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Technology Aims to Halve Coal Emissions



Australia's national science agency CSIRO and its industry partners plan to conduct a trial of the Direct Injection Carbon Engine (*pictured*) intended to reduce **emissions** from brown **coal**-generated electricity by 50 percent compared to current technology.

Industry partners include Exergen, Ignite Energy Resources, AGL, MAN Diesel & Turbo and EnergyAustralia.

Brown Coal Innovation Australia (BCIA) has allocated A\$1 million (\$930,000) to the technology trial in Victoria's Latrobe Valley, the second largest and lowest cost brown coal resource in the world.

The coal technology involves converting coal or biomass into a water-based slurry that is directly injected into a large, specially adapted diesel engine. The fuel burns to produce intense temperature and pressure in the engine, which provides highly efficient power to turn electrical generators.

An existing laboratory-scale prototype engine will trial fuel based on Victorian brown coal and this work will be followed by trials using the same fuel in a large-scale test engine in Japan.

This research will help determine whether DICE can enable brown coal to produce Australia's lowest cost, reduced CO₂ electricity for the staged replacement of existing coal power plants.

Power plants that use natural gas and a new technology to squeeze more energy from the fuel release far less CO₂ than coal-fired power plants do, according to research by NOAA and the University of Colorado, Boulder, published earlier this year. The so-called "combined cycle" **natural gas power plants** also release significantly less nitrogen oxides and sulfur dioxide, which can worsen air quality.

Image Credit: Murray McKean

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