue: **Pullman Hotels and Resorts, Kuching, Sarawak**
Date: **10-11 April 2018**
Theme: **Sustainable Energy: The Future is Here**

SOLAR PV PROJECTS FOR SELANGOR

SEDA Malaysia has been working closely with State governments, government agencies/ institutions and various organisations on its sustainable energy initiatives.

The most popular initiatives are:

a) Low Carbon Building Facilitation Programme; and
b) Solar PV Installation Facilitation Programme

The Selangor government is one of them. In 2018, SEDA Malaysia was appointed by the State to implement renewable energy and energy efficiency initiatives. Selangor, which is actively promoting the green energy agenda, engaged SEDA Malaysia as its partner to implement two solar photovoltaic (PV) projects under the Smart Selangor programme.

a) SEDA MALAYSIA LOW CARBON BUILDING FACILITATION PROGRAMME AND SOLAR PV PROGRAMME

SEDA Malaysia is honoured to be able to work together with the Selangor State Economic Planning Unit (EPU) to promote energy efficiency and create public awareness under the of the latter's Low Carbon Building Facilitation Programme by SEDA Malaysia.

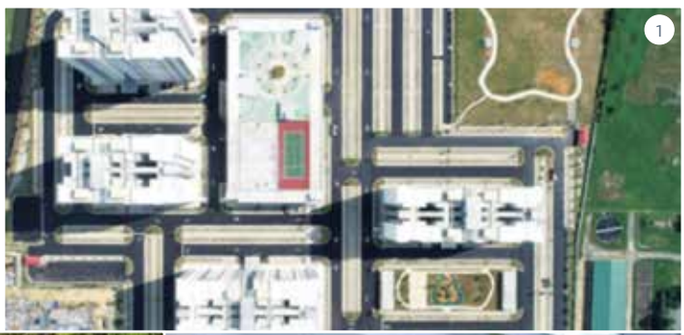
As part of an initiative under the Selangor Green Technology Action Plan (2016-2018), energy audit exercise was conducted at buildings belonging to the District and Land Office throughout Selangor in the quest to establish energy management program in order to support the energy efficient state government buildings.

The high commitment and interest shown by the Selangor State EPU were the catalyst for the implementation of this programme. SEDA was also appointed as the implementing agency of the Energy Management and Building Audit Programme for District and Land Office Buildings under the Selangor Government.

With special attention on the building sector, the objectives of the Low Carbon Building Facilitation Programme are as follows:

- Identifying potential energy and greenhouse gaseous savings;
- Development of the energy management programme at Local Authorities, District and Land Offices throughout Selangor;
- Assist the Selangor EPU to incorporate sustainable energy elements in urban development;
- Enhance the technical capacity of specialised professionals in energy management;
- Increase awareness and develop human capital capacity on energy management among Local Authorities, District and Land Office employees;
- Reducing the annual utility bill expenditure of the buildings; and
- Support the implementation of low carbon programmes in Selangor (in accordance with the Selangor State Green Technology Action Plan [2016 – 2018]).

SEDA Malaysia has, on the whole, also played an active role throughout the low carbon facilitation programme by providing energy management solutions and energy audit training to State government staff, notably those from the Petaling Jaya City Council, Sepang Municipal Council, Shah Alam City Council and the Kajang Municipal Council.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b) SEDA's SOLAR PHOTOVOLTAICS (PV) INSTALLATION AND FACILITATION PROGRAMME SOLAR PV PROJECTS FOR SELANGOR

The projects are:

- The 50kW Grid-Connected Photovoltaic (GCPV) system at Rumah Selangorku, Pangsapuri Seri Utama in Puchong, and
- The 1.2kWp x 12 houses Off-Grid Photovoltaic (OGPV) system at Perkampungan Orang Asli Sungai Relang in Gombak.

Grid-Connected Photovoltaic (GCPV) system at Rumah Selangorku, Pangsapuri Seri Utama

The 50kWp installed capacity pilot project implemented at Rumah Selangorku, Pangsapuri Seri Utama will generate electrical energy and connected to the power supply to the common area of the building.

This is the first Rumah Selangorku (Project Perumahan Rakyat or people's housing project) with a Green Building Index (GBI) certification. It is estimated that the 50kWp solar PV system can generate about 60,000kWh/year with an estimated 41,640kg of CO2 avoided per year.

Off-Grid Photovoltaic (OGPV) at Perkampungan Orang Asli Sungai Relang

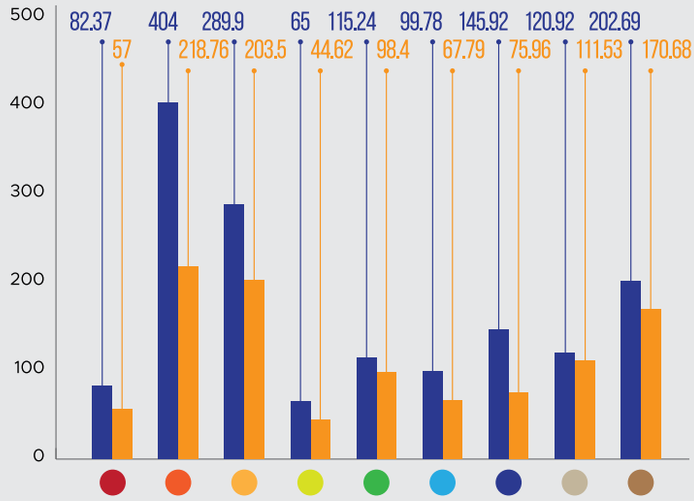
As part of its responsibility in ensuring the public has access to electricity, the Selangor Government has again collaborated with SEDA Malaysia to equip its first Orang Asli settlement which comprises 12 houses with an individual solar PV System.

For houses located far away from the electricity grid supply, a solar PV system is an ideal solution to providing electricity supply. This PV system also reduces dependency on fossil fuel sources, particularly the often costly diesel used for generators, to power electricity generation.

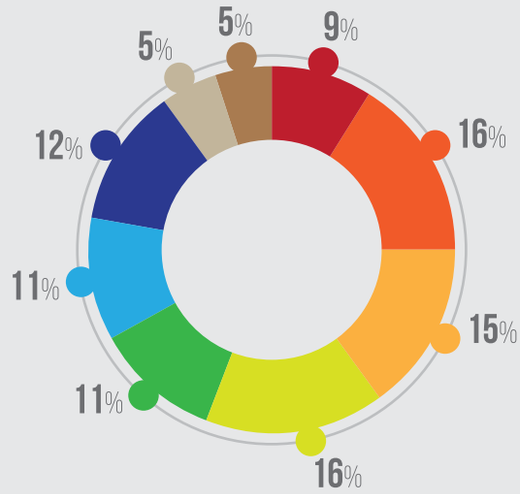
Each of the 12 Orang Asli houses is now equipped with a 1.2kWp solar PV system, including battery storage and basic electrical appliances such as lights and fans so that the children can study at night.

1. *Aerial view of Rumah Selangorku, Pangsapuri Seri Utama in Puchong.*
2. *The 1.2kWp Solar Off-Grid at the Sungai Relang Orang Asli settlement in Gombak*
3. *YB Hee Loy Sian, Chairman of Selangor Government Committee on Environment, Green Technology, Science and Consumer Affairs, led the site visit to the Sg Relang Orang Asli settlement in Gombak on 26 October 2018.*
4. *A meeting chaired by YB Elizabeth Wong Keat Ping to discuss the energy efficiency programme in Selangor. SEDA was represented by its Director of Technical Development and Facilitation Division, Steve Anthony Lojuntin.*

Potential Building Energy Index (BEI) reduction following SEDA's Malaysia collaboration with the Selangor Government to implement renewable energy and energy efficiency initiatives for the state



Potential CO2 reduction following SEDA's Malaysia collaboration with the Selangor Government to implement renewable energy and energy efficiency initiatives for the state



NEM QUOTA BOOST FOR DEVELOPERS

Property developers are now allowed to reserve quota under Net Energy Metering scheme

Property developers have been given the green light to reserve Net Energy Metering (NEM) quota for new projects effective August 5, 2019.

This is among the government's initiatives to drive the solar photovoltaic (PV) agenda and encourage installation among property developers, according to Sustainable Energy Development Authority (SEDA) Malaysia Chairman YB Wong Kah Woh.

"This is one of the measures taken by the government to achieve the 20% target of renewable energy (RE) in the national installed capacity mix (including hydro up to 100MW) by 2025," he pointed out.

According to Wong, Peninsular Malaysia has huge technical potential for solar PV rooftop applications with over 4.1 million rooftops, including on 1,000 shopping malls.

He said property developers who are interested must be incorporated in Malaysia. The scheme is applicable to residential, commercial and industrial types of developments. Applications must be made before December 31, 2020 and be supported by a proof of development order. The permissible time frame is up to a maximum of 30 months from the project's commencement date.

ENHANCEMENTS TO NEM SCHEME

Under the NEM concept, energy produced from the installed solar PV system will be consumed first with excess energy exported/sold to Tenaga Nasional Bhd (TNB) on a one-on-one basis.

The NEM was first introduced in November 2016 with a total capacity of 500MW allocated until end-2020. However, the take-up had been low, prompting the Ministry of Energy, Science, Technology, Environment and Climate Change (MESTECC) to initiate enhancements to the NEM scheme towards end-2018.

One key enhancement was on the compensation rate of energy exported to the grid which previously was based on displaced cost. With effect from January 1, 2019, energy export is compensated on a one-on-one basis.

Among the NEM's benefits are reduced electricity bills, ability to generate one's own clean energy, reduced carbon footprint and a hedge against uncertainty in electricity tariffs.

Earlier this year, MESTECC Minister YB Puan Yeo Bee Yin had estimated that there was RM1 billion worth of potential business opportunities for the private sector under the NEM mechanism which is aimed at boosting the use of solar panels on rooftops to generate RE.

This is in addition to at least RM2.2 billion worth of green projects being tendered out by Putrajaya this year.

FINANCING ACCESS FOR RE ADOPTION

NOW AVAILABLE AT CIMB & UOB

Awareness over the prospects of renewable energy (RE) in driving business sustainability is growing among financial institutions.

CIMB Bank Bhd recently rolled out its RM100 million renewable energy financing programme for micro, small and medium enterprises (SMEs) in Malaysia as part of its RM15 billion SME allocation for 2019-2020 in line with the Group's sustainability commitment.

Joining the sustainability agenda is United Overseas Bank (UOB), which recently unveiled U-Solar, the first solar industry ecosystem in Asia, in its quest to accelerate RE development and adoption across Southeast Asia. Malaysia is the first ASEAN country in which UOB is rolling out its U-Solar ecosystem.

CIMB's programme was launched recently at its *The Cooler Earth Sustainability Summit* in the presence of Minister of Energy, Science, Technology, Environment and Climate Change YB Puan Yeo Bee Yin.

The summit saw a gathering of more than 1,000 business leaders, financiers, investors, policy-makers and regulators. They engaged openly in a transparent and constructive forum aimed at catalysing action from all stakeholders to begin or enhance their sustainability journey by embedding environmental, economic and social (EES) considerations in their strategies.

One of the first initiatives under this programme is to provide smaller SMEs with full financing to cover the cost of solar photovoltaic (PV) systems and installation on their rooftops.

PRACTICAL FINANCIAL SOLUTIONS

The financing initiative offers packages from as low as RM20,000 and up to RM1 million in support of the government's Net Energy Metering (NEM) scheme whereby excess energy can be exported to the national grid.

To be eligible for CIMB's Renewable Energy Financing, SMEs need to first obtain the NEM approval from SEDA Malaysia.

The financing initiative provides a practical solution to enable even the smaller and micro SMEs to purchase solar PV systems to save on their electricity bills, hence contributing to planet earth's well-being.

Apart from the SME Renewable Energy Financing, CIMB Group has also taken other steps to fulfill its commitment to Sustainability, a key pillar in its current growth strategy. These include launching its Group Sustainability Policy and Sustainable Financing Policy to guide decisions on operations and lending policies to ensure positive EES impact.

Besides that, CIMB is one of 30 founding member banks and the only ASEAN banking group that helped draft the United Nations Environment Programme Finance Initiative's Principles of Responsible Banking which is currently supported by 130 signatory banks globally.

CIMB also recently announced that it had successfully priced its US$680 million SDG bond, the proceeds of which will be channeled to various impactful sectors that serve seven of the UN's Sustainable Development Goals that CIMB Group has committed to.

UOB JOINING THE CHORUS

As for UOB, the bank connects businesses and consumers across the entire solar power value chain through U Solar, thus helping each other fulfill their role in their collective efforts to transition to a low-carbon economy.

The collaboration of UOB Malaysia Bhd with leading local solar energy service providers – starting with ERS Energy, Plus Solar and Solarvest – will offer installation, commissioning, operations and after-sales service packages for solar power systems to help business and homeowners.

Through U-Solar, the bank offers a suite of financial solutions to support the solar power value chain – from solar project developers, engineering, procurement and construction (EPC) contractors – to end-users of solar power that include consumers and companies.

Additionally, UOB also provides solar project developers with solutions in green financing in the form of sukuk (Islamic bond), project loans and portfolio financing as well as cash management services.

For EPC contractors, the bank is offering end-to-end contract-based financing solutions ranging from bid bonds and letters of credit issuance to performance guarantees and working capital facilities.

Through its U-Solar's online portal, the bank also connects these industry players to potential customers who seeksolar power solutions for their factories, offices or homes.

To promote the adoption of solar power by the end-users which include companies and consumers, U-Solar offers a one-stop shop for them to plug easily into the services offered by UOB's partners across the region.

They can also tap UOB's financing solutions for the installation, operation and maintenance of solar power systems based on their business or personal needs in making the switch to solar power.

FLEXIBLE SOLUTIONS

U-Solar offers two flexible solutions to help Malaysian companies adopt solar power with little upfront capital.

Companies can purchase a solar power system for their factory or office with the U-Solar green loan offered by UOB Malaysia. Additionally, they can also apply for a 2% rebate under the government's Green Technology Financing Scheme 2.0 for their purchase.

Elsewhere, they can also benefit from the government's tax incentives under the Green Investment Tax Allowance and Green Investment Tax Exemption schemes.Alternatively, businesses can sign up for a long-term solar power leasing agreement with UOB's U-Solar partners.

Customers can also enjoy zero upfront costs for services provided by the bank's U-Solar partners, including on-site assessment, installation and maintenance of their solar power panels and systems at their residences.

BUDGET 2020:

GREEN GROWTH AND ENERGY FOR FUTURE STRATEGY

The green economy is one of the four areas to achieve economic diversity to expand economic growth.

In 2020, the Government will accelerate EPC implementation for Government buildings, prioritising hospitals and education institutions.

Through Energy Performance Contracting (EPC), the upfront capital investment into energy saving equipment for Government buildings will be repaid through the savings in utility costs achieved.

A 70% income tax exemption of up to 10 years will be given to companies undertaking solar leasing activities.

For Budget 2020, the GITA and Green Income Tax Exemption (GITE) incentives will be extended to 2023.

CURRENT POSITION

1. **Green Investment Tax Allowance (GITA)** - Investment Tax Allowance (ITA) of 100% on qualifying capital expenditure incurred on green technology project from the date on which the first qualifying capital expenditure incurred is not earlier than October 25, 2013 for a maximum period of 5 years, or until December 31, 2020. This allowance can be set-off against up to 70% of statutory income.

2. **Green Income Tax Exemption (GITE)** - Income tax exemption of 100% of statutory income for qualifying green services activity from the year of assessment where the date of application received by MIDA on or after April 1, 2017 until the year of assessment 2020.

The government is moving towards wholesale market in the future and remain silent on the PPA.

In the future, renewable energy suppliers will also be able to compete directly in the retail market.

The more transparent and competitive electricity market will ensure a lower cost of electricity for Malaysian consumers.

The Government aims to attain Malaysia's goal to achieve 20% renewable energy from national capacity mix by 2025.

Last year's budget saw the government significantly expanding the qualifying list of green assets for Green Investment Tax Allowance (GITA) under the MyHijau directory.

BUDGET 2020

BUDGET 2020 MEASURES:

GITA

- GITA of 100% of qualifying capital expenditure incurred on a green technology project from the date on which the first qualifying capital expenditure incurred not earlier than January 1, 2020 up to three years.

  This allowance can be set-off against up to 70% of statutory income in the year of assessment.

- This is for applications received by the Malaysian Investment Development Authority (MIDA) from January 1, 2020 until December 31, 2023.

GITE

- Income tax exemption of 70% of statutory income for qualifying green services activities from the year of assessment where the date of application received by MIDA starts January 1, 2020 until three years of assessment. New tax incentive for solar leasing activities with income tax exemption of 70% of statutory income where the date of application received by MIDA starts January 1, 2020 up to 10 years of assessment for solar leasing companies certified by Sustainable Energy Development Authority (SEDA) Malaysia.

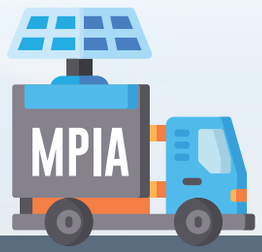
- This is for applications received by the Malaysian Investment Development Authority (MIDA) from January 1, 2020 until December 31, 2023.

ENCOURAGING RESPONSE TO SOL

The final leg of the Malaysian Photovoltaic Industry Association (MPIA) nationwide solar roadshow concluded in Johor by attracting over 110 participants from various facets of industry.

The four other previous roadshows in Penang, Alor Setar, Melaka and Kuantan had also attracted a good turnout. These locations are among the highly active economic centres with a considerable number residential, commercial and industrial buildings that could benefit most from solar photovoltaic (PV) energy.

The industry players were being briefed by SEDA Malaysia's officers with the benefits of solar PV installation on commercial and industrial rooftops, including the available incentives provided by the government.



AR ROADSHOW

During the event, representatives from MPIA and supporting agencies such as SEDA Malaysia, the Malaysian Investment Development Authority (MIDA) and Energy Commission spoke on solar system applications, procedures and requirements of the related schemes and incentives, risk and return of investments and licensing process, among others.

The roadshows were designed in such a way that participants could get accurate and direct information which is in line with the government's target of achieving 20% national installed capacity mix for renewable energy by 2025.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The Borneo Post (Sabah)
Net Energy Metering to be extended to Sabah
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EdgeProp
P2P solar energy trading platform in the pipeline


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MALAYSIA

MALAYSIA KICKS OFF P2P ENERGY TRADING WITH PILOT RUN

Peer-to-peer (P2P) energy trading has arrived at Malaysian shores with the Minister of Energy, Science, Technology, Environment and Climate Change (MESTECC) YB Puan Yeo Bee Yin launching a pilot run of the platform at the 10th International Greentech & Eco Products Exhibition & Conference Malaysia (IGEM) 2019 on 9th October.

Malaysia is the second ASEAN country (after Singapore) to conduct a pilot run of the P2P energy trading. The project has been hailed as a novel paradigm of power system operation whereby people can generate their own energy from renewable energy sources in dwellings, offices and factories – and share it with others in their vicinity.

Globally, the P2P energy trading is rapidly gaining importance as an effective mechanism to spawn greater solar PV rooftop market.

POWERING TO THE PEOPLE

In essence, P2P energy trading will provide greater empowerment to both prosumers (producers-cum-consumers of electricity) and consumers through choices of purchasing solar electricity from the P2P platform or from the retailer as well as providing an opportunity for citizens to be part of the climate change solution.

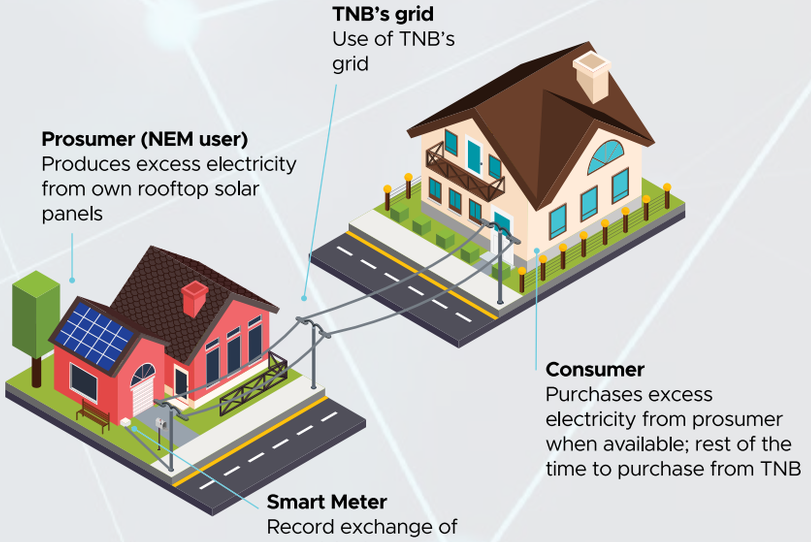
Very broadly, the P2P aligns with the recent announcement by YB Puan Yeo on the on-going electricity market reform (under the MESI 2.0 or Malaysia Electricity Supply Industry 2.0 initiative) by providing opportunities for consumers to access enhanced user experience through digital innovation, reasonable electricity prices and generating additional economic activities.

In the rise of grid edge technologies, the energy space will face positive disruptions underpinned especially by the internet-of-things (IoT), artificial intelligence (AI), blockchain, big data and smart contracts. These disruptions will continue to shape the future of energy via further decentralisation, decarbonisation, and democratisation.

MALAYSIA'S PILOT RUN

This pilot run is an initiative under the Renewable Energy Transition Roadmap (RETR) 2035 implemented by the Sustainable Energy Development Authority (SEDA) Malaysia with the support of MESTECC.

The P2P energy trading is premised on the concept of sharing economy whereby owners of solar photovoltaic (PV) system (prosumers) sell their excess solar electricity to other consumers through the grid at a competitive rate with the retailer.



Timeline: 8 months pilot project

2 Months — **Alpha phase**
To be conducted with real data and processes with no financial transaction

6 Months — **Beta phase**
Includes commercial transaction: Solar prosumers are paid for solar electricity sold to electricity consumers

P2P Pilot Project: Peer-to-peer electricity trading across the electricity network (TNB's grid)

Concept of P2P pilot project in Malaysia

To be participated by net energy metering (NEM) prosumers and electricity consumers, the pilot run is expected to run for a period of at least eight months comprising two months of alpha and six months of beta runs.

The alpha run which emphasises on technical operability test commenced in November 2019 whereas the beta run is intended to enable commercial transactions among the solar prosumers and electricity consumers (i.e. financial settlement between NEM prosumers and consumers via TNB's electricity bills).

MESTECC will then assess the outcome of the pilot run and determine how to bring this project forward, according to YB Puan Yeo.

"This is very much in line with MESI 2.0 reform where we want to empower the consumer to enable them to also be a producer (prosumer) who can sell electricity not limited to TNB (under NEM) but also to other people," she pointed out during the launch of the P2P energy trading initiative.

"This interesting concept represents the future of democratisation of electricity. This is something very progressive and we really look forward to see the results of this pilot run."

Commenting on pricing structure, the Minister noted that there will be an exchange platform for prosumers to trade their excess electricity once the project is fully implemented. This will be in the form of a regulatory sandbox approved by the Energy Commission of Malaysia which allows NEM prosumers to sell excess solar PV electricity to TNB consumers.

"There will be a market where the cheapest will get dispatch first," enthused YB Puan Yeo. "What is certain is the government is moving towards the direction of empowering consumers to be producers or prosumers (in line with the MESI 2.0 reform agenda)."

PROJECT PARTNERS

In this pilot run, the regulatory sandbox is approved by the Energy Commission of Malaysia (ST) while the P2P platform is provided by Power Ledger Ltd Pty, an Australian-based blockchain technologist in energy trading platform.

The pilot run works in close collaboration with Tenaga Nasional Bhd (TNB), TNBX Sdn Bhd, and the Malaysian Photovoltaic Industry Association (MPIA) which includes Pekat Solar SdnBhd and Plus Solar Systems Sdn Bhd.

Solar prosumers who participated in this pilot run are existing net energy metering (NEM) prosumers who have volunteered to be part of the pilot run. At the time of writing, the sandbox participants include BD Agriculture (M) Sdn Bhd, Cypark Suria (Pajam) Sdn Bhd, Lean Lee Trading Co. Sdn Bhd, KIP Hotel and Pasaraya KIP Mart Senawang with a total PV capacity of 1,577.5kW.

SOLAR ROOFTOP POTENTIAL

Given that Malaysia lies along the sunbelt, the country has abundant rooftop solar PV potential. In Peninsular Malaysia, the estimated rooftop solar PV potential is 37GW with residential rooftop provided the largest solar PV potential at 21GW, followed by industrial (8,637MW), commercial (4,598MW) and government buildings (including schools and hospitals) (3,394MW).

An advantage of solar PV rooftop is that it does not incur the use of land and addresses the concern of environmental and social aspects of power generation.

WORLD ECONOMIC FORUM

Source Image: http://crueltyfreewithme.com/there-is-no-planet-b/

WHAT IF WE GET THINGS RIGHT?

CLEAN ELECTRICITY TO DOMINATE ENERGY SECTOR

If we get things right, by 2030 the global carbon concentration will drop to 350 parts per million from 407 parts today. By then, the energy sector will largely be electricity, and at least half of the electricity is from renewable resources. Deep de-carbonising efforts will be demonstrated by governments and corporates, and yes, even the ordinary members of the public.

By 2030, electricity will also be democratised and people will be empowered with choices and they will choose energy sources that sustain life. Power generations will also shift from centralized structure to greater distributed renewable generations. The electricity system will be defined by further digitalisation, enabling the concept of sharing economy in the energy space.

By 2030, trading of excess solar electricity with neighbours and sharing of electric vehicles within the community will be the way of living. Children will be taught to live in harmony with the environment. All these did not happen by chance. It happened because there was sufficient willpower to deliberately shape the future of energy. It happened because the need to preserve the future of our children finally matters.

By Ts. Dr. Chen Wei-Nee

(Editor's Note: At the Annual Meeting of the Global Future Councils of the World Economic Forum in Dubai from Nov 3-4, 2019, the Council members were invited to present their vision of "what if we get things right". The following is the author's vision for 2030.)

Source: https://www.weforum.org/agenda/2019/10/future-predictions-what-if-get-things-right/

PVMS
PV MONITORING SYSTEM

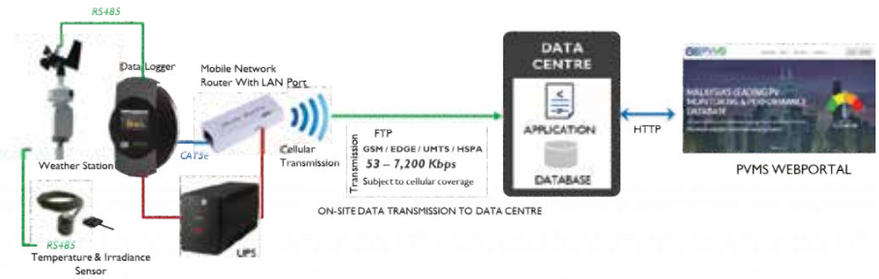
MALAYSIA'S LEADING PV MONITORING & PERFORMANCE DATABASE

Up-to-date information, real-time monitoring and reports on solar photovoltaic (PV) in Malaysia. Harness and energise tomorrow's energy, today.

The National PV Monitoring & Performance Database via the PV Monitoring System (PVMS) is an initiative to monitor selected grid-connected solar PV systems for performance and reliability. This programme is funded by Akaun Amanah Industri Bekalan Elektrik (AAIBE) or the Malaysian Electricity Supply Industries Trust Account (MESITA) under the Ministry of Energy, Science, Technology, Environment and Climate Change (MESTECC).

For a start, 150 grid-connected solar PV systems (up to 1MW capacity) throughout Malaysia are being monitored on a real-time basis. Both data and system performance analyses are available upon subscription. The Database will become the reference for designing national energy policies and programmes in the future.

The PVMS system architecture



PVMS REPORTS What's included?

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DR JEMMA GREEN
Chairman & Co-founder
Power Ledger

BLOCKCHAIN TO POWER P2P ENERGY TRADING

The blockchain technology has emerged as a potential disruptor to the energy industry in the same manner fintech has brought about numerous disruptions to the banking and financial industry.

Often associated with the trading of cryptocurrency, blockchain serves as an irreversible digital public ledger which allows a distributed network of computers to verify the authenticity of transactions without the need for a central authority.

When applied in the energy context, blockchain is able to provide a secure, transparent and decentralised ledger of an all-encompassing energy production and consumption/ transaction data.

In the peer-to-peer (P2P) energy trading sphere, blockchain can automate energy trading through smart-contracts (different from legal contracts).

Stored on a blockchain, these smart-contracts are self-executing programmes that facilitate the exchange of value between parties based on agreed-upon terms. Smart-contracts can automate energy trading by providing an automated marketplace where consumers can bid among each other to purchase renewable energy.

The above forms the basis of Malaysia's Sustainable Energy Development Authority's (SEDA) blockchain-backed energy trading platform which is now on an eight-month pilot run.

Unveiled recently during IGEM 2019, SEDA is partnering Perth (Australia)-based Power Ledger, an energy trading software outfit, who will demonstrate the ability of its platform to effectively trade surplus solar energy.

QUICK RETURN-ON-INVESTMENT

The trial will eventually be a testbed of Malaysia's potential as a solar photovoltaic (PV) rooftop market, thus able to advance the deployment of Distributed Energy Resources (DERs) across the country.

Malaysia has more than four million buildings with rooftop solar potential in Peninsular Malaysia. Endowed with huge solar energy potential, one of the key strategies to achieve the country's renewable energy target of 20% by 2025 will be to leverage on the vast rooftop space available.

In essence, P2P energy trading will make the grid relevant again through the front-of-the-meter (FTM) business opportunities available to solar PV such as virtual net metering.

By pitting a market mechanism which is facilitated by the blockchain in place, people are more likely to install solar, battery and even bigger system, according to Power Ledger's Chairman and Co-Founder Dr Jemma Green.

"By having a price mechanism whereby they can trade, people are more likely to install a bigger system which encourages them to stay connected to the grid," she told ***Sustainable Energy Malaysia***.

"This P2P market mechanism maintains utilisation of the grid, thus ensuring its on-going relevance."

> This P2P market mechanism maintains utilisation of the grid, thus ensuring its on-going relevance.

Reiterating Power Ledger's aspiration to work with regulators and electricity retailers to make energy markets more efficient, Green said the trial with SEDA Malaysia provides a real opportunity "to tailor our platform to suit the needs of the Malaysian energy market."

With the on-going electricity regulatory changes in Malaysia, surplus green energy generated by buildings with solar PV can soon be traded through the grid, thus empowering consumers with electricity choices.

"Advancements in renewable energy technologies, coupled with regulatory changes, are starting to unlock new opportunities for the energy sector," enthused Green.

In this regard, Power Ledger had partnered with a number of renowned energy companies to improve the efficiency and transparency of energy markets globally.

HIGH SCALING UP POTENTIAL

Deemed to be the first of its kind in the Southeast Asian energy market, Power Ledger's blockchain-enabled energy trading platform is also being trialed in several locations across Australia as well as in Thailand, Japan and the US.

"It (the P2P trading structure) provides prosumers with an income stream to pay back their solar or battery system investments besides just avoiding electricity bills," asserted Green, who won the Australia-level EY Fintech Entrepreneur of the Year Awards 2018 for her blockchain sustainable Power Ledger energy platform.

"If you've a solar batter system on the east coast of Australia, you can expect to generate A$14.50 per kW/hour in the spot market during the peak period so a 10kW household battery might be able to generate A$145.00 during one peak period. Given there might be 10-12 such period a year in certain parts of the market, one can expect to recoup his/her investment very fast."

Another beauty of the P2P energy trading concept is surely its ability to scale up quickly to thousands of users.

"We've a project in Europe targeting to hit 25,000 users in the next year. Our big-scale emission in Thailand which is currently 1MW on the platform is expected to grow by 4MW over the next month or two," envisaged Green.

Moving forward, Green opined the most valuable lesson for emerging economies in their implementation of the P2P energy trading platform was not to emulate the mistakes of their developed counterparts. As new industry players, she believed Asian countries in particular could leapfrog to better energy system at the outset.

"Australia has a deregulated market but it is not well-designed in the sense that there is not enough competition in certain parts of the market, especially in the peaking part and prices have gone up," she shared.

"On the contrary, Singapore with also a deregulated market but with competition at the base low and peak part of the market, has achieved a more efficient market with low cost base."

BLOCKCHAIN-BACKED P2P ENERGY TRADING ACROSS THE GLOBE

Aside from SEDA Malaysia, Power Ledger had also recently partnered with Japanese solar provider Sharing Energy and electricity retailer eRex to trial P2P solar energy trading in the Kanto region.

Scheduled to run until December 2019, the trial is intended to demonstrate the use of distributed energy systems to counter the significant feed-in-tariff (FIT) reduction planned for October 2019 that would affect more than 500,000 solar consumers.

This will be Power Ledger's second trial in Japan. The project aimed to demonstrate how communities could monetise renewable energy investments and gain access to cheaper energy systems by selling their excess solar energy via Power Ledger's P2P platform.

Power Ledger had previously successfully trialed a blockchain-enabled demonstration of P2P transaction for post FIT surplus power in Osaka with Japan's second largest utility, KEPCO, which demonstrated the accuracy and consumer acceptance of the platform.

Japan has 40GW of installed solar capacity and the energy trading technology had already proven a viable alternative to the market's current FIT model. This secondary trial strengthened Power Ledger's foothold in the Japanese energy market.

Power Ledger's platform would integrate with the home's existing smart meter systems to enable participants to set prices, track energy trading in real time to demonstrate settlement of surplus solar transactions.

AUSTRIAN EXPERIENCE

Earlier in June 2019, Power Ledger partnered with a subsidiary of one of Austria's top five largest energy utilities EnergieSteiermark, to deploy a P2P energy trading network in and around Graz, home to Austria's Smart City flagship project which was exploring new energy technologies to meet zero emission and carbon neutral targets by 2050.

E-NEXT with the NEXT-Incubator, the innovation arm of EnergieSteiermark, made Power Ledger's energy trading platform available to an initial 10 Graz households by enabling those with rooftop solar panels to sell excess renewable energy to their neighbours.

Henceforth, Power Ledger's technology would help drive the city's transition towards a zero-carbon energy future, while also giving Graz residents a monetary incentive to use renewable energy. Following the initial deployment and validation phase, the project has the potential to expand to more households in Graz and across Austria's energy network.

As a blockchain-backed platform the project will ensure data is anonymous, thus complying with the European Union's strict privacy requirements as outlined in the General Data Protection Regulation (GDPR) legislation.

FIRST SOUTHEAST ASIAN BREAKTHROUGH

In late 2017, Power Ledger and the Thai-Government backed renewable energy developer, BCPG PLC, announced a collaboration – which is Southeast Asia's first – on the formation of a microgrid development in Bangkok which would see between six and 10 multi-storey apartment buildings trading between 1-2MW of embedded solar generation.

By leveraging Power Ledger's energy-trading platform, building managers would be able to trade renewable energy from solar panels installed on each building with autonomous financial settlement enabled via the use of a secure banking interface.

This would help reduce the government's investment in building large-scale power plants to meet the growing demand for electricity and at the same time offer customers and consumers a greater choice of electricity from renewable energy in the form of P2P energy trading.

Moreover, the P2P platform allows communities the opportunity to maximise the value of their renewable energy investment while sharing low-carbon benefits with neighbouring consumers.

The autonomous nature of the trading platform means it's simple and low-cost, thus bringing this together with on-site generating capacity means energy can be low-cost, low-carbon and resilient to the impacts of severe weather conditions.

TAPPING INTO UTM'S SUSTAINABILITY PROWESS

Universiti Teknologi Malaysia (UTM) has made remarkable inroads to inculcate the spirit of sustainability into diverse areas of its technical research undertakings.

Living up to its stature as a sustainability campus, UTM has established an unparalleled reputation as a local tertiary institution of higher learning with full credential and research facilities in biogas, biomass and energy management.

Thus, SEDA Malaysia in its quest to tap into this much sought-after technical expertise, recently renewed its collaboration with UTM with an enhancement on the scope of renewable energy.

Towards this end, a Memorandum of Understanding (MoU) was inked between UTM and SEDA Malaysia – witnessed by Minister of Energy, Science, Technology, Environment and Climate Change YB Puan Yeo Bee Yin during the recent IGEM 2019. UTM was represented by its Kuala Lumpur Campus Pro-Vice Chancellor Prof Dr Shamsul Sahibuddin at the signing with SEDA represented by its CEO Ir Dr V. Sanjayan.

The MoU, which boasts a partnership span of three years, is a continuity of the previous MoU which lapsed in June 2018.

For the record, UTM's Faculty of Chemical Engineering and SEDA had in June 2015 signed a MoU to work as partners in driving forward Malaysian biomass and biogas technology.

This was in line with the National Green Technology agenda to increase the usage of renewable energy from sources such as solar, hydro, biogas and biomass while lessening the dependency on fossil fuel.

Back then, UTM's principal researchers, Prof Dr Rozainee Mohd Taib and Prof Dr Haslenda Hashim were entrusted to design and carry out basic training and competence modules for local engineers in the fields of construction, operation and maintenance of biomass and biogas technology.

WHAT THE MOU ENTAILS

Under the current MoU, both UTM and SEDA Malaysia will endeavour to strengthen, promote and develop research co-operation between them on the basis of equality and mutual benefit.

Below is the scope of collaboration between both parties:

Biomass and Biogas Technology

- To collaborate in developing training modules and provide relevant training on the development, operational and maintenance of biomass and biogas technologies;
- To provide basic and competency training programmes for local engineers and technicians in the field of construction, operation and maintenance of biomass and biogas technologies;
- To collaborate in advanced and continuous research activities in biomass and biogas industries;
- UTM to act as an independent party on behalf of SEDA Malaysia during biomass and biogas plant testing and commissioning tests such as the acceptance test, reliability run, plant efficiency test and other related tests;
- UTM to provide services and advice for or on behalf of SEDA Malaysia during the testing and commissioning of biomass and biogas projects; and
- Any other areas of cooperation to be mutually agreed by both parties.

Energy Management and Efficiency

- Provide energy efficiency training that meets the industry's requirements;
- Provide training centers for basic training programmes and skills for stakeholders in energy management and efficiency;
- Promote technology, research and applications for efficiency and towards achieving energy and carbon savings targets;
- Participate in workshops, seminars and other activities related to energy management and efficiency with SEDA Malaysia; and
- Develop energy management laboratories.

Prof Dr Shamsul said with its track record, UTM was well-positioned to fill the role of an independent third party for testing, providing assessment and certification as well as developing training materials and conducting training for engineers and technicians in designing biomass and biogas plants.

"On the energy efficiency front, we shall look at how to assess the issues of energy efficiency in Malaysia as not many buildings have met the desirable energy efficiency standards," he told ***Sustainable Energy Malaysia***.

"This is interesting for us as UTM has long embarked on an energy efficiency audit to lessen our energy consumption (thus reducing the various forms of carbon footprint)."

In fact, sustainable energy management (SEM) is already a university-wide commitment programme for UTM where it strives to efficiently manage the consumption of energy in a manner consistent with providing a conducive and sustainable campus environment for teaching, learning, research and intellectual development.

UTM's current SEM objectives are to:

- Promote a culture of conservation among the campus and greater community
- Encourage efficient energy usage
- Be a leader in energy sustainability

In the longer-term, the SEM objectives will enable UTM to achieve the following goals:

- Establish a sustainable energy management system and culture of conservation within the campus community
- Reduce carbon emissions through efficient energy management
- Reduce dependency on fossil fuel
- Utilise renewable energy
- To be not only a leader in energy sustainability but also to promote the best practices locally and internationally

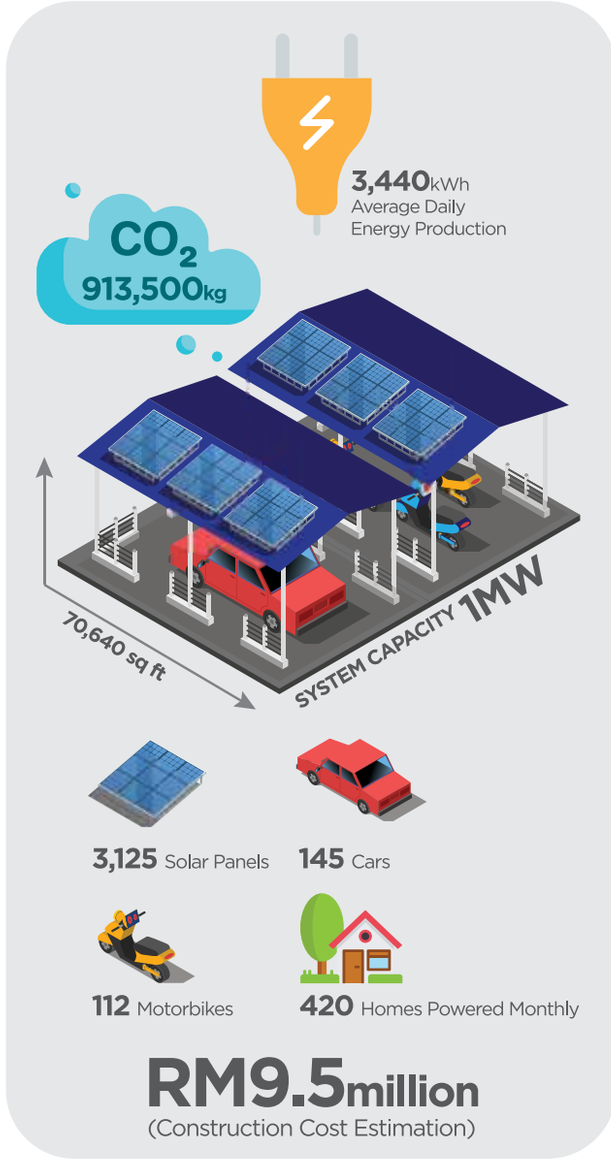
Prof Dr Shamsul said apart from the SEDA Malaysia project which comes under the purview of Prof Dr Rozainee and Prof Dr Haslenda, another group of UTM researchers led by Prof Dr Zainura Zainon Noor were currently working with PLUS Malaysia Bhd on a project which focuses on the sustainable policy of the North-South Expressway (i.e. sustainable development and green house emission).

"Elsewhere, we also have a collaboration with Air Asia on carbon-saving initiatives and more recently, with the Malaysian Palm Oil Board (MPOB) to undertake a two-and-a-half year study on the usage of palm oil biodiesel up to the B30 variant in Euro 4 engines and below," he added.

The government has allocated RM2.5 million for MPOB to undertake the palm oil biodiesel study which also involves five other universities, namely Universiti Malaya, Universiti Tun Hussein Onn Malaysia, Universiti Teknikal Melaka, Universiti Kuala Lumpur and the University of Nottingham Malaysia.

WALKING THE TALK IN PROMOTING RENEWABLE ENERGY

In 2015, UTM collaborated with solar company BSL Eco Energy to erect a unique solar car park roof measuring 70,640 sq ft at its Kuala Lumpur campus. To date, this 1MW array is the only solar installation of this size in the vicinity of the Kuala Lumpur city centre.



SPURRING RE AWARENESS AMONG THE YOUNG

The National Science Week (NSW) is an ideal platform for the Ministry of Energy, Science, Technology, Environment and Climate Change (MESTECC) to reach out to the young and help inspire the creation of future scientists and researchers in the country.

Organised by MESTECC, the NSW has become an annual event since 2018. Filled with various activities related to science, technology and innovation, the nationwide celebrations were done in two phases – the first from April 1 to 7 (2019) while the second took place from August 2 to 8 (2019).

The NSW is an ideal platform to raise public awareness on the importance of science and technology on a society's well-being and national progress. Hence, the theme *Science for Well-Being* was aptly selected to convey the message on the major role played by science and technology in the realm of socio-economy and environmental sustainability. This year's NSW 2019 targeted the participation of one million visitors in its various nationwide programmes and activities.

In rolling out the second phase of the Selangor level NSW, MESTECC Minister YB Puan Yeo Bee Yin noted that SEDA Malaysia's selection to spearhead this year's NSW was apt given the Ministry's quest to leverage this year's NSW celebration as a platform to encourage the proliferation of renewable energy (RE) in Malaysia.

SEDA Malaysia played a pivotal role in this year's Selangor level NSW as the event's implementing agency side-by-side with the Selangor Government, the Selangor Public Library Corporation (SPLC) and the Malaysian Association of Creativity and Innovation (MACRI).

On its part, SPLC has been supportive of the government's aspiration to empower the dependency on RE. Through the Net Energy Metering (NEM) programme implemented by SEDA Malaysia, SPLC's building has been retrofitted with a solar PV system with a 507.3 kW capacity.

Various interesting and interactive programmes were implemented during the second phase of the Selangor level NSW including a water rocket competition for primary and secondary schools, drone race, perfume making & forensics, STEM robotic competition, study tours to SEDA Malaysia's RE power generation stations, video shows, Veative VR (virtual reality) Learning and Science, Engineering & Aerospace, among others.

To further spark the concept of "Science is Fun", SEDA Malaysia, MACRI and the Selangor Education Department had conducted a study tour during which pupils visited RE power generation stations. Earlier during the first phase, around 10 schools in Selangor were selected to participate in a similar study tour to gain insight into RE projects on a hands-on basis.

SEDA EXPERIENTIAL LEARNING TOUR

SEDA Malaysia has come out with an ingenious way to reach out to secondary school children by initiating an Experiential Learning Tours-cum-Video Competition. It is designed to promote greater awareness and appreciation of sustainable energy generation among them.

Held in conjunction with the Selangor State level National Science Week 2019, the event was also aimed at promoting a better understanding of science, technology and innovation among school children. It was made possible with the support from feed-in approval holders (FiAHs) under the feed-in tariff (FiT) scheme.

Participating schools were given a 'video challenge' to produce a short video through which pupils can share their observations, understanding and experience gained at the renewable energy (RE) power plants.

A total of 420 pupils from 10 schools participated in the study tour programme from July 19 to August 7 (2019) which involved visits to renewable energy sites within the Klang Valley and neighbouring Negri Sembilan.

The sites were Jana Landfill Sdn Bhd (biogas), Solar System & Power Sdn Bhd/Ennesa Power Sdn Bhd (solar PV), KUB-Berjaya Energy Sdn Bhd (biogas), Fortune 11 Sdn Bhd (solar PV), Sai Kim Enterprise Sdn Bhd (solar PV) and Cypark Resources Bhd (solar PV).

The participating schools were SMK Batu 8 Puchong, Sekolah Berasrama Penuh Integrasi Gombak, SMK Rawang, SMK (P) Taman Petaling, SMK Alam Megah 2, Sekolah Berasrama Penuh Integrasi Sabak Bernam, SMK Raja Mahadi Klang, SMK Taman Bunga Raya (1), Karimiyah Integrated Islamic School and Sekolah Menengah Agama Bandar Baru Salak Tinggi.

Key objectives of the SEDA Experiential Learning Tours-cum-Video Contest

- To compliment the objectives of the National Science Week by reaching out to students in Selangor.
- To create greater awareness and foster interest in Science, Technology, Engineering and Mathematics (STEM), particularly in matters related to sustainable energy in line with the objectives of SEDA Malaysia.
- To record, narrate and communicate the learning experiences and outcome of each educational tour.
- To accentuate learning through hands-on experiences and develop video contents based on the study tours that will be showcased and rewarded during the Selangor Science Week.

In the video competition, pupils from each school would first compete among themselves for the best entry. The best entry from each school would then compete with other participating schools for the best three entries.

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In the video competition, pupils from each school would first compete among themselves for the best entry. The best entry from each school would then compete with other participating schools for the best three entries. Pupils were also allowed to vote for the best videos, of which their votes made up 30% of the score for the best submission.

Evaluation was focused on five aspects, namely:

i. Clarity (ability to highlight the learning objective);
ii. Effectiveness (depth of the message conveyed to viewers);
iii. Creativity (uniqueness of the video presentation);
iv. Inclusion of Additional Information (materials researched online), and
v. Level of Engagement with the Host of the Renewable Energy Plant (asking relevant questions).

The three winning schools in the video shoot competition were:

- **First Prize: Sekolah Berasrama Penuh Integrasi Gombak** (Video on Visit to Solar System & Power Sdn Bhd and Ennesa Power Sdn Bhd in Seri Kembangan)
- **Second Prize: SMK Rawang** (Video on visit to KUB-Berjaya Energy Sdn Bhd at Pusat Pelupusan Sanitari Sisa Pepejal Bukit Tagar)
- **Third Prize: SMK Batu 8 Puchong** (Video on visit to Jana Landfill Sdn Bhd at Tapak Pelupusan Sanitari Air Hitam in Puchong)

Gauging from the response and feedback from teachers and pupils, it would seem that the SEDA Experiential Learning Tour-cum-Video Competition has successfully met the objectives of creating greater awareness on sustainable energy and the role played by SEDA Malaysia.

Among the salient points noted from the event are:

- The FiAHs were very supportive and provided insightful information. They welcome more study tours in future.
- All 10 participating schools were very appreciative of the opportunity given to the students. The teachers agreed that the video competition was a good way to get the students to pay more attention while creating good video contents on renewable energy generation.
- 426 pupils benefited from the visits to seven renewable sites while 1,468 students (physical engagement) participated in the video preview session and had an opportunity to vote for the best videos.
- A total of 103 videos created by the pupils – along with photographs and experiences of their study tours – have been archived in a dedicated website https://sedalearningtourvideos.simdif.com/page-562341.html.
- The highlight of the study tour-cum-video competition was the award presentation ceremony where Minister of Energy, Science, Technology, Environment and Climate Change YB Puan Yeo Bee Yin presented prizes to the winners and watched the winning videos.

RENEWABLE ENERGY (RE) FUND

WHAT ARE THE IMPACTS OF HAVING RE FUND TO SUPPORT THE FEED-IN TARIFF (FiT) MECHANISM?

POSITIVE IMPACTS ON :

ECONOMY

Hedges against conventional fuel price volatility.

Creates RE - related jobs.

Financial security through Renewable Energy Power Purchase Agreement (REPPA).

Creates spin off businesses.

NATIONAL AGENDA

Promotes a decentralised and democratised form of electricity system.

Government's commitment to 20% of RE electricity generation by 2025.

Increases energy security and autonomy.

SOCIETY

RE, a common landscape for the community.

Community engagement through climate change mitigation.

Increases public awareness for renewables.

ENVIRONMENT

Reduces dependency on fossil fuels.

Lowers carbon dioxide (CO_2) emissions for cleaner air.

Increases health of general populations.

www.seda.gov.my

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CALENDAR OF EVENTS

The final strategic trust under the National Renewable Energy Policy and Action Plan (NREPAP) and the impending launch of the Renewable Energy Transition Roadmap (RETR) 2035 relates to developing an awareness programme so there is greater acceptance and participation by the general public and private sector in the sustainable energy programmes administered by SEDA Malaysia.

The activities cover local awareness programmes including engagement with stakeholders through seminars/workshops, open days, exhibitions and collaboration with NGO partners as well as international liaisons through meetings and seminars attended.

JANUARY 2019

22 PUTRAJAYA

INSIGHTFUL EXCHANGE WITH KOREANS

A delegation from Korean Hydro & Nuclear Power Co. visited SEDA Malaysia. There was insightful exchange of information, particularly on RE including updates in both countries.

24 BANGKOK, THAILAND

DESIGNING THE FUTURE OF THAILAND'S POWER SECTOR

A forum jointly organized by the Ministry of Energy Thailand and ADB where Dr Wei-nee Chen was invited to chair the session on "Business Models and Innovations in Renewable Energy".

FEBRUARY 2019

12 PUTRAJAYA

SPECIAL WORKSHOP FOR FIREMEN

SEDA Malaysia organised a Grid Connected Photovoltaic System (GCPV) workshop at the Jabatan Bomba dan Penyelamat Putrajaya.

PUTRAJAYA

28

MESTECC OPEN DAY DRAWS VISITORS

CEO, Dr Sanjayan lend a listening ear to the voice of youth who visited SEDA's booth at the Open Day which was graced by YB Yeo Bee Yin, Minister of MESTECC.

FEBRUARY 2019

15 KLANG, SELANGOR

TNB DELEGATION VISITS SEDA MALAYSIA

The Sustainable Energy Development, Retail Division of TNB visited SEDA Malaysia. There was a useful exchange of ideas on SE.

18 PUTRAJAYA

COURTESY CALL ON SEDA BY SMALL HYDRO PLAYERS

The Malaysia Small Hydro Industry Association (MASHIA) made a courtesy call on SEDA Malaysia.

LINE WALK AT TEX CYCLE

SEDA Malaysia visited Tex Cycle (P2) Sdn Bhd prior to the Acceptance Test and Performance Assessment (AT&PA). The plant is one of few which applies biomass gasification technology to produce steam and generate electricity.

15 PUTRAJAYA

EVENT PARTNER AT MALAYSIA URBAN FORUM

SEDA Malaysia which was the Event Partner of the Malaysia Urban Forum 2019 set up an exhibition booth at the event held at the KLCC.

18-19 KUALA LUMPUR

MARCH 2019

26 PUTRAJAYA

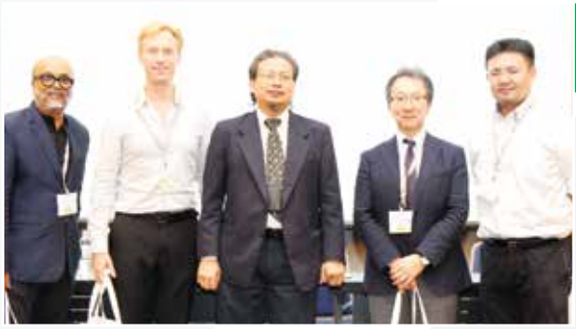
LEARNING MORE ABOUT NET ENERGY METERING

SEDA Malaysia set up a booth at "Forum Bandar Hijau Karbon Rendah 2019" hosted by Perbadanan Putrajaya where the public learnt more particularly on the Net Energy Metering (NEM) programme.

28 PUTRAJAYA

PROMOTING SOLAR PV INSURANCE FOR SERVICE PROVIDERS

SEDA Malaysia teamed up with Allianz Malaysia and Anora Agency to promote solar PV insurance for service providers at Anora & the Malaysian Photovoltaic Industry Association's (MPIA) Open Day. SEDA's Malaysia Director of Corporate Communication Roslan Ali delivered a welcome speech.



28 PUTRAJAYA

KEEN INTEREST IN ZERO ENERGY BUILDINGS

A huge crowd turned up at the seminar on Awareness towards Zero Energy Building, jointly organised by SEDA Malaysia and JASE-W.

13 GOMBAK, SELANGOR

VISIT TO OFF-GRID SOLAR PROJECT

SEDA Malaysia and Times-Lite Electrical Engineering Sdn Bhd visited the Off-Grid Solar Project at Perkampungan Orang Asli Sg Relang in Gombak, Selangor

18 PUTRAJAYA

BRIEFING SESSION ON NEM PROGRAMME

An awareness briefing session was held on the Net-Energy Metering (NEM) programme, Solar PV Investor Directory, SARE and Sel-Co. It was graced by MESTECC Minister YB Puan Yeo Bee Yin.

19 KUALA LUMPUR

UPDATES ON SE DEVELOPMENT

SEDA Malaysia participated in the ASEAN Super 8 event held at MITEC, Kuala Lumpur where a booth was set up to provide updates on Malaysia's sustainable energy development.

29 PUTRAJAYA

YOUNG LEADERS LEARN MORE ABOUT SE

SEDA Malaysia was visited by participants of the Malaysia Young Leaders Programme by the Global Institute for Tomorrow. The programme involves acquiring knowledge with regards to SE.

APRIL 2019

22 KUALA LUMPUR

REACHING OUT THROUGH TV2

SEDA Malaysia CEO Dr. Sanjayan Velautham and SEDA HoDs were interviewed on TV2 pertaining to a Green Technology Documentary. It featured SE updates and highlighted SEDA Malaysia's key roles, latest plans and developments.

MOTIVATING STAFF THROUGH TEAM BUILDING

SEDA Malaysia organised its 2019 Team Building for two days at Genting Highlands.

28 PUTRAJAYA

BELGIANS KEEN TO EXPLORE RE INVESTMENTS

A delegation from the Belgian Renewable Energy Group visited SEDA Malaysia and expressed keenness to explore renewable energy investments in Malaysia.

30 PUTRAJAYA

MAY 2019

PUTRAJAYA
14

NEW WEBSITE AND NEM CALCULATOR LAUNCHED

MESTECC Minister YB Puan Yeo Bee Yin launched a new SEDA Malaysia website which featured a renewable energy microsite and Net Energy Metering (NEM) calculator. She also had a meet and greet session with SEDA Malaysia staff.

AN INSIGHTFUL INTERVIEW WITH ASTRO AWANI

SEDA Malaysia CEO Dr Sanjayan Velautham and former Deputy Secretary General (Natural Resources) Dato' Dr Nadzri Yahaya were interviewed on Let's Talk with Sharaad Kuttan on Astro Awani. The insightful talk show focused on Sustainable Energy updates and SEDA Malaysia's key role and latest plans.

30
KUALA LUMPUR

JUNE 2019

DONATING BLOOD AND LEARNING ABOUT SE

SEDA Malaysia organised the "Jom Amalkan Hidup Sihat" programme where the public not only could donate blood but also learnt more about Sustainable Energy.

18 PUTRAJAYA

PUTRAJAYA
22

A DIALOGUE FOR BETTER COLLABORATION

SEDA Malaysia held a dialogue session with IEM-EETD & EEAM aimed at fostering a stronger collaboration in sustainable energy.

26 KUALA LUMPUR

REACHING OUT TO THE BANKING COMMUNITY

In reaching out bankers, SEDA Malaysia was one of the speakers who shared an overview on Malaysia's Renewable Energy sector at Sasana Kijang, Bank Negara Malaysia.

JULY 2019

10 KUALA LUMPUR

UPDATES ON SE PROGRAMMES THROUGH TRAXXFM

SEDA Malaysia was featured on TRAXXfm where its Chief Strategic Officer Dr Wei Nee Chen and SEDA Malaysia Director of TDF Steve Anthony Lojuntin provided updates on Malaysia's sustainable energy programmes.

PUTRAJAYA **10**

USEFUL EXCHANGE OF IDEAS WITH SINGAPOREANS

SEDA Malaysia had the honour of welcoming delegates from Singapore's Energy Market Authority (EMA). There was a useful exchange of insights and experiences between both countries.

11 KUALA LUMPUR

MAYBANK ENGAGES IN GREENING EFFORTS

SEDA Malaysia and Maybank engaged on the topic of renewables and the importance of financial institutions in realising a common sustainable future for Malaysians. SEDA hopes that this "greening" effort with the financial institutions would continue to snowball and flourish.

18 KOTA KINABALU, SABAH

CURRENT UPDATES ON RE FOR SABAH

Frederick Wong from SEDA Malaysia's Sabah Branch office briefed the crowd on current RE updates and latest programmes during the IEM-SESB seminar entitled *Towards Generation Optimisation, Challenges and Opportunities for Sustainable Hydropower Development in Sabah*.

AUGUST 2019

2 PUTRAJAYA

SEDA MALAYSIA BRINGS CHEER TO PROPERTY DEVELOPERS

SEDA Malaysia Chairman YB Wong Kah Woh announced at a press conference that property developers will be allowed to reserve a NEM quota for their new projects.

7 PUTRAJAYA

GOOD RESPONSE TO TRAINING SESSIONS

SEDA's Malaysia training sessions on "Grid-Connected PV Systems" and "ACMV Energy Demand Management" designed for engineers and professionals.

9 PUTRAJAYA

MORE INFO ON E-BIDDING REQUIREMENTS AND GUIDELINES

SEDA Malaysia held a briefing to provide highlights on e-bidding requirements and system guidelines. It also released the quota for small hydro (160MW) through the first e-bidding process.

13 PUTRAJAYA

LEARNING MORE ABOUT SOLAR PV PROJECTS

Malaysia's RE capability has drawn attention from the Asian Development Bank and Nepal. A delegation visited SEDA Malaysia to learn more on solar PV projects.

SEPTEMBER 2019

4 BANGKOK, THAILAND

PRESENTATION ON MALAYSIA'S PILOT P2P ENERGY TRADING

SEDA Malaysia Director of Digital Services Hazril Izan Bahari was invited to a forum discussion which included a discussion on Malaysia's pilot P2P energy trading at the ASEAN Energy Business Forum jointly organised by the ASEAN Centre for Energy (ACE) and International Renewable Energy Agency (IRENA).

4 PETALING JAYA, SELANGOR

ENGAGEMENT SESSION ON RENEWABLE ENERGY PROGRAMMES

SEDA Malaysia conducted an engagement session on Renewable Energy programmes (focusing on NEM) which took place at Petaling Jaya.

ENGAGEMENT SESSION ON RENEWABLE ENERGY PROGRAMMES

SEDA Malaysia had the honour conducting a briefing session on the Net Energy Metering (NEM) programme during the "Save & Earn from Solar" dialogue session at Subang Jaya. The event was graced by YB Michelle Ng and the crowd had a chance to know on achieving better savings via the NEM programme.

OCTOBER 2019

DIALOGUE SESSION ON RENEWABLE ENERGY PROGRAMMES

SEDA Malaysia had an insightful dialogue session with the RE Industry stakeholders at Kota Kinabalu, Sabah. One of the objectives of this event is to gather feedbacks from the industry players at Sabah in regards to the renewable energy matters

4 KOTA KINABALU, SABAH

22 SUBANG JAYA, SELANGOR

FRUITFUL DISCUSSIONS WITH CHINESE DELEGATION

MESTECC and SEDA Malaysia welcomed HE Mr Zhang Baoshun, Deputy Chairman of Population, Resources and Environment Committee, Chinese People's Political Consultative Conference (CPPCC) and his delegation to Putrajaya. Fruitful discussions were held on best practices in managing environmental pollution and energy issues.

PUTRAJAYA

21

KNOWLEDGE EXCHANGE BETWEEN BRUNEI AND MALAYSIA

SEDA Malaysia had the honour receiving a delegation from Brunei (Department of Energy and Environment) to learn about Malaysia's RE policy and programmes.

25 PUTRAJAYA

JOHOR BAHRU, JOHOR **25**

WORKSHOP ON INVESTMENT OPPORTUNITIES AND INCENTIVES

SEDA Malaysia's officers briefed participants at a workshop entitled "Green Accord Initiative Award Kick-Off: Building Energy Monitoring and Reporting System, UNIDO-MAESTA Investment Opportunity and Incentives in Green Tech Workshop" in Johor Bahru.

NOVEMBER 2019

3-4 DUBAI, UAE

World Economic Forum's Annual Meeting of the Global Future Council on Energy Technologies.

6 DUBAI, UAE

Fireside Chat on Sustainable Energy at the World Government Summit

13-15 SANTIAGO, CHILE

54th IEA PVPS ExCo Meeting

DECEMBER 2019

KUALA LUMPUR **3**

IFN FORUM ON GREEN & SUSTAINABLE FINANCING

Chief Strategic Officer of SEDA Malaysia, Ts. Dr Weinee Chen, is interviewed by Pn Hatini Mat Husin, Senior Director/Head, Debt Markets at Affin Hwang Capital.

KING GETS BRIEFING ON SEDA'S INITIATIVES

SEDA Malaysia was honoured to have His Majesty Seri Paduka Baginda Yang Di-Pertuan Agong Al-Sultan Abdullah Ri'ayatuddin Al-Mustafa Billah Shah at its booth during the National Planning Congress 2019 at Kompleks Perbadanan Putrajaya. SEDA Malaysia briefed His Majesty on its initiatives and the Green Technology Application for the Development of Low Carbon Cities project.

11 PUTRAJAYA

8 MUAR, JOHOR

ENGAGEMENT SESSION ON RENEWABLE ENERGY PROGRAMMES

SEDA Malaysia conducted an engagement session on Renewable Energy programmes (focusing on NEM) in Muar. The event was graced by YB Puan Yeo Bee Yin, Minister of MESTECC. She was accompanied by YB Rajiv Rishyakaran, SEDA Malaysia Board Member and SEDA Malaysia officers led by Ir. Dr Sanjayan Velautham, SEDA Malaysia CEO. The engagement session was attended by public, government officials and industry players.

10-11 KUCHING, SARAWAK

SUSTAINABLE AND RENEWABLE ENERGY FORUM (SAREF)

Ir Dr Sanjayan Velautham, CEO of SEDA Malaysia, who was one of the panellists in the "Energy Leaders Forum" session, shared on Malaysia's RE policies and SEDA Malaysia's involvement in the RE sector with participants. Aside from Ir Dr Sanjayan, SEDA Malaysia's Chief Strategic Officer Ts Dr Wei-nee Chen was also part of the panelists on the RECs Market @ SAREF.

ISES 2020 RATE CARD

Since 4th ISES2018, ISES have established an income generation method via sponsorship packages, exhibition space sales and registration fees. Gradually the packages have increased according to the market trend. The income derived from the said channels has help in ensuring all the previous ISES as self-funded event as mandated by the Authority Members.

PLATINUM
RM 150,000.00

- 8 summit seats
- Special brand mention in any of the speeches done by respective person*
- Company presentation by MD/CEO before summit starts/during lunch session, duration from 10 minutes onwards*
- Dedicated bunting with title, and company logo
- Company logo on stage backdrop
- Company logo on front cover program book with status
- Company logo in ISES press release/speech paper
- Advertising space in ISES website, and hyperlink (size and concept differ accordingly)
- Special blasting in social media (Facebook, Instagram, Twitter) - (frequency differs accordingly)
- 6 Pages of advertising space in SEDA Malaysia magazine (premium position) **
- 2 Pax gala dinner invite*
- Brief intro about company/top management with 2 page ads in ISES programme book
- Logo in newspaper ads with title
- Exhibition Space***

DIAMOND
RM 100,000.00

- 6 summit seats
- Special brand mention in any of the speeches done by respective person*
- Company presentation by MD/CEO before summit starts/during lunch session duration from 10 minutes onwards*
- Dedicated bunting with title, and company logo
- Company logo on stage backdrop
- Company logo on front cover program book with status
- Company logo in ISES press release/speech paper
- Advertising space in ISES website, and hyperlink (size and concept differ accordingly)
- Special blasting in social media (Facebook, Instagram, Twitter) - (frequency differs accordingly)
- 4 Pages of advertising space in SEDA Malaysia magazine (premium position) **
- 2 Pax gala dinner invite
- Brief intro about company/top management with 2 page ads in ISES programme book
- Logo in newspaper ads with title
- Exhibition Space***

EXHIBITION BOOTH

RM3,000/booth

- 2 days summit
- 1 plug point
- A table c/w cloth and 2 chairs
- Certificate of participation as Exhibitor
- Food will be provided for staff assigned at booth/2 paxs

CONFERENCE FEE

Details	Early Bird/ *Until 31 December 2019	Standard	Walk-In
Single Seat	RM350	RM600	RM 1,500
Lecturer /Student Packages	RM350		

Here's your chance to be a part ISES2020. Your options are:

1. Summit Sponsorship Package
2. Exhibition booth Space sales
3. Conference Fee
4. SEM Magazine Sponsorship – pagination RM value tbc if based on page buying

Please find below details of the pricing

GOLD
RM70,000.00

- 5 summit seats
- Special brand mention in any of the speeches done by respective person*
- Company logo on stage backdrop
- Bunting with title and logo on sharing basis of 2 companies only
- Company logo on front cover program book with status
- Company logo in ISES press release/ speech paper
- Advertising space in ISES website, and hyperlink (size and concept differ accordingly)
- Special blasting in social media (Facebook, Instagram, Twitter) - (frequency differs accordingly)
- 2 Pages of advertising space in SEDA Malaysia magazine (front half position) **
- 2 Pax gala dinner invite
- Brief intro about company/top management with 1 page ads in ISES programme book
- Logo in newspaper ads with title
- Exhibition Space***

SAPPHIRE
RM50,000.00

- 3 summit seats
- Bunting with title, and logo on sharing basis of 2 companies only
- Company logo on stage backdrop
- Company logo inside program book content
- Advertising space in ISES website, and hyperlink (size and concept differ accordingly)
- Special blasting in social media (Facebook, Instagram, Twitter) - (frequency differs accordingly)
- 1 Pages of advertising space in SEDA Malaysia magazine (ROP)
- 1 Pax gala dinner invite
- Brief intro about company/top management in ISES programme book
- Logo in newspaper ads with title
- Exhibition Space***

TOPAZ
RM 15,000.00

- 2 summit seats
- Bunting with title, and company logo on sharing basis of 4 companies only
- Company logo on stage backdrop
- Company logo inside program book content
- Advertising space in ISES website, and hyperlink (size and concept differ accordingly)
- Special blasting in social media (Facebook, Instagram, Twitter), frequency differs
- Logo in sponsors' column
- Logo in newspaper ads with title
- Exhibition Space***

*** Dimension To Be Confirmed
** First Come First Serve Basis
* To Be Confirmed

TERM AND CONDITION

1. Prices stated are inclusive of SST.
2. All payments for the Summit are to be collected in Ringgit Malaysia (MYR).
3. Jointly organised by SEDA Malaysia and Selangor State Environment, Green Technology, Science, Technology and Innovation, and Consumer Affairs Committee and co-hosted with the Ministry of Energy, Science, Technology, Environment and Climate Change (MESTECC) together with the State Government of Selangor.
4. The Summit will be held on the 21th and 22th April 2020 at Selangor (Venue tbc).
5. For more details of the summit, please log on to www.ises.gov.my.
6. By signing the contract of sponsorship, the Sponsor is deemed to have agreed / given permission to the following:
   - Logo submission for the purpose of marketing and advertising of the summit.
   - The Organiser reserves the right to place the logo in any of the marketing collaterals across various platforms (print, digital, outdoor).
   - By virtue of being the Summit owner, the Organiser may use services of third parties.
   - The Sponsors will need to submit the required logo within time for any of the marketing collaterals usage, in which failure to do so, logo will be unplaced.
   - The Organiser reserves the right to change the date and/or venue or to postpone the Summit due to force majeure at its sole discretion.
7. Once the Participant's registration has been duly processed, there will be NO fee refund to Participant who wishes to withdraw their participation for the Summit for whatever reason.
8. The Organiser cannot be held responsible for lost, damaged or stolen property during the 2-day Summit.

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