

Category	Question Heading	Cement Australia Answers
Licence	What is Cement Australia licensed to do?	Queensland environmental licences are based upon permission to carry out specified Environmentally Relevant Activities (ERAs). Cement Australia carries two licences authorising the manufacture of cement and lime respectively at their Fisherman's Landing plant, as well as a range of activities necessary for the manufacture of cement and lime. The licence ensures that these activities are managed in a way that achieves the objectives of the <i>Environmental Protection Act 1994 (Qld)</i> .
	What is the approach used in Cement Australia's licence? Risk based, prescriptive etc	Cement Australia's licences contain both risk-based and prescriptive elements.  The licences issued by the EPA include conditions: to manage impacts from emissions to air and water; addressing waste and stormwater management; prescribing monitoring and reporting requirements; and that address the specific circumstances of alternative fuels and raw materials trials. This is in addition to a requirement to operate an environmental management system that ensures continuous improvement in the management of the cement and lime manufacturing operations.
	What technology and processes do you use to reduce your environmental impact?	The EPA recently benchmarked the Cement Australia's Gladstone plant against similar plants in Australia, Europe, Canadian and USA. The report stated:  "The Cement Australia plant is a world scale, dry process operation, with a portion of the final clinker product ground to saleable cement powder on site and the remainder exported to Brisbane for grinding." By way of explanation, the dry-process is current world's best-practice compared to the less efficient and higher emissions wet process.  Emission reduction measures at Cement Australia's Gladstone plant include bag filters, flue gas scrubbing and the use of flue gases to pre-heat kiln material.  Source: <a href="http://www.epa.qld.gov.au/publications/p02712.html">http://www.epa.qld.gov.au/publications/p02712.html</a>
Air Emissions	What air emission parameters are addressed by Cement Australia's licences?	Total solid particulates, oxides of nitrogen and sulphur dioxide are authorised to be released from a specified number of release points up to specified maximum levels. Ongoing monitoring ensures that the operations meet the licence requirements.

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	What conditions are included to manage air emissions?	<b>Lime Manufacturing</b>	<b>Cement Manufacturing</b>
		Contaminants can only be released to atmosphere from the release points specified in the licences. For certain release points; stack height and gas flow rate requirements must be met. For other release points, particulate abatement technologies are specified.	
		Contaminants can only be released from a release point at a mass emission rate/concentration less than prescribed.	
		Monitoring of air emissions must occur as detailed in the licence and not less frequently than prescribed.	
		Nuisance at any odour sensitive place must not be caused by a release of noxious or offensive odours.	A list of fuels approved for use is prescribed. This list can be added to if a trial program is undertaken in accordance with an extensive range of trial conditions. Fuel sulphur contents are also prescribed.
		Investigations of complaints must be undertaken as required by the Administering Authority. In some cases this requires dust and particulate monitoring to be undertaken and reporting within specified time periods.	
		The release of dust must not cause an environmental nuisance at any dust sensitive place. Environmental nuisance is defined as exceeding prescribed dust deposition or ambient dust concentration levels	Dust suppression must be employed to prevent dust moving beyond the site boundary.
			Abrasive blasting must be carried out in a manner to prevent movement of contamination beyond the site boundaries.
			All fabric filters must be inspected and maintained in accordance with the manufacture's specifications.

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	What are the maximum emission limits specified by the licences?	<b>Total solid particulates</b> (applicable to main kiln, cooler and coal mill release points)	100 mg/Nm <sup>3</sup> (24-hr average basis)
		<b>Oxides of nitrogen</b> (applicable to the main cement kiln and lime kiln stacks)	1,200 mg/Nm <sup>3</sup> (24-hr average basis)
		<b>Sulphuric acid mist and sulphur dioxide</b> (applicable to the main cement kiln stack)	100 mg/Nm <sup>3</sup> (24-hr average basis)
How do you know that you are operating within your licence conditions?	What pollutants does Cement Australia monitor for?	Cement Australia monitors those pollutants for which we have specified emissions limits. The Gladstone plant relies substantially on continuous emissions monitoring equipment to ensure compliance. Specific testing programs are also undertaken at various intervals to provide a more complete picture of combustion emissions including inorganic and organic compounds, and heavy metals to ensure that we understand the full spectrum of parameters in our flue gases, as well as supporting the emissions estimates undertaken for the National Pollutant Inventory.	
	Where are the Cement Australia monitoring sites - on site and off site?	The monitoring of emissions to air is undertaken at sampling points aligning with the licence release points. These include the kiln stack for the lime kiln and the kiln, cooler and coal mill stacks for the clinker kiln. In addition dust deposition sampling is undertaken at 9 locations around the site.  A map of Cement Australia's emission and monitoring locations can be found at: <a href="http://www.gilg.com.au/document/show/47">http://www.gilg.com.au/document/show/47</a>	
	How does Cement Australia monitor? Real time monitoring or samples?	Cement Australia operates real time continuous monitors as well as undertaking periodic (point – in-time) sampling programs. Sulphur dioxide, total solid particulates and oxides of nitrogen emissions in the clinker kiln and total solid particulates and oxides of nitrogen in the lime kiln are monitored on a real-time basis, but regular sampling programs as well as monthly analysis of dust deposition gauges are also undertaken.	
	If samples, how often does Cement Australia sample, who collects samples and where are samples analysed?	Cement Australia undertakes periodic sampling programmes, most commonly on 6 monthly and 12 monthly frequencies; however, this frequency may vary if operational changes require additional emissions testing. Dust deposition gauges are collected and analysed on a monthly basis.  Samples are analysed by NATA accredited laboratories	

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	Does Cement Australia report monitoring results to the EPA and, if so, how?	Results are provided to the EPA on request, as well as to the National Pollution Inventory (NPI) on an annual basis.
	Does Cement Australia make the results public and, if so, how can people access them?	The Gladstone plant's total air emissions are reported annually in the National Pollutant Inventory (NPI). This data is available online at <a href="http://www.npi.gov.au">www.npi.gov.au</a> . Cement Australia is currently considering the development of a public sustainability report, which would include air emissions monitoring data.
Breaches	What happens if Cement Australia exceeds their licence conditions?	All exceedances are reported to the EPA in accordance with licence conditions and managed internally through Cement Australia's ISO14001 certified environmental management system.
	What is the external and internal process that Cement Australia goes through to report and rectify exceedances?	All incidents are managed through Cement Australia's Critical Hazard Incident Link application, which identifies risks and notification requirements prior to initiating an investigation and corrective actions process. The decision to publicly release these investigation reports is made on a case-by-case basis.
Internal Targets	Does Cement Australia have internal standards or targets?	Yes. Cement Australia's ISO14001 certified environmental management system nominates and reviews and reports on a range of internal standards and targets.

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Emission Reduction	What work practices or strategies that Cement Australia uses to reduce emissions?	<p>Cement Australia maintains a continuous improvement ethic in relation to emissions improvements. Examples of initiatives include:</p> <ul style="list-style-type: none"> <li>• the use of best-practice bag filters to reduce total solid particulates emissions;</li> <li>• the use of alternative fuels to the kiln reduces coal consumption by approximately 20,000 tonnes per annum and can provide reduction in emissions of oxides of nitrogen as well being a significant resource conservation benefit;</li> <li>• establishment of a site dust management committee to address non-point source emissions of dust around the site</li> <li>• the revegetation of 145 hectares of habitat for native fauna;</li> <li>• the recycling of reject lime kiln products through the cement kiln eliminates landfill disposal as well as mitigating stockpile dust emissions;</li> <li>• the implementation of ISO 14001 environmental management standards to raise awareness of environmental issues on site and to drive environmentally focused behaviour;</li> <li>• the use of an intelligent kiln control system to provide improved stability in process operation;</li> <li>• energy efficiency programmes to reduce the in leak of air across the kiln system; and</li> <li>• waste and water recycling programmes.</li> </ul>
	What projects has Cement Australia completed in the last five years to reduce air emissions?	The capability to introduce urea into stack flue gases in order to reduce emissions of oxides of nitrogen.
	What budgeted projects does Cement Australia have planned to reduce air emissions?	None at present