Is there a new energy future for Australia's remaining oil refiners?

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Highlight: A sprawling ***oil*** refinery in Geelong sees a future as an energy hub importing ***gas*** despite the transition away from polluting fuels casting a cloud over longer-term demand.

Body

A flame flickers above a giant chimney stack at the Geelong ***oil*** refinery, burning off excess ***gas*** from the day's production of millions of litres of ***petrol***, diesel and jet ***fuel***. On another end of the site, construction workers are building a service station fitted with electric chargers and hydrogen-refuelling equipment for emissions-free trucks and buses. "The old and the new," one worker says.

Opened by ***Shell*** 70 years ago, the sprawling ***oil*** refinery on the shores of Corio Bay was the first in a wave of postwar refineries to come onstream across Australia. Today, it is one of just two that remain.

It's been a bruising decade for the nation's ***oil*** refineries - plants that process crude ***oil*** into usable ***fuel*** - as competition from cheaper imports from the mega-refineries of South-East Asia have pushed many to breaking point, leading to closures and heavy job losses. In 2021, travel bans to arrest the spread of COVID-19 dealt another crushing blow, wiping out ***fuel*** demand on an unprecedented scale. ExxonMobil shut the Altona refinery in Melbourne. BP closed its Kwinana plant in Perth.

The refinery at Geelong - now owned by ASX-listed Viva Energy - and Ampol's Lytton refinery in Brisbane were the only two to agree to a federal government rescue package, which offered them subsidies in return for committing to stay open until at least 2027.

Their futures beyond that date, though, are far from certain. Intense competition pressures persist, refining profit margins are volatile, and the transition away from polluting ***oil***-based fuels continues to cast a cloud over longer-term demand for core products.

To set it up with a stronger chance of longevity, the refinery at Geelong is busier than it's ever been, says Bill Patterson, Viva Energy's new general manager of refining.

While continuing to supply more than half of Victoria's typical liquid ***fuel*** needs, the 235-hectare site is seeking to bolster its role in ensuring national ***fuel*** security. In 2024, it added three enormous diesel storage tanks, enough to hold 90 million litres, which could keep the state running for a week. It is also in the process of installing a $350 million ultra-low-sulphur gasoline plant to comply with new ***petrol*** standards, the refinery's single biggest upgrade in decades. But as part of owner Viva Energy's strategic vision to transform the site into a broader energy "hub", it is

pushing harder to diversify into other areas, too, explains Patterson. And that includes looking beyond traditional fuels and lubricants to projects with the potential to play significant roles in the green energy shift.

One such project is the "new energies" service station being built on the refinery's edge, which is on track to become Australia's first publicly accessible hydrogen-refuelling station when it opens in 2025. Sitting alongside diesel pumps and electric vehicle charging bays, the site will house a 2.5-megawatt electrolyser, which will source electricity from the grid to produce clean-burning hydrogen ***fuel*** by splitting water molecules. Four major customers have already signed on to buy hydrogen for new vehicles in their fleets: Toll, Cleanaway, Barwon Water and local bus operator CDC.

Another proposal under consideration is the development of a plant to recycle soft plastics such as food packaging and plastic bags that are currently sent to landfill, converting them back into feedstock to make new products, including lower-carbon fuels.

"These are the sorts of things that if we can do them here in Australia - in Geelong - I'd like to think that we should," says Patterson.

"We are doing a lot of work on-site and investing a lot to make sure the refinery is in a great state to keep running."

Arguably the refinery's biggest diversification push, however, is being planned just offshore from the site, in the waters of Corio Bay. It's here that Viva is proposing to extend a pier to park a vessel that could serve as Victoria's first floating ***gas***-import terminal - one that could receive shipments of super-chilled liquefied natural ***gas*** (LNG) from other parts of Australia or overseas, turn it back into vapour and inject it into the pipeline network it to supply homes and businesses.

The ***gas*** terminal's environmental-impact studies went on public exhibition in September - a requirement before the project can be approved - and attracted mixed reviews. Some in the Geelong community forcefully support it, including manufacturers who depend on secure ***gas*** supplies for their factories, and the Geelong Football Club, which sees it as a significant potential source of local jobs and economic growth. Others, however, including environmentalists, large community groups, fishing and boating enthusiasts and nearby Geelong Grammar School argue the site is inappropriate and are calling for it to be rejected. There are also objections on the basis that the project could set back Australia's climate ambitions by entrenching the use of emissions-intensive fossil fuels.

But as authorities continue sounding the alarm over a ***gas*** shortage emerging in south-eastern Australia as the 50-year-old Bass Strait ***gas*** reserves continue rapidly drying up, state and federal governments are worried that other viable options look increasingly limited.

Developing enough new ***gas*** fields and pipelines to cover the shortfalls would take much too long, experts warn, while holding back more of the ***gas*** that Queensland exports overseas would only go so far, as the north-south pipeline that runs into Victoria and NSW is already at capacity during days of high winter ***gas*** usage. On the demand side, households are increasingly replacing their ***gas*** appliances with electric ones, but the shift is not happening quickly enough to keep pace with falling supply.

Recognising the urgency, Australia's energy ministers in December tasked officials to develop proposals enabling them to underwrite one or more LNG import terminals in Victoria, NSW or South Australia. Viva Energy is billing the import project as the "only complete ***gas*** solution" that could be delivered in time for Victoria to avert a crisis.

If the state government ends up green-lighting the project early in 2025, Viva thinks it could start construction in 2026 and begin imports by 2028 - the year by which the Australian Energy Market Operator says consumers in south-eastern states will be at the most severe risk of shortfalls.

"We are playing a very significant role in ***fuel*** security - and we want to extend that from liquid fuels to energy security, which is one of the drivers behind our proposal for a ***gas*** terminal," says Patterson.

In Brisbane, rival ASX-listed ***fuel*** supplier Ampol is also looking to shore up the outlook for its last ***oil*** refinery, placing its chips on exploring the promise of sustainable aviation ***fuel*** and renewable diesel. As well as reaching a

final investment decision on an ultra-low sulphur gasoline plant, Ampol has struck a deal with IFM Investors and agribusiness giant GrainCorp this year to investigate the feasibility of a domestic renewable fuels plant at the Lytton refinery site.

Airlines, which are major drivers of climate change due to the greenhouse emissions released by burning ***oil***-based jet ***fuel***, could be significant future sources of demand. As planes are unable to readily switch to greener alternatives such as electric batteries, which don't have the energy density to power anything but very light aircraft, the industry has been stepping up commitments and long-term purchase agreements for sustainable fuels. National carrier Qantas has committed to increase its use of unblended sustainable aviation ***fuel*** from 0.2 per cent to 10 per by 2030 and 60 per cent by 2050.

Link to Image

Jason South

"A combination of Ampol's existing infrastructure and capabilities, such as the Lytton site and Ampol's broader distribution network with established channels to market and strong customer relationships, can play a pivotal role in creating a national renewable fuels ecosystem," Ampol chief Matt Halliday says.

Long before he was appointed to lead the Geelong refinery in July, Patterson began his career at the site as a graduate engineer in 2001, before moving into a series of senior postings across ***Shell*** and later Viva Energy in Australia, the Middle East and Singapore.

"I still remember when I was finishing up at university, and I said I'd been offered a job at the ***Shell*** Refinery, one of my lecturers in 2000 said, 'That's a sunset industry'," he recalls.

"In the years under ***Shell*** ownership, we were always told the refining business was marginal - capital was always very tight and winning investment for this site was always difficult."

When ***Shell*** sold the refinery in 2014, its new owners "took a different view", he says. And the opportunity for him to return to the Geelong refinery was a hugely attractive one, he says.

"I live in Geelong, family is here, so that part of it was convenient, but because I got my start here, and it gave a lot to me ... I want to see it continue," he says. "I really do want to see it give others the sorts of opportunities it gave me."

While ensuring safe and reliable operations remains top priority, Patterson says he and his team are working hard at positioning the plant to be able to play a key role in existing and future energy markets.

"It would be nice to keep the place changing and evolving in ways that it can keep contributing to society," he says.

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Graphic

Community groups oppose Viva's plans to construct an import ***gas*** terminal in 2026 and begin imports by 2028.

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