

ENVIRONMENT, HEALTH & SAFETY



The coal seam gas (CSG) industry in NSW operates under the toughest controls in Australia, with companies facing fines of up to a million dollars for any environmental breaches.

The NSW Government is implementing strict regulations to protect the State's important agricultural lands and industries such as; farming, fisheries, crops, livestock, horse breeding, winemaking and horticulture from any potential impacts of CSG activity.

The **Environment Protection Authority (EPA)** can impose heavy fines of up to \$1 million on any company breaching its Environment Protection Licence. Companies that fail to inform the EPA of a serious incident can be prosecuted and fined up to \$2 million.

Safeguards

The EPA is the lead regulator of environmental and health impacts of CSG activities in NSW, with responsibility for compliance and enforcement. All CSG operators are required to hold Environment Protection Licences (EPLs) for both CSG exploration and CSG assessment and production activities. These EPLs contain stringent conditions that relate to pollution prevention and monitoring, and cleaner production via the implementation of best practice.

As the trusted independent watchdog for the environment, the EPA has the power to investigate serious breaches and enforce conditions of Environment Protection Licences.

CSG activity in NSW is also regulated under the following legislation:

- *Petroleum (Onshore) Act 1991*
- *Environmental Planning and Assessment Act 1979*
- *Protection of the Environment Operations Act 1997*
- *Water Management Act 2000, Water Act 1912*
- *Work Health and Safety Act 2011*
- *Threatened Species Conservation Act 1995*
- *Heritage Act 1977*

In addition, the federal government imposes further regulatory controls under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* and the *National Greenhouse and Energy Reporting Act 2007*.

NSW Chief Scientist & Engineer's Review

The NSW Chief Scientist & Engineer, Professor Mary O'Kane is conducting an independent review of coal seam gas related activities in NSW with a focus on the potential impacts of these activities on human health and the environment.

The NSW Government has asked the Chief Scientist to:

- Undertake a comprehensive study of industry compliance involving site visits and well inspections;
- Identify and assess any gaps in the identification and management of any potential impacts arising from coal seam gas exploration, assessment and production;
- Explain how the characteristics of the coal seam gas industry compare with the industry in other jurisdictions; and
- Inspect and monitor current drilling activities including water extraction, hydraulic fracturing and aquifer protection techniques.

Professor O'Kane's initial report, released in July 2013, acknowledges coal seam gas extraction, like all forms of energy production, poses human health and environmental challenges. But it found many of these concerns can be offset by ensuring engineering best practice; superb monitoring by industry; diligent and transparent compliance checks by regulators; and a rapid and effective response, then remediation, should an incident occur.

The Chief Scientist has released further reports which can be found at www.chiefscientist.nsw.gov.au/reports.

Water protection

Scientific research by the CSIRO¹ shows that groundwater contamination from coal seam gas operations is considered a low risk because:

- Hydraulic fracturing, when conducted correctly, is unlikely to introduce hazardous concentrations of chemicals to groundwater or to create connections between fresh and coal-containing aquifers;

- Water extraction from coal seams makes cross-contamination of aquifers unlikely;
- Long-term monitoring of well bore integrity can help to identify the potential for well leakage into surrounding aquifers; and
- The surface footprint of coal seam gas infrastructure does not prohibit other uses of the land.

All new coal seam gas exploration and production activity is banned within 2km of existing and future residential areas. It is also banned within areas identified as the Upper Hunter equine and viticulture critical industry clusters.

The NSW Government is also investing significant resources into improving groundwater monitoring in relation to resource extraction projects. This includes analysis of water data in key areas, seeking advice from the NSW Chief Scientist on additional water monitoring and commencing scoping work on the establishment of an environmental data repository.

¹ www.csiro.au, 'Coal seam gas developments – predicting impacts'

CSG is banned from critical industries in the Upper Hunter, including horse studs.

