

Inquiry into the Mineral Resources (Galilee Basin) Amendment Bill 2018

**State Development, Natural Resources and Agricultural
Industry Development Committee**

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This submission represents the opinions of the contributing authors listed in this document. It does not necessarily represent an official position of The University of Queensland.

Summary and recommendations

Thank you for the opportunity to make a submission to this review of the Mineral Resources (Galilee Basin) Amendment Bill 2018 (Qld). We welcome and support the introduction of this Bill, and the prohibition of mining in the Galilee Basin. Opening up this region to mining is inconsistent with climate change science, and passage of this Bill would show Queensland's strong support for climate change action. It will also provide certainty to all affected parties.

This submission will provide a brief overview of the scientific and legal reasons underlining our support of this Bill.

Climate change science, the carbon budget, and Queensland

In the early 21st century, 2°C average global warming was seen as 'safe', or as the 'guardrail' for safe climate change.¹ This 2°C target was adopted in the 2009 Copenhagen Accord as an objective for States to pursue.² Scientists have utilised this 2°C target to formulate a 'carbon budget' – that is, an amount of carbon dioxide which can be emitted globally whilst keeping climate change under the agreed 'safe' limit. A 2009 paper indicated that, to keep warming under 2°C, cumulative greenhouse gas emissions for the period 2000-2050 could not exceed 1,000Gt.³ In 2015, it was suggested that over 80% of global current coal reserves should remain unused in order to meet this target.⁴ This 'carbon budget' has been utilised in climate change litigation as a basis for arguing that the emissions of coal burned from a single mine can be 'significant' in a global context, as they will represent a discernible proportion of the global carbon budget.⁵

More recently, 1.5 degrees has emerged as the target which should be adhered to in order to keep climate change impacts to a 'safe' level. The central goal of the Paris Agreement is to reduce warming to well below 2°C, with an aspirational goal of 1.5°C.⁶ If warming continues at its current rate, it is likely that the 1.5°C threshold will be

¹ See eg. Summary for Policymakers in Christopher B Field et al., *Climate Change 2014: Impacts, Adaptation and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press, 2014) 1, 4-8.

² Conference of the Parties, United Nations Framework Convention on Climate Change, *The Copenhagen Accord*, UN Doc FCCC/CP/2009/L.7 (18 December 2009) Art 1.

³ Mathew M. Meier et al., Greenhouse-gas emissions targets for limiting global warming to 2°C (2009) 458 *Nature* 1158.

⁴ Matthew M. Meier and Ekens, The geographical distribution of fossil fuels unused when limiting global warming to 2°C (2015) 517 *Nature* 187.

⁵ See eg. Mathew M. Meier, *Expert Report: Contribution of the Wandoan Coal Mine to climate change and ocean acidification* (3 August 2011) at [44].

⁶ Conference of the Parties, United Nations Framework Convention on Climate Change, *The Paris Agreement*, UN Doc FCCC/CP/2015/L.9/Rev.1 (12 December 2015) Art 2. Note that these temperature goals are based on pre-industrial levels.

reached sometime between 2030 and 2052.⁷ Although 1.5°C and 2°C do not seem like vastly different targets, the recent 2018 Intergovernmental Panel on Climate Change ('IPCC') Special Report has highlighted the significantly worse impacts that would occur under an average of 2°C warming. This is partly because of the impact on extremes; for example, 1.5°C of average warming will result in extreme hot days being 3°C warmer, whereas 2°C average warming will result in these days being 4°C warmer.⁸ Risks of drought and extreme precipitation are lower under 1.5°C of warming, and global mean sea level rise will be of a lesser magnitude.⁹ Species loss and extinction will be lower under 1.5°C, as will impacts on oceans and marine biodiversity.¹⁰ Leaders of Pacific Island nations are strong advocates for a 1.5°C target, as anything higher will devastate their communities.¹¹

Even at 1.5°C average warming, there will be significant impacts for humans. Risks to health, food and water security, livelihoods and economic growth increase with 1.5°C average warming, and increase even further with 2°C average warming.¹² However, limiting global warming to 1.5°C (compared with 2°C) could reduce the number of people exposed to climate risks and poverty by as much as several hundred million by 2050.¹³

Queensland will be particularly impacted by climate change. Unless deep cuts are made in global emissions, commensurate to a 1.5°C global warming target, the Great Barrier Reef stands little chance of survival.¹⁴ Sea-level rise is another anticipated impact of climate change. If global emissions continue on a business as usual trajectory, sea-level rise of up to 0.98m is projected.¹⁵ A now-dated 2009 report indicated that over 711,000 residential addresses are located within 3km of the coast, and less than 6 metres above sea level.¹⁶ Another study conducted in Queensland suggested that there are currently 35,200 residences exposed to storm tide inundation, with a likely damage bill of \$1.1 billion if an event occurs. With the same planning regulation as today [2010], this could rise to 61,500 structures and a \$3.9 billion

⁷ Myer A et al., Summary for Policymakers in V. Masson-Delmotte et al. (Eds) *Global warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* (2018) 1, 6.

⁸ Above n 7, 9.

⁹ Above n 7, 9.

¹⁰ Above n 7, 10.

¹¹ See eg. Kos Latu, *1.5 to Stay Alive: Reflecting on the IPCC Special Report on Global Warming of 1.5 Degrees Celcius* (2018) <<https://www.sprep.org/news/15-to-stay-a-ve-ref-ect-ng-on-the-pcc-spec-a-report-on-goba-warm-ng-of-15-degrees-ce-s-us>>.

¹² Above n 7, 11.

¹³ Myer A et al., Summary for Policymakers in V. Masson-Delmotte et al. (Eds) *Global warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* (2018) 1, 11.

¹⁴ Lesley Hughes, Annika Dean, W. Steffen and Martin R. Ce, *Lethal Consequences: Climate Change Impacts on the Great Barrier Reef* (Climate Council Report, 2018) <https://www.climatecouncil.org.au/wp-content/uploads/2018/07/CC_MVSA0147-Report-Great-Barr-er-Reef_V4-FA_Low-Res_Sng-e-Pages.pdf> II.

¹⁵ J.A. Church et al., Sea Level Change in T.F. Stocker et al. (eds), *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press, 2013) 1137, 1140.

¹⁶ *Climate Change Risks to Australia's Coasts: A first pass national assessment* (2009) 14, 75 <<http://www.climatechange.gov.au/~medal/publications/coastne/cc-risks-final-report.pdf>>.

damage bill by 2070.¹⁷ Although these figures are now ~10 years old, population expansion and continued growth means that they are likely higher today, especially in light of the chequered history of coastal planning in Queensland over the past decade.¹⁸

Other impacts of climate change are many and varied. Increased heatwaves will put pressure on Queensland's health services, infrastructure and agricultural industries.¹⁹ Queensland has been experiencing severe drought conditions, with more than half the state still drought declared.²⁰ Climate change will exacerbate drought conditions, through increased frequency and intensity of hot days, impacting on health, livelihoods and the economy.²¹ Climate change will impact on economically valuable crops like wheat and cotton,²² and impact on species extent and distribution.²³

In summary, the science surrounding the carbon budget has provided policy-makers with a measurable goal to consider in decision-making processes. If the carbon budget is exceeded, climate change is likely to exceed the so-called 'guardrail', and the impacts on Queensland's environment and economy will be severe.

The Galilee Basin and Climate Change

Exploitation of the Galilee Basin is wholly inconsistent with staying within the carbon budget, with the Climate Council deeming the Galilee Basin's coal as 'unburnable'.²⁴ If the Galilee Basin is exploited to its full potential, resulting emissions would be in the magnitude of 700 million tonnes of CO₂ per annum.²⁵ This would result in a single region in a single country using a significant and measurable proportion of the global carbon budget; in effect, deep cuts in emissions would be needed elsewhere to offset this impact.

More specific figures have been calculated in relation to Adani's Carmichael Mine, which is just one of a number of major mines proposed for the Galilee Basin. In a joint expert report to the Land Court of Queensland, it was estimated that the cumulative

¹⁷ Xaom ng Wang et a , *Coastal inundation under climate change: a case study in South East Queensland (CSIRO Climate Adaptation Flagship Working Paper No. 6)* (2010) CSIRO, 6 <<http://www.csro.au/files/es/pysz.pdf>>.

¹⁸ See eg. Justine Be and Mark Baker-Jones, *Retreat from retreat – the backward evolution of sea-level response in Australia*, and the implications for local government (2014) 19 *Local Government Law Journal* 23.

¹⁹ Bureau of Meteorology, *State of the Climate 2018* (2018) 8 <<http://www.bom.gov.au/state-of-the-climate/State-of-the-C-mate-2018.pdf>>.

²⁰ Queensland Government, *Drought Declarations* (2019) <<https://www.ongpaddock.qd.gov.au/drought/drought-declarations/>>.

²¹ Climate Council, *Thirsty Country: Climate Change and Drought in Australia* (2015) <<http://www.climatecouncil.org.au/uploads/37d4a0d2a372656332d75d0163d9e8b8.pdf>>.

²² F Sharban and B Kotey, *Future distribution of cotton and wheat in Australia under potential climate change* (2016) 154(2) *The Journal of Agricultural Science* 175.

²³ See eg. Kristen J Williams et al, *Queensland's biodiversity under climate change: impacts and adaptation – synthesis report* (2012) v <https://research.csro.au/climate/wp-content/uploads/sites/54/2016/03/12F_CAF-Working-Paper-12F.pdf>.

²⁴ Climate Council, *Galilee Basin – Unburnable Coal* (2015) <<https://www.climatecouncil.org.au/uploads/af9ceab751ba2d0d3986ee39e1ef04fd.pdf>>.

²⁵ Above n 24, 12.

emissions from the coal proposed to be extracted would represent around 0.5% of the global carbon budget.²⁶ That is, the emissions from coal mined in the Carmichael mine will represent a tangible and significant portion of the total allowance for staying under 2°C of global warming. This figure has not been recalculated with a carbon budget for 1.5°C of global warming, but it would mean that this project (and projects of similar magnitude) would represent an even larger contribution to the depletion of the carbon budget. The IPCC Special Report does suggest that, to stay within the 1.5°C range, by 2050 coal will only be able to comprise 1-7% of the global energy supply.²⁷ That is, coal will need to become a very small proportion of the energy mix in order to limit climate change impacts.

In summary, opening the Galilee Basin up to development is at odds with staying within the carbon budget, which is necessary to secure the health of many important natural assets in Queensland, including the Great Barrier Reef.

Uncertainties in the current legal framework

The current legislative framework in Queensland does not explicitly require climate change to be taken into account in making decisions about mining leases, and associated environmental authorities. Regardless, Queensland Courts have found that scope 3 emissions from coal mines are a relevant consideration for decision-makers under both the *Mineral Resources Act 1989* (Qld) and the *Environmental Protection Act 1994* (Qld).²⁸ Further, Courts have also:

- Accepted climate change science;
- Acknowledged cause and effect between a project's Scope 3 emissions and climate change;
- Found that single projects are significant in a global context; and
- Assessed emissions on a cumulative (rather than annual) basis.²⁹

In essence, Courts are edging closer to upholding an objection to a mine on the basis of climate change arguments.

The main barrier to a successful objection at present is the so-called 'market substitution' defence; that is, that if that proponent does not mine and sell coal,

²⁶ See eg. Chris Taylor and Mate Meinhäuser, *Joint report to the Land Court of Queensland on 'Climate Change-Emissions' Adani Mining Pty Ltd (Adani) v Land Services of Coast and Country Inc & Ors* (22 December 2014) at [18].

²⁷ Joeri Rogelj, Drew Shinde and Kejun Jang, *Mitigation pathways compatible with 1.5°C in the context of sustainable development* in V Masson-De Motte et al (Eds) *Global warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways in the context of strengthening the global response to the threat of climate change sustainable development and efforts to eradicate poverty* (2018) 93, 96.

²⁸ *Hancock Coal Pty Ltd v Key* (No 4) [2014] QLC 12, [218] per Member Smith; *Coast and Country Assn of Queensland Inc v Smith* [2015] QSC 260, [39] per Douglas J. *Adani Mining Pty Ltd v Land Services of Coast and Country Inc* [2015] QLC 48, [447] per President MacDonnell. See also Justice Bell-James and Sean Ryan, *Climate change litigation in Queensland, Australia: a case study in incrementalism* (2016) 33 *Environmental and Planning Law Journal* 515, 532.

²⁹ See summary in Justice Bell-James and Sean Ryan, *Climate change litigation in Queensland, Australia: a case study in incrementalism* (2016) 33 *Environmental and Planning Law Journal* 515, 531-533.

someone else will.³⁰ For this reason, the scope 3 emissions from a mine cannot be found to have a measurable impact on climate change.

This future application of this principle is of course dependent on international demand for coal continuing, and other mines continuing to open offshore. In light of the global push to limit climate change to 1.5°C, the future of coal is uncertain. Indeed, major players like the USA and China are reducing their exploitation and use of coal.³¹

For this reason, it is difficult to predict whether objections to mining leases on climate change grounds may well be upheld by Queensland Courts in the near future. A more effective course of action would be to pass the proposed Bill, and provide certainty to all parties involved.

Conclusion

The overwhelming scientific consensus surrounding climate change, and the global push to limit warming to 1.5°C is inconsistent with development and exploitation of the Galilee Basin. Passage of the proposed Bill would also give certainty to all affected parties, rather than leaving these matters to the Courts to decide.

We strongly recommend passage of this Bill.

³⁰ *Adani Mining Pty Ltd v Land Services of Coast and Country Inc* [2015] QLC 48, [453].

³¹ See eg US Energy Information Administration, *Short-Term Energy Outlook* (September 2018) <<https://www.eia.gov/outlooks/steo/archives/Sep18.pdf>>; Climate Council, *Galilee Basin – Unburnable Coal* (2015) 9 <<https://www.climatecouncil.org.au/uploads/af9ceab751ba2d0d3986ee39e1ef04fd.pdf>>.

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