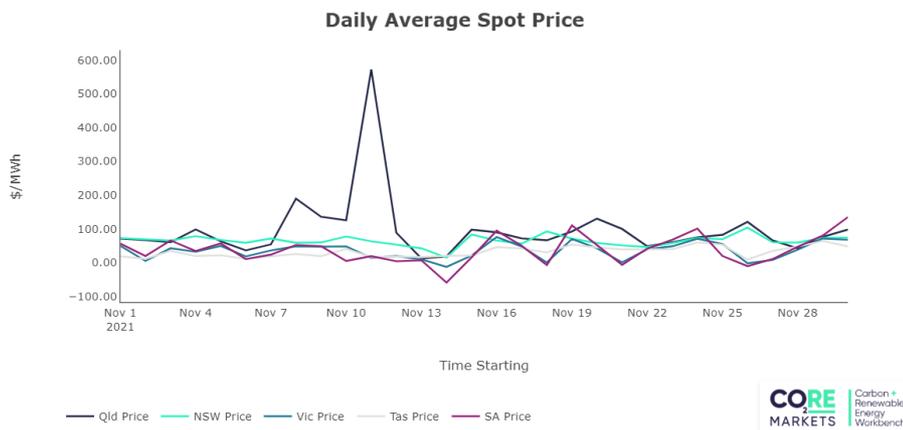


Market Update

A monthly energy & carbon market update

- Queensland continues to experience high energy prices compared to the rest of the NEM, with multiple instances of prices reaching the market cap, driving up its average spot price.
- The NEM is finally feeling the delayed impact from record high Japan-Korea netback prices, with a 45% increase in gas prices NEM-wide, influencing higher energy prices in all regions and in their Flat Futures pricings.
- ACCUs continued to continue their upward rally, while LGCs and STCs have seen minimal movement in November.
- Enabled by its synchronous condensers, South Australia has become the first gigawatt scale grid in the world to reach zero demand.
- The New South Wales government's hydrogen strategy has been approved by the State Parliament, while the Federal Government has passed legislation to allow offshore wind farms to be built in Australian waters.
- AEMC has denied an AEMO request that storage projects be exempt from network charges.
- The Basslink operator is now in external administration, but the interconnector remains in operation as normal.
- AEMO released updated Integrated System Plan (ISP) in which they are now expecting 14 GW of coal-fired capacity to be closed this decade due to ongoing commercial and operating challenges among those power plants. RE Hub will cover in detail on the next market update.

Spot market electricity price – November 2021

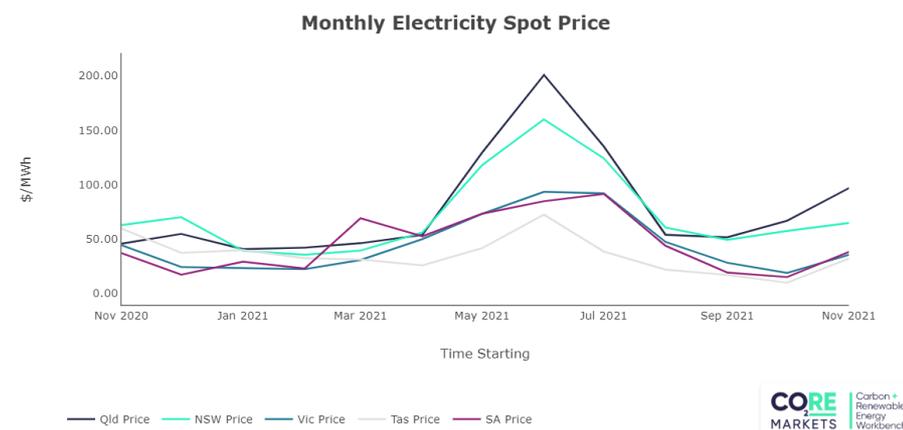


For the month of November, Queensland saw abnormally high pricing events early in the month, reaching a peak daily price of \$572/MWh on November 11th. There were 5 intervals where prices were over \$10,000/MWh and was consistently between \$500-1000/MWh for a significant portion of the day. This was caused by widespread cloud cover and constraints on the QNI interconnector; also causing high FCAS contingency Raise prices.

The full operation of four synchronous condensers in South Australia, lifting the threshold before VRE curtailment, has seen the minimum gas output fall to only 80MW. It became the first gigawatt scale grid in the world to reach zero demand, with (on average) 100% of local demand being met by just wind and solar over a 93-hour period. However, because even the higher concentration of VRE generation with the synchronous condensers, energy prices have become more volatile as is evident in the latter half of the month compared to the first half.

The energy prices in the remaining NEM states were less volatile in comparison, with only one instance of prices passing \$1000/MWh between them.

Spot market electricity price – rolling monthly average

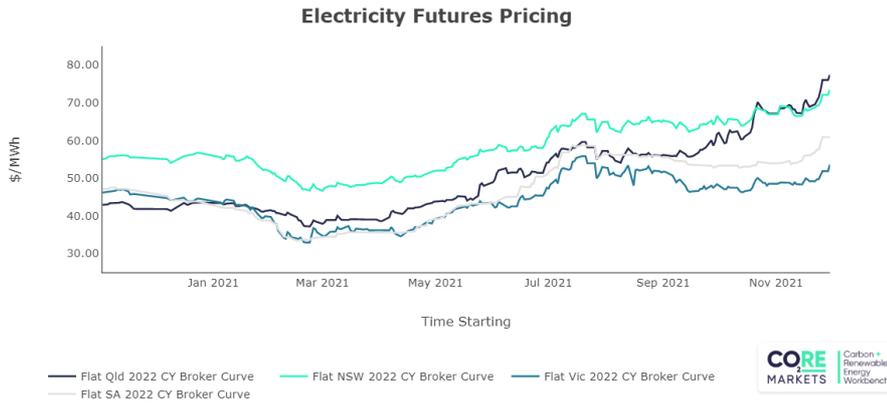


The month of November has seen a rise in electricity prices for all NEM regions. This is primarily driven by higher NEM gas prices stemming from the high LNG netback prices from global gas shortages.

Queensland and New South Wales saw a continuing rise in its energy prices, with Queensland seeing a 45% increase from October's average to \$97/MWh for November. Similarly, New South Wales saw a much milder 13% increase to \$64/MWh.

Victoria's and South Australia's monthly average was ~\$30/MWh, with Tasmania slightly less at \$27/MWh. This was a month-on-month increase of 70%, 110% and 185%, respectively. However, all three NEM regions saw their lowest monthly average for the past year in October.

Futures contracts – past 12 months



Flat Futures contracts for 2022 were initially stable for most of November before prices rose to new annual highs for all states except Victoria. As previously alluded to, the shortage in global gas supplies is placing upward pressure on gas prices and is being reflected in Futures pricing for all NEM regions.

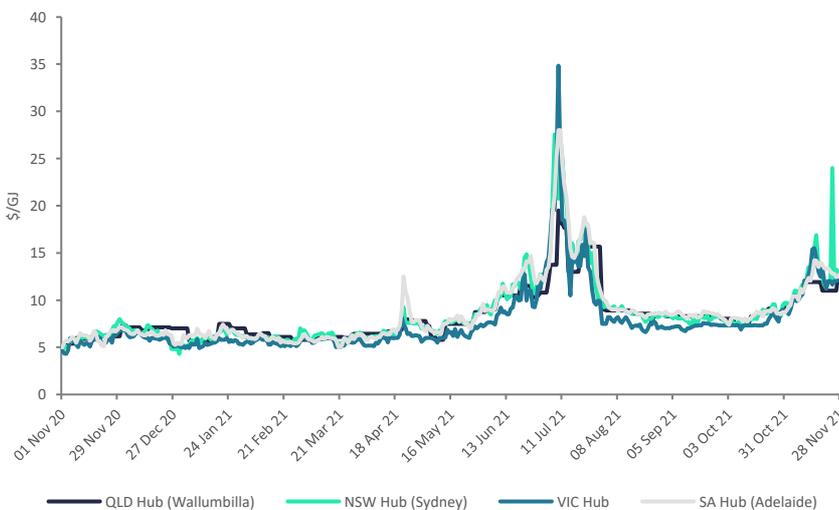
Queensland rose most sharply through November from \$67/MWh to an annual high of \$77/MWh.

New South Wales futures pricing was holding steady for most of the month, but saw an upwards movement, influenced by Queensland due to their shared interconnectors, to end the month on an annual high of \$73/MWh from its previous month of \$67/MWh.

South Australia saw its 2022 Futures rise to an annual high of \$61/MWh, up from \$54/MWh at the start of the month.

Victoria rose from \$48/MWh at the start of the month to end on \$54/MWh, slightly short of its current annual high of \$56/MWh seen in July.

East coast gas prices – past 12 months

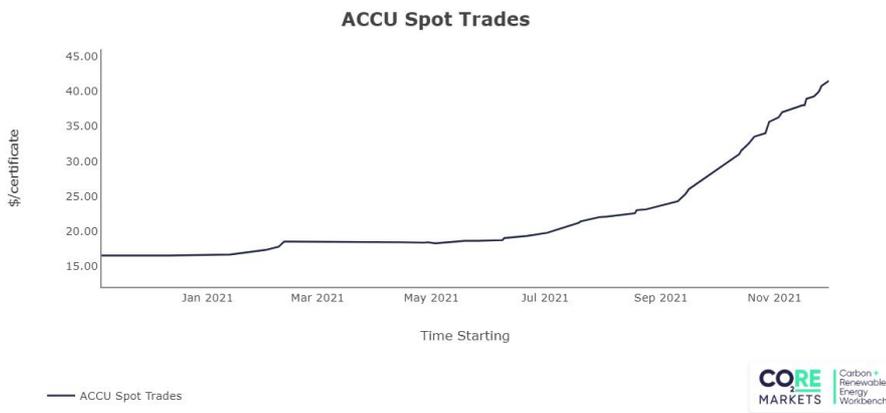


The daily gas spot price NEM wide has significantly increased by 45% over the course of November; the 7-day moving averages have increased by \$3-5/GJ.

Queensland saw its 7-day moving average end at \$11.9/GJ from its initial \$8.8/GJ at the start of November. New South Wales saw had the highest 7-day moving average of \$14.4/GJ, up from \$9.1/GJ. This was highly influenced from an abnormally high \$24/GJ gas pricing on November 24th. Victoria saw its 7-day average increase from initially \$8.5/GJ to \$12/GJ by month's end. Similarly, South Australia saw a similar price increase from \$8.7/GJ to \$12.8/GJ.

The increase in NEM gas prices is not unexpected given the dramatic increase in Japan-Korea LNG netback prices over the last several months. The netback prices have plateaued from its previous high of \$39/GJ last month to \$35.5/GJ for November. Given the continuing gas shortage in Europe, and delayed manifestation of its impact on NEM gas prices, the NEM may likely increase in the coming months or to likely remain above historical averages well into the foreseeable future.

Environmental certificates market – ACCUs



ACCU prices have continued their rally, increasing by 16% from \$35.6/cert to another record high of \$41.5/cert throughout the month of November.

Continued voluntary buying from corporates and investors have been integral to driving ACCU prices higher. Tight supply and increased demand continue to provide forward momentum to ACCU prices passing beyond the \$40/cert milestone.

While not directly impacting ACCU as much as other international carbon markets, the overall positive response from COP26 with agreements on rules for cross-border cooperation has triggered record high prices in compliance and voluntary markets.

Environmental certificates market – LGCs



Corporate demand for has been a major contributing factor for LGC prices rising across the board in recent months.

November has seen minimal movement across all vintages by 4% or less. Cal 21,22 saw a slight rise overall rise throughout the month, while the longer vintages have slightly decreased.

LGCs	Curve	Last Trade
Spot	41.95	42.05
Cal 21	41.85	42.50
Cal 22	39.60	40.25
Cal 23	36.50	36.50
Cal 24	30.75	30.50
Cal 25	21.25	21.50

Environmental certificates market – STCs



STC prices have remained consistently flat for the year, with November seeing virtually no movement at all following the Retailer Q3 surrender deadline at the end of October.

STC prices shifted from \$38.95/cert to \$39.05/cert throughout the month of November.

Supply chain challenges around components to rooftop Solar installs still remain from both shipping delays due to soaring shipping costs and reduced production out of China from its recent power crisis.

Feature: COP26 Glasgow Highlights



COP26 brought together 120 world leaders and 40,000 participants together in Glasgow. The Glasgow Climate Pact calls on 197 countries to report their progress towards more keeping the 1.5 °C Paris Agreement target viable at COP27 in Egypt next year. While limiting global warming to 1.5 °C remains possible, announced pledges fell short of this ambition but only time will tell.

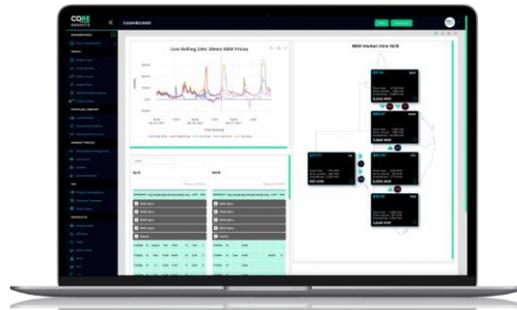
Coal was a hotly debated topic and COP26 saw the first climate agreement explicitly planning to reduce coal use and how it would be “phased-down” by countries. Over 40 countries agreed to the shift away from coal.

The other main development was addressing the financing of climate action in developing countries by developed countries with calls to increase support for developing countries and to better mobilise climate finance to achieve the goals of the Paris Agreement.

Surprisingly, the United States and China pledged to boost climate cooperation over the next decade in a joint declaration and reiterated their commitments to limit warming to 1.5 °C. There were also pledges to end deforestation by 2030 and the sale of internal combustion engines by 2040. Many smaller commitments were also made, such as the Beyond Oil and Gas Alliance setting an end date for national oil and gas exploration and extraction. Moreover, 100 countries agreed to cut methane emissions – a greenhouse gas 25x more potent than CO₂ in trapping heat – by 2030.

Feature: CORE Markets – the game-changing SaaS platform for carbon & energy markets

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2
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Asset contracting scenarios



Customisable charts & dashboards



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Renewable Energy Hub, together with the teams at Tradition and TFS Green, and our funding partner ARENA, are proud to release our digital workbench CORE Markets.

CORE Markets has been developed through extensive consultation to deliver maximum value for market participants who are driving the transition to a low carbon future.

On CORE Markets, you will gain exposure to all major energy trading counterparties in the NEM, enabling you to access transactions in both standard and Renewable Energy Hub's innovative energy futures contracts, as well as liquid markets in the full suite of environmental products. Our roadmap includes further capabilities that will provide critical asset contracting scenarios and commercial analysis.

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[Renewable Energy Hub](#) is an innovative, boutique corporate energy advisory and transaction consultancy operating in Australia.

We are part of global financial services company [Tradition](#), located in 29 countries worldwide.

With over 20 years Australian wholesale energy markets experience, we can support your financial and sustainability goals for energy procurement, including power purchase agreements (PPAs), firming and project investment through market insights, expertise, data and guidance.

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