

31 January 2024

New Year's greetings from Port Kembla! This **Port Kembla Hydrogen Hub Update #24** contains information on the following key projects and initiatives:

- **TAFE NSW – Fuel Cell Electric Vehicle Training**
- **How Port Kembla** could support **offshore wind** as far away as **Victoria** - 19 January 2024
- **2025 deadline** for **green hydrogen** mix at **Tallawarra** 'may change' - 10 January 2024
- **No threat to aircraft** from next **Tallawarra power plant** upgrade - 4 January 2024
- **Wollongong** misses out on slice of **\$2 billion green hydrogen** funding - 27 December 2023
- **EnergyAustralia** successfully completes **test fire** of **Tallawarra B** - 18 December 2023

Previous editions of the **Port Kembla Hydrogen Hub Update** newsletter are available [here](#).

TAFE NSW - Fuel Cell Electric Vehicle Training

<https://store.training.tafensw.edu.au/product-category/microskills/fuel-cell-electric-vehicles/>



Fuel Cell Electric Vehicles

With the Coregas H2Station opened in July 2023 and two FCEV heavy vehicles now in service in the region, a lot of focus has been on the important training and safety aspects of operating and refuelling hydrogen powered heavy vehicles. TAFE NSW have been at the forefront of the developing industry led training that reflects these new hydrogen technologies and deployment challenges.

TAFE NSW have worked collaboratively with key industry participants such as Coregas, Hyzon, ARCC and Foton Mobility to develop a range of Microskill courses covering areas such as refuelling and specific FCEV vehicle technology.



Get to know the Foton FTH12 Hydrogen City Bus



Introduction to fuel cell electric vehicles, systems, and components

Shellharbour TAFE Campus are at the forefront of the transition to battery electric and fuel cell electric vehicle technology. They have been big supporters of the Port Kembla Hydrogen Hub activities such as the H₂ Future Mobility Day and H₂ Training + Safety Day events held during 2023.

Both staff and students are benefitting from having hydrogen powered heavy vehicles deployed in the region. Late last year Remondis visited the Shellharbour TAFE Campus with their Hyzon FCEV Refuse truck as shown below providing students and staff with the opportunity to experience first hand the sophistication of the FCEV drivetrain and hydrogen storage system.



Hyzon FCEV Refuse Truck operated by Remondis at TAFE NSW – Shellharbour Campus

How Port Kembla could support offshore wind as far away as Victoria

Date: 19 January 2024

<https://www.illawarramercury.com.au/story/8490395/port-kemblas-role-in-offshore-wind-in-nsw-and-victoria/>



One of the concept plans for the development of Port Kembla's outer harbour as an offshore wind port terminal, released in February 2023.

Port Kembla is in prime position to support offshore wind zones along Australia's east coast beyond just that proposed for the Illawarra, its managing body says. NSW Ports is again promoting Port Kembla as an offshore wind port following the federal government's decision to knock back such plans for Victoria's Port of Hastings on environmental grounds. Hastings was identified as the Victorian government's preferred port when Gippsland became Australia's first declared offshore wind zone (the Hunter has also since been declared). While Gippsland offshore wind farm's chief executive officer has flagged Geelong Port and the Port of Bell Bay as other options, NSW Ports says Port Kembla also has a role to play to deliver offshore wind and meet the federal government's target of net zero emissions by 2050.

NSW Ports released concept plans in February 2023 which outlined the development of multiple berths and storage facilities across 35 to 40 hectares of Port Kembla's outer harbour to service offshore wind farms. Chief executive officer Marika Calfas said Port Kembla was well-located to support offshore wind zones in both NSW and Victoria, and had advanced plans for a terminal. "Additionally Port Kembla is located within an existing industrial hub, including the BlueScope steelworks which may be used to provide certain steel inputs to wind farm projects," Ms Calfas said. "Port Kembla already supports the renewable energy transition through its handling of onshore wind farm and solar farm components."

The development of Port Kembla's outer harbour for port facilities was approved in 2011 and Ms Calfas said modification of this approval would make the port available to the offshore wind industry. "In this way Port Kembla is more advanced than other ports and can be progressed in a timely way to support the east coast offshore wind zones," Ms Calfas said. NSW Ports anticipates a facility at Port Kembla would be ready within five years if work began now. "Given we already have approved plans in place for a container and bulk port terminal development in the outer harbour we don't anticipate any significant issues modifying the approval to accommodate offshore wind port activities," Ms Calfas said.

While Port Kembla is some distance from Gippsland, multiple ports will be needed to support offshore wind zones. Ms Calfas said industry participants indicated that Port Kembla could support the development of wind farms in Gippsland. "Port Kembla can be made ready whilst other locations continue to be considered," she said.



Port Kembla's outer harbour in September 2023. File picture by Robert Peet

The plan for Port Kembla has the backing of the region's peak business group, Business Illawarra, and one of the Illawarra wind farm proponents, Oceanex. Business Illawarra executive director Adam Zarth said there was a very strong need for "capable and industrialised ports" like Port Kembla to support the offshore wind industry. Mr Zarth said the region was able to provide and train, through the University of Wollongong and the public and private sectors, the people who could work with the complex equipment of the offshore wind farms.

Emily Scivetti, Oceanex's chief operating officer, said the company had worked with NSW Ports and the Port of Newcastle for over four years, and it was clear Port Kembla and Newcastle were the "two leading ports in Australia to service offshore wind". "This is a huge opportunity for NSW and we encourage all efforts to prepare Port Kembla and the Port of Newcastle to take advantage of what could be a \$50 billion industry for our state," Ms Scivetti said. "There is no reason why Port Kembla and the Port of Newcastle should not be involved in servicing Victorian projects, both are well set up to deliver the multiple functions of a construction port."

Meanwhile, wind farm developers are still awaiting a decision on the proposed Illawarra offshore wind zone, and although there is no set timeline for this process, a determination is expected within the first quarter of the year. The federal government declared the Hunter zone in July 2023, a little under three months after the consultation period ended, and the Gippsland zone a little over two months after consultation wrapped up.

2025 deadline for green hydrogen mix at Tallawarra 'may change'

Date: 10 January 2024

<https://www.illawarramercury.com.au/story/8481271/illawarra-hydrogen-trial-potentially-delayed-as-energyaustralia-evaluates-fuel-availability/>

A major potential user of green hydrogen in the Illawarra has indicated it is preparing for a world-first trial of hydrogen for power production to potentially not meet initial deadlines. EnergyAustralia, the owner of the Tallawarra power station, said last week that the addition of green hydrogen to the gas-fired power plant on the shores of Lake Illawarra "may change" due to the availability of the fuel.



In 2023 EnergyAustralia managing director Mark Collette set a 2025 deadline for locally-sourced green hydrogen in the Tallawarra B blend. Now this may not happen. Picture by Sylvia Liber.

"EnergyAustralia and the NSW Government are currently assessing the feasibility of a 5% demonstration of hydrogen at Tallawarra by 2025 although this may change to align with the development of a hydrogen manufacturing industry of an appropriate size and scale," a spokesperson said. EnergyAustralia is currently undergoing a modification to its planning approvals to be able to use hydrogen as part of the fuel mix at the new Tallawarra B turbine.

The turbine went through its "first firing" in late 2023, and is expected to be fully up and running shortly, after a minor delay due to the collapse of major contractor Clough. Earlier in 2023, managing director of EnergyAustralia Mark Collette told the Mercury that the company wanted to have locally-made green hydrogen running through the power station by 2025.

If successful, that would be a world first, as Tallawarra B has installed the first of a particular dual gas-hydrogen turbine from US manufacturer GE, and EnergyAustralia's Hong Kong-based owner, CLP Holdings were looking at the site as a demonstration of how the technology could be rolled out in other sites around the world. While the turbine, pipeline and power station are ready to go, the challenge is to find a suitable producer of green hydrogen in the Illawarra.

In December, the Illawarra was overlooked in the federal governments' Hydrogen Headstart scheme, despite the Treasurer name-checking Wollongong in his budget speech when he announced the initiative. The bulk of the projects funded under Commonwealth the scheme have indicated they intend to produce hydrogen for export, largely in the form of ammonia, which can then be used for fertiliser and explosives. In contrast, the Illawarra has a number of major hydrogen users, some having already made significant investments to be hydrogen ready - as in the case of Tallawarra - but without a major green hydrogen producer.

After a registration of interest period as part of the NSW government's Hydrogen Hub scheme, three businesses in the Illawarra indicated they were willing to be major consumers of hydrogen, with a total yearly demand of more than 22,230 tonnes of hydrogen initially, with the capacity to scale up. Since then, one of those customers, Squadron Energy, has shelved plans for a hydrogen power plant. On the other side of the ledger, BOC received a \$28,500,000 grant for a 10.5MW electrolyser, to produce 1460 tonnes of green hydrogen in Cringila. A final investment decision by the company is yet to be reached, with a spokesperson saying the engineering design phase was continuing.

UOW energy expert Ty Christopher said that EnergyAustralia's timelines were always "ambitious", but said that in the development of any new industry, there needed to be companies willing to take the plunge. "It's better to push the boundaries out, than sit and wait for things to happen." Instead, Mr Christopher said the spark needed to come from government, which would provide the necessary lubrication between a mismatch between purely commercial supply and demand. After the "disappointing" federal decision, it was time for the NSW Energy Minister Penny Sharpe to step up. "A question worth asking of our current state leaders is well, we had momentum, the momentum has now slowed, what's going on?"

The office of Minister Sharpe was contacted for comment and directed queries to the Department. "NSW Government has awarded \$109.3 million of funding from the hydrogen hub initiative to three hub projects to increase the production and availability of green hydrogen across the state," a department spokesperson said. "The hubs are progressing towards final investment decisions, expected this year, with domestic green hydrogen production and offtake expected in 2025."

No threat to aircraft from next Tallawarra power plant upgrade

Date: 4 January 2024

<https://www.illawarramercury.com.au/story/8475669/tallawarra-power-station-upgrade-no-threat-to-aircraft-casa-says/>

Aviation authorities have made it clear there are no worries about an exhaust plume from the next upgrade of the Tallawarra power station near Shellharbour Airport. Concerns were raised by some Shellharbour city councillors last year that exhaust from the new Tallawarra B plant may produce a [plume that could cause aircraft to stall](#) when leaving the nearby airport at Albion Park. The council's September meeting featured debate on whether plant operator EnergyAustralia should have to provide exhaust plume measurements in real time for aircraft safety. But that was Tallawarra B. The latest upgrade concerns the Tallawarra A plant, which EnergyAustralia is seeking permission to upgrade.

Both plants burn gas for electricity and are seeking to be capable of taking up to 5 per cent hydrogen as well, to help stimulate a hydrogen industry in the region. The next would increase Tallawarra A's capacity to 480 megawatts (from 440) by increasing its efficiency - and reducing emissions while doing so. Less emissions means a smaller exhaust plume, and the Civil Aviation Safety Authority said it will not cause aircraft safety problems - same as the A station's present plume.

"CASA notes advice from the proponent that the exhaust velocity and temperature of the emissions from the proposed upgrade are lower than that of emissions from the existing plant," CASA states in its advice to the [NSW Major Projects](#) planning process. "Noting the current plume rise does not create a risk to the safety of aircraft operations, CASA advises that the proposal with the lower exhaust parameters is acceptable without any additional risk mitigation."



EnergyAustralia managing director Mark Collette at the Tallawarra B site in April 2023. Picture by Sylvia Liber.

More information on hydrogen needed

EnergyAustralia's [Environmental Impact Statement](#) for the Tallawarra A upgrade says it would be able to "generate more electricity without using more gas", by using newer and more reliable components. The upgrade also seeks to make Tallawarra A hydrogen capable, but moving to include 5 per cent hydrogen would require another planning approval.

"By making Tallawarra A hydrogen capable, the upgrade increases the potential customer base for hydrogen in the Illawarra region, supporting the creation of a hydrogen industry," the EIS states. The Environment Protection Authority has stated it has no objection to the upgrade, but the Department of Planning and Environment's Hazards Team says the EIS mentions potential hydrogen use, but contains no assessment of risks or methods of hydrogen handling and storage. It says this information needs to be clarified.

Tallawarra B firing up

Test firing was conducted on the new Tallawarra B plant in December, Energy Australia said, with commercial operation set to start in late February. "We are very close to completion however the final phase of commissioning involves extensive testing and various approvals including by AEMO [Australian Energy Market Operator]," a spokesman said. "The project is broadly on track, although we originally hoped Tallawarra B would be commissioned by the end of 2023. The small delay is primarily associated with the project's main contractor Clough collapsing in December 2022.

"The project team have worked hard through challenges presented by Clough's collapse to ensure the project remained largely on schedule. "Tallawarra B will be commissioned as a gas-fired peaking power station as originally planned; however it remains our ambition to support the development of a hydrogen manufacturing industry in the Illawarra by creating demand at Tallawarra with both our A and B power stations being 'hydrogen capable'. "EnergyAustralia has lodged a modification to the Tallawarra B planning approval to use 5 per cent hydrogen as part of the fuel mix and to install the necessary infrastructure to blend hydrogen with gas.

"EnergyAustralia and the NSW Government are currently assessing the feasibility of a 5% demonstration of hydrogen at Tallawarra by 2025 although this may change to align with the development of a hydrogen manufacturing industry of an appropriate size and scale."

Wollongong misses out on slice of \$2 billion green hydrogen funding

Date: 27 December 2023

<https://www.illawarramercury.com.au/story/8470873/illawarra-misses-out-on-2-billion-in-hydrogen-headstart-funding/>

A \$2 billion federal government funding initiative which the [Treasurer announced during the 2023 budget while name checking Wollongong](#) as a site it will benefit has not shortlisted a single project in the Illawarra. On December 21, the Australian Renewable Energy Agency announced the shortlist of six projects for the Commonwealth's Hydrogen Headstart program. These included projects in Queensland, Tasmania, Western Australia and two projects in the Hunter. The final successful applicants will be announced in late 2024.

A spokesperson for ARENA said the location of the 60 applicants could not be disclosed due to the competitive nature of the process. "The Hydrogen Headstart Program received more than 60 expressions of interest applications. This indicates a strong pipeline of hydrogen projects under development in Australia across a range of end uses and locations." When announcing the program in his budget speech this year, Treasurer Jim Chalmers said the initiative would be directly relevant to the Illawarra.

"Hydrogen power means Wollongong, Gladstone and Whyalla can make and export everything from renewable energy to green steel," Dr Chalmers said. The terms of the funding, which would provide a production credit over 10 years to reduce the price gap between renewable hydrogen and other energy sources, was directed towards projects that include the deployment of large-scale electrolyzers of at least 50 megawatts in size.

Most of the shortlisted projects intend to produce green ammonia, which is used to make fertiliser and explosives, with some intending to use hydrogen for green fuels for aviation and heavy industry. None of the projects explicitly target green iron or steel. ARENA CEO Darren Miller said the selected projects would contribute to Australia's green goals as well as provide the spark for a green hydrogen export industry. "Hydrogen Headstart is a crucial step towards keeping Australia on the path to become a global hydrogen leader, creating new export opportunities, while helping to decarbonise our economy," he said. The ARENA spokesperson said the agency had funded a number of hydrogen projects in the Illawarra, including at [the Port Kembla steelworks](#) and green hydrogen start up Hysata.

The largest currently operating electrolyser in Australia is 1.25MW, located in South Australia. In the Illawarra, industrial conglomerate [BOC plans to build a 10 MW electrolyser at its site in Cringila](#) to produce hydrogen for heavy vehicles, and received \$28.5 million from the NSW government for the initiative earlier in 2023. Garbage trucks and buses powered by blue hydrogen - produced from natural gas at CoreGas's Port Kembla plant - are making the rounds of the Illawarra, while [Hysata moved into its manufacturing site in Port Kembla](#) earlier this year. However, establishing a large-scale hydrogen production facility in the Illawarra has had its stops and starts. [BlueScope and Shell](#) announced plans for hydrogen production to support green steel, however both parties later went their separate ways.



Wollongong state MP Paul Scully - pictured at the opening of CoreGas's hydrogen refuelling station - has repeatedly said the Illawarra would not be handed opportunities and would need to seize them itself. Picture by Anna Warr

In addition, Squadron Energy, the power generation arm of Andrew 'Twiggy' Forrest's business empire, quietly shelved [plans for a hydrogen power plant in August](#). Despite this, the Illawarra retains many of the ingredients for a hydrogen economy, with a [hydrogen-ready power plant nearing completion at Tallawarra](#), hydrogen vehicles in commercial operation, and a future major industrial user in the case of [BlueScope's Port Kembla steelworks which is exploring hydrogen in place of coal as the most likely pathway to producing green steel](#). Whether government investment is the final piece of the puzzle remains to be seen, but as Wollongong state MP Paul Scully often reminds industry gatherings the region may have to create its own luck as it has done in the past. "These opportunities are not going to be presented to us, they're not going to be served up on a silver platter," Mr Scully told an Illawarra i3Net meeting in December, "we're going to have to fight for it as a region."

EnergyAustralia successfully completes test fire of Tallawarra B

Date: 18 December 2023

<https://www.energyaustralia.com.au/about-us/media/news/energyaustralia-successfully-completes-test-fire-tallawarra-b>

EnergyAustralia today confirmed it has successfully completed the first test fire of its new 316MW Tallawarra B gas power station located on the shores of Lake Illawarra at Yallah in southern New South Wales. EnergyAustralia's Tallawarra B Project Director Ian Black said: "Successfully completing the test fire is a significant milestone toward Tallawarra B's commercial operation early in 2024. "We understand the importance of completing this project to help provide energy security for homes and businesses in New South Wales with what is predicted to be a hot and dry El Niño summer. While there is still more work to complete, we look forward to completing the remaining work to bring Tallawarra B online this summer."



Image: Tallawarra B power station in foreground. Picture by EnergyAustralia

Mr Black added: “As Australia continues to transition away from coal to renewables, fast-start gas generation assets like Tallawarra B, will play a critical role in supporting electricity reliability at peak periods and at times of low solar and wind production.” EnergyAustralia and other project partners including GE and over 300 contractors have worked to keep the project on track through supply chain disruptions associated with the COVID pandemic and after the principal project contractor Clough went into administration in December 2022. AEMO and grid provider Endeavour Energy are supporting Tallawarra B to connect to the grid as efficiently as possible.

Recent Tallawarra B Milestones

- Completion of ‘back energisation’ of the station in October which saw Tallawarra B connected to the electricity grid.
- Over \$13 million invested in safety measures to manage and monitor Tallawarra B’s exhaust plume. This includes the design and installation of a 54-tonne purpose-built plume dispersion device, real-time plume monitoring technology and other plume safety features. These measures are designed to meet all Civil Aviation Safety Authority requirements ensuring the safety of aircraft using the nearby Shellharbour airport.
- Commencing a \$300,000 program of work, in partnership with the Illawarra Local Aboriginal Land Council and the Wollongong Botanic Gardens, to rehabilitate land surrounding the Tallawarra A and B power stations with native vegetation.

When commissioned the \$300 million Tallawarra B will power up to 180,000[1] homes and small businesses during peak demand periods, providing system reliability and complementing renewables coming into the system. Tallawarra B is located adjacent to EnergyAustralia’s existing combined cycle Tallawarra A gas-fired power station which has been in operation since 2009. Tallawarra A is one of Australia’s most thermally efficient, large-scale gas-fired power stations with a generation capacity of 435MW.

FURTHER INFORMATION

The Port Kembla Hydrogen Hub is facilitated by the [Department of Regional NSW](#) in partnership with the [Illawarra Shoalhaven Joint Organisation](#) (ISJO). For further information about the Port Kembla Hydrogen Hub, please visit the [webpage](#) or contact Nigel McKinnon, Deputy Director, Department of Regional NSW by email nigel.mckinnon@regional.nsw.gov.au.