



Media Release

8 December 2014

ARENA funding leads to record solar PV efficiency

ARENA today congratulated researchers at the University of New South Wales (UNSW) for being the first in the world to convert more than 40% of the sunlight hitting a solar system into electricity.

The record efficiency was first achieved in outdoor tests in Sydney, before being independently confirmed by the National Renewable Energy Laboratory (NREL) at their outdoor test facility in the United States.

ARENA CEO Ivor Frischknecht said this is another world first for Australian solar researchers, demonstrating the value of investing in Australia's renewable energy ingenuity.

"The clever solution combines advanced triple junction cells with cheaper conventional silicon cells to boost power output," Mr Frischknecht said.

"Light that is normally wasted by triple junction cells is captured by splitting incoming sunlight into different spectra and directing some of it into a silicon cell.

"This approach has achieved a higher efficiency than what is physically possible with a triple junction cell alone."

The record-breaking technology was developed through collaboration between UNSW and local company, RayGen Resources.

Mr Frischknecht said that the breakthrough could have practical applications for concentrated solar power PV towers, where sunlight is reflected from a field of sun tracking mirrors towards a central receiver.

"Instead of using mirrors to heat a medium like salt, the high tech receiver converts light to electricity directly, like a rooftop solar panel does," Mr Frischknecht said.

"This project is an excellent example of ARENA achieving true innovation with real-world commercial application through investment in solar research.

"We hope to see this home grown innovation take the next steps from prototyping to pilot scale demonstrations.

"It has real potential for RayGen Resources' concentrating PV power tower technology, currently being commercialised through another ARENA supported project.

"Ultimately, more efficient commercial solar plants will make renewable energy cheaper, increasing its competitiveness."

ARENA has contributed \$550,000 towards the \$1.3 million 'Power Cube' project.

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**For more
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About ARENA

ARENA was established by the Australian Government as an independent agency on 1 July 2012 to make renewable energy technologies more affordable and increase the amount of renewable energy used in Australia. ARENA invests in renewable energy projects, supports research and development activities, boosts job creation and industry development, and increases knowledge about renewable energy.

About University of New South Wales

UNSW is Australia's leading research-intensive university focused on science, technology and the professions. Renowned for the quality of its graduates, the University has a proud tradition of sustained innovation, focusing on areas critical to our future - from climate change and renewable energies to life-saving medical treatments and breakthrough technologies.