

August 27, 2021

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Dear Sir/Madam

RE: INQUIRY INTO INTERGENERATIONAL CHALLENGES AND OPPORTUNITIES FOR THE WESTERN AUSTRALIAN ECONOMY

The Australian Petroleum Production & Exploration Association (APPEA) appreciates the opportunity to provide comment on the terms of reference for the Parliament of Western Australia's inquiry into intergenerational challenges and opportunities for the Western Australian economy (the Inquiry), conducted by the Economics and Industry Standing Committee (the Committee).

APPEA is the peak national body representing upstream oil and gas explorers and producers with interests in Australia. APPEA's member companies account for more than 95 per cent of Australia's petroleum production, the majority of which is produced from facilities located in, or in waters adjacent to, Western Australia (WA). The oil and gas industry in WA is a major contributor to the state and national economies creating jobs and business opportunities whilst providing oil and gas to domestic and international consumers. Further information about APPEA and the Australian oil and gas industry can be found at www.appea.com.au.

The Committee announced it will inquire into and report on identified intergenerational challenges and opportunities for the Western Australian economy, out to 2041. APPEA addresses the Inquiry's terms of reference below, detailing key points to consider with regards the oil and gas industry and the WA economy, both now and over the next 20 years. At the heart of these comments is the principle that there is a duty to ensure that future generations in WA can continue to benefit from access to affordable and reliable energy, as well as improve the energy security of countries in our region where there may be a lack of access to reliable and lower-emission energy (for example for cooking, heating, and lighting). However, the main points can be summarised as follows:

Opportunities

- WA has abundant natural gas reserves that can help enable and support other critical industries in WA such as mining and minerals processing, and facilitate the development of new industries in coming decades.
- WA's natural gas can assist in lowering carbon emissions, both in WA and in importing countries, assisting the transition to a lower carbon economy, and supporting the growth in renewables.

- Skills and expertise in oil and gas production, processing, transport, and marketing are transferable to developing a hydrogen industry in WA.
- Continued oil and gas activity and development will provide economic benefits and employment opportunities for regional areas of WA.
- WA's strength in oil and gas means it can continue to grow as a regional hub for the industry, bringing with it the technical expertise, employment, and opportunities for local businesses.
- Technical expertise and resources of the oil and gas industry could be utilised to develop lower emission technologies for decarbonisation of the economy.
- Emission reduction policies in consuming countries for WA's LNG provides opportunity given natural gas can provide energy with less emissions than alternatives such as coal.
- Global demand for gas is forecast to double by 2040¹ and Australia, particularly WA, is well placed to meet this demand.

Challenges

- Barriers to investment in the State's resources such as inefficient and duplicative regulatory processes, increasing the cost of developments and reducing WA's international competitiveness.
- Ensuring oil and gas operators in WA have access to sufficient low-emission technologies to assist in decarbonising current and future developments. Part of this will be timely introduction of legislative frameworks to enable the use of technologies as well as facilitating the ability for companies to source offset solutions at the lowest cost.
- Access to a skilled workforce, particularly post the COVID-19 pandemic when skilled migration has been dramatically curtailed.
- How WA emerges from the COVID-19 pandemic and transitions from a "zero COVID" approach to more open borders with Australia and the rest of the world given this will impact workforce availability and operating costs.
- Excessive delay in regulatory reform that is key for some exploration and production activities such as the implementation of recommendations from the Independent Scientific Panel Inquiry into Hydraulic Fracture Stimulation in Western Australia (the HFS Inquiry). The HFS Inquiry handed its report to the WA Government on 12 September 2018, and the recommendations from this report have still not been implemented as agreed by Government, leaving some companies with no certainty over future development of their resource.

The current structure of the WA economy

The WA economy has recovered strongly from the initial economic shocks brought about by the global COVID-19 pandemic. As detailed in the July 2021 update to the *Western Australia Economic Profile*, produced by the Department of Jobs, Tourism, Science and Innovation (DJTSI), strong activity in the mining sector, including oil and gas, has supported this economic recovery, although economic impacts continue to be felt from travel and other restrictions that have been put in place to prevent the spread of COVID-19 into the WA community.²

¹ EY report – [Australia's oil and gas industry: kickstarting recovery from COVID-19](#)

² [DJTSI's Western Australia Economic Profile – July 2021.](#)

The resources sector, including oil and gas exploration and production, continues to underpin much of WA's economic activity. According to Deloitte's *WA Economic Outlook – May 2021* report, commodity exports are expected to be the largest contributor to WA's economic growth in 2021.³

WA's petroleum sector, which includes crude oil, condensate, Liquefied Natural Gas (LNG), natural gas and Liquefied Petroleum Gas (LPG), had sales valued at \$37 billion in 2019-20, a decrease of 4 per cent from \$39 billion in 2018-19.⁴ Of petroleum products, WA LNG exports were the most valuable at \$27 billion (second only to iron ore in value), followed by condensate at \$5.7 billion and oil at \$2.6 billion.

In terms of royalty revenue, the WA Government received a record \$9.3 billion of royalty revenue in 2019-20 from the State's minerals and petroleum producers, an increase of 42% on 2018-19. However, this was largely due to a 60% year-on-year increase in royalty receipts from iron ore due to higher iron ore volumes and prices. Challenging market conditions for petroleum over 2019-20 saw the opposite outcome with petroleum royalty payments falling 41% on the year. Nearly all payments to the WA Government from petroleum activities in WA comes in the form of grants from the North West Shelf project⁵. In 2019-20 these grants totalled \$690 million, down 22% on the year due to lower market prices, but still higher than the record royalties from WA gold production of \$361 million.

The activity of producing, processing, and selling oil and gas, as well as operating and maintaining the facilities, has direct economic benefits to WA, creating thousands of direct and indirect jobs, generating revenue for the WA and Commonwealth Governments, and boosting activity in the WA economy, both in the metropolitan area where many company headquarters are based and in regional areas where operations are located. The industry is also supporting the Government's LNG Jobs Taskforce, an initiative that brings together industry, government, and unions to collaborate on the challenges and opportunities for WA's existing LNG sector, with the aim of maximising local jobs and establishing WA as a global LNG hub for the decades to come.

Aside from the direct economic benefit and activity provided by producing and selling oil and gas, the WA oil and gas industry also supports many other sectors of the WA economy. WA has the highest natural gas consumption of all Australian states, consuming 669 petajoules (PJ) of gas in 2018-19, approximately 42% of Australia's total domestic gas consumption.⁶ Given our relatively small population, the bulk of consumption is from mining (for example, iron ore, gold and nickel mines), minerals processing (for example, alumina refineries, nickel smelters), and large industrial users (for example, brickworks, cement manufacturers, chemical plants such as ammonia production).

As detailed in the Australian Energy Market Operator's (AEMO) *2020 WA Gas Statement of Opportunities* (GSOO) report⁷, consumption of WA's gas supply in 2018-19 was as follows:

- Gas-fired Power Generation – 43.2% (generating over 60% of WA's electricity including that used for mining and minerals processing)
- Mining – 31.1%.

³ Deloitte's [WA Economic Outlook – May 2021](#)

⁴ DMIRS' [Western Australian Mineral and Petroleum Statistics Digest 2019-20](#)

⁵ The WA Government receives about 65% of the royalties from the petroleum produced by the North West Shelf project, in the form of Commonwealth grants, in accordance with an agreement between the WA and Australian Governments.

⁶ Australian Energy Market Operator [WA Gas Statement of Opportunities - December 2020](#)

⁷ Australian Energy Market Operator [WA Gas Statement of Opportunities - December 2020](#)

- Industrial and minerals processing sector – 22.2%.
- Residential and commercial – 2.4%.
- Other – 1.1%.

The use of WA's natural gas by other major sectors of the economy shows how important a reliable and affordable energy supply is to these high energy-use sectors. It also shows that the industry provides benefits both through WA LNG exports which are a major export earner for Australia and the supply of gas to the WA domestic market (via the WA gas pipeline network from domestic gas plants alongside LNG facilities or standalone domestic gas processing plants). Together, they are major enablers of WA's economic activity.

Besides the economic benefits for WA, the oil and gas industry has a strong commitment to the communities where we operate. Direct and indirect employment opportunities for local residents is one aspect to this, but companies also have a range of initiatives they undertake to support communities, from building community infrastructure to supporting local programs in areas such as environmental protection, health, education, and arts and culture. With oil and gas facilities generally operating for many decades, this support for the community spans similar timeframes and can therefore have a material impact in building community capacity and positive outcomes for residents.

Given the decades-long lifespan of existing production assets, plus additional reserves and resources in WA that could be developed, natural gas will continue to be a critical part of WA's energy system for decades. This is not just in support of current industries but also development of new industries such as hydrogen production, carbon capture and storage and the growth of renewable energy and low emission technologies. Natural gas is well placed to partner renewable energy in the energy system given it can provide baseload power when renewable energy sources are intermittent.

In terms of challenges currently facing the WA economy, and the oil and gas sector, the COVID-19 pandemic has had a significant impact on how we operate and manage our workforce movements due to the interstate and international travel restrictions that have been in place.

Throughout the pandemic, the oil and gas industry has worked hard to ensure compliance above and beyond that required by Government to keep our workers and contractors safe, protect the health of the communities where we operate, as well as ensure our facilities continued to safely produce and operate. As mentioned above, maintaining production is important not just to ensure a reliable energy supply to our international customers, and to meet contractual commitments, but also important for the many WA domestic users of natural gas that represent other critical parts of the WA economy.

Key factors driving current demand for WA exports

WA's abundant petroleum reserves, and our proximity to some of the largest energy consuming and importing countries in the world, have underpinned WA's petroleum export activity in recent decades. The opportunity for these export markets has seen an unprecedented amount of investment of \$473 billion in Australian oil and gas projects in the past decade, with a large share of this investment occurring in projects and developments located in WA or in Commonwealth waters off WA⁸.

⁸ Wood Mackenzie's [2020 Australian Oil & Gas Industry Outlook Report](#)

The need for reliable and affordable energy by major energy importing countries such as Japan, Korea, China, and Taiwan, has resulted in long-term LNG sales and purchase agreements being secured for WA's LNG developments. LNG in WA is produced from five production facilities: the North West Shelf, Pluto, Gorgon, Wheatstone and Prelude. In 2019-20 the quantity of LNG produced from WA reached a record of more than 47 million tonnes produced, an increase of 8% on the year⁹. Whilst Australia as a whole is the largest exporter of LNG in the world, if WA was its own country, we would be the second largest LNG exporter after Qatar.

Demand for LNG exports is also supported by many of the importing countries committing to targets to reduce emissions as they start to transition to a lower emissions energy system. The Australian Government estimates Australia's LNG exports have the potential to lower emissions in LNG-importing countries by about 170 million tonnes of CO₂-equivalent a year by providing an alternative to higher emissions fuels¹⁰. That equates to almost a third of Australia's total annual emissions.

Sales of condensate and crude oil tend to be via spot market sales, and therefore are more exposed to fluctuations in the oil price and global demand. Most of WA's condensate and crude oil exports are sold to refineries in Singapore, Indonesia, and Malaysia. For many of WA's oil and condensate producing facilities, exports will continue even at lower prices, particularly when it is important to maintain operations in integrated developments (for example, when condensate production is integrated with LNG production). This was the case in early 2020 when the oil price fell sharply due to geopolitical tensions between Russia and Saudi Arabia and the decrease in demand triggered by the COVID-19 pandemic.

Key factors that will affect demand for WA exports into the future

There are several factors expected to influence the demand for WA exports of petroleum products in the period to 2041, with the opportunities as follows:

- The demand outlook for LNG, particularly in Asia, remains strong. Demand for gas is forecast to double by 2040¹¹ and Australia, particularly WA, is well placed to meet this demand. Australian LNG export volumes are forecast to increase by 5.3 per cent to 83 million tonnes in 2021-22. Australian LNG exports earnings are forecast to increase from an estimated \$33 billion in 2020-21 to \$49 billion in 2021-22.¹²
- Policies in importing countries on emissions reduction initiatives, which should favour natural gas given it produces lower emissions than alternatives such as coal. In short, WA exports of LNG can assist in lowering global emissions and can contribute to a cleaner energy sector in Asia.

The future challenges for WA exports in terms of oil and gas are as follows:

- Supply from other LNG exporting countries, particularly Qatar, which although geographically further from Australia's key markets can produce LNG at lower cost. This is not just due to

⁹ DMIRS' [Western Australian Mineral and Petroleum Statistics Digest 2019-20](#)

¹⁰ <https://minister.environment.gov.au/taylor/news/2019/australias-national-greenhouse-gas-inventory-march-2019-quarterly-update-released>

¹¹ EY report – [Australia's oil and gas industry: kickstarting recovery from COVID-19](#)

¹² Australian Government's [Resources and Energy Quarterly: June 2021](#)

the quality of the resource to be developed (which can make development much cheaper), but also the business and public policy conditions.

- Policies within WA and Australia that reduce the competitiveness of WA petroleum exports, and the ability of WA to attract investment to the industry. Oil and gas exploration and production is a very capital-intensive industry, and when capital is increasingly scarce and mobile, WA needs to remain competitive with other jurisdictions and exporting countries.
- A report by ACIL Allen, *Western Australian Gas and Downstream Opportunities Study*¹³, commissioned by the Government as part of the LNG Jobs Taskforce and released on 23 August 2021, found that business and public policy conditions were integral to the development of a downstream project using natural gas, influencing the “up front capital cost of the project in question, which impacts on the economics of the overall project.” The report detailed that developing a project in WA was at least 20 per cent higher than the capital cost of a similar project in the United States, and at least 40 per cent higher than the capital cost of a similar project in Mainland China.
- A recent example where a policy change in WA was viewed negatively by potential investors in the upstream oil and gas industry was the change to the domestic gas reservation policy in August 2020 that banned the export of gas from the WA gas pipeline network. The aim of this policy change was to increase supplies of gas to the WA domestic market, but APPEA was concerned that it would in fact decrease the likelihood of investment in potential new developments and therefore would decrease domestic supply. ACIL Allen’s *Western Australian Gas and Downstream Opportunities Study*, found that allowing a portion of future gas developments to be exported could facilitate new developments and new sources of supply to the domestic market. This is because by allowing some access to the higher-priced export market, the improved project economics would essentially “bankroll” the rest of the development for domestic gas production.
- As WA emerges from the restrictions put in place to manage the COVID-19 pandemic, access to skilled labour, especially when skilled migration has been almost zero during the pandemic will be important to ensure that the industry has the workforce it needs to bring new projects to fruition as well as continuing to maintain existing facilities.
- Another potential challenge for the economy as we emerge from COVID-19 is in how WA transitions and changes its travel and border restrictions over time. If a ‘hard border’ approach continues in coming years, with intermittent lockdowns within WA, the high operating costs of managing the restrictions (for example, the need for charter flights to move workers and ongoing quarantining costs) may cumulate in sufficient costs for some operators to reassess the ongoing viability of their operations.

Actions being undertaken by relevant stakeholders to plan for identified trends in demand for WA exports

An emerging trend in petroleum exports has been the move for some international consumers and suppliers to come together and agree sales of “carbon neutral” LNG. This involves the carbon emissions associated with the upstream production, liquefaction, and transportation of the LNG (and potentially the combustion of the gas in its end use) is offset using carbon credits (and in the further, potentially by other means, including carbon capture and storage). To date, only a handful of LNG cargoes have been sold in tenders that specify “carbon neutral” requirements, mostly with buyers from Asia, but this is expected to grow given the increasing focus on reducing emissions and “decarbonising” energy systems in consuming countries.

¹³ ACIL Allen’s [Western Australian Gas and Downstream Opportunities Study](#)

For WA LNG exporters to be able to offer “carbon neutral” LNG to end consumers, access to a portfolio of options, including offset opportunities within and beyond WA, will be critical. In WA, legislative amendments will be required to enable some of the low emission technology options that could provide these offsets, in particular storage of greenhouse gas emissions (including carbon, capture and storage) and hydrogen. APPEA understands that the WA Government is working on both these legislative amendments and looks forward to the consultation process through their development. Ensuring that exporters have access to all the necessary low emission tools will provide options for exporters to choose the best offset option for their business, as well as facilitate lowest cost abatement that is critical for maintaining export competitiveness.

Infrastructure can play an important role in decarbonising heavy industry. Looking at examples elsewhere in the world, Canada’s Alberta Carbon Trunk Line is an integrated, large-scale carbon capture, utilisation, and storage (CCUS) system. The trunk line captures industrial emissions and delivers the CO₂ to mature oil and gas reservoirs for use in enhanced oil recovery and permanent storage.¹⁴ This initiative is supported with funding from both the Government of Alberta and the Government of Canada.

APPEA also supports the development of a technology-neutral hydrogen industry in Australia and several oil and gas companies are investigating this technology as a potential future energy source and export industry from WA. The WA Government has in recent years been promoting the opportunity for hydrogen to be the next big export commodity for WA. Despite the opportunity many technical and commercial barriers remain, and therefore policies that embrace all hydrogen technologies (that is, one that does not only focus on only one hydrogen production process) will be required to ensure the fastest and lowest-cost route to becoming a hydrogen exporter.

Oil and gas expertise is a good foundation on which to find solutions to the technical and commercial challenges of hydrogen given the similarities between LNG and hydrogen in the way they are produced, transported, and marketed.

Key factors affecting inbound investment in major sectors of the WA economy

There are several factors affecting inbound investment to the oil and gas industry in WA, some of which are managed by the State and some by the Australian Government (for example, fiscal policies).

Given WA is still emerging from the economic impacts of the COVID-19 pandemic, maintaining attractiveness for investors from both within WA and beyond, will be critical to our ongoing economic prosperity. As mentioned, the oil and gas industry is very capital intensive, and therefore attracting capital and investment into WA for WA-based projects is crucial.

APPEA notes that Australia’s upstream oil and gas industry needs long-term regulatory stability and efficiency to create attractive investment opportunities for the sector and maintain industry’s strong economic contribution. This is outlined in detail in Wood Mackenzie’s *Australian Oil & Gas Industry Outlook Report* released in March 2020.¹⁵

¹⁴ [Alberta Carbon Trunk Line](#)

¹⁵ [appea.com.au/wp-content/uploads/2020/06/Australia-Oil-and-Gas-Industry-Outlook-Report.pdf](https://www.appea.com.au/wp-content/uploads/2020/06/Australia-Oil-and-Gas-Industry-Outlook-Report.pdf)

For WA, there are some key regulatory levers which will be important to ensuring WA is an attractive place to invest in the petroleum sector and in lower emission technologies on which the industry is also focused:

- Efficient regulatory processes between different WA government agencies to reduce duplication. An example is the environmental impact assessment processes required through the Environmental Protection Authority and those environmental plans required by the Department of Mines, Industry Regulation and Safety. APPEA recommends the Government's *Streamline WA* initiative should address more rigorously some of these duplicative processes.
- Excessive delay in the implementation of the outcomes of the Independent Scientific Panel Inquiry into Hydraulic Fracture Stimulation in Western Australia (the HFS Inquiry). The HFS Inquiry handed its report to the WA Government on 12 September 2018 finding that, when appropriately regulated, HFS activities (if required in petroleum exploration and production activities) are of very low risk to people and the environment. The Government accepted all recommendations of the HFS Inquiry on 27 November 2018 and to date some of the most critical elements of the regulatory changes, such as the Code of Practice, have not been finalised or been released for public consultation. This has had material impacts on several companies who are wanting to explore for petroleum onshore WA and have delayed their work programs whilst awaiting details of the regulations under which their activities will be assessed. Even accounting for potential delays in implementing regulatory changes due to the COVID-19 pandemic, the prolonged delay in moving ahead with the HFS Inquiry implementation is of great concern to industry.
- Clarification in the WA domestic gas reservation policy around what constitutes "exceptional circumstances" to allow some export of gas from the WA pipeline network through existing LNG facilities. As detailed in the ACIL Allen report mentioned earlier, allowing some gas from a development to be exported will likely bring new supplies of gas to the domestic market. In addition, APPEA recommends the policy is clarified as to what it means for potential developments that do not have access to the WA pipeline network, for example, the onshore Canning Basin.
- Regulatory changes to enable low emission technologies such as greenhouse gas storage and hydrogen to be undertaken in WA will likely attract investment to the State given there are many companies, including international companies, looking at opportunities in this space.

Conclusion

APPEA would once again like to thank the Economics and Industry Standing Committee for the opportunity to provide a submission to this inquiry. Should the Committee have any questions on any of the information in this submission, please do not hesitate to contact me on [REDACTED] or [REDACTED].

Yours faithfully,

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Claire Wilkinson
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