

# Arid Lands Environment Centre, Inc.



Office 90 Gap Rd, The Gap  
PO Box 2796 Alice Springs  
Mail NT 0871 Australia  
Phone +61 (08) 8952 2497  
Fax +61 (08) 8953 2988  
E-mail [info@alec.org.au](mailto:info@alec.org.au)  
ABN 50 100 640 918

---

## Leigh Creek (SA) In-Situ Gasification Proposal: ALEC Submission on the Environmental Impact Report

The Arid Lands Environment Centre (ALEC) is central Australia's peak environmental organisation that has been advocating for the protection of nature and ecologically sustainable development in the arid lands since 1980.

ALEC regularly makes submissions on resource projects that pose significant environmental and climate risks, and actively engages stakeholders over significant development proposals in the arid lands. This proposal represents one of the most harmful methods of gas extraction that has had disastrous consequences in Queensland. There has since been successful prosecution of Linc Energy executives in Qld as they were deemed personally responsible for the catastrophic harm this method of mining caused.

### Underground Coal Gasification: environmental catastrophe

Underground Coal Gasification (Insitu Gasification) is a contentious and fraught industrial process. The Leigh Creek In-situ Gasification Demonstration Project Environmental Impact Report (EIR) has not acknowledged the Queensland experience of UCG, which lead to a permanent ban on coal to gas in that state.

The EIR does not include expert independent scientific information on the environmental problems associated with the demonstration UCG plants in Queensland which is problematic as it is not considering the significant risks identified from these operations.

Following an independent scientific report, an ombudsman report, unprecedented criminal environmental litigation and evidence of severe environmental contamination the Queensland Government amended the Mineral Resources Act to permanently prohibit UCG.

The Minister's response to a question on notice was that:

“This uncertainty, along with the issues associated with the trial projects to date, has led the government to the decision that the potential risks of allowing projects to grow to commercial scale are not acceptable”<sup>1</sup>

The lack of confirmed financial viability of UCG (or ISG) should be of grave financial concern for the state of SA. The rehabilitation cost of an ISG project in the event of bankruptcy, which is what has occurred in Queensland, will place significant financial strain on the government and thus tax payers.

Since UCG operations in Chinchilla a 300km<sup>2</sup> exclusion zone has been established preventing land holders from excavating below 2m. An expert report into the environmental disaster has shown permanent degradation of prime agricultural land from the acidification of the soil and water.<sup>2</sup>

---

<sup>1</sup>Minister for State Development and Minister for Natural Resources and Mines, Question on Notice, No. 928, 25/05/2016 Parliament of Qld <[http://www.parliament.qld.gov.au/documents/TableOffice/questionsAnswers/2016/928-2016.pdf#search=%22underground coal gasification%22](http://www.parliament.qld.gov.au/documents/TableOffice/questionsAnswers/2016/928-2016.pdf#search=%22underground%20coal%20gasification%22)>

<sup>2</sup>ABC News <<http://www.abc.net.au/news/2015-08-10/linc-energy-secret-report-reveals-toxic-chemical-risk/6681740>>



This resulted from fracturing of the overburden, which also released carcinogens into the environment such as benzene. The disaster was described by the Queensland Environment Minister as “the biggest pollution event probably in Queensland’s history”.<sup>3</sup>

Queensland was confident of robust environmental laws to properly assess the environmental impact of the project, but those laws were unable to predict and prevent the catastrophe. There is the question whether the laws of South Australia can regulate a threat of this magnitude. As the process is unprecedented in SA, regulators have no prior experience to draw from.

### **Uncertainty**

The cause of the environmental contamination of Australia’s only In Situ Gasification plant in Queensland was the process of vertical fracturing that breached the combustion chamber and compromised the integrity of the overburden.

Increasing permeability of surroundings by mechanical stress is noted in the EIR to be a risk. The conclusion that this risk is low is not sufficiently grounded in robust scientific evidence. The EIS states, ‘Any increase in permeability above the coal seam is expected to be constrained within this fracture zone above the gasifier’.<sup>4</sup>

ALEC questions the basis of this *expectation*. If the containment is a matter of hypothetical expectation this inspires little confidence in a risk rating of low. It is simply scientifically inaccurate for the EIR to list most risks for this project to be low at the same time as criminal charges for environmental negligence are progressing against operators of the same process in another state.

UCG was undoubtedly an environmental catastrophe in Queensland. Pilot programs in other countries have also caused significant contamination, including benzene contamination in Wyoming and a methane explosion in Spain. There is therefore a very real possibility that the Leigh Creek In-Situ Gasification project could cause significant harm to the environment and human health in South Australia.

The project is inconsistent with the principles of ecologically sustainable development. It is also inconsistent with South Australia becoming national leaders in renewable energy policy. This industry is highly risky, politically contentious and untested. As of result of the significant risk of harm and the uncertainty around the process, the precautionary principle should be applied and consent for the development should be refused.

### **References**

Queensland Ombudsman, ‘The Underground Coal Gasification Report’ (2012)  
<<http://www.parliament.qld.gov.au/documents/TableOffice/TabledPapers/2012/5412T1124.pdf>>

---

<sup>3</sup> The Australian, <<https://www.theaustralian.com.au/life/weekend-australian-magazine/linc-energys-ucg-plant-at-chinchilla-a-smart-state-disaster/news-story/89096454ced60874c5d8e2e967fb9c1c>>

<sup>4</sup> Leigh Creek EIS at 5.2.2.5