

Middle Arm Sustainable Development Precinct

Senate Inquiry Hearing

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The Institute for Energy Economics and Financial Analysis (IEEFA) examines issues related to energy markets, trends, and policies. The Institute's mission is to accelerate the transition to a diverse, sustainable and profitable energy economy.

IEEFA's market-based research shows how the rise of the new energy economy, where renewable energy sources are steadily eroding reliance on fossil fuels, makes financial sense for investors, governments, businesses, communities and ratepayers.



Evidence-based

Our analyses are thoroughly researched, fact-based, and data driven



Independent

As a non-profit think tank, our work is free from political influence, corporate and sectoral interests.



Energy focused

Our mission is to accelerate the transition to a diverse, sustainable and profitable energy economy. We cover domestic and export energy markets.



Financial analysis

We focus on the financial issues associated with the energy transition, looking at market trends, financial risks and opportunities.



Global

We have teams in North America, Europe, Asia and Australia.

Key points

- The Middle Arm Sustainable Development Precinct (MASDP) plan relies on new gas supply, which is speculative. To date there are no proven gas reserves in the Beetaloo basin and active explorers will require significant financing.
- The business case for the proposed NTLNG project is flawed, relying on overly optimistic assumptions about future LNG demand. Australia's high LNG costs are likely to see the project struggle to secure financing.
- The plan relies on CCS to offset carbon emissions from the use of gas, but CCS has proven to be expensive and unreliable.
- Government support will stretch budgets and strain government fiscal arrangements.
- Development of new gas supply poses risks for other industries, especially agriculture.



Source: <https://landdevcorp.com.au/project/middle-arm-sustainable-development-precinct/current-investment/>

The development plan is flawed

Problems with the Middle Arm Gas and Petrochemicals Hub

The plan is flawed

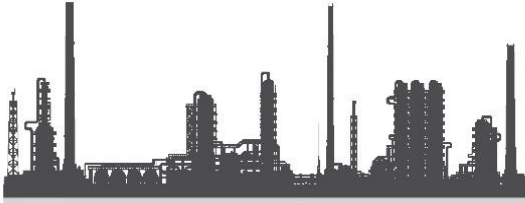
- Unlikely to see the expected boom in LNG exports.
- Off-taker industries unlikely to set up in NT.
- Australia likely to reduce domestic gas consumption.
- Unrealistic to rely on costly, unproven CCS for industry and climate.
- Initiative strains fiscal arrangement between states, territories and federal government.
- Insufficient mobilisation of government and corporate resources for plan success.
- Natural gas industrial expansion conflicts with Australian Net-zero policies.

● Economic risk ● Financial risk ● Fiscal risk

The business model is not viable

- Hydraulic fracturing unlikely to be profitable.
- High NT development costs disadvantage natural gas competitiveness.
- Waste management is expensive.
- NT gas producers financially unprepared for required investments.
- Regulations won't shield Australians from fracking's health and safety risks.

● Environmental/Health risk ● Technological risk



Source: IEEFA, Middle Arm gas and petrochemicals hub.

**The MASDP will require new
competitive gas supply**

MASDP plan centred on speculative gas supply, likely from Beetaloo

The NT Government's submission confirmed that gas will be required for Middle Arm:

Taking a neutral technological approach has allowed planning for options that include the manufacture of hydrogen and hydrogen carrier materials such as ammonia, methanol and methylcyclohexane (MCH), first from gas and then from hydrolysis once this technology has been established.

- **The Beetaloo basin does not have *any* commercially proved (2P) gas reserves**
- **Despite almost a billion of dollars spent on exploration over more than a decade, the Beetaloo is yet to produce any commercial quantities of gas**
- **Several large players who looked at the Beetaloo have since walked away, including Origin Energy**

Junior explorers will require significant new funding to develop the Beetaloo

- There are only three junior explorers are currently active in the Beetaloo – Tamboran Resources, Empire Energy, and Falcon Oil and Gas
- Tamboran Resources faces financing hurdles and has relocated to the US to raise funding
 - Its disclosures indicate serious doubts about its ability to be ongoing concern
- Empire Energy will likely require significant new funding to develop its interests
- Santos has interests in the Beetaloo but does not appear to be focused on developing them despite delays with its Barossa project and supply issues at Gladstone LNG

NT gas is likely to be globally uncompetitive

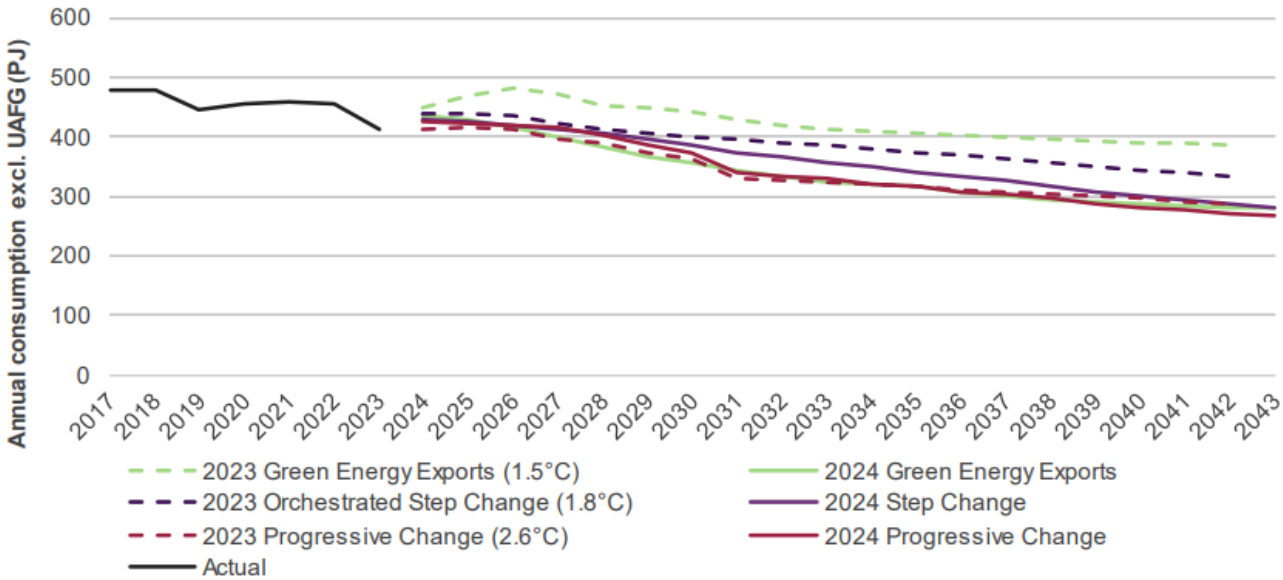
The NT Government's submission outlined:

The overarching vision for MASDP is to be a globally competitive, sustainable 'development ready' industrial Precinct of regional, state, and national significance ...

- **Beetaloo gas developers are likely to require high prices – Tamboran Resources' disclosures confirm that it needs Australian gas prices and LNG prices to remain elevated relative to US gas prices**
- **This likely reflects high development costs – the Future Gas Strategy estimated Beetaloo gas costs well above gas prices in the US (even without accounting for additional costs to transport gas to Darwin)**
- **However, high domestic gas prices will ultimately undermine the competitiveness of NT gas, raising questions about the financial case for offtake industries to invest in Middle Arm**

Declining domestic gas demand raises questions about the Beetaloo business case

Actual and forecast domestic gas consumption, excluding GPG, all scenarios and compared to 2023 GSOO forecasts, 2017 -43 (petajoules [PJ])



Notes:














- 2023 GSOO forecasts have been amended to align with 2024 GSOO forecasts, where scenarios anticipate consumer demand will be met by natural gas, or a combination of natural gas and renewable gases.
- The Northern Territory is included in actual gas consumption from 2020 onwards.

- Domestic east coast gas demand is falling, potentially undermining the business for gas development
- The cost of Beetaloo gas delivered to key east coast demand centres is likely to be prohibitively high, especially for industrial gas users
- Reliance on Beetaloo gas will likely accelerate gas demand destruction

Source: AEMO, 2024 Gas Statement of Opportunities.

The plan relies on CCS, which is expensive and has a history of failure and underperformance

 **Carbon Capture and Storage (CCS) projects' poor report card**

Project	Capacity (MtCO ₂ p.a.)	Performance
Natural Gas processing		
 1986 Shute Creek	7	Lifetime under-performance of 36%
 1996 Sleipner	0.9	Performing close to the capture capacity
 2004 In Salah	1.1	Failed after 7 years of operation
 2007 Snøhvit	0.7	Performing close to the capture capacity
 2019 Gorgon	4	Lifetime under-performance of ~50%
Industrial sector		
 2000 Great Plains	3	Lifetime under-performance of 20–30%
 2013 Coffeyville	0.9	No public data was found on the lifetime performance.
 2015 Quest	1.1	Performing close to the capture capacity
 2016 Abu Dhabi	0.8	No public data was found on the lifetime performance.
 2017 Illinois Industrial (IL-CCS)	1	Lifetime under-performance of 45–50%
Power sector		
 2014 Kemper	3	Failed to be started
 2014 Boundary Dam	1	Lifetime under-performance of ~50%
 2017 Petra Nova	1.4	Suspended after 4 years of operation

Two successful projects in Norway:

- **Sleipner:** CO₂ migrated in mass to unknown 9th layer
- **Snøhvit:** Had 18 months instead of 18 years capacity
- Demonstrate **material ongoing risks**

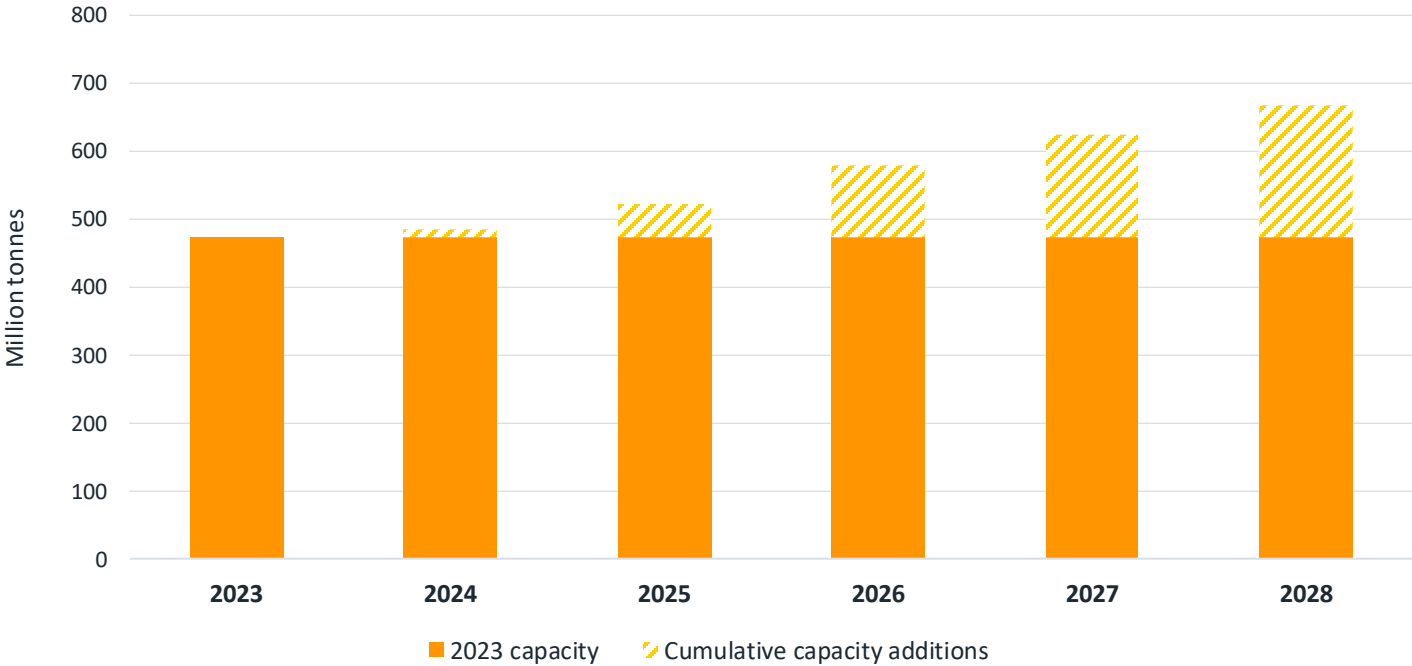
Gorgon:

- **Underperformed by ~50%** its targets for the first 5 years
- **Injected just 34%** of 5 MtCO₂ it captured in FY2022-23
- **Cost >A\$3 billion** since it started

Source: IEEFA, Carbon Capture and Storage factsheet.

Tamboran Resource's LNG project faces challenges

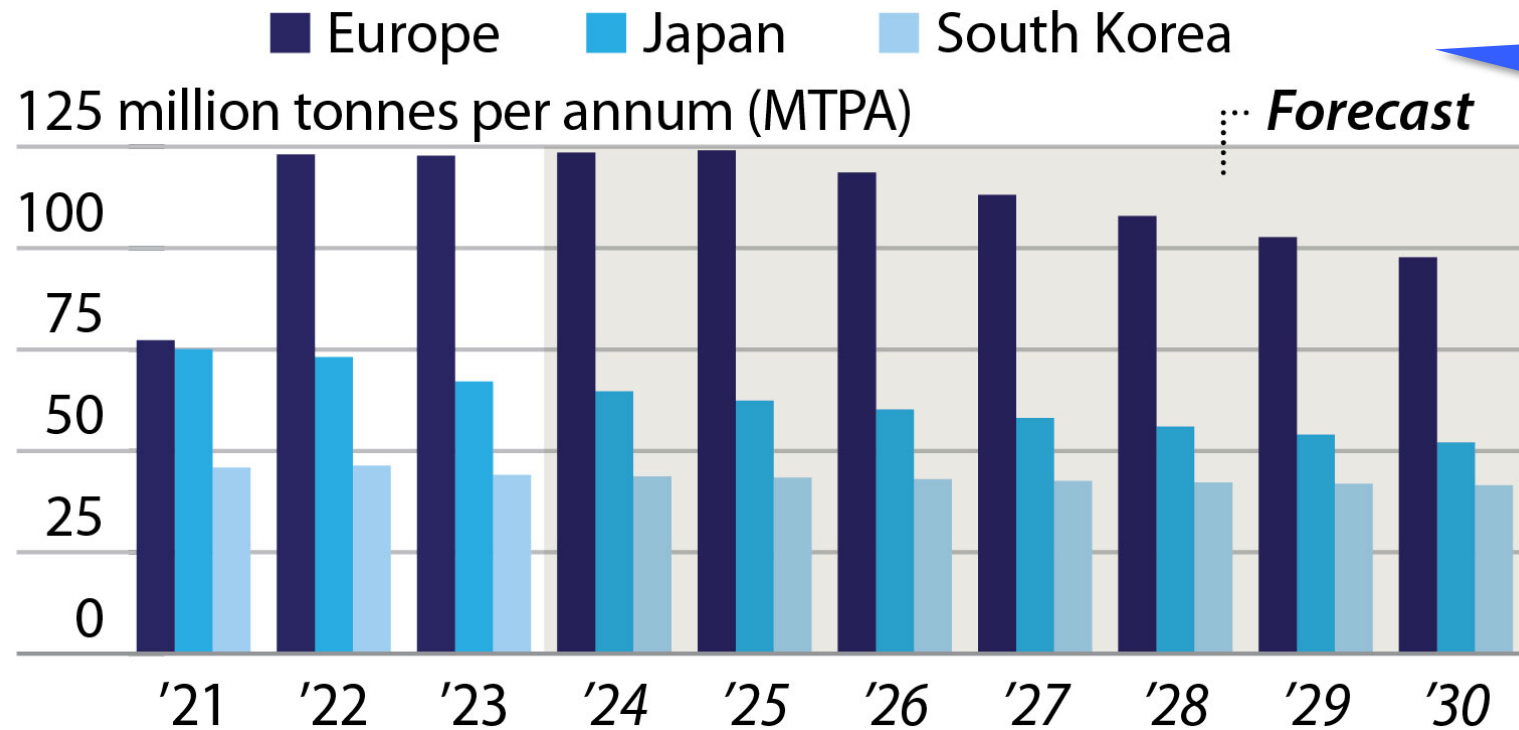
Global LNG markets will soon see a supply glut



Low-cost Qatar and the US dominate new supply

Source: IEEFA, *The Future of Australian LNG*.

Demand in mature markets is starting to decline



Together accounted for >50% of global LNG consumption in 2023

Sources: GIE, Kpler, Eurostat, UK ONS, MOTIE, KITA, METI IEEFA

Other Asian markets are also facing barriers to demand growth

The IEA expects China to be over-contracted by 2030

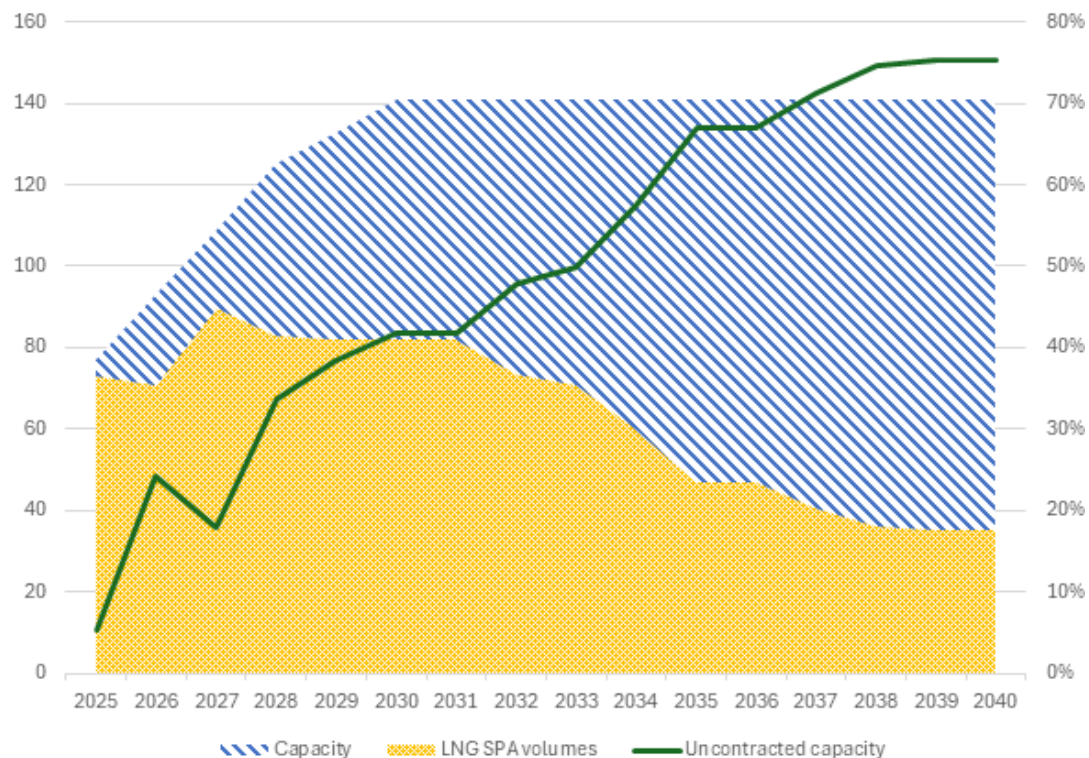
Domestic natural gas production, additional pipeline imports and other energy sources may constrain LNG demand growth in **China**.

In **South Asia**, fiscal challenges and the inherent volatility of LNG prices may limit rapid short-term demand growth, especially in the power sector.

In **Southeast Asia**, LNG infrastructure projects have often faced extensive development timelines, contract negotiations, and repeated project delays.

The spot market is likely to become flooded with uncontracted gas

Contracted & uncontracted LNG capacity, Qatar, MTPA



As at May 2024

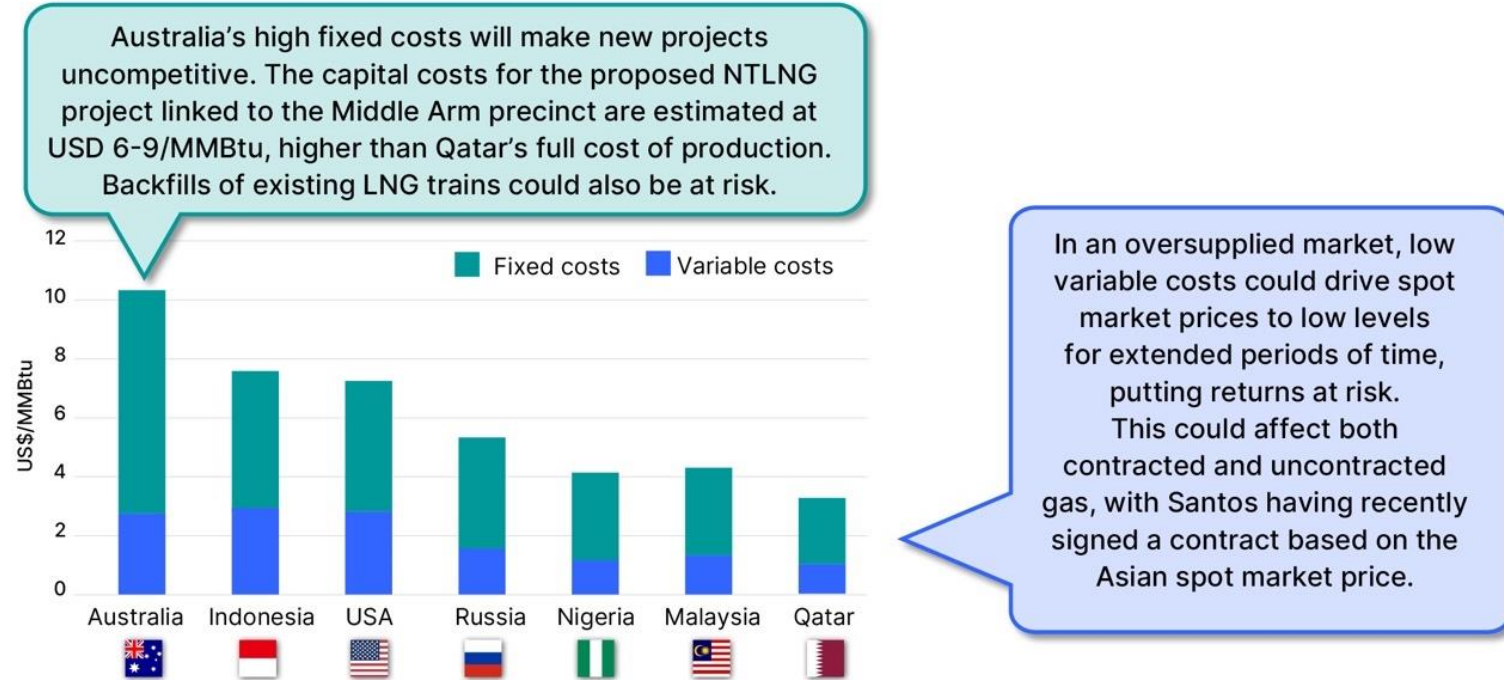
Gas looking for end buyers:

- **Qatar:** 60 mt by 2030
- **Portfolio players:** >100 mt by 2025
- **Japan:** 50 mtpa by 2030
- **Europe:** 29 mtpa by 2030

Source: Kpler; IEEFA, *The Future of Australian LNG*.

NTLNG project may struggle to secure financing due to higher costs

Production cost curve of select LNG exporters

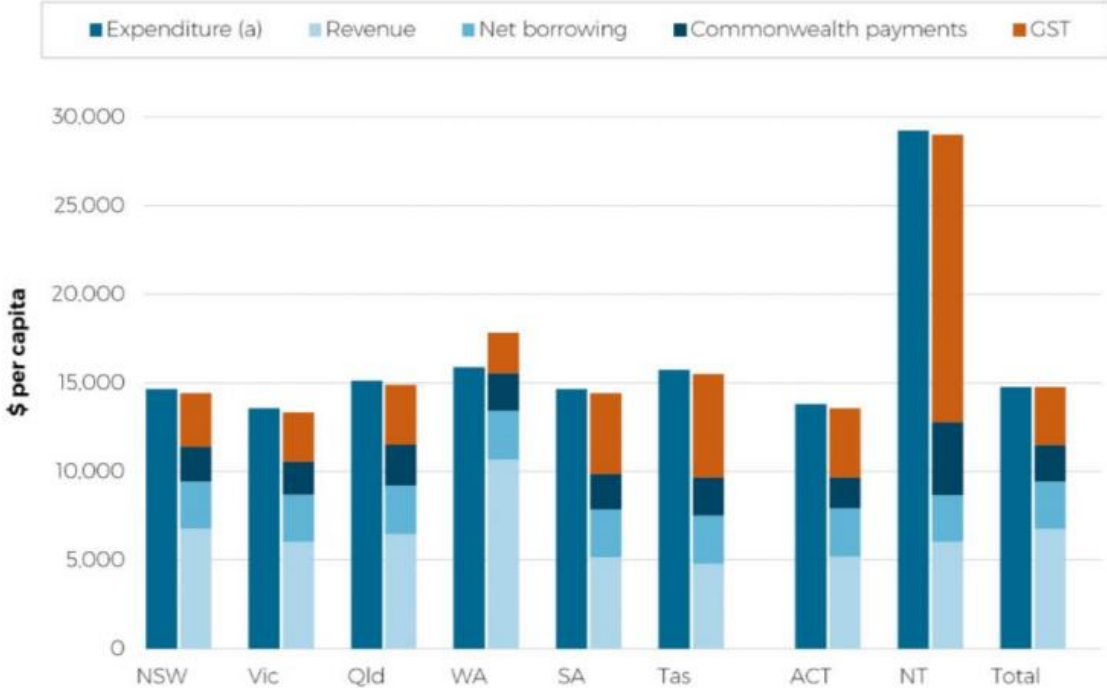


Source: DISR, Future Gas Strategy Analytical report; IEEFA, The Future of Australian LNG.

The MASDP plan poses financial risks

The level of government funding will strain government fiscal arrangements

Assessed budgets per capita (excludes no worse-off payments)



Source: Commonwealth Grants Commission. GST Revenues Sharing Relativities.
 Note: Expenditure includes expenses and investment.

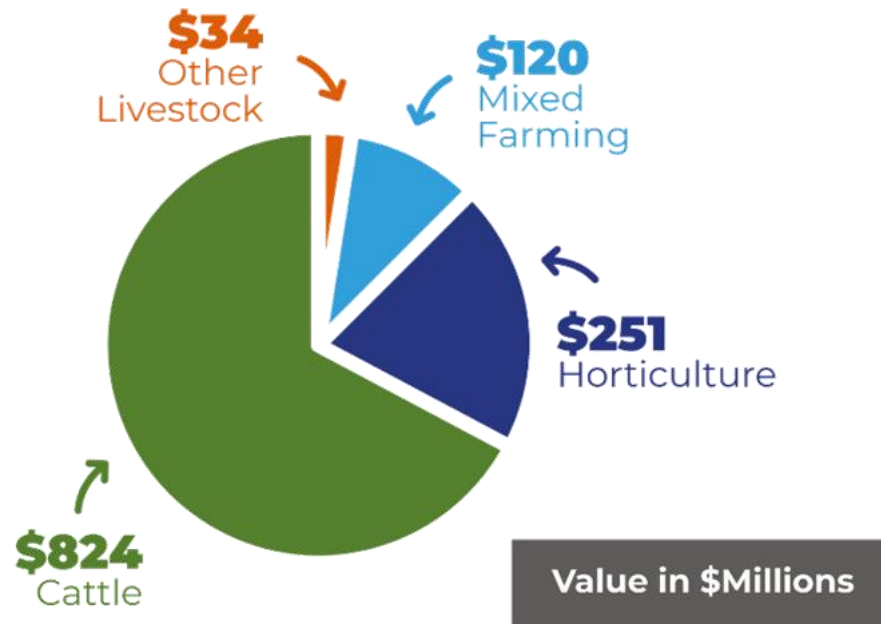
The NT plan anticipates a 10-year infrastructure package from the Commonwealth (outside the GST process), but short- and long-term revenue and expense implications are likely to be material to current and future intergovernmental budgets

Source: IEEFA, Middle Arm gas and petrochemicals hub.

Development of NT gas creates financial risks for other industries

NT PRODUCTION (2018 - 2019)

Source: Department of Primary Industry and Resources, 2019



- Fracking poses significant water risks and regulations are not likely to protect the Australian public
- The US mandates failed, and polluted drinking water led to civil and criminal actions
- Development of the Beetaloo will create risks for key industries, particularly agriculture and tourism

Source: Industry Skills Advisory Council NT; IEEFA, *Beetaloo a \$10 billion pipe dream for gas producers.*

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