



# EXPLORATION & PRODUCTION

Exploration and production of natural gas from coal seams (CSG) began in Australia in 1996, although it was first produced during the early days of coal mining.

CSG was extracted at the Sydney Harbour Colliery in Balmain in the early 1900s. It was compressed and sold as an industrial and motor fuel. Production reached its peak in 1944 when more than 11 million cubic feet of gas was produced.

Today, CSG exploration and production in NSW is subject to some of the toughest regulations in the world to ensure the protection of the environment and the safety of our communities. Exploration and production can proceed only after detailed multiagency assessments which address environmental, community, health and water concerns.

The NSW Government has banned several exploration and production practices used in CSG activities in other parts of the world, including the use of harmful chemicals in the hydraulic fracturing process. It has also banned evaporation ponds to encourage the treatment and re-use of water extracted in the process.

The NSW Government has introduced regulations which ban all new coal seam gas exploration and production activity in or within 2 kilometres of existing and future residential areas. Coal seam gas activity will also be banned within the areas identified as the Upper Hunter equine and viticulture Critical Industry Clusters.

A hold on exploration and extraction of CSG in the 'Special Areas' zone of the Sydney drinking water catchment also now applies pending an investigation by the NSW Chief Scientist and Engineer on the impact of these activities.

Stringent well integrity standards were also imposed in 2012 to protect aquifers and our precious water resources.

A desktop study is typically the first stage of exploration. After identifying prospective deposits through geological studies and geophysical surveys, engineers move into the field to drill a core hole (up to

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20 centimetres in diameter) to obtain a sample of what is below the surface.

The data gathered from the drilling provides comprehensive geological information and details of the gas content in the coal seam.

Once testing is complete, core holes are cemented and plugged and the site is fully rehabilitated by the exploration company, in line with NSW Government requirements.



Geologists at work during the exploration process, NSW Hunter Valley.