MTI MINISTRY OF TRADE AND INDUSTRY SINGAPORE

MINISTER S ISWARAN TO ATTEND 33rd ASEAN MINISTERS ON ENERGY MEETING (AMEM)

Minister for Trade and Industry (Industry), Mr S Iswaran, will attend the 33rd ASEAN Ministers on Energy Meeting (AMEM) in Kuala Lumpur, Malaysia, from 6 to 7 October 2015.

2. In line with the 2015 theme "Powering ASEAN towards a Greener Community", the 33rd AMEM will focus on enhancing cooperation towards a greener and more energy efficient ASEAN. The Ministers will discuss ways to accelerate progress on key energy infrastructure projects, namely the Trans-ASEAN Gas Pipeline and ASEAN Power Grid. When completed, these projects will facilitate cross-border energy trade and encourage the private sector to participate in the future of an integrated ASEAN energy market.

3. In addition, the Ministers will be endorsing the first phase of a new five year action plan for enhancing energy cooperation and security. The plan contains short to medium-term measures such as initiating multilateral electricity trade among ASEAN countries, increasing the share of renewable energy in the ASEAN energy mix and building capabilities in nuclear power and safety within ASEAN countries. *(refer to Annex A for details)*

4. As part of the ASEAN Energy Awards 2015, seven Singapore organisations [1] will also receive prizes from ASEAN Ministers for best practices in energy management and in renewable energy projects. *(refer to Annex B for details)* Started in 2000, the annual awards aim to promote regional cooperation on energy projects and to generate opportunities for the private sector to be involved in the energy development of ASEAN.

5. As with previous years, the ASEAN Ministers will be joined by their key energy dialogue partners, namely Australia, China, India, Japan, South Korea, New Zealand, Russia, the United States and the International Energy Agency (IEA).

6. Minister S Iswaran will be accompanied by officials from the Ministry of Trade and Industry and the Energy Market Authority.

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6 October 2015

[1] The seven organisations are ITE College Central, UOB Plaza 1, Jurong Port Admin Building, Mat Jambol House, Ocean Financial Centre, United World College of Southeast Asia (East Campus), and Eco Wise Marina Power Pte Ltd.

Annex A - ASEAN Plan of Action for Energy Cooperation (APAEC)

Background

The APAEC is a series of guiding policy documents to support the implementation of multilateral energy cooperation to advance regional integration and connectivity goals in ASEAN. The APAEC 2016-2025 is the fourth in the series since the APAEC was initiated in 1999.

The theme for APAEC 2016-2025 is "Enhancing Energy Connectivity and Market Integration in ASEAN to Achieve Energy Security, Accessibility, Affordability and Sustainability for All".

Strategies and implementation plan

There are seven programme areas under the APAEC: (i) ASEAN Power Grid (APG); (ii) Trans ASEAN Gas Pipeline; (iii) Coal and Clean Coal Technology; (iv) Energy Efficiency and Conservation; (v) Renewable Energy; (vi) Regional Energy Policy and Planning; and (vii) Civilian Nuclear Energy.

The key strategies under these programme areas include embarking on multilateral electricity trading to accelerate the realisation of the APG and enhancing gas connectivity by expanding the focus of the TAGP to include Liquefied Natural Gas (LNG) regasification terminals. There are also new targets to improve energy efficiency and increase the uptake of renewable energy sources. In addition, ASEAN will continue to promote clean coal technologies, build capabilities on civilian nuclear energy and establish collaboration with new International Organisations.

The APAEC 2016-2025 will be implemented in two phases. The first phase will cover the period 2016-2020 to implement the short to medium-term measures to further enhance ASEAN's energy connectivity and integration. A mid-term review of Phase I will be carried out to chart the directives and pathways for the next phase of the APAEC for the period 2021-2025.

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Annex B - Singapore winners of the ASEAN Energy Awards Competition 2015

	Category	Position	Organisation	Key Highlights
1	**ASEAN Energy Efficient Buildings/ New & Existing Category of the**	Winner	ITE COLLEGE CENTRAL, SINGAPORE	• Incorporate extensive energy saving techniques into building design and architecture which achieve savings of more than 30% including: • Buildings designed to provide maximize ventilation from prevailing winds and facilitate cross ventilation to reduce reliance on mechanical options • Efficient light fittings, timer systems and motion detectors to reduce light intensity during off peak hours • Installation of PV Cells on rooftops
2	**ASEAN Energy Efficient Buildings/ Retrofitted Category**	Winner	UOB PLAZA 1, SINGAPORE	• Overall 22% reduction total energy consumption • Retrofitting of latest high efficiency chillers and pumps with variable speed drives • Installation of Energy Recovery Wheels (recover energy from exhaust air to treat incoming outdoor air while improving indoor air quality • Usage of CO detection machines in carparks to optimize operation of carpark fans • Construction of green podium roof to reduce heat transmittance and act as rainwater catchment area for landscape irrigation • Energy Monitoring System that tracks usage in real time to optimize power usage

3	**ASEAN Energy Efficient Buildings/ Retrofitted Category**	1st Runner-up	JURONG PORT ADMIN BUILDING, SINGAPORE	• Retrofitted with central chiller plant system and auto cleaning system for air con system to work in optimal condition and prevent energy waste. • Energy saving LED lights installed • Photo and motion sensors installed to reduce energy consumption • Frequency inverter technology employed in variable voltage frequency motors regulates voltage and frequency thus drawing less current
4	**ASEAN Green Buildings/ Small & Medium Green Building Category**	Winner	MAT JAMBOL HOUSE, SINGAPORE	• Heat gain into the east west reduced by clever design of deep roof overhangs and a large front porch cover • Daylighting (use of defuse radiation) is used hence negating the need for artificial lighting throughout the day time. Achieved by reducing the area of opaque walls • More than 80% of the concrete flat roof area of the house had been furnished with high solar reflectance paint to prevent heat accumulation in the roof and eventual transmission into the house interior space • Renewable energy through polycrystalline photovoltaic panels installed at the roof top of the house. Panels sit alongside solar thermal tubes which converts solar energy to hot water for shower purpose.
5	**ASEAN Green Buildings/ Large Green Building Category**	Winner	OCEAN FINANCIAL CENTRE, SINGAPORE	• Low emissive coated glass for façade maximises light transmittance but minimise heat. • Lightings controlled by photo sensor thus utilising day lighting • Hybrid chiller system using in house chillers and district cooling system to eliminate need for spare chillers for off peak periods • Lifts fitted with regenerative drives which converts kinetic energy back into electrical energy. savings of 264 tonnes of CO2 a year • Energy management system to enable real-time monitoring and analytics • PV cells fitted at roof generating 84 MWh yearly. Total renewable energy gained enough to power approximately 58,000 homes a year.

6	**ASEAN Green Buildings/ Large Green Building Category**	2nd Runner-up	UNITED WORLD COLLEGE OF SOUTH EAST ASIA (EAST CAMPUS), SINGAPORE	• Awarded Greenmark Platinum rating in 2015 • Achieve an overall average of 37% power savings compared to a 'baseline reference model' • Building designed to minimize heat gain and maximize interior lighting • Solar and Water efficiency: -Installation of almost 4000 sq meters of solar thermal collectors leveraging on solar radiation which saves over 700,000kwh/year compared to conventional cooling and hot-water systems -Recognised by PUB as a 'Water Efficient Building' and achieve water savings of over 80,000m3/year -Use of efficient water saving fittings and installed over 56 linked sub-water meters to serve as a leak detection system -Many rainwater catchment areas • Energy management system to facilitate maintenance and corrective measures: -24hr web based monitoring system to trend log events - Building Management System (BAS) which monitors air-conditioning, ventilation, lighting and carpark systems
7	**ASEAN Renewable Energy Awards / Cogeneration Category**	1st Runner-up	ECO WISE MARINA POWER PTE LTD. (SUBSIDIARY COMPANY OF ECOWISE HOLDING LTD)	• Started in Nov 2011 with a capacity of 0.9MW electricity and 5.4 MW heat/hr, ecoWise biomass co-generation plant supplies electricity to the internal grid at Gardens by the Bay and heat for the dryer and adsorption chillers to cool the Garden's Conservatories; • As a carbon-neutral project, the CO^2 emissions reduction is estimated at 13,280 tons/year by substituting grid electricity (natural gas and diesel); • The plant's overall efficiency is 75% at full load.