

How Australia took centre stage at the world's hydrogen jamboree

Hans van Leeuwen *Europe correspondent*



May 11, 2022 – 11.30am

At the sole restaurant in the huge Rotterdam conference centre where the World Hydrogen Summit took place this week, I ordered a flat white from a Dutch waitress.

“What is a flat white? I don’t even know. People keep asking for it,” she said exasperatedly.



Australia's stand at the World Hydrogen Summit in Rotterdam. **Hans van Leeuwen**

There's a simple explanation for its popularity. As Hydrogen UK boss Clare Jackson observed, deadpan, on the summit's main stage on Tuesday: “I don’t know whether you’ve noticed, but there are quite a lot of Australians knocking around here this week.”

In the exhibition hall, the Australian government hired one of the largest stands – triple the size of that rented by the likes of Canada, Chile, the UK or South Korea – and brought a flotilla of two dozen companies to tout their wares.

Executives from listed companies such as Woodside, Origin Energy, Global Energy Ventures, Hazer and Fortescue, alongside private tech players like [Star Scientific](https://www.afr.com/companies/energy/hydrogen-studies-under-way-at-origin-s-eraring-coal-plant-20190816-p52htu) [https://www.afr.com/companies/energy/hydrogen-studies-under-way-at-origin-s-eraring-coal-plant-20190816-p52htu] and Hysata [https://www.afr.com/companies/energy/hydrogen-under-2-in-reach-as-hysata-develops-revolutionary-process-20220315-p5a4te], rubbed shoulders with trade promotion officials from Austrade and no less than five state governments.



And Rotterdam was the place to make that statement: the Russian invasion of Ukraine has turbo-charged Europe's push to escape its addiction to the Kremlin's politically toxic supplies of gas [<https://www.afr.com/companies/energy/australian-resource-boon-to-grow-as-european-gas-crisis-escalates-20220401-p5aa4n>], oil and coal.

And with stretchy EU climate targets looming in just eight years, the substitute has to be green hydrogen, which is made using renewable energy.

"Our demand is huge," German hydrogen tsar Stefan Kaufmann told the summit, ahead of a trip to Australia next week. "We need to find those countries which are able to produce fast, and in big figures."

Ryan Willemsen-Bell, future fuels manager at Origin Energy, says the change is palpable.

"Up until a couple of months ago the dominant area would've been the Asia-Pacific — Japan and Korea. Easier shipping routes, easier to get a product there, and in timeframe terms a bit ahead of Europe," he says.

"We feel that has changed even in the past few months. Europe has emerged as a more interesting market, and probably more willing to look at the export opportunities.

We are going to be a major hydrogen superpower in our own region.

— Australian Hydrogen Council CEO Fiona Simon

“Conversations are centring around industry being crippled if it can’t move away from Russian gas, and whether hydrogen can fill this in some way.”

The Australian stand was a hotbed of networking, as Europeans and Australians sized each other up. The search was on for customers, technology collaborators, infrastructure partners, investors, suppliers.

“There’s a strong momentum in developing export supply chains between Australia and Europe. There has been a strong government push behind this, from both sides,” says Tom Campey, chief commercial officer at start-up electrolyser manufacturer Hysata.

“That extends beyond the export supply chain to supporting supply-chain innovation between the two sides. Australia and Europe are the two leading geographies in this sector, so it makes sense for them to be working together.”

Woodside’s vice-president of technology, Jason Crusan, agrees: “Europe is very significant for us. It’s an important marketplace, they are a thought leader and policy leader that will help drive international standards.”

Ripe or hype?

But hanging over this flurry of collaboration, and over the summit at large, was an unavoidable and almost unanswerable question: is this real, or is this hype?

Australian Hydrogen Council chief executive Fiona Simon is optimistic about the possibility of hydrogen becoming a major play for the nation.

Is it all conference talk, swapped business cards and non-binding bits of paper? Or is a hydrogen revolution, with Europe and Australia in the vanguard, already gathering pace?

The summit seemed to lace effusive enthusiasm with unspoken uncertainty.

Paul Bogers, vice-president of hydrogen at Shell, captured the dichotomy when he called hydrogen “the Swiss army knife of the energy transition”.

Like a good Swiss army knife, he said, hydrogen isn't cheap. “The third or fourth conversation with any customer is on affordability, and how you walk further down the cost curve,” he told conference-goers.

“All of that needs a tremendous amount of innovation ... The level of investment that will have to go into R&D and innovation in hydrogen is still massive.”

Hydrogen is also like a Swiss army knife, he said, in that when you first look at buying one you don't always know which of its tools you're going to end up using most.

How hydrogen will be used, how it will be transported, how much it will cost – all of these things are still hazy, making it hard to gauge cost, risk and return.

“It's a bit like when people talk about eating an elephant and you need to take your first bite. I feel like we're still kind of walking around the elephant,” the Australian Hydrogen Council's Simon says.

“We're still so pre-commercial, that the economic gap is too great for anyone to take that level of risk with their shareholders' funds, and reasonably so. I don't think markets create themselves at a loss.”

Chicken and egg

Many of those in Europe who might want to buy green hydrogen are waiting for a credible supplier with a clear price. Many of those who might supply the hydrogen are waiting for a fully committed buyer.

Little wonder that offtake agreements are not yet on the table.

“I do hear the enormous enthusiasm ... but I do hear a common refrain of, we're waiting for something,” Simon says.

“And I'm just trying to understand, what are we waiting for? Let's work that out, let's name it, and then let's start tackling it.”

West Australia's hydrogen minister Alannah MacTiernan, who was also in Rotterdam, said her government was thinking hard about how to nudge demand

and facilitate supply.

“We are aware of the problem that we’ve got all these horses at the starting gate, and how do we get them through it?” she told the conference floor.

Some of Perth’s policy work is about building up a domestic base, and she’s also keen to attract not just buyers but also German investment and know-how.

MacTiernan is enthusiastic about Berlin’s proposal for an interim “double auction” system, in which the German government buys high on the international market and sells low to its own industry, with the taxpayer wearing the losses until the cost comes down.

Campey says some kind of public subsidy will be needed to get the nascent industry through to 2030, by which time “we should be at the races”.

Origin’s Willemsen-Bell reckons, though, that momentum could ramp up more quickly than expected.

“If a customer says we’d ideally like to see production in 2026 or 2027, then given the time frames for that to occur, you’d need to move to a decision and be turning soil pretty quickly,” he says. He suggests companies might need to get into a position to do that “over the next 12 to 18 months”.

But first the buyers have to commit. “It would be a brave call to build a production facility without a significant proportion of your production having some form of home,” he says.

Getting real

The Europeans clearly want Australia’s green hydrogen. The question is whether and when they’ll be truly ready for it.

“We can provide reliable, competitive green hydrogen. ... but at the end of the day it is consumers who need to pick it up. They need to reconsider their processes, their fleets, their applications,” says Ivo Bols, president for Europe and Africa at US hydrogen producer Air Products.

Woodside’s Crusan says power generators may be able to find ways to lower the capital cost of joining the hydrogen bandwagon.

They can retool their plants in a phased fashion, gradually bringing ammonia into the mix; and they can phase their shift from grey hydrogen (produced with carbon emissions) to blue (produced with carbon capture) then green.

He says hydrogen producers, meanwhile, can do what Woodside is doing and add electrolyser capacity in a modular fashion, which avoids a full-scale commitment to potentially expensive technology that could become outdated very quickly.

Marcel Galjee, managing director of Macquarie-backed hydrogen producer HyCC, says the evolution of the hydrogen market will be incremental, and suppliers and customers will need to work together.

“It will be large-scale. But large-scale tomorrow, and cheap and easy? That is not what we’ll find. It will be hard work. It will require a lot of commitment, it will require support from a lot of players in the value chain. There will be a lot of learning along the way. But we’ll get there.”

Woodside’s Crusan says Australians who want to seize the European opportunity might need to work outside their primary niche, helping to develop the whole supply chain.

“We couldn’t export LNG into Japan until there were import terminals in Japan. You can’t export Australian energy into Europe unless there are import terminals,” he says.

“Whether we own them, or a consortium owns them, or a port owns them — all those answers could be OK, but it just has to happen. You have to play across the entire value chain to make the future happen.”



RELATED

Ukraine is a rehearsal for the great energy transition

<https://www.afr.com/policy/energy-and-climate/ukraine-is-a-rehearsal-for-the-great-energy-transition-20220508-p5ajkb>



RELATED

Woodside to build \$1b hydrogen plant in WA

<https://www.afr.com/companies/energy/woodside-to-build-1b-hydrogen-plant-in-wa-20211025-p592wk>

If hydrogen lives up to the hype in Europe, Australia’s intensive marketing push might start to pay dividends.

But as an Aussie export success story, there's still a way to go before green hydrogen becomes the new flat white.

ESG Summit - Early bird registration

Australia's premier forum for business leaders, financiers and investors to navigate the complexities of ESG as a core business strategy to drive sustainable growth.

Register

Hans van Leeuwen covers British and European politics, economics and business from London. He has worked as a reporter, editor and policy adviser in Sydney, Canberra, Hanoi and London. *Connect with Hans on [Twitter](#). Email Hans at hans.vanleeuwen@afri.com*