

Industry sector steps up efforts to boost energy efficiency

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Businesses are taking a wide range of approaches in their operations and reaping significant savings.

IMPROVING energy efficiency is one of the most cost-effective ways to address the challenges of energy cost, energy security and global climate change. Undoubtedly, there are many benefits to being energy efficient and already businesses and industries in Singapore are stepping up their efforts to promote energy efficiency here by taking a wide range of approaches in their operations.

At the national level, the National Environment Agency (NEA) launched an industry focused Energy Efficiency National Partnership (EENP) programme in 2010. The EENP is a voluntary partnership programme for companies that wish to be more energy efficient, thereby enhancing their long-term business competitiveness and reducing their carbon footprint. The EENP aims to support companies in their energy efficiency efforts through learning network activities, provision of energy efficiency related resources, incentives and recognition.

"Improving energy efficiency will bring about multiple benefits for companies and continues to be an important forward-looking strategy to create competitive advantages. Companies should adopt robust energy management practices, such as putting in place a structured energy management system to seek continual energy efficiency improvements, conducting regular energy assessments to identify cost-effective energy efficiency opportunities, and investing in the opportunities identified to achieve their energy goals," says Ronnie Tay, chief executive officer of NEA.

There is clearly an ongoing need for companies to continue with their energy efficiency efforts even though currently there is a low energy price climate, energy experts say. This is because businesses cannot take it for granted that the energy prices will continue to stay at the current low level over the medium to long term.

It is heartening that this is well understood by companies here, and as the articles in the following three pages show, businesses continue to plan enthusiastically for enhancing their energy efficiency efforts.

In fact, companies may well use the current slowdown in the economy to step up their energy efficiency so that when the good times are back, they can reap the savings of their energy efficiency projects.

Keeping with the national effort for enhancing energy efficiency, mandatory energy management requirements for energy intensive companies in the industry sector were introduced on April 22, 2013 under a new Energy Conservation Act (ECA).

Under it, energy intensive companies consuming 54 TJ of energy or more each year are required to appoint an energy manager, monitor and report energy use and greenhouse gas emissions, and submit energy efficiency improvement plans.

SUCCESS STORIES

As the industry sector accounts for more than half of Singapore's total energy demand, the companies in this sector play a major role in the national efforts to become more energy efficient. Through the implementation of energy conservation and efficiency measures, firms have reaped significant energy and cost savings. Examples of success stories include retrofitting to more efficient chillers, compressors and dryers.

The EENP is targeted at companies that are interested in improving their energy efficiency and implementing energy management practices. Significantly, as of Sept 2, 2016, a total of 234 companies have joined as partners in the EENP programme, which has three components.

- **Energy Management System:** Partners are encouraged to adopt an energy management system at the organisational level so that the measurement and management of energy consumption, as well as the identification of energy efficiency improvements, can be done systematically.
- **EENP Learning Network:** This aims to provide opportunities for the industry to learn about energy efficiency ideas, technologies, practices, standards and case studies.

The learning network includes platforms such as high-level forums that are targeted at top management, conferences and technical workshops targeted at senior and middle management teams and technical staff, and learning journeys.

Energy efficiency technical workshops on industrial systems are also organised to provide intensive training to engineers and practitioners in energy efficiency so as to develop their capabilities.

The EENP Learning Network is being augmented by energy efficiency benchmarking studies that will be conducted in collaboration with industry, to help companies to determine their energy efficiency improvement potential and identify cost-effective measures that they can implement to improve energy productivity.

- **EENP National Recognition Scheme:** This scheme, known as the EENP Awards, recognises the efforts and achievements of corporations and corporate teams in excellent energy management practices and in improving energy efficiency.

The EENP Awards is organised by NEA, the Energy Market Authority (EMA) and the Economic Development Board (EDB). The annual awards aim to foster a culture of sustained energy efficiency improvement in industry and the public sectors, especially in the major energy consuming industries. The EENP Awards also aims to encourage companies to adopt a proactive approach towards energy management by identifying and sharing best practices for other companies to emulate.

Application for the EENP Awards is open exclusively to EENP partners for their local facilities. There are three categories for the EENP Awards - Excellence in Energy Management, Best Practices and Outstanding Energy Manager of the Year.

The Excellence in Energy Management award recognises companies that have demonstrated a high level of commitment to excellence in energy management.

The Best Practices award is for corporate teams who had implemented energy efficiency projects that have led to improvements in the energy performance of their facilities.

The Outstanding Energy Manager of the Year award recognises outstanding energy managers who have demonstrated leadership in driving energy efficiency across the organisation, and who have played an instrumental role in promoting energy efficiency within the organisation.

There is also a Best Energy Efficiency Practices in the Public Sector commendation which recognises outstanding public sector agencies that have demonstrated exemplary performance and commitment in adopting best energy efficiency practices and have been proactive in implementing energy efficiency improvements for their building.

Among the award winners this year is Molex Singapore, which gets the Excellence in Energy Management award for putting in place a good energy management system which includes a cross-functional energy management team, a comprehensive energy management plan and good energy management practices. The company also assigned responsibility of managing energy consumption of each process to the process owners.

In addition, for Molex's project on replacing compressed air system with blower for the plating line, the project team made use of internal knowledge on processes to make efficiency improvements without affecting the manufacturing operations.

Interestingly, companies and energy managers are also spreading the message of energy efficiency in a different way. For instance, the German Centre in Singapore encourages its tenants to use energy efficient features and helped its clients replace their inefficient T8 fluorescent tubes with LED tubes even though the centre would not directly enjoy the energy savings achieved.

Katharina Ravens, managing director, German Centre Singapore, says that improving energy efficiency is one of the most cost-effective ways to address the challenges of energy cost, energy security and global climate change

"The most visible benefit for our company is that we not only save energy resources but also save energy and maintenance costs. Another benefit is that we play a role in implementing environmental standards, so that future generations can still live in a healthy environment with no further waste of natural resources."

Ms Ravens adds: "Germany has a good reputation with regard to energy efficiency and many German companies offer solutions in that field. Being a showcase of German companies, we want to set an example as to what can be done to promote energy efficiency in our own building."

Outstanding Energy Manager of the Year, Mohamed Shahril Bin Jaffar of Panasonic Appliances Refrigeration Devices Singapore, has been hosting annual student visits to the company's "eco ideas" factory through the Environment Champion Industrial Module programme.

Says Mr Shahril, who is the manager of plant engineering, environment, health and safety department at Panasonic Appliances Refrigeration Devices Singapore: "In our company, we implemented bio-fuel and solar photovoltaic systems as we adopt green manufacturing practices and work towards environmental sustainability." He adds: "We have installed energy saving devices, namely, inverter control for cooling towers, water pumps and LED lightings in the recent years to minimise energy usage. We also have an energy saving team which conducts periodic internal energy audits to applaud energy saving efforts and ensure proper energy usage. For example, usage of electricity, gases, water and steam is recorded and monitored monthly."

At the same time, some organisations are developing more in-house capability in energy efficiency. For example, Singapore Management University's energy management team is trained in various aspects of energy efficiency. It has two certified Singapore Certified Energy Manager (SCEMs) and two certified data centre professionals/specialists, and the university's centralised data centre was designed by its in-house technical team.

SMU's energy policy is to practise responsible energy management in all university activities of faculty, staff and students, and to continually seek new and better ways to improve energy efficiency and to adapt to new stakeholder requirements.

"As a public-funded institution, our efforts originate from our sense of stewardship. As the university grows, there will be more demand for energy to support the increasing level of teaching and learning activities on campus. Stewardship requires that we manage our use of resources responsibly," explains Goh Thiang Hock, director, Office of Facilities Management, SMU.

He adds: "Our energy policy is to promote the responsible use of energy on campus. We adopt an inside-out approach, improving the areas within our purview in the first instance and thereafter promoting the culture of sustainability amongst stakeholders. To improve energy efficiency in SMU, we can be more productive, using the same or lesser resources to address the increasing demand of energy use on campus to support the growth of the university."

EENP AWARDS CEREMONY

This year's EENP Awards Ceremony will be held on Oct 4 at the Devan Nair Institute of Employment & Employability and it will be followed by an industry energy efficiency sharing session. Throughout the day, there will also be an exhibition featuring energy efficiency training providers, the latest technical innovations and other energy solutions.

At the industry energy efficiency sharing session, recipients of the EENP Awards and other industry energy professionals will share best practices, case studies, technologies and standards on energy efficiency and energy management.

The session will focus on:

- Sharing of ideas and opportunities for improving energy efficiency (eg, solar PV solutions, improving fan systems and motor efficiency).
- Sharing of best practices and energy management practices of the award recipients, including companies that have achieved the ISO 50001 certification. ISO 50001 is an international standard on energy management standards.

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