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Department of Climate Change, Energy, the Environment and Water
GPO Box 3090 Canberra ACT 2601
By email: EnergyandElectricitySectorPlan@dcceew.gov.au

Dear Review Team,

RE: ELECTRICITY AND ENERGY SECTOR PLAN DISCUSSION PAPER

Woodside Energy Limited ('Woodside') welcomes the opportunity to comment on the Australian Government's Electricity and Energy Sector Plan Discussion Paper ('the Paper').

Australian gas has a critical role to play in supporting the deployment of renewable energy infrastructure for domestic electricity generation, as well as helping regional trading partners meet their energy and decarbonisation goals. Therefore, we believe, Australia's Electricity and Energy Sectoral Plan should be in alignment with an Australian Future Gas Strategy that enables the responsible development and utilisation of Australian gas resources. In addition, the interlinkages between the Resources and Mining Sectoral Plan and the Electricity and Energy Sectoral Plan need to be recognised. As the Resources and Mining Sectoral Plan Discussion Paper will be released after the Future Gas Strategy publication – and both follow the Electricity and Energy Sector Plan Discussion Paper – this submission only covers issues related to power generation.

As such, we wish to highlight the following points:

Gas for domestic use

- Electricity generation fuelled with natural gas typically has lower lifecycle greenhouse gases compared to electricity generation fuelled with coal.[1] Additionally, natural gas-fired electricity generation offers a flexible means of providing support to batteries and help stabilise the power grid during periods of decreased renewable energy production (e.g. at night, and when the wind is calm).
- Australia's National Electricity Market serves as an example of how a gas-renewables mix can generate power at lower emissions intensity than a coal-dominated mix. Power generation in South Australia is mainly from renewables with approximately one third from gas, and has only a third of the emissions intensity of power generation in Victoria, which relies mainly on brown coal[2,3] (See Attachment Figure 1 for greater detail).
- When considering our trading partners, Asia has more than half of the world's people and is growing.[4] Across Asia many countries are still heavily reliant on coal which accounts for approximately 50% of total energy supply in the Asia Pacific.[5] Asia is a prominent manufacturing and trade region that utilises LNG already but also creates the opportunity for a further shift towards gas to support decarbonisation. (See Attachment Figure 2 for greater detail).

[1] IEA, 2019. "The Role of Gas in Today's Energy Transition", p. 4. All rights reserved.
[2] Australian Department of Climate Change, Energy, the Environment and Water, 2023. "Australian National Greenhouse Accounts Factors." Electricity generation emissions intensities have been sourced from the emission factors in Table 1, pp. 7-8. These factors represent the emissions from the consumption of electricity purchased from a grid. https://www.dcceew.gov.au/sites/default/files/documents/national-greenhouse-account-factors-2023.pdf
[3] Fuel mix percentages accessed online https://www.aemo.com.au/energy-systems/electricity/national-electricity-market-nem/data-nem/data-dashboard-nem using 12 months to 22 Jan 2023. Percentages may not total 100% due to rounding.
[4] United Nations, 2022. "World Population Prospects 2022: Summary of Results", Table 1.1, https://www.un.org/development/desa/pd/sites/www.un.org.development.desa.pd/files/wpp2022_summary_of_results.pdf.
[5] IEA, 2020. "Asia Pacific: Region profile, Total energy supply 2020", https://www.iea.org/regions/asia-pacific.

Role of gas

- In 2023, the IPCC concluded its Sixth Assessment Report.[6] It found that there are many pathways that can limit warming to within the goals of the Paris Agreement. These include 97 pathways that can limit warming to 1.5°C with no or limited overshoot (modelled global emissions pathways Category C1, the most ambitious subset assessed by the IPCC).[7] The report also includes pathways with a 50% or greater probability of returning warming to 1.5°C after a high overshoot (C2), a 67% or greater probability of limiting warming to 2°C (C3) and other higher temperature outcomes up to those exceeding 4°C (C8).
- Demand for oil and gas remains through the remainder of this century in all of these pathways, but to varying degrees. Different variables contribute to the temperature outcomes in these pathways. For example, C1 pathways with higher gas use typically also have higher uses of carbon capture utilisation and storage (CCUS).[8] CCUS is an opportunity for Australia to reduce the emissions intensity of its gas, energy system, other industries and support regional decarbonisation by offering CCUS as a service.
- The range of oil and gas use in each of the particular temperature outcome pathways arises because choices in one sector can be compensated for by choices in another while being consistent with the same assessed level of global warming.[8] The level of global oil and gas use is an important but not sole determinant of temperature outcomes. Other influential factors include coal use, total primary energy use, emissions from outside the energy sector and levels of abatement and carbon dioxide removals. Moreover, it is expected that different options will be pursued by different countries consistent with what the Paris Agreement calls "the principle of equity and common but differentiated responsibilities and respective capabilities, in the light of different national circumstances".[9]

Regulatory Enablers

- The Electricity and Energy Sectoral plan should prioritise policy reforms that incentivise lowest cost abatement from heavy emitting industries and facilities. For example, consideration should be given to amendments to Safeguard Mechanism rules to incentivise renewable power purchase or importation from renewable energy projects developed outside the facility boundary.
- In terms of regulatory certainty, the implementation of clear processes and response times for project approvals is essential in unlocking reliable supply. Otherwise, energy investment will find another home, taking jobs and opportunities with it. Improving legislation to ensure approvals are provided in a timely manner and with certainty is a key enabler of Australia's energy transition. Improving existing regulations has the added benefit of providing a framework to streamline the approvals process required for renewable energy projects, the transmission network and critical minerals sector. All of which is critical to ensuring long-term investment and growing secure jobs in energy related sectors.

It is our view that a stable energy transition will be one in which energy is secure, affordable, and reliable. We would also request that DCCEEW consider our yet-to-be-made submission to the Department of Industry, Science and Resources on the 'Resources and Mining Sectoral Plan Discussion Paper'.

Yours sincerely

Peter Metcalfe
Vice President – Climate and Sustainability

[6] IPCC, 2023. "Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change", [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, doi: 10.59327/IPCC/AR6-9789291691647, https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_FullVolume.pdf -
[7] Overshoot means the temporary exceedance of a specified level of global warming, such as 1.5°C. Overshoot implies a peak followed by a decline in global warming, achieved through anthropogenic removal of CO_2 exceeding remaining CO_2 emissions globally.
[8] IPCC 2022. "Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change". Summary for Policymakers paragraph C.3.2
[9] UNFCCC, 2015. "Paris Agreement", Preamble. https://unfccc.int/sites/default/files/english_paris_agreement.pdf.

ATTACHMENT:

Figure 1: Fuel mix and emissions intensity of Australia's National Electricity Market (NEM) and the South West Interconnected System (SWIS)[10,11]

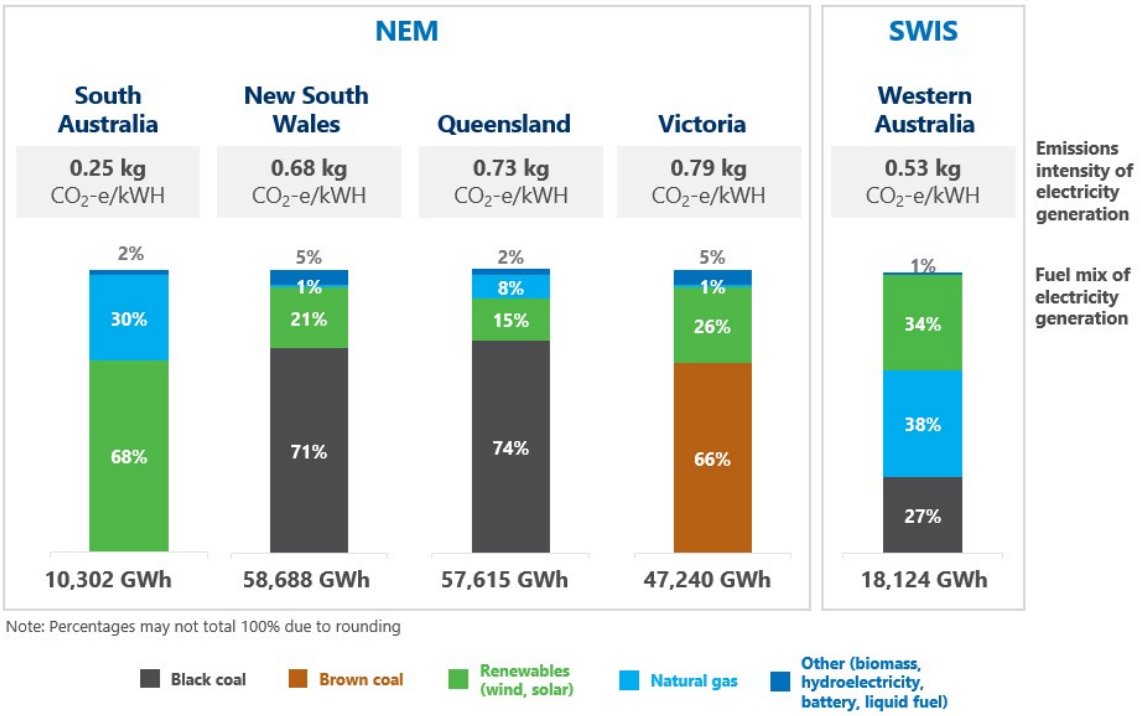
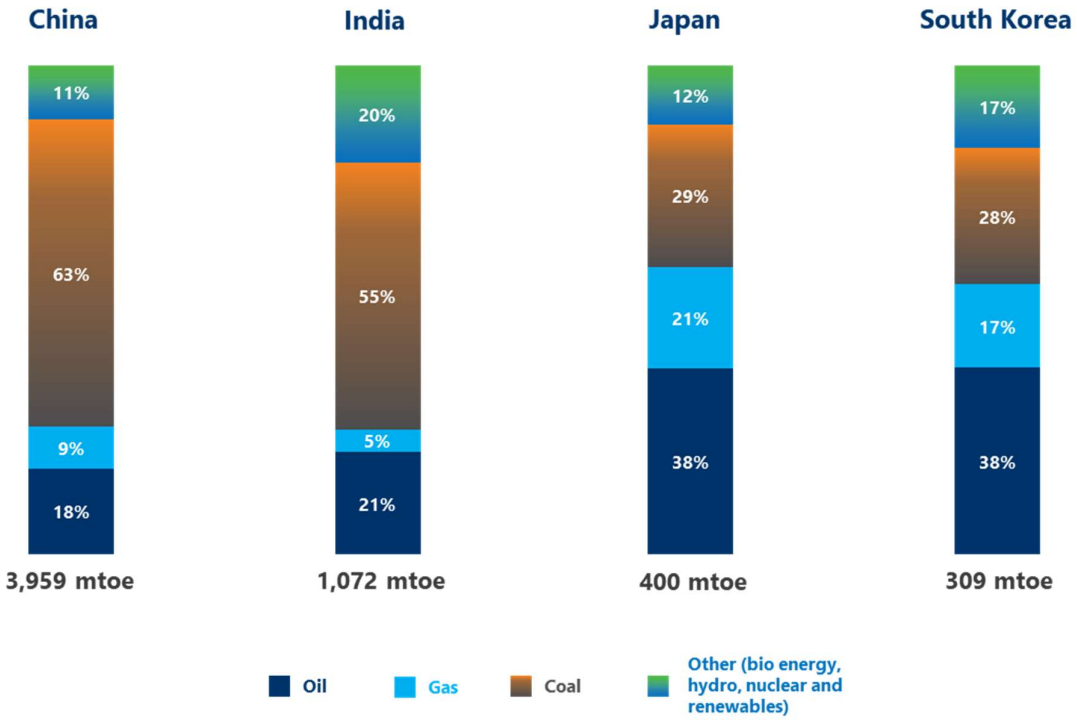


Figure 2: 2023 total energy demand for key Asian countries[12]

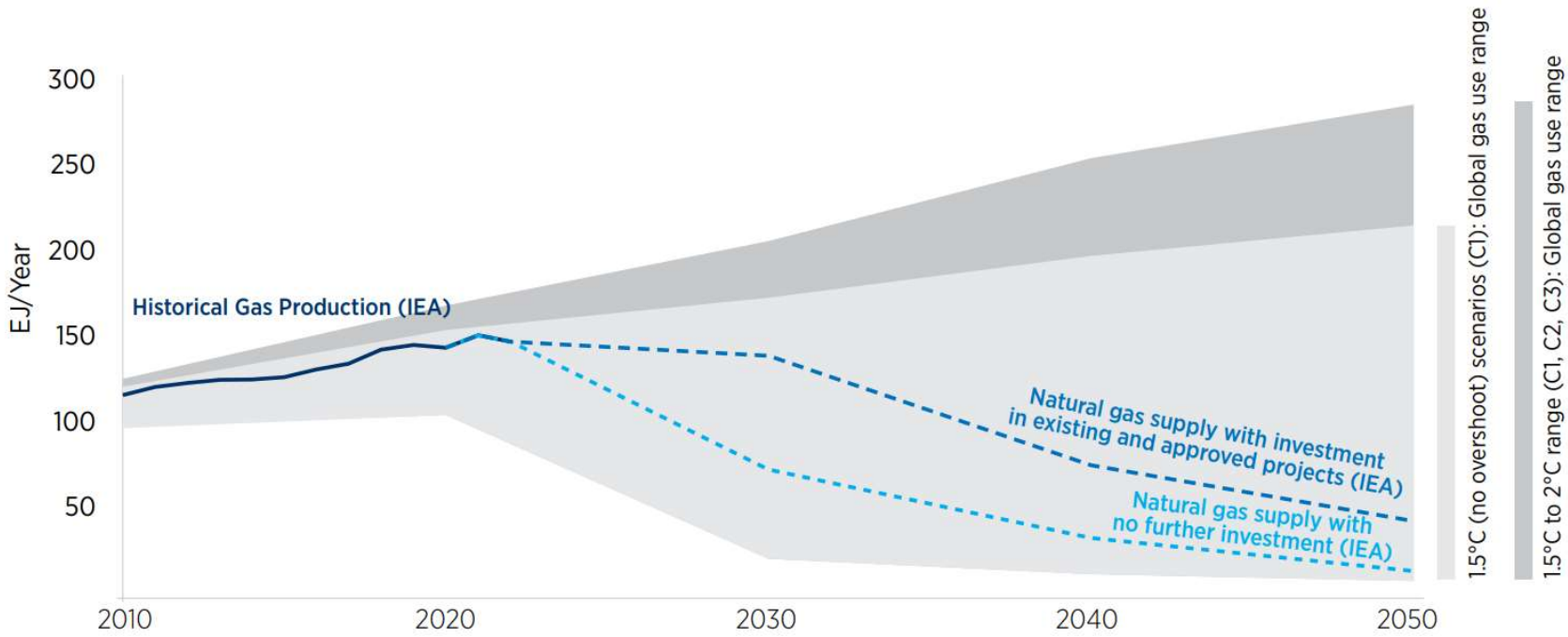


[10] Australian Department of Climate Change, Energy, the Environment and Water, 2023. "Australian National Greenhouse Accounts Factors." Electricity generation emissions intensities have been sourced from the emission factors in Table 1, pp. 7-8. These factors represent the emissions from the consumption of electricity purchased from a grid. https://www.dcceew.gov.au/sites/default/ files/documents/national-greenhouse-account-factors-2023.pdf

[11] Fuel mix percentages for NEM accessed online https://www.aemo.com.au/energy-systems/electricity/national-electricity-market-nem/data-nem/data-dashboard-nem on using 12 months to 22 Jan 2023 and for SWIS accessed online https://opennem.org.au/ for financial year 2023

[12] Source: Wood Mackenzie Energy Transition Outlook, September 2023. Assumes global temperature rise to around 2.0°C compared to pre-industrial levels. Asia Pacific includes China and India. Other includes bio energy, hydro, nuclear and renewables.

Figure 3: Potential global use of gas in pathways that limit global warming[13,14,15]



[13] Charts utilise IPCC ranges for gas usage in scenarios that have a 50% or greater probability of limiting warming to 1.5°C with no or limited overshoot (C1), a 50% or greater probability of returning warming to 1.5°C after a high overshoot (C2), a 67% or greater probability of limiting warming to 2°C (C3) from AR6-WG3. IPPC data representing outlooks for Primary Energy Oil and Primary Energy Gas was sourced from the AR6 Scenario Database World v1.1 hosted by the International Institute for Applied Systems Analysis (IIASA). AR6 Scenarios Database hosted by IIASA, International Institute for Applied Systems Analysis, 2022. doi:10.5281/zenodo.5886911, https://www.data.ece.iiasa.ac.at/ar6/.

[14] IEA, 2023. "The Oil and Gas Industry in Net Zero Transitions", https://www.iea.org/reports/the-oil-and-gas-industry-in-net-zero-transitions, License: CC BY 4.0.

[15] Data points sourced from the IPCC includes 2010, 2020, 2030, 2040 and 2050. Woodside has used interpolation for the data points in intervening years. Historical data from the IEA is provided on an annualised basis. Forward looking data from the IEA includes 2023, 2030, 2040, 2050. This is a work derived by Woodside Energy Ltd from IEA material and Woodside Energy Ltd is solely liable and responsible for this derived work. The derived work is not endorsed by the IEA in any manner. IEA data was converted to exajoules using conversion factors obtained from the IEA report; The Oil and Gas Industry in Net Zero Transitions, IEA 2023. IEA and IPCC scenarios are not predictions or forecasts and are representative of views of the future. Woodside's approach to analysing and assessing future energy market conditions is based on qualitative and quantitative factors and therefore may vary from any one scenario presented by the IEA or IPCC.