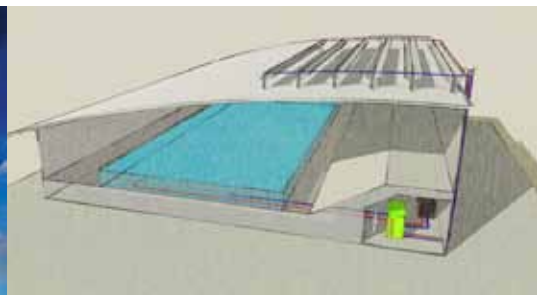
Fact Sheet
Round 3 Project

AUSTRALIAN SOLAR INSTITUTE





Solar Supercritical Organic Rankine Cycle for power and industrial heat

GRANITE POWER LTD, NEP SOLAR PTY LTD, NUSPORT, THE UNIVERSITY OF NEWCASTLE, NEWCASTLE INNOVATION, YOKOGAWA AUSTRALIA PTY LTD, TURBO POWER SYSTEMS INC.

AT A GLANCE

Grant Recipient
Granite Power Ltd

ASI Funding
$0.8 million

Total Project Value
$1.7 million

Small scale concentrating solar thermal (CST) systems can provide a cost effective and clean energy option for remote communities. Granite Power Ltd will develop, demonstrate and test a small scale CST system that combines proven Organic Rankine Cycle technology called GRANEX® with Direct Supercritical Fluid Generation (DSFG) of an organic fluid through parabolic trough solar collectors. The system will provide both heating and electricity.

Granite Power will:

- Install a prototype-sized plant comprising a 150kW solar array; and a
- GRANEX® supercritical plant at The University of Newcastle swimming complex; generating 30kW electrical output to offset pool filtration equipment, and deliver over 100 kW of heat to the swimming pool, to prove the practicality and performance of DSFG.

Unlike conventional concentrating solar thermal systems, this project is using organic DSFG, which allows a greater bandwidth of temperatures to increase efficiency, and also lower cost by eliminating the need for costly thermal oils. Efficiency will be further increased by using Rankine cycle technology to reduce heat and energy loss.

The project will demonstrate the system's ability to provide 24/7 electricity through integrating solar thermal storage and operating as an automated plant in conjunction with a gas heater as a hybrid technology.

The system is intended to be the test-bed and launch platform for a commercial product.

"This first of its kind demonstration plant will provide thousands of hours of operating data and confidence for investors and customers with this technology."

Sean McCracken, Principal Investigator

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