

For Immediate Release

**SECOND MINISTER FOR TRADE AND INDUSTRY DR TAN SEE LENG AT  
THE 39<sup>TH</sup> ASEAN MINISTERS ON ENERGY MEETING**

1. Second Minister for Trade & Industry Dr Tan See Leng is attending the 39<sup>th</sup> ASEAN Ministers on Energy Meeting (AMEM), hosted virtually by the 39<sup>th</sup> AMEM Chair Brunei Darussalam, from 15 to 16 September 2021.
2. During the Meeting, the Ministers welcomed the achievements made by Member States under the ASEAN Plan of Action for Energy Cooperation (APAEC) Phase II: 2021-2025 and reaffirmed their commitment to continue implementing the activities under the Plan. The Meeting also adopted the Bandar Seri Begawan Joint Declaration of the 39<sup>th</sup> ASEAN Ministers on Energy Meeting on Energy Security and Energy Transition, which reaffirmed the shared commitment and collective responsibility of ASEAN Member States in the pursuit of energy security and energy transition. This Bandar Seri Begawan Joint Declaration can be found in [Annex B](#).
3. The Meeting also held an inaugural session with United States (US) Secretary of Energy Jennifer Granholm on ASEAN-US energy cooperation. ASEAN and the US expressed support to deepen cooperation on clean and alternative energy initiatives, and energy innovation, including the deployment of technologies that support renewable energy such as energy storage, grid optimisation activities, and digitalisation tools.
4. At the sidelines of the 39<sup>th</sup> AMEM, Dr Tan chaired the 2<sup>nd</sup> Lao PDR-Thailand-Malaysia-Singapore (LTMS) Ministerial Meeting between the Energy Ministers of Lao PDR, Thailand, Malaysia and Singapore. The four countries reaffirmed their commitment towards the LTMS Power Integration Project (LTMS-PIP), and noted that this was a major milestone to enhance ASEAN power connectivity. The LTMS Ministers issued a Second Joint Statement to reaffirm their commitment towards the project and looked forward to the early commencement of the LTMS-PIP in 2022. The Joint Statement of the LTMS-PIP can be found in [Annex C](#). More details on the LTMS-PIP can be found in [Annex D](#).
5. Dr Tan noted that he is heartened to see ASEAN Member States continue to take active steps together to accelerate the region's energy transition efforts towards a more sustainable energy future for all. On the LTMS-PIP, Dr Tan said, "Singapore is committed to realising multilateral power trade in the region through the project. The LTMS-PIP marks a significant step towards realising our vision for an ASEAN Power Grid . This will help create a multilateral cross-border market for electricity trading, promote investments and facilitate the development and deployment of low carbon solutions in the region. At the same time, it will enhance regional electricity supply security and resilience, while supporting Singapore's energy transition . We look forward to the early finalisation of all agreements underpinning the LTMS-PIP with a view to commence cross-border power trade in 2022, and work towards multilateral electricity trading in the region."

6. The 7th AMEM-International Energy Agency (IEA) Dialogue and 5th AMEM-International Renewable Energy Agency (IRENA) Dialogue were also held today. To commemorate the 10<sup>th</sup> anniversary of ASEAN-IEA cooperation, a “Commemorative Statement on the ASEAN-IEA Energy Collaboration” was issued, reaffirming ASEAN and the IEA’s commitment to energy cooperation in achieving energy security, accessibility, affordability and sustainability for all in the region, in line with the ASEAN Plan of Action for Energy Cooperation (APAEC).

7. The ASEAN Energy Awards 2021 Ceremony was held this evening. The Awards seek to recognise the efforts of the private sector in energy management, while encouraging greater cooperation in the region towards energy efficiency. Singapore received 12 awards for implementing best practices in energy efficiency and contributing to the region’s energy sector. The list of awardees can be found in [Annex E](#).

8. ASEAN’s key Dialogue Partners and International Organisations, namely Australia, China, India, Japan, the Republic of Korea, New Zealand, Russia, and the United States will join the ASEAN Member States at the 15<sup>th</sup> East Asia Summit Energy Ministers Meeting and 18<sup>th</sup> ASEAN Plus Three Ministers on Energy Meeting on 16 September. They will discuss how to further strengthen cooperation to support ASEAN’s energy transition efforts with the view to promote greater energy resilience and sustainability.

**Ministry of Trade and Industry  
15 September 2021**

**Annex A: Photos of Dr Tan at the 39<sup>th</sup> AMEM and Captions**

**Annex B: Bandar Seri Begawan Joint Declaration on Energy Security and Energy Transition**

**Annex C: Second Joint Statement of the LTMS-PIP**

**Annex D: Background Information on the LTMS-PIP**

**Annex E: Singapore winners of the ASEAN Energy Awards 2021**

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**Annex A: Photos of Dr Tan at the 39<sup>th</sup> AMEM and Captions**



**Photo 1:** Second Minister for Trade and Industry Dr Tan See Leng with Chairperson and Minister of Energy H.E. Dato Seri Setia Dr Awang Haji Mat Suny bin Haji Md Hussein, other ASEAN Energy Ministers, as well as the ASEAN Secretariat and the ASEAN Centre of Energy (ACE) Executive Director at the Joint Opening Ceremony for the 39th AMEM and Associated Meetings.



**Photo 2:** Second Minister for Trade and Industry Dr Tan See Leng with Minister of Energy and Mines, Lao PDR H.E. Daovong Phonekeo, Deputy Prime Minister and Minister of Energy, Thailand H.E. Supattanapong Punmeechaow and Secretary General of the Ministry of Energy and Natural Resources, Malaysia Datuk Zurinah Pawanteh at the 2<sup>nd</sup> LTMS Ministerial Meeting.

## **Annex B: Bandar Seri Begawan Joint Declaration on Energy Security and Energy Transition**



### **BANDAR SERI BEGAWAN JOINT DECLARATION OF THE 39<sup>TH</sup> ASEAN MINISTERS ON ENERGY MEETING ON ENERGY SECURITY AND ENERGY TRANSITION**

The Thirty-Ninth ASEAN Ministers on Energy Meeting (hereinafter referred to as “AMEM”) was convened on 15 September 2021, via videoconference.

**ACKNOWLEDGING** the unprecedented impacts of the Coronavirus disease 2019 (COVID-19) pandemic on the global economy, including the energy sector, as well as the adverse effects the pandemic has had on the well-being and livelihood of the people;

**RECALLING** the ASEAN Comprehensive Recovery Framework (ACRF) and its Implementation Plan, adopted by the ASEAN Leaders at the 37<sup>th</sup> ASEAN Summit via videoconference on 12 November 2020, by which, under the Broad Strategy 5: Advancing Towards a More Sustainable and Resilient Future highlights the importance of sustainable energy and seizing the opportunities for ASEAN to promote green growth and boost the economy;

**UNDERSCORING** the importance of a resilient energy system that can contribute to all elements of energy security, including diversification of energy sources, security of supply, and regional energy connectivity, through enabling adaptation to changing conditions and recovery, restoration and rehabilitation from disruptions and emergencies;

**INSPIRED** by and united under One Vision, One Identity and One Community, and Brunei Darussalam’s ASEAN Chairmanship 2021 theme: “*We Care, We Prepare, We Prosper*”, with a view to care for the people and each other’s well-being, prepare for future opportunities and challenges, and prosper together as a unified region, in pursuing the goal of energy security to maintain and protect energy services against disruptions that drive energy transition in ensuring access to affordable, reliable, sustainable and modern energy for all;

**GUIDED** by the purposes and principles in the ASEAN Charter, the ASEAN Community Vision 2025 and the ASEAN Economic Community Blueprint 2025 to promote sustainable energy security and energy transition in an inclusive and just manner to foster economic growth and sustainable development for the

benefit of present and future generations, and to place the well-being, livelihood and welfare of the peoples at the center of the ASEAN Community building process;

**RECALLING ALSO** the historic inauguration of the ASEAN Economic Ministers Meeting on Energy Cooperation (AEMMEC), a precursor to the AMEM, in Bali, Indonesia on 29 – 30 September 1980 as a significant milestone for the evolution and consolidation of ASEAN energy cooperation in contributing towards the advancement of ASEAN Community building, particularly the ASEAN Economic Community;

**ENCOURAGED** by the substantial achievements of the AMEM in the last four decades in forging regional economic cooperation and integration, with a view to enhance connectivity, and increase competitiveness and productivity that are vital to the effective operationalisation of the economic community;

**RECALLING FURTHER** the ASEAN Plan of Action for Energy Cooperation (APAEC) Phase II: 2021 – 2025, endorsed at the 38<sup>th</sup> ASEAN Ministers on Energy Meeting via videoconference on 19 November 2020, with the theme: “Enhancing Energy Connectivity and Market Integration in ASEAN to Achieve Energy Security, Accessibility, Affordability and Sustainability for All”, and the sub-theme: “Accelerating Energy Transition and Strengthening Energy Resilience through Greater Innovation and Cooperation”;

**NOTING WITH GREAT SATISFACTION** the notable progress and tangible results of the AMEM in supporting sustainable energy security and encouraging effective energy transition, in particular, through the work of the Specialised Energy Bodies (SEBs), comprising the Heads of ASEAN Power Utilities and Authorities (HAPUA) on ASEAN Power Grid (APG), the ASEAN Council on Petroleum (ASCOPE) on Trans-ASEAN Gas Pipeline (TAGP) and the ASEAN Forum on Coal (AFOC) on Coal and Clean Coal Technology (CCT); and the Sub-Sector Networks (SSNs) on Energy Efficiency and Conservation (EE&C), Renewable Energy (RE), Regional Energy Policy and Planning (REPP) and Nuclear Energy Cooperation (NEC);

**APPRECIATING** the role of the ASEAN Centre for Energy (ACE) since its establishment in 1999 in providing relevant information and expertise to ensure that the necessary energy policies and programmes are in harmony with the economic growth and the environmental sustainability of the region;

**DETERMINED** to enhance cooperation within ASEAN through the implementation of the bold and forward-looking APAEC that is relevant, contemporary and responsive to the challenges of the times in ensuring energy security, while transitioning towards a low-carbon energy system, based on national social and economic circumstances and needs, with diverse energy resources, demand dynamics, affordability to the people, appropriate technologies, financial resources and cultures;

**RECOGNISED** that with unique and diverse energy systems, energy transition in the region shall take a pragmatic approach, and that natural gas and renewable energy can play a key role in the transition towards lower-emission energy systems, including through the different possible national paths to achieve access to affordable, reliable, sustainable and modern energy for all;

**RECOGNISING** that the issues and challenges in ensuring energy security and accelerating an inclusive and just energy transition cuts across and goes beyond the energy sector, and needs to be addressed through concrete, collaborative, and parallel interventions with key enabling sectors and policy areas such as finance, investments and industrial policy, standards and conformance, transport, environment and climate;

**RECOGNISING ALSO** that the energy sector is crucial to urgently address our shared long-term climate goals and commitment to reduce emissions through the transformation of the energy system, in accordance with national planning and priorities, which includes enhancing energy efficiency and conservation, deploying energy renewables and increasing investments in advanced and cleaner energy technologies that can contribute to an environmentally sound, greener, affordable, and socially and economically sustainable development path;

**EMPHASISING** the need to strengthen cross-sectoral and cross-pillar coordination, in view of the complex and interconnected challenges of the ASEAN Community building process, including the close nexus between energy and climate that requires greater collaboration to pursue Sustainable Development Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all and Sustainable Development Goal 13: Take urgent action to combat climate change and its impacts of the United Nations 2030 Agenda for Sustainable Development, and the 2015 Paris Agreement under the United Nations Framework Convention on Climate Change;

**SHARING THE BELIEF** that innovation is one of the main drivers of the energy transition process to facilitate research, development, demonstration and deployment (RDD&D) of cleaner, efficient and safe energy technology options, such as hydrogen, Carbon Capture, Utilisation and Storage (CCUS) and Battery Energy Storage (BES), and the need for these technologies to be technically and commercially viable, in delivering an affordable, reliable, sustainable, and modern energy system;

**ACKNOWLEDGING** the important role of funding institutions, including the private sector, international financial institutions and donors, as well as standard-setting bodies in mobilising investments and financing into innovative energy technologies to advance the low-carbon energy transition agenda in the region, in view of fostering economic growth and sustainable development that serve the interest of the people;

**REAFFIRMING** our determination to maintain our proactive and outward-looking approach in our relations and cooperation with ASEAN Dialogue Partners (DPs) and International Organisations (IOs), as well as external partners, based on shared interests, constructive engagements and mutual benefits, with a view to effectively address global energy challenges in achieving sustainable economic development, while strengthening our unity, centrality and relevance in the region;

**COGNISANT** of the importance to complement the works of other actors across the ASEAN Sectoral Bodies in making our energy systems more adaptive and flexible that are capable of responding to and mitigating the effects of future emergencies and disasters;

**RECOGNISING** the need to promote and enhance people-to-people contacts and interaction within the ASEAN energy establishments, with a view to create an ASEAN sense of belonging that is in line with the goals of a people-centered and people-oriented Community;

**REAFFIRMING** our shared commitment and collective responsibility in ensuring current and future energy security, and accelerating the energy transition in the region;

**DO HEREBY DECLARE TO:**

- 1. Take concrete actions** to develop robust policies and measures, and strengthen national, bilateral and multilateral energy programmes and projects that enhance energy resilience and improve energy security, in all of its aspects in the region, which form the foundation of an inclusive and just energy transition, in achieving access to, affordable, reliable, sustainable, and modern energy for all, while taking into consideration national circumstances, priorities, policies and capacities, including our respective energy systems;
- 2. Progress** as rapidly as possible energy efficiency and conservation initiatives in all economic sectors, in accordance with national policies, laws and regulations, and increase the use of renewable energy and alternative energy sources, taking into consideration national circumstances, in ensuring greater levels of energy security;
- 3. Resolve** our common determination to maximise the benefits of low-carbon energy resources, including natural gas, as reliable sources of energy, through enhanced mechanisms of sharing information, knowledge, expertise, experience and best practices;
- 4. Intensify** efforts on long-term energy and climate policy and planning to increase the rate of energy efficiency and conservation, expand renewable energy sources, and deploy advanced, cleaner and low-carbon energy technologies towards low greenhouse gas (GHG) emissions and climate-resilient development;

- 5. Endeavour** in the future to explore an aspirational long-term regional target towards lower-emission energy systems, in accordance with our common but differentiated responsibilities and respective capabilities, that can contribute to lowering GHG emissions;
- 6. Reaffirm** AMEM's role as the highest ministerial energy consultative and cooperative mechanism among ASEAN energy establishments, and the role of the APAEC as the regional energy blueprint to strengthen energy resilience, through greater innovation and cooperation;
- 7. Strengthen** the role of ACE in fulfilling its critical functions as catalyst, knowledge hub, and think tank to contribute towards ensuring energy security and accelerating the energy transition in the region;
- 8. Intensify** AMEM's efforts to collaborate on sustainable development across relevant sectoral bodies and pillars within the ASEAN community in mobilising financial resources, enhancing participation in related value and supply chains, and creating green jobs, with a view to integrate the low-carbon energy transition agenda and expand sustainable economic opportunities that will lead to the attainment of the long-term goal of transitioning to decarbonized energy systems in the region;
- 9. Pursue** cross-sectoral collaboration to accelerate the development of cleaner, greener, low-carbon, and more sustainable transport fuels and vehicles by increasing electric mobility capabilities and the utilisation of alternative fuel sources such as natural gas, biofuels, hydrogen and fuel cell technologies;
- 10. Further enhance** cooperation with other pillars under the ASEAN Community, ASEAN DPs, IOs, as well as external partners, to address sustainable economic development challenges, which include developing a sustainable finance ecosystem to support ASEAN's long-term energy security and energy transition agenda, and developing a regional taxonomy, taking into consideration ASEAN needs and international developments, to enhance the region's policies, frameworks, and capabilities in attracting and scaling up investments in energy infrastructure and technologies;
- 11. Welcome** continued cooperation with the private sector, international financial institutions and donors, as well as standard-setting bodies, to facilitate and support the deployment and financing of innovative energy technologies in fostering economic growth, and leveraging the market potential to accelerate the energy transition in the region;
- 12. Emphasise** the value of education and academia to promote research, development and innovation in sustainable energy technologies through the increase of international triple-helix cooperation amongst government, private sector and academia in facilitating access to upgraded technologies and improved infrastructure for supplying affordable, reliable, sustainable, and modern energy system;
- 13. Endeavor** to ensure that the energy sector continues to make effective and meaningful contributions towards enhancing ASEAN's preparedness and response

to regional emergencies and disasters, including during the recovery phases, with a view to better protect the society, economy and the broader developmental agenda, as well as to enable a strategic, holistic, coordinated and cross-pillar response in mitigating impacts of emergencies and disasters that have or may affect the Southeast Asian region, in line with a Strategic and Holistic Initiative to Link ASEAN Responses to Emergencies and Disasters (ASEAN SHIELD);

**14. Uphold** ASEAN Centrality in our engagement with ASEAN DPs and IOs, as well as external partners;

**15. Undertake** appropriate measures and initiatives to increase the level of awareness within ASEAN energy establishments to promote ASEAN identity in support of an ASEAN Economic Community;

**ADOPTED** in Bandar Seri Begawan, Brunei Darussalam, on this Fifteenth Day of September in the Year Two Thousand and Twenty-One.

## **Annex C: Second Joint Statement of the LTMS-PIP**

1 **We**, Minister of Energy and Mines of the Lao PDR, Minister of Energy of the Kingdom of Thailand, Minister of Energy and Natural Resources of Malaysia, and Minister of Trade and Industry of the Republic of Singapore, have met through video conferencing on the occasion of the 39<sup>th</sup> ASEAN Ministers on Energy Meeting (AMEM) and its Associated Meetings, hosted by Brunei Darussalam on 15 September 2021;

2 **RECALLING** that Lao PDR, Thailand, Malaysia, and Singapore had jointly agreed in Vientiane, Lao PDR on 23 September 2014 to set up a Lao PDR, Thailand, Malaysia, Singapore – Power Integration Project (LTMS-PIP) Working Group to study the technical viability of cross border power trade of up to 100MW from Lao PDR to Singapore through existing interconnections;

3 **RECALLING ALSO** that the Ministers of Lao PDR, Thailand, Malaysia and Singapore had issued a Joint Statement on the occasion of the 38th AMEM on 19 November 2020 to affirm our commitment to initiate cross-border power trade of up to 100MW from the Lao PDR to the Republic of Singapore via Thailand and Malaysia under the LTMS-PIP, using existing interconnections, for a two-year period from 2022 to 2023;

### **DO HEREBY:**

4 **REAFFIRM** our commitment to advancing multilateral cross-border power trade in ASEAN;

5 **WELCOME** the good progress of the LTMS-PIP Working Group on the technical and commercial feasibility and viability, and legal and regulatory aspects of cross-border power trade of up to 100MW from Lao PDR to Singapore via Thailand and Malaysia using existing interconnections from 2022 to 2023;

6 **ENCOURAGE** Électricité Du Laos (EdL), Electricity Generating Authority of Thailand (EGAT), Tenaga Nasional Berhad (TNB) and the Singapore importer to continue working towards the early commencement of cross-border power trade under the LTMS-PIP;

7 **LOOK FORWARD** to the early finalisation of all agreements underpinning the LTMS-PIP with a view to commence cross-border power trade in 2022 to support multilateral electricity trading in the region;

8 **LEVERAGE** the support of ASEAN Ministers on Energy for the LTMS-PIP as a pathfinder to complement existing efforts towards realising the ASEAN Power Grid and the ASEAN Economic Community by creating opportunities for multilateral electricity trading in the region.

## **Annex D: Background Information on the LTMS-PIP**

### **Background**

- The Lao PDR-Thailand-Malaysia-Singapore Power Integration Project (LTMS-PIP) serves as a pathfinder to advance cross border power trading in Southeast Asia, and complement existing efforts in the ASEAN Power Grid by creating opportunities for multilateral electricity trading beyond neighbouring borders.
- As part of the first phase of this project, Lao PDR, Thailand and Malaysia initiated the Lao PDR, Thailand and Malaysia Power Integration Project (LTM-PIP). They signed a two-year Energy Purchase Wheeling Agreement (EPWA) at the 35<sup>th</sup> AMEM in Manila, Philippines in Sep 2017, to trade up to 100MW of electricity under a Power Purchase Agreement (PPA) Model, which involves bilateral contracts between the buyer and seller, as well as wheeling charge contracts with transit countries. From 2018 to 2019, about 25GWh of electricity was exported from Lao PDR to Malaysia under the EPWA. Lao PDR, Thailand and Malaysia extended the EPWA in Dec 2019 for 2 years till 2021 and increased the power trade capacity to up to 300MW.
- At the 38<sup>th</sup> AMEM in 2020, Lao PDR, Thailand, Malaysia and Singapore announced their commitment to initiate multilateral cross-border power trade in a Joint Statement at the inaugural LTMS Ministerial Meeting . Under the LTMS-PIP, the four countries pledged to explore the technical and commercial feasibility and viability of trade of up to 100MW from Laos to Singapore via Thailand and Malaysia using existing interconnections for a two-year period (i.e. 2022 – 2023).

### **Developments on the LTMS-PIP**

- At the 39<sup>th</sup> AMEM in 2021, the four countries released a second LTMS PIP Joint Statement to reaffirm the four countries' commitment to the project, welcome the good progress of discussions by the LTMS-PIP Working Group, and look forward to the early commencement of cross-border power trade in 2022.
- Electricite du Laos (EdL), the state utility of Lao PDR, has appointed Keppel Electric Pte Ltd as its working partner to import up to 100MW of hydropower from Lao PDR into Singapore, under the LTMS-PIP.

### **Benefits of the LTMS-PIP**

- The LTMS-PIP will benefit all four countries, by facilitating the development of a regional market for electricity trading, promoting investments, and enhancing

regional electricity supply security and cost-competitiveness. This would help to drive the development and deployment of low carbon solutions in the region.

- Singapore will be able to tap on the abundance of renewable energy from the region, to advance our sustainable energy goals to progressively decarbonise electricity generation.
- The project will support the broader ASEAN Power Grid vision, as it creates the opportunity to trade electricity beyond neighbouring borders and enhance energy resilience.

**Annex E: Singapore winners of the ASEAN Energy Awards 2021**

Category	Award Recipients	Key Highlights
<b>Energy Efficient Building Awards</b>		
<b>New and Existing Buildings</b>	First Runner-Up: Housing Development Board Oasis Terraces	<ul style="list-style-type: none"> <li>• Oasis Terraces is designed with several smart and sustainable features such as motion-sensor lighting and sensor-activated fans for residents' comfort. The development also has a rainwater harvesting system that treats surface water runoff and a sensor-triggered irrigation system to manage the distribution of water to designated planting zones, removing the need for manual watering.</li> <li>• Oasis Terraces is a Green Mark Platinum Building. Its energy saving measures and green features have achieved a total annual electricity savings amounting to about 5,059,595 kWh, equivalent to 30% annual savings in utilities bill.</li> <li>• There are also solar panels on the rooftops. About 140 pieces of solar panels were installed on the roof with a capacity of 53.82 kWp. The estimated monthly generation is 4,800 kWh.</li> </ul>
	Second Runner-up: National University of Singapore Wet Science Building	<ul style="list-style-type: none"> <li>• The National University of Singapore Block S9 (Wet Science Building) is the first institutional BSL2 laboratory building in Singapore to obtain BCA Green Mark Platinum</li> </ul>

		<p>under the Green Mark 2015 criteria.</p> <ul style="list-style-type: none"> <li>• The project spares no efforts in designing for sustainability, incorporating passive designs such as use of glazed unitised curtain wall system for natural daylight, lush greenery to demand control air-conditioning and lighting systems.</li> <li>• It adopted an innovative passive cooling system using condensate water harvested from Air-Handling Units (AHUs) to cool the ambient environment via water features that enhances the communal spaces for students to relax and enjoy and yet remain sustainable under natural ventilation mode.</li> </ul>
<p><b>Green Building (Small &amp; Medium)</b></p>	<p>Winner: Faci Asia Pacific Pte Ltd, Ancillary Building</p>	<ul style="list-style-type: none"> <li>• The Building is located in an industrial environment, but is designed with sustainability in mind, to reduce energy and water usage and waste production, minimise the environmental impact, improve working conditions and comfort for the occupants while using sustainable materials.</li> <li>• 201 kWp of Photo Voltaic panels have been installed on the roof area of the adjacent warehouses, replacing almost 100% of the electricity needs.</li> <li>• The urban heat island effect has been effectively mitigated by making sure that 50% of the site area is covered by building</li> </ul>

		<p>footprint and on-site greenery. Cool Paints have been used for the all the external walls and roof to cut down heat radiation.</p>
	<p>1<sup>st</sup> Runner Up: 44 Springleaf Rise</p>	<ul style="list-style-type: none"> <li>• The house is designed with window openings having floor to ceiling heights to allow natural form of ventilation into the house. The design has been enhanced to facilitate cross ventilation by reducing barriers to air paths through the buildings and maximising exposure to prevailing wind direction.</li> <li>• The air-conditioning system installed is the energy efficient Variable Refrigerant Volume (VRV) system because of its modularity and a high part load efficiency, this can minimise energy consumption.</li> <li>• Solar hot water system with heat pump are used to provide hot water supply for the shower facilities in the house. A 15.37 kWp solar PV system covering almost 75% of the flat roof is expected to generate 19,875 kWh/year.</li> </ul>
<p><b>Retrofitted Buildings</b></p>	<p>Second Runner Up: Singapore Land Group Ltd, Stamford Court</p>	<ul style="list-style-type: none"> <li>• Stamford Court has been decorated Green Mark Platinum Award for Existing Non-Residential Buildings from Building and Construction Authority (BCA) of Singapore in 2019.</li> <li>• The reconfiguration of the air-cooled chiller system to water-cooled chiller system was</li> </ul>

		<p>completed in February 2020. The chiller plant efficiency can achieve 0.509 kW/RT, 15% better than the Green Mark Platinum Building standard 0.60 kW/RT.</p> <ul style="list-style-type: none"> <li>The building also includes green features such as energy efficient lighting system, efficient car park ventilation system and PUB certified water efficient building (WEB).</li> </ul>
<p><b>Tropical Buildings</b></p>	<p>First Runner Up: National University of Singapore University Sports Centre</p>	<ul style="list-style-type: none"> <li>The building was specially designed to catch the prevailing North-South winds by creating a wind scoop at the main thoroughfare and atrium. The natural ventilation and constant breeze reduces the reliance on air-conditioning thus reducing cooling load and energy consumption.</li> <li>The sports hall is designed as a mixed mode ventilation space. During normal hours it is naturally ventilated, and the air conditioning system will only be used during competition and exams period.</li> <li>Lighting zones with different lux levels were wired to give the operator more flexibility, as well as allowing them to light specific areas. The highest efficiency light fittings were selected, resulting in an overall savings of 43% of the annual total lighting energy within the building.</li> </ul>

	<p>Second Runner Up: Woh Hup Holdings Pte. Ltd Woh Hup Technical Hub</p>	<ul style="list-style-type: none"> <li>• The building air- conditioning system comprises an energy efficient VRV system for the office and split units for the small local offices inside the factories. The energy efficiency of the air-conditioning load for the office areas stands at 197W/m2.</li> <li>• The building also leverages on Solar Photovoltaic Panel System for both of the single and 4-storey factory building, with a total capacity of up to 357 kWp.</li> <li>• The building installed lifts are of gearless hoisting machines, which makes them more energy efficient, and includes a regenerative drive to recover the energy when descending with a heavy load or ascending with a light load.</li> </ul>
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<p align="center"><b>Special Submission – Cutting Edge Technology</b></p>		
<p><b>Special Submission</b></p>	<p>Winner: Air T&amp;D Pte. Ltd. Intelligent Air Distribution System (IADS)</p>	<ul style="list-style-type: none"> <li>• The Intelligent Air Distribution System (IADS) employs a “Networked Control System” concept, where different control loops are connected via wire or wireless communication network, which offers the capabilities of large air distribution control system in building at much lower cost.</li> <li>• The IADS is also easily implemented and maintained. It uses a fault detection algorithms to detect common faults in the duct system and the</li> </ul>

		<p>replacement of any component in the system is a simple “plug-out and plug-in” process.</p> <ul style="list-style-type: none"> <li>• With flexible configurations and control strategies, the IADS can also be easily tailored to suit different applications. As the system has little requirement for space, it can be adopted for new buildings as well as for existing buildings as energy saving retrofit.</li> </ul>
<b>Special Submission – Zero Energy Building</b>		
<b>Special Submission</b>	<p>Winner: Nanyang Technological University Campus</p>	<ul style="list-style-type: none"> <li>• The campus uses a grid-tied system for its 5,172 kilowatt-peak (kWp) Solar Photovoltaic (PV) system to reduce the overall energy consumption of the campus by about 3.2% or 6.4 million kWh per year</li> <li>• Chiller Plants serving the campus academic building leverages on machine learning (ML) and Artificial Intelligence (AI) to optimise the overall air-conditioning from cooling towers, chillers, to the air handling units, including sensing the changing ambient wet bulb temperature.</li> <li>• The campus uses a grid-tied system for its 5,172 kilowatt-peak (kWp) Solar Photovoltaic (PV) system to reduce the overall energy consumption of the campus by about 3.2% or 6.4 million kWh per year</li> </ul>
	<p>Winner:</p>	<ul style="list-style-type: none"> <li>• The Ulu Pandan Depot is the first bus depot in Singapore to use the Photovoltaic Solar</li> </ul>

	SBS Transit Ltd Ulu Pandan Depot	<p>Panel System to power its facility with more than 2,000 solar panels installed on its roof.</p> <ul style="list-style-type: none"> <li>• Collectively, they generate about 840 MWh of renewable energy and any unconsumed surplus energy is fed into the national power grid for utilisation.</li> <li>• The depot had also achieved the Building and Construction Authority of Singapore's Green Mark Platinum- Super Low Energy Building Award in 2020.</li> </ul>
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<b>ASEAN Excellence in Energy Management by Individual Category</b>		
Ms Faith Gan	Deputy Director, Energy Connections Office, Energy Market Authority of Singapore	<ul style="list-style-type: none"> <li>• Ms Faith Gan is the Deputy Director of the Energy Connections Office at the Energy Market Authority of Singapore (EMA). She leads a team tasked to spearhead regional grid interconnections and electricity into Singapore</li> </ul>
<b>Special Recognition for ASEAN-Japan Energy Efficiency Partnership (AJEEP) Training of Trainers</b>		
Mr Steven Huang Youzhi	Research Fellow, Singapore Institute of Technology	<ul style="list-style-type: none"> <li>• Mr Steven Huang is a Research Follow in Singapore Institute of Technology (SIT). He worked in pharmaceutical industry for 18 years. He is a Singapore Certificated Energy Manager and Energy Efficiency Opportunity (EEO) Assessor, and subject-matter expert for utilities and energy practices</li> </ul>

<b>Energy Efficient Building (Tropical)</b>		
University Sports Centre (National University of Singapore)	1 <sup>st</sup> Runner-Up	<ul style="list-style-type: none"> <li>Building sits on existing sloping topography, enabling efficient and intensive planning of spaces and energy efficient technologies, along with envelope building design</li> </ul>
Woh Hup Technical Hub	2 <sup>nd</sup> Runner-Up	<ul style="list-style-type: none"> <li>Factory building with sustainable features including building design, efficient lighting, solar PVs and sustainable building products</li> </ul>
<b>Special Submission – Cutting Edge Technology</b>		
Intelligent Air Distribution System (Air T&D Pte Ltd)	Winner	<ul style="list-style-type: none"> <li>Air-conditioning and mechanical ventilation system with automatic control of ventilation airflow rates</li> </ul>
<b>Special Submission – Zero Energy Building</b>		
Nanyang Technology University Campus	Winner	<ul style="list-style-type: none"> <li>7 Zero Energy Buildings and 2 Super Low Energy Buildings across the whole campus, using unconventional high impact energy saving systems for both new and existing buildings and facilities</li> </ul>
Ulu Pandan Bus Depot (SBS Transit Ltd)	Winner	<ul style="list-style-type: none"> <li>First bus depot in Singapore to use solar PVs to power its facility with more than 2,000 rooftop solar panels, also uses energy efficient air-conditioning and LED lighting, awarded Green Mark Platinum – Super Low Energy Building award in 2020</li> </ul>

Category	Award Recipients	Key Highlights
<b>ASEAN Excellence in Energy Management by Individual</b>		
Faith Gan	Winner	<ul style="list-style-type: none"> <li>• Deputy Director, Energy Connections Office, EMA</li> </ul>
<b>Special Recognition for ASEAN-Japan Energy Efficiency Partnership (AJEEP) Training of Trainers</b>		
Steven Huang Youzhi	Winner	<ul style="list-style-type: none"> <li>• Utility and Facility Manager, Energy Management Committee, Abbott</li> </ul>