

Solar thermal power warms up

With some major shifts now occurring in the global energy supply stakes, a recent study by the CRC for Coal in Sustainable Development (CCSD) shows that solar thermal energy is emerging as a cost-competitive source of electrical power, especially because it can combine beneficially with current energy sources such as coal power generation.

The study's lead author, Dr Louis Wibberley from CSIRO, said 'What makes solar thermal particularly attractive is the fact that it integrates very well with existing technologies including coal, gas, biomass, photovoltaics and wind power.

It is suitable for base and peak-load grid power, and for distributed or stand-alone generation. In contrast to photovoltaic and wind electricity, the energy from solar thermal can be stored far more cheaply in the form of heat, and so provide more continuous power.'

Among the most promising uses for solar thermal power is the provision of supplementary steam energy to bolster the effi-



The mirror array of the solar reactor at CSIRO's Energy Technology Centre, Newcastle. Nick Pittas

ciency of coal-fired power plants and cut greenhouse emissions. It can also give the low-grade energy needed to filter CO₂ out of the exhaust gases of existing coal- and gas-fired power stations for long-term storage.

Sunlight is already being used to re-form natural gas and coalbed methane, to produce clean energy, industrial chemicals and transport fuels.

Commenting on the report, CCSD Chief Executive Frank van Schagen said 'In the polarised public debate Australia's energy challenge is often depicted as fossil-versus-renewables. In reality, the answer lies in an intelligent combination of the best technologies and resources to produce cost-effective energy with next to zero greenhouse and pollution emissions.

Solar thermal energy is emerging as a cost-competitive source of electrical power.

'Solar thermal is proving to be reliable technology. With increasing adoption, it will become more competitive with fossil fuels and this report is a wake-up call to Australia not to neglect the opportunity to combine two of our greatest resources.'

A major solar-coal trial is taking place at Liddell power station in NSW, by Solar Heat and Power, for extra steam production, and CSIRO's National Solar Research Facility in Newcastle is exploring the use of Concentrating Solar Thermal technology to reform methane from natural or coalbed gas to make synthesis gas (CO + CO₂ + H₂) for power generation (Solar-Gas), industrial chemical or transport fuel production, or for generating hydrogen for power production. This has the added bonus of taking off the CO₂ in a pure stream for long-term sequestration.

Federal funds will accelerate devil tumour disease work

A \$750 000 federal grant is the first instalment of a \$2 million rescue package to strengthen research and counteract the effects of the highly contagious cancer which has already wiped out up to half of Tasmania's devil population, forcing protection measures to save the now-threatened species.

A joint research effort between the Australian and Tasmanian governments and CSIRO has been racing to establish the cause of the disease. A recent breakthrough announced in *Nature* identified the cancer as an infective rogue cell line that clones itself and becomes parasitic when transferred between individuals, mostly by bites. This cancer type is highly unusual, and the

scientists are yet to understand its cause.

Announcing the new funding, Federal Minister for the Environment and Heritage, Senator Ian Campbell, said the current research priorities include further mapping of the devil genome and investigation to determine possible causes; field research to determine the impact on wild populations; and research to determine the effectiveness of field management techniques in suppressing and eradicating the disease in the wild population.

It is planned that quarantined populations of healthy animals may be held as 'insurance', with some animals kept for captive breeding and others returned to the wild when disease risk is minimal.



Healthy devils receive the facial tumour disease through their regular biting behaviour. Michael Sacco

More information:
www.dpiwe.tas.gov.au/inter.nsf/Home/1?Open