

NEW SOLAR TECHNOLOGY TRIALLED

Demand 'to go through the roof'

GAME CHANGER: Dr Dragos Petrescu demonstrates the weight-bearing capabilities of the integrated photovoltaic roofing panel he designed.

Picture: Graeme O'Neill

By Graeme O'Neill

A PILOT-scale photovoltaic roofing system trialled on a test rig at Sunraysia Institute of TAFE's Cardross farm is potentially "a game changer" for companies around the world seeking to reduce their power bills.

That's the claim of a spokesperson for Moorabbin-based developer, The Specialty Group.

The system bonds flexible photovoltaic arrays to reinforced fibreglass roofing sheets that are stronger than conventional steel roofing panels used to roof factories and commercial premises.

And the scientist who designed the system, Romanian-born Dr Dragos Petrescu, says the roofing system and the array bonded to its surface has already survived an encounter with extreme wind gusts on the periphery of last month's Category 5 Cyclone Ita.

And this week, when a 1.5 kilowatt conventional polycrystalline photovoltaic array used for comparative purposes, stopped producing electricity during a 50 per cent solar eclipse and heavy cloud cover in Melbourne, the new system was still delivering 400 watts.

SuniTAFE students will help The Specialty Group to moni-

tor the performance of the array.

SuniTAFE CEO Win Scott said that, as a branch of the National Centre of Sustainability, the institute has a particular interest in alternative energy technologies.

"We're very pleased to be part of this trial," Ms Scott said. "It's fascinating to see how solar technology is evolving and this test rig provides an opportunity for our students and staff to see new industry innovations."

SuniTAFE's farm is one of five locations around Australia where The Specialty Group has installed test rigs to verify the durability and performance of the 1.5 kilowatt arrays – the one in Cairns had an impromptu baptism by wind during Cyclone Ita.

The cells consist of a flexible, thin-film sandwich of copper-indium selenide and copper-gallium selenide.

Unlike conventional, rigid polycrystalline cells, if some part of an integrated panel is shaded, the unshaded section continues to produce power.

The arrays are about 25 per cent less efficient than rigid polycrystalline arrays, but Dr Petrescu says that, when installed on the roof of a new factory, the integrated roof panels are likely to be sig-

nificantly cheaper than mounting conventional photovoltaic array on a new steel roof.

What makes the new system a game changer is the massive area of roofing available on factories and commercial buildings in cities around the world, and the potential reductions in greenhouse-gas emissions.

After thorough testing, the system should go into commercial production next year, according to Dr Petrescu.

The company has developed a continuous-production line to produce the new panels, and they will be manufactured in Australia.

The reinforced fibreglass panels – and the arrays bonded to them – are thicker and much stronger than steel panels, and coated with a buff-coloured material that minimises UV and oxidative damage.

The concept of a reinforced, opaque fibreglass roof panel with an integrated photovoltaic array was the brainchild of Damian Leipnik, whose father, Peter, founded The Specialty Group in the 1970s.

"We've looked around the world, and there's nothing like it, which is why we developed it," Dr Petrescu said.

SuniTAFE to take part in national solar testing project

SUNRAYSLIA Institute of TAFE will help test a new solar product over the next 12 months as part of a nationwide project.

Developed by Melbourne-based company The Specialty Group, the revamped solar paneling - called Enersheet - is a cost-effective alternative to traditional panels currently available.

A test rig has been established at SuniTAFE's Cardross Farm for the duration of the testing period, with Specialty Group representatives Dr Dragos Petrescu, PICTURED, and Jenni Gregory visiting the region this week to train SuniTAFE staff and students in data collection.

"This is one of many test sites we have established across the country," Specialty Group research and development manager, Dr Petrescu, said.

"Mildura is an ideal place to carry out this type of test due to the climate.

"The climate is a mixture of desert and even tropical conditions, so it provides the perfect opportunity to see how our product will hold up in a range of conditions.

"We need to see how it reacts to different conditions, and what the ideal conditions are for solar energy output."

Dr Petrescu said The Specialty



Group planned to market Enersheet to both residential and commercial buildings once testing was complete.

"Our main goal is certainly the residential market," he said.

SuniTAFE's Cardross Farm manager Kevin Sharman said the organisation was delighted to be hosting testing of this magnitude.

"We're really happy to have the test rig on site," he said. "Staff will help monitor the rig's output while students will help gather and analyse data collected.

"Both staff and students will learn a lot from this project - especially when it comes to sustainability.

"As a farm we also get to benefit from the power being generated through the test rig, with the rig currently powering a small percentage of our property.

"This is the first time we've had solar energy on our Cardross Farm, and any help in generating power is a plus considering how much we have to use to run irrigation systems etc.

"Sunraysia is becoming a main vocal point for solar energy, with a number of people looking at how they can harness free energy from the sun.

"There are a lot of houses who utilise solar across the community, which makes this project even more exciting to be a part of."

