

Cells offer slivers of hope for sustainable future cities

By Sarina Talip

So much sunshine, so little solar power: why has this happened? According to the deputy director of the Centre for Sustainable Energy Systems, Klaus Weber, a lack of government support has meant the domestic solar energy industry has never really taken off.

Mr Weber came first in the ACT division of the Keep Australia Beautiful Sustainable Cities Awards in 2006 for his research on sliver cell technology at the Australian National University.

He and the 2007 winner, Australian Ethical Investment executive director Howard Pender, launched the 2008 awards this week with Minister for Territory and Municipal Services John Hargreaves.

Conventional solar cells are square tiles, typically 15cm by 15cm, and a few dozen are needed to make up a solar panel.

Sliver solar cells by comparison are literally slivers – 10cm long by 1mm wide. About 1000 are needed to make up a solar panel but because they use less silicon, they are cheaper to produce.

“You’re reducing the amount of silicon that you need and because

and research institutions is essential because if you want to remain competitive, you’ve got to be innovative.

“It’s a huge industry and there are very big international players so you can’t just do what everybody else is doing and expect to remain competitive.”

Australian Ethical Investment executive director Howard Pender won in 2007 for the \$1.6 million refurbishment of a 1980s commercial building in Bruce.

While he was unable to install solar panels because “the body corporate objected” the refurbishment still resulted in significantly lower greenhouse emissions.

“There’s no on-site generation of energy but we reduced our greenhouse emissions by two-thirds by reducing the need for energy,” Mr Pender said.

Measures included a passive cooling and ventilation system, double-glazing on windows, insulation under the metal deck roof, and rainwater tanks.

Australian Ethical Investment began the refurbishment in early 2006 and moved in a year later.

Mr Pender said staff feedback had been positive.

silicon is the major cost component you can reduce the cost of the panel and you can also reduce the processing costs," Mr Weber said.

The ANU research team developed the technology between 2000 and 2003 with \$2.5 million from Origin Energy Australia.

In 2003 Origin began building a development facility in Adelaide, which has been running since 2005 and now employs 60 people.

"The next step is to start the construction of a commercial production plant [overseas], and Origin tells us they are just about ready to make that commitment," Mr Weber said.

He believes the production of cheaper solar panels – a conventional one costs about \$10,000 – is essential in tackling climate change.

"I can see [a domestic solar energy market] happening in Australia, but it does require the right mix of ingredients in terms of the proper incentives and signals from government to make it happen," he said.

"You need to establish a domestic market because that really helps companies get started and gain a foothold in order to grow to a size where they can compete internationally.

"And to nurture that industry, good collaboration between industry

"Control is important – people can go and open a window if they want and that sort of thing really makes a difference to people's satisfaction with the building," he said.

"And nobody is working where they haven't got good access to natural light. A lot's been done to make the building pleasant but also to save energy and people reacted well to that."

Entries in the 2008 ACT Sustainable Cities Awards close on June 27. Visit www.kab.org.au



SOLUTIONS: Winners of the Sustainable Cities Award, Australian Ethical Investment director Howard Pender, left, and Centre for Sustainable Energy Systems deputy director Klaus Weber. Picture: Vikky Wilkes