Balancing the economy with ecology

Breakthrough eco-friendly construction tech may have high initial costs, but is compensated by much lower life-cycle cost

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The concept of green building and sustainable construction is becoming more important for professional service providers in the construction industry. This is essential, especially with Malaysia catching up and transforming into a high-income economy.

Energy efficient housing concepts and the awareness of a greener environment have long entered the construction and design market. *MALAYSIA SME*® spoke to Robert Himmler, managing director of EGS-plan International GmbH (Bangkok).

With the country in the process of liberalising the engineering and architecture sectors, Malaysia is trying to reach out to expand the services beyond ASEAN. Besides the opportunities present while engaging in new joint ventures and partnerships, leveraging on foreign technologies, expertise, and soft skills would help create a more sustainably built environment.

"We have innovative pilot projects that we have implemented in Germany. We are currently working on a project in Bangkok and we are designing the first energy plus building. We want to try and adapt the same concepts that we apply in Germany here. We are fitting in good quality windows, solar protection, solar generator and we store the energy in the battery storage and ice storage. To run the air conditioning at night we use the energy that is stored in the ice storage and energy from the battery for the electric lightings," said Himmler.

He explained that high energy efficiency buildings have lower demand for energy compared to the conventional buildings. High energy efficiency buildings optimises on the building envelope to the cooling load, he said, citing several energy efficient technology such as light pumps and air conditioning system, among others.

"Energy plus buildings should be energy efficient and on top of that are able to produce more renewable energy for operations. Instead of just being an energy consumer, it should be an energy producer. In any technology, the first step is always to reduce the energy demand followed by applying energy efficient technology like ventilation systems. The final step is designing renewable energy that is usually generated from solar energy," said Himmler.

Although the initial start-up cost may be quite expensive, Himmler said that it will compensate after some three to four years and contribute to lower life-cycle costs in the long run. "It usually takes a long time to enjoy the payback as it may take up to 12 years, but it will pay back.

"We must also make it a point to look at the other side and take responsibility towards the environment. This is not just about the economy, but also the ecology and companies are obliged to save energy and carbon dioxide.

"SMEs can afford to adopt this technology as a green building provides better indoor environmental quality. Green buildings promote a healthier work environment and goes on to improve the efficiency of the workforce. There are no harmful materials to our health in a green building, such as glue and paints, "he explained.

Not only the workers benefit from better work environment, SMEs can stay ensured that they are doing something for the environment on their part, Himmler added.

Himmler was speaking to *MALAYSIA SME*® on the sidelines of the EU-Malaysia Symposium that was held at KLCC recently.

Malaysian Green Technology Corporation (GreenTech Malaysia) signed MoUs with leading innovators in the fields of electric mobility, energy efficiency and air quality at the 6th International Greentech and Eco Products Exhibition and Conference Malaysia (IGEM). This is in line with the 11th Malaysia Plan to further drive the growth of Malaysia's green technology sector.

IGEM looks to address the nation's carbon footprint in transportation in encouraging Malaysia to become a low-carbon nation and energy efficient. IGEM 2015 is themed "Powering the Green Economy" and targets to generate over RM1.2 billion in business leads. The event attracted some 430 exhibitors from more than 20 countries with more than 50,000 visitors. The event was thematically segmented into five key sectors; Green Energy, Green Transport, Green Building, Solid Waste Technology and Management and Clean Water Technology and Management.

Himmler also said that batteries for energy storage are still comparatively quite expensive and have to be replaced every two to three years. "That is why we have chosen to replace part of the battery with ice storage that can last up to 15 years.

"There is a spiral plastic pipe inside the tank that is connected to the chiller. The tank is filled with water and the temperature is maintained at -5°C. Ice will start forming around the pipe during the day with the renewable energy that is produced. At night the cold water is pumped out of the storage and causes the ice to melt, generating energy. The ice storage is used to store the solar energy and is well insulated, so the heat from the surroundings does not affect it," explained Himmler.

He said that he is hopeful that Malaysian SMEs are ready to learn from the German enterprises when it comes to adopting this technology. Many SMEs focus on the investment costs and they end-up picking the cheapest technology, failing to look at operational costs and certainly not at the lifetime cost, he added.

"There are several interesting technologies with alternative energy sources. As for the future for the green buildings, the main focus is high energy efficiency and solar power. The time is right for change and makes it possible to be able to supply energy for the building, and also for the country, at some point of time. MSME

IGEM 2015 at KLCC

Himmler says that green buildings promote healthier work environments

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