

Documented Impacts of Fracking and Onshore Unconventional Gas Development

Employment Impacts

Limited Job Creation: The gas industry is a capital-intensive industry that provides small numbers of long term jobs. The [Office of the Chief Economist](#)¹ estimates that the *entire* oil and gas industry in Australia employed just 29,000 people in 2015/16. That's less than one quarter of one per cent of the total Australian workforce. In 2016, Australian agricultural industries employed more than 10 times as many people as the oil and gas industry combined. Independent ACIL Allen economic report to the NT Fracking Inquiry found that fracking would only create a few hundred extra jobs, going until 2043.²

Boom and Bust Cycle: Most unconventional gas industry jobs are required for the short *initial construction phase only*. According to the Office of the Chief Economist, the three major unconventional gas projects in Queensland cut employment by over 80% as the projects entered their operational phase³.

Few spill over jobs: Researchers found that job spill over into non-mining employment following Queensland coal seam gas (CSG) development was “negligible”⁴. Retail trade and manufacturing showed minimal growth. Other local services jobs and agricultural employment declined. 9 jobs were lost in the services sector for every 10 new CSG jobs. 18 agricultural jobs were lost for every 10 people employed in the CSG industry.

Transient Workforces: Existing gas developments in Australia rely on the use of fly-in, fly-out (FIFO) workforces. [Wide ranging social impacts](#) include a decline in local resident populations with less essential services and volunteer organisations, reduced community cohesion, detrimental impacts on local businesses, and social problems such as violence and crime in ‘host’ communities.⁵

Impacts on Businesses & Communities

Negative social and financial impacts: [In 2013](#), people working in non-gas industry employment in rural Queensland reported a deterioration in financial capital and local infrastructure as a result of CSG development⁵. Residents also reported that locals’ skills and knowledge and social cohesion were also impacted. Reasons for these impacts were the loss of skilled staff to the gas industry and the increased cost of labour, rent, transport, and goods and services for local businesses.

Royalties Shortfalls: Gas industry contributions to the Australian nation via royalty payments are falling well short of expectations. CSG revenues in Queensland in 2015-16 were only \$22 million from thousands of gas wells.⁶ Forecasts for future royalties from oil and gas in QLD have been revised down. The forecast back in 2012-13 of \$636 million by 2017-18, is now down to a forecast of \$147 million in the actual 2017-18 budget.⁷ Any claims of high royalties by the gas industry should be taken with a grain of salt. In its [analysis](#) of the economic context for shale as in the NT, ACIL Allen estimates that royalty payments from the most likely NT shale gas development scenarios would be very small⁸.

Higher retail gas prices: Increased production of onshore gas in the Territory does not mean lower prices for NT consumers. Since the three new export gas plants in Gladstone came online in 2015-16, domestic gas prices in eastern Australia [have increased by up to 500%](#)⁹. This has caused significant hardship for Australian consumers. The export plants linked the Australian gas market to higher priced export markets and redirected our domestic gas resources overseas. A [2017 report](#)¹⁰ revealed that Queensland residential gas prices are the highest in the nation and more than twice the national average.

Water, Health & Environmental Impacts

Research highlights risks: Out of 685 [published scientific papers](#)¹¹ on the impacts of unconventional gas development [\[3\]](#), '84% of public health studies show risks to public health, 69% of water studies show actual or potential water contamination and 87% of air quality studies show elevated air pollution'.

High water use: Fracking for shale and tight gas is an extremely water-intensive practice. According to one UN report, a single frack operation on a shale gas well will use between 11 and 34 million litres of water, roughly 360 – 1100 truckloads¹². However, in their submission to the NT Fracking Inquiry, Origin put forward a much higher water use figure, suggesting they will require 50 – 60 million litres of water per fractured gas well in the Beetaloo Sub-basin.

Groundwater contamination: [US studies](#) have implicated shale gas in the contamination of groundwater with heavy metals, salts and gas¹³. Contamination can occur from well casing failure due to corrosion, faulty construction or repeated fracturing. Data from one US state shows that 6-7% of new shale gas wells were faulty and leaking gas¹⁴. After 20 years this failure rate may increase to 50%, as wells corrode and cement casings degrade¹⁵. The US EPA undertook a multi-year study and found clear scientific evidence that hydraulic fracturing can impact drinking water resources. Cases of impacts were identified for all stages of the hydraulic fracturing water cycle and included contamination that made private drinking water wells unusable.¹⁶

Wastewater issues: Disposal of wastewater from unconventional gas operations is a serious problem. In addition to drilling and fracking chemicals, wastewater can contain a range of naturally occurring contaminants from source rock¹⁷. Wastewater disposal methods pose a contamination risk to water and soils, whilst wastewater reinjection [has been linked](#) to increased seismicity and earthquakes.¹⁸

Limits of regulation: [Growing evidence](#)¹⁹ from the US shows that regulations are not capable of preventing harm in this industry. The number of wells and infrastructure keeps increasing. Point-sources of possible pollution are so many. It is not possible to properly monitor and enforce regulatory compliance for all of them. Plus, the outcomes of fracking operations are simply not always controllable. Monitoring unconventional gas extraction is high cost. In both the east coast CSG industry and the US unconventional gas industry, it has often been left up to impacted landholders and communities to monitor and report leaks and pollution. These factors mean that even in the presence of strong regulatory frameworks, the industry can still cause significant harm.

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