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'Oil and gas exploration and production in the Beetaloo Basin' Senate Inquiry submission

The Arid Lands Environment Centre (ALEC) is Central Australia's peak community environmental organisation that has been advocating for the protection of nature and ecologically sustainable development of the arid lands since 1980. ALEC has worked closely with the focus of the Senate Inquiry. This has primarily occurred as a result of close engagement with the Scientific Inquiry into Hydraulic Fracturing in the Northern Territory handed down by Justice Pepper (Pepper Inquiry) and its subsequent implementation. ALEC actively contributes to the development of energy and resources policy through regulatory reform, written submissions, community education and advocacy within the community.

ALEC welcomes the opportunity to provide a submission to the Senate Inquiry into Oil and gas exploration and production in the Beetaloo Basin (the Senate Inquiry).

ALEC's response will first consider the fracking context. Second, we will focus on the regulatory environment of shale gas activities in the Beetaloo Basin and the failure to implement key recommendations of the Pepper Inquiry. Third, we will consider the implications of fast-tracking shale gas exploration upon this regulatory context. This has significant environmental, social, cultural and economic implications for the Territory and Australia. Finally, we unpack core assumptions behind the Federal Government's decision to promote a gas-led recovery, in which hydraulic fracturing ("fracking") and shale gas is a central pillar. Namely, we focus on assumptions made around jobs, economic recovery, gas as a transition fuel and electricity prices.

1. Context around fracking in the Beetaloo Basin

Shale gas and fracking is the most controversial and high-profile environmental issue in the Northern Territory. On the 14th September 2016, the Northern Territory Government introduced a moratorium on fracking, in addition to the establishment of the Pepper Inquiry. Chief Minister Michael Gunner announced the moratorium in response to widespread community concern, stating that "we heard loud and clear the concerns of everyday Territorians, pastoralists, amateur and commercial fishermen, tourism operators, traditional owners, Indigenous rangers and environmental groups. It's clear that Territorians are concerned about the effects of fracking on our land, water and environment". ¹

¹ Gunner, M, 2016. Delivering on our Fracking Moratorium election commitment. Accessed: https://newsroom.nt.gov.au/mediaRelease/21262

The Pepper Inquiry handed down its final report on the 27th March 2018. The Pepper Inquiry provided 135 recommendations to the Northern Territory Government, stating that:

"The recommendations in this Report are a complete package. It is only the implementation of the entire package that will create the framework that will mitigate the risks associated with any onshore shale gas industry in the NT to an acceptable level. If the Government does not implement all the Panel's recommendations, then the Panel, in the Panel's assessment, is not able to state with certainty that the identified risks will be mitigated to acceptable levels."

On the 16th of April 2018, the moratorium on fracking was lifted as the Territory Government agreed to introduce "strict new laws and regulations" and implement all 135 recommendations in full.³

Since the moratorium has been lifted, fracking has continued to be a highly contentious issue in the Northern Territory and it is quickly becoming an issue of national significance. We recognise that this Senate Inquiry has emerged in response to community opposition, most notably from Traditional Owners from in and around the Beetaloo Basin. Traditional Owners sent an open letter to parliamentarians objecting to the exploration and development of fracked gas in the Beetaloo Basin, and visited politicians in Canberra. This was done to protect Country and culture. Traditional Owners and the wider community have been resisting fracking developments for over a decade.

The Pepper Inquiry also captured the severity of opposition to fracking in the Northern Territory, stating that there was an "overwhelming consensus" from participants in the inquiry that they were opposed to the industry establishing in the Northern Territory.⁴ The Territory public continues to be strongly engaged with fracking years into the campaign to resist its development.

Despite the Pepper Inquiry providing a pathway for fracking to occur in the Northern Territory, the viability of the industry from a regulatory standpoint remains unknown. The baseline assessments part of the Strategic Regional Environment and Baseline Assessments (SREBA) are yet to be completed. Very little research has been conducted in the region to date. These ecological, social, cultural and economic baseline assessments will be critical components that will inform whether the industry is viable as part of the Final Risk Assessment.

The implementation of all 135 recommendations remains critical to the Territory Government's licence to regulate, in addition to the gas industry's social licence to operate.

² Scientific Inquiry into Hydraulic Fracturing in the Northern Territory: Final Report, 2018, p.454

³ Gunner, M, 2018. Fracking moratorium lifted - strict laws to be in place before exploration or production can occur, 2018. Accessed: https://newsroom.nt.gov.au/mediaRelease/25488

⁴ Scientific Inquiry into Hydraulic Fracturing in the Northern Territory: Summary of the Final Report, 2018, p.6

2. Recommendations from the Pepper Inquiry that have not been implemented

It is the Northern Territory Government which is primarily responsible for the governance and regulatory environment around shale gas. However, there are a few recommendations in which the Federal Government is also (partly) responsible.

a. Expand the 'water trigger' of the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) to include shale gas

The only recommendation of the Pepper Inquiry that is the sole responsibility of the Federal Government is recommendation 7.3, "that the Australian Government amends the EPBC Act to apply the 'water trigger' to onshore shale gas development".

The EPBC Act is the Federal Government's key legislative instrument to ensure environmental protection. The EPBC Act's powers extend to matters of national environmental significance, however, the EPBC Act currently does not have powers to protect water resources connected to shale gas activities.

The 'water trigger' ensures that water resources are a matter of national environmental significance in relation to coal seam gas and large coal mining development. The water trigger means that an action which involves a coal seam gas development or a large coal mining development requires approval from the Australian Government Minister for the Environment if the action has, will have, or is likely to have, a significant impact on a water resource.

The 'water trigger' must be expanded to include shale gas activities. The risk posed by shale gas activities is as great if not greater than the risks posed by coal seam gas and large coal mining developments. Shale gas uses large quantities of water, in addition to posing a risk to groundwater through contamination.

It is deeply concerning that the Federal Government is attempting to fast-track exploration in the Beetaloo Basin, while disregarding the regulatory framework and the recommendations of the Pepper Inquiry. It is this framework which has permitted the shale gas industry to exist in the Northern Territory. Instead, the Federal Government has ensured that water resources are not protected in the Beetaloo Basin, while fast-tracking development in the Beetaloo through the *Beetaloo Cooperative Drilling Program*.

Development in the region cannot occur without a robust and comprehensive regulatory system. The Senate Inquiry must recommend that the Federal Government amends the EPBC Act and expands the 'water trigger' to include onshore shale gas development, prior to any further spending in the Beetaloo Basin.

b. Offsetting greenhouse gas emissions

The Pepper Inquiry outlined that the opening up of the Beetaloo Basin to shale gas will be responsible for 4.5-6.6% of Australia's greenhouse gas emissions (GHG).⁵ More recent estimations as a result of a Freedom of Information request have suggested that the Beetaloo

⁵ Scientific Inquiry into Hydraulic Fracturing in the Northern Territory: Summary of the Final Report, 2018, p.33.

Basin could be responsible for 7-22% of Australia's annual emissions. The Pepper Inquiry concluded that the Beetaloo Basin's risk to Australia's annual GHG emissions was "unacceptable".

Recommendation 9.8 was established to overcome this 'unacceptable' risk. The recommendation ensures "that the NT and Australian governments seek to ensure that there is no net increase in the life cycle GHG emissions emitted in Australia from any onshore shale gas produced in the NT".⁸

To date, there is no publicly disclosed plan for how recommendation 9.8 will be implemented and GHG emissions offset.

A Deloitte report, commissioned by the Federal Government found that issues around greenhouse gas emissions (including recommendation 9.8) need to be addressed "immediately". Despite this report being published in 2020, there remain no plans around how recommendation 9.8 is to be implemented. In addition, it remains unclear what kind of collaboration is occurring between the Northern Territory Government and the Federal Government.

ALEC notes that the Northern Territory Government has drafted a "Large Emitters Policy" in February 2021. However, the policy in its current form is weak, focuses only on Scope 1 emissions, is not linked to legislation and thus is not enforceable and is dependent on arbitrary definitions. This draft policy ignores recommendation 9.8 which was clear that Greenhouse Gas Abatement Plans must include plans to offset all of the lifecycle emissions (not just Scope 1 emissions).

The implementation of this recommendation has the potential to shape whether the shale gas industry in the Northern Territory will be economically viable. It is unreasonable to continue the fast-tracking of exploration and development, while key recommendations which will inform whether the industry is viable, are yet to be implemented.

c. Erosion of trust in the SREBA process

The SREBA is a central component of the Pepper Inquiry involving the completion of 6 baseline studies over an advised 3-5 year period. ¹⁰ A transparent and robust SREBA was a key feature to restore public confidence in the shale gas industry, in addition build confidence in the regulatory regime.

However, it is understood that the SREBA is being undermined in its current form. Rather than the 3-5 year timeline as advised in the Pepper Inquiry, or the 3 years emphasised in the Draft SREBA framework (2019). It is understood that the SREBA has been reduced to a period of 18 months and will conclude in December 2022. This has been done with no public consultation, nor has there been any communication outlining how this decision was made,

⁶ Swann, T, 2020. All It's Fracked Up to Be.The Australia Institute.

⁷ Scientific Inquiry into Hydraulic Fracturing in the Northern Territory: Final Report, 2018, p.240.

⁸ Scientific Inquiry into Hydraulic Fracturing in the Northern Territory: Final Report, 2018, p.239.

⁹ Report on the Development of the Beetaloo Subbasin: For the Commonwealth Department of Industry, Science, Energy and Resources, 2020, p.19.

¹⁰ Scientific Inquiry into Hydraulic Fracturing in the Northern Territory *Final Report*, p.451-452.

when and by who. The decision to substantially erode the timeframe for research is unacceptable. The SREBA makes up 30 of the 135 recommendations of the Pepper Inquiry. A decision to compromise its timeline has implications for many of these recommendations.

The Pepper Inquiry was clear in the need for transparency and accountability in decision making. It was stated that, "transparent decision-making by an accountable regulator is the cornerstone of a trusted and efficient regulatory regime". The handling of the SREBA process is undermining trust in the regulatory regime.

d. Failure to achieve regulatory separation

ALEC remains seriously concerned that regulatory separation has not occurred, with the Department of Industry, Tourism and Trade (DITT) still maintaining key responsibilities around the regulation of fracking. The Pepper Inquiry was very clear in Recommendation 14.34, stating:

"That prior to the grant of any further exploration approvals, in order to ensure independence and accountability, there must be a clear separation between the agency with responsibility for regulating the environmental impacts and risks associated with any onshore shale gas industry and the agency responsible for promoting that industry". ¹²

DITT still manages Well Operation Management Plans (WOMPs) which are a key process which can have significant environmental impacts, such as regulating well integrity. WOMPs remain hidden from the public, again undermining the Pepper Inquiry and the need for transparency.

While it was established that all environmental regulations of the shale gas industry are to be regulated by the Department of Environment, Parks and Water Security (DEPWS), this is not currency occurring.

e. Community participation.

The Pepper Inquiry Recommendation 16.4 stated that a community and business reference group (CBRG) be established "to provide feedback to Government on the development of an implementation framework, and its subsequent execution". The CBRG was to "assist in establishing trust and confidence in the Government and in the gas industry and facilitate in obtaining a [social licence to operate]".¹³

However, the CBRG which was established in 2018, was scrapped in December 2020. At the time of this submission, 63 of the 135 recommendations had been fully implemented. This means that there is no transparent community and business reference group to hold the government accountable for the majority of the 135 recommendations handed down in the Pepper Inquiry.

The CBRG was replaced by the *Beetaloo Regional Reference Group* but the group contains no peak Northern Territory environmental organisation. It is understood that the new group

¹¹ Scientific Inquiry into Hydraulic Fracturing in the Northern Territory *Final Report*, p.431.

¹² Scientific Inquiry into Hydraulic Fracturing in the Northern Territory *Final Report*, p.431.

¹³ Scientific Inquiry into Hydraulic Fracturing in the Northern Territory *Final Report*, p.458.

only has jurisdiction over the SREBA and not the recommendations of the Pepper Inquiry more broadly. To reiterate, the SREBA is only 30 of the 135 recommendations.

The disbanding of the CBRG prior to the full implementation of all 135 recommendations was again made without justification. It is impacting the government's social licence to regulate as well as the shale gas industry's social licence to operate.

f. Government 'loans' to industry

Recommendation 9.4 of the Pepper Inquiry requires that the SREBA be funded by the gas industry. However we now understand that the Northern Territory Government is paying for the SREBA, on a promise that the gas industry will "reimburse" this amount if and when the onshore gas industry ever reaches production. We believe that the integrity and rigour of the SREBA may be adversely affected by the desire of the Northern Territory Government to recoup these costs as quickly as possible. There is also a real possibility that this money will never be repaid, as the gas industry may never reach production. The implementation of Recommendation 9.4 continues to undermine the public's trust that the Territory Government is able to effectively regulate fracking in the Northern Territory.

3. Questioning the fast-tracking of fracking in the Beetaloo

With the understanding that key recommendations of the Pepper Inquiry are being undermined, or, are yet to be implemented, it raises serious questions around why fracking is being fast-tracked. There is a serious disconnect between the development of the shale gas industry in the Northern Territory which is speeding up, and the erosion of a robust, transparent and comprehensive regulatory framework. We are seeing an acceleration in shale gas exploration (and Federal Government spending) despite the SREBA process being wholly compromised just as it is beginning.

The Pepper Inquiry was clear that all 135 recommendations must be implemented together as one package. This should be a core foundation in which any funding is premised upon. The regulatory environment must be strong first. We are seeing actions by the Federal Government in their expenditure which undermines this strength.

ALEC holds serious concerns at the coercive power the Federal Government has over the Northern Territory Government. We are seeing Federal Government money be used to subsidise private corporations with a rapid sense of urgency. It has been announced that the Federal Government Minister for Resources and Industry, Keith Pitt has awarded a \$21 million grant (a focus of this inquiry I am sure) to Imperial Oil and Gas, prior to the corporation gaining any approvals from the Northern Territory Government. How can it be that Imperial Oil and Gas have been awarded a grant that they are not even eligible for. This is the same corporation that has been the main beneficiary of the Federal and Territory Government's \$217 million funding for the new Northern Territory Gas Industry Road Upgrades. It raises serious concerns around the motivations of the Federal Government to so boldly and urgently support private corporations in the Beetaloo Basin, while the regulatory regime is yet to fully establish.

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¹⁴ Grants to help speed up Beetaloo drilling program, 2021.

ALEC holds serious concerns that the increase in Federal Government spending will compromise regulations that are aimed to ensure environmental, cultural, social and economic protections.

This is all occurring, while key recommendations that involve the Federal Government, such as developing a plan to offset all GHG emissions, and the expansion of the 'water trigger' under the EPBC Act continue to be disregarded.

ALEC urges the Senate Inquiry to consider the need for a strong regulatory context to be established in the Northern Territory, prior to an acceleration of fracking exploration and development in the Beetaloo Basin.

4. Critiquing assumptions behind a 'gas-fired' recovery a. Gas and jobs

A gas-fired recovery isn't going to create a jobs boom. In fact, the oil and gas industry is one of the least labour intensive industries in Australia. The gas industry currently employs 17000 workers, which is less than 0.2% of the Australian workforce despite Australia's position as one of the world's largest gas exporters. Nearly twice as many people work at Bunnings than they do in the oil and gas industry. For every \$1 million in sales generated, only 0.4 jobs are created in the gas industry. Some created in the gas industry.

Gas jobs are increasingly automated, with the remaining jobs often highly skilled. It is likely that the workforce in the Northern Territory will be dependent on fly-in, fly-out workers. This may result in limited benefit for the Territory in terms of employment opportunities. In an age of COVID-19, is it appropriate to be creating economies dependent on inter-state workers? The Newmont Gold Mine COVID-19 cluster is an important case study illuminating the stress fly-in, fly-out workforces can have on Australia's health system.

In addition, Fleming and Measham found that job spill over into non-mining employment following Queensland coal seam gas (CSG) development was "negligible". ¹⁷ Retail and manufacturing showed minimal growth whilst other local services jobs and agricultural employment declined. Overall, 9 jobs were lost in the services sector for every 10 new CSG jobs.

ALEC strongly urges the Senate Inquiry to reflect where the benefit of the Federal Government expenditure is going. It is very unlikely to produce ongoing jobs in the Territory.

b. Gas and economic recovery

The gas industry won't stimulate the economy as much as the Federal Government claims. Many oil and gas companies pay a negligible amount of tax and limited royalties, with most profit exiting Australia. Institute for Energy Economic and Financial Analysis researchers found in 2016-17, oil and gas companies in Australia paid only \$81 million in income tax, despite generating tens of billions in revenue. Telstra by comparison over the same period

¹⁵ ABS, 2020. 81550DO002_201718 Australian Industry, 2019-20.

¹⁶ ABS, 2020. 81550DO002_201718 Australian Industry, 2019-20.

¹⁷ Local economic impacts of an unconventional energy boom: the coal seam gas industry in Australia, 2014.

¹⁸ Robertson, B, 2019. Oil and gas industry pays less tax than Telstra.

generated \$1644 million in income tax.

The controversial Petroleum Resource Rent Tax (PRRT) only levied \$1.2 billion in tax, despite nearly \$30 billion in tax receipts in 2017-18 due to the use of tax credits. ¹⁹ Complex loopholes in the form of the PRRT allow profits from industry to never be recouped by the Federal Government. Despite industry generating billions in revenue annually, only a very limited proportion is paid to the Federal Government.

ALEC asks the Senate Inquiry to investigate the proposed economic benefits of the opening up of the Beetaloo for the Territory and the Federal Government, beyond subsidies for private corporations.

c. Gas is not a transition fuel

Gas is primarily made up of methane which is a highly potent greenhouse gas. It has a warming potential 84 times greater than CO2 over a 20 year period, and 28 times greater over a period of 100 years. When methane is burnt, carbon dioxide is produced. Conventionally, depending on the type of gas power station (open cycle gas turbine vs combined-cycle gas and steam turbine), gas power stations are approximately 30-50% more efficient than coal-fired power stations in the emissions they produce. However, during the extractive process unintended gas leaks from pressurised equipment can occur, this is known as fugitive emissions. Due to the high warming potential of methane, only a small proportion of gas needs to leak for it to become a major emissions issue. It is these fugitive emissions which challenge the idea that gas is a 'cleaner' fuel than coal, as it only takes 2-3% of methane fugitive emissions to be produced for gas to have a higher warming potential than coal. Fugitive emissions in the United States have been shown to range between 2-17% of production. Gas has the highest Scope 3 emissions intensity of different fossil fuels and renewable energy sources.

Globally, methane levels are now 2.5 times higher than they were prior to industrialisation.²⁴ Our understanding of methane is dynamic, with evidence in 2016 showing that methane is 20-25% more potent than previously understood and modelled.²⁵ Although, there are

¹⁹ Khadem, N, 2019. Tax credits for oil and gas giants rise to \$324 billion.

²⁰ IPCC, 2014, p.151: Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC.

²¹ Robertson, B, 2020. IEEFA Australia: Origin pulls the plug on gas exploration in the Northern Territory. Who's next?

²² Lafleur, D., Forcey, T., Saddler, H. and Sandiford, M., 2016. A review of current and future methane emissions from Australian unconventional oil and gas production. Melbourne Energy Institute.

²³ Acil Allen Consulting, 2014. Emission factors: review of emission factors for use in the CDEII. Australian Energy Market Operator.

²⁴ Dlugokencky, E, 2021. NOAA/GML. Accessed: www.esrl.noaa.gov/gmd/ccgg/trends_ch4/

²⁵ Etminan, M, Myhre, G, Highwood, E, Shine, K, 2016. Radiative forcing of carbon dioxide, methane, and nitrous oxide: A significant revision of the methane radiative forcing. Geophysical Research Letters, 43 (24), pp.12-614.

suggestions that this remains a significantly understated figure.²⁶²⁷ As research develops, this has significant implications for policy. In June 2020, the Federal Government changed laws to reflect scientific consensus around the warming potential of methane, with amendments likely to increase Australia's annual reported emissions by 3%.²⁸ This is likely an understated figure as alluded to above.

A gas-led recovery is a disaster for the climate, which has severe implications for Australia and the Northern Territory. The Northern Territory is already a place of climate extremes, and climate change will increase the intensity, frequency and variability of climate events such as heatwaves, droughts, floods and 'fire weather. The NT is expected to experience a significant increase in extreme temperatures. By the end of the century Darwin is forecast to experience 288 days a year above 35°C, compared to the historical average of 47.²⁹ Droughts are predicted to be more intense in the Northern Territory, there will be fewer frosts, fewer but more intense cyclones and wild fires will become more frequent and harsher.³⁰ Additionally, the sea-level is expected to rise by more than half a metre by the end of the century and coastal waters are anticipated to have warmed to 1.6-4.1°C depending on the emissions scenario by 2100.³¹

ALEC urges the Senate Inquiry to consider the potential climate implications from the opening up of Australia's largest gas basin.

d. Gas and Australia's domestic energy market

A Federal Government led acceleration of exploration and development of shale gas in the Beetaloo Basin and the wider gas-fired recovery is a significant intervention into Australia's energy political-economy. It is an intervention that is not justified, nor is it congruent with the trajectory of the domestic or global energy markets. The energy sector is already undergoing a dramatic transition towards renewable energy. The 20 year roadmap by the Australian Energy Market Operator (AEMO) in its Integrated System Plan (ISP) makes it clear that a diverse array of renewable technologies with storage capacity, a focus on demand management and upgrades made to the transmission network will foster a resilient and reliable energy system in Australia.

Australia is fortunate to have the highest solar radiance of any continent globally, extensive pumped-hydro capacity, some of the world's best wind resources and the potential of a huge

²⁶ Etminan, M, Myhre, G, Highwood, E, Shine, K, 2016. Radiative forcing of carbon dioxide, methane, and nitrous oxide: A significant revision of the methane radiative forcing. Geophysical Research Letters, 43 (24), pp.12-614.

²⁷ Sarofim, M.C., 2012. The GTP of methane: modeling analysis of temperature impacts of methane and carbon dioxide reductions. Environmental Modeling & Assessment, 17 (3), pp.231-239 ²⁸ National Greenhouse and Energy Reporting (Measurement) Amendment (2020 Update) Determination 2020, 2020.

²⁹ CSIRO, 2020. Climate Change in the Northern Territory: state of the science and climate change impacts.

³⁰ CSIRO, 2020. Climate Change in the Northern Territory: state of the science and climate change impacts.

³¹ CSIRO, 2020. Climate Change in the Northern Territory: state of the science and climate change impacts.

hydrogen energy industry.³²³³³⁴ It is well known that standalone renewable energy is by far the cheapest form of new energy generation, where standalone solar costs have dropped in price by more than 500% in the last decade.³⁵³⁶

With an additional 26GW of renewable energy required by 2040, in addition to a further 9-16GW of dispatchable resources, the role of gas in the 20-year plan remains unclear. Existing gas supplies (19% of electricity generated in Australia) will play a supportive role in the renewable energy transition, however additional new gas generation remains unlikely and is dependent on gas prices remaining between \$4-6 for the technology to be viable. 3738 Wholesale gas prices have dropped to between \$5-6 with gas prices plunging to historic lows globally, however, prices are forecast to rise sharply around Australia across the 2020-2050 outlook.³⁹⁴⁰ Variable renewable energy such as wind and solar built with storage capacity are already competitive with gas-fired generation.⁴¹ The cost of storage to accompany renewable energy will continue to fall and become even more competitive. This is critical, as the Australian grid will require additional dispatchable power to firm the grid, primarily in the 2030's when a significant proportion of coal-fired generation will be retired. Batteries, small-scale pumped hydro and potentially hydrogen-energy are highly likely to be more competitive than gas-fired generation. Australia currently sits at a critical juncture in determining how it transforms its economy to be powered by the technologies of the future, which will offer reliable, low cost and low carbon energy. The answer is not gas. A gas-fired recovery is a regressive step in Australia's transition to renewable energy. It is a highly concerning intervention that may disrupt Australia's decarbonising potential for decades. The Beetaloo Basin is a priority gas basin part of the Federal Government's gas-fired recovery. It is not the answer to Australia's domestic energy network, nor has AEMO or the AER asked for it to be.

Gas prices nearly tripled between 2014 and 2017 in direct correlation with growth in gas production for LNG exports. Easily accessed gas resources were funnelled off for export, leaving more expensive gas resources for the domestic market.⁴² The opening up of untapped gas reserves in the Beetaloo Basin isn't going to lower domestic electricity prices. The Beetaloo is isolated, capital intensive, will accrue substantial transportation costs, all emissions have to be offset and it remains unclear whether the resource is commercially viable. In addition, it is renewable energy technologies, not gas which have been lowering

³² Geoscience Australia, 2019. Energy Resources and Markets. Key Messages. Australian Government. Accessed 24th February 2021.

³³ Blakers, A., Lu, B. and Stocks, M., 2017. 100% renewable electricity in Australia. Energy, 133, pp.471-482.

³⁴ Commonwealth of Australia, 2019. Australia's National Hydrogen Strategy. COAG Energy Council.

³⁵ de Atholia, T., Flannigan, G. and Lai, S., 2020. Renewable Energy Investment in Australial Bulletin–March Quarter 2020. Reserve Bank of Australia

³⁶ Graham, P., Hayward, J., Foster, J. and Havas, L. 2020, GenCost 2019-20, Australia

³⁷ AEMO, 2020a, p.55. Integrated System Plan

³⁸ Department of the Environment and Energy, 2019a. Australian Energy Statistics, Table O, March 2019. Australian Government

³⁹ AEMO, 2019. Delivered Wholesale Gas Price Outlook 2020-2050

⁴⁰ Australian Energy Regulator, 2021. Wholesale statistics: SSTM Quarterly prices.

⁴¹ Graham, P., Hayward, J., Foster, J. and Hayas, L. 2020, GenCost 2019-20, Australia

⁴² Ogge, M., Swann, T, 2020. Gas fired backfire: why a "gas fired recovery" would increase emissions and energy costs and squander our recovery spending. The Australia Institute.

electricity prices.43

ALEC again urges the Senate Inquiry to investigate why the Federal Government is accelerating exploration and development of shale gas in the Beetaloo Basin, as it is unlikely to assist in the east-coast electricity supply and lower electricity prices.

Kind Regards,

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⁴³ Australian Energy Market Commission, 2018. Residential Electricity Price Trends, Final report, 21 December 2018.