

## VANADIUM AN ENERGY VALUE-ADD

CHEYANNE ENCISO

Vanadium can complement lithium-ion batteries in meeting the global demand for battery energy storage systems.

That is the view of Young Yu, who founded Perth-based vanadium redox flow battery (VRFB) company AVESS in 2020. The company is set to deploy three of their battery prototypes in the Australian mining, energy and agriculture sectors in 2023 after seeing "significant" results from a recent test study.

The prototype batteries will include two configurations of 250kilowatt/h VRFBs, which can provide 50kW or 25kW of power per hour for over five or 10 hours respectively.

The configurations can store energy generated from a solar panel or wind turbines and released as base-load power when required, or used for solar and wind-connected power systems in remote areas.

Mr Yu, pictured, said vanadium batteries had added advantages which complemented the dominant lithium-ion batteries.

"VRFBs have some advantage in the areas of varying high and large-scale energy storage, its recyclability, and also the safety of its performance and lifetime reusability," Mr Yu said.

"If we are able to leverage some technologies to be working with our critical (Australian) mineral value chain and have that vertical integration, then Australia will be better placed."



Picture: Simon Sant

# BP sees path to hydrogen

## Big stake in Pilbara project

STUART MCKINNON

BP says it is confident it can overcome environmental concerns with the proposed Asian Renewable Energy Hub in the Pilbara after it took a 40.5 per cent operating stake in the sprawling project.

The company is eyeing the \$US36 billion project 220km east of Port Hedland as it seeks to become a leading player in the emerging hydrogen sector and as it targets carbon neutrality for it and its customers by 2050.

But the Federal Government last year rejected plans for the project because of its impact on migratory bird wetlands at nearby Eighty Mile Beach.

The project involves a vast array of solar panels and wind turbines across a 6500sqkm site that will generate 26 gigawatts of energy, representing about a third of all the electricity generated in Australia in 2020.

Fully developed, it could also be capable of producing about 1.6 million tonnes of green hydrogen or 9 million tonnes of green ammonia a year.

Noting AREH had secured major project status from the Federal Government and lead agency status from the State Government, BP Australia president Frederic Baudry said the company would collaborate with the government, environmental agencies and all stakeholders to address all environmental concerns around the project, however long it took.

The company's vice-president of low carbon solutions for Asia Pacific, Lucy Nation, said she was confident of finding a path forward for AREH through ongoing engagement.

"This is exactly the type of project we need to address climate change, but we must do it in a way that is very mindful of the environmental issues," she said.

Ms Nation also indicated the ammonia component of the project could be relocated to a more suitable location to address environmental concerns.

AREH is expected to abate about 17Mt of carbon in domestic and export markets annually, which would equate to roughly 0.5 gigatonnes of carbon savings over the lifetime of the project.

BP's executive vice-president of gas and low carbon energy, Anja-Isabel Dotzenrath, said the hub could make a big contribution to Australia and the wider Asia Pacific's energy transition.

"It truly reflects what integrated energy is — combining solar and onshore wind power with hydrogen production and using it to help transform sectors and regions," she said.

BP is targeting a final investment decision in 2026, green electrons by 2029 and green hydrogen by 2030. No guidance has been given on the timing of green ammonia export capabilities of the project. An anticipated threefold reduction in the costs of producing green hydrogen by 2030 will be necessary for the project to be viable.

## Newmont boss says more mergers likely

The gold mining industry will need more mergers and partnerships to dig up harder-to-access deposits in an environmentally friendly way, according to the head of the world's biggest producer.

"We are seeing fewer and fewer large-scale and transformative gold discoveries," Newmont chief executive Tom Palmer told an industry con-

ference in Toronto. "Instead, we are seeing lower grades and more difficult to reach ounces."

To tap those ounces while assuring the industry addressed "critical sustainability issues" would require access to capital and agility, Mr Palmer said.

"There are only a few gold mining companies who have the capacity to deliver on all of these elements: size, scale, mine life

and access to capital — clearly making the case for further partnerships and consolidation within the gold mining industry," he said.

Those who do not understand such fundamentals "are doomed to be left behind", Mr Palmer said. "While gold will always exist, not all of us will without collaboration and consolidation," he said.

## WEST MARKETS FINANCIAL SNAPSHOT

### KEY INDICES

INDEX	CLOSE	CHANGE
All Ordinaries	6785.8	95.40 ▼
ASX200	6601	85.00 ▼
ASX50	6485	72.90 ▼
INDEX	LAST	CHANGE
Dow Jones	30,364.83	151.91 ▼
Nasdaq	10,809.23	530.79 ▼
Shanghai Cmp	3305.406	16.50 ▲
Nikkei 225	26,326.16	303.70 ▼
Hang Seng	21,314.08	246.09 ▲
FTSE100	7187.46	18.35 ▼
DAX	13,304.39	122.64 ▼

### KEY RESOURCES

INDEX	LAST	CHANGE
Gold	1808.1	10.674 ▼
Silver	21.075	0.023 ▲
Nickel*	25,158	680 ▼
Aluminium*	2544.25	58.25 ▼
Copper*	9218.75	66.75 ▼
Oil - Brent	121.09	1.27 ▼
Iron Ore	140.09	0.25 ▼
Lead*	2061.5	25.50 ▼
Tin*	31,375.67	1.811 ▼

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### SECTOR PERFORMANCE

TELCOS	RETAIL	UTILITIES	FINANCIALS	RESOURCES
0.17% ▼	0.64% ▼	0.73% ▼	0.75% ▼	0.94% ▼

## ASX tumbles again on Fed fear

The local bourse has closed lower for the sixth session in the past seven as traders digest the possibility of a supersized US rate hike overnight.

Selling accelerated in the afternoon, with the benchmark S&P/ASX200 index finishing Wednesday down 85 points to 6601.0, a fall of 1.27 per cent.

The broader All Ordinaries fell 95.4 points to 6785.8, a 1.39 per cent fall.

Global markets have been in free-fall since US consumer price figures released on Friday showed inflation was still raging, with many expecting the Federal Reserve to respond with its biggest rate rise in 28 years at its next meeting early on Thursday, Australia time.

"As you can see from the performance of the last two days, the market's very much on tenterhooks, starting to anticipate that the Fed might start hiking

(interest rates) a lot more aggressively than it otherwise would," Australian Stock Report senior adviser Ben Le Brun said.

Every sector on Wednesday was in retreat, with tech stocks the worst performer, collectively falling 3.1 per cent. Xero was down 5.2 per cent and Block 7.1 per cent. Realestate.com.au

owner REA Group and Seek both hit two-year lows, falling 6.4 and 6.8 per cent, respectively, as Westpac-Melbourne

Institute Index consumer confidence figures showed sentiment fell to a 22-month low.

All four big banks were lower after Reserve Bank of Australia governor Phil Lowe said Australians needed to be prepared for the possibility of substantial interest rate hikes this year.

The Fair Work Commission's decision to boost the minimum wage by 5.2 per cent will

increase the pressure on the RBA to quickly normalise rates, RBC Capital Markets economists Su-Lin Ong and Robert Thompson said in a note.

NAB fell by 1.9 per cent to \$26.33, and ANZ and Westpac fell 1.8 per cent, to \$21.60 and \$19.70 respectively, and CBA was down 0.6 per cent to \$90.62. Investment giant Macquarie was up 0.5 per cent and insurance companies QBE, IAG and Suncorp were all up by between 2.2 and 3.5 per cent.

In the heavyweight mining sector, BHP fell 0.8 per cent to \$43.90 and Rio Tinto edged 0.1 per cent lower to \$110.96, while Fortescue gained 1.3 per cent to \$19.88.

ResMed fell 2.5 per cent to \$29.01 as the respiratory products company agreed to acquire German healthcare software company Medifox Dan from Hg for \$US1 billion (\$1.44b).