OVERVIEW OF COAL MINE METHANE PROJECT:

Centennial Coal's Mandalong Mine is located between Sydney and Newcastle in NSW, Australia. This commercial scale project aims to safely directly couple to a mine ventilation fan to capture 98% of the fan flow between 100 m³/s to 150 m³/s. This project is at concept phase with a feasibility study underway.

Funding is contemplated from Centennial Coal Company, the Australian Government's Coal Mining Abatement Technology Support Package (CMATSP) and industry funding.

Centennial Coal and Corky’s propose to engage with the mining industry, its regulators and relevant stakeholders to develop a design assurance process utilising established aerospace industry practices for complex design processes. Subsequent to a successful design assurance process, a commercial scale ‘hard connection’ (safe connection duct) and RTO will be designed, installed and demonstrated at Mandalong Mine. The major aims from this project are to add no safety risk and provide no back pressure to the underground coal mine, manage the variable flow of methane released from one ventilation fan and to significantly drive down delivery cost for subsequent projects.

ESTIMATED ANNUAL EMISSION REDUCTIONS: 360,500 MTCO₂E
HISTORICAL AND PROJECTED MINE DATA
PAST AND PROJECTED AUSTRALIAN COAL MINING METHANE EMISSIONS

--- | --- | --- | --- | --- | --- | --- | ---
Average Estimate of CH₄ in Ventilation Air, concentration by volume (%) | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6
Total CH₄ captured and abated (Mm³/year) | Planning | Off site exhibition | Construction | 23.12 | 23.12 | 23.12 | 23.12
Total CH₄ captured and abated (metric t/year CO₂-e) | 0 | 0 | 0 | 360,500 | 360,500 | 360,500 | 360,500
Net benefits – reduction in Australian Carbon Tax Liability ($M US/year) | 0 | 0 | 0 | 8.75 | 8.75 | 8.75 | 8.75


GREENHOUSE GAS EMISSION REDUCTION
METHANE EXPECTED TO BE ABATED AT MANDALONG MINE (COMMERCIAL SCALE UNIT ONLY)

GREENHOUSE GAS EMISSION REDUCTION CHART
TOTAL METHANE EMISSIONS (IN CO₂-EQUIVALENT) ABATED AT CENTENNIAL COAL’S MANDALONG MINE (WITH DEMONSTRATION AND COMMERCIAL SCALE RTO).

PROJECTED TO ABATE APPROX. 38% CMM EMISSIONS BY 2016.
MARKET ANALYSIS / DEMAND ANALYSIS

The new carbon tax in Australia has lead to a growing demand for methane abatement systems. However, the major barriers are legitimate concern about mine safety and operability and the absence of regulator approved standards. This project aims to quantify and demonstrate the design of the functional and safety systems in such a way that standards can be written. There after the cost to deliver RTO technology will be reduced.

With global warming increasing, it is becoming a poignant issue to act now to ensure the coal mining industry becomes more environmentally and economically sustainable. After acceptance of the safety analysis in the exhibition phase of the project, VAM RAB technology’s modular design will be available internationally.

TYPE(S) OF ASSISTANCE SOUGHT

Technical design, construction and experimentation are being completed through Corky’s Sustainable Energy. The construction and testing compliances will be verified via third party reviews.

PROPOSED TECHNOLOGIES

SCHEMATICS OF THE EXISTING DEMONSTRATION PLANT AT CENTENNIAL COAL MINE AND THE PROPOSED COMMERCIAL SCALE UNIT.

FOR MORE INFORMATION, CONTACT:

Ms. Donna Dryden
General Manager Sustainability
(Centennial Coal)
PO Box 1000
Toronto NSW
Australia, 2283
(+61) 249 358 903
E-mail: donna.dryden@centennialcoal.com.au

DISCLAIMER: The information and predictions contained within this poster are based on the data provided by the site owners and operators. The Global Methane Initiative cannot take responsibility for the accuracy of this data.