

Media Release

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Singapore Bags 5 ASEAN Energy Awards

SINGAPORE – Four Singapore organisations bagged top awards at the 2010 ASEAN Energy Awards. Convened annually, the ASEAN Energy Awards recognise efforts by enterprising ASEAN companies to integrate renewable energy and energy efficient solutions in their projects.

2 The winners are:

ASEAN Energy Awards - Renewable Energy Project Competition 2010

(i) IUT Singapore Pte Ltd - Food Waste to Renewable Energy (Winner, On-grid category)

IUT Singapore Pte Ltd innovatively treats food and organic waste to generate renewable energy. Electricity produced is used to power the plant itself and the excess electricity is exported into Singapore's power grid. By bio-digesting the food waste via a patented process known as Anaerobic Digestion of Organic Slurry (ADOS), this project also helps to reduce the need for landfill space and the methane-rich bio-gas (methane is one of the greenhouse gases that contribute to climate change) produced is used to generate power via gas engines.

(ii) Eco Special Waste Management Pte Ltd - Sewage Sludge Dehydration Using Thermal Energy Generated from Sludge Incineration (Winner, Off-grid category)

This project by Eco Special Waste Management Pte Ltd is the first of its kind in Singapore and the biggest in South-East Asia where sewage sludge¹ is burnt as fuel. The burning process produces thermal energy which is then recycled to dry the sludge and turn it into a fertiliser. This process eliminates methane production and reduces carbon dioxide emissions by 100,000 tons annually.

ASEAN Energy Awards – ASEAN Best Practices for Energy Efficient Buildings Competition 2010

(iii) Tampines Grande Building (Winner, New and Existing Category)

¹ Sewage sludge is the end-product from the treatment of used water at the water reclamation plants.

Tampines Grande cleverly uses covered walkways, landscaping and plants to reduce the amount of energy needed to cool the building. Solar photovoltaic (PV) panels are also innovatively installed on the rooftops and as part of the façade to harvest solar energy. This is the first commercial development with the largest and most extensive use of solar technology in Singapore. The building is expected to achieve a minimum energy-efficiency of more than 30% compared to a standard commercial office building.

(iv) Fuji Xerox Towers (Winner, Retrofitted Category)

Fuji Xerox Towers has implemented numerous energy conservation initiatives such as upgrading their chiller plant, installing ultrasonic and motion sensors over the past few years and achieved 23% reduction in electricity consumption from 2007 to 2009.

[Tampines Grande and Fuji Xerox Towers are both properties under City Development Ltd. They have attained BCA's Green Mark Platinum and Gold awards respectively where energy efficiency is a key criterion. The other criteria for Green Mark include water efficiency, environmental protection, indoor environmental quality and other green features.]

(v) People's Association Headquarters (2nd Runner-up, New and Existing Category)

People's Association Headquarters utilises technology and design to maximise its energy efficiency. Solar PV panels are installed, air-conditioning and lighting systems are monitored closely to control usage. To prevent heat gain, the building has an additional roof, a breathable wall and sun shades.

[The People's Association Headquarters is also a BCA Green Mark Gold^{PLUS} award recipient.]

3 The companies received their awards at the Awards Ceremony during the Gala Dinner of the 28th ASEAN Ministers on Energy Meeting in Da Lat City, Vietnam today. Mr S Iswaran, Senior Minister of State for Trade & Industry and Education, who attended the Meeting, commended the efforts of the companies and said "These awards are a testament to the winning companies' contributions to more energy efficient buildings and innovative renewable energy solutions. We look forward to more of such companies as Singapore works to become a smart energy economy."

4 This is the first time our companies participated in the ASEAN Energy Awards - Renewable Energy Project Competition, and they emerged with top honours in the category. Mr Lawrence Wong, Chief Executive of the Energy Market Authority said, "Despite the scale limitations of renewable energy in Singapore, our companies have shown that they have the capabilities to come up with innovative solutions in this area. These awards highlight the opportunities available for companies to use Singapore as a site for test-bedding of renewable energy options, and a platform for exports to other countries where conditions are more conducive for the deployment of large-scale renewable energy solutions."

5 Myanmar's representative on the Board of Judges for the ASEAN Energy Awards 2010, Mr U Win Khaing, Vice President, Myanmar Engineering Society, said, "The two renewable energy projects submitted by Singapore were exemplary due to

their innovative concepts of utilising daily wastes such as food waste and sewage for power generation. These two projects were lauded as an eye opener for waste utilisation and they have the added benefits of reducing carbon dioxide emissions significantly." Agreeing was Mr Ronnie N Sargento, Officer-in-Charge & Project Manager, United Nations Development Programme - Capacity-Building to Remove Barriers to Renewable Energy Development, the Philippines's representative on the Board of Judges. He said, "Singapore is currently showing other ASEAN countries the significance of research and the tangible results it could achieve."

6 Commenting on the award-winning energy efficient buildings, Dr John Keung, Chief Executive Officer of Building and Construction Authority said, "This shows that both existing and new buildings can achieve equally high standards of energy efficiency through adopting best practices and technologies to consciously reduce energy used. These buildings, which have also received commendations under BCA's Green Mark scheme, will serve as good benchmarks in the course of greening our built environment."

7 Technologies for energy efficiency, as well as other innovative solutions needed for the region to balance its needs for energy security, environmental sustainability and economic competitiveness will be showcased at the upcoming Singapore International Energy Week (SIEW) 2010, to be held from 27 October to 4 November 2010. Building on the theme "Fuelling the Smart Energy Economy", SIEW 2010 will see more than 10,000 energy professionals, policy makers and commentators coming together to discuss energy issues, strategies and solutions.

Please refer to the Annexes for more information on the ASEAN Energy Awards and the five Award winners.

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About the Building and Construction Authority (BCA)

The Building and Construction Authority (BCA) of Singapore champions the development of an excellent built environment for Singapore.

BCA's mission is to shape a safe, high quality, sustainable and friendly built environment, as these are four key elements where BCA has a significant influence. In doing so, it aims to differentiate Singapore's built environment from those of other cities and contribute to a better quality of life for everyone in Singapore. Hence, its vision is to have "the best built environment for Singapore, our distinctive global city".

Together with its education and research arm, the BCA Academy of the Built Environment, BCA works closely with its industry partners to develop skills and expertise that help shape the best built environment for Singapore. For more information, visit www.bca.gov.sg.

About the Energy Market Authority

The Energy Market Authority (EMA) is a statutory board under the Ministry of Trade and Industry. The EMA's main goals are to promote effective competition in the energy market, ensure a reliable and secure energy supply, and develop a dynamic energy sector in Singapore. Through its work, the EMA seeks to forge a progressive

energy landscape for sustained growth. For more information, please visit www.ema.gov.sg

About the Singapore International Energy Week

The annual Singapore International Energy Week (SIEW) is a leading energy event that provides a platform for policymakers, business leaders and academics to exchange ideas, strategies and best practices that will help shape global and industry energy agendas. Jointly organized by the EMA and the Energy Studies Institute from 27 October to 4 November 2010, SIEW features a comprehensive schedule of energy-focused conferences, exhibitions and networking sessions from a diverse cross-section of energy industry leaders. For more information, please visit www.singapore.iew.com.sg

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About the ASEAN Energy Awards

The ASEAN Energy Awards was established in 2000 to recognise the efforts of building owners and property developers in implementing energy efficiency best practices in buildings as well as to spur energy efficiency. Since its inception, the AEA has evolved into competitions in energy efficient buildings, renewable energy projects and energy management best practices.

2 The ASEAN Energy Awards consist of the following categories:

A. ASEAN Best Practices for Energy Efficient Building Competition

- i. New and Existing Category
- ii. Retrofitted Category
- iii. Tropical Category
- iv. Special Submission Category

B. ASEAN Best Practices for Energy Management in Building and Industry Competition

- i. Building (Small and Medium) Category
- ii. Building (Large) Category
- iii. Industry (Large) Category
- iv. Special Submission Category

C. ASEAN Renewable Energy Project Competition

- i. On-Grid Category
- ii. Off-Grid Category
- iii. Co-Generation Category

3 Some of the previous Singapore winners of the ASEAN Best Practices for Energy Efficient Buildings Competition include:

Categories	2009	2008	2007	2006	2005
New & Existing Buildings	Xilinx Building	Republic Polytechnic	National Library Board	One George Street	National Institute of Education
Retrofitted Buildings	Singapore Airlines Training Centre	Singapore Post Centre	Environment Building	Tan Tock Seng Hospital	

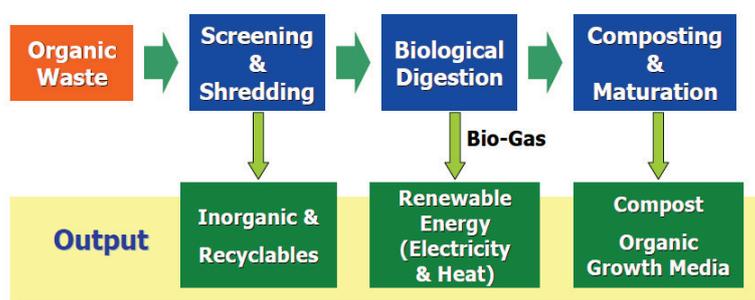
IUT Singapore Pte Ltd - Food Waste to Renewable Energy Grid Connected Power Project (Winner, On-grid category)

The first of its kind in Singapore and the largest in Asia, IUT Singapore Pte Ltd operates a food waste biomethanisation and renewable energy plant at Tuas, using its own patented technology. At full capacity, the facility will recycle more than half of Singapore's food waste currently being disposed at local incineration plants. The plant is able to process up to 800 tons of organic waste per day, and generate up to 10 MW of electricity. Marking a significant milestone in Singapore's environmental waste management industry, it is the only renewable energy plant that exports green electricity into Singapore's power grid.

2 The waste recycling plant treats food and organic waste produced from industrial, commercial and institutional premises such as shopping centres, hotels, food manufacturers, markets, hospitals, institutes of higher learning and animal waste from slaughterhouses, farms and stables.

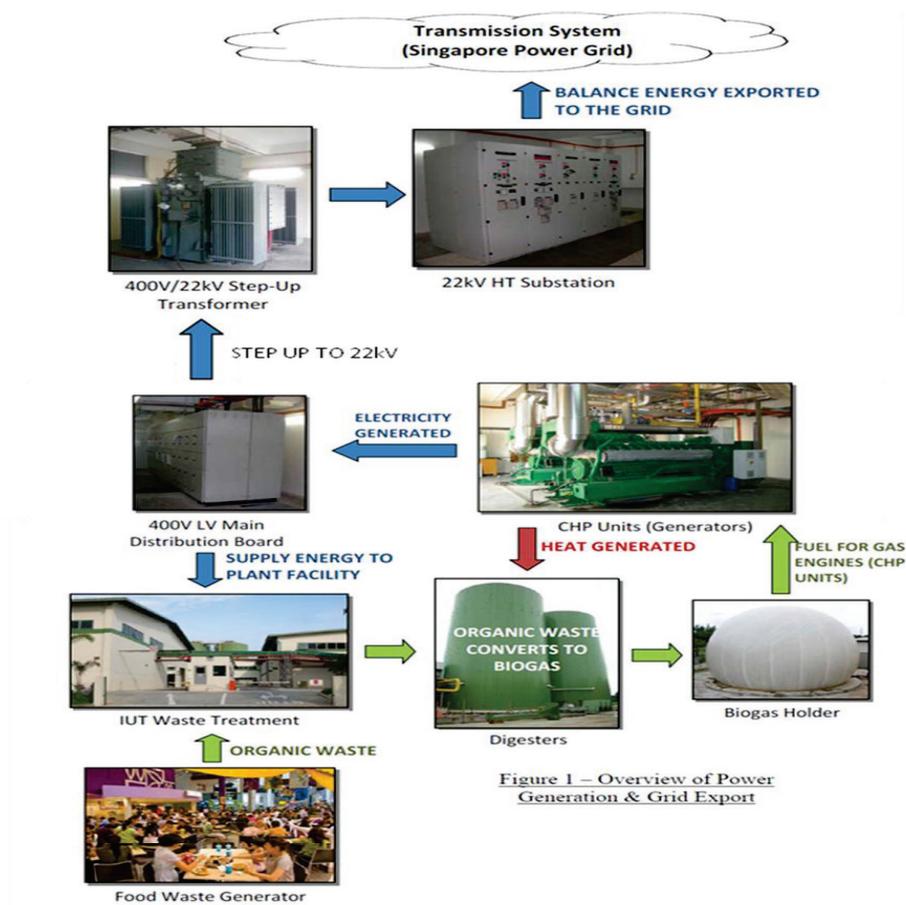
3 The project encompasses three suites of technology to convert organic waste into a resource.

- **Pre-Treatment Process** involving screening and shredding to separate inorganic materials (for recycling and disposal) from the organic waste
- An **Anaerobic Biological Digestion Process** that generates methane-rich bio-gas for combustion in a gas engine to generate power for internal consumption and export excess electricity into the local power grid
- An **Environmentally Controlled Composting Process** that prevents noxious odours from escaping the facility, thereby enabling the recycling plant to be located in an urban environment and not creating any nuisance to the plant's neighbours.



IUT Singapore's Food Waste to Renewable Energy Biotechnology

An Overview of Power Generation and Grid Export



Relevance, Impact, Efficiency

The Project's ability to create resource from solid waste has high relevance in protecting the environment. It is also an alternative green energy source. This project will have the following positive impacts on any urban setting:

1. Reducing the volume of solid waste that ends up in a landfill therefore extending the life of existing landfills and postponing the need to create new landfills.
2. Eliminating organic waste (source of methane rich green house gas and the cause of most landfill fires) from landfills.
3. The ability to control noxious odours emanating from organic waste enables the project's plant to be located in an urban environment, closer to the source of organic waste.
4. Production and application of bio-compost for plant growth replaces the need to use mineral based fertiliser.
5. Treatment of organic waste via the project's anaerobic digestion process generates more renewable energy than the combustion process of an incineration plant.
