

Helping buildings go green with a black box

In the first of a six-part series on innovative companies, energy consultancy firm G-Energy Global tells **YASMINE YAHYA** how it is creating a whole new business for itself, with help from Spring Singapore's Innovation Voucher Scheme.

IT IS no secret that a building that saves energy and water is a building that saves money for its owners.

There are various ways to make a building greener and more cost-efficient – you could install energy-saving air-conditioners and lights, or mount solar panels on the rooftop, for example.

But the work does not end once the construction of the building is completed. The building owner would also have to continuously monitor the energy and water consumption levels of its occupants, to ensure that they always remain within the target levels.

This is usually a laborious process involving manual data collection and analysis.

However, G-Energy Global has invented a fully automated system that will allow building owners to monitor energy usage levels hour by hour, without having to leave their desks.

"All I have to do is install a 'black box' and connect it to the existing building management system. The client can then check in real time how much energy his building is using by logging on to our website," said G-Energy's vice-president of business development, Mr Vincent Low.

This "black box" is a remote monitoring system (RMS) that G-Energy co-developed with researchers from Ngee Ann Polytechnic under Spring Singapore's Innovation Voucher Scheme (IVS).

G-Energy had received \$5,000 in vouchers from Spring under the scheme, which it then used to help offset the cost of consulting scientists at Ngee Ann Polytechnic to develop the RMS.

"Our schemes target enterprising SMEs (small and medium-sized enterprises) which wish to adopt technology innovation as a key enabler to grow their businesses," said the deputy director of technology innovation at Spring, Mr Fung Mok Wing.

"IVS targets SMEs which are exploring the feasibility of their ideas by tapping the resources and expertise available at the knowledge institutions, for example at the polytechnics and research institutes."

The system developed by G-Energy and Ngee Ann Polytechnic collects energy usage data from the building it is placed in, and feeds this data back to G-Energy every hour, 24 hours daily.

G-Energy then converts this data into easy-to-read charts and reports for its clients. For example, clients can see the total energy consumption within the building each day, week, month or year. They can also check on how efficient their air-conditioning systems are.

If any anomalies occur – for example, a sudden spike in the energy consumption level – the system will alert the engineers at G-Energy, who will then alert the building superintendent.

"As far as we know, this is the first such technology of its kind in the world," said Mr Low.

G-Energy was founded by Mr Low and three partners in 2005. It started off as a regular energy consultant, helping architects and developers figure out ways to design energy-efficient buildings.

The idea for the RMS came about when the firm realised many building



Mr Vincent Low's G-Energy Global worked with Ngee Ann Polytechnic researchers to develop the "black box", a remote monitoring system which allows building owners to monitor energy usage levels hour by hour, without having to leave their desks. ST PHOTO: SAM CHIN

owners find it a chore to constantly collect data about their buildings' energy and water usage levels, Mr Low said.

"We plan to target building owners in Singapore first, and then Malaysia. Afterwards, we are looking at marketing this in China and Indonesia," he added.

Property developers pay for this ser-

vice via a monthly subscription that would be based on how many power systems the building has.

And this is just the first phase of the RMS. The firm plans to increase the capabilities of its black box so that in future it would be able to monitor water usage levels as well as the efficiency of a building's

Supporting innovation

UNDER the Innovation Voucher Scheme, Spring Singapore will grant small and medium-sized enterprises \$5,000 worth of vouchers to help them develop an innovative idea.

The vouchers can be used to offset the cost of obtaining technology-related advice and services at participating knowledge institutions. These include several polytechnics, each of which specialises in a different area of technology.

To apply, a company must:

- Have an innovative idea in mind that will require technological innovation to execute;
- Be physically present and registered in Singapore;
- Have at least 30 per cent local shareholding;
- Have group annual sales of not more than \$100 million or a group employment size of not more than 200 workers.

The scheme covers areas such as food sciences, pharmaceutical sciences, energy technology, interactive digital media, sustainable manufacturing and traditional Chinese medicine.

lifts, elevators and lights.

G-Energy has received another \$90,000 grant from Spring to enhance the capabilities of the RMS, Mr Low said.

With the RMS driving the firm's growth over the next several years, Mr Low expects that G-Energy's revenue will double in just three years' time.

Although the RMS has not been officially introduced into the market yet, three building owners – two in Singapore and one in Malaysia – have already asked G-Energy to install this system in their buildings.

A black box has already been installed at City Square Mall, owned by City Developments, and Malaysia's GTower Hotel and office building. It is also in the process of being installed at the Tokio Marine office tower in Singapore.

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Applications are now open for the Innovation Voucher Scheme. Visit www.spring.gov.sg/ivs for more details. Applications will close on June 30.