Why WA energy prices have tripled

Wholesale gas and electricity prices have tripled in Western Australia since 2020, when the WA Government first permitted export of domestic gas, linking the domestic and international markets. Approval for the Woodside's proposed North West Shelf Extension will lock in this link for the long term, leading to increased costs for West Australian households and companies.

Discussion paper

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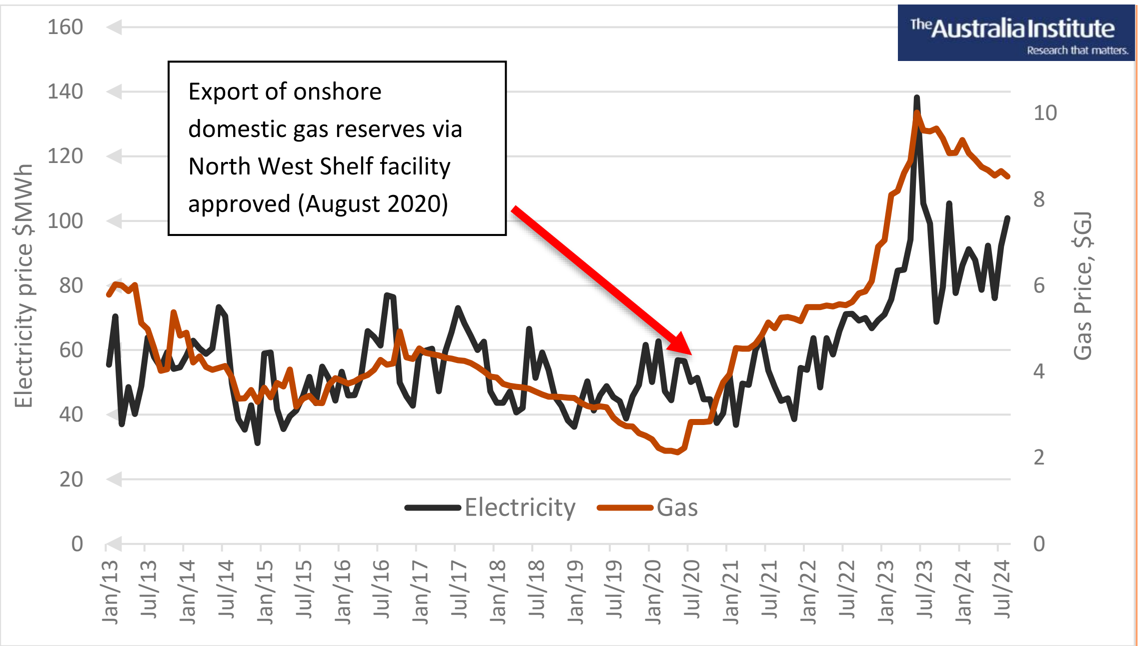
Summary

Gas and electricity prices have tripled in Western Australia's wholesale markets since 2020, as shown in Figure A below:

Figure A: WA wholesale gas and electricity spot prices



Sources: GasTrading Australia (2024) *Historical Prices and Volume*, OpenNem (2024) SWIS, openelectricity.org.au

The reason for this increase is that the domestic wholesale gas market is now linked to higher-priced international markets. Wholesale electricity prices follow gas prices in WA because around one third of the state's electricity is from gas-fired generation.

The price rises began in 2020 when the WA Government first permitted export of onshore gas that had been reserved for the WA domestic market. Approvals for further export of onshore gas have strengthened the link between domestic and international prices.

The price rises are not yet a major media or political issue in WA because the impact on retail prices and WA households has been limited to date for several reasons. Firstly, residential energy pricing is regulated in WA, so much of the price rises have been absorbed by the state-owned energy corporations. These corporations also buy much of their gas on long-term contracts, meaning the price rise will take longer than in the short term 'spot' market shown in Figure A.

But the increase will hit households soon according to wholesale buyers and analysts, who describe the WA Government's decisions as "stupid", "shooting [the state] in the foot" and potentially leading to the "de-industrialisation" of regions.

The anger from analysts and wholesale buyers is not only because of the price increases, but also because the consequences of allowing the export of domestic gas and linking domestic and international markets were entirely predictable because this similar situation played out in eastern Australia. From 2014, eastern Australia began to export gas out of Queensland with few restrictions and wholesale prices tripled. Exactly the same thing has now occurred in WA.

Western Australians have long been told that the state's domestic gas reservation policy protects them from the price increases experienced by the east coast. Figure A shows that this is not the case. Even if the 15% reservation policy from offshore fields is enforced (and a recent WA parliamentary inquiry showed it is not), this policy alone cannot separate WA consumers from international gas prices because of how the reservation policy works.

For this separation to be maintained, exporters must be prevented from diverting gas for the WA domestic market for export. This means there must be 100% reservation or effective ban on exports from WA's onshore gas fields. Even modest amounts of exports from onshore reserves have the effect of linking the domestic market with international prices, regardless of the 15% reservation from offshore fields. Former Western Australian Premier Colin Barnett understood this when he said:

> Gas that is onshore in Western Australia belongs to the West Australian Government. It does not belong to the companies. The biggest risk to gas security in Western Australia is the discussions going on with the Labor Government here that onshore gas can be exported. That should never be allowed to happen.

This is exactly what has occurred in recent years in the WA gas market, as WA Labor has allowed significant volumes of gas (up to almost a quarter of the total WA market demand) to be contracted for export via Woodside's North West Shelf (NWS) gas export facility, the largest in Australia. Previously all of this gas was sold to the domestic market. The direct consequence of this change is to reduce the amount of gas available to the domestic market and this has pushed up the domestic price.

Woodside is currently applying for a 50-year extension to its NWS operations. This is a major problem for WA gas markets because there is a huge gap between the amount of gas the NWS has capacity to process and the amount of gas that will be supplied to it from offshore fields. This means that Woodside will be strongly incentivised to pursue further export of WA domestic gas, permanently linking domestic and international prices.

Woodside's motives extend beyond simply supplying the NWS facility — in addition to exports, the company supplies significant volumes of gas to the WA market from several facilities. If gas prices paid by Western Australian customers rise, Woodside and other domestic gas producers will increase profits; a windfall gain and a transfer of wealth from Western Australian households, businesses and taxpayers to gas companies.

The Western Australian Government should not approve the North West Shelf Extension. In the short term it should prioritise the gas supply of the state's households and businesses over gas company profits and in the longer term work to phase out fossil gas altogether.

Introduction

Western Australia's domestic gas reservation policy is widely credited with providing affordable access to gas for the state's consumers and protecting them from the vagaries of world markets. While Australia's east coast gas market has lurched from one crisis to another since liquified natural gas (LNG) export terminals were constructed in Queensland in 2014, WA consumers had largely been spared from major price increases.

These good times have now come to an end in WA. In 2020, the Western Australian Government allowed the export of onshore domestic gas reserves for the first time. This linked the domestic gas market to global prices and saw wholesale gas and electricity prices triple.

The underlying problem is Woodside's North West Shelf (NWS) export terminal. This facility is Australia's largest existing offshore gas export terminal, but the offshore gas reserves developed to feed it are no longer sufficient. This shortage has created a strong financial incentive for the operators to acquire and export gas that had always been intended for Western Australia's domestic use.

The NWS terminal is applying for a 50-year extension. If the Western Australian Government approves the project, it will lock in this structural change to WA gas markets and decades of high gas and electricity prices for Western Australians.

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The east coast lesson

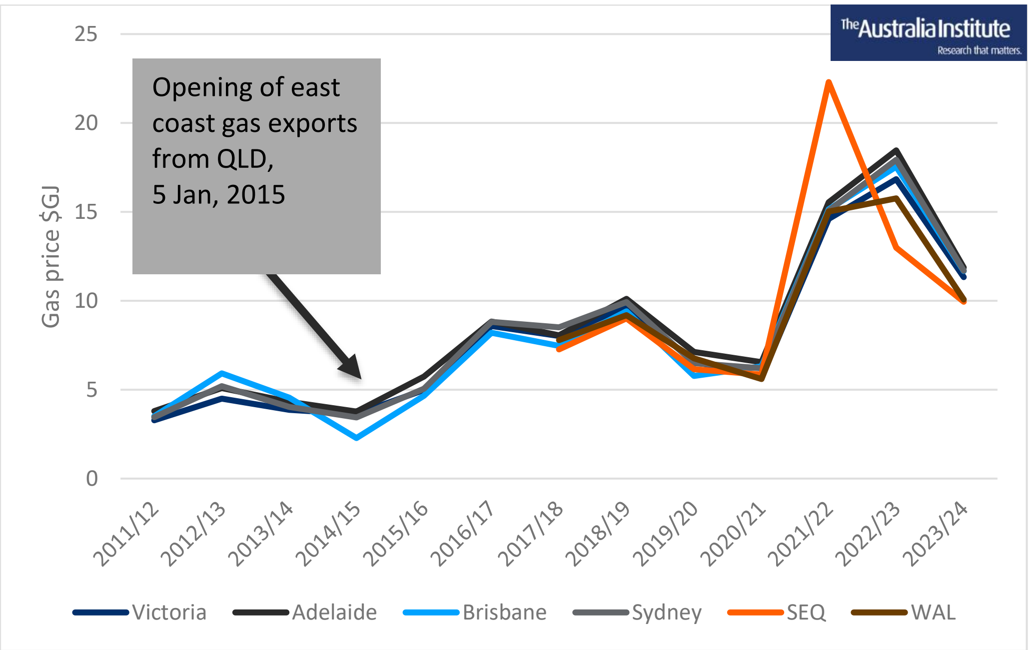
In 2010, the Queensland and Federal Governments approved the export of gas as liquefied natural gas (LNG) from onshore gas fields in eastern Australia. Exports began from Gladstone in Queensland in 2015.[1] This linked domestic gas prices to higher global prices. LNG producers, who now control 90% of east coast gas reserves,[2] forced Australian households and businesses to compete with Asian customers in a global market with far higher prices than Australia had ever experienced.

Figure 1 below shows wholesale gas prices in the various Eastern Australian gas markets markets from 2011/12 to 2023/24, including Victoria, Adelaide, Brisbane, Sydney, South East Queensland (SEQ) and Wallumbilla (WA). Within four years of the first gas exports from Gladstone, east coast gas prices had tripled and by 2023 they had doubled again. The second wave of gas prices increases from 2021 was a result of the global price spike triggered by the Ukraine war, but this would not have affected Australia if domestic gas prices had not been linked to global prices by LNG exports. The disruption caused by LNG exports of onshore gas in eastern Australia is one of the primary factors driving increases in the cost of living, and difficulties for parts of the manufacturing sector.

[1] ABC Rural (2015) First shipment of natural gas leaves Gladstone in Queensland bound for Asia, https://www.abc.net.au/news/rural/2015-01-07/first-lng-from-csg-ship-leaves-queensland/6002446

[2] ACCC (2022) *LNG exporters must divert gas to the domestic market to avoid shortfalls*, https://www.accc.gov.au/media-release/lng-exporters-must-divert-gas-to-the-domestic-market-to-avoid-shortfalls

Figure 1: Australian east coast gas prices



Source: AER (2024) Gas market prices, https://www.aer.gov.au/industry/registers/charts/gas-market-prices, AEP (2015) World first for Queensland as LNG tanker leaves Gladstone, https://energyproducers.au/all_news/world-first-for-queensland-as-lng-tanker-leaves-gladstone/

Why WA was different

For many years Western Australia avoided high global gas prices despite also hosting a rapid growth in LNG exports.

The WA domestic gas policy is often credited with keeping gas prices low, and this is partly true. But there was another more fundamental difference that protected Western Australian customers from global prices.

The fundamental difference was that, unlike the east coast, much of the gas being exported from Western Australia was not available to the domestic market. Exported gas was entirely from offshore fields, mostly from Commonwealth waters, developed specifically to supply LNG export facilities. Exports were entirely separate from Western Australia's domestic onshore gas reserves. In some cases, there is no physical link between exporting projects and the WA market. This separation insulated Western Australian gas customers from high global gas prices.

Former Western Australian Premier Colin Barnett understood this when he said:

> Gas that is onshore in Western Australia belongs to the West Australian Government. It does not belong to the companies. The biggest risk to gas security in Western Australia is the discussions going on with the Labor Government here that onshore gas can be exported. That should never be allowed to happen.[3]

This is exactly what has occurred in recent years in the WA gas market, as WA Labor has allowed significant volumes of gas (up to almost a quarter of the total current WA market demand) to be contracted for export via Woodside's NWS LNG facility. This has led to warnings by analysts and has already ushered in significant increases to energy prices paid by West Australian homes and businesses. As one Curtin University energy economist put it:

> Essentially, the onshore gas price is going to be pegged to the [higher] international price.[4]

But other LNG exporters do also sell significant volumes of gas to the domestic market. Woodside, for instance, supplies around 22% of WA's domestic gas.[5] As such, increases in

[3] Former Premier of Western Australia, Colin Barnett, ABC Drive Friday, February 2024.

[4] Mclean (2024) *Analysts say WA's gas exports remain key factor in future supply shortfalls* https://www.abc.net.au/news/2024-10-03/new-wa-gas-policy-criticism-exports-creating-energy-shortage/104389224

[5] AEMO (2023*) 2023 Western Australia Gas Statement of Opportunities*, pp.14-15 https://aemo.com.au/-/media/files/gas/national_planning_and_forecasting/wa_gsoo/2023/2023-wa-gas-statement-of-opportunities-wa-gsoo.pdf?la=en

the domestic gas price result in windfall gains to these companies. Companies that supply domestic gas have a strong commercial incentive to see WA domestic gas prices rise to international levels, so understanding the operations of LNG projects that have a link to WA gas markets is critical to understanding WA energy price dynamics.

Woodside’s North West Shelf extension

Woodside’s NWS LNG terminal is the largest gas export terminal in Australia, and exports more than twice the volume of gas used by all Western Australia’s households, business and industry combined, including electricity generators.[6]

Like all other LNG projects in Western Australia, the original project included sufficient offshore gas reserves to supply the facility over its proposed operating life and requirements to supply significant volumes of gas to the WA domestic market.

This meant that the facility could export large volumes of gas without exposing WA’s domestic market consumers to international gas prices.

Now, the outlook is very different for Australia’s largest gas export facility. With rapidly declining offshore reserves, Woodside is now seeking to source gas from WA’s onshore domestic gas reserves, with the support of the WA Labor Government.

No other WA LNG export facility is looking to export gas from WA’s domestic reserves for the foreseeable future - all other facilities have adequate supplies from offshore fields. This means that changes to the WA domestic gas policy to allow exports of the State’s onshore domestic gas reserves are driven by the commercial interests of Woodside, which include:

a) maintaining exports from the NWS facility beyond the supplies of gas from its original offshore fields
b) increasing prices in the WA domestic gas market, which Woodside supplies from a number of facilities.

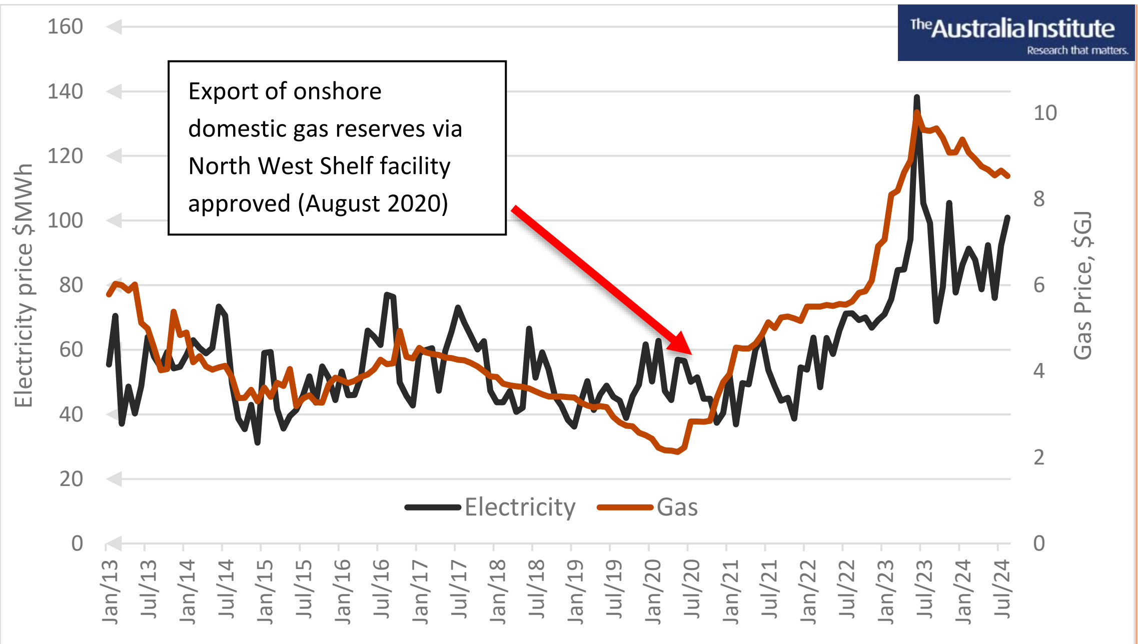
[6] NWS LNG export capacity 18.5 mtpa LNG, approximately 2600 PJ/year compared to WA domestic gas demand approximately 400 PJ/year. AEMO (2023) *2023 Western Australia Gas Statement of Opportunities*, https://aemo.com.au/-/media/files/gas/national_planning_and_forecasting/wa_gsoo/2023/2023-wa-gas-statement-of-opportunities-wa-gsoo.pdf?la=en

The end of cheap gas in WA

The era of cheap gas in WA ended in August 2020 when the separation between LNG exports and WA's domestic gas was broken. A deal between the McGowen Government, Woodside and Beach Energy allowed Woodside to export 250 TJ/day of onshore domestic gas from Beach's Waitsia project in the Perth Basin via the NWS terminal.[7] 250 TJ/day is a significant amount of gas, equivalent to almost a quarter of WA's entire domestic gas demand of around 1,100 TJ/ day.[8]

As occurred with east coast gas following the opening of onshore gas exports in 2015, WA's gas market was now linked to global prices. As shown in Figure 2 below, within two years of the NWS onshore gas export deal, wholesale gas prices on the spot market (shown with red line in Figure 2) doubled, and then tripled by 2023.

Figure 2: WA wholesale gas and electricity spot prices



Sources: GasTrading Australia (2024*) Historical Prices and Volume*, https://www.gastrading.com.au/spot-market/historical-prices-and-volume/daily-price-history, OpenNem (2024) SWIS, openelectricity.org.au

Figure 2 shows that wholesale gas and electricity prices are closely linked in WA due to the relatively large role of gas-fired electricity generation in the state – Western Australia produces around one third of its electricity with gas, compared with around 5% on the east

[7] Milne (August 18, 2020) *McGowan: onshore gas export banned, unless its Stokes' Waitsia*, https://www.boilingcold.com.au/mcgowan-onshore-gas-export-banned-unless-its-stokes-waitsia/; AEMO (2023*) 2023 Western Australia Gas Statement of Opportunities, p16 n*

[8] AEMO (2023) *2023 Western Australia Gas Statement of Opportunities*

coast.[9] Because WA uses a lot of gas for its electricity, when gas prices go up in WA, electricity prices follow. This means that the effect of rising gas prices is potentially more significant in Western Australia than it has been in eastern states.

WA households have not yet experienced much of this price increase because of WA's regulation of household energy prices. Since August 2020, Perth household gas prices are up just 18.5%,[10] and electricity prices have increased from 28.8 cents per kilowatt hour to 31.6 cents, or 10%,[11] broadly in line with inflation. Instead, the cost of this decision appears to have been largely absorbed by taxpayers though households electricity rebates[12] and subsidies to state-owned energy companies, particularly Synergy, with the most recent WA Budget papers noting "a net increase in operating costs for Synergy, primarily due to electricity and gas costs."[13] Synergy is likely to have much of its gas supply from long term contracts, so may not yet be heavily affected by spot pricing shown in Figure 2. However, higher prices will feed through to contracts as they are renewed.

Spokesperson for the DomGas alliance which represents large industrial gas users in Western Australia, Richard Harris, has said that gas buyers are already experiencing rising gas prices and that higher gas prices will flow through to the energy bills of households and businesses.

> Mr Harris said prices (sic) pressures would in large part flow through to households and businesses in the form of higher gas and electricity bills, especially given the fuel was used to generate a third of power in the state's main grid.[14]

The gas price in Figure 2 is based on spot prices. While the spot market trades a small amount of gas relative to contracted gas, it reflects the underlying dynamic that ultimately flows through to contract prices as happened on the east coast.

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[9] OpenNem. Total gas generation volume as a percentage of total generation in National Electricity Market (NEM) and South West Interconnected System (SWIS) from October 2023 to October 2024 https://explore.openelectricity.org.au/energy/nem/?range=7d&interval=30m&view=discrete-time&group=Detailed

[10] ABS (2024) *6401.0 Consumer Price Index, Australia*, Sourced from *TABLE 11. CPI: Group, Sub-group and Expenditure Class, Percentage change from previous quarter by Capital City*, https://www.abs.gov.au/statistics/economy/price-indexes-and-inflation/consumer-price-index-australia/latest-release.

[11] WA Government (2024) *Household electricity pricing*, https://www.wa.gov.au/organisation/energy-policy-wa/household-electricity-pricing. Past editions accessed via Wayback Machine, http://web.archive.org/

[12] Government of Western Australia (2024) Household electricity credit, https://www.wa.gov.au/government/publications/household-electricity-credit

[13] WA Government (2024) *Western Australian State Budget 2024-25*, BP3, p.47, https://www.ourstatebudget.wa.gov.au/2024-25/budget-papers/bp3/2024-25-wa-state-budget-bp3.pdf

[14] Mercer (2022) *WA braces for gas supply crunch as Seven Group-backed onshore project eyes exports,* https://www.abc.net.au/news/rural/2022-02-03/wa-gas-price-rise-and-supply-crunch-predicted/100787468

Although there is no publicly available data on contract prices, price increases, linked to the Waitsia decision, were already reported to be flowing through to contract prices in 2020, with producers quoting prices of up to $8GJ for 2026, up from $2 GJ.[15] Perth-based analyst Peter Stachen characterised the decision to allow the export of Perth Basin gas as WA "shooting itself in the foot":

> It seems really stupid to be shooting yourself in the foot that way when we've got abundant gas and selling it offshore.

In April this year Yara Pilbara Fertilizers executive Jai Coppen said high prices caused by allowing the export of Perth Basin gas were already affecting fertilizer and ammonia prices, and warned high gas prices could lead to "deindustrialization of the region."[16]

In 2022 and 2023 the Ukraine war led to record high global gas prices. The impact on WA's domestic gas and electricity prices can be seen in Figure 2 from mid-2022 onwards. However, if it was not for the linkage of Western Australia's domestic gas prices to global prices as a result of the export of onshore gas, WA homes and businesses would have remained insulated from global prices.

The decision to open WA's domestic gas reserves for export via the Waitsia project has now been reinforced, with further changes to the domestic gas policy to allow even more exports of the state's onshore gas reserves under the Cook Labor Government.[17]

TRANSFER OF WEALTH FROM WA HOUSEHOLDS AND BUSINESSES TO GAS PRODUCERS

Since August 2020, domestic gas suppliers in Western Australia have supplied roughly the same amount of gas to more or less the same customers as previous years, for a lot more money.[18] The price increase is largely a result of the linkage to global prices.

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[15] Mercer (2022) *WA braces for gas supply crunch as Seven Group-backed onshore project eyes exports,* https://www.abc.net.au/news/rural/2022-02-03/wa-gas-price-rise-and-supply-crunch-predicted/100787468

[16] DomGas Alliance (2024*) High gas prices will shut down WA industry, Yara executive warns,* https://www.domgas.com.au/new-blog/2024/4/29/high-gas-prices-will-shut-down-wa-industry-yara-executive-warns

[17] Shine, Burke, Mercer (September 2024) *WA gas exports from onshore projects to be allowed until 2031 under revised state policy,* https://www.abc.net.au/news/2024-09-19/revised-wa-domestic-gas-policy-allows-onshore-exports-until-2031/104369506

[18] Ave demand 2020-2023 was 1060 TJ/day, 2024 demand forecast to be 1063 TJ/day. AEMO (2023) *WA GSOO 2023*, Figure 10, https://aemo.com.au/energy-systems/gas/gas-forecasting-and-planning/wa-gas-statement-of-opportunities-wa-gsoo

As such, the increase in gas prices paid by Western Australian customers are largely windfall gains to gas producers and a transfer of wealth from Western Australian households, businesses and taxpayers to gas producers.

Woodside is a particular beneficiary of this, as in addition to its exports, it supplies significant volumes of gas to the WA market from several facilities, including the Macedon domestic gas facility recently acquired from BHP.

The implications of approving Woodside's 50-year North West Shelf Extension

Recent decisions by WA Labor to allow the export of WA's domestic gas reserves have effectively locked in a global price linkage for at least five years, reflecting the term of the Waitsia export agreement.

WA can revert to an insulated domestic gas market after this period by returning to a policy of 100% reservation of onshore gas for the domestic market. However, this will not be possible if Woodside's NWS Extension is approved as currently proposed.

Woodside, and all other gas companies, will continue pressure to lock in and expand exports if Woodside's NWS Extension is approved – but without this there is no pathway for others to export.

The Western Australian Government's current policy to revert to a full export ban in 2030 provides little protection. It is not in legislation and can be changed at any time. Exceptions and changes made in the last few years alone include allowing Woodside to export Waitsia gas (as discussed above), allowing Texan fracking company Black Mountain to export gas from the Kimberley Region,[19] and the recent decision to allow the export of 20% of gas from new onshore domestic gas projects.[20]

While the Waitsia gas export contract is significant in comparison to the WA domestic gas market, it only supplies a very small volume of the gas required to meet the demand created by the NWS export extension as shown in Figure 3 below.

Approving Woodside's NWS Extension would lock in an ongoing demand for export from WA's onshore gas reserves at a level that would rival the total combined demand from all domestic market customers, and many times greater than the Waitsia contract which has already ushered in dramatic price increases for WA consumers.

The only identified source of gas from offshore fields to supply the NWS Extension is the uncertain and controversial Browse project and the even more uncertain (and smaller)

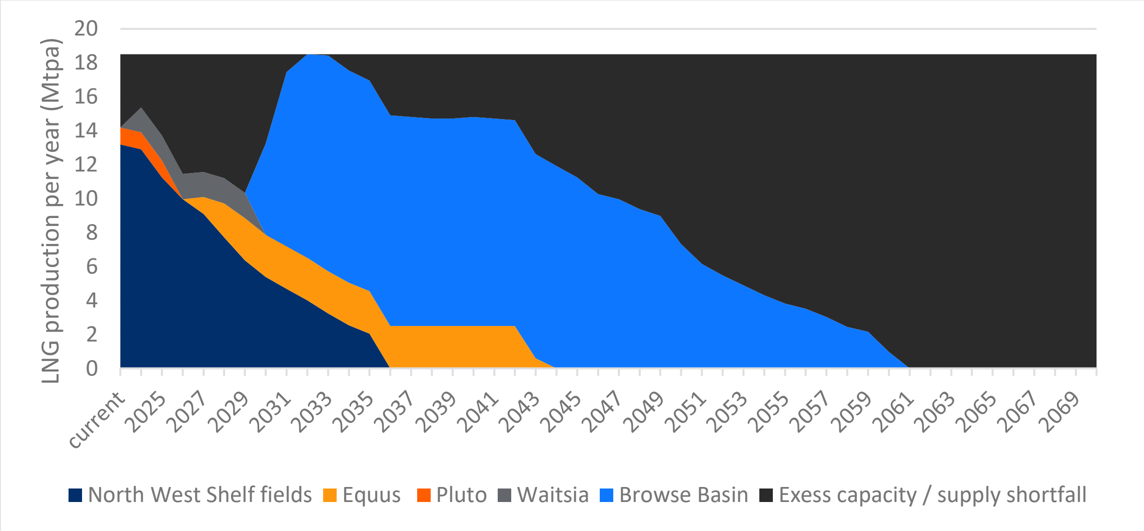
[19] Black Mountain (2021) *Black Mountain Energy Secures Export Exemption to Western Australian Domestic Gas Policy*, https://www.blackmtn.com/press-release/black-mountain-energy-secures-export-exemption-to-western-australian-domestic-gas-policy/

[20] Shine, Burke, Mercer (September 2024) *WA gas exports from onshore projects to be allowed until 2031 under revised state policy*, https://www.abc.net.au/news/2024-09-19/revised-wa-domestic-gas-policy-allows-onshore-exports-until-2031/104369506

Equus field. Even if these projects proceed (in a best-case scenario for Woodside), offshore fields will supply less than half of the total aggregate demand at NWS, leaving a gap equivalent to almost the entire domestic gas demand of Western Australia.

Figure 3 below represents the total export capacity of NWS (18.5 Mt of LNG/year) from now to 2070 if the extension is approved. The colored areas indicate the amount of that capacity filled by the fields identified by Woodside in a best-case scenario. The dark blue shows gas supplied by the declining NWS fields, the light blue is Browse Gas Project, and Waitsia indicated in grey.

Figure 3: North West Shelf Extension capacity and potential supply



Source: Verstegen (2024) *Provider to parasite*, https://apo.org.au/node/327144, Ogge, Campbell and Saunders (2024) *Gas in WA: Exports*, https://australiainstitute.org.au/report/gas-in-wa-exports/

The black areas in Figure 3 show the unfilled capacity that Woodside will seek to fill with WA's onshore domestic gas reserves. Of note is that the gap prior to 2030 is almost equivalent to WA's total domestic gas demand.

Conclusion

The Western Australian government has already repeated the mistake of Queensland and Federal Governments that allowed east coast gas supplies to be linked global gas prices, leading to a fivefold increase in east coast gas prices and perpetual gas shortage scare campaigns.

By allowing the export of onshore gas for the first time, the WA Government has linked domestic gas to global prices, leading to a tripling of wholesale gas and electricity prices.

The root cause of the problem is Woodside's NWS Extension, which would lock in massive export demand for onshore gas for decades. The limits on onshore gas exports are not legislated and provide little protection.

If the Government approves Woodside's proposed 50-year extension, it risks locking in a structural change to the WA gas market which will not be possible to wind back.