

BY SAMANTHA BOH

THE Tengeh Reservoir, out in the western reaches of Tuas, has acquired a space-age look, with hundreds of dark blue squares now lining its tranquil surface.

It is the world's largest floating solar cell test-bed – solar on steroids, if you will – an amalgam of 10 different systems which will, in December, begin to drink in the sun.

Over six months, the \$11 million project the size of about one and a half football

Floating solar cells on trial in Tengeh

fields will be studied for the performance and cost-effectiveness of the various systems.

The power generated will be sent to the grid to fuel Singapore's electricity needs.

Announcing the initiative at

the Asia Clean Energy Summit yesterday, Minister for the Environment and Water Resources Masagos Zulkifli said sustainability should not be considered as an alternative or a trade-off to economic development.

“Rather, the pursuit of clean and renewable energy development is a venture into greater opportunities and growth, and also a necessary step into the green era,” he said, speaking at the event at the Sands Expo

and Convention Centre.

Each solar photovoltaic system has a peak capacity of 100 kilowatts, enough to power 25 four-room HDB flats for a year. Over 150 sensors and other monitoring devices will keep tabs and capture the data to see which one performs the best.

The floating system will also be compared against a roof-top system that has been constructed on a building near the reservoir.

The two best floating systems will be chosen and placed on a larger trial of 1 megawatt peak capacity each, enough to power 250 four-room HDB flats for a year.

Three of the eight companies participating in the trial are local small and medium-sized enterprises and the remaining five are international companies.

Examples of systems being tested include one that uses solar cells which allow sunlight to enter from both sides, and another that has a cooling feature where water from the reservoir is pumped onto the cells to cool them down to improve their performance.

The scientific evaluation will be conducted by the Solar Energy Research Institute of Singapore.

National water agency PUB will also look at the environmental impact on the reservoir, such as the effect on evaporation, as well as water quality and biodiversity.

The project, an Economic Development Board (EDB) and PUB initiative, was initially meant to be operational by 2013. The three-year delay, they said, was due to technical and logistical complexities, including securing the land and ensuring the electrical substation was big enough to accept the electricity generated.

Floating solar cells are becoming an increasingly attractive way for Singapore to harness sunlight due to limitations in roof space, and also for their higher performance.

Previous research suggests that they can be up to 20 per cent more efficient than roof-top systems in tropical countries.

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