MTI MINISTRY OF TRADE AND INDUSTRY SINGAPORE

For Immediate Release

SECOND MINISTER FOR TRADE AND INDUSTRY DR TAN SEE LENG AT THE 38TH ASEAN MINISTERS ON ENERGY MEETING

1. Second Minister for Trade & Industry and Manpower, Dr Tan See Leng, is attending the 38th ASEAN Ministers on Energy Meeting (AMEM), from 19 to 20 November 2020, hosted virtually by the 38th AMEM Chair, Vietnam. The theme for this year's AMEM is "Energy Transition Toward Sustainable Development".

2. Ministers from all 10 ASEAN Member States (AMS) noted the region's achievements under the ASEAN Plan of Action for Energy Cooperation (APAEC) Phase I: 2016-2020. They also endorsed the APAEC Phase II: 2021-2025, with a new sub-theme of *"Accelerating Energy Transition and Strengthening Energy Resilience through Greater Innovation and Cooperation"*. As Chair of the APAEC Phase II Drafting Committee, Singapore had worked closely with the AMS to set out an ambitious five-year plan for energy collaboration in 2021-2025, which will guide the region's energy cooperation towards a sustainable energy future. This includes enhancing the regional energy intensity reduction target to 32% by 2025, from 2005 levels[1], and introducing a target of 35% renewable energy share in installed power capacity by 2025.

3. Lao PDR, Thailand, Malaysia, and Singapore also announced their commitment to initiate cross-border power trade of up to 100MW under the Lao PDR-Thailand-Malaysia-Singapore Power Integration Project (LTMS-PIP). This is a significant step forward which will help to promote greater infrastructural connectivity in the ASEAN region and contribute to ASEAN's sustainable energy goals. The Joint Statement of the LTMS-PIP can be found in Annex A.

4. At the meeting today, Dr Tan underscored the importance of ASEAN remaining cohesive in its response to the COVID-19 pandemic and continuing to take bold steps towards accelerating the region's energy transition to enhance energy security, accessibility, affordability and sustainability for all. Welcoming the Joint Statement of the LTMS-PIP, Dr Tan said, "Tapping on regional power grids is a core component of Singapore's Energy Story. Singapore is committed to developing multilateral power trade in the region through the LTMS-PIP. ASEAN must continue to work closely together to realise our shared energy goals and co-create innovative solutions that will contribute positively to our energy future."

5. The ASEAN Energy Awards 2020 Ceremony was held during the 38th AMEM on 19 November 2020. The annual Awards aim to promote regional cooperation on energy efficiency and profile the efforts of the private sector in energy management. This year, Singapore received nine awards for implementing best practices in energy

[1] The regional energy intensity reduction target was increased to 32% from 2005 levels, up from the original reduction target of 30% set out under the APAEC Phase I: 2016-2020.

efficiency and contributing to the region's energy sector. The list of awardees can be found in Annex B.

6. Dr Tan also participated in the 6th AMEM-International Energy Agency (IEA) Dialogue on 19 November 2020. On 20 November 2020, Dr Tan will participate in the 17th ASEAN Plus Three Ministers on Energy Meeting, the 4th AMEM-International Renewable Energy Agency (IRENA) Dialogue and the 14th East Asia Summit Energy Ministers Meeting. The AMS are joined by ASEAN's key Dialogue Partners and International Organisations, namely Australia, China, India, Japan, the Republic of Korea, New Zealand, Russia, the United States, the IEA and the IRENA. They will exchange views on key issues including the role of international cooperation to enhance energy resilience and sustainability.

Ministry of Trade and Industry
19 November 2020

Annex A: Joint statement of the LTMS-PIP
Annex B: Singapore winners of the ASEAN Energy Awards 2020
Annex C: Photos of the 38th AMEM

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ANNEX A

JOINT STATEMENT OF THE LAO PDR-THAILAND-MALAYSIA-SINGAPORE POWER INTEGRATION PROJECT

DELIVERED AT 19 NOVEMBER 2020, 5.00pm

1. **WE**, Minister of Energy and Mines of Lao PDR, Minister of Energy of the Kingdom of Thailand, Minister of Energy and Natural Resources of Malaysia and Second Minister for Trade and Industry of the Republic of Singapore, have gathered through video conferencing on the occasion of the 38th ASEAN Ministers on Energy Meeting (AMEM) and its Associated Meetings, hosted by Viet Nam on 19 November 2020;

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;

DO HEREBY:

3. **AFFIRM** our commitment to advancing multilateral cross-border power trade in ASEAN;

4. **COMMIT** to initiate cross-border power trade under the LTMS-PIP;

5. **PLEDGE** to explore the technical and commercial feasibility and viability of cross-border power trade of up to 100 megawatts (MW) from Lao PDR to Singapore via Thailand and Malaysia using existing interconnections, for a two-year period from 2022 to 2023;

6. **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.

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ANNEX B

Singapore Winners of the ASEAN Energy Awards 2020

Category	Award Recipients	Key Highlights
Energy Efficient Building Awards		
New and Existing Buildings	Second Runner-Up: Frasers Tower	• Used chilled water plant (0.551 kW/ton efficiency) for its air conditioning system. All chillers are equipped with automatic condenser tubing cleaning system, with a refrigerant leak detection installed. • Integrated Building Management System (BMS) that monitors and controls the various services such as the chiller plant cooling towers and electrical system. • Photocell sensors are installed along the perimeter of the office premises to switch off lightings, in response to the amount of variable daylight.
Retrofitted Buildings	Winner: The Adelphi	• A 35-year-old strata-titled building that was awarded the Singapore Green Mark Platinum Certificate in 2017. Its energy saving measures and green features have achieved a total annual electricity savings amounting to 3.2 million kWh, equivalent to 34% annual savings in utilities bill. This was accomplished within an 8-year Energy Performance Contract with the energy service

		company (ESCO), Comfort Management Pte Ltd. • Re-engineered the two chiller plant systems to combine them as one (with modification of the piping system); achieved a 56% improvement in the plant efficiency from 1.295kW/RT to 0.573kW/RT, better than the Green Mark Platinum Building standard of 0.65kW/RT. • Installed high performance variable frequency chiller systems which uses environmentally friendly refrigerant and also variable speed drives (VSDs) for chilled water pumps, condenser pumps and cooling towers.
	First Runner-Up: ISEAS – Yusof Ishak Institute	• 7 old air-cooled chiller tower units of various sizes were replaced by 2 energy-efficient water-cooled tower units. Retrofit of air conditioning system such that upon completion - achieved an efficiency of 0.917 kW/RT, from the current 2.45 kW/RT. This improvement in efficiency has contributed greatly to the total annual energy savings of 41.6% • The lighting system was also identified as another major area for energy efficiency improvement. A one-to-one replacement of 36W fluorescent lamps to 9W light emitting diode (LED) lamps was implemented for the Library block, resulting in brighter lighting and as much as

		75% reduction in the power consumption. • Approximately 42% of the gross floor area is served by natural ventilation and green spaces are maximised in the surroundings. Majority of the common areas such as corridors, staircases and lift lobbies are open to natural ventilation, which results in a much lower energy consumption from cooling needs.
Tropical Buildings	Winner: Heartbeat@Bedok	• Used the Variable Speed Drive (VSD) in the air conditioning system that allows for improvement in the overall operating system to 0.58kW/RT. • Artificial lighting system which incorporated energy efficient LED and T5 fluorescent light fittings, resulting in an overall lighting power budget (LPB) of 4.96W/m^2 for the entire development. • The building design team had conceptualised a self-shading façade to reduce heat gains. Tapered fenestrations wrap around tensile fabric and vertical fins help reduce solar heat gain and the incidental cooling load by 30%.
	Winner: Frontier (NUS)	• The building façade is designed to minimise solar heat gain. The adoption of low E double glaze

		glass combined with the extended overhang from the roof as additional shading elements results in an envelope thermal transmittance value (ETTV) of 38.7W/m2. • High performance roofing material was also selected to achieve a roof thermal transmittance value (RTTV) of 32.1 W/m2, which is more than 30% below the code requirements. • High efficient chilled water was supplied to the air conditioning system, achieving efficiencies which is over 20% better than the local Singapore standards.
Special Submission – Cutting Edge Technology		
Special Submission	Winner: Thermosiphon Beams	• Developed the Thermosiphon Beam (TB), products to address the shortcomings of a the widely used Passive Displacement Cooling (PDC) system in ASEAN countries, resulting in over 30% energy savings compared to the existing solutions. • Other benefits of the TB include substantial improvement in the Indoor Environment Quality (IEQ) space, cost reduction, scalability- with the system being easily tailored to suit different applications, and the ease of implementation as all elements in the solution are nearly 'plug and play'. • Thermosiphon Beams (TBs) with the three operating modes

		(PTB/ATB/HTB) can also be easily adopted by the subtropical, mild Mediterranean and temperate climates without much modification.
Special Submission – Zero Energy Building		
Special Submission	School of Design & Environment, SDE4, NUS	• The building massing and layout makes use of the architectural concept of "floating boxes", where its shallow plan depth, loosely stacked planes and porous layout allows for cross ventilation, natural lighting distribution and views to the exterior environment. • Ventilation design favoured a mixed-mode ventilation approach combining natural ventilation (52%), mechanical ventilation (4%), air-conditioning (10%) and a new hybrid cooling system supplying tempered air augmented by ceiling fans (34%). The building's hybrid cooling system results in lower cooling load requirements and greater energy savings with the same thermal comfort. • A roof array of 1,225 solar photovoltaic (PV) panels capable of producing more than 510 MWh of energy per year to reduce the annual primary energy balance to zero, achieving the requirement of a net zero energy building (NZEB).

ASEAN Excellence in Energy Management by Individual Category		
-	Winner- Mr Wong Kim Yin, Group President & CEO, Sembcorp	• As former CEO of SP Group, Mr Wong had represented Singapore at the Heads of ASEAN Power Utilities/Authorities (HAPUA)

	Industries, Singapore	Council since 2012, sharing technical experience with counterparts across ASEAN on distribution, and power reliability and quality, and others.
Special Recognition for ASEAN-Japan Energy Efficiency Partnership (AJEEP) Training of Trainers		
-	Winner Mr Tan Guan Qun, Senior Engineer, Industry Regulation Department, National Environment Agency	• Mr Tan Guan Qun was recognised for his outstanding results at the ASEAN-Japan Energy Efficiency Partnership Practical Energy Manager Training – Training of Trainer course.

ANNEX C

Photos of the 38th AMEM

Photo 1: Second Minister for Trade and Industry Dr Tan See Leng with Chairperson and Vice-Minister of Industry and Trade, Vietnam H.E Dang Hoang An, 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 38th 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. Dr. Khammany Inthirath, 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