

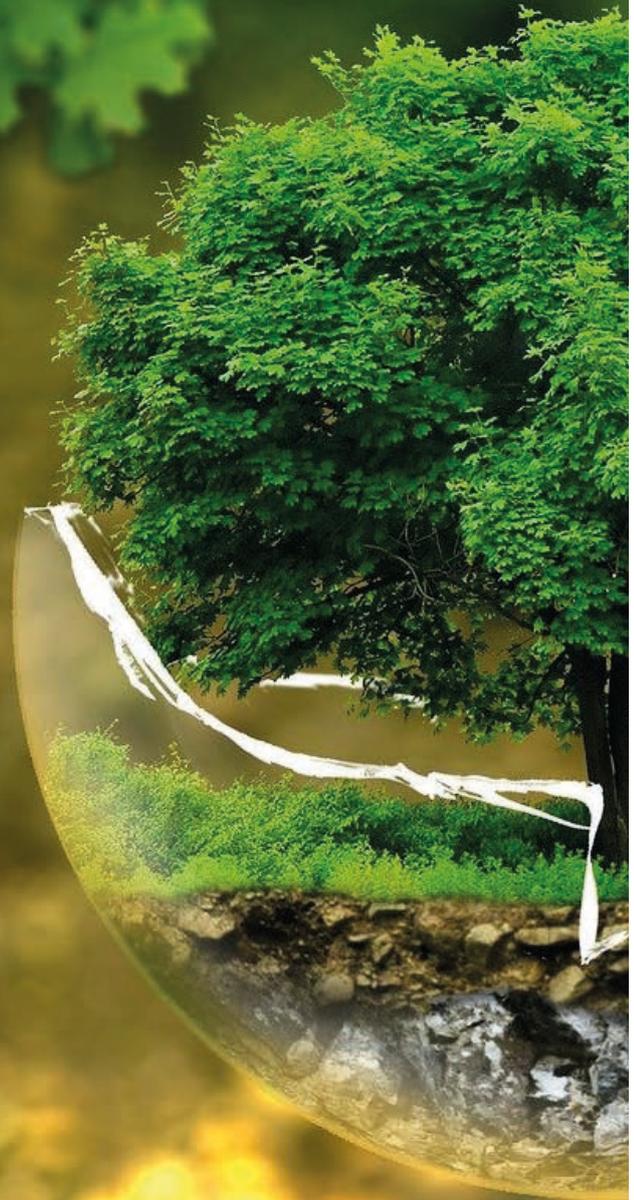
# REDUCING SCOPE 2 EMISSIONS IN MALAYSIA WITH GREEN ELECTRICITY

Scope 2 emissions refer to indirect greenhouse gas emissions (GHG) that arise from the generation of purchased energy (e.g. electricity, steam and cooling). The Malaysian government has introduced various initiatives for companies to reduce their Scope 2 emissions, such as through energy conservation measures, energy efficient methods, or renewable energy.

In November 2021, the government launched the Green Electricity Tariff (GET) Programme to allow individuals and companies to nominally purchase renewable electricity from Tenaga Nasional Berhad without having to install their own solar PV panels.

In this article, Amin Abdul Majid, Chelsea Lim Chaw Sea, and Sonia Soon Nea, of the Infrastructure, Energy and Utilities Practice Group of Zaid Ibrahim & Co. (a member of ZICO Law) discuss how the GET Programme helps Malaysia reduce Scope 2 emissions.

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What gets measured gets managed. In their efforts to manage and reduce global greenhouse gas (“GHG”) emissions, global stakeholders have created standards for the accounting of such emissions. These standards are intended to create uniformity in the measurement of GHG emissions, facilitating the useful study and observation of short, medium and long-term trends.

The Greenhouse Gas Protocol Corporate Standard (“GHG Protocol”) is one such measurement standard. The GHG Protocol classifies a company’s GHG emissions into three scopes:

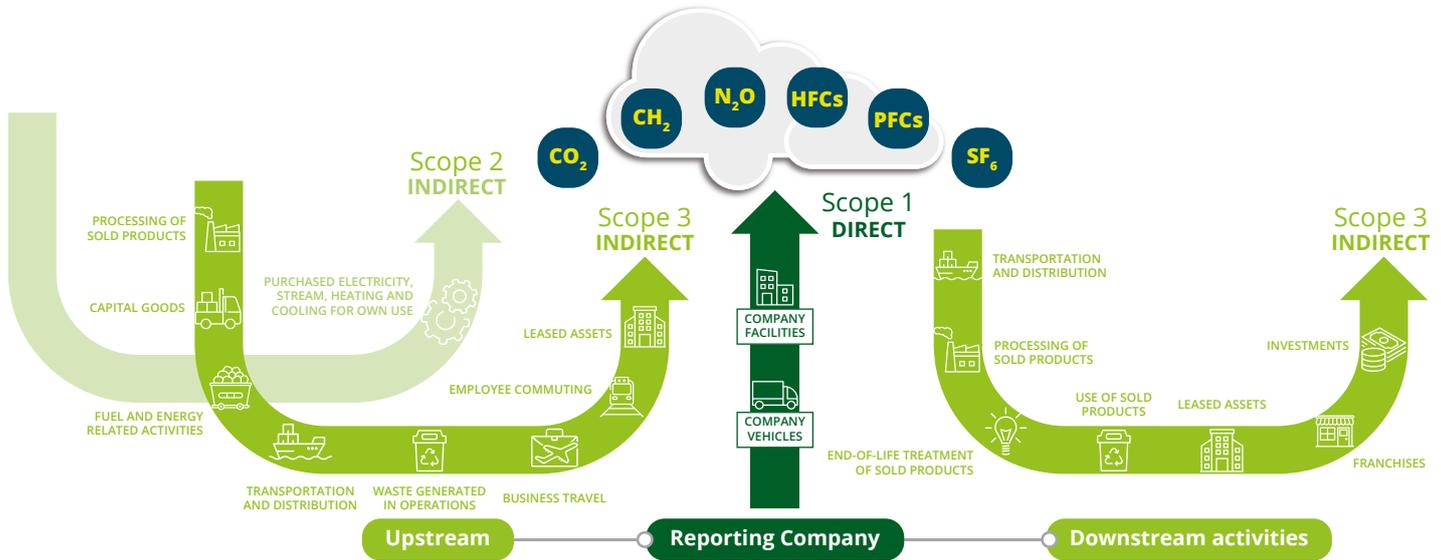
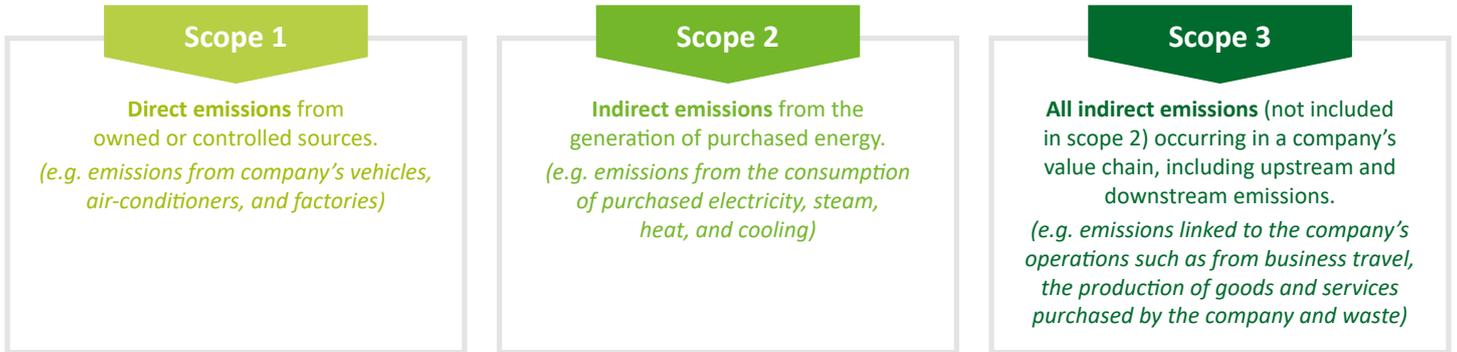


Figure 1: Overview of Scopes and Emissions across the Value Chain

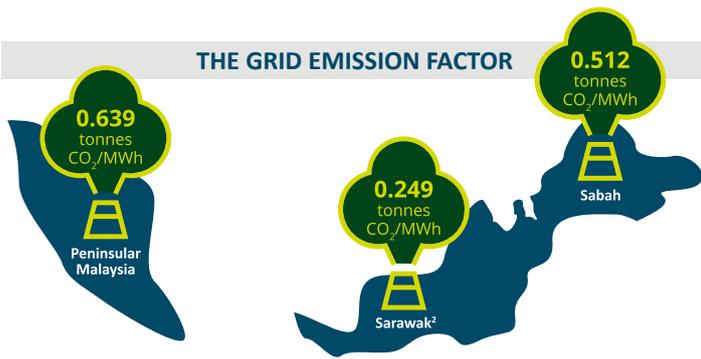
In our earlier publication, Zaid Ibrahim & Co. explored the various ways Malaysian institutions and companies can reduce Scope 1 GHG emissions. Encouragingly, more and more initiatives are now in place in the country for the reduction of Scope 2 emissions.

## POSSIBLE ACTIONS FOR REDUCING SCOPE 2 EMISSIONS

“Globally, nearly **40% of GHG emissions** can be traced to energy generation (Scope 2 emissions), with half of that energy being **used by industrial or commercial entities.**”

To reduce Scope 2 emissions, companies in Malaysia can implement energy conservation measures, adopt energy efficient methods or opt for the consumption of electricity that they generate from renewable resources or technologies such as solar photovoltaic (“PV”) panels installed on their own rooftops.

The use of renewable electricity will reduce electricity generation from fossil fuel power plants and lessen the GHG emissions that would have resulted from the production of such conventional electricity. The use of renewable energy can be measured against the carbon dioxide emissions associated with each unit of electricity generated by fossil fuel power plants, i.e. grid emission factor.



Applying this calculation to a company located in Shah Alam, a city in Peninsular Malaysia as an example, the use of every 1 MWh of renewable electricity allows a company in Shah Alam to reduce its Scope 2 emissions by 0.639 tonnes CO<sub>2</sub>.

With the launch of the Green Electricity Tariff (“GET”) Programme by the Government of Malaysia on 23 November 2021, individuals and companies in Peninsular Malaysia now have the opportunity to purchase renewable electricity from the national utility, Tenaga Nasional Berhad (“TNB”) and reduce its Scope 2 emissions, without the need to install its own solar PV panels.

## GREEN ELECTRICITY TARIFF PROGRAMME

### 01. | What is the GET Programme?

Under the GET Programme, TNB consumers can purchase electricity generated from renewable energy resources without having to install renewable energy installations. This form of energy is called “Green Electricity” under the GET Programme. Currently, the Green Electricity under the GET Programme comes from solar power plants under the Large Scale Solar (LSS) Programme<sup>3</sup> and TNB’s and its subsidiaries’ hydropower plants in Malaysia.

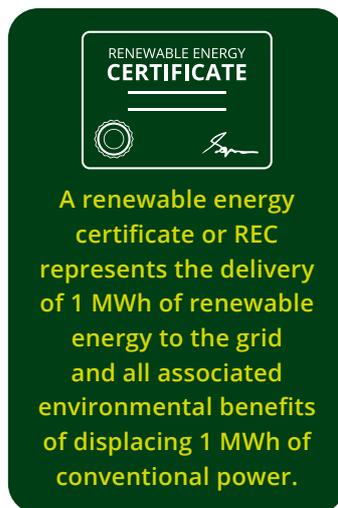
### 02. | Why choose the GET Programme?

#### ► Reliable claim of Green Electricity usage

Once it enters an interconnected grid system, electricity generated from renewable and non-renewable resources are indistinguishable from each other. Unless there is a direct connection with a renewable energy installation, a consumer taking electricity from TNB cannot validly claim that it is receiving and using only renewable energy.

The GET Programme addresses this issue. Under the GET Programme, a consumer can subscribe a specified amount of Green Electricity and become a GET Consumer. The GET Consumer would receive a Malaysian Renewable Energy Certificate (“mREC”) for the Green Electricity it subscribes and consumes.

Such mREC allows the GET Consumer to make a reliable and verifiable accounting of its use of renewable energy and reduction of Scope 2 emissions. Each mREC is denominated by a renewable energy certificate (“REC”) that is issued by an internationally recognised REC registry, such as the International Renewable Energy Certificate (I-REC) Registry or Tradable Instrument for Global Renewables (TIGR) Registry, and redeemed by TNBX Sdn. Bhd. (“TNBX”) for the benefit of the GET Consumer. mREC is a trademark product of TNBX, a wholly-owned subsidiary of TNB.



The mREC can also serve as evidence of REC redemption, which can then be used for the GET Consumer’s reporting and disclosure in line with Carbon Disclosure Project (CDP), Race to Zero, RE100, Science-Based Targets, and other major reporting frameworks.<sup>4</sup>

#### ► Supports the Growth Renewable Energy Industry

Payments collected from the GET Programme will be paid to the Malaysian Electricity Supply Industry Trust Account. This supports Malaysia’s renewable energy agenda and initiatives.<sup>5</sup>

### 03. | How does the GET Programme work?

TNB consumers are eligible to subscribe to the GET Programme in blocks of 100kWh of Green Electricity for residential consumers and in blocks of 1,000kWh of Green Electricity for non-residential consumers. Subject to other conditions that may apply, a consumer may subscribe up to its average monthly consumption. Applications for the GET Programme are processed and approved on a first-come, first-served basis subject always to the quota of Green Electricity available for subscription under the GET Programme (“GET Quota”) as published on TNB’s website.

**Duration of the GET Contract**

One-year subscription cycle (“Subscription Cycle”) with a new subscription cycle automatically commencing upon the expiry of the earlier Subscription Cycle, subject to termination or modification of subscription amount as allowed under the GET Contract.

**Delivery of mREC**

An mREC will be transferred to the GET Consumer electronically on a yearly basis, based on the actual Green Electricity subscribed and consumed by the GET Consumer.



### Increase of subscription of Green Electricity

Applications can be made by the GET Consumer at any time during a Subscription Cycle. Such application if approved by TNB will take effect through a new GET Contract.



### Reduction of subscription of Green Electricity

Applications can be made by the GET Consumer at least 14 business days prior to the expiry of a Subscription Cycle.



### Termination of subscription

GET Consumer may apply to terminate its subscription at least 14 business days prior to the expiry of a Subscription Cycle, and such termination will take effect after the end of such Subscription Cycle.



### Billing and Payment

GET Consumer pays a premium of 3.2sen/kWh<sup>6</sup> for the Green Electricity subscribed and consumed, which is in addition to the prevailing tariff applicable for electricity consumption. Green Electricity subscribed is exempted from Imbalance Cost Pass-Through (ICPT) surcharges or rebates until 31 December 2022, and the premium payable is also not subject to the 1.6% surcharge for the Renewable Energy Fund (KWTBB).

For more details, please visit [TNB's GET](#).

The following examples set out some illustrations for the calculation of the amount payable by the GET Consumer for electricity consumed:

#### Example 1

(Where electricity consumption is higher than Green Electricity subscription)

Electricity consumption = 800,000 kWh  
Green Electricity subscription = 100,000 kWh

Billing Period		: 01.12.2021 – 31.12.2021 (31 Days)		Prorated Factor
Tariff		: C2: Medium Voltage Peak/Off-Peak Commercial Tariff		1
Tariff Block (kWh/kW)	Usage (kWh/kW)	Rate (RM)	Amount (RM)	
Consumption during peak period	500,000	0.365	182,500.00	
Consumption during off-peak period	300,000	0.224	67,200.00	
Maximum Demand	1,500	45.100	67,650.00	
Total			317,350.00	
Green Electricity Tariff (kWh)	100,000	0.037	3,700.00	
Description	Not Subject to Service Tax	Subject to Service Tax	Total	
kWh Consumption	kWh	800,000	0	800,000
RM Consumption	RM	249,700.00	0.00	249,700.00
Maximum Demand	RM	67,650.00	0.00	67,650.00
Green Electricity Tariff	RM	3,700.00	0.00	3,700.00
ICPT (RM0.02)	RM	-14,000.00	0.00	-14,000.00
Consumption for the Month	RM	307,050.00	0.00	307,050.00
Service Tax (6%)	RM			0.00
RE Fund (1.6%)	RM			5,077.60
<b>Current Billing Charges</b>	<b>RM</b>			<b>312,127.60</b>

Source: Guide on Green Electricity Tariff issued by Energy Commission

#### Example 2

(Where electricity consumption is less than or equal to Green Electricity subscription)

Electricity consumption = 50,000 kWh  
Green Electricity subscription = 100,000 kWh

Billing Period		: 01.12.2021 – 31.12.2021 (31 Days)		Prorated Factor
Tariff		: C2: Medium Voltage Peak/Off-Peak Commercial Tariff		1
Tariff Block (kWh/kW)	Usage (kWh/kW)	Rate (RM)	Amount (RM)	
Consumption during peak period	30,000	0.365	10,950.00	
Consumption during off-peak period	20,000	0.224	4,480.00	
Maximum Demand	1,000	45.100	45,100.00	
Total			60,530.00	
Green Electricity Tariff (kWh)	50,000	0.037	1,850.00	
Description	Not Subject to Service Tax	Subject to Service Tax	Total	
kWh Consumption	kWh	50,000	0	50,000
RM Consumption	RM	15,430.00	0.00	15,430.00
Maximum Demand	RM	45,100.00	0.00	45,100.00
Green Electricity Tariff	RM	1,850.00	0.00	1,850.00
ICPT (RM0.02)	RM	0.00	0.00	0.00
Consumption for the Month	RM	62,380.00	0.00	62,380.00
Service Tax (6%)	RM			0.00
RE Fund (1.6%)	RM			968.48
<b>Current Billing Charges</b>	<b>RM</b>			<b>63,348.48</b>

## PURCHASE OF UNBUNDLED MREC

In 2019, the Malaysia Green Attribute Tracking System (“mGATS”) was launched by the Malaysian Government and TNBX to serve as a national marketplace to facilitate the trading of mREC in Malaysia. The myGreen+ scheme was also simultaneously launched to provide TNB consumers an option to purchase green electricity with a premium rate of 8 sen/kWh.

The GET Programme replaces the myGreen+ scheme, so TNB will no longer be selling green electricity without mRECs. It is unclear whether consumers would, in the future, still be able to purchase mRECs alone, which is not bundled together with green electricity.

## VIRTUAL POWER PURCHASE AGREEMENT AS A NEW WAY TO PROCURE REC?

The Virtual Power Purchase Agreement (“vPPA”) has become increasingly popular in other countries with a liberalised or wholesale electricity market - such as the US and Singapore - as a way for corporations to purchase RECs to advance their environmental and sustainability goals. Corporations that have utilised vPPAs include Microsoft, Google, Estée Lauder, McDonalds, Clorox and Walmart.<sup>7</sup>

vPPA is a type of financial instrument for price hedging, also known as a contract for differences, and is essentially a swap. Under a vPPA between the corporate buyer and renewable energy producer, the corporate buyer agrees to purchase electricity generated from the renewable power plant and RECs at a fixed price. However, the electricity is not physically delivered to the corporate buyer. Instead, the renewable energy producer will deliver the electricity into the grid and sell it in the wholesale market. If the wholesale market price - which is a floating price - is higher than the fixed price, the corporate buyer is entitled to

that upside. If the wholesale market price is lower than the fixed price, the corporate buyer is liable for that downside. Given that vPPA is purely a financial transaction, exchanging a fixed-price cash flow for a variable-priced cash flow and RECs, the corporate buyer still needs to meet its electricity load through the traditional way.<sup>8</sup>

Nevertheless, there are challenges for vPPA to be adopted in Malaysia, which has a regulated electricity market. Under the New Enhanced Dispatch Arrangement (NEDA), certain renewable energy producers are allowed to sell electricity to the utility through competitive bidding, but it is uncertain whether environmental attributes will remain with the renewable energy producers or will be sold to the utility, bundled together with the electricity. Additionally, given that vPPA is a swap, there may also be financial regulatory issues that would need to be complied with or overcome.

## CONCLUSION

Malaysia is responding to the increase in demand for renewable energy as a replacement for conventional energy. The future is uncertain as to the possibility of purchasing unbundled mREC through mGATS, and the potential adoption of vPPAs which would require market liberalisation.

Nonetheless, the GET Programme would serve as a key stepping stone to help corporations reduce their Scope 2 emissions in achieving their sustainability goals.

<sup>1</sup> Greenhouse Gas Protocol, ‘Scope 2 Guidance’ <[https://ghgprotocol.org/scope\\_2\\_guidance](https://ghgprotocol.org/scope_2_guidance)>.

<sup>2</sup> Ministry of Environment and Water, ‘Malaysia Third Biennial Update Report to the UNFCCC’ (UNFCCC) <[https://unfccc.int/sites/default/files/resource/MALAYSIA\\_BUR3-UNFCCC\\_Submission.pdf](https://unfccc.int/sites/default/files/resource/MALAYSIA_BUR3-UNFCCC_Submission.pdf)>.

<sup>3</sup> Large Scale Solar or known as LSS is a competitive bidding programme implemented and administered by the Energy Commission which allows selected developers to develop solar PV farm to generate electricity for sale to the grid.

<sup>4</sup> ‘Malaysia Launches a Green Electricity Tariff (GET) Program backed by I-REC Standard’ (The International REC Standard, 2 December 2021) <<https://www.irecstandard.org/news/malaysia-launches-a-green-electricity-tariff-get-program-backed-by-i-rec-standard/#/>>.

<sup>5</sup> ‘Frequently Asked Questions for Green Electricity Tariff (GET) Programme’ (myTNB) <<https://www.mytnb.com.my/themes/user/mytnb/pdf/faq-get.pdf>>.

<sup>6</sup> The premium rate of 3.7sen/kWh is determined by the Energy Commission based on the incremental cost incurred for the procurement of green electricity, compared to the System Marginal Price (SMP), which is the price of the most expensive marginal generator.

<sup>7</sup> Alicia M. Mcknight, ‘Virtual PPAs: Are They Right for Your Company?’ (Pillsbury Law, 6 February 2020) <<https://www.pillsburylaw.com/en/news-and-insights/virtual-ppas-are-they-right-for-your-company.html>>.

<sup>8</sup> Ranchit Kansal, ‘Introduction to the Virtual Power Purchase Agreement’ (Rocky Mountain Institute, 2019) <<https://rmi.org/insight/virtual-power-purchase-agreement/>>.

If you have any questions or require any additional information, please contact Amin Abdul Majid, Chelsea Lim Chaw Sea or the Zaid Ibrahim & Co. (a member of ZICO Law) partner you usually deal with.



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Amin is familiar with legislative reform having assisted in the drafting of the Malaysian Renewable Energy Act 2011 and its subsidiary legislation and also Malaysia's recent attempt to enact an energy efficiency statute.

Amin has advised on power generation projects in Myanmar, Cambodia and Kazakhstan. Amin was also a country representative in negotiations for ASEAN's regional power grid.



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