Department of Industry, Innovation and Science submission to the Review of the PRRT Gas Transfer Pricing Arrangements

September 2019

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# Submission structure

This submission by the Department of Industry, Innovation and Science (the department) provides an overview of Australia’s offshore oil and gas industry. It highlights the important economic contribution the industry makes, key global challenges and some emerging issues that may be relevant to the Treasury’s Review of the PRRT Gas Transfer Pricing Arrangements (the Review).

The department, and relevant portfolio agencies, has responsibility for policy development, regulation and legislation governing offshore petroleum resources in Commonwealth waters. This submission reflects that scope of responsibility.

# Introduction

Australia’s prosperity and status as a leading energy supplier to the world depends on retaining and attracting investment in our resources sector.

For Australia to realise the full potential of its resources – and the multi-billion dollar multi-generational benefits it provides to the Australian community and economy – a stable regulatory and attractive tax framework is critical.

How offshore oil and gas industry policy objectives link with tax policy objectives – to support investment, innovation and encourage industry collaboration – are key issues for the department and the Australian Government.

Australia’s giant gas field discoveries have underpinned world-leading projects and first-class infrastructure, mostly developed on a standalone basis, where offshore fields are developed as one project with supporting offshore and onshore processing infrastructure. These include the Pluto, Wheatstone, Gorgon, Ichthys and Prelude LNG projects. The upstream development of much of Australia’s resources has historically been conducted in tandem with the construction of downstream processing infrastructure.

The decision to invest by these project’s joint venture partners involves, among many other factors, consideration of the resources in their foundation petroleum production licences – and their petroleum retention leases as future fields for infill.

Attracting and retaining new investment, especially in frontier areas, is strongly influenced by the opportunities and risk companies are willing to take. Their decisions are underpinned by the regulatory, financial and tax regime in which Australia competes internationally.

The role of Government is to support development with a fit for purpose regulatory framework – and ensure Australians receive a fair share from the development of our resources.

# The National Resources Statement

The 2019 National Resources Statement (the Statement) sets out the Australian Government’s policy and long-term reform agenda for the Australian resources sector. This strategic long-term approach aims to position Australia’s resources sector as the world’s most advanced, innovative and successful.

It includes a 5 point action plan to:

* deliver the most globally attractive and competitive investment destination for resources projects
* open up new industries and resources regions
* better focus the sector’s innovation, research and development on long-term, sectoral growth
* develop and retain the world’s best workforce
* deliver better outcomes for stronger and more engaged communities

Action 1 of the Statement notes that Australia has a consistent and stable framework for the release of offshore areas for exploration (‘offshore acreage‘). This is reflected in the world-leading investments made in Australian waters – but there is potential to better market Australia’s opportunities.

# Australia’s offshore oil and gas industry

Australia’s offshore oil and gas industry is a major multi-billion dollar contributor to Australia’s prosperity, energy security, employment and terms of trade. Investment exceeding AU$260 billion in Australia’s oil and gas sector since 2007 has fuelled opportunity and growth.

Australia has been successful in attracting, retaining and growing a world-class offshore oil and gas industry. The industry has adapted to global demand patterns, and developed and adopted innovative technologies. Australia’s oversight of the industry has ensured a leading reputation in offshore titles management and the regulation of health, safety and the environment.

### Energy and investment

As one of the world’s two largest exporters of LNG (along with Qatar), Australia has a solid reputation as a reliable long-term energy supplier to Asia. This supply is a result of the ten operating LNG projects in Australia – seven supplied by gas from Australia’s offshore waters and three supplied by east coast onshore gas.

Five projects in Australia’s north-west account for close to three quarters of the value of Australia’s LNG investment since 2007: Gorgon, Wheatstone, Prelude, Ichthys and Pluto. Attachment A provides a summary of Australia’s LNG facilities, their ownership, development milestones, production capacity and capital investment.

The foundation North-West Shelf project has both exported LNG and provided gas to the domestic Western Australia market for more than 30 years. The planned development of the Burrup Hub in Karratha, Western Australia, is dependent on collaborative industry efforts to realise the potential of the Browse fields and the Scarborough projects (*see* box on page 8). The Gippsland Basin is the dominant source of offshore gas supply to south east Australia, with about half of total demand for domestic gas coming through the Longford Gas Plant.

Petroleum exploration expenditure (both onshore and offshore) was $881 million in the 2018-19 financial year, up 21 per cent year-on-the 2017-18 financial year.[[1]](#footnote-2) However, exploration expenditure has fallen for over a decade, and the 2018-19 result provides a preliminary indication that 2017-18 may have been the bottom. High oil prices in Australian dollar terms and domestic prices on the east coast may have motivated a modest return of confidence in the oil and gas industry.[[2]](#footnote-3)

### Economy and export value

The large LNG investments over the past decade continues to contribute significantly to Australia’s economy – in February 2018 the Reserve Bank of Australia forecast that LNG exports were expected to contribute around a quarter percentage point in GDP growth per year.[[3]](#footnote-4) The May 2019 Statement on Monetary Policy by the Reserve Bank of Australia[[4]](#footnote-5) noted that LNG exports continue to grow strongly and are expected to increase further over the next year or so, as production from the final LNG projects in Western Australia continues ramping up.

In 2018-19 the value of Australian oil and gas exports was just over AU$59 billion. The vast majority of this - $50 billion – was LNG. According to the Department of Industry, Innovation and Science’s Office of the Chief Economist, export earnings are forecast to lift to $52 billion in 2019–20, driven by growing export volumes, before falling back to $49 billion, as prices ease. Australian LNG export prices are forecast to decline slightly in 2019–20 and 2020–21, due to an appreciating exchange rate and easing oil-linked contract prices (at which most Australian LNG is sold).[[5]](#footnote-6)

The oil and gas industry paid almost AU$1 billion in Petroleum Resource Rent Tax in 2017-18.

Offshore gas supplied projects in Western Australia and the Northern Territory which represent
71 per cent of Australia’s installed production capacity of 88 million tonnes per annum.

About 70 percent of Australia’s crude oil and condensate production is from the Carnarvon Basin in north-western Australia. The composition of Australia's oil exports is changing, with condensate exports growing strongly since 2015 while crude oil exports have declined. Condensate output is forecast to grow 10 per cent a year. The start-up of INPEX’s Ichthys facility in late 2018 has resulted in new condensate production.

The presence of condensate in new gas field developments is an important factor in determining project commerciality as it adds an additional income stream for the project.

**Figure 1: Australian LNG export volumes and values**

### Innovation, science and supporting communities

Australia’s offshore oil and gas industry is a significant investor in innovation, science and technology. It includes pioneering world-class infrastructure and rapid new technology adoption:

* Shell’s Prelude Floating Liquefied Natural Gas (FLNG) facility is the world's largest FLNG vessel and the biggest offshore floating facility.
* The US$60 billion Gorgon project is the largest single resource project in Australia’s history, one of world’s largest LNG projects and includes the world’s largest commercial-scale CO2 injection and storage project.
* The Ichthys project includes the longest subsea gas export pipeline in the southern hemisphere 890km and the world’s largest semi-submersible platform.

Community investment by the industry takes many forms. These include multi-million dollar programs to support: local businesses, indigenous advancement, trade training centres, STEM curriculum materials in schools, employee time for volunteering, sharing research on local environmental issues, funding festivals, research and innovation centres and many other community and cultural activities.

This community investment has also included direct support of local businesses and indirect benefits from spending by a highly paid workforce in regional areas. Schools, medical centres, airports, heli-ports, parks, roads, jetties and job opportunities have greatly improved the amenity and cultural vibrancy of northern and regional towns such as Onslow, Karratha and Broome and Darwin.

**Supporting Communities – the Larrakia Ichthys LNG Foundation Trust**

INPEX, as the operator of Ichthys LNG onshore processing facilities in Darwin, established the Larrakia Ichthys LNG Foundation Trust in consultation with the INPEX Larrakia Advisory Committee on behalf of the Larrakia, the Traditional Owners in Darwin.

This Trust will contribute a total of $24 million over the its lifespan, providing education, employment and  a number of other benefits to support the Larrakia people during the next 40 years of INPEX’s Ichthys LNG operations.

The Trust is funded by INPEX and the Ichthys LNG Joint Venture participants in recognition that Ichthys LNG onshore LNG processing facilities at Bladin Point were constructed and are hosted on Larrakia traditional lands.

The signing of the agreement formalising the package was witnessed by Minister for Resources and Northern Australia Matt Canavan and Northern Territory Chief Minister Michael Gunner, with INPEX President and CEO Takayuki Ueda also in attendance.

The Trust structure ensures the funds are distributed for the sole benefit of the Larrakia people, the Traditional Owners of the land on which the LNG plant has been developed. The initial focus areas of the Trust include the provision of education opportunities and support for Larrakia elderly and people with disabilities.

The first milestone occurred when $3 million was paid into the Trust to celebrate the start of the initiative, followed by a further $1 million that will be allocated to mark the Ichthys LNG onshore processing facilities achieving 8.4 million tonnes per annum in LNG production.

The construction phase of Ichthys LNG has already supported more than 62 Aboriginal and Torres Strait Islander- owned businesses and engaged more than 1,450 Aboriginal and/or Torres Strait Islander peoples.

# The future of Australia’s offshore resources

As of the end of 2017 Australia’s remaining offshore oil and gas reserves included over 68 trillion cubic feet (Tcf) of gas, 339 million barrels (Mmbbls) of oil, 1,329 Mmbbls of condensate and 201 Mmbbls of LPG. Further contingent resources included over 102 tcf of gas and 1,497 Mmbbls of condensate.

While many offshore gas discoveries have remained sub‑economic, Australia’s gas reserves will substantially increase as projects come on-line, field sequencing for major projects are determined, wells are drilled to reduce uncertainty and collaborative commercial developments are progressed.

Future development of Australia’s offshore gas resources is less likely to involve the integrated development of upstream and downstream infrastructure. Instead, future development is more likely to involve the development of new fields as backfill or the incremental expansion of existing infrastructure. This is a consequence of declining production from foundation projects and the economics of developing greenfield facilities in a country that already has ten operational projects, some of which have space for future expansion. While some of these will be large fields (such as the Browse fields and Scarborough) many of these will be smaller as industry needs to utilise smaller, more distant, or more technically complex fields for infill.

To realise the development of these smaller and often more isolated fields, collaboration is critical. Collaboration can spread the risk on project investments, encourage third-party participants, enable third-party infrastructure access (and development) and can foster equitable tolling arrangements. Collaboration will underpin the next wave of development of Australia’s offshore resources.

Failure to realise Australia’s offshore resources potential could result in inefficient infrastructure use, sub-optimal and delayed development outcomes and stranded fields. This has flow-on effects to the broader economy, the sustainability of regional areas, small and medium businesses and jobs. These issues reflect the department’s support of the Review’s objective to:

*ensuring the regulations are fit for purpose into the future and compatible with emerging developments in the industry, such as liquefied natural gas (LNG) tolling arrangements and third party processing.*

**Incentivising collaboration**

Tolling and an increased need for cross project and regional collaboration is expected to become more significant in the development of future Australian gas resources. Ensuring these arrangements are supported by a suitable offshore titles regulatory regime is an emerging focus of the Australian Government’s policy. This is critical to ensure the timely identification of gas fields for backfill to existing infrastructure. The commercial implementation of these arrangements requires multi-level and complex negotiations and financial arrangements.

The development of the Browse project (utilisiing the Calliance, Brecknock and Torosa fields) is a significant development in the evolution of the Australian oil and gas industry – and reflects a shift to tolling arrangements to backfill existing facilities. The Joint Venture arrangements of the upstream and downstream parts of the project has produced a number of challenges for participants. While the parties all recognise the benefits of the Browse project as backfill there is still a need to align joint venture interests and timeframes for development.

During consideration of the NWS developments Chevron Australia publicly raised the idea of a Trans Carnarvon Basin Trunkline. Such a pipeline could link the Scarborough, Thebe and the Exmouth fields, to existing gas facilities such as the North-West Shelf, Pluto and Wheatstone. Chevron noted that it would be a multi-user open access offshore pipeline, connecting shared offshore infrastructure to create an interconnected basin.

There are many challenges to realising this trunkline concept – including ownership structures and financing around uncertainty. The uncertainty relates to the available projects to use this pipeline, timelines and gas specifications – all of which affects the size of the pipe required (which impacts the cost). These commercial decisions are complex when clarity about the nature and timeline of future developments is uncertain.

But this concept does highlight the potential benefits of collaboration as the industry transitions toward tolling arrangements – but alignment of joint venture interests will be the determining factor to realise timely development.

### Transitioning from vertical integration to tolling infrastructure

The majority of Australia’s offshore developments are through joint venture arrangements that enable flexibility, minimise costs and help share the risk of investments. How these joint venture interests and ownership structures align in the transition from vertical integration to tolling and third-parties – is a key area of focus for Australia’s offshore resources policy.

The potential for the North West Shelf, detailed below, highlights the need for alignment of interests to enable timely development. Production from the Browse fields, and potentially other fields in the Carnarvon Basin, would transition the Karratha Gas Plant into a third-party tolling facility and extend the life of the facility for decades.

### Woodside’s Burrup Hub

Woodside’s Burrup Hub project located in Karratha Western Australia, aims to create a regional LNG production hub on the Burrup Peninsula. It proposes the development of around 25 trillion cubic feet of gross dry gas resources from Browse (US$27 billion), Scarborough (US$16 billion) and Pluto using North West Shelf infrastructure. It also involves processing gas from offshore fields through existing or expanded onshore infrastructure. These developments are expected to involve commercial tolling arrangements with existing infrastructure owners.

Production from the Scarborough gas field could include new offshore facilities connected to a brownfield expansion of the existing Pluto LNG onshore facilities, including construction of a second LNG train. Expansion of the Pluto onshore facilities would also provide the potential to accelerate other offshore Pluto gas reserves and would help enable future development of third-party resources.

In 2018 the North West Shelf (NWS) Joint Venture participants executed non-binding preliminary agreements with both the Browse Joint Venture and Chevron (as titleholder of the Clio-Acme fields) to further progress both projects to processing their respective offshore gas resources through the NWS facilities. The NWS Joint Venture continues to work towards agreement on a Gas Processing Agreement to enable the NWS Joint Venture to enter into a binding agreement with other resource owners for the provision of services.

Upcoming Final Investment Decisions for the Burrup Hub will consolidate the many commercial interests and potential development concepts – and the decisions will take account of the tax and regulatory context in which these developments could be realised.

Other examples of the need for alignment include Woodside’s proposal for an interconnector pipeline (to transport gas from Pluto LNG to Karratha Gas Plant). It would be owned and operated by a third party and provide increased flexibility around the management of gas transported to the Pluto and NWS facilities.

These changes highlight some of the opportunities and challenges facing infrastructure owners and joint ventures as they transition to tolling arrangements. The opportunities include more options to get gas to markets by using existing infrastructure – which is without the high cost of investment in new LNG facilities, and helps avoid significant regulatory and approvals processes.

**Risk allocation and managing transition**

A key challenge in the transition to tolling is the allocation of risk between upstream titleholder and downstream infrastructure service providers, and the appropriate level of return on existing and future infrastructure investments.

In an integrated LNG project, ownership is aligned across upstream and downstream and as such risk allocation is not a consideration. Creating a tolling structure will require the allocation of risk between upstream and downstream and will be a factor in attracting other resource owners and the financial success of the infrastructure project.

Infrastructure owners are likely unwilling take on risks that are within the control of resource owners. Similarly, resource owners are unlikely to bear the risk of the performance of the downstream infrastructure provider. Flexibility, communication, collaboration and a clear commitment to realise timely development are needed to realise equitable arrangements.

As the industry moves to develop new gas fields to replace declining resources, foundation infrastructure users in what started as an integrated LNG project are likely to be faced with the need to put in place tolling arrangements for resource owners that were not part of the original arrangements. Some of these fields could be developed by smaller companies and may be more expensive to develop. As such tolling arrangements which result in extra costs for upstream developers may be to the detriment of the development of new fields. Consideration of these issues may be relevant to the Review.

The department also notes that offshore gas pipelines are typically not subject to Australia’s third party access regime for gas pipelines. This is due to pipelines in the upstream of processing facilities being currently exempt from the access regime.

# Global energy markets

LNG business models, investments, trade, markets and global value chains are evolving. Australia needs to reflect on the global trends changing the industry – to ensure that our policy settings encourage ongoing investment and development.

**Pre-2000 LNG business model**

Before 2000, LNG trade in Asia was characterized by point-to-point business model, long-term contracts, oil-linked pricing and inflexible non-pricing contractual terms.

A typical LNG project sold gas to a small group of buyers, with dedicated ships taking gas between the seller’s liquefaction plant and the buyers’ regasification terminals.

LNG was traded on long-term contracts, sometimes in excess of 20 years. LNG projects require a large upfront capital investment, and long-term contracts provided LNG project developers with a degree of revenue and volume certainty required to access project finance. Buyers were also willing to lock-in long term contracts as a way of ensuring supply for newly built gas plants for power generation.

These long-term contracts often included terms on matters not related to prices. Destination clauses, for instance, prevented a buyer from reselling LNG cargoes until they were delivered to the buyer’s port.

In Asia, LNG prices were linked to the price of crude oil. When Japan began importing LNG, oil was the main fuel competing with natural gas in power generation, and consequently an oil-price linkage was adopted in LNG contracts. When other Asian buyers entered the market — South Korea (1986), Taiwan (1990), India (2004) and China (2006) — they too adopted this pricing approach. Oil-indexed pricing allowed buyers and sellers to access liquid oil futures markets to manage price risk through hedging.[[6]](#footnote-7)

**Post 2000 LNG business model**

Since 2000, spot and shorter-term trading markets began to grow, providing buyers with access to different pricing arrangements, shorter contract lengths and more flexible contract terms.

The point-to-point business model also started to fade and LNG ‘portfolio players’ emerged. The percentage of the global LNG market held in short term contracts (4 years or less) and the spot market increased from just over 20 per cent in 2010 to 40 per cent in 2017 before surging to 50% in 2018.[[7]](#footnote-8)

More recently, the Australian experience (noted above) of a partial shift from integrated LNG projects to more distinct upstream and downstream activities, is reflected globally – which is starting to make LNG markets look more like oil markets.

At the same time there is increasing investment in value chain integration – companies are seeking downstream integration to enable shorter lead-times, lower costs and flexible arrangements.

For example, investments in storage can help LNG sellers cater to seasonal demand and benefit from regional arbitrage opportunities. LNG import terminals provide economic access to new or growing gas markets that may be constrained by a lack of infrastructure.

This liquidity is also driving the growing role of intermediaries – portfolio deals and commodity traders are playing an important role in connecting new and diverse sources of supply and demand. These ‘portfolio players’ produce LNG and/or purchase it from different regions – supplying buyers from their global portfolio, rather than from a specific LNG project. These players or intermediaries are acting as long-term buyers, project financiers and project partners.

**Global LNG prices**

LNG markets have seen a major expansion in global supply capacity over the past few years, particularly in the United States, Australia and Russia. Growth in global supply capacity has pushed LNG spot prices in Asia to near record low levels.

Recent falls in LNG spot prices has resulted in divergence from long-term oil-linked contract prices. A key question is what the implications of this decoupling might be, especially if decoupling endures for a sustained period. Previous periods of low spot prices have encouraged buyers to push for shorter, more flexible contracts and gas-based pricing – rather than traditional oil-linked pricing arrangements.[[8]](#footnote-9)

Short-term and spot trades will continue to be a major part of the LNG market. This growth is driven by: increasing volumes, especially from the US and Qatar, which are linked to other gas markets for example the Henry Hub price; increasing uncommitted shipping capacity; a large amount of unused regasification capacity, particularly in Europe (worldwide average utilisation rate in terminals is 30-40 per cent); and increasing demand for spot volumes, particularly from the Asia Pacific.

### Australia’s global supply role

Australia’s offshore oil and gas industry includes oil and gas supermajors, mid-tier, junior players, niche service providers and substantial foreign investment. Since a final investment decision was made on the Pluto project in 2007 almost $200 billion has been invested in Australia’s offshore gas infrastructure and associated LNG processing. Along with a further investment of over $60 billion in CSG based projects in Queensland, this has taken Australia to a position of being on par with Qatar as the world’s largest LNG exporter. This reflects Australia’s reputation as reliable supplier with low sovereign risk and a stable regulatory policy.

**Japan**

Japan remains Australia’s largest LNG destination and is the world’s largest importer of LNG. Japan takes 44 per cent of Australia’s LNG exports.

**China**

Australia is the largest supplier of LNG to China, taking about a third of Australia’s LNG exports. China was the second largest LNG buyer in the world in 2018 and will be the main driver of global gas demand accounting for about 40% of total gas demand increase to 2024. Australian LNG has been part of China’s coal-to gas switching policy. This policy has significantly contributed to LNG demand increases and potentially averted 40 million tonnes of CO2 emissions[[9]](#footnote-10).

**South Korea**

South Korea was the world’s third largest buyer of LNG in 2018. Australia supplied 17 per cent of South Korea’s LNG and 12 per cent of Australia’s LNG exports went to South Korea. South Korea’s long-term plan is to shift its energy mix towards renewables and gas, and away from nuclear and coal. This is reflected in the recent lowering of the LNG import tax by 75 per cent, while the tax on coal was raised by 28 per cent.

**Figure 2 – Australia’s LNG supply capacity**

### Growing demand – and competition

Incentivising multi-national oil and gas companies to choose Australia as the preferred investment destination, is an issue of aligning Australia’s development opportunities and global investment portfolio priorities.

Global demand for LNG is growing. Growth is being led by China as it switches to gas for energy generation, and other countries in emerging Asia. Gas demand in the coming five years is set to be driven by the Asia Pacific, forecast to account for almost 60% of the total consumption increase to 2024 (IEA). Australia is in a prime position to supply the increasing gas demand from the Indo-Asia Pacific region. India’s gas demand has doubled since 2010. Global IMO rulings on reducing the sulphur content of bunker fuel is driving a shift to LNG. If the world’s shipping fleet ran on LNG an additional 200+ Mtpa of LNG demand is estimated – compared to 313 Mtpa total global demand today.

Global competition – for markets and capital are key challenges for the Australian offshore oil and gas industry. Australia is facing strong competition from lower-cost gas producers such as Qatar and the United States (US) and new players like Mozambique. US LNG production is projected to reach 86 mt in 2025 and 115 mt in 2040 with the US accounting for the majority of new liquefaction proposals.

Australia faces growing competition at a time when a number of our long term contracts are reaching their expiry in the next few years particularly for the NWS and Darwin LNG projects (*see* Attachment B). These expiries roughly align with the expected field project life when the contracts were executed and so the financing of backfill arrangements coincides with the expiry of current contracts.

Many of Australia’s long term customers have been raising concerns about the perceived high prices of Australian gas. In order to continue to maintain a foothold in these markets Australian gas will need to be priced competitively.

# Conclusion

This submission has provided an overview of Australia’s offshore oil and gas industry, the future potential investment and some of the key changes and challenges that face industry and governments. A key objective for Australia’s offshore oil and gas industry policy is to ensure Australia continues to attract and retain investment.

Booming exports, growing Asian demand, growing capacity, storage and regasification terminals and a trend toward tolling are some of the dynamics that are re-shaping how the industry invests, adapts and restructures in a global market. The growth in new portfolio players, supply competitors regional hubs and information is deepening liquidity and providing flexibility to link LNG supply and demand.

These global dynamics require Australia to ensure that our industry can seize the opportunities, and capture the value from evolving supply chains. It also requires policy settings that encourage collaboration to ensure legacy infrastructure is fully utilised and our offshore oil and gas fields are not stranded. Australia’s unique geology and geography and current state of play requires a broad appreciation of the dynamics shaping the industry at the local and global level.

# Attachment A

## Australia’s LNG development projects – as at 23 August 2019

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Project** | **Investors (Operator in Bold)** | **LocationBasinPlant** | **Final Investment Decision (FID) and First Gas (FG)** | **Size** | **Cost[[10]](#footnote-11)** |
| North West Shelf | **Woodside** (16.67 percent)Shell (16.67 percent )BP Developments 16.67 percent)Chevron (16.67 percent )BHP Billiton (16.67 percent ) MIMI (16.67 percent )CNOOC (gas and associated liquids 5.3 percent only) | WACarnarvonKarratha | FG 1989 (pipeline gas in 1984) | 16.9 Mtpa5 trains  | A$34b |
| Darwin LNG | **ConocoPhillips** (56.94 percent)ENI Australia (10.99 percent )Santos (11.49 percent )INPEX (11.38 percent )JERA (6.13 percent )Tokyo Gas (3.07 percent)  | NTJPDADarwin | FG 2006 | 3.7 Mtpa1 train  | Not available |
| Pluto LNG | **Woodside** (90 percent)Tokyo Gas (5 percent )Kansai Electric (5 percent ) | WACarnarvon Karratha | FID 2007FG 2012 | 4.9 Mtpa1 train | A$14.9b |
| Queensland Curtis LNG | **Shell** (50 percent T1, 97.5 percent T2)CNOOC (50 percent in T1)Tokyo Gas (2.5 percent in T2) | QLDSuratGladstone | FID Oct 2010FG Jan 2015 | 8.5 Mtpa2 trains | A$20.4b |
| Gladstone LNG | **Santos** (30 percent)Petronas (27.5 percent)Total (27.5 percent)KOGAS (15 percent) | QLDBowen and SuratGladstone | FID Jan 2011FG Oct 2015 | 7.8 Mtpa2 trains | A$18.5b |
| Australia-Pacific LNG | **Origin Energy** (37.5 percent )ConocoPhillips (37.5 percent )Sinopec (25 percent ) | QLD Bowen and SuratGladstone | FID T1 Jul 2011 T2 Jul 2012FG Jan 2016  | 9 Mtpa2 trains | A$24.7b |
| Gorgon LNG  | **Chevron** (47.333 percent)ExxonMobil (25 percent) Shell (25 percent)Osaka Gas (1.25 percent)Tokyo Gas (1 percent)JERA (0.417 percent) | WACarnarvonBarrow Island | FID 2009FG Mar 2016 | LNG – 15.6 Mtpa3 trains  | US$60b |
| Wheatstone LNG  | **Chevron** (64.14 percent\*)Woodside (13 percent )KUFPEC (13.4 percent )Kyushu Electric (1.46 percent), PE Wheatstone part owned by JERA (8 percent) \*Plant. Gas field Chevron (80.17 percent and PEW 10 percent) | WACarnarvonOnslow | FID Sept 2011FG Oct -2017 | LNG - 8.9 Mtpa2 trains | US$34b |
| Ichthys LNG  | I**NPEX** (62.245 percent)Total (30 percent )CPC Corporation Taiwan (2.625 percent)Tokyo Gas (1.575 percent)Osaka Gas (1.2 percent)Kansai Electric Power (1.2 percent)Chubu Electric (0.735 percent)Toho Gas (0.42 percent) | WABrowseDarwin | FID Jan 2012FG Nov 2018 | 8.9 Mtpa2 trains | Over US$45b  |
| Prelude Floating LNG | **Shel**l (67.5 percent)INPEX (17.5 percent)KOGAS (10 percent)OPIC (CPC Taiwan) (5 percent) | WABrowse | FID May 2011FG 18 | 3.6 Mtpa1 train | US$12.6b  |

# Attachment B

Upcoming Expiring LNG Contracts[[11]](#footnote-12)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Project | Seller | Buyer | ACQ (Mtpa) | Began  | Ends |
| North West Shelf | Woodside, Shell, BHP, BP Australia, Chevron, Japan Australia LNG | Chugoku Electric | 1.43 | 2009 | 2021 |
|  |  | JERA | 0.5 | 2009 | 2019 |
|  |  |  | 0.3 | 2009 | 2024 |
|  |  | Kansai Electric | 0.5-0.93 | 2009 | 2024 |
|  |  |  | 0.2-0.44 | 2009 | 2024 |
|  |  | Kyushu Electric | 0.7 | 2009 | 2023 |
|  |  |  | 0.5 | 2006 | 2021 |
|  |  | Toho Gas | 0.76 | 2009 | 2019 |
|  |  | Tohoku Electric | 1 | 2010 | 2018 |
|  |  | Tokyo Gas | 0.5 | 2009 | 2024 |
| Darwin LNG | ConocoPhillips, ENI, Santos, INPEX, JERA, Tokyo Gas | JERA | 2 | 2006 | 2022 |
|  |  | Tokyo Gas | 1 | 2006 | 2022 |
| Pluto LNG | Woodside, Tokyo Gas, Kansai Electric | Kansai Electric | 1.75-2 | 2011 | 2025 |
|  |  | Tokyo Gas | 1.5 | 2011 | 2025 |
| Gorgon | Chevron | SK Group | 0.83 | 2017 | 2021 |

1. Australian Bureau of Statistics, Mineral and Petroleum Expenditure Australia, Catalogue 8412.0 [↑](#footnote-ref-2)
2. <https://publications.industry.gov.au/publications/resourcesandenergyquarterlyjune2019/documents/Resources-and-Energy-Quarterly-June-2019.pdf> [↑](#footnote-ref-3)
3. https://www.rba.gov.au/publications/smp/2018/feb/pdf/statement-on-monetary-policy-2018-02.pdf [↑](#footnote-ref-4)
4. https://www.rba.gov.au/publications/smp/2019/may/pdf/statement-on-monetary-policy-2019-05.pdf [↑](#footnote-ref-5)
5. <https://publications.industry.gov.au/publications/resourcesandenergyquarterlyjune2019/documents/Resources-and-Energy-Quarterly-September-2019.pdf> [↑](#footnote-ref-6)
6. https://publications.industry.gov.au/publications/resourcesandenergyquarterlyjune2018/documents/Resources-and-Energy-Quarterly-June-2018-Asian-LNG-trade.pdf [↑](#footnote-ref-7)
7. GIIGNL 2019 Annual Report p29 [↑](#footnote-ref-8)
8. <https://publications.industry.gov.au/publications/resourcesandenergyquarterlyjune2019/documents/Resources-and-Energy-Quarterly-June-2019.pdf> [↑](#footnote-ref-9)
9. IEA Global Energy and CO2 Status Report [↑](#footnote-ref-10)
10. Estimates from company statements, public presentations and industry estimates. [↑](#footnote-ref-11)
11. International Group of LNG Importers 2019 Annual Report [↑](#footnote-ref-12)