LIVE WEBINAR

Speakers:





Mr. Ruzlisham bin Mat Diah Deputy Director of Green Technology Division, Malaysian Investment Development Authority (MIDA)



Mr. Davis Chong President, Malaysian Photovoltaic Industry Association (MPIA)



Investment Opportunities in Renewable Energy:

Solar Industry Outlook in Malaysia

Dato' (Dr.) Ir. Guntor Tobeng Group Managing Director, Gading Kencana Sdn Bhd



Y.M Tunku Akmaludin Zakri Tunku Dato Zahri Business Development Head, Antah Solar Sdn Bhd

We will start at 2.45pm (GMT +7, Thailand Time) / 3.45pm, (GMT +8, Malaysia Time)

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HOUSEKEEPING RULES

- All microphone & video of attendees have been muted.
- By clicking at the webinar assistant, you will see.....



- Live discussion between audiences is available at the "Chat" tab
- If you wish to ask any question to our speakers, please leave your question at the "Question" tab
- Any problem or need our assistance you need please send your request to the "Help" tab
- If there's any internet disruption during the webinar, please be patient and try to sign in again.

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PROGRAMME

Welcome remarks by Emcee

Introduction of Speakers by Moderator

Y.M Tunku Akmaludin Zakri Tunku Dato Zahri, Business Development Head of Antah Solar Sdn Bhd

Presentation by Speakers

Mr. Ruzlisham bin Mat Diah, Deputy Director of Green Technology Division of Malaysian Investment Development Authority (MIDA)

Mr. Davis Chong, President of Malaysian Photovoltaic Industry Association (MPIA)

Dato' (Dr.) Ir. Guntor Tobeng, Group Managing Director of Gading Kencana Sdn Bhd

Panel Discussion & Q&A Closing Remarks by Emcee The End

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Y.M Tunku Akmaludin Zakri Tunku Dato Zahri

Business Development Head Antah Solar Sdn Bhd

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Investment Opportunities in Renewable Energy: Solar Industry Outlook in Malaysia

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Mr. Ruzlisham bin Mat Diah

Deputy Director Green Technology Division Malaysian Investment Development Authority (MIDA)

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GOVERNMENT'S FACILITATION ON GREEN TECHNOLOGY INDUSTRY



by Mr. Ruzlisham Mat Diah Deputy Director, Green Technology Division

FIRST Point of Contact



PROMOTION

- Foreign Direct Investment
- Domestic Investment
- Manufacturing & Selected Services

02

EVALUATION

- Manufacturing Licenses
- Tax Incentives
- Expatriate Posts & Duty Exemption
- Principal Hub & selected services.

03

PLANNING

- Planning for industrial development
- Recommend policies & strategies on industrial promotion and development
- Formulation of strategies, programs and initiatives for international economic cooperation



05

MONITORING

- Licensing & Incentive Compliance and Monitoring
- Determination of effective date of Incentives
- Issuance of Pioneer Certificate

POST INVESTMENT

- Assist companies in the implementation & operation of their projects
- Facilitate exchange & coordination among institutions engage in or connected with industrial development
- Advisory Services

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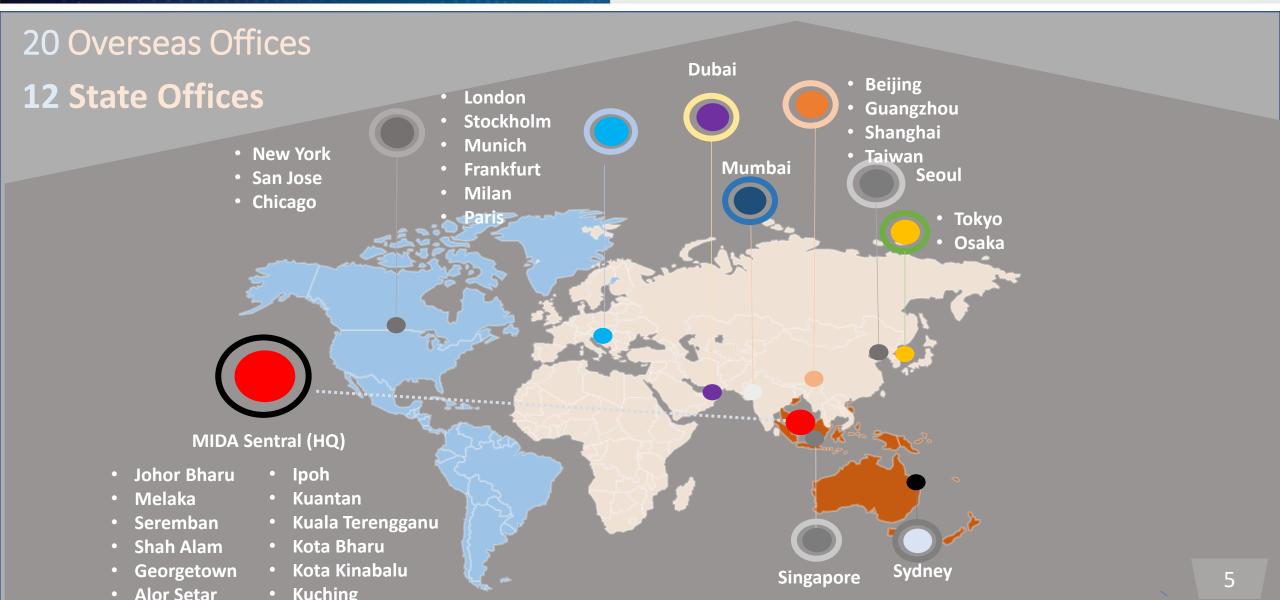




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Renewable Energy Policy

National Target

PAR S GREEMENT

MALAYSIA

National Green Agenda

Achieving 31% Renewable Energy (RE) capacity mix by 2025

8 th	Gth	Aoth	d d th
Malaysia Plan	Malaysia Plan	10 th Malaysia Plan	11 th Malaysia Plan
(2001 - 2005)	(2006 - 2010)	(2011 - 2015)	(2016 - 2020)
 RE introduced as the 5th Fuel Target of 5% RE in energy mix 	 National RE Policy & Action Plan (NREPAP) was introduced Target: 350MW Achievement: 61.2 MW (17.5%) Small Renewable Energy Programme (SREP) 	 Enactment of RE Act 2011 & SEDA Act 2011 Target: 985MW (5.5% of total electricity generation mix) Achievement: 332MW (33.7%) Feed-in Tariff (FiT) Establishment of the Renewable Energy (RE) Fund 	 Target RE capacity of 2,080 MW Achievement: 630.75MV (30.3%) as of June 202 Net Energy Metering (NEM) Scheme Large Scale Solar (LSS)

Source: Ministry of Energy and Natural Resources (KeTSA)

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Green Technology Incentive, Income Tax Act, 1967 Investment Tax Allowance (ITA)

Income Tax Exemption (ITE)

GREEN Tax Incentives

Investment Tax Allowance (ITA)

Investment Tax Allowance (ITA) of **100% of qualifying capital expenditure** incurred on green technology project for **three (3) years** from **the date of first qualifying capital expenditure (CAPEX) incurred.** The allowance can be offset against **70% of statutory income** in the year of assessment. The unutilized allowances can be carried forward until they are fully absorbed.

Qualifying activities :

Renewable Energy

- Solar*, Biomass, Biogas, Mini Hydro, and Geothermal

Energy Efficiency

Income Tax Exemption (ITE)

- Green Building**
- Green Data Centre
- Integrated Waste Management

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* Excluding Solar Project under Feed-in Tariff (FiT) scheme

** The qualifying capital expenditure can be backdated not earlier than 3 years from the date of application received by MIDA but not earlier than 1 January 2020.



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- green technology services issued; and
- b) The date of the first invoice shall not be earlier than the date of application received by MIDA.

• Income Tax Exemption (ITE) of 70% on statutory income for qualifying green services where:

Qualifying activities :

✓ Energy Efficiency

a)

- ✓ Renewable Energy
- ✓ Electrical Vehicle (EV)
 ✓ Green Building

- ✓ Green Data Centre
- ✓ Green Certification and Verification

✓ Green Township

• Income Tax Exemption (ITE) of 70% on statutory income for solar leasing activity for a period of up to ten (10) years of assessment.

The period of incentive is for three (3) years starting from assessment year of the first invoice related to

√ Int

CRITERIA for GITA

- Company must be incorporated under the Companies Act, 2016.
- Company must achieve the following green results:
 - ✓ conserve the use of energy and/or other forms of natural resources or promotes the use of renewable energy or recycles waste material resources
 - \checkmark minimise the degradation of the environment or reduces greenhouse emission
 - ✓ promote health and improves environment
- Company which has incurred first qualifying CAPEX before application made to MIDA is not eligible for this incentive.

For Green Building:

- Company must submit application form together with the Provisional Green Building Certificate (e.g. Design Assessment, Actual Assessment, etc.) and before the completion of the Green Project.
- Company which has already obtained the Final Certificate or equivalent is not eligible for this incentive. The qualifying capital expenditure can be backdated not earlier than 3 years from the date of application received by MIDA but not earlier than 1 January 2020.

ASEAN SOLAR ASEAN TENAGA Energy



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CRITERIA for GITE

- Company must be incorporated under the Companies Act, 2016.
- Company must meet the following green services:
 - ✓ Employing at least five (5) full time employees including at least two (2) competent personnel^{**} in green technology
 - \checkmark Company must has a green policy related to environmental / sustainability
 - ✓ Must have documented Standard Operating Procedure (SOP) to ensure quality of services
 - \checkmark 100% income must be derived from the respective green technology services
 - \checkmark Company must undertake at least three (3) qualifying activities from the respective green technology sectors.

As for GITE – Services, requirements of Competent Personnel are as follows: -

- 1. Must be registered with a professional body;
- 2. Must be an active member in the professional body;
- 3. Must be actively practising in the respective field;
- 4. The registration/Continuing Professional Development (CPD) points with the professional bodies is up to date; and
- 5. Must be a permanent staff of the company.

**Competent personnel are defined as those holding a certificate of competency as a service provider in the related field of green technology. The certificate must be recognised by the Government, MGTC or Professional Body in Malaysia.



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CRITERIA for GITE

For Solar Leasing:

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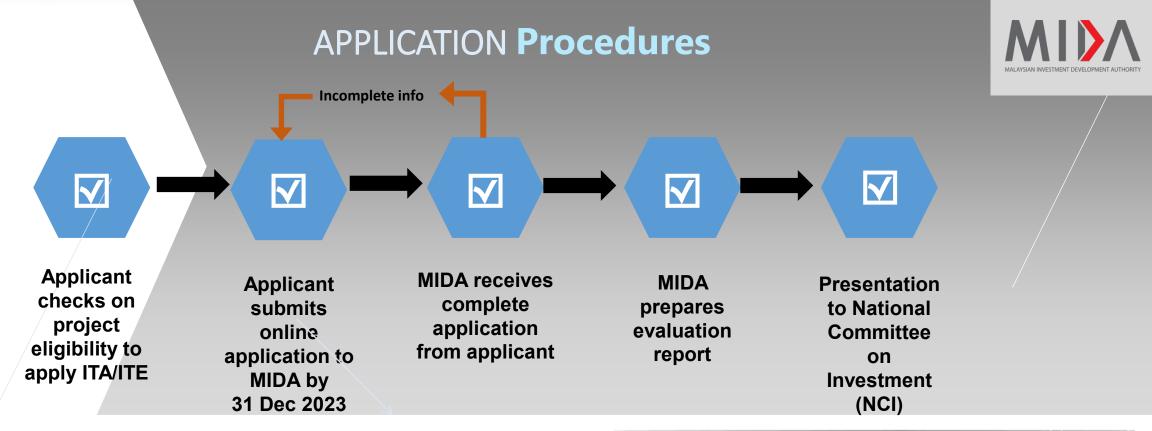


- \checkmark At least 60% of the equity of the company must be held by Malaysians
- ✓ Been verified by SEDA and listed under the Registered Solar PV Investor (RPVI) Directory
- ✓ Possess a minimum installed capacity of 3MW solar PV projects under NEM / SelCo
- ✓ Employing at least five (5) full time employees including at least two (2) competent personnel** in green technology
- \checkmark The income must be derived from sales of electricity / leasing activities.
- \checkmark Assets must be incorporated in the RPVI balance sheet.
- Company which has undertaken solar leasing project(s) and issued the first invoice before application made to MIDA is not eligible for this incentive.

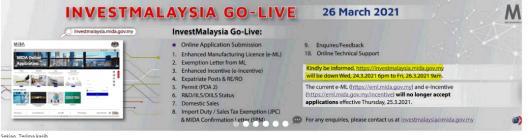
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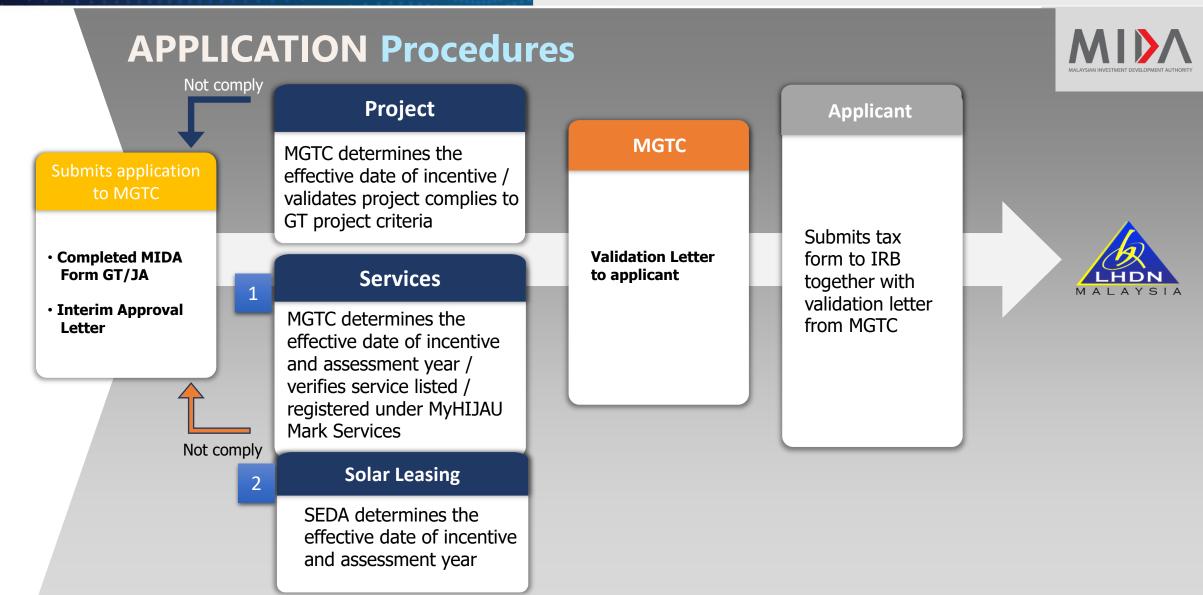


https://investmalaysia.mida.gov.my/EIP/InvestMalaysia.aspx



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MALAYSIAN INVESTMENT DEVELOPMENT AUTHORITY



Green Technology Division, MIDA Level 25, MIDA Sentral, No. 5, Jalan Stesen Sentral 5 KL Sentral, 50470 Kuala Lumpur Tel: 03- 2267 3540 / 03 -2267 6648

Fax: 03- 2274 8470 Email: whashimah@mida.gov.my https://iservices.mida.gov.my/iservices/ https://incentives.mida.gov.my

> Opening hours: Mon - Fri 8.30 a.m. - 5.00 p.m.



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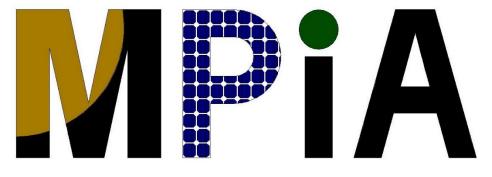


Mr. Davis Chong

President Malaysian Photovoltaic Industry Association (MPIA)

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MALAYSIAN PHOTOVOLTAIC INDUSTRY ASSOCIATION

DAVIS CHONG PRESIDENT

The Rooftop Solar PV in Malaysia

Malaysian Photovoltaic Industry Association (MPIA) SW-03-08, Cova Square, Jalan Teknologi, Kota Damansara, PJU 5, 47810 Petaling Jaya, Selangor Darul Ehsan, Malaysia

> Tel: +603 – 6151 7227 Email: secretary@mpia.org.my Website: www.mpia.org.my

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Malaysia's Rooftop Solar Programme

2011

≵

Feed-in Tariff (FiT) Electricity generated from solar PV systems exported to grid at a premium and paid in cash

2021

NEM 3.0

Additional 500 MW NEM quota after the previous 500 MW quota fully taken in 2020

2006
Suria 1000
Subsidy for solar PV installations by households

券

2016

Net Energy Metering (NEM)

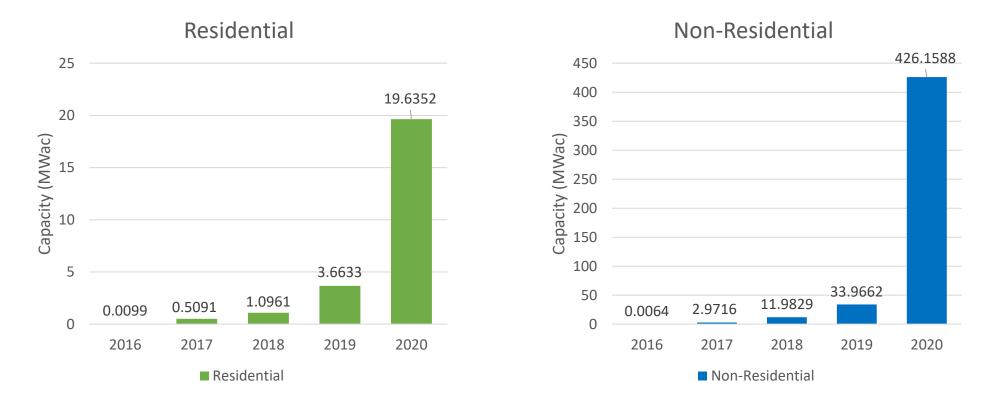
Electricity generated from solar PV systems is first consumed by solar PV system owners, excess is exported to grid in exchange for credits to offset electricity bills



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Cumulative Grid-connected Rooftop Solar Capacity



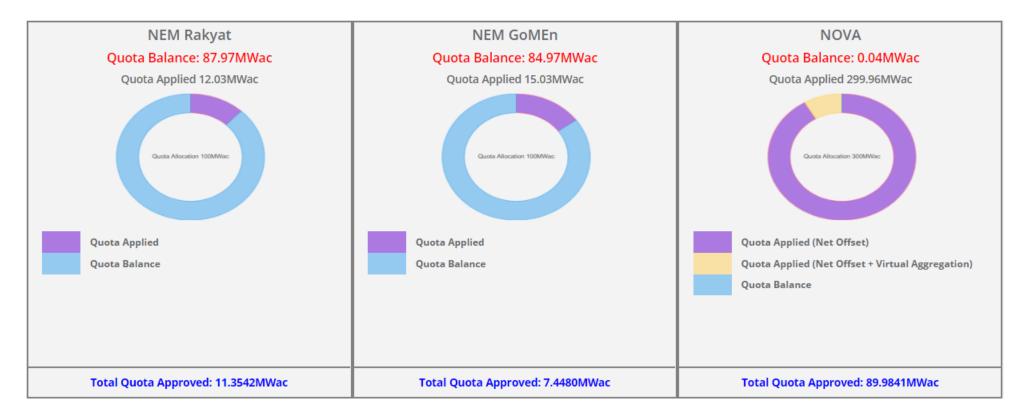


NEM Uptake Trend up to Dec 2020 Source: SEDA Malaysia

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NEM 3.0 Quota Allocation





Data update as at July 2021 Source: SEDA Malaysia

MPiA

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Rooftop Solar Examples in Malaysia





F&NHB Asserts Commitment to Environmental Stewardship with 10MWp Solar Roof Project

🛗 Posted on 01st November 2020 🖨 Print



Goodyear Launches Solar Power to Reduce Carbon Footprint at Malaysia Production Site

Kuala Lumpur, 23 July 2019 – The Minister of Energy, Science, Technology, Environment and Climate Change, Puan Yeo Bee Yin today officiated the launch of Goodyear Malaysia's one of the biggest sustainability initiatives, the installation of 6,680 solar panels to power up and reduce carbon footprint in its corporate office and production plant in Shah Alam. This is in line with Goodyear's global mission to drive sustainability and reduce environmental impact.



Ramon Le, Director of Manufacturing Operations for Goodyear Asia Pacific said: "For more than 120 years, Goodyear has helped people connect with the ones they love...the places they dream about...and a world of possibilities. As a leading tyre manufacturer globally, we are aware of the potential impact from our business operations on our environment, which is why we are embarking multiple initiatives to protect our people, our consumers and the planet.

To drive more sustainability efforts, we started a program called "Better Future" at the corporate level several years ago. Through this program, we have identified more than 600 energy efficiency projects that focus on environmental protection. For Malaysia alone, we have invested nearly US\$5.7 million into the plant as part of our energy and environmental sustainability efforts since 2015. Through this effort, we have been able to eliminate almost 17% carbon emissions by end 2018," Ramon added.

The solar panel system is capable of producing 2.5-megawatts of power, and it is connected to six Low Voltage (LV) substations located within the plant. These panels will be responsible for powering the manufacturing plant, so will as the office and warehouse buildings.

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Drivers of Rooftop Solar

- Tax incentives: Green Investment Tax Allowance (GITA), Green Income Tax Exemption (GITE), etc.
- Electricity bill savings (which actually translate to net profit)
- Cheaper solar PV system prices than before
- Renewable energy and solar financing facilities by banks
- Corporate image and branding



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Procurement Models

- Outright purchase with cash
- Bank loan
- Solar leasing funded by an investor and repay by instalment
- Solar power purchase agreement (solar PPA) Zero capital expenditure with payment based on the amount of electricity generated from the rooftop solar PV system installed



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Rooftop Solar Comparison



Malaysian population ~ 32 million

Rooftops with solar system < 20,000 Buildings



Australian population ~ 25 million

Rooftops with solar system > 2,000,000 Buildings



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Malaysia's Rooftop Potential

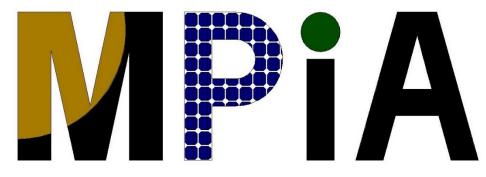
- 3,200,000 Residential houses
- 450,000 Shop houses
- 90,000 Terrace factories
- 21,000 Stand-alone factories
- 1,000 Shopping malls
- 5,000 Government offices / buildings





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Thank You

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Investment Opportunities in Renewable Energy: Solar Industry Outlook in Malaysia

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Group Managing Director Gading Kencana Sdn Bhd

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Investment Opportunities in Renewable Energy: Solar Industry Outlook in Malaysia

By: Dato' (Dr.) Ir Guntor Tobeng Gading Kencana Sdn Bhd



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25 Years of Experience since 1993

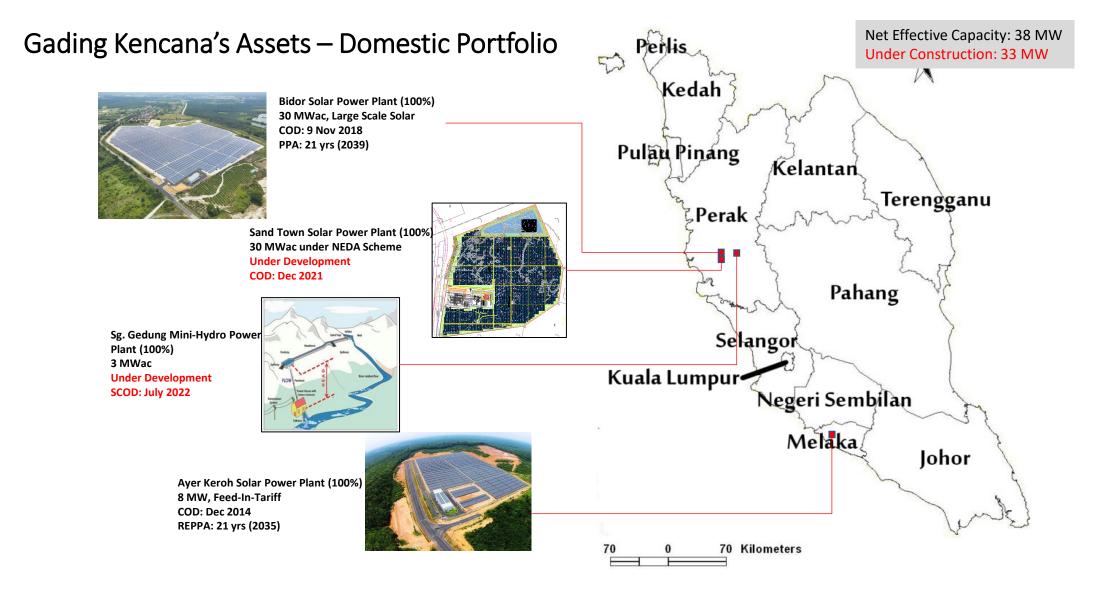
Over USD100 Million Of Asset Revenue of USD250 Mill over 21 Years

4 Stars CIDB G7 Contractor Success 67 Contractor 4 GCPV Designers to Lead Solar PV Design Team

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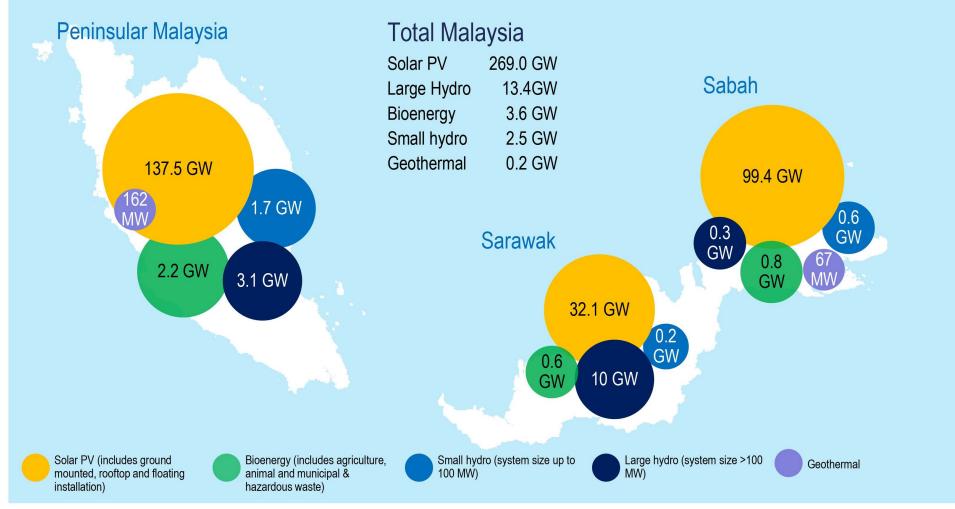




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Resource Potential in Malaysia





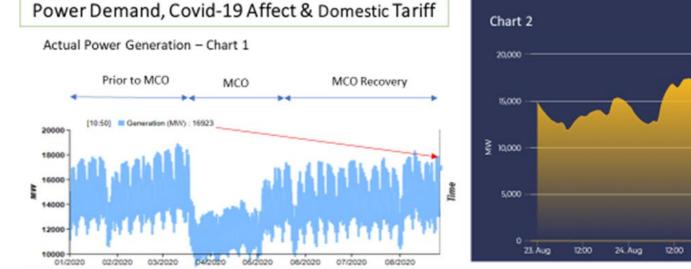
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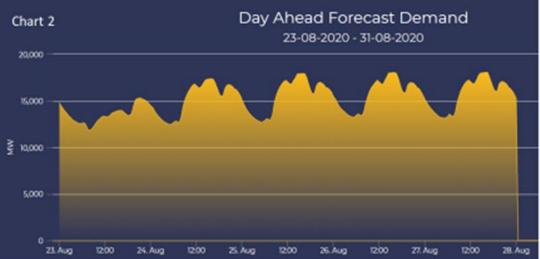


"Malaysia aim to increase RE in power Capacity from the current 6% to 31% by 2025 and 40% by 2035" (Source: IRENA 11A, January 2021)

Feed-in-Tariff (FiT) Incentive. Green Technology Financing Scheme (GTFS)	Large Scale Solar #1 (500 MW) New Enhanced Dispatch Arrangement (NEDA) System Marginal Price (SMP) Mechanism	Large Scale Solar #2 (500 MW)	Large Scale Solar #3 (500 MW)	Large Scale Solar #4 (1000 MW)	NEM 3.0 (500MW)
2012	2017	2018	2019	2020	2021





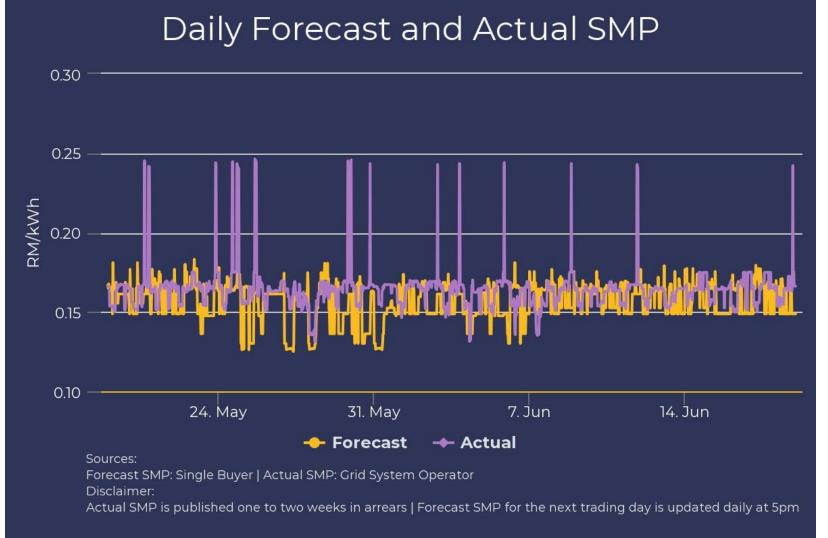


SECTOR CONTRIBUTION TO POWER DEMAND (%)	LSS Program	Lowest Bidding Price (RM/kWh)	Prior to Covid-19, the power demand is ranging between 14 to 18GW. The industry and commercial sector which contribute to 76% of total power demand, were closed during Covid-19, the		
	22%	LSS 1	0.3900	power demand reduced to ranging between 10 to 14GW, as shown in Chart 1.	
	industry 41%	LSS 2	0.3398	The MCOR (Recovery) with more industry & commercial sector are back on business, the power generated has increase inline with forecast demand to 17GW, as shown on chart 1 & 2.	
Commercial 35%		LSS 3	0.1778	With most users #stayathome during MCO, the domestic sector power demand has increase, hence the energy consumption per	
	LSS 4	0.1399	house also to increase with the higher tariff block shown in Table 1, means higher electricity bill to users.		
	Chart 3				

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NEW ENHANCED DISPATCH ARRANGEMENT (NEDA)



FINANCIAL CHALLENGES

- □ HEAVY CAPITAL UPFRONT LEAD
- □ HIGH EQUITY PORTION UPFRONT
- □ HIGH BANK LOAN INTEREST/PROFIT RATE
- □ LOW TARIFF LEADS TO LOW IRR
- □ COSTLY SUKUK ISSUANCE UPFRONT COST
- □ HIGH COST TO RAISE LOAN VIA MERCHANT BANK
- □ HIGH COST FOR INTERCONNECTION TO GRID

□ HIGH IRR REQUIRED BY GOVERNMENT LINKED INVESTMENT BODIES







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AVAILABLE GREEN INCENTIVES IN MALAYSIA

- GreenTech Financing Scheme (GTFS) 60% guaranteed on loan & 2% discount on interest rate.
- Green Investment Tax Allowance (GITA) for Solar Projects & Green Investment Tax Exemption (GITE) for Green Technology Services and Solar Leasing
- Mechanism related to Solar PV in Malaysia:

Matter	Mechanism
Feed-in TariffCapacity base + BonusFrom RM0.60/kWh	 Renewable Energy Act 2011 SEDA Act 2011 Renewable Energy Power Purchase Agreement (REPPA)
Net Energy Metering / Self Consumption	 Electricity Supply Act (Amendment)2015 (Act A1501)
Large Scale Solar (LSS) Plant - Competitive Bidding Rates	 Suruhanjaya Tenaga Electrical Supply Act 1990 Power Purchase Agreement (PPA)





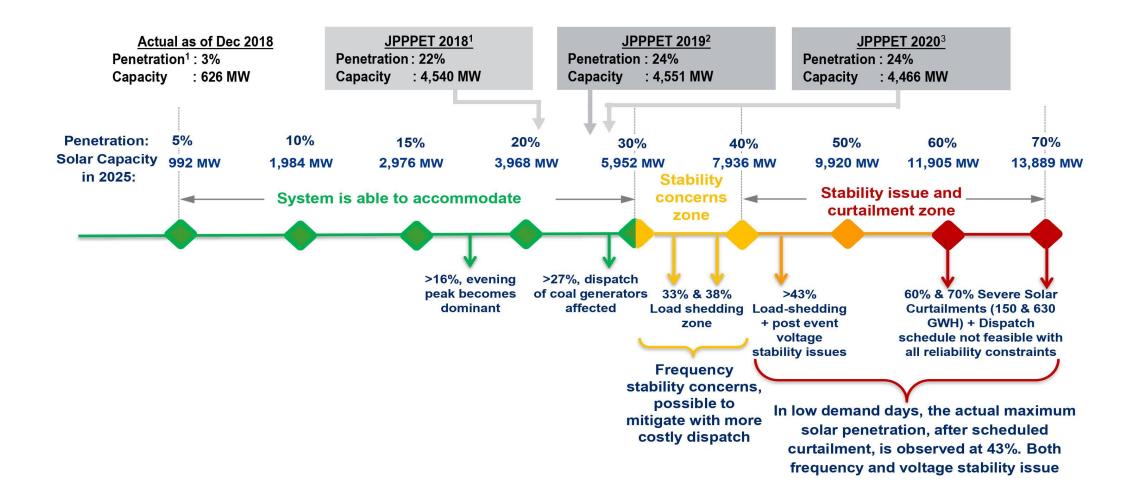


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Technical challenge: Solar penetration limit for Peninsular Malaysia





TECHNICAL CHALLENGES

- □ SOLAR PV DEGRADATION ISSUE
- POWER INDUCED DEGRADATION
- □ HOT SPOT
- □ MICRO CRACK
- □ FAULTY INVERTER
- WARRANTY CLAIM DECLINED

HIGH SPECIFICATION FOR INTERCONNECTION TO THE GRID

□ INTERMITTENT SUPPLY TO GRID DUE TO WEATHER

CONDITION

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SULTAN IDRIS EDUCATION UNIVERSITY



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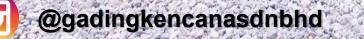
ENERGY STORAGE & MANAGEMENT SYSTEM

- As reported in the Peninsular Malaysia Electricity Development Plan, the solar is expected to reach 30% peak demand by year 2035, therefore prior to that, the grid infrastructure which include the installation of the Energy Storage System (ESS).
- The best for energy storage system is to be installed at the solar farm itself, which directly can be configured to provide instant supplemental power to the solar fluctuation.
- In many case, the tariff for the ESS will be higher to the normal solar energy as it is requiring additional system and the function is providing peaking power.

THANK YOU



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PANEL DISCUSSION & Q&A SESSIONS

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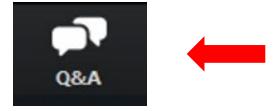
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Q & A SESSIONS

• Please drop your question in the Q&A box



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ASEAN Energy & Utilities DIGITAL WEEK



Time: 16.15 - 17.30 hrs. (GMT+7)

ASEAN BIOENERGY



Mr. Tang Kok Mun Managing Director Rapid Genesis Sdn. Bhd.





Assoc. Prof. Dr. Suneerat Fukuda Lecturer The Joint Graduate School of Energy and Environment, King Mongkut's University of technology Thonburi, Thailand

Moderator

Dr. Nuwong Chollacoop Renewable Energy and Energy **Efficiency Research Team Leader** National Energy Technology Center (ENTEC)

Prof. Dr.-Ing. emerit. Horst Kreimes Technical University of Applied Sciences, Germany



Prof. Pham Huu Tuyen Head of the Research Center for Engines, Fuels and Emissions School of Transportation Engineering, Hanoi University of Science and Technology, Vietnar





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