ASIA CARBONX CHANGE PLT.

No LLP 0030470LGN

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Meet
The Game-Changer in Renewable Energy & Market-Based

Sustainability Solutions in ASEAN

We Are
Asia CarbonX Change PLT.

ASEAN's *Leading Provider* of Sustainability Solutions.

We have only one business mantra.

We want to make a dent in the Universe.

We want to avail cutting-edge and pragmatic decarbonisation solutions with less talk and more action.

We are driven to help businesses and organisations to meet and help achieve their climate action goals.

We are a reliable partner for high-impact climate change projects that generate carbon credits. energy efficiency projects and renewable energy certificates (RECs)

We are early adopters since the beginning of the energy transition by seeking new products and services in relentless pursuit of sustainable futures.

We are *Green By Choice.*

We are obsessed to help facilitate this energy transition. Greenhouse gas (GHG) emissions must halve by 2030 and drop to net zero by 2050.
We have limited time to meet this global target. Every sector in every market must turn commitment into action.

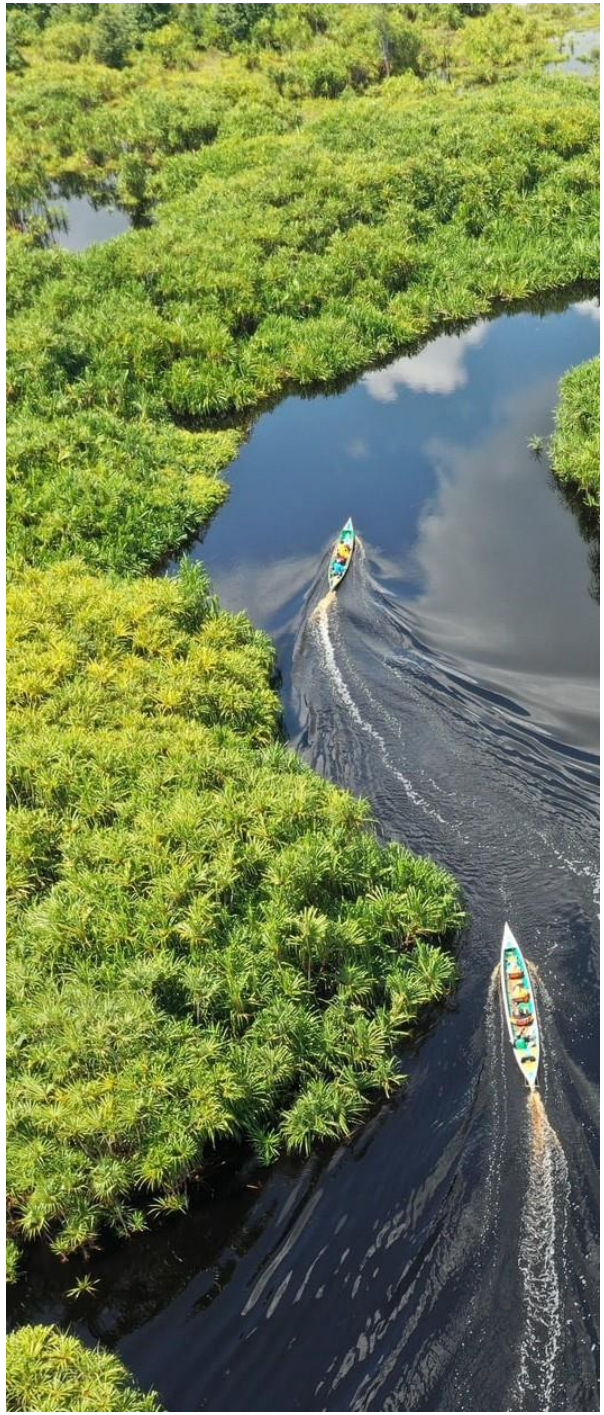
We are at your service to help ensure that as a global community all of us will thrive for the sake of humanity and generations to come.

We help businesses understand and navigate the complex world of voluntary carbon credits.

We have a moral obligation to ensure we play our part in climate action goals and enable the global energy transition.

We invite you to partner us on your journey to a sustainable future.

Headquartered in Rawang , Asia CarbonX Change leverages on Malaysia's financial, legal and commodities hub infrastructures to provide secure, highly resilient systems to serve the various needs of buyers and sellers in the carbon market.



Ir. Nirinder Singh Johl
CEO & Founder,
Asia CarbonX Change PLT (ACCP)

Rainmaker.
Climate Change Agent.
Innovator. Public Speaker.
Humanitarian.
Green Energy Guru. Thinker.
Social Entrepreneur.

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Our Story

A visionary who foresaw the future in renewable energy and global energy transition.

Ir. Nirinder Singh Johl , served with Asia's leading national utility company, Tenaga Nasional Berhad (TNB) in a multitude of portfolios with distinction for the last 36 years.

He has been a witness and active participant in the quantum technological leaps in the renewable energy sector.

Affectionately known by the moniker, Ned the Bijiliwalla, he retired in June 2022 as the Managing Director of TNBX Sdn Bhd, a subsidiary of TNB, offering smart and innovative solutions in renewable energy and energy efficiency for homes and businesses.

During his tenure, TNBX successfully accelerated a platitude of innovative breakthroughs including solar energy contracting with utility billing; I-REC branded Renewable Energy Certificates for Malaysia, both bundled and unbundled, and many other energy efficiency projects.
Today, as the founder and CEO of Asia CarbonX Change PLT, Ir. Nirinder continues a noble, sustainable, and meaningful journey to be actively involved in the energy renewable business as ASEAN's leading provider of Decarbonisation Solutions.

His passion as Renewable Energy Ambassador and Social Entrepreneur is in helping empower ASEAN's regional energy transition.

There is a surging momentum in ASEAN to tackle sustainability and address climate change especially after the Glasgow Climate Pact 2022. Corporate entities have a pivotal role to play as leaders of both compliance-driven and voluntary climate action.

In today's world of globally interlinked supply chains that are moving at an accelerated pace it is equally important for Asia CarbonX Change to provide step by step guidance and assistance in this process to help attain their objectives.

2022

I have a dream to share.

I am driven by one purpose in my life and that is to help make climate action happen for organisations anywhere in ASEAN through enabling a sustainable economy.

I want to establish an ecosystem of sustainability.

At Asia CarbonX Change our core business is to provide environmental solutions. With our indepth insights in renewable energies, renewable fuels, emissions and energy efficiency opportunities, we empower our clients to achieve their climate action goals with our innovative and growing product and service portfolio.

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After graduating from the Universiti Teknologi Malaysia (UTM), Nirinder embarked on a path-breaking career as a Distribution Engineer covering the frontline for 15 years in Peninsular Malaysia before migrating to TNB's Headquarters to be in charge of its Customer Service Division for a decade, constantly engaging and listening to over 9 million customers before ascending up the corporate ladder as a TNB General Manager in 2012.

He fast-tracked and strategically mastered domain expertise in other equally significant areas of the utility business, namely in Transmission, Generation, Strategic Corporate Communications, International Business during the subsequent years.

Apart from the serious business of running Asia CarbonX Change, Nirinder experiences a fire-in-the-belly to serve humanity in various capacities.

He is an active Rotarian, being the Charter President of the Rotary Club of Bernam Valley; and founder of the Hug-Our-Tree (Hot), an NGO dedicated to saving and planting trees in Malaysia. He also actively serves with several other charitable and non-profit NGOs dedicated to the good of mankind.

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Our Experience
Asia CarbonX Change PLT.

ASEAN's *Leading Provider* of Market-Based Sustainability Solutions.

Our Founder's Experience in RE Malaysia

- 36 years experience at Tenaga Nasional Berhad . Retired as MD for TNBX.
- Registered Professional Engineer with BEM and Certified Energy Efficiency Manager.
- Worked with SEDA on the development of the RE ACT 2011 and first signatory for PSS studies for FIT.
- Developed the Supply Application with Renewable Energy program (SARE)
- Developed Malaysia's mREC and MGATS framework for REC's in Malaysia in 2019 as MD for TNBX .(2019)
- Traded 800,000 unbundled RECs (mRECS) and 4 mil Bundled RECs (GETS) and presently have a solar portfolio of over 100 MWp , Biomass of 26 MW and Biogas of 12 MW.
- Introduced and Launched the Green Energy Tariff (GETS) with bundled RECs (Dec 2011)
- Regional Speaker on Renewable Energy and RECs

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Social and Market Influencer
Asia CarbonX Change PLT

Demystifying Sustainability Series.

NIRINDER SINGH JOHL

Demystifying sustainability

Political will needed to address RE challenges

By implementing a carbon tax regime, the government can incentivise companies to invest in RE projects, particularly in the solar, biogas and biomass sector, which are readily abundant in Malaysia.

MALAYSIA has an abundance of renewable energy (RE) resources, particularly in the form of solar, mini hydro, biogas and biomass.

Despite the country's potential to generate RE, progress has been painfully slow in transitioning to a more efficient and sustainable energy mix due to several reasons.

This is where strong political will and actions are needed to wean off populist policies, namely, subsidies, which are counter-productive in the long-term.

The price subsidy mentality is killing us and we cannot afford to be affirmative only during a brink of collapse.

Malaysia needs to bite the bullet! This is the need of the hour.

It is imperative that the Environment and Climate Change Ministry and the Economy Ministry revisit current policies and the regulatory framework, and engage the various stakeholders instead of working vertically in silos.

How do we future-proof the energy grid?

Retiring fossil fuel assets smartly

We must retire our fossil fuel assets smartly and focus on distributed generation while decarbonising the grid.

Our indigenous biomass and biogas needs to be further exploited against non-indigenous coal.

The Renewable Energy Act 2011 and grid connecting policies can be further revisited with utility focusing on making grid resilient to distributed generation or DG connectivity.

In terms of RE resources, the RE policy had always shown greater inclination towards solar instead of biogas and biomass.

This lopsidedness needs to be addressed.

Biogas and biomass are RE sources that produce significantly lower carbon emissions compared to fossil fuels.

The use of these resources can help to reduce waste and promote sustainable waste management practices in the country benefitting particularly our palm oil industry directly.

One of the main challenges in adopting RE sources is the initial high cost of installation and maintenance.

Biogas and biomass power plants require significant investment, making them less attractive to investors compared to solar or traditional fossil fuel-based power plants per-MWh of generation.

However, it is important to note that the cost of traditional fossil fuels is not static and can fluctuate greatly.

This is depending on factors such as supply and demand, geopolitical events, and environmental regulations.

In some cases, the cost of biomass or biogas may be competitive or even cheaper than traditional fossil fuels.

Rising coal prices take a toll

The rise of coal prices had taken a toll on the electricity tariff recently with the imbalance cost pass through or ICPT hitting an all-time high of RM0.20 sen per kilowatt hour.

Furthermore, the use of biomass or biogas can have significant environmental benefits, including reducing greenhouse gas emissions and promoting sustainable land use practices.

These benefits can provide additional value that may offset the higher cost of production.

One other immediate solution to this problem is the implementation of RE certificates (RECs).

RECs are tradable certificates that represent the environmental attributes of one megawatt-hour of RE generated.

These certificates serve as proof of RE generation and can be bought and sold by companies looking to meet their RE targets.

By implementing a carbon tax regime, the government can incentivise companies to invest in RE projects, particularly in the solar, biogas and biomass sector, which are readily abundant in Malaysia.

This would not only help to reduce the country's carbon emissions but also spur further economic investment, growth and create job opportunities in the fast-growing RE sector.

Achieving our climate goals

The implementation of RECs would help Malaysia to achieve its climate goals.

The country has committed to reducing its carbon emissions by 45% by 2030 under the Paris Agreement.

However, as of now, the country is still heavily reliant on fossil fuels, particularly natural gas and coal, for its energy needs.

The use of biogas and biomass as a RE source would significantly reduce the country's carbon footprint and help it achieve its climate targets.

More importantly, the biogas and biomass sector has the potential to create a significant number of jobs, particularly in rural areas where these resources are plentiful.

The use of RECs for Scope 2 emission mitigation could help to diversify Malaysia's energy mix.

Currently, the country is heavily reliant on natural gas and coal for its energy needs.

Biogas and biomass

The use of RE sources, particularly biogas and biomass, would reduce the country's dependence on fossil fuels and make it less vulnerable to price fluctuations in the global energy market.

RECs provide a valuable revenue stream for RE asset owners, enabling them to reinvest in their facilities and expand their operations.

Large corporations can purchase RECs to offset their Scope 2 carbon footprints, helping them to meet their sustainability goals and comply with carbon tax regulations in their home countries.

Malaysia needs to position itself as a leader in sustainability and attract international investment.

RECs provide a valuable opportunity for Malaysia to meet its RE targets, attract foreign investment and generate income from its surplus RE.

By participating in cross-border REC trading, Malaysia can take advantage of the growing demand for RE and position itself as a leader in the RE market.

As the world moves towards a more sustainable future, countries that invest in RE will reap the economic and environmental benefits of this transition.

We cannot afford to be left behind, given the abundance of RE resources in the country.

Nirinder Singh Johl is the founder and CEO of Asia Carbon XChange PLT. He was formerly the managing director of TNBX, a subsidiary of Tenaga Nasional Bhd. The views expressed here are the writer's own.

NIRINDER SINGH JOHL

Demystifying sustainability

Future-proofing the electricity grid

Malaysia stands to gain exponentially with the upliftment of RE target and RE export ban.

I am highly elated by the joint announcement of the Ministry of Natural Resources, Environment and Climate Change (NRECC) and the Ministry of Economy in addressing the Renewable Energy (RE) challenges plaguing Malaysia with the uplifting of the RE target and RE export ban.

Indeed, I shared some of these challenges in my previous column in *The Star* of April 25, 2023 and the need of the hour for Malaysia to bite the bullet.

Kudos to the NRECC and the Ministry of Economy for their political will, foresight and commitment in ensuring a sustainable future for our next generation with this strategic development and cross border trade policy for RE.

Sharing some facts on why such a policy is necessary and pertinent.

Malaysia's Fourth Biennial Update Report submitted to the United Nations Framework Convention on Climate Change (UNFCC) in December 2022 by NRECC shows the following electricity emission factor **(see chart)**:

Thus, this marks a turning point in Malaysia's transformative climate change transition towards sustainable development and leap-frogging the promotion of green energy in Asean.

This will also help create thousands of new job opportunities, attract foreign investment, and reduce Malaysia's reliance on fossil fuels.

The NRECC must be highly commended in recommending some key initiatives:

tCO2/MWh (Electricity Emission Factor or EEF)

Grid/year	2017	2018	2019
Peninsula	0.776	0.807	0.780
Sabah	0.513	0.520	0.527
Sarawak	0.213	0.193	0.222

Note: Compared to our Asean neighbours: Singapore reports EEF in 2021 of 0.4057 tCO2/MWh, Vietnam reports a EEF of 0.5657 tCO2/MWh and Indonesia reports in 2021 a EEF of 0.82924 tCO2/MWh.

Self-Contained Systems (SCS): I was asked after I responded to to the NRECC's media statement on May 9 on my LinkedIn, "What is meant by Self Contained Systems ?" My first response was to simply, "to put the grid on standby".

This should also put an end to the proliferation of the Large-Scale Solar (LSS) or more than 30-megawatt plants. The LSS can at many a times be detrimental to the environment in terms of land use and its degradation including habitat loss and this could be replaced with the development of localised RE MW's from roof tops and floating type solar solutions at disused mines, water harvesting bodies, water balancing dams, hydro dams and our indigenous biomass/ biogas plants plus our own waste to energy RE generation.

Rules on the present Corporate Green Power Plant could be further modified to include terms like the contracting of a solar plant should be limited to within 50km (crows flight) of the corporate buyer thus localising the solar generation, giving more local job opportunities and creating an embedded economy locally.

In an effort to further decarbonise the grid locally and make it self-contained, stakeholders especially regulators could also look at:

> Waste heat recovery systems for small and medium enterprises and view it as an energy efficiency initiative to reduce energy intensity and introduce support policies to make it commercially viable.

> Support distributed co-generation (identified as a game changer), using our indigenous gas supply, would be a golden opportunity not to be missed as the gas industry already has a third party access policy since 2017 while electricity regulators are still mulling over MLSI 2.0.

The benefits of an SCS include the following:

> **Increased energy security:** Self-contained systems ensure a reliable and secure energy supply, as they are not reliant on a centralised energy generation and are less vulnerable to disruptions in the grid system.

Here utility planners would need to equip themselves with the knowledge to not only ensure reliability but also to address resilience.

While reliability is "the quality of being trustworthy of performing consistently well," grid resilience describes it as the ability to bounce back after network disruption.

> **Cost savings:** Self-contained systems can result in cost savings, as they eliminate the need for expensive grid infrastructure and transmission lines.

In utilities, the transmission dept has always been seen superior over distribution dept due to their far higher allocated budget yearly. The capital expenditure presently used to gold plate the Malaysian transmission grid can be better spent on addressing smarter self-contained grids.

This should include not only allowing consumers to self-generate thus reducing their reliance on energy from traditional brown sources and potentially lowering their energy bills but making some simple fundamental changes in policy like allowing customers to generate based on roof top size and capability against present regulation limiting them to 75% of their maximum demand.

This small change can bring about the required changes almost immediately as the rules on Net Energy Metering (NEM) and Self Consumption under the NOVA framework have already been long established and utility metering system is already robust enough to accommodate these changes.

Storage thus becomes an additional opportunity, once cross subsidies are carefully removed and tariffs reflect actual Cost of Supply, thus allowing prosumers to decide between exporting to grid or storing for later use.

> **Environmental benefits:** Self-contained systems promote the use of local renewable energy sources, like solar, hydro, waste to energy, biomass and biogas, thus reducing greenhouse gas emissions and promoting environmental sustainability. In the early 1980's many rural electrification projects were done via run-of-the-river with minimum water storage, which were then eventually abandoned once these villages received grid connected supply.

> SEE PAGE 12

Our Customers