MTI MINISTRY OF TRADE AND INDUSTRY SINGAPORE

PRESS RELEASE

For Immediate Release

SENIOR MINISTER OF STATE SIM ANN AT THE 34TH ASEAN MINISTERS ON ENERGY MEETING

1. Senior Minister of State for Culture, Community and Youth & Trade and Industry Ms Sim Ann was in Nay Pyi Taw, Myanmar from 20 to 21 September 2016 for the 34th ASEAN Ministers on Energy Meeting (AMEM). She also met with her counterparts to reaffirm bilateral ties and explore opportunities for collaborations.

2. The theme for this year's AMEM was "Towards a Greener Community with Cleaner Energy". Ministers from the ten ASEAN member states exchanged views on key issues such as sustainable energy development, natural gas and regional cooperation.

3. At the meeting, Ms Sim reiterated Singapore's commitment to the global effort to mitigate the effects of climate change. She also welcomed ASEAN's progress on implementing the ASEAN Plan of Action for Energy Cooperation (APAEC) 2016-2025. On enhancing energy connectivity and international cooperation, Ms Sim voiced support for the US-ASEAN Energy Connect initiative and the inaugural Energy Access Forum, which will be held during the Singapore International Energy Week (SIEW) 2016 next month. The Forum, which is held in partnership with the US under the US-ASEAN Energy Connect Initiative, will discuss key challenges of energy access in the Asia Pacific region and share best practices to address them. Ms Sim also stressed the importance of continuing to expand ASEAN's engagement with Dialogue Partners and International Organisations following the good progress achieved with the US and the International Energy Agency (IEA).

4. The ASEAN Energy Awards 2016 Ceremony was held during the AMEM. The annual awards aim to promote regional cooperation on energy efficiency and profile the efforts of the private sector in energy management. This year, nine organisations from Singapore received awards for implementing best practices in energy efficiency in buildings. (*Refer to Annex A for the list of awardees*).

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

6. Ms Sim was accompanied by officials from the Ministry of Trade and Industry and the Energy Market Authority.

(**ANNEX A**: Singapore winners of the ASEAN Energy Awards Competition 2016)

Ms Sim Ann, Senior Minister of State for Culture, Community and Youth & Trade and Industry, with her ASEAN counterparts at the 34th ASEAN Ministers on Energy Meeting (AMEM) in Nay Pyi Taw, Myanmar.

Ministry of Trade and Industry
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ANNEX A

Singapore Winners of the ASEAN Energy Awards Competition 2016

Category	Award Recipients	Key Highlights
ASEAN Energy Efficient Buildings Award		
New & Existing Category	**Winner:** Galaxis	• Galaxis is an integrated development located in Fusionopolis, one-north. The development comprises a 17-storey Business Park Tower, 5-storey block of work-loft units and a 2-storey retail podium. • A multi-award winning development with eight accolades including the Building & Construction Authority Green Mark Platinum Award, Galaxis makes extensive use of roof terraces as well as sun shades to insulate from heat and reduce cooling load. • Besides extensive use of greenery, Galaxis employs environmentally-friendly technologies such as high efficiency multi-tiered chiller plant, achieving 0.61kW/RT efficiency, LED lighting coupled with intelligent lighting controls, variable voltage variable frequency (VVVF) lift systems with smart energy saving modes, and heat recovery system to pre-cool the outdoor fresh air. • Galaxis is developed by Ascendas Fusion 5 Pte. Ltd., a joint venture between Ascendas-Singbridge Group and Mitsui & Co. Ltd.
	1st Runner-up: CapitaGreen	• Winner of ✓ BCA Green Mark Platinum Award, 2016 ✓ BCA Universal Design Platinum Award, 2016 ✓ BCA-SGBC Leadership in Sustainable Design and Performance (Commercial Category), 2016 ✓ BCA BIM Platinum Award, 2016 ✓ BCA Construction Productivity Award, 2016 ✓ Best Tall Building (Asia & Australasia Region) CTBUH Award, 2015 • Innovative cool void and wind funnel structure to draw in cooler and cleaner fresh air to reduce the load on the air-conditioning system. • Double skin façade reduces the solar heat gain by about 1,455,000 kWh per year (equivalent to 728 tons of carbon emission). • Extensive greenery to minimize the urban heat

		effect and an East-West weighted distribution of vertical greenery to cut down on solar heat gain during sunrise and sunset. • High energy efficient chillers to provide air-conditioning to the building. • High efficiency T5 fluorescent light fittings coupled with smart sensors such as photo sensors and occupancy sensors have been installed in all the office levels of the building. • All lifts systems are equipped with energy efficient features like "sleep mode", where lifts are programmed to shut off fans and lights when not in use to further conserve energy 25 lifts in the building are regenerative and it is estimated that 25% in savings can be achieved with 50% ridership on a daily basis.
Retrofitted Category	**Winner:** SMU City Campus	• Over 33% reductions in energy consumption from 2006 to 2015, despite doubling of student population. • Replaced T8 florescent lights with energy efficient T5 lights, and replaced Halogen lights with LED bulbs. • Installed motion sensors for lighting control • Replaced inefficient Air-cooled DX air-con units with efficient chilled water units. • Retrofitted chilled water plant to improve system efficiency from 0.8 to 0.5kW/RT. • Obtained campus-wide BCA Green Mark Platinum Awards. Winner of BCA-SGBC Leadership in Sustainable Design and Performance (Institution Category), 2016 • Winner of Energy Efficiency Energy Partnership Awards 2016 (Excellence in Energy Management)
	1st Runner-up: Bugis Junction	• Bugis Junction is an integrated development comprising the Office Tower, Retail Block and Hotel and occupies a site area of about 23,057 m^2. • Bugis Junction, was re-certified to Green Mark Platinum from Green Mark Gold in 2014. • The owners of Office, Retail and Hotel are Keppel REIT, CapitaLand Mall Trust and Fraser Hospitality Real Estate Investment Trust, respectively. • The development retrofitted its air-conditioning

		plant in 2013/2014. There is an average of 25% overall energy savings after the retrofit of the air-conditioning plant. The chiller plant efficiency improved from 0.973 kW/RT to 0.60 kW/RT. • Lighting retrofit works were carried out using energy efficient LED lighting at the common areas of BJMC, office tower and retail mall. • The use of skylight in the retail mall spaces to introduce daylighting to the indoor spaces reduces energy consumption. • 178kWp PV panels were installed on the roof of Bugis Junction Towers and Bugis Junction, covering an area of 1,000 m2. The PV panels are expected to produce energy of 200 MWh/year, which is equivalent to about 0.5% of the total annual building energy consumption. • A Zero Capex Lighting Retrofit Scheme was implemented in collaboration with Philips Singapore to replace the T8 fluorescent tubes with LED lights at office tenanted premises. Savings derived from the lower energy consumption were shared with tenants. • Urban farming at level 4 podium roof was introduced and tenants are invited to take up planting plots for urban farming.
Tropical Buildings Category	**1st Runner-up:** Singapore Institute of Technology @ Singapore Polytechnic	• Use of Energy Efficient Air Conditioning • 40.3 % improvement in the lighting consumption, which is achieved by the use of: LED and T5 lighting that is equipped with high frequency electronic ballasts to improve light efficiency, photocell sensors are in the corridor to capitalise on the harvesting of natural lighting, zonal controlled energy efficient artificial lighting, and motion sensors in toilets and staircases. • All lifts installed with AC variable voltage and variable frequency (VVVF) motor drive and sleep mode. • Other green features include auto tube cleaning in condenser tubes (Ball Technic System), a siphonic rainwater drainage system, and weather station to further control the Cooling Tower efficiently based on ambient temperature. • An interactive green education corner offers an eco-kiosk which displays the green initiatives taken up by the institute. This improves student awareness and involvement in the sustainable

		design process of the institute.
	2nd Runner-up: NTU Crescent & Pioneer Halls	• PV Solar panels introduced to harness solar energy (119.86kWp) – approximately 2.45% replacement of electricity. • Solar hot water system designed to serve communal shower facilities where water is heated up by solar energy harnessed using solar panels installed on the roof of each block. • Extensive use of LED lights in circulation areas and extensive use of T5 lights with high frequency electronic ballasts in common rooms, car park and residential floors. • Heat recovery air conditioning systems for gymnasium and apartments where heat generated from the condenser units serving these areas are used to produce hot water for its adjoining shower facilities. • Residential units are designed with good cross ventilation (average of 0.42 m/s) with the aid of ventilation simulation modelling to optimise building layout and facade openings, thus reducing the use air-conditioning.
ASEAN Green Buildings Award		
Small & Medium Green Building Category	**Winner:** Tsao Residence	• First of its kind in Singapore, the Tsao Residence, a 2 storey good class bungalow, boasts an exceptional passive design that implements various green technologies for efficient use of energy and water, waste management, minimizing environmental impact and future development. • Designed by the owner, this model green development showcases her commitment towards building a sustainable home that combines energy efficiency, comfort and practicality. • It features elements-involved sun path analysis and passive design strategies to minimize energy consumption and optimize thermal comfort; Using a 23.5kWp grid-tied solar photovoltaic system yields solar energy for household use, including solar hot water; Energy efficient air-conditioning system (high COP VRV) and ceiling fans for all habitable spaces; Harvesting rainwater for non-potable

		users; Bio retention pond and swales for the treatment of rain water.
Large Green Building Category	**Winner:** Insead Leadership Development	• All Chilled Water Pumps, Condenser Water Pumps and Cooling Tower Fans in the air-conditioning system are equipped with Variable Speed Drive (VSD). • Lifts contain KONE EcoDisc with Variable Voltage Variable Frequency (VVVF) and Sleep Mode function, gearless motor and regenerative drive. With these facilities in the lifts, 25,688kWh could be saved per year. • Other energy saving active design concepts include Motion Sensors for Staircases and Toilets, Photocell Sensors for Teaching Block Parameters. With these sensors, 7,487 kWh can be saved per year. At least one elevator is shut off during non-peak periods to conserve energy. • Solar PV plane with 93.6 kWp installed capacity, generated 113,747 kWh/year in 2015, equivalent to savings of $21,043. • Air-conditioning is only switched on 30 minutes before the class starts in any teaching room, amphitheatre and breakout room, and the air-con temperature is set between 24^{o}C and 26^{o}C in accordance with National Environmental Agency (NEA) recommendations. • INSEAD has been participating in the Earth Hour Day since 2009 and endeavours to do so every year. During Earth Hour, all lights and air-conditioning were switched off in the main campus and at a reduced level in the Residence.
	1st Runner-up: Ministry of Manpower Service Centre	• MOMSC was designed with sustainability in mind. Some of the innovative green features were: ✓ Passive Displacement Ventilation system for high volume customer service halls that eliminate fan power and reduce energy. wastage by not cooling the ceiling space ✓ Use of sprinkler water tank for thermal energy storage system to serve the building's air-conditioning night load. • MOMSC was recognised for its sustained efforts in managing building energy efficiency. It achieved an outstanding chiller plant efficiency of 0.538 kW/RT and Energy Efficiency Index (EEI)

		of 128.82kWh/m2/year. Although the building started from a very efficient baseline, energy consumption further reduced by 8% in 2015, as compared to 2013.