

MOBILISING AUSTRALIA

Gas

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GAS

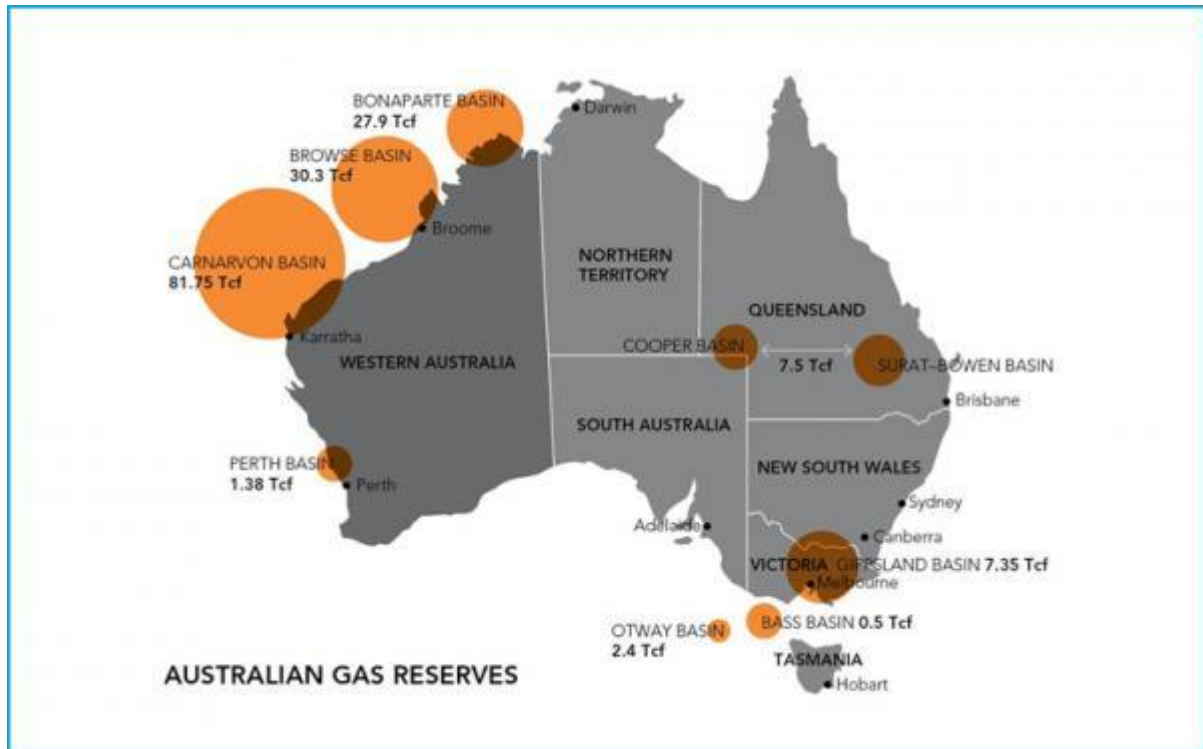


Photo: earthsci.org

Natural gas is an odourless, colourless fossil fuel formed from the decomposed remains of plants and animals. Over millions of years, this decomposition produces natural gas (mainly methane), which becomes trapped in rock formations deep underground. There are many benefits to using natural gas, including:

- **A natural source of fuel.** Natural gas consists mainly of methane, a natural, non-toxic, and non-carcinogenic fuel.
- **Lower carbon emissions.** Natural gas is the cleanest-burning of all fossil fuels, producing the least carbon dioxide, a major contributor to the greenhouse effect.
- **High safety standards.** Natural gas is lighter than air and disperses readily in the event of a leak, making it a safer alternative to other combustible fuels, such as coal.
- **Cheaper to run.** Natural gas is a low-cost fuel.

Natural gas is Australia's fastest-growing energy source, accounting for 25% of our primary energy use. Since the 1960s, natural gas has been a heating source for Australian homes and a power source for industry, with local demand and supply in balance. In 2015, exports began, and by 2024, export demand was consuming about 75% of what had previously been available for domestic demand on the East Coast. Foreign customers are now reaping the benefits of Australian gas, whilst local customers are being disadvantaged!

Australia has abundant gas reserves; however, in 2025, Australian manufacturers pay some of the highest gas prices in the world – often double or even triple those of US manufacturers.

The lack of a long-term vision for the nation, magic-pudding economics, and anti-gas ideology have resulted not only in consumers feeling the pain of high domestic gas prices but also in industry being deprived of what should be a competitive energy advantage for Australian manufacturing.

Australia is a significant source of natural gas. Victoria also has significant potential gas fields; however, gas exploration and extraction were effectively halted in 2012 by the Victorian Labor Government. This policy has now been revised; however, the damage remains.

Since 2006, WA has had a reservation policy that requires LNG producers to reserve 15% of their LNG exports for the WA domestic market. The policy has worked well and serves as a model for nationwide implementation.

USES OF GAS

Liquefied Natural Gas

Australia exports most of its natural gas as liquefied natural gas (LNG).

- About 83% of natural gas produced in 2025 was exported.
- LNG exports were worth **\$69–92** billion in recent years, making LNG one of Australia's largest export commodities.
- Natural gas supplies about 25% of Australia's total energy needs.

Electricity Generation

Gas provides 18–20% of Australia's electricity and is critical for fast-start backup generation and grid stability when renewables are not generating (at night or in low-wind periods). Gas is the only dispatchable fuel that can ramp from a cold start to full output in minutes. This makes it a strategic stabiliser of the national electricity system.

In some states it is already a critical component of the electricity system.

- In WA, gas is replacing coal by 2029.
- In SA, gas fills the gaps when solar/wind output drops.
- In the NT, gas supplies 88% of electricity generation.

Industrial Heat & Manufacturing

Gas is essential for high-temperature industrial processes that electricity cannot yet replace. Gas-fired furnaces reach 800–1700°C, which is required for melting glass, firing bricks, and producing cement. Gas accounts for 37% of the energy used in Australian manufacturing. Some sectors cannot yet be electrified, and without gas, Australia would lose industrial capability. Industries using gas for heat include:

- Steel.
- Cement & bricks.

- Glass.
- Ceramics.
- Mining & critical minerals.
- Paper & cardboard.

Chemical Feedstock

Around 17% of industrial gas is used as a chemical feedstock. This underpins the gas-to-urea fertiliser industry (Perdaman in WA). Products include:

- Fertilisers
- Plastics
- Pharmaceuticals
- Explosives
- Paints & adhesives
- Synthetic fabrics
- Hydrogen

Household & Commercial Use

Over 5 million homes are connected to the gas network. Victoria and the ACT have the highest household gas use, primarily for winter heating. Gas is widely used in homes and small businesses for:

- Heating (space heating, especially in Victoria).
- Hot water.
- Cooking.
- Cooling (less common, but used in some commercial systems).

Strategic Leverage

Australian LNG is critical to the economies of several Asian nations, creating strategic interdependence through LNG exports. This has become a national diplomatic asset, activated by Australia during the oil crisis caused by the closure of the Strait of Hormuz. The major nations now entwined with Australia through LNG exports are:

- Japan - energy security.
- South Korea - energy security.
- India - fertiliser production.
- Southeast Asia - industrial growth.

DATA

Global:

- Australia is the 7th largest producer.
- Australia is the 3rd largest LNG exporter, accounting for about 20% of global LNG exports.
- Since 2008, Japan and South Korea have invested more than \$20 billion in Australian LNG infrastructure.

Australia:

- Most reserves lie off the NW coast of Western Australia.

- Gas provides 25% of our primary energy use and 17% of electricity generation.
- 83% of production was exported in early 2025.
- Gas is essential for many production processes, particularly heating.
- If coal is phased out, gas is the only viable alternative for electricity generation in the short term. Gas enables the retirement of coal if that is the objective.
- KPMG analysis found that the gas sector contributes \$105 billion annually to the national economy and supports 215,000 jobs.
- In the 2024 financial year, the gas sector paid a record \$30 billion in taxes and royalties to state and federal governments.
- More than 5 million commercial and private consumers use gas across Australia.

Government

- Gas is excluded from the Capacity Investment Scheme for ideological reasons.
- An east coast gas reservation scheme is needed to ensure gas is prioritised for our domestic power needs, for both consumers and industry. The Commonwealth's Gas Market Review (2025) found current regulation insufficient to guarantee domestic supply.
- The \$6 billion Perdaman urea project is under construction in the Pilbara, made possible by the WA gas reservation policy.
- Changes to the Regulatory & Policy Landscape (2025–2027)
 - Domestic Gas Reservation Scheme (commences 1 July 2027) is intended to secure reasonably priced domestic gas while maintaining export commitments.:
 - LNG exporters must supply the domestic market with 20% of their export volume annually.

Victoria

- In 2012, an administrative moratorium was placed on all onshore gas exploration and development in Victoria. This meant a temporary hold on onshore gas exploration permits and retention leases, and a suspension of approvals for new applications. This has now been rescinded.
- In 2017, the Victorian Government passed the **Resources Legislation Amendment (Fracking Ban) Act 2017**. Under this legislation, fracking and coal seam gas extraction were permanently banned, and the existing administrative moratorium on onshore conventional gas was replaced with a legislative moratorium that halted all exploration and development activities in Victoria until 30 June 2020.
- In June 2020, the Victorian Parliament passed the **Petroleum Legislation Amendment Act 2020**, which allowed the restart of onshore conventional gas exploration and production.
- The damage had been done, however, and Victoria must now import high-cost LPG from other sources to avert a gas shortage by 2028.

FERTILISERS

Natural gas is the world's dominant feedstock for nitrogen fertilisers, accounting for about 70% of global ammonia production. It supplies hydrogen, which reacts with nitrogen from the air to produce ammonia, the precursor to urea, ammonium nitrate, and ammonium sulphate. This is the Perdaman model (gas → ammonia → urea), and it is the benchmark for sovereign fertiliser capability. Natural gas is a complete feedstock for all nitrogen fertilisers, but not for phosphorus or potassium fertilisers.

The Chemical Chain is: (Natural Gas → Hydrogen → Ammonia → Fertilisers).

What fertilisers can be made from gas

Fertiliser	Made from gas?	Notes
Urea	Yes	Gas → ammonia → urea. Perdaman model.
Ammonium Nitrate (AN)	Yes	Requires nitric acid (from ammonia).
Ammonium Sulphate (AS)	Yes	Requires sulphuric acid.
UAN (Urea Ammonium Nitrate)	Yes	Blend of urea + AN.
MAP/DAP (Phosphate fertilisers)	No	Require phosphate rock. Gas only supplies ammonia.
Potash fertilisers (MOP/SOP)	No	Potash ore required. Gas irrelevant.

Strategic advantages of gas-based fertiliser production

- **Sovereign Capability.** Australia imports about **90% of urea**. Gas-to-urea plants (Perdaman) directly reduce this vulnerability.
- **Industrial Efficiency.** Gas-based ammonia production is:
 - Lower capital cost than coal gasification.
 - Lower CO₂ intensity.
 - Faster to build.
 - Globally standardised technology.
- **Export Leverage.** Australia can become a regional nitrogen fertiliser hub for Asia: India, Southeast Asia, Japan, South Korea.
- **Integration with LNG.** Long-term gas offtake.

GAS ROYALTIES

Australian gas exporters often pay relatively little in royalties because of the design of Australia's gas taxation system. The answer to why depends on whether you're talking about state royalties or federal taxes, as they're separate systems. Here are the main reasons:

Most LNG exports are taxed on profits, not on production. Many offshore gas projects are subject to the Petroleum Resource Rent Tax (PRRT), which is a tax on

profits rather than on the amount of gas produced. If a project reports little or no taxable profit—due to high development costs, depreciation, or accumulated deductions—it may pay little or no PRRT for many years.

High upfront costs lead to long-term deductions. LNG projects often cost tens of billions of dollars to build. The tax system allows companies to carry forward these costs (often with an uplift factor for older investments), thereby reducing taxable profits until the costs are recovered.

Royalties vary by jurisdiction. Onshore gas is generally subject to state or territory royalty regimes based on production value or volume. Offshore projects in Commonwealth waters are generally subject to the PRRT rather than traditional royalties.

Transfer pricing and related-party sales can affect taxable income. Some critics argue that when gas is sold between related companies within a multinational group, it can reduce the profits reported in Australia. The Australian Taxation Office monitors and audits these arrangements, and transfer pricing rules are intended to ensure that prices reflect market value.

Policy choices to encourage investment. Australia adopted a profits-based system, partly to attract investment in costly offshore gas developments. The idea was that investors would bear more risk upfront but pay more tax once projects became highly profitable.

Why is this controversial? Critics argue that Australians have received relatively low returns from publicly owned gas resources compared with those in some other gas-producing countries. Several LNG projects exported large volumes for years while paying little or no PRRT. Other countries, such as Norway and Qatar, capture a larger share of resource rents through higher royalties, taxes, or state ownership.

Supporters of the current system argue that Australia's LNG industry required exceptionally large capital investments and substantial commercial risk. A profits-based tax avoids discouraging investment in projects that may not be profitable. PRRT payments naturally increase as projects mature and their carried-forward deductions are exhausted.

In recent years, the Australian government has tightened aspects of the PRRT by limiting the extent to which PRRT assessable income can be offset by deductions in a given year, with the aim of increasing revenue from mature LNG projects while retaining the basic profits-based structure.

GAS-TO-LIQUIDS (GTL)

GTL is the conversion of natural gas into high-quality liquid fuels, including synthetic diesel, jet fuel, naphtha, and base oils. For Australia, GTL is not just a technology: it is a strategic capability that directly addresses fuel security, sovereign resilience, and industrial mobilisation. Modern processes enable the production of ultra-clean fuels.

Strategic context.

Australia imports about 90% of its diesel and aviation fuel, primarily from North Asia. In addition, domestic refining capacity has collapsed from 7 major refineries (2002) to just 2 today, leaving the nation exposed to maritime disruption. GTL provides:

- Onshore production of diesel and jet fuel.
- A sovereign supply independent of shipping routes.
- A capability that can be scaled in northern Australia, close to major gas basins.
- National Resilience.
- Environmental & Lifecycle Benefits.
- Economic & Industrial Development.

Australia has world-class gas reserves but imports most refined fuels - a strategic paradox. GTL can:

- Convert domestic gas into high-value fuels.
- Support regional development (Pilbara, NT, QLD basins).
- Create export opportunities for synthetic fuels.
- Strengthen industrial capability and supply chain sovereignty.

GTL is the most credible pathway for Australia to regain sovereign liquid fuel capability. It must align with a long-term vision for Australia to:

- Achieve national resilience.
- Improve defence readiness.
- Facilitate industrial mobilisation.
- Move towards a lower-emissions fuel transition.
- Enable strategic independence from maritime supply chains.

Pearl GTL (Qatar)

The successful GTL projects are concentrated in Qatar, Malaysia, South Africa, and emerging U.S. projects. The only *mega-scale*, fully proven successes are Shell's Pearl GTL (Qatar) and Shell MDS (Malaysia), with Sasol providing decades of syngas-to-liquids experience. The U.S. has major GTL projects in the design and feasibility stage but not yet operating.

Pearl GTL is the World's Largest and Most Successful GTL Plant, operating reliably for over a decade. Details are:

- **Operator:** Shell and QatarEnergy.
- **Status:** Fully commercial, globally benchmarked.
- **Scale:** Converts 1.6 billion cubic feet/day of gas into GTL liquids.

- **Products:** Gasoil, kerosene, base oils, naphtha, paraffins.
- **Significance:** Largest GTL plant ever built; fully integrated upstream.
- **Performance:** Ultra-clean fuels, virtually sulphur-free; major global export volumes

US Gas

On January 20, 2025, President Trump signed several energy-related executive orders to boost US oil and gas production and exports by declaring a national energy emergency, removing regulatory barriers, and expediting approvals for oil and gas projects.

- With the rapid growth in oil and gas production over the past two decades, driven by the shale boom, the US is now the world's largest oil and gas producer and a net exporter.
- The US shale revolution has delivered abundant natural gas at about \$3 per gigajoule. Australian prices have risen from \$3 to \$12 (Fazzino, 2025).
- The US has an export permit system that ensures domestic supply and keeps industry prices low.
- Since 2010, there have been about 350 new project startups linked to affordable gas.
- Australian companies Bluescope, Brickworks, Orica, Viva, and Orora have built plants in the US because of more pro-business policies. This has accelerated under President Trump.
- The US has created a million manufacturing jobs because of its gas policies.
- The US is a strong model for Australia to follow. Australian companies have already migrated to the US – it is beyond time for the Australian government to follow the US example.

Case Study: Perdaman Project

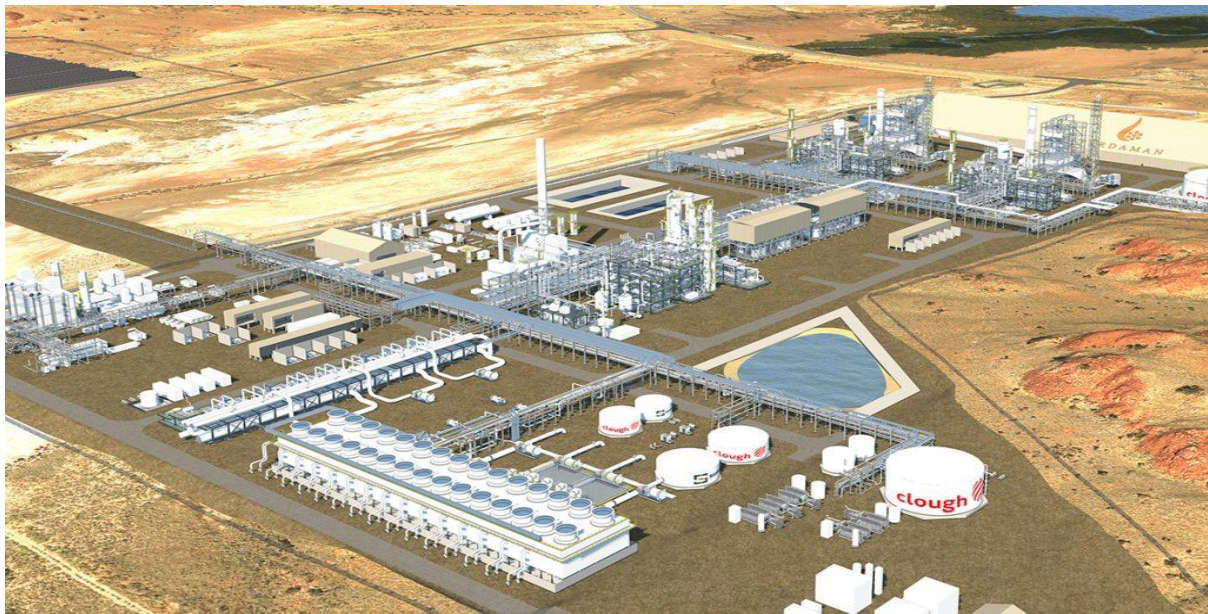


Photo: Perdaman Chemicals and Fertilisers.

On 28 February 2026, Israel and the US attacked Iran, and shipping through the Straits of Hormuz quickly ceased, triggering a global oil crisis. Another direct impact was on the fertiliser supply, as much of it also passed through the Strait. Australia was quickly affected by restrictions on oil and fertiliser deliveries, followed by increases in petrol, diesel, and fertiliser prices. All this could have been avoided.

In 2006, visionary entrepreneur Vikas Rambal founded Perdaman Industries, now Perdaman Chemicals and Fertilisers, laying the groundwork for a diversified global enterprise focused on innovation, sustainability, and national resilience.

In 2017, the company launched its flagship initiative, Project Ceres, a world-scale fertiliser plant in Karratha, set to produce 2.3 million tonnes of urea annually from natural gas sourced from the NW shelf. With construction commencing in 2023, the \$6 billion project is poised to secure Australia's fertiliser independence and contribute to global food security.

The project will contribute significantly to Australia's agricultural, industrial, and economic future. It will produce about 2 million tonnes of urea per year. Its strategic impact is to:

- reduce Australia's reliance on imported urea.
- create export capacity.
- satisfy long-term gas demand for WA and Australia.
- support agricultural supply chains.
- provide sovereign fertiliser security.

Conclusions

Natural gas is one of Australia's most strategically important resources. It underpins electricity security, industrial production, fertiliser supply, export revenue, and, as clearly demonstrated during the closure of the Strait of Hormuz, provides geopolitical leverage. It underpins sovereign industrial capability, prevents strategic vulnerability and is therefore a strategic buffer against external shocks. Without gas:

- Fertiliser imports rise (90% dependence today).
- Electricity reliability collapses.
- Manufacturing shuts down.
- LNG export partners lose confidence.
- Australia loses leverage in the Indo-Pacific.

Gas is abundant and widely distributed. Australia has massive offshore gas reserves (WA, NT), onshore reserves (QLD, SA), and untapped potential in Victoria (Gippsland, Otway). This gives Australia resource depth unmatched by most nations.

Australia is also trade-exposed, as gas accounts for about 25% of the nation's export income. If gas exports were halted for any reason, Australia would suffer catastrophic economic damage. Other emerging issues threatening the long-term profitability and viability of the gas industry include increasing regulatory intervention, union penetration and interference. Australia's conventional gas reserves are also being depleted faster than they are being replaced. Unconventional gas (CSG, shale, tight gas) remains significant but is politically contested.

The way ahead for Australia is to treat gas as a strategic national asset, alongside coal, fuel reserves, and critical minerals. Gas resources must be harnessed and used to resurrect the Australian industrial base. Value-adding to gas extraction must be the mantra. This is already happening with fertilisers (Perdaman Project) and electricity generation.

A national vision for the future of natural gas is the start point. One simply stated objective that would galvanise Australia would be:

Make Australian natural gas the cheapest in the world for domestic and industrial users.

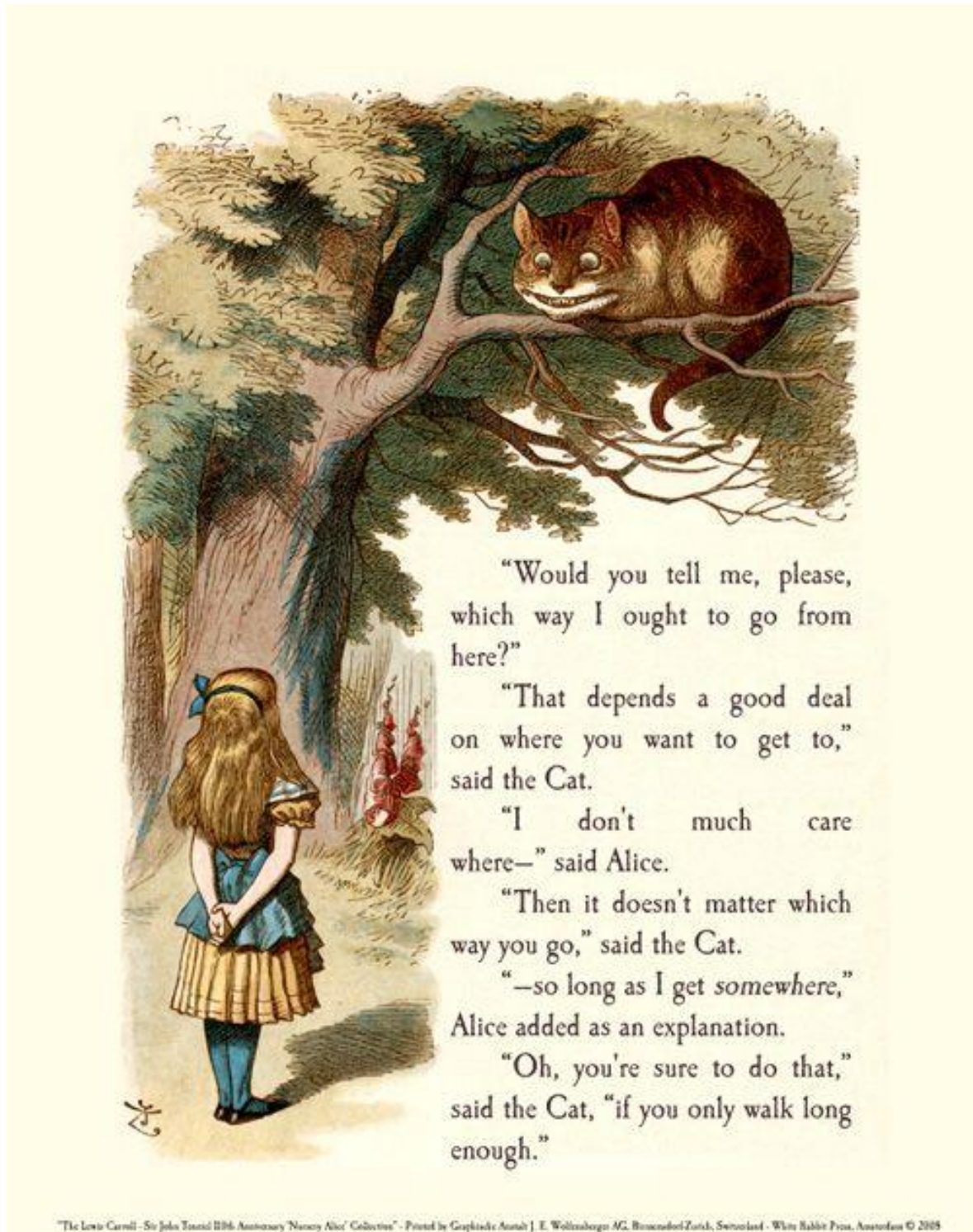
Other strategic aims would be to guarantee domestic supply through domestic gas reservation, strategic gas storage, priority supply for fertiliser, electricity, and industry, and replicate the Perdaman model on the east coast using Gas and coal gasification.

Proposals

1.	Government. • Declare the natural gas industry to be a Strategic asset. • Incentivise investment in the gas industry through tax reform and other financial measures. • Make natural gas the cheapest in the world for domestic and industrial users. • Guarantee domestic supply through domestic gas reservation and strategic gas storage.
2.	Electricity: Enshrine gas as the preferred backup to coal for base-load electricity generation.
3	Strategic Partnerships. Seek collaborative partnerships, potentially under the AUKUS or QUAD umbrellas, to develop the gas industry.
4.	Fertilisers. Develop a sovereign fertiliser industry using gas where feasible. The aims are fertiliser security, commercial and export opportunities, use of an abundant sovereign resource, and value-adding for existing industries. Develop an east coast fertiliser supply based on the Perdaman model using gas and coal as available.
5.	Gas to Liquids. Develop a GTL industry as a strategic alternative to oil imports. The aims are oil security, commercial and export opportunities, the use of an abundant sovereign resource, and value-adding to existing industries

THE LAST WORD

The last word belongs to Lewis Carroll and his “Alice in Wonderland” - Alice is lost in the forest, meets the Cheshire Cat and asks for directions. It is a perfect analogy for Australia’s present lack of a national vision, strategic planning, and purposeful direction in the gas industry. We are indeed at a crossroads in Australian history.



The only difference between where we are today and what could have been - or what is possible in the future - is a question of national will.

Tomorrows History Starts today.

THE AUTHOR

This paper draws on the author's experience in the Australian Army, as well as his industry experience across manufacturing and major defence and construction projects throughout Australia and overseas. He holds qualifications in Engineering, Management, and Operations Research. He is retired and lives in Melbourne.

He is a passionate Australian who wishes to see that Australia remains on the right side of history.

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Australian Gas Reserves: Earthsci.org.

The Perdaman Project: Perdaman Chemicals and Fertilisers.

The Final Word, Lewis Carroll, Alice in Wonderland.