Volume 151 MYR 10.00
ISSN 2180-0812 00151
9 772180 081001

International Business Review™

Of National Leaders, Businesses & Innovations

www.ibrasiagroup.com

Malaysia

IN THIS ISSUE

PETRONAS Gas: Exclusive Interview With Managing Director and CEO, Abdul Aziz B Othman

A Labour Problem And What To Do With It

War Against Reality War Against Women

IBR GLOBAL MARITIME AND AEROSPACE AWARDS 2023

THE INFINITE ENERGY OF WATER AND AIR

A Night To Celebrate The Powerhouses Of Maritime And Aerospace

TOWARDS A NET ZERO FUTURE

Suruhanjaya Tenaga CEO, Dato' Ir Ts Abdul Razib Dawood, on Leading Malaysia's Energy Transition

SURUHANJAYA TENAGA

SPEARHEADING MALAYSIA'S TRANSITION TO NET ZERO

Electricity is an invisible force that is often taken for granted in the modern world. It is the pulse that powers everything, from our homes and businesses to our communication networks and transportation systems. And yet, despite its ubiquity, many do not fully appreciate the tremendous impact that electricity has on human society today. In fact, access to electricity is one of the main indicators in gauging the nation's civilisation and competitiveness. Electricity has indeed played a pivotal role in shaping the modern world and is undoubtedly a critical component of our daily lives.

The importance of electricity cannot be overstated and yet many are not aware of the statutory body responsible for regulating the energy sector to ensure a secure, reliable, sustainable and affordable electricity and piped gas supply for all. In this article, **International Business Review** will explore the regulatory body that is entrusted to do so in Malaysia – **Suruhanjaya Tenaga (ST– The Energy Commission of Malaysia)** with its Chief Executive Officer, Dato' Ir Ts Abdul Razib Dawood.

ST is a statutory body that was established under the Energy Commission Act 2001. The organisation is responsible for regulating and overseeing the electricity and piped gas supply industries in Malaysia. ST has been vested with broad roles to regulate these industries by the said 2001 act as well as other supplementing legislation, namely, the Electricity Supply Act 1990, Gas Supply Act 1993, Licensee Supply Regulations 1990, Electricity Regulations 1994 as well as the Gas Supply Regulations 1997.

Malaysia's Apex Energy Entity

With regard to the electricity sector, both ST and Tenaga Nasional Berhad (TNB) are deemed important entities in the Malaysian energy industry.

"In essence, ST regulates the country's energy industry while TNB is a business enterprise that is licensed to operate in the energy sector under us, just like any other independent power producer (IPP) that we license. This includes the likes of Malakoff Corporation Berhad and Edra Power Holdings Sdn Bhd for the electricity sector as well as Gas Malaysia Berhad and Petronas Gas Berhad for the piped gas sector," explained Dato' Ir Ts Abdul Razib.

Suruhanjaya Tenaga
Energy Commission

TENAGA NASIONAL
Better. Brighter.

While both ST and TNB play critical roles in Malaysia's energy industry, it is important to recognise the differences between the two entities. ST regulates and oversees the industry, while TNB operates within the regulated environment. Also, ST's decisions can impact TNB and other energy companies in the country, as they must adhere by law to ST's regulations.

Overall, it is important for the general public to understand the roles and responsibilities of both ST and TNB to ensure a better understanding of Malaysia's energy industry and how it impacts the national energy landscape for years to come.

The Conductor

Taking a closer look at ST's broad regulatory powers, one can surmise its functions as firstly, its economic regulation. This involves setting the tariffs and regulating the operations of energy companies such as TNB. ST plays a crucial role in ensuring that electricity tariffs are set at a fair and reasonable rate for consumers. ST sets the electricity tariff using the Incentive-Based Regulation mechanism, where the tariff determination is based on prudent and efficient projections of capital costs and operating costs that are set and reviewed every three (3) years of the regulatory period based on the guidelines in force.

Secondly is technical regulation, whereby, ST is also responsible for licensing energy companies in Malaysia by setting out the regulations related to energy security. ST monitors the performance of energy companies to ensure that they operate efficiently and provide quality and secure service to consumers. The licensing process helps to ensure that only reputable and responsible energy companies operate in Malaysia which in turn ensures energy security for the nation.

"The government of Malaysia will accelerate its Net Zero 2050 program, through a lot of solar, battery storage, with zero curtailment as the target. Peninsular Malaysia will receive hydropower from Sarawak, while overall, Malaysia aspires to be the RE hub for ASEAN. Links to Sumatra and Vietnam are being planned to build on the existing interconnections between Thailand and Singapore, which have both been recently upgraded to 1000 MW transmission capacity. Malaysia has also started multi-lateral power wheeling agreement from Laos - Thailand - Malaysia to Singapore, which forms the ASEAN Power Grid."

– Dato' Ir Ts Abdul Razib Dawood,
CEO of ST

Malaysia is on its way towards its decarbonisation goals, from implementing more solar power grids to building the infrastructure to support electric vehicles. As Malaysia's energy regulator, ST is responsible to ensure that the national power grid is ready to meet this new demand in a reliable and secure manner.

"ST works to ensure that there is sufficient capacity to meet the country's energy demand by implementing policies to ensure that each licensee delivers quality services to its customers. For example, in the electricity sector, customers are currently satisfied with the reliability of their electricity supply. The same goes for piped gas licensees whereby we make sure the industry receives uninterrupted gas supply, said Dato' Ir Ts Abdul Razib.

Of course, ST's regulatory powers also include the safeguarding of electrical and piped gas safety by enforcing regulations that its licensees must adhere to. By doing so, ST protects not only the public but also the licensees' personnel.

Last but not least, one of ST's important roles is to advise the Malaysian government on matters relating to energy. It meticulously researches the current state of affairs as well as analyses collected data to recommend the next steps to further evolve the country's energy industry.

The Drive to Increase RE Capacity

As with any esteemed organisation, ST has long-term targets it constantly strives to achieve. The main driving factor behind the organisation's efforts is to accelerate Malaysia's transformation to become a net zero nation by 2050 as set by the 12th Malaysia Plan.

To achieve this, the Ministry of Natural Resources, Environment and Climate Change (NRECC) has recently announced that the renewable energy (RE) power installed capacity in the electricity supply system is anticipated to reach approximately 70 percent by 2050 to enable decarbonisation and economic growth.

The Government had announced several new RE initiatives and programmes to further drive the development of the country's RE industry. Firstly, to help spur the nation's net zero carbon emissions pathway, a solar rooftop initiative is also expected to encourage photovoltaic (PV) installations to maximise Malaysia's RE potential with minimal environmental and ecosystem destruction. Furthermore, the green energy exchange initiative will enable surplus RE generation capacity to be exchanged across borders with regional neighbours, in realisation of the ASEAN Power Grid initiative.

For Dato' Ir Ts Abdul Razib, ST – as the national energy regulator – needs to address a number of issues in order to meet the nation's Net Zero and decarbonisation initiatives. "First and foremost is to increase the share of variable renewable energy in the power mix, such as solar power, in the electricity power grid while ensuring stability and reliability," he explained.

This, he elaborated, will necessitate a significant change in power infrastructure. "We anticipate a shift from traditional large-

capacity power plants to lighter modules such as rooftop PV cells. Or to put it in other words, a shift from synchronous to an asynchronous and decentralised system."

Dato' Ir Ts Abdul Razib further noted, "We want to avoid a situation where we have to curtail our use or output of RE owing to the limitations of the power grid. As most types of REs are variable – meaning that they are intermittent depending on weather conditions – the National Renewable Energy Laboratory (NREL) in the US has identified six Main Intervention Levers (6Ls) needed to design a system that can cater to high variable REs in the mix."

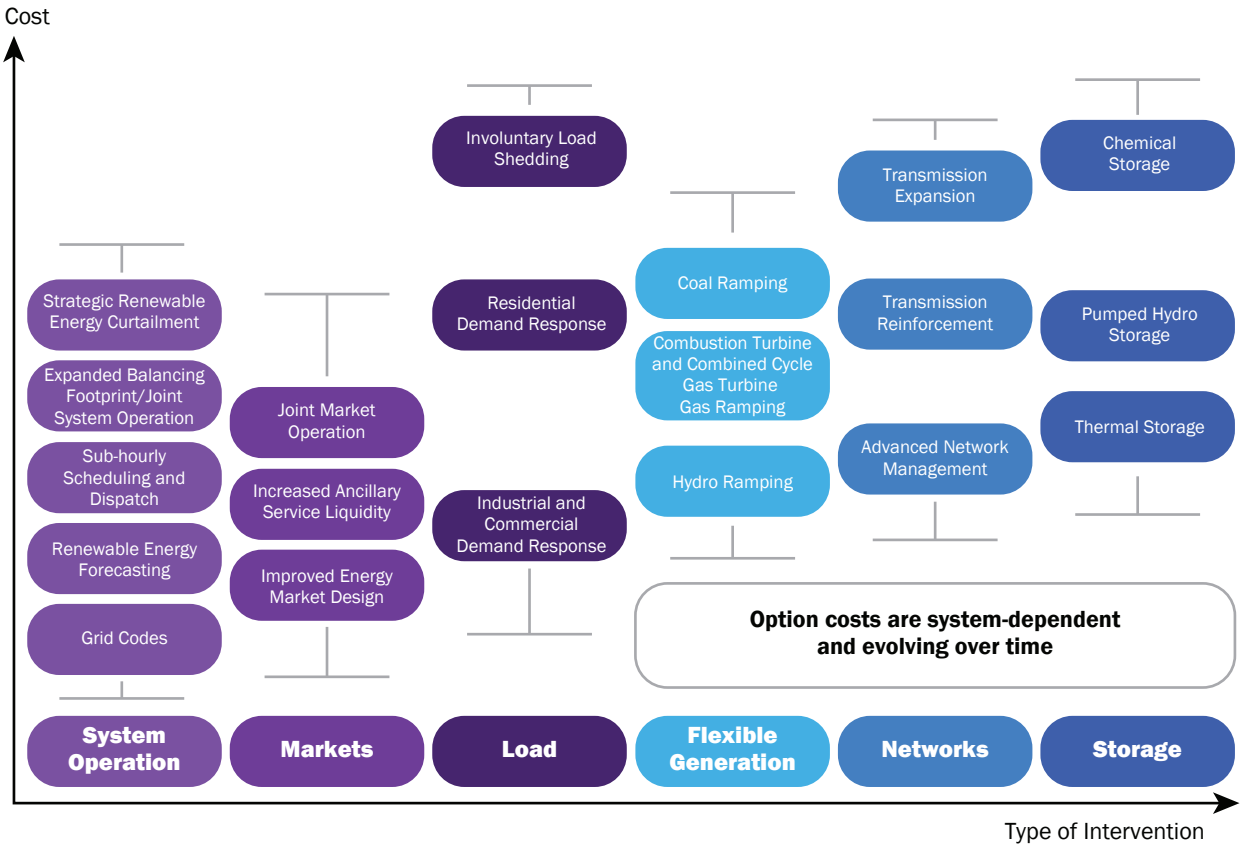
These 6Ls are System Operations, Markets, Load, Flexible Generation, Network Interconnection and Storage. According to Dato' Ir Ts Abdul Razib, ST is studying how other jurisdictions – in particular, the UK, US, Spain, and Australia – are integrating these levers into their RE aspirations.

Giving the UK as an example, the ST CEO noted that "The UK is set to achieve instantaneous 100 percent in variable generation by 2025 during the day. However, the key issue for the UK is to maintain that 100 percent in variable generation from week-to-week because the UK does not currently have a storage solution that can last for over the week. That is something that we can learn and adapt from in the near future."

Speaking on the directions needed to realise the national 70 percent RE capacity goal, Dato' Ir. Ts. Abdul Razib revealed that the final plan will be revealed in August this year by the government of Malaysia.

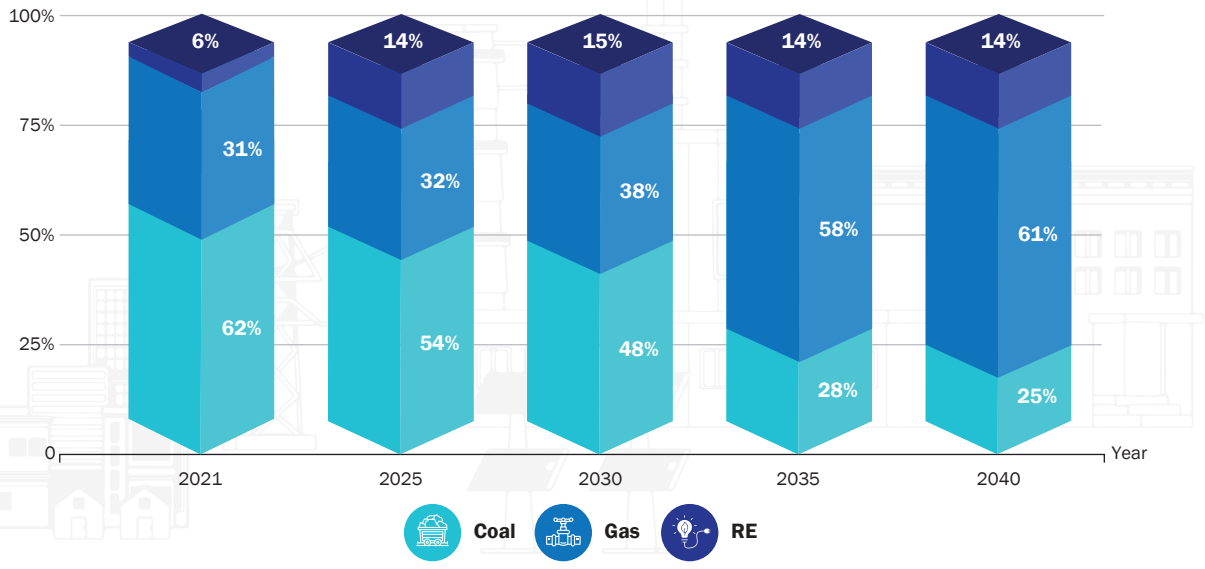
Drawing on his experience in the energy sector and with reference to the 6Ls, he highlighted several areas that he anticipates the country will need to focus on. "We need to ensure greater flexibility in systems operations. We need to focus on battery storage systems.

Relative Economics of Integration Options



Source: Grid Integration and the Carrying Capacity of the U.S. Grid to Incorporate Variable Renewable Energy, National Renewable Energy Laboratory, April 2015, www.nrel.gov.

Energy Mix in the Peninsula, 2021-2040



Source: Suruhanjaya Tenaga Annual Report 2021

We need to create more interconnections with neighbouring countries and territories such as Sumatra, Indonesia, as well as Vietnam and Cambodia to add to the existing interconnection we have with Thailand and Singapore," he said.

Towards Net Zero

Running alongside this is another driving factor, which is to facilitate the nation's target to reduce its carbon emissions by 45 percent (against GDP) by 2030 as stated in the Paris Agreement.

According to Dato' Ir Ts Abdul Razib, ST has conducted several initiatives in order to achieve these goals. Its bread and butter is to conduct audits on buildings and industrial premises to verify their energy efficiency levels and potentials as well as to ensure that only energy-efficient domestic equipment are available in the market.

To add to this is ST's initiative to transform Malaysia's power mix to further lower the country's carbon footprint. This would include the use of RE consisting of big and small hydro plants, solar PV, biomass and biogas. "Composite-wise, currently Malaysia's energy mix is roughly dominated by coal at 43 percent, gas at 49 percent and RE at 8 percent. We need to move towards the target set in the Paris Agreement first before hitting the 2050 goal. So far, I am confident that we are moving in the right direction and are on track to do so," stated Dato' Ir Ts Abdul Razib.

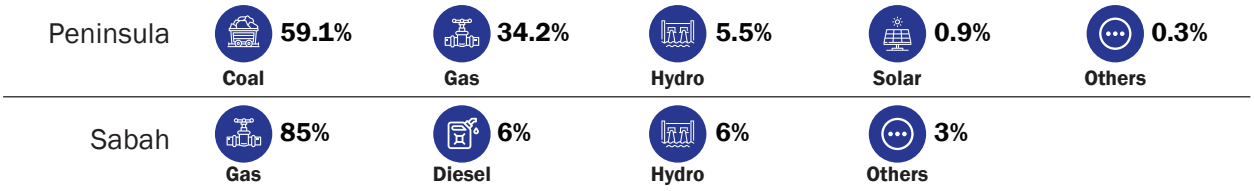
He added that in order to reduce carbon emissions, there is a real need to remove coal from the equation. "As decided by the government recently, ST is enforcing the decision to no longer build new coal power plants and no extension of the existing coal power plant. The existing coal power plants will be retired once their power purchase agreement expires. In the near future, there will be no coal power plants anymore."

Energy Cooperation

In a bid to exchange knowledge and best practices as well as enhance its capabilities as a regulator, ST also works with its international counterparts through the signing of Memorandum of Understandings (MoUs). Dato' Ir Ts Abdul Razib noted that it was imperative that ST learns from other regulators which not only enables it to pick up their tips and tricks but is also a great way for ST to benchmark itself against its peers.

Thus far, ST has signed MoUs with the California Energy Resources Conservation and Development Commission (California Energy

Generation Mix in 2021, Peninsula and Sabah



Source: Suruhanjaya Tenaga Annual Report 2021

Commission) in 2012 and the Energy Market Authority (EMA) of Singapore in 2020. These MoUs have resulted in an abundant exchange of knowledge by way of meetings, data exchanges as well as site visits to both pilot and commercial projects.

"Our collaboration with the California Energy Commission, for example, has been very fruitful. I recall that California started the Net Energy Metering (NEM) for rooftops and solar PV on residential rooftops as well as established an infrastructure to charge Electric Vehicles (EVs). Even in the US, California is without a doubt, one of the country's leading states in the adoption of new technologies such as fuel cells, EV and even hydrogen."

Moreover, Dato' Ir Ts Abdul Razib added that the bilateral cooperation with the EMA too has been productive. Considering that Singapore's EMA is 100 percent market-based while ST is still vertically integrated, there was much for ST to learn from its closest neighbour.

All in all, these partnerships have boosted ST's capabilities to effectively plan the regulation of the electricity and piped gas sectors nationally as well as strengthen its reputation in the global arena.

To Strike a Balance

While the main driving force is to reach the Net Zero by 2050 goal, ST must strive to do so while keeping a fine balance between the three elements of the Energy Trilemma.

"Our role is to find the balance between these objectives, to carve a middle path of having a secure supply of electricity that is also affordable, environmentally sustainable as well to improve upon the economic development of Malaysia."

Mohammed Rashdan Mohd Yusof, the Chairman of ST further reinforced this at the official launch of the Malaysia Energy Transition Outlook (METO), a report that is produced with the joint efforts of the International Renewable Energy Agency (IRENA) and NRECC. The METO report provides a valuable reference for state and non-state players in transitioning toward sustainable energy.

"The government is conscious of the importance of accelerating Malaysia's energy transition as major global mega-tech giants such as Apple, Samsung, Facebook, Google and Microsoft, with a combined market cap of almost US$7 trillion has not only reaffirmed their net zero commitments, but also doubled-down to reach it by 2030, a mere seven years away. This would apply not only for their products, services and operations, but also includes their supply chains. Most of these supply chains reside in Malaysia – from key Electrical and Electronics, semi-conductor and component manufacturing, data centres and business outsourcing industries. It is imperative that Malaysia does not lose these businesses to its neighbouring countries by not transitioning to a greener energy mix."

By incorporating more RE into Malaysia's power mix, the country may not only move towards the aforementioned carbon emission goals but also attract more Foreign Direct Investments and spur new economic development such as green economy.

"When it's all said and done, as a regulator, what we want is fairness to all. To industry

players, consumers, and of course, the country by meeting the economic development expectations," Dato' Ir Ts Abdul Razib affirmed.

To The Future

With such heavy prospects, it is crucial that ST makes adequate preparations to steer the Malaysian energy sector in the right direction. As reiterated by YB Tuan Nik Nazmi Nik Ahmad, the Minister of Natural Resources, Environment & Climate Change, "The local energy market must readily challenge orthodoxies and adopt technological change and advancements as the energy policy focuses on clean energy generation. At the same time, there is definitely a need for regulators and government bodies, especially ST and the Sustainable Energy Development Authority (SEDA), to create a suitable environment that supports the acceleration of energy transition."

Given that ST is also responsible for overseeing the maintenance of the national power grid, (which is critical to ensuring a reliable and secure supply of electricity), Dato' Ir Ts Abdul Razib asserted that it is imperative that the infrastructure is future-proofed. "Currently, the national peak demand for electricity is around two to three in the afternoon with air conditioning being the major reason. However, let's look to the future to a period where Malaysia has achieved its decarbonising goals and where practically everyone would have made the switch from traditional internal combustion engine vehicles to EVs. This would result in electricity peak demand to shift towards the later evenings as this would ultimately be the time where everyone would be charging their respective EVs. In that instance, ST will need to be ready to ensure that the infrastructure, system and supply are able to meet this new demand."

ST has the vision necessary to foresee and identify these very real challenges that lie ahead. Planning ahead, with the appropriate measures, is crucial as any infrastructure upgrades would take time. Dato' Ir Ts Abdul Razib estimated that it would take roughly up to three to five years to commission and construct these upgrades. "It is indeed a huge and challenging undertaking but we are ready for it."

Besides that, ST itself is also undergoing its own transformation in preparation for the upcoming

From left to right: *ST CEO Dato' Ir Ts Abdul Razib Dawood, the Minister of Natural Resources, Energy and Climate Change YB Tuan Nik Nazmi Nik Ahmad, and the Minister of Economy YB Tuan Rafizi Ramli during the Energy Transition Townhall held in March 2023.*

ST has established the energy efficiency labelling for electrical equipment under the Minimum Energy Performance Standard (MEPS) as pictured above. With the upcoming legislation, ST will adapt a similar program for buildings and infrastructures.

challenges. Internally, it has undertaken extensive efforts towards digitalisation which ST estimates to be completed by the end of this year. Once completed, industry players that are looking to become licensees under ST can remotely apply to become one.

The whole process, from payment of fees, documentation, auditing, and communications will be done via its online portal. This will exponentially improve ST's quality of service as processes are executed entirely online. ST has ensured the same digitalisation efforts with its licensees too. TNB, for example, has started to move away from its paper-based billing system to a fully online one as well as initiated the swapping from conventional electrical meters to smart meters. The benefit of the new smart meter is that it can automatically notify TNB if an area or even a single consumer is experiencing a blackout, which allows the energy provider to immediately mobilise a team to the affected area more effectively.

With New Powers, Comes New Responsibilities

Lastly, ST is also eagerly awaiting the ratification of a new legislation that will further enhance and modernise its regulatory powers to enable ST to keep up amid the rapid changes in the industry. As stated by Dato' Ir Ts Abdul Razib, ST has submitted its latest findings and recommendations to the government for the enactment of the Energy Efficiency and Conservation Bill, which will be tabled at the upcoming parliamentary session.

Once ratified, the act will allow ST to broadly regulate that all electricity, power and thermal services delivered by its licensees on the demand side are efficient. To top it off, the enforcement of this bill would also serve as a major indicator to building developers and operators. "We have to modernise the law. The way buildings are operated, how the cooling systems are

One of ST's roles as the regulator of the energy industry is to ensure that service disruptions are kept to a minimum, which it does through the reinforcing of the Performance Standard of Electricity Supply Services which consists of the guaranteed service levels (GSL) and minimum service levels (MSL) for utilities.

installed as well as the power consumption for all of these will be rated for their energy efficiency levels. Overall, this move will be a win-win situation for all parties involved. From the upstream, developers will save on costs if they adhere to the required specifications and include the bonus of using this energy efficiency rating as a selling point, which will definitely attract more tenants or buyers. As for the tenants and buyers, those in highly-rated buildings would benefit from the energy-efficient infrastructure and have the opportunity to save on energy costs in the long run. And of course, they'd also be contributing towards reducing carbon emissions in the country."

For over two decades now, ST has been quietly and yet efficiently playing its role as the regulator of the energy sector in Malaysia. It has proven itself to be a world-class energy regulator, with its strong regulatory framework, efficient operations and commitment to promoting sustainability and energy security. ST's role in overseeing the country's energy industry is vital to ensuring Malaysia's long-term carbon emission goals are met, balanced with energy companies operating within a fair and regulated environment, while safeguarding the interests of consumers. All in all, meeting the expectations of all parties in the equation.

As Malaysia continues to transition towards a sustainable and renewable energy future, ST's leadership in Dato' Ir Ts Abdul Razib and his expertise will be crucial in promoting a stable and secure energy supply for the country. With its track record of commitment to excellence, ST is well-positioned to continue serving as a world-class energy regulator in Malaysia for years to come.