13 September 2024

Greetings from a cold and windy Port Kembla! This special edition of the **Port Kembla Hydrogen Hub Update #29** contains information on today's release of the **2024 National Hydrogen Strategy.** Meeting since February 2020, the **Vision** and **Key Strategies** of the **Port Kembla Hydrogen Hub** were shaped and informed by the **2019 National Hydrogen Strategy**.

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- **Orrcon launches $70 million** Unanderra steel **mill upgrade** - 26 July 2024
- **BlueScope** warned it risks being left behind in **global shift to green steel** - 20 July 2024
- **'Gutted like a Fish': Forrest** on **Fortescue job losses** - 18 July 2024
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Previous editions of the **Port Kembla Hydrogen Hub Update** newsletter are available here.

New hydrogen strategy sets path for Australia to become a global H2 leader

13 September 2024

https://www.dcceew.gov.au/sites/default/files/documents/national-hydrogen-strategy-2024.pdf

The Australian Government has released its 2024 National Hydrogen Strategy. The strategy provides the framework to guide Australia's production, use and export of hydrogen. This will position Australia to become a global hydrogen leader.

Australia has one of the largest pipelines of hydrogen projects of any country in the world. The International Energy Agency (IEA) reports that 20% of all announced projects globally are in Australia.

The 2024 National Hydrogen Strategy represents a comprehensive formal review and update of the 2019 National Hydrogen Strategy. It takes into account developments in technologies, markets and the international policy landscape over the last 5 years.

It focusses on industry growth through supporting development at scale. The National Hydrogen Strategy's new vision is:

"A clean, innovative, safe and competitive hydrogen industry that benefits Australia's communities and economy, enables our net zero transition, and positions us as a major global player."

Central to the updated strategy are the production incentives announced as part of the Australian Government's $22.7 billion Future Made in Australia plan. These were announced through the 2024-25 Federal Budget. The Hydrogen Production Tax Incentive (HPTI) and the expanded Hydrogen Headstart Program will drive economies of scale, accelerate investment and reduce the cost gap for renewable hydrogen.

The new strategy was developed in close consultation with stakeholders from:

- state and territory governments
- industry stakeholders, including:
    - face to face meetings with more than 65 stakeholders
    - the receipt of 115 submissions to a consultation paper
- a multidisciplinary advisory group.

Read more

- Australia's National Hydrogen Strategy

Orrcon launches $70 million Unanderra steel mill upgrade

26 July 2024

Orrcon launches $70 million Unanderra steel mill upgrade - Australian Manufacturing Forum (aumanufacturing.com.au)

Orrcon Steel has officially opened its new Unanderra mill, which will serve demand in sectors including infrastructure and renewables. According to parent company BlueScope, $70 million was invested in the new mill, which is the most advanced factory of its kind in Australia, "This new pipe and tube mill gives new meaning to this historic 65-year-old building with a rich history, making stainless steel up to the early 1990s," *The Illawarra Mercury* reports Tania Archibald, BlueScope's

CEO of Australian Steel Products, as saying at the launch. “Breathing new life into the facility, the multi-storey 300m-long building now houses Australia’s most advanced pipe and tube mill.”

An estimated 20 new full-time jobs will be created at the site. In a statement on Linkedin, BlueScope said the new mill builds on the existing range of tubular products made at Orrcon’s Salisbury (Queensland) and O’Sullivans Beach (South Australia) sites. “Including advanced robotics and automation, the state-of-the-art mill can produce up to 90 metres of tubular product per minute, featuring large circular, square, and rectangular hollow sections up to 10 inches in diameter,” it said.

Picture: credit Orrcon Steel

“We congratulate the teams at Orrcon Steel and BlueScope who have made this a reality, with a special mention of Brendan McNally (Unanderra Manufacturing Manager), who has worked tirelessly to oversee and ensure the project’s completion.” Guests at the opening included NSW Wollongong MP Paul Scully, Wollongong Lord Mayor Gordon Bradbery, and BlueScope’s chair Jane McAloon and CEO Mark Vassella. BlueScope Steel acquired Orrcon Steel and Fielders, both steel products companies, from Hills Holdings a decade ago for $80 million.

BlueScope warned it risks being left behind in global shift to green steel

20 July 2024

[BlueScope warned as global steel industry moves towards green | Illawarra Mercury | Wollongong, NSW]

BlueScope has again been warned it risks being left behind as the world moves on to "green" low-emissions steel, while the Port Kembla steelworks doubles down on using coal. The international iron and steel industry has made "major strides" towards cutting greenhouse emissions in the past year, the Global Energy Monitor group said in its latest report on the global industry. It would be "absurd" if Australia were to import "clean" steel because BlueScope was not making it, GEM said. About 93 per cent of new steelmaking capacity would use low-emission electric arc furnace (EAF) technology, according to industry announcements, GEM said in its Pedal to the Metal 2024 report.

BlueScope Australia CEO Tania Archibald during the Rio Tino-BHP announcement at Port Kembla in February. Picture by Adam McLean

BlueScope has started the reline of its No. 6 blast furnace at Port Kemba, a billion-dollar job which would enable another two decades of high emission, coal-based steelmaking. BlueScope has said the reline does not lock it in to 20 years of high-emissions steelmaking, but given the $1.15 billion price tag the company will want value from its expenditure.

'This is a warning' GEM's program director for heavy industry Caitlin Swalec said the amount of "green steel" in the pipeline worldwide had reached an all-time high. She said this sounded a warning to BlueScope it may be left behind if major customers demand cleaner steel. "This report is a warning for Australia's biggest steel maker BlueScope that as demand for low emissions steel grows, Australia may find itself importing clean steel from other countries because BlueScope has committed itself to upgrading its blast furnace and locking in coal based dirty steel making for decades to come," Ms Swalec said.

"For a country so blessed in renewable energy potential as well as iron ore, it would be an absurd situation for Australia to be importing clean steel instead of exporting it. "GEM cautioned that the 93 per cent figure represented capacity announcement, much of which had not yet become a reality with development commencing. Just 14 per cent had moved into the construction phase at steelworks globally.

BlueScope has for many years cautioned that low-emissions steelmaking techniques were not yet commercially viable. Earlier this year the Federal Government used a fund set up to aid decarbonisation to give BlueScope a $137 million grant to help upgrade the No. 6 blast furnace.

BlueScope's plans

The blast furnace reline has been criticised for "locking in" two more decades BlueScope could be relying on high-emission coke ovens to burn coal for steel for at least two more decades from 2026. But BlueScope CEO Mark Vassella has said this is not necessarily true. A BlueScope release to investors in August 2023 said the reline could be "a bridge to the future". "The reline does not lock us in to a full 20-year blast furnace campaign," it stated. "In contrast, it secures our immediate future while enabling a transition to lower emissions steelmaking as soon as it is commercially feasible.

"In this sense the reline project is our bridge to the future and critical to maintaining the sovereign capability of flat steelmaking in Australia." BlueScope in February announced a partnership with iron ore miners Rio Tinto and BHP to investigate an electric smelting furnace (ESF) in Australia. This includes the possibility of a pilot plant which the companies said could possibly happen in 2027. "Building a pathway to low emission-intensity iron and steelmaking in Australia is a key priority for our business," BlueScope's Australia Tania Archibald said in February. "We believe that this collaboration where we can contribute BlueScope's unique experience in operating an ESF will be key to cracking the code for Pilbara ores in low emission-intensity ironmaking."

The project aimed to overcome a key impediment in the production of low carbon or green steel - the difficulty of using Australian iron ore in the direct reduced iron (DRI) process, which BlueScope expects to be the technological pathway to green steel. A blast furnace is where iron ore is combined with coke (carbon made from burning coal) to make molten iron for steelmaking.

'Gutted like a fish': Forrest on Fortescue job losses

18 July 2024

'Gutted like a fish': Forrest on Fortescue job losses | Illawarra Mercury | Wollongong, NSW

Mining magnate Andrew 'Twiggy' Forrest is standing by his green hydrogen plan after a decision to axe hundreds of jobs cast doubt on the Fortescue Group's direction. The iron ore miner turned energy company slashed 700 jobs in a restructure on Wednesday, saying it would ensure the company remained "lean, impactful and agile". Dr Forrest took to the airwaves on Thursday to explain the move and reassure investors he remained committed to a green energy future.

"We're not pulling back, this is something which I really genuinely believe in, I'm a hardcore bloke from the bush, I'm a miner, I'm a practical person, I've also had the good fortune to have an education in Australia, so I've really looked hard at the science," he told Perth radio station 6PR. "I just know that going the way we're going with fossil fuels isn't an option, the climate is changing dramatically around us. "It's been taken as 'Twiggy is walking back from hydrogen'.

Andrew Forrest says Fortescue will cut 700 jobs to reduce the duplication of roles across the firm. Photo: James Ross/AAP PHOTOS

Fortescue boss Andrew Forrest during a hydrogen announcement on Gibson Island in Brisbane. (Darren England/AAP PHOTOS)

"Twiggy is not walking back from hydrogen. The world has to have it. We just have to work out how to produce it cheaply enough." The billionaire philanthropist said the uncertainty created by the wars in Ukraine and Gaza and high costs had made the operating environment tough. "We need lower power prices, hydrogen is directly a function of the electricity cost - if the electricity cost is high, then we can't make hydrogen cheaply enough to compete with fossil fuels," he said.

He said the 700 jobs were being cut to reduce duplication of roles across the business and lower costs. Dr Forrest said they included white-collar jobs in the communities, human resources and government relations departments. "Our organisation had been simplified down into one, from having management layers everywhere, we're down to three. He said the job losses had left him "gutted like a fish with a blunt knife, mate". "We're up around 15,000 people ... 5000 contractors. We've let 700 people go. I just hate doing it."

Opposition spokesman for climate change and energy Ted O'Brien said Fortescue was abandoning its green hydrogen strategy and it had "blown a gaping hole" in the federal government's energy plan. "The collapse of this project is symptomatic of Labor's failing all-eggs-in-one-basket renewables-only plan which is eating away at Australia's energy future," he said. "Labor thinks it's picking winners, but we now know they are picking losers and it's Australian taxpayers who are picking up the bill."

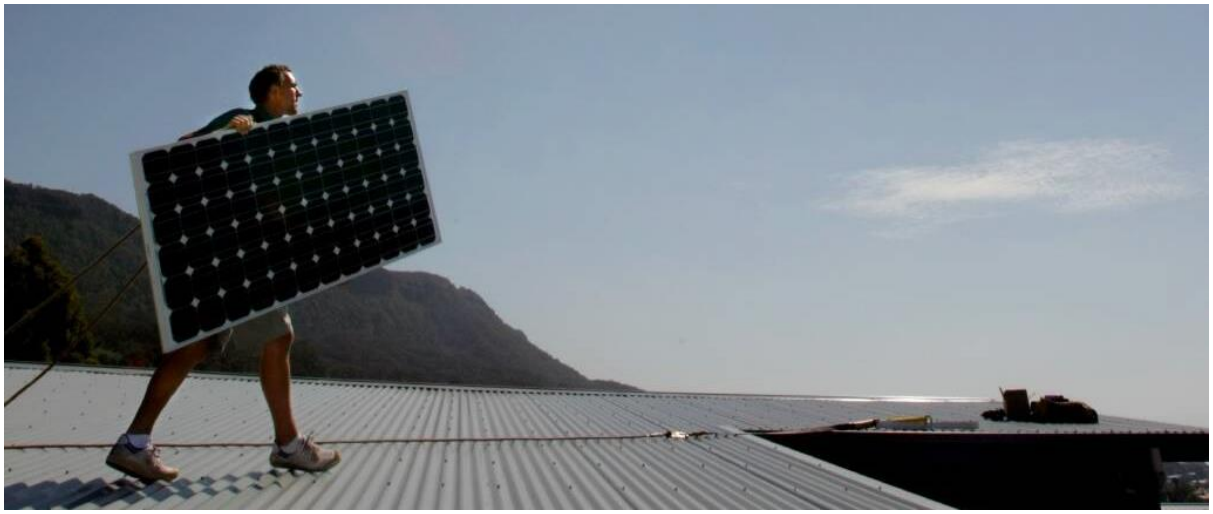
Mr O'Brien said the nation's energy security was under threat. "If increasing gas supply was critical yesterday it is absolutely essential today as the hopes that green hydrogen can play a role in supporting supply fades," he said. Prime Minister Anthony Albanese said the nation's energy plan remained on track. "We want to make sure that we deliver the clean energy that Australia needs and that when coal-fired power stations closed, as they've announced their closure," he said. "That's why we need a real plan that's fully costed and that's being rolled out with the certainty being provided for investment.

Climate Change and Energy Minister Chris Bowen said more than 50 companies were working on renewable hydrogen projects across the nation, with a value in excess of $225 billion. "Green hydrogen will be one of the best ways Australia can decarbonise domestic heavy emitters and help develop robust low carbon manufacturing and industry," he said.

'Virtual power plant' across Illawarra under councils' renewable energy vision

17 July 2024

Illawarra councils plan virtual power plant for renewable energy | Illawarra Mercury | Wollongong, NSW



A solar panel going on a Thirroul roof. File picture by Kirk Gilmour

The Illawarra's councils want to set up a shared system of solar power generation and battery storage to help more households access renewable energy. A "virtual power plant" (VPP) can be created by linking together solar systems on residents' roofs with shared batteries to store the power created for when it is needed. Illawarra councils in Kiama, Wollongong, Shellharbour and the Shoalhaven have kicked off a major move towards a "community renewables" project. The Illawarra Shoalhaven Joint Organisation (ISJO), which includes the region's four councils, is seeking expressions of interest from companies who can deliver the program.

"We need to provide help where it's needed most so there are opportunities for people to share in the health and financial benefits of renewable energy," Wollongong Lord Mayor Gordon Bradbery, chair of the ISJO board, said. "Expressions of interest are being sought from providers to deliver a range of offerings including community bulk buy discounts on solar and battery systems, access to virtual power plants and community energy plans. "We are aiming to provide opportunities to bring everyone on the Wollongong net zero journey, so more residents can benefit from cheap renewable energy. Together is the only way we can reach a net-zero Wollongong. VPPs have been described as the "internet of energy" for their ability to connect and share electricity as the World Wide Web has with information. Commercially run VPPs available in NSW vary; most require solar panels and a battery to be already installed.

Fast track of Squadron Energy's Port Kembla import facility 'would plug the gas supply gap'

2 July 2024

Andrew Forrest's Squadron Energy says its LNG import terminal at Port Kembla could be fast tracked to plug looming gas shortages on the east coast, amid fears regular shortfalls are likely to emerge much earlier than initially anticipated. Squadron's Port Kembla Energy Terminal in the NSW Illawarra region is on track to become the nation's first LNG import facility, with construction expected to be completed this quarter.

The facility is set to become operational in the winter of 2026 following the arrival of a floating storage and regasification unit (FSRU). However, Squadron Energy chief executive Rob Wheals said that could be brought forward a year to next year's winter, but only with the support of state and federal governments. "Based on market feedback, Squadron Energy's focus is to bring the terminal into operation from 2026 to ensure the market remains well supplied, and to support customers ahead of the shortfalls predicted by AEMO," Mr Wheals said. "If there was a need to shore up

security of supply for winter 2025, federal or state governments would need to act now, as time is running out to have the terminal ready in time."

Once completed, the Port Kembla terminal will have the capacity to supply 500TJ a day into the east coast gas system – enough to meet all NSW's gas needs on a peak day. Squadron argues that the facility is the best short-term solution to plugging looming gas shortages on the east coast, despite it still looking for its first customers close to four years after construction began. Mr Wheals would not comment on how talks with potential customers were progressing. Debate around the role of LNG imports in stabilising the domestic gas market is expected to escalate following last month's dire warning from market operator AEMO about the state of the east coast market. While AEMO is forecasting that structural gas shortages are likely to emerge from 2028, in a market "threat notice" issued to the industry on June 19, the market operator said the market had tightened substantially amid supply disruptions, low wind power generation and a winter cold snap that triggered a run on reserves. It warned that supplies in the east coast gas system "may be inadequate to meet demand".

The notice suggested the threat of gas supplies running short extended from NSW to Victoria, South Australia, Tasmania and the ACT, and could last until September, sparking criticism from producers and gas users who blame years of inaction to unlock new gas development projects. The Australian revealed in the days after the notice that AEMO also cautioned the industry that the largest supplier of gas storage on the east coast, Lochard Energy's Iona facility in northeast Victoria, could run out of gas before the end of winter. Squadron's Port Kembla facility is one of several LNG import terminals under consideration, with Venice Energy courting investors for its $300m proposal at Port Adelaide and Viva Energy proposing a terminal for Geelong.

Rick Wilkinson, the chief executive of consultancy EnergyQuest, said AEMO's warnings last month demonstrated the urgent need for LNG import terminals to stabilise the local market. "The evidence is clear. A significant and increasing shortfall of gas is expected earlier than 2028 with seasonal and peak day swings. The sudden supply outage we saw last month confirms that shortfalls are real, and there is limited time to address this problem,"

Mr Wilkinson said "If gas import terminals had been operational last month, the sudden supply shortfall that caused a spike in energy prices would likely not have happened. Mr Wheals also argued LNG import terminals would put downward pressure on domestic gas prices. "LNG import terminals can supply cheaper gas from global markets when pricing is weak during the northern hemisphere summer, right as demand is peaking in the Australian winter," he said.

Economic Development Blueprint for the region launched

28 June 2024

https://isjo.nsw.gov.au/home/who-we-are/statement-of-regional-priorities/

The Illawarra Shoalhaven "Next Generation" Economic Development Blueprint was formally launched on Friday 28 June 2024 by The Hon. Ryan Park, MP, Minister for Health, Minister for Regional Health and Minister for the Illawarra and the South Coast. Funded by the former Department of Regional NSW, the Blueprint is the product of widespread stakeholder input across Government, the private sector and key interest groups. It has as its intention the setting of an agreed direction for collective action and for Federal, State and local plans and the establishment of a smooth runway for private investment.

The Blueprint identifies five “Big Moves” that will transform our region and respond to Sydney’s growth and local needs. While some moves have a specific geography, all will generate region-wide benefits and beyond. They include:

1. Grow Greater Wollongong’s influence in servicing south-west Sydney and vice versa, expanding access to markets and talent
2. Activate and transform the Wollongong-Port Kembla catalyst area to accelerate region-wide diversification and innovation and expand opportunities for Shoalhaven defence manufacturing
3. Unlock the Renewable Energy Zone, Hydrogen Hub and local supply chain opportunities across the region
4. Support the growth of technology-driven manufacturing, research and skills development
5. Amplify the region’s capability and innovation reach across health and care, education and training.

The Blueprint then identifies what needs to happen for our Region and its partners to realise the potential contribution of the Big Moves to our Region, State and Nation. Importantly, the Blueprint also stresses the importance of a focus on key enabling mechanisms including better connectivity, a healthy supply of well-located housing and a proactive and collaborative innovation ecosystem working toward a common vision. The last factor – already a strength in our region – will continue to grow and expand as we work together to help bring about the vast and transformative change so strongly articulated in the Strategy.

A full copy of the Illawarra Shoalhaven Next Generation Economic Development Blueprint is available here ISJO-Report-Final Web-Spread.

We need large-scale energy production: three reasons why offshore wind is a good fit

21 June 2024

https://www.illawarramercury.com.au/story/8670643/offshore-wind-energy-why-its-a-good-fit-off-the-illawarra-coast/

On the weekend, an area 20km off the Illawarra coast south of Sydney became Australia's fourth offshore wind energy zone. It's the most controversial zone to date, with consultation attracting a record 14,211 submissions - of which 65 per cent were opposed. The zone's declaration has inflamed fierce debate over the pathway to decarbonisation, particularly in industrial regions. The Illawarra hosts heavy industries such as Australia's largest steel manufacturer, BlueScope Steel.

In response to the announcement, National Party Leader David Littleproud declared Australia doesn't need "large-scale industrial windfarms". He argues the focus should instead be on household solar and battery storage. So what is the role of offshore wind in our future energy mix? Here we argue offshore wind energy has three main advantages: scale, availability and proximity. It's just what Australia needs.

1. Scale
Offshore wind has substantial energy-production potential. A single 100-turbine project is capable of generating up to 1.5 gigawatts (GW) of energy and the Illawarra zone could contain two

projects (2.9GW). To put this in perspective, Eraring, Australia's largest coal-fired power station near Lake Macquarie in New South Wales, also produces 2.9GW. Because offshore wind is more consistent than either onshore wind or rooftop solar, it is the most practical way to provide time-sensitive renewable energy grid security for large energy users.This high-capacity, consistent energy source is particularly crucial for Australia's industrial decarbonisation efforts. BlueScope Steel, for example, estimates it will need approximately 15 times its current energy consumption to transition to green steel-making operations in the Illawarra region.

University of Wollongong experts Ty Christopher and Michelle Voyer write about the advantages of offshore wind energy. Main pic by Wesley Lonergan

2. Availability

Offshore wind blows more consistently than onshore wind. We can quantify this by comparing so-called "capacity factors". The capacity factor is the actual output of a power station over a given period of time, divided by the theoretical power that could be generated if the plant operated at full output for the same period of time. Onshore wind has a capacity factor of 30%, meaning 1GW of onshore wind farms can be relied upon to deliver 0.3GW of output at any time. Offshore wind has a capacity factor of at least 50%.

For reference, coal plants in Australia, due to their age and condition, have a capacity factor of 60% and this falls further every year. It is a common myth that coal is reliable. The reliability of Australian coal fired generators is currently at an all time low and falling. The Coalition's plan for nuclear power plants announced on Wednesday might look like an alternative answer to the energy availability challenge. But the plan relies on coal in the meantime and coal-fired power plants have a limited lifespan. It's highly unlikely those nuclear power stations could be built in time to take over from coal.

The International Atomic Energy Agency publishes a step-by-step guide to going nuclear. This internationally recognised manual says it takes 10-15 years for a country to go from initial consideration of the nuclear power option to operation of its first nuclear power plant. So the first big problem with nuclear in Australia is, how do we ensure we have reliable power for the five to ten

year gap between when most of the coal exits and the first nuclear power plant could possibly be commissioned?

3. Proximity
Most of Australia's population and industry is near the east coast. Placing electricity generation near to where it is needed is more efficient. It also avoids having to construct many kilometres of new overhead electricity transmission lines to connect onshore wind farms far inland. Australia is leading the world in the uptake of home solar panels and batteries. This is definitely worthwhile. But contrary to Littleproud's suggestion, it's not the whole solution to Australia's decarbonisation effort. For example, it won't solve the problem of the need to electrify heavy industry.

BlueScope has stated that to decarbonise its current steel-making operations, it will need 15 times more electricity. This is the equivalent of the solar exported by a staggering 3.6 million homes - more than one-third of the total number of homes connected to the National Electricity Market. Putting this into perspective, the Illawarra region has 130,000 homes. By our calculations, the BlueScope steelworks currently uses the same amount of electricity each day as the total solar exported by 240,000 homes - assuming generous export of 10kWh per home and BlueScope's daily use of 240,000 kWh of energy.

Even if the Illawarra had enough homes exporting solar power to electrify BlueScope's operations, getting this electricity to where it's needed is technically impossible. Home solar systems are connected to the lowest capacity part of the energy grid - the wires in the street. We simply don't have the capacity to move gigawatts of power from rooftop solar to large energy users such as steel and aluminium plants.

Australia needs large-scale energy, including wind
Australia needs large-scale electricity generation. The Coalition has recognised this, and is now promoting large nuclear power plants as well as small modular reactors. The clean energy transition requires multiple renewable energy sources to meet different needs. There is no "one size fits all" solution - and there is clearly an important role for offshore wind in this mix. We can expect to see Australia's first offshore wind farms operating in Victoria's Gippsland by the end of the decade. The Coalition remains committed to the Gippsland project. But it has signalled its intention to scrap proposed offshore wind zones in the Illawarra and Hunter, if elected.

This decision would have flow-on effects. An industry is emerging around the pipeline of potential wind energy projects. The latest announcement will almost certainly heighten tensions surrounding the already bitter debates raging in our communities.

Navigating the contested waters of offshore wind
It is common for the media and politicians to frame energy debates as a blunt binary of support versus opposition for different options, such as offshore wind. Yet genuine progress requires respectful dialogue and a commitment to finding common ground. For the Illawarra, we argue much greater attention must be paid to the methods, models and outcomes of community engagement. We need to involve the community in constructive conversations about the nature, scale and scope of our future energy mix, which may include offshore wind.

Independent scientific research can provide the evidence base for such crucial decisions about the future of our communities and industries.

- Ty Christopher: Director Energy Futures Network, University of Wollongong
- Michelle Voyer: Principal Research Fellow, University of Wollongong
- This article was first published on The Conversation

FURTHER INFORMATION

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