

Clean technology spin-outs on the rise at CSIRO



The National Solar Energy Centre, at CSIRO's facility in Newcastle, hosts a solar array tower and linear trough solar array. Nick Pittas, CSIRO

The market pull for 'clean' – or environmentally friendly – technologies has grown pending the introduction of the Australian Carbon Pollution Reduction Scheme (CPRS) and a global move to formalise carbon markets.

Demand is high for technologies that can make an impact in the Australian marketplace in the next two years and, at an international level, hedge against any changes in the UN Clean Development Mechanism schemes.¹

'Technology that can reduce the impost on Australian companies under the CPRS is in demand from both financial and industry partners' says Ray O'Neill, Commercialisation Manager at CSIRO.

CSIRO has a track record in 'spinning out' clean technology companies, and that is being extended as market demand mounts. For example, Smart Storage Pty Ltd, trading as Ecoult™, is developing solutions around the CSIRO-invented Ultra-Battery for the renewable sector.

'We are progressing project commitment and definition for major first commercial implementations in Australia and the USA,' comments John Wood, Ecoult™ CEO.

As the effects of climate change increase,

renewable energy sourced from the wind is a growth area. Windlab Systems, another successful CSIRO spin-out, has made clever use of this natural energy source by deploying wind resource mapping and modelling technology to assist utility-scale wind farm developers in site selection and site optimisation. Various projects have been commissioned in Australia as well as in New Zealand, Canada, the USA and South Africa.

Another clean tech project in CSIRO's dynamic commercialisation pipeline is VAMCAT, a methane mitigation and energy generation technology, housed at CSIRO's Queensland Research Centre. Since coal mining releases large amounts of stored methane, a greenhouse gas more than 20 times as potent as carbon dioxide (CO₂), CSIRO wanted to develop a technology that could not only abate the large volumes of low concentration methane from mines, but also turn this otherwise waste product into a clean source of energy. VAMCAT is the outstanding result. The potential impact from this technology is extremely large with annual wasted mine methane equivalent to the CO₂ coming from 55 million cars!

Currently at commercialisation stage is a soil remediation technology which

utilises high pressure ultrasonic (HPU) waves to neutralise contaminated soil. Not only is the technology more cost-effective than current solutions on the market, it has the potential to clean up many contaminated sites throughout Australia, with significant ecological and environmental impacts for both people and wildlife, including reducing the need to incinerate soil or send it to landfill.

In addition to developing wind power as a renewable energy source, CSIRO is working on solar energy technology. The National Solar Energy Centre (NSEC) is a joint program between CSIRO Energy Technology and the Energy Transformed Flagship with the objective to research, develop and demonstrate world-leading concentrated solar thermal technologies and facilitate a transition to increased renewables-based energy supplies.

The NSEC includes a high concentration solar array tower with a field of approximately 200 mirrors and a low concentration linear trough solar array. The centre is developing these solar thermal technologies for use across the energy supply spectrum for distributed energy applications at the community level and large-scale solar power stations.

The NSEC is a hub for national and international solar researchers, promoting collaboration and partnerships between the research community, government and industry. For example, the headquarters for the recently launched Australian Solar Institute will also be located at the NSEC site.

Other energy saving projects underway at the Energy Transformed Flagship are an efficient solar cooling system that matches the peak demand for air-conditioning with the coinciding available peak solar energy, to keep Australia cool, and an office air-conditioning system known as optiCool, which can improve the efficiency of existing air-conditioning systems while keeping staff as comfortable as ever. OptiCool reduces both energy costs and CO₂ emissions associated with office buildings, making it an attractive hedge investment against rising rates.

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¹ This mechanism allows emission reduction (or removal) projects in developing countries to earn certified emission reduction (CER) credits. These can be traded and sold, and used by industrialised countries to meet part of their emission reduction targets under the Kyoto Protocol.

* This online version has been altered from the original.