

UPDATE #21

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This **Port Kembla Hydrogen Hub Update #21** contains information on the following key projects and initiatives:

- **H2 Training + Safety Day #3**: 21 September 2023 – Register Now
- **BlueScope Steel** to reline coal-fired blast furnace at Port Kembla
- Hydrogen company **Hysata** to begin making new electrolyser at Port Kembla
- Consultation opens for **Offshore Wind Zone** in the Illawarra
- **Business Illawarra** - Illawarra Clean Energy Summit and Expo
- **HDrive** - NSW Launch of Taurus FCEV Prime Mover
- **Coregas** opens Australia's first commercial hydrogen refuelling station
- **Green Gravity** launches Port Kembla testing apparatus

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

H2 Training + Safety Day #3: 21 September 2023 – Register Now

Australia's first Hydrogen Refuelling Station (HFS) for heavy road transport - the \$2m Coregas H2Station is now operational at Port Kembla. With capacity of 400kg, the Coregas HFS facility can refuel up to ten hydrogen powered heavy vehicles daily.

The focus of this one hour virtual event is on training + safety aspects of using hydrogen refuelling stations and operating hydrogen powered heavy vehicles. Training + safety are especially important topics as FCEV and H2ICE heavy vehicles are deployed at scale. [BOC](#) has announced plans for 50 FCEV heavy vehicles to be deployed in 2025 in partnership with [IVECO](#) and [Foton Mobility](#).

Hear from [TAFE NSW](#), Fire & Rescue NSW, HYZON and UOW representatives as they present on training and safety issues concerning the practical aspects of operating and refuelling hydrogen powered heavy vehicles. There is no restriction on numbers for this virtual event.

Register now for this important event [here](#).

BlueScope Steel to reline coal-fired blast furnace at Port Kembla

Date: 21 August 2023

<https://www.abc.net.au/news/2023-08-21/bluescope-steel-reline-coal-fire-blast-furnace-port-kembla/102755706>

[BlueScope Steel](#) has approved the most expensive infrastructure project in the company's history, insisting that relining a dormant coal-fired blast furnace will not lock the company to coal-based steelmaking for the next two decades.

Key points:

- BlueScope Steel to spend \$1.15 billion to reline mothballed coal-fired blast furnace
- CEO Mark Vassella says the move will not lock the company into coal-based steelmaking for 20 years
- The steelmaker says it supports a potential carbon border adjustment mechanism for steel imports

The steelmaker confirmed its board had approved the reline of the number six blast furnace in Port Kembla to replace its current blast furnace. The project was initially estimated to cost between \$700 million and \$1 billion, however the steelmaker has updated the cost to about \$1.15 billion. BlueScope has been [under pressure from international observers to abandon the reline](#) and invest the money into "green" steelmaking alternatives.

Chief executive Mark Vassella confirmed there was no other technology on the market that could maintain the plant's output as its current blast furnace reaches its end-of-life later this decade. "We see no alternative between now and late 2026 when we need number six ready to blow in and start producing iron for us, that is clear from our perspective," Mr Vassella said. "There are not technologies which are commercially viable to replace the blast furnace so, we are building a bridge to the future. "This allows us to continue to grow and generate the profits that will allow us to invest in the newer technologies, the lower emissions steelmaking technologies as they emerge."

The announcement comes as the steelmaker reported an annual profit after tax of \$1 billion, [down on the previous year's record \\$2.8 billion profit](#). The new blast furnace would have a "campaign life" of 20 years however Mr Vassella said it did not mean BlueScope was committed to using coal to make steel for the full period. "What we are really signalling there is the world is changing, there is no question and steelmaking technologies are emerging," Mr Vassella said. "We have set a net-zero goal but have been really clear that what we need in Australia to support that are enablers around renewable energy, hydrogen, raw materials."



European companies are promising to begin production of low-emissions steel as early as 2025. (Supplied: SSAB)

In June, German steelmaker ThyssenKrupp secured more than \$3 billion in government funding to build a green steel plant, while Swedish H2 Green Steel has promised to begin producing low-emissions steel using hydrogen by 2025. BlueScope confirmed it was working with steelmakers like ThyssenKrupp to plot the best path forward for decarbonising its operations.

Steelmaker welcomes green tariffs

Last week, Federal Environment Minister Chris Bowen confirmed the government was considering introducing an import tariff on carbon-exposed industries such as steel, aluminium and cement.

Mr Vassella said it was one of a number of ways the government could support manufacturers decarbonising their operations. "What we need from government is a broad-based approach to this, you can't have a country isolated or marginalised by other countries who do not have the same rules being applied on them," he said. "What we are after really is free and fair trade and if the Australian steel industry ... has to incur costs to abate its carbon, then we should not allow steel to come from countries that don't have that same cost burden. "Allow their steel to be imported into the country free of charge and undermine the local businesses."

Mr Bowen said the carbon border adjustment mechanism would not be introduced until after two rounds of consultation next year.

Hydrogen company Hysata to begin making new electrolyser at Port Kembla

Date: 15 August 2023

<https://www.abc.net.au/news/2023-08-15/hysata-begins-building-worlds-most-efficient-electrolyser/102729908>

An Australian company is set to begin mass producing the world's most efficient hydrogen electrolyser, claiming it will be the building blocks for the decarbonisation of heavy industry.

Key points:

- Hydrogen company Hysata has opened its electrolyser manufacturing facility in Port Kembla
- The company says it has developed an electrolyser 20 per cent more efficient than others in use
- Efficient electrolysers are seen as a key to creating cheap hydrogen

[Hysata](#) has opened its commercial manufacturing plant in the Wollongong suburb of Port Kembla, where it will soon begin building hydrogen electrolysers. Hydrogen is seen as the fuel source most viable to become a substitute for the fossil fuels used in hard-to-abate industries such as steelmaking and transport. An electrolyser produces hydrogen by using electricity to split water, or H₂O, into its component parts.

"Hysata has developed a way to do that in a really energy efficient matter, in fact we use 20 per cent less energy than any incumbent electrolyser today," chief executive Paul Barrett said. "That really moves the needle on efficiency that saves the people that run electrolysers a lot of power and saves them a lot of money."



Chris Bowen (centre) was among the politicians at the Hysata plant opening. (ABC Illawarra: Tim Fernandez)

Once fully operational, the commercial plant will supply about 20 electrolysers per year, or roughly 100 megawatts worth of generation capacity. Australia's energy transition will cost 'trillions' and still needs a gas safety net. A landmark report modelling Australia's pathway to carbon neutrality by 2050 finds the country's biggest power grid will need to triple in size within eight years. Energy Minister Chris Bowen said it was a "big deal" for Australia's decarbonisation goals. "This means driving down the cost of renewable hydrogen, vital to reducing emissions in steelmaking and so much more," he said.

Hysata received a \$20.9 million grant through the Australian Renewable Energy Agency to build its first five-megawatt demonstration plant. It will be deployed alongside the Queensland government-owned Stanwell coal-fired power station in Rockhampton in 2025. The work is expected to create 44 jobs with the company aiming to grow its team to more than 200 employees in the next couple of years.

Paul Barrett says the technology will be critical to decarbonising the sector. Hysata's technology has also attracted foreign attention. "We have burgeoning demand for our technology," Mr Barrett said. "Southeast Asia, Europe, United States, the phone is ringing hot with all the commercial demand we have."

'First step' in green steel

Hysata's warehouse is based on the doorstep of one of Australia's largest emitters, BlueScope Steel. BlueScope will soon vote whether to endorse a \$1 billion reline of a mothballed blast furnace, a move which would lock the steelmaker into using coal to make steel for another two decades. The current main blast furnace is set to reach its end of life between 2026 and 2030. BlueScope has previously claimed low emissions iron and steelmaking technologies were unlikely to be commercially viable before the current blast furnace reached its end of life.

The steelmaker also said the blast furnace provided a bridge to emerging technologies such as hydrogen. Australia's former chief scientist Alan Finkel, who is an advisor to Hysata, said efficient electrolysers and abundant green energy was essential to the viability of zero-emission steelmaking. "You need very cheap electricity, and you need very cheap hydrogen, and together the electricity in hydrogen replaces the metallurgical coal that is used in the blast furnace," Dr Finkel said. "We need to get everything right, we need the solar and wind electricity production so there is cheap electricity, and we need to have highly efficient manufacturing of hydrogen. "We can then bring the inexpensive green hydrogen together with the inexpensive green energy to produce the first step in steelmaking which is green iron."

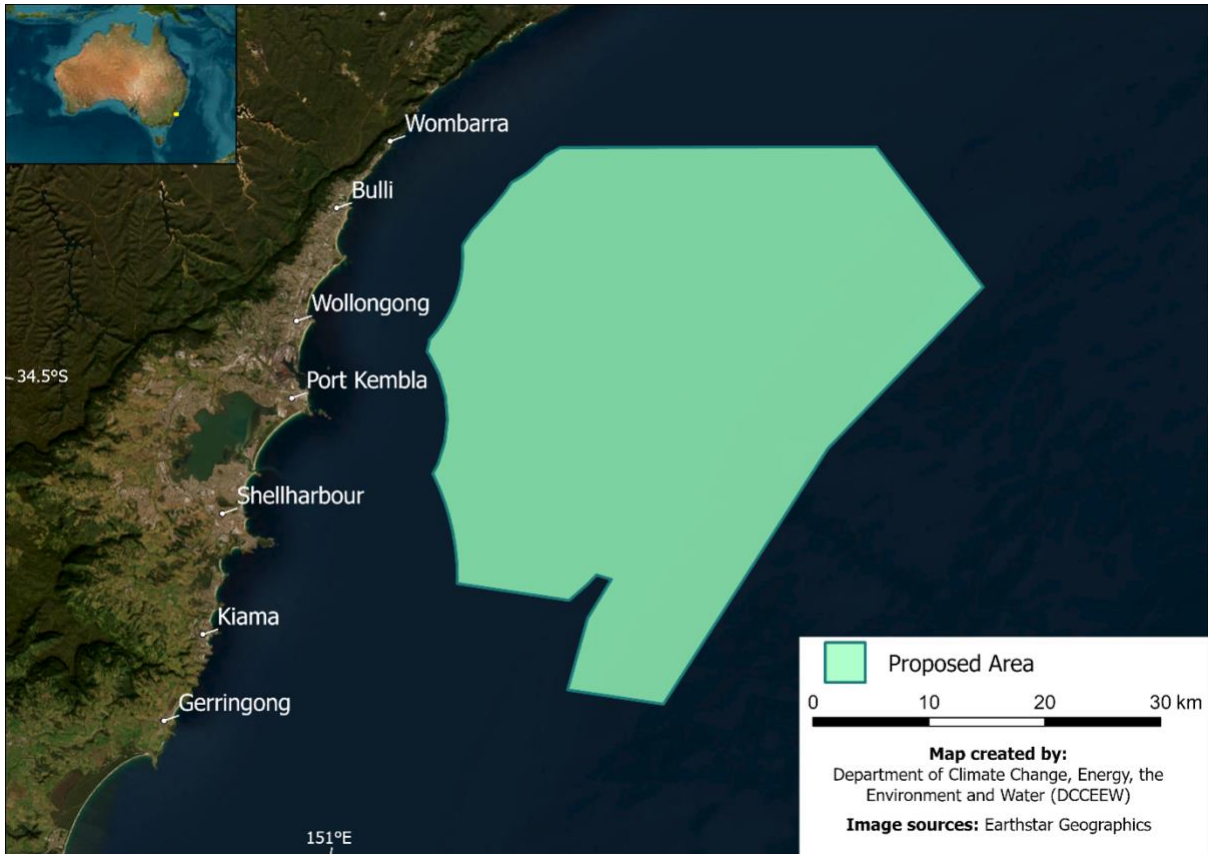
Consultation Opens for Offshore Wind Zone in the Illawarra, Driving Regional Jobs and Investment

Date: 14 August 2023

<https://minister.dcceew.gov.au/bowen/media-releases/consultation-opens-offshore-wind-zone-illawarra-driving-regional-jobs-and-investment>

The Albanese Government is working to unlock renewable energy jobs, energy security and job security in the Illawarra with consultation now open on a new offshore wind zone off the Illawarra. This comprehensive consultation period is open until 16 October and includes six community information sessions across the Illawarra. We strongly encourage all community members, industries and businesses to participate and make sure their questions are answered and concerns are heard.

The proposed offshore wind area is 1461 square kilometres with the potential to generate up to 4.2GW from offshore wind farms. This would be enough to power up to 3.4 million homes. Just one turn of one offshore wind turbine provides as much energy as an average rooftop solar installation generates in a whole day, and it produces energy more consistently than onshore wind.



The Illawarra was identified for its strong offshore wind resource, major port infrastructure and role as an industrial and manufacturing hub looking to transform to greater renewable generation and thrive in a changing global economy. The region has a diverse and skilled workforce, and the introduction of an offshore wind industry will bolster its existing strengths and spearhead the economic opportunities of the energy transformation. The zone open for consultation would be at least 10 km from shore, out to 30km at Kiama, and would be able to deliver up to 2,500 jobs in construction and 1,250 jobs ongoing.

The development of offshore wind in the Illawarra will provide new renewable energy options for Illawarra industries. Communities often have questions about amenity, environmental impacts, shipping and fishing. The community consultation process is an opportunity for those questions to be raised so that the government has the chance to address them in a final decision. Info sessions will start the week commencing 18 September, providing an opportunity for all community members, workers, residents, industry groups and businesses to ask questions, and provide feedback on a potential offshore wind industry for the Illawarra.

Minister for Climate Change and Energy, Chris Bowen, emphasised the transformative potential of this new energy industry for the Illawarra. “Offshore wind is energy rich and jobs rich but despite having some of the best wind resources in the world, Australia doesn’t currently have any offshore wind. This presents a huge economic opportunity for the regions that help power Australia – like the Illawarra, to continue to power our nation for generations to come. This is a genuine consultation and I encourage all community members to get involved and have their say on the proposed zone,” Minister Bowen said.

In addition to the Illawarra, the Hunter and the Southern Ocean, the Government has previously announced the Bass Strait region off Northern Tasmania, and the Indian Ocean region off Perth/Bunbury as further regions earmarked for offshore wind zones.

For more information on the Illawarra offshore electricity area public consultation, visit <https://consult.dcceew.gov.au/oei-illawarra>

HDrive – NSW Launch of Taurus FCEV Prime Mover

Date: 14 August 2023

[HDrive](#) chose Port Kembla to hold the NSW launch of their Australian designed Taurus FCEV Prime Mover. The event at Port Kembla follows the unveiling of the 220KW hydrogen powered prime mover at the Brisbane Truck Show in May. The NSW launch event was held at the BlueScope Visitor Centre hosted jointly by HDrive parent company [Pure Hydrogen](#).



HDrive Taurus FCEV Prime Mover (HDrive)

A large number of heavy vehicle fleet operators across industry and government were in attendance at the event. A key message made by HDrive CEO Ben Kiddle was the much lower Total Cost of Ownership (TCO) maintenance items of a FCEV prime mover helped to offset the higher purchase price as compared to a diesel equivalent vehicle. Pure Hydrogen CEO Scott Brown described the company's goal in developing a supportive ecosystem of green hydrogen production in Australia.



Pure Hydrogen CEO Scott Brown presenting at the NSW Launch of the Taurus FCEV at the BlueScope Visitor Centre. (HDrive)

Attendees at the event were invited to test drive the Taurus 6 X 2 prime mover on a restricted route within the BlueScope Port Kembla Steelworks. It was a wet and cold day at Port Kembla but the opportunity to drive one of the first FCEV prime movers in Australia was welcomed by many of the event attendees.



HDrive CEO Ben Kiddle explaining the key features of the Taurus FCEV prime mover. (HDrive)

Business Illawarra - Illawarra Clean Energy Summit & Expo

Date: 14 August 2023



https://www.youtube.com/watch?v=A_HddfBlmm0

The Hon. Chris Bowen, Minister for Climate Change and Energy opened the Illawarra Clean Energy Summit and Expo was held on Monday 14 August 2023 at the repurposed Shinagawa Warehouse on BlueScope grounds. The [Business Illawarra](#) event showcased the region's strong, diverse and growing renewable energy sector which benefits from leading research at the University of Wollongong and advanced supply chains in related fields.

Over 200 people attended the landmark event held in partnership with [Endeavour Energy](#) and [Oceanex](#). The Summit featured expert panels that discussed opportunities making the Illawarra a future clean energy, renewables and clean manufacturing powerhouse. Minister Bowen announced the Illawarra Offshore Wind Zone and additional ARENA funding for Hysata at the event that are covered in separate articles in this edition.

Coregas opens Australia's first commercial hydrogen refuelling station for heavy vehicles at Port Kembla

<https://www.abc.net.au/news/2023-07-28/hydrogen-refuelling-station-heavy-vehicles-coregas-port-kembla/102661936>

Date: 28 July 2023

Australia's largest supplier of industrial gas, [Coregas](#), has opened the nation's first commercial hydrogen refuelling station for heavy vehicles at Port Kembla in the Illawarra.

Key points:

- The general manager of Coregas says the station is just a "starting point"
- Soon up to ten trucks a day will be able to use the facility

- Hydrogen is the only gas fuel that does not produce polluting carbon dioxide when burnt

Describing the opening as a "starting point", Coregas executive general manager Alan Watkins said within a short period of time up to 10 trucks a day could be refilling at the station. "The first company Remondis, a waste management company, will be running its first garbage truck on hydrogen," Mr Watkins said. "Coregas is also expecting two heavy-duty prime movers from Hyzon motors to move gas from Port Kembla to customers." He said a typical 400-kilowatt vehicle would be able to refuel in 15 minutes from empty at the station and travel 650 kilometres on a tank of hydrogen.

The \$2 million hydrogen refuelling station has been built alongside Coregas' existing hydrogen production plant and transport hub for bulk hydrogen, within the BlueScope Steel terminal at Port Kembla. The New South Wales government provided \$500,000 to assist the project.

From grey to green hydrogen

Mr Watkins said hydrogen was the only gas fuel that did not produce carbon dioxide when burnt. "The fuel cell vehicles that we have seen today are producing steam, they have zero footprint," he said. He said the refuelling time and payload were also advantages. "There is no charge time in the same way an EV vehicle works and the payload is quite light," he said.

"The equivalent truck to the Hyzon vehicle here today would have to lose about six or seven tonnes of payload in battery weight — and that is important if you are going to run a commercial fleet and run long distances." Coregas expects to convert its fleet of a dozen vehicles to hydrogen within the next couple of years. At present, the station uses "grey" hydrogen created using natural gas.



Coregas executive general manager Alan Watkins says the new fuel station is just the "starting point". (Supplied: Coregas)

But the company aims to transition to "green" hydrogen, from less polluting, carbon-neutral sources. "We have a kind of obsession with the colour of hydrogen at the moment," Mr Watkin said. He said the company was in advanced negotiations to convert to biogas, which he said would create carbon-neutral green hydrogen.



The Coregas hydrogen truck refuelled for the first time at Port Kembla. (ABC Illawarra: Kelly Fuller)

Building the transition workforce

State Minister for the Illawarra and Keira MP Ryan Park was the first to refuel a truck at the station's launch today.



Local Labor MPs Ryan Park and Paul Scully at the Coregas launch. (ABC Illawarra: Kelly Fuller)

"This is going to be a part of the mix as we start the process of reform in the way we provide fuel and energy to our prime movers and heavy vehicles," Mr Park said. The state government is set to introduce a fleet of 8,000 hydrogen buses, with trials running on the Central Coast already. Wollongong MP Paul Scully said he hoped to see the bus trial extended to the Illawarra. He said the state government was working with TAFE NSW to help build the work force required for the transition.

Green Gravity launches Port Kembla testing apparatus

Date: 20 July 2023

<https://www.illawarramercury.com.au/story/8277651/illawarra-based-energy-start-up-launches->

As the Productivity Commission challenges the Albanese government's plans to subsidise a national [electric battery industry](#), a Illawarra-based start-up is launching a homegrown solution to the issue of energy storage. [Green Gravity](#) launched its [GravityLab](#) in a former BlueScope steelworks warehouse on Thursday, July 20.

The technology uses a pulley system and weights as a method of storing and generating renewable energy and proposes to locate its rigs in former mine shafts. Green Gravity CEO Mark Swinnerton said the system avoids the issues plaguing other storage solutions. "The technology offers incredible sustainability credentials and has no waste streams," he said. "It has an ability to re-use infrastructure, and it has very low critical resource utilisation."



Green Gravity's GravityLab - a 1:30 model of the proposed energy storage system. Picture by Adam McLean

The launch comes as the Productivity Commission, in its Trade and Assistance Review released on Thursday, July 20, criticised government support for specific industries, including the Albanese government's planned National Battery Strategy. "As a small open economy, our future prosperity depends on global economic integration and low trade barriers," Productivity Commission deputy chair Dr Alex Robson said. "It is unlikely to be in Australia's interests to try and compete in a protectionist contest via large scale industry assistance."

The battery strategy, which recently completed consultations, suggests supporting the nascent industry through loans and potentially local content quotas, in response to massive government subsidies for clean energy technology in the United States and the European Union. However, the Commission warned against Australia following in the footsteps of its much larger trading partners as the costs would outweigh the benefits. "The world's largest economies are increasingly engaged in policies to favour selected domestic industries through subsidies, local content rules and trade barriers. In many cases this is simply a form of old-fashioned protectionism," Dr Robson said.

Speaking on the sidelines of the Green Gravity launch, member for Cunningham Alison Byrnes said the government needed to look across the technology spectrum when it came to meeting decarbonisation targets. "We've got 82 per cent renewables to get into the grid by 2030," she said. "We need to be looking at all the possibilities that we can for renewable energy generation and the storage that goes with it."

Mr Swinnerton said the company hoped to have 29 shafts through the pre-feasibility stage by next year and have signed access agreements for 600 mine shafts around the globe in the next 24 months. "Our mid term ambition is looking at over 10 gigawatt hours of capacity," he said. Snowy 2.0 aims to have an energy storage capacity of 350 gigawatts. The 1:30 scale rig in Port Kembla will be used to refine the design of the final set-up and develop a digital model of the operation.

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.hov.au.