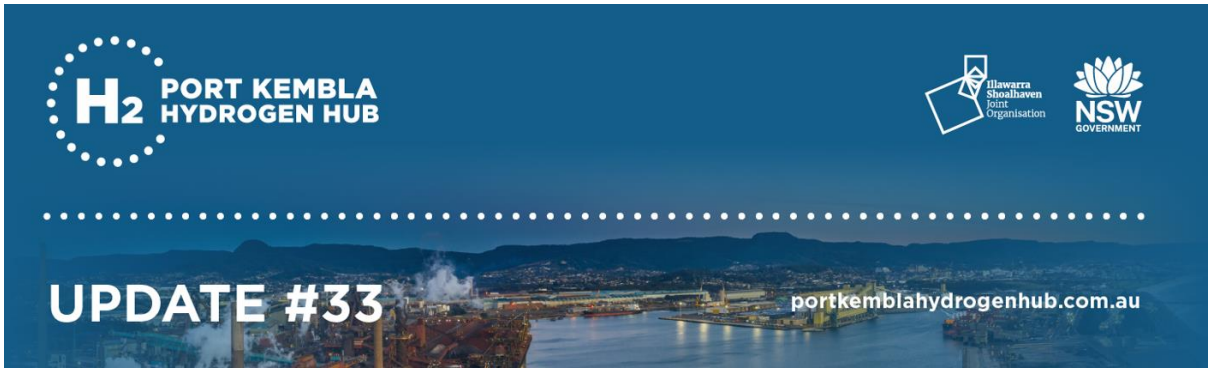

20 May 2025

Greetings hydrogen hipsters from a cool Port Kembla! This **Port Kembla Hydrogen Hub Update - Edition #33** contains information on the following key projects and initiatives:

- **H2 Future Mobility Day #8** - 29 May 2025
- **Illawarra offshore wind in limbo as BlueFloat all quiet on licence 'pause'** - 17 May 2025
- **LONGi Ships Electrolysers to Australia's Largest Green Hydrogen Project -** 16 May 2025
- **Hyundai Unveils Hydrogen-Powered XCIENT Fuel Cell Truck in Australia** - 15 May 2025
- **The Illawarra's green energy prospects on the menu at industry breakfast** - 30 April 2025
- **Ask Fuzzy: What is white hydrogen?** - 22 April 2025
- **Japanese car giants join fight to keep engines alive with synthetic fuel** - 15 April 2025

Previous editions of the **Port Kembla Hydrogen Hub Update** newsletter are available here.

H2 Future Mobility Day #8 - 29 May 2025

BACKGROUND: Heavy road transport is a large carbon emitter and hard to abate sector.

HYBRID TECH: **Gastech Engine & Energy** have developed proprietary technology to convert a diesel powered prime mover into diesel hydrogen hybrid.

On display at the H2 Future Mobility #8 will be a converted Volvo FM540 Prime Mover using Gastech's ControlR hydrogen hybrid system.

Individual drive sessions can be arranged, please nominate your interest when registering. See you there!

WHEN: 29 May 2025 – 12pm to 2pm

WHERE: BlueScope Visitor Centre - Port Kembla

REGISTER HERE: H2 Future Mobility Day #8 Tickets, Thu 29 May 2025 at 12:00 | Eventbrite

Illawarra offshore wind in limbo as BlueFloat all quiet on licence 'pause'

17 May 2025

Illawarra offshore wind in limbo as developer weighs options. | Illawarra Mercury | Wollongong, NSW

Image: Still waters: From top, BlueFloat's Nick Sankey, Minister Chris Bowen, UOW's Ty Christopher.

It's too early to say whether the development of Illawarra offshore wind has stalled, energy expert Ty Christopher said. But the location of an offshore wind farm in the region is in limbo, with BlueFloat Energy not yet willing to proceed - despite being virtually offered a feasibility licence by the federal Government in February. BlueFloat, the only developer applying for a feasibility licence, asked for its assessment process to be "paused" in the lead-up to the federal election because the Coalition had vowed to scrap development of the Illawarra offshore wind zone.

Image: BlueFloat CEO Nick Sankey in Thirroul in 2023.

However, after a landslide win to Labor, which supports offshore wind, BlueFloat has not asked for its application to be restarted and has given no signal that it plans to do so. The *Mercury* asked BlueFloat country manager Nick Sankey whether it wanted the assessment to resume, but BlueFloat declined to comment. The company has not asked for the feasibility assessment to resume, and would give no comment on when, or if at all, it would do so.

All quiet on licence

Climate Change and Energy Minister Chris Bowen this week would not comment either. In February, he revealed he had virtually offered BlueFloat the feasibility licence. "We have been in discussion with them for the last few weeks, indicating to them that it's possible that we might be ready to proceed to issue a licence," he told ABC radio on February 28. "They've said that the uncertainty created by the Opposition's position would mean that they would like to have a pause until after the election."

Image: Energy Futures Network director Ty Christopher, at an offshore wind panel in 2023. In the background is Member for Cunningham Alison Byrnes.

Ty Christopher, director of the Energy Futures Network at the University of Wollongong, said it would take longer post-election to see whether BlueFloat would resume the process.
"Yes, it would be nice if BlueFloat had been waiting at the door of Minister Bowen's office as he returned from the Governor General's swearing-in ceremony to say 'we want to go ahead now'," he said. "But realistically in business things have a reasonable pace, and I'm fairly sure that conversations will be occurring to go ahead in the right way and the measured way."

Wind farm not the main game

Mr Christopher said the "main game" was not a local wind farm but supply opportunities for offshore wind nationwide. "I think sometimes in the debate here locally, we have become overly obsessed with having our own wind farm or whether it's going ahead," he said. "And that causes us to lose sight of the main game. "The main game is what role can and should we be playing nationally in the supply chain for all of the offshore wind farms that are slated for development across the east and west coasts of Australia. "I think that's the opportunity for our region in terms of economic

benefit and in terms of jobs - and then us having our own offshore wind farm is added on top of that as a very significant additional local benefit."

He said the Illawarra should concentrate on opportunities to support the offshore wind industry and if there was an offshore wind farm built here that would be the "cherry on top". "[Illawarra] will always be playing a significant part in the supply chain to deliver the fabricated materials that will need to be fabricated here in Australia, because it's just not economic to make multi-thousand ton steel structures overseas and try and ship them to Australia. "The greatest opportunities for our region from offshore wind lie in participation, in use of our steelmaking, our steel fabrication, our port facilities, our logistics, and all the intelligent fabrication industries that hang off that."

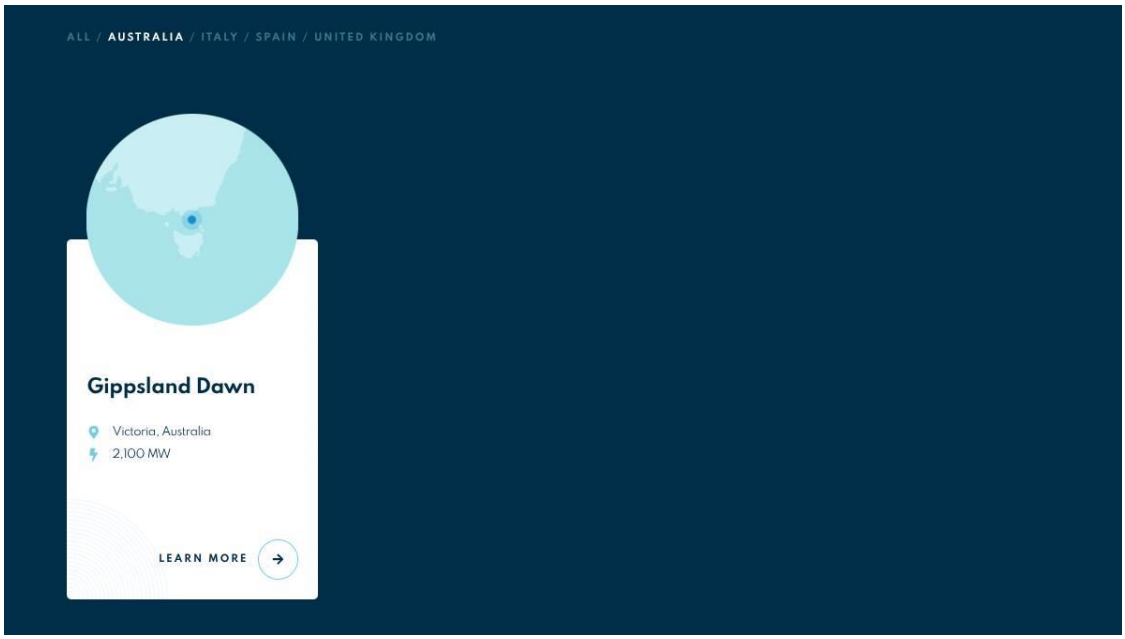

Image: The 'projects' section of BlueFloat's website lists one Australian project, the more advanced Gippsland Dawn.

Gippsland going ahead

BlueFloat is occupied with its Gippsland Dawn offshore wind project, where it has been granted a feasibility licence and major project status. This gives the company an exclusive seven-year period to develop its project, which is more advanced than its Illawarra ambitions. It may be reluctant to start the clock ticking on a seven-year timeframe for an Illawarra wind feasibility licence before it is ready to commit the necessary resources. BlueFloat has also lost its founder and chief executive, Carlos Martin Rivals, a strong supporter of offshore wind investment, who stepped down in late February.

Mr Christopher said there was considerable uncertainty worldwide about offshore wind, and while this may benefit Australia in the medium term, progress may be slower until then. "Globally, renewable investment and renewable capital has been shaken by the events in the US, and by Trump and his administration effectively shutting down the Inflation Reduction Act - that's caused a major reshuffle of global capital in the renewable space," he said.

A world adjusting

"I believe that, over the medium term, that will be a positive for Australia because it will direct capital ... into markets outside of the US, specifically here in Australia. "And so it's not unreasonable to expect that, given that global uncertainty and everything that's happened, there is a bit of a pause in thinking what's going on, not just here in the Illawarra, but taking a national and a global perspective as well, as the world readjusts to a fundamentally different operating regime than has been the case up until now."

BlueFloat was left as the only developer seeking an Illawarra offshore wind feasibility licence after the withdrawal of Norwegian energy giant Equinor and its local partner Oceanex last year. Their withdrawal was reported in October 2024; Mr Bowen said at the time he had known about it since June. International firm Spark Renewables had also announced its intent for the Illawarra zone in 2023 but the company, now owned by Malaysian energy giant TNB, is not seeking a feasibility licence.

Results no smoking gun

While Mr Bowen's office would not answer questions from the *Mercury* this week, he did address offshore wind generally at a press conference in Canberra on Wednesday, May 14, a day after he was sworn in as minister for the new term of government.

Image: Minister for Climate Change and Energy Chris Bowen.

He said the results supported the continuation of Labor's policies. "I do note that despite some of the rhetoric and the argy bargy, there was a swing to the Labor Party pretty much in every offshore wind seat and strong advocates for offshore wind like Alison Byrnes in Cunningham received a big boost to her vote," Mr Bowen said. "So, I take that as, well, as an endorsement." In fact, Labor's Carol Berry won the seat of Whitlam with a 1.92 per cent swing (two-party preferred) against Labor, following the retirement of long-time member Stephen Jones. Interpretation of what this result means for any issue is complicated by not only the departure of the incumbent, but a significant electoral redistribution, where Whitlam lost strong Labor areas in Berkeley and Windang, and gained several traditionally conservative areas in the Southern Highlands.

Ms Byrnes, widely identified as a prominent backer of Illawarra offshore wind, received a swing towards her of 3.51 per cent in the primary vote, 2.55 per cent two-party preferred - slightly below the swing to Labor nationally of 2.68 per cent. Her electorate of Cunningham has much of the coastline that would be exposed to offshore wind's visual impact, and Ms Byrnes was closely associated with the offshore wind consultation. The Greens, also prominent backers of offshore wind, retained a significant 20.37 per cent of the primary vote in Cunningham, down just 0.29 per cent on the previous election.

Opponents of offshore wind, after an election described by Peter Dutton as a referendum on energy, will point to the swing towards Labor being less in the Illawarra than nationwide as proof offshore wind cost Labor some votes. The government, and supporters of offshore wind, will have every right to say Labor took its policies to a general election and won resoundingly, and in Australian democracy that is the voice of the people being heard. But without a developer this ship's sails will be empty. The coming months should give a clearer indication of whether BlueFloat will continue its interest, or whether this period of calm turns into the doldrums.

Image: Member for Cunningham Alison Byrnes in Warrawong after her election win. Picture by Adam McLean

LONGi Ships Electrolysers to Australia's Largest Green Hydrogen Project

16 May 2025

[LONGi Ships Electrolysers to Australia's Largest Green Hydrogen]

Image: One of the two electrolyzers leaving the factory (Photo: Longi)

LONGi Hydrogen has delivered electrolyzers for Australia's largest green hydrogen project, aiming to significantly boost the integration of renewable hydrogen into local gas networks. The Murray Valley Hydrogen Energy Park will produce green hydrogen for 40,000 households and 20 industrial sites, substantially cutting annual carbon emissions.

LONGi Hydrogen Energy has officially dispatched two electrolyzers, each capable of producing 1000Nm³/h, from its facility in Wuxi, Jiangsu, destined for the Murray Valley Hydrogen Energy Park in Australia. This marks the company's first significant delivery for Australia's ambitious green hydrogen industry and signifies one of the nation's largest green hydrogen endeavours to date.

Upon completion, the project will generate enough green hydrogen to supply approximately 40,000 households and 20 industrial facilities annually, contributing to an annual carbon reduction of 3,000 tons. "As Australia's first natural gas-drilling demonstration project and the commercialization of the IGBT power system solution, the project validates the technical feasibility of 'green hydrogen not only as an alternative to traditional energy, but also deeply integrated with existing traditional energy networks' to provide a flexible and efficient solution and replicable path for energy transition," said Ma Jun, President of LONGi Hydrogen Energy. He emphasized LONGi's commitment to becoming a reliable partner in Australia's journey towards net-zero emissions by 2050, through advanced technology and dependable services.

Australia's rigorous safety, reliability, and compliance standards posed significant demands on LONGi's electrolyzer equipment. The shipped equipment has successfully passed critical certifications including AS 3000 electrical safety standards, ASME pressure vessel regulations, and IECEx explosion-proof standards. LONGi Hydrogen maintained stringent control throughout the design, material selection, manufacturing, and testing processes to achieve full compliance. Enhanced electrolyzer design optimizes hydrogen production efficiency and operational stability, while advanced manufacturing techniques and strict quality controls ensure each unit meets high-quality requirements.

Hyundai Unveils Hydrogen-Powered XCIENT Fuel Cell Truck in Australia

15 May 2025

Hyundai Unveils Hydrogen-Powered XCIENT Fuel Cell Truck in Australia

Image: Hyundai

Hyundai Motor Company's debut of the XCIENT Fuel Cell Truck at the 2025 Brisbane Truck Show marks a significant step toward introducing hydrogen-powered long-haul freight in Australia. The truck, which has already proven itself in Switzerland and New Zealand, will be put to the test on Australia's tough roads, demonstrating hydrogen's potential to decarbonize the transport sector and contribute to the country's clean energy future. Hyundai Motor Company has introduced its XCIENT Fuel Cell Truck to Australia at the 2025 Brisbane Truck Show, marking a pivotal moment for the hydrogen industry in the country. The XCIENT, which has already racked up over 13 million kilometres in Switzerland and New Zealand, will undergo trials in Australia, with a focus on proving the viability of hydrogen fuel cells for long-haul freight in harsh conditions.

The XCIENT Fuel Cell is equipped with a second-generation 180kW hydrogen system that ensures the truck starts in temperatures as low as -30°C and offers a range of 700 km per hydrogen fill. Refuelling takes just about 20 minutes, making it a practical alternative to traditional diesel-powered vehicles. The truck features a range of safety technologies, including radar-based SmartSense for lane-keeping and crash prevention, alongside regenerative braking to boost efficiency. "As the world's first mass-produced hydrogen-powered heavy-duty truck, XCIENT offers a zero-emission alternative for long-haul freight, combining powerful performance with eco-conscious innovation."

Hyundai's hydrogen trucks aim to help decarbonize Australia's freight and transport sector, which is crucial to the country's A$72 billion logistics industry. The Queensland region, with its focus on renewable energy and hydrogen infrastructure, is set to play a vital role in this initiative. The state's

A$4.7 billion investment in hydrogen infrastructure provides the perfect backdrop for Hyundai's efforts to demonstrate the viability of hydrogen trucks in the Outback's tough terrain. However, challenges remain. Hydrogen trucks come with a hefty price tag, about A$350,000 more than their diesel counterparts, and there is currently insufficient refuelling infrastructure to support widespread use. Hyundai's trials will serve as a key step in overcoming these hurdles and laying the groundwork for future hydrogen-powered freight solutions.

The Illawarra's green energy prospects on the menu at industry breakfast

30 April 2025

Illawarra industry backs renewable energy projects at i3net event | Illawarra Mercury | Wollongong, NSW

Image: The i3net April industry breakfast. Supplied picture by Brad Chilby

The Illawarra business community gathered at the Grange Golf Club for the i3net April industry breakfast to hear updates on several renewable energy projects in the region. Speakers from Toyota Australia, Squadron Energy and the University of Wollongong [UOW] spoke about the upcoming green energy future and the Illawarra's place in the emerging renewable energy market.

Port Kembla Energy Terminal
GM Operations Readiness at Squadron Energy Martyn Garrett updated the room on the Port Kembla Energy Terminal and said it would help with the transition to renewable energy. The gas is shipped in and unloaded at the terminal, and then transported via a pipeline to Kembla Grange, where it connects to the Eastern Gas Pipeline. "The terminal will meet all of NSW's gas needs on a peak day," he said. "The Port Kembla Energy Terminal is the best short-term solution."

Once operational, the facility will have the capacity to supply 500 TJ a day (130 PJ annually).
The terminal is expected to support about 200 jobs during construction in the area and contribute $27.1 million of regional investment. Once operational, the terminal is expected to employ around 30 people to run the site.

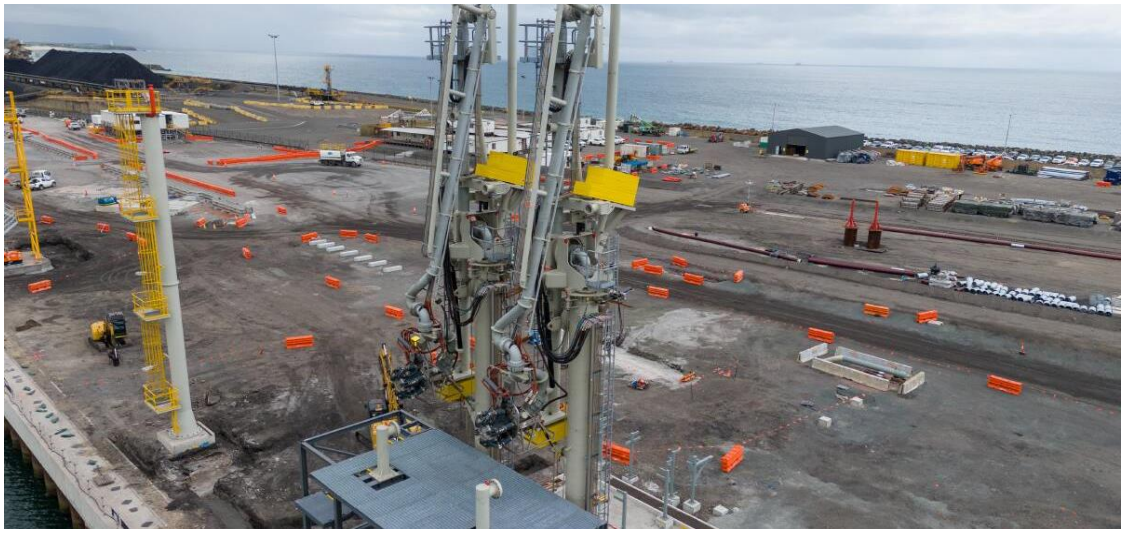

Image: A drone shot of the Port Kembla energy terminal. Picture supplied

Hydrogen fuel-cell power generators

In the car park of the event, Toyota had set up a hydrogen fuel-cell power generator, which runs on hydrogen supplied by Coregas in Port Kembla and emits only heat and water. Toyota has used the hydrogen generator at events like the Australian Grand Prix and AFL Gather round to power sections of the event and is in use on mining sites in the Hunter region.

Image: Toyota's hydrogen generator was set up outside the breakfast. Supplied picture by Brad Chilby

The generator is also able to operate quietly, at its loudest the noise doesn't reach above 60dB, equivalent to a dishwasher, and uses the same fuel cell as the one used in Toyota's Mirai vehicles. Manager, Energy and Partnerships for Toyota, Daniel Ivanov, was one of the speakers at the breakfast and said 1kg of hydrogen can supply roughly 15 kw of power.

UOW electrification project

Sustainability manager of UOW, James Roth, spoke at the breakfast about the university's microgrid project. The Clean Energy Living Laboratory (CELL) at UOW's Innovation Campus will incorporate commercial and residential space, offering researchers the chance to explore the viability of communities that want to reduce their reliance on the national electricity network through on-site clean energy generation. The project will invite industry to trial the project as a "sandbox" and be able to test solutions in a real-world environment.

Image: James Roth speaking at the i3net April industry breakfast. Supplied picture by Brad Chilby

Ask Fuzzy: What is white hydrogen?

22 April 2025

White hydrogen: discovery could spark a renewable energy revolution | Illawarra Mercury | Wollongong, NSW

Hydrogen is often touted as an energy source because it contains no carbon and produces only water when burned. Unfortunately, it's not that simple because it has a lower energy density than other fuels. The overwhelming majority of commercial hydrogen is produced by steam methane reforming from natural gas - a process that generates significant carbon dioxide.

What is the hydrogen rainbow?
Hydrogen is said to come in different 'colours'. Grey hydrogen is made from natural gas, as is Blue, except that it includes carbon capture and storage (CCS).

Image: The discovery could be a major step towards meeting hydrogen demand. Picture Shutterstock

The problem is that CCS has not proven to be viable. Probably the dirtiest are Brown and Black hydrogen, which are both made from coal. Then there's a range of variations such as Turquoise,

Yellow and Purple. There's even a Pink hydrogen. Green hydrogen is usually produced using renewable-generated electricity to split water into hydrogen and oxygen. While this is preferable on environmental grounds, a key difference is that it is not fundamentally an energy source. Because it requires energy to produce, it's actually an energy store. Like a battery, it needs to be 'charged' before it can be used.

Now a surprising new entrant has joined the mix. Until recently, it was believed that hydrogen would never be found in sufficiently large, accessible underground deposits where it could be mined. Since hydrogen is highly reactive, most of it would be tied up in compounds like water or hydrocarbons. In May 2023, scientists found something remarkable in abandoned mines in France's Lorraine region: naturally occurring hydrogen. In March 2025, they discovered more reserves near Moselle. These so-called White hydrogen reserves are estimated to be around 92 million tonnes, which equates to nearly half the world's current hydrogen production.

Even more remarkable is the possibility that the reserves may be replenished by a chemical reaction between water and iron-rich minerals in the mantle rocks. If that proves true, White hydrogen may be a renewable resource. If properly exploited, this could be a major step towards meeting hydrogen demand for several years. The challenge now will be to develop the technology to economically extract, store and transport hydrogen. Unlike other fuels, this is still in its infancy and will require substantial investment in research and development.

Japanese car giants join fight to keep engines alive with synthetic fuel

15 April 2025

Japanese car giants join fight to keep engines alive with synthetic fuel | Illawarra Mercury | Wollongong, NSW

Five big names in Japan's automotive industry are backing synthetic fuels to ensure the future of internal combustion engines, with demonstrations now taking place for the public. They're not the only brands looking to synthetic 'e-fuel' to keep engines alive, with Porsche investing heavily in its e-fuel program, which includes planned production in Tasmania. Now Toyota, Mazda, Subaru, Suzuki and Daihatsu will all provide passenger vehicles for this year's Osaka Expo (running from April to October), and rather than running on oil-based 'fossil' fuels, they'll be powered by hydrogen-derived synthetic fuels.

Manufactured by Eneos, the carmakers claim synthetic fuels are "clean energy sources made from hydrogen derived from renewable energy sources and CO2 that can reduce CO2 emissions throughout their product lifecycle". "As liquid fuels, they can utilize existing infrastructure and therefore contribute to reducing internal combustion engine CO2 emissions." In a joint media statement, the carmakers said that "By operating the vehicles for transporting guests and related parties at the Expo, Eneos, Suzuki, Subaru, Daihatsu, Toyota, and Mazda will promote the idea that engine-equipped vehicles running on synthetic fuel are a key mobility option on the path toward carbon neutrality."

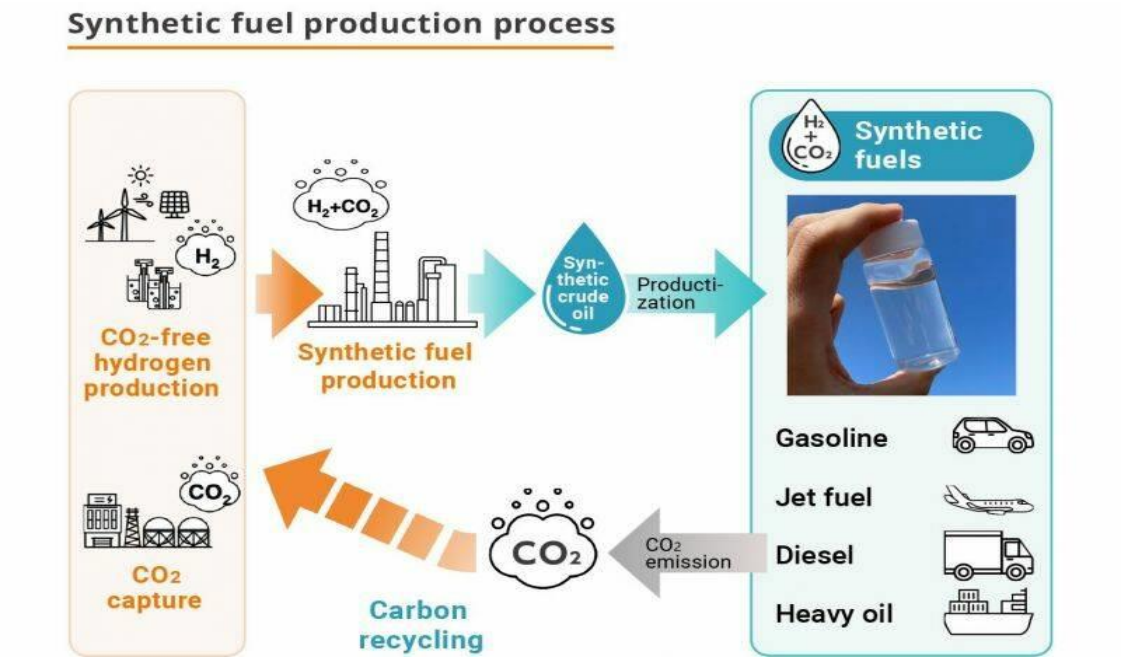

Image: Japanese car giants join fight to keep engines alive with synthetic fuel

It's not the first time Toyota, Mazda and Subaru have joined forces to back internal combustion engines. Last year they committed to the development of lower-emissions powertrains which will lean on hybrid assistance and the use of synthetic fuels. All three brands have been criticised for being slow to transition to an electric model lineup, though their continued support for traditional combustion engines is claimed to come from "a deep understanding of their customers' diverse lifestyles". The brands say their future engines will "not only represent their respective brands but also cater to their customers' unique needs and preferences".

While the most recent announcement marks one of the first times Mazda and Subaru have openly supported non-petroleum fuels, Toyota has long sought a diverse powertrain approach to reducing emissions. In addition to developing and releasing hydrogen fuel-cell vehicles (FCEVs), the world's largest carmaker has been experimenting with internally combusted liquid hydrogen as an alternative to petrol, with racing prototypes of its GR Corolla and GR Yaris using the world's most abundant gas rather than high-octane unleaded petrol.

Contact

The **Port Kembla Hydrogen Hub** is funded by the Illawarra Shoalhaven Joint Organisation (ISJO) and NSW Government. For further information, please contact Jessica Young, Port Kembla Hydrogen Hub Facilitator by email: info@portkemblahydrogenhub.com.au. Previous editions of the **Port Kembla Hydrogen Hub Update** newsletter are available here.