

Moments in the sun **On campus, 13/3/06**

Developments in different solar energy technologies at ANU have been in the spotlight during a recent string of VIP visits.

Heading the list was the Governor-General Major General Michael Jeffery, who has expressed a strong interest in climate change and sustainable energy solutions.

His visit on 7 March included an overview of the solar community at ANU, part of the ANU College of Engineering and Computer Science. The community is made up of 40 staff members and students, and is engaged in solar energy research from basic R&D through to commercialisation.



Dr Keith Lovegrove explains the Big Dish solar project to MP Malcolm Turnbull.

Other high-profile visitors to the solar facilities during February and March included the head of the World Council for Renewable Energy Dr Hermann Scheer, Parliamentary Secretary to the Prime Minister Malcolm Turnbull, Greens leader Senator Bob Brown, Democrats leader Senator Lyn Allison, and ALP environment spokesman Anthony Albanese.

A number of research projects were on display during the visits, including developments in solar cell design and characterisation, luminescent concentrators, solar air heaters, and the large Bruce Hall solar trough concentrator system.

There was particular interest in Sliver® solar cell technology, which was developed at the Centre for Sustainable Energy Systems (CSES) with substantial funding from the University's commercial partner Origin Energy. Origin is commercialising Sliver® technology and has invested tens of millions of dollars to construct a pilot factory in Adelaide, with sales of the more-efficient technology expected to begin mid-year.

Speaking at the Governor-General's visit, CSES Director Professor Andrew Blakers said: "Sliver® technology has the potential to make solar electricity competitive with wind energy and 'zero emission' coal, which has important ramifications for worldwide climate change policy".

Dr Klaus Weber, co-inventor of Sliver® technology, explained that the 3D Sliver solar cell technology was fundamentally different from conventional 2D solar cell technology.

"It's a cost-effective energy technology that uses an infinite resource in the sun, and can provide a guaranteed energy supply in almost every country, particularly in

equatorial poor countries.”

During an earlier VIP visit, Mr Turnbull, who has been given special responsibility for water policy by the Prime Minister, toured the Big Dish solar-thermal facility because of its possibilities for coupling with desalination technology.

The head of the solar-thermal group, Dr Keith Lovegrove, said industry partner Wizard Power was keen to develop a large array of solar dishes similar to the single dish on campus, which uses the sun’s rays to power a steam-driven turbine for electricity generation.

Dr Lovegrove said the solar-thermal technology was also attracting interest from organisations interested in desalination.

“Wizard and ourselves are working with a company called United Utilities, who are experts in reverse osmosis systems, which need electricity to run. Some of the electricity from the solar-thermal plant would go to run the reverse-osmosis system [that would remove the salt from sea water].

“On top of that, the solar-thermal plant generates electricity by using a steam turbine. Once the steam has been through the turbine, you get low-pressure low-temperature steam that can be used to heat the water that goes into the reverse-osmosis plant, thereby improving its efficiency.”

Dr Lovegrove said while there was talk of larger-scale operations, the immediate goal was to build a system of 10 dishes that would generate a megawatt of electricity and desalinate about a megalitre of water each day.

He said the possibilities for commercialisation were very exciting.

“This relationship with Wizard Power has been running for a year and a half. The number of doors it has opened and the amount of interest in it is really phenomenal.”

For more on the ANU’s solar technologies: <http://solar.anu.edu.au>
