



# Save the Reef

A member group of Lock the Gate Alliance  
[www.savethereef.net.au](http://www.savethereef.net.au)

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## Submission to the Senate Community Affairs Committee Inquiry on the impacts on health of air quality in Australia

Thank you for considering our late submission to your inquiry.

### ***Background***

Save the Reef is an environmental group which was established in September 2012 in response to the ecological collapse taking place in Gladstone Harbour as a result of dredging and construction for new coal ports and LNG facilities on Curtis Island. Gladstone Harbour and Curtis Island fall within the boundaries of the Great Barrier Reef World Heritage Area.

For many years, residents of the township of Gladstone have been negatively affected by poor air quality from coal dust and other hazardous industries located nearby.

The poor air quality in the township meant that residents prized highly the very limited development of the islands which help form the harbour – viz. Curtis, Facing and Quoin Islands. Gladstonians often refer to these islands as the lungs of the township as they each retain large amounts of original vegetation.

### ***Air Quality Issues related to LNG facilities on Curtis Island***

There are currently 3 LNG plants under construction on Curtis Island, and a Supplementary Report to the Environmental Impact Statement for a 4<sup>th</sup> is currently under consideration by the Queensland Coordinator-General's department. Vegetation clearance on Curtis Island for the LNG plants on the southwest corner of the island facing the township has been the first major development to take place on the island which had previously only been intermittently used for cattle grazing.

While the tree clearance on an island that was 95% untouched is unfortunate for Gladstone's air quality, the LNG plants will also contribute significantly to levels of air pollution over the city.

LNG plants routinely emit nitrogen dioxide although other gases such as carbon monoxide are also caused by combustion in the turbine generators, and the LNG tankers and tugs produce pollutants such as sulphur dioxide.

The visual pollution of flare stacks from 3 and potentially 4 plants is extreme. For example, a four-train plant requires 8 stacks of 40m and a pilot flare towering 115m.<sup>1</sup> Arrow Energy's SREIS estimates a non-routine plume height could reach up to 1,641m causing hazards to local aviation.<sup>2</sup> It predicts that up to 20 plant upsets per year will result in flaring for 2 hours at a time; this is on top of routine shutdowns which will also require flaring.<sup>3</sup> This scale gives a sense of the volumes of air emissions and their potential impact on Gladstone's air quality.

The air quality report for Arrow Energy's SREIS acknowledged that ground level concentrations of nitrogen dioxide at 257.1 µg/m<sup>3</sup> in Gladstone is already above Environmental Protection (Air) Policy guidelines for human health of 250 µg/m<sup>3</sup>. The report acknowledges that its contribution will increase background levels for nitrogen dioxide to 257.7 µg/m<sup>3</sup> as calculated according to the Gladstone Airshed Modelling System.<sup>4</sup> These were estimates based on impacts at 8 sensitive receptor areas only.

In disagreement with UNESCO's request for cumulative impacts of port developments impacting on world heritage areas to be taken into consideration, the Air Quality chapter of Arrow Energy's SREIS argues that their plant's contribution to ground level concentrations of nitrogen dioxide in Gladstone is irrelevant as EP(A)P guidelines have already been exceeded by existing industrial developments.

It gives no further detail on sulphur dioxide and carbon monoxide emissions produced by its LNG tankers.

We regret that this submission is late and very brief but we urge your committee to take into consideration the future impacts of the 3 LNG plants currently under construction and the proposed 4<sup>th</sup> plant on the already poor air quality of Gladstone. With their 40 metre stack heights, pilot flare towers of 115m, massive LNG tankers and large volumes of emissions from gas turbines and compressors the LNG developments on Curtis Island will contribute to worsening air quality in Gladstone, as the latest SREIS indirectly acknowledges.

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<sup>1</sup> In its chapter on project description Arrow claims that its 4 train plant will only require 5 flares. See ch.4 section 4.1, p.1 of Shell Australia LNG Supplementary Report to EIS.  
<http://www.arrowenergy.com.au/community/project-assessment-eis/arrow-lng-plant-eis>

<sup>2</sup> Shell Australia LNG Supplementary Report to EIS, vol. 3 ch.9, p. 4. Available at:  
<http://www.arrowenergy.com.au/community/project-assessment-eis/arrow-lng-plant-eis>

<sup>3</sup> Shell Australia LNG Supplementary Report to EIS, vol.3 ch.4, section 4.4, p. 10. Available at:  
<http://www.arrowenergy.com.au/community/project-assessment-eis/arrow-lng-plant-eis>

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<sup>4</sup> Shell Australia LNG Supplementary Report to EIS, vol. 3 ch.8, pp. 5-7