Energy Action Commentary on AEMO and Clean Energy Regulator Quarterly Reports

Here’s our interpretation of what happened in the energy and carbon markets, and what that could mean for the future

February 2022

Foreword

Every quarter AEMO and the Clean Energy Regulator publish market data that few will read. But these reports contain hidden gems for those prepared to see past political misdirection and connect that data to the business world.

Our synopsis of AEMO's December Quarterly Energy Dynamics Report and the Clean Energy Regulator's September Quarterly Carbon Markets Report is intended to fulfill our mission to make energy simpler, cleaner and lower cost. By finding the gems and adding our opinions, we make these reports relevant to businesses like yours.

In writing our analysis, we've added contributions from myself and two of Energy Action's experts – Scott Easton with energy market insights – Ed Hanna with carbon market and Net Zero commentary.

We trust you find our analysis useful for your business and would be delighted to talk through the detail of our work with you any time.

Bruce Macfarlane
Interim-CEO
Energy Action

Energy markets

In the NEM. Spot wholesale electricity prices have risen dramatically in recent weeks, where coal no longer has pricing power. 5-minute settlement has increased dispatch price volatility and will drive prices higher over the medium term.

In the WEM. Renewable energy capacity is increasingly setting spot price, which is likely to lead to lower prices over the medium term

In East Coast Gas. International markets continue to cause gas price uplift and are likely to increase the electrification of local manufacturing.

In West Coast Gas. Renewable generation is contributing to the price impact of government domestic gas reservation policy.

NEM

Spot wholesale electricity prices have fallen where coal no longer has pricing power during peak periods

AEMO

The trend continues. With lower middle-of-day prices, driven by increasing solar generation capacity and declining operational demand, but higher evening and overnight prices.

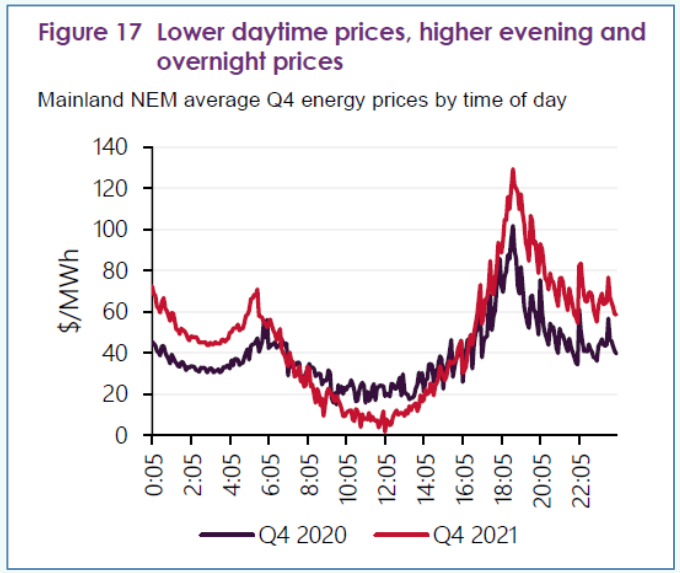
Ongoing north-south price differentials were caused by larger share of thermal generation in Queensland and New South Wales.

This has led to QLD seeing its highest Q3 prices on record – double the level of a year ago. Whereas prices fell in all other NEM states, other than NSW.

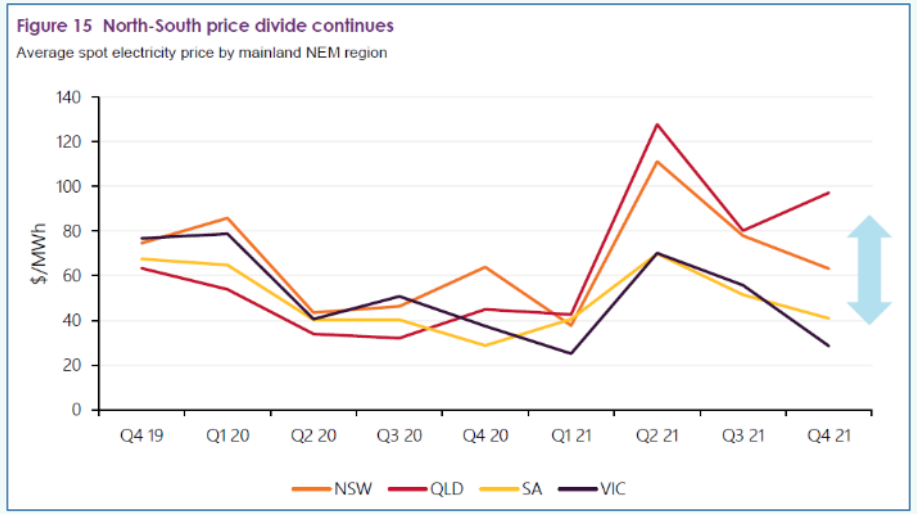
Energy Action opinion

QLD has a target of 50% renewable energy generation by 2030 and combined with rooftop solar, the state has 7,200 MW of renewable energy capacity. This is likely to have a significant downward impact on daytime pricing. But nighttime pricing will remain dominated by coal-fired generation, potentially leading to ongoing higher prices than other NEM states.

EnergyAction



Source, AEMO January Quarterly Energy Dynamics Report



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NEM

5-minute settlement has reduced volatility and will drive prices lower in the medium term

AEMO

A return to rising prices in Q4 2021. This was the first quarter in which the National Electricity Market (NEM) operated with 5-minute settlement (5MS). Movements in NEM and east coast gas market prices reversed the falling trends observed through the previous quarter.

Energy Action opinion

5-minute settlements have changed the bidding game for coal, gas and renewables. This has stopped big generators from withholding capacity to force spot prices higher, and then making negative rebids to capture the average 3-minute marginal price.

We believe the impact of reduced price volatility will be wholesale spot electricity prices moving closer to LRMC Cost of renewable generators.

Figure 21 Pre 5MS – Rebidding after Qld price spikes

Queensland 5-minute spot prices – 30 September 2021

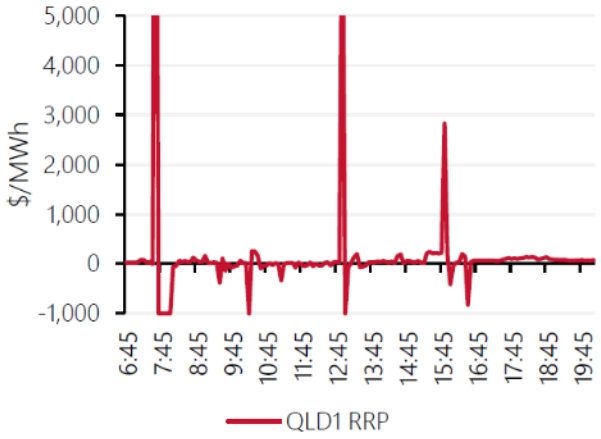
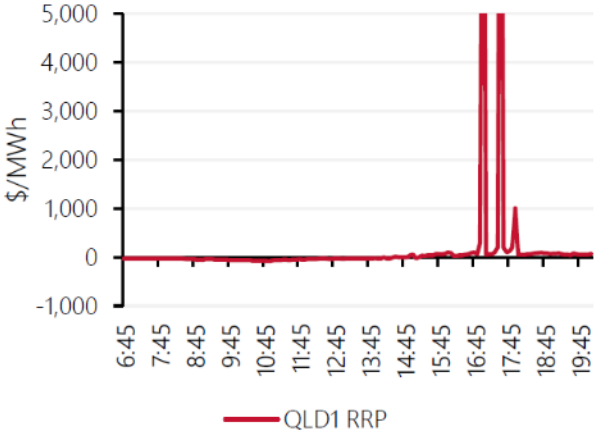


Figure 22 Post 5MS – No rebidding after price spikes

Queensland 5-minute spot prices – 4 Oct 2021



Source, AEMO January Quarterly Energy Dynamics Report

WEM

Renewable energy is increasingly setting spot price which is likely to lead to lower prices over the medium term

AEMO

A late heatwave drove high demand and price events in the WEM. Increasing renewable contribution led to record low WEM minimum demand. Increasing levels of distributed PV and large-scale renewable generation resulted in nearly 40% of total underlying demand being met by renewable energy in Q4 2021.

In Q4 2021, wind and solar facilities set the price 9% of the time – a 2% increase compared to Q4 2020.

Energy Action opinion

Large scale battery is likely to become an urgent feature of the WEM to mitigate the impact of distributed PV, with renewable generation increasingly setting the daytime price and potentially moderating wholesale electricity spot prices.

Figure 93 Wind and solar facilities play their largest role yet in setting the Balancing Price

Price-setting Balancing Portfolio and fuel type of non-Balancing portfolio facilities – Q4 2019 to Q4 2021

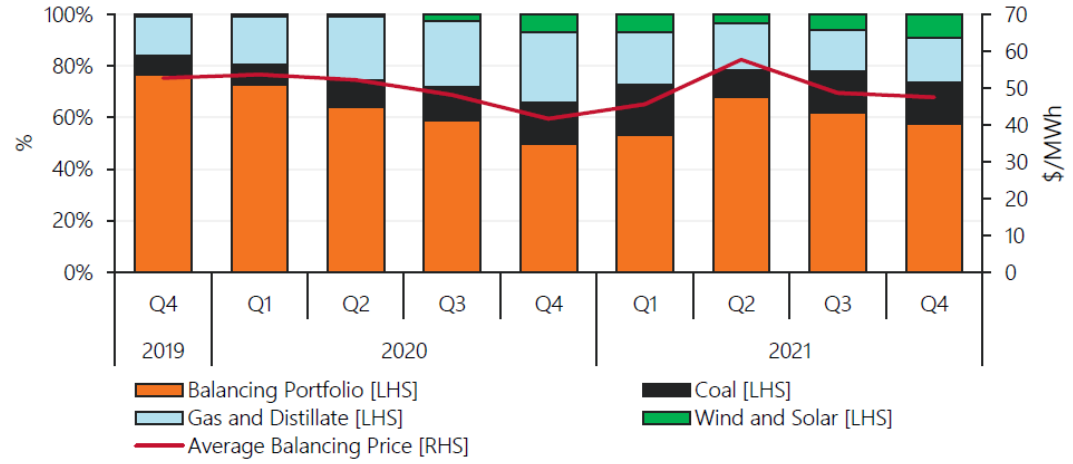
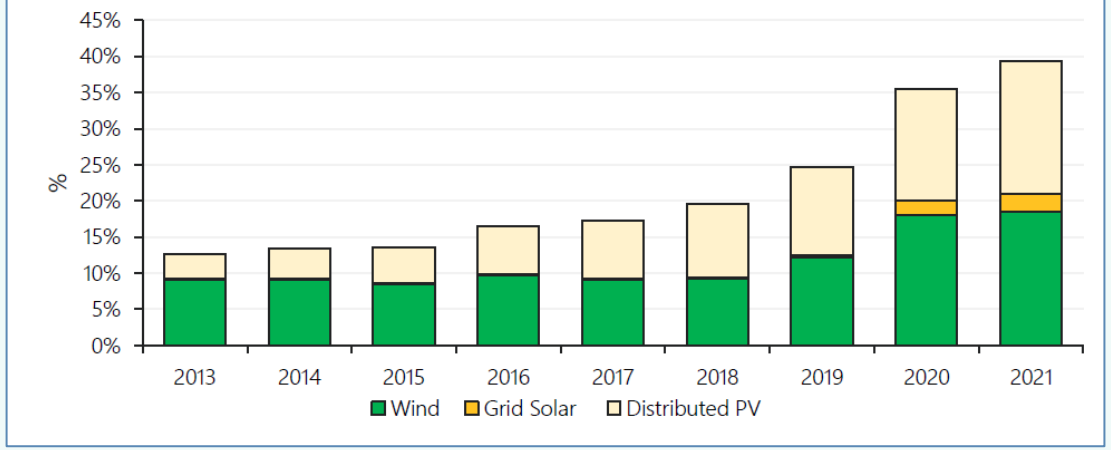


Figure 95 Renewable energy meets a record share of underlying demand in the WEM

Q4 renewable energy generation share – 2013 to 2021



Source, AEMO January Quarterly Energy Dynamics Report

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East Coast Gas

International markets continue to cause gas price uplift

AEMO

East coast gas generation demand decreased by 22% compared to Q4 2020. Reductions were seen in all states, resulting in the lowest Q4 gas generation demand since 2003. At the same time, there were record LNG exports.

Quarterly average prices were at or near record levels across all AEMO markets, averaging $10.60/gigajoule (GJ) compared to $5.95/GJ in Q4 2020.

Energy Action opinion

International parity between domestic and export prices is becoming more certain as historical domestic contracts continue to expire. Our view is that Australian manufacturing will – where possible – invest in electrification of local facilities, further reducing local gas demand.

Figure 68 GLNG and QCLNG drive record calendar year flows to Curtis Island for LNG export

Total quarterly pipeline flows to Curtis Island

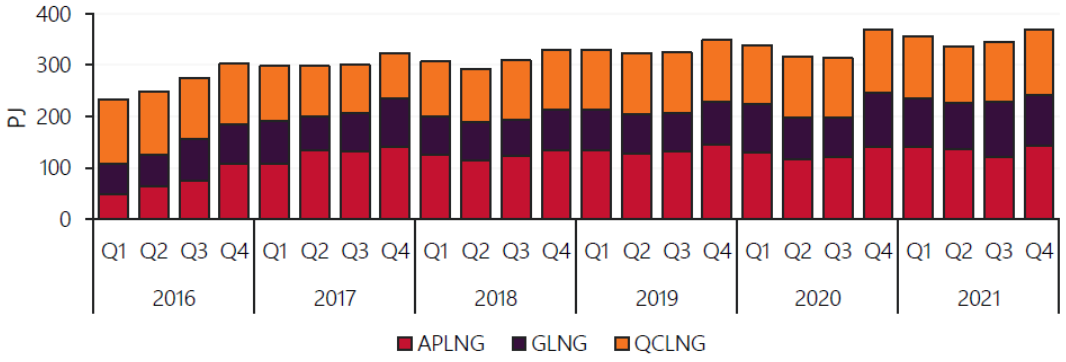
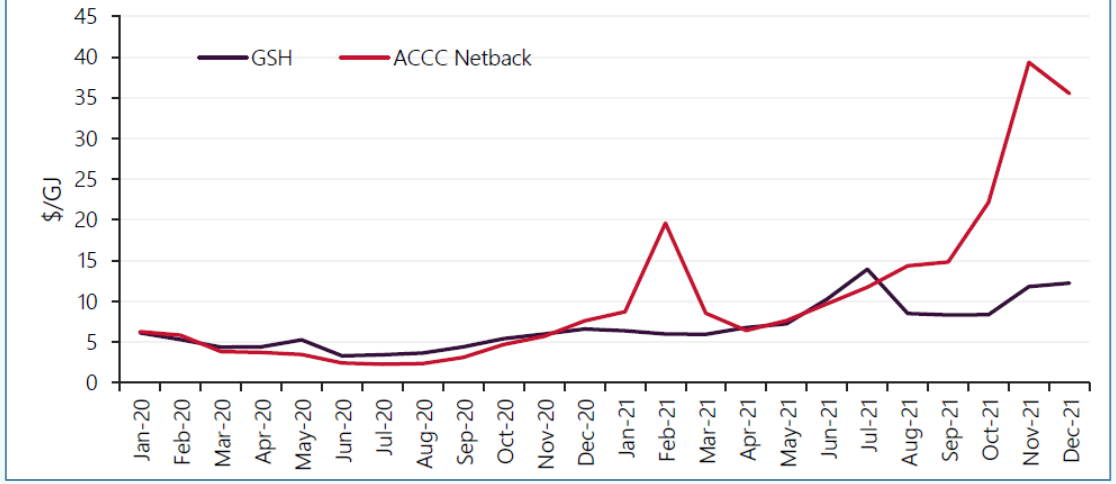


Figure 69 Domestic prices increase but remain well below international prices

ACCC netback and GSH average gas price by month



Source, AEMO January Quarterly Energy Dynamics Report

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West Coast Gas

Renewable generation is contributing to the price impact of government policy

AEMO

Domestic gas consumption in Western Australia decreased – in electricity generation, industrial use, and mineral processing **–** compared to the same quarter last year: a fall of 2.6 PJ (-2.7%).

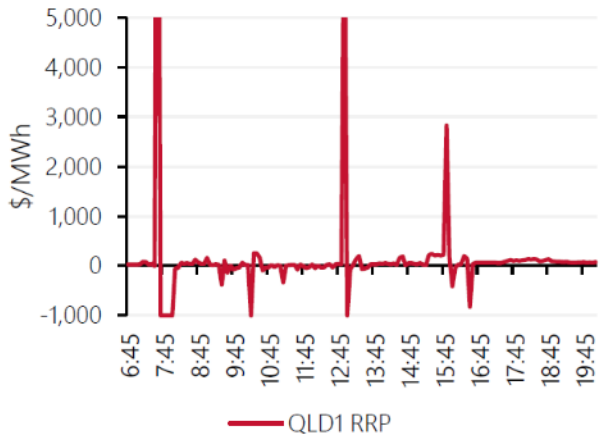
Energy Action opinion

WA domestic gas prices have almost tripled over the last two years. So, while renewable generation is reducing demand, this has been offset by increased export approvals, reduced production at the Northwest Shelf, and delays in replacement projects such as Woodside's Scarborough reserve.

It seems likely that WA's gas market will face supply side shortages from 2025 until later in the decade.

Figure 21 Pre 5MS – Rebidding after Qld price spikes

Queensland 5-minute spot prices – 30 September 2021



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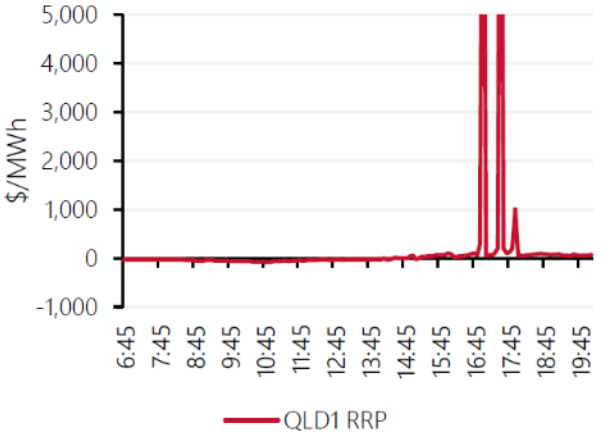

Source, AEMO January Quarterly Energy Dynamics Report

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Expert commentary:

Scott Easton
Head of Trading &
Pricing, Energy Action

The outlook for the electricity contract market

Electricity prices continued to rise during the first half of January 2022. The price for a 2023 calendar year contract in QLD and NSW have both passed 2-year highs – by more than 22% and 14% respectively.

One complication remains the inflationary impact on energy prices from tensions on the Russian border. We expect the impact on electricity prices will depend on the duration of instability and indirectly from gas pricing. The demand for gas-fired electricity will feed through to higher electricity spot and contract prices, as gas is diverted from domestic markets to Europe. This situation will play out in two ways: either short-term price rises or a sustained longer-term increase. A risk-averse option is to enter contracts immediately to avoid further price increases – particularly for gas renewals. This approach is less risky than guessing the duration of instability.

If you're looking to renew a June 2022 supply Agreement, your options are limited. We suggest a short position of 12 or even 6 months. We consider current price levels remain over inflated for fixed-price electricity agreements and encourage customers to consider a structured product such as a Progressive Purchasing (refer to December's Market Wrap for more details). We consider current prices are close to 'topping-out' and have begun to 'round-off' in VIC.

The outlook is better for 2024 and 2025 electricity contract prices, which are trading well below 2023 levels. NSW 2024 contracts are currently 12% below 2023, QLD is 22% below and VIC 19% below.

Prices for 2025 contracts are also trading at a discount to 2024 price levels. If you haven't already secured your organisation's 2024 or 2025 electricity supply agreement, we suggest you consider a Progressive Purchasing Agreement to avoid a single point of renewal at the peak of the price cycle. This option allows corporates to manage the risks associated with uncertainty from global energy prices, while maximising the opportunity to take advantage of weakness in forward markets.

Many corporates are combining their electricity procurement with environmental strategies and opting for renewable sourced contracts, PPA's, installing solar generation and forward purchasing LGCs. These strategies are allowing them to take advantage of lower electricity pricing in 2024 and 2025 by securing year-on-year savings or reinvesting these savings into a Net Zero strategy at minimal or no additional cost (depending on take-up rates).

Scott Easton
Head of Energy Trading & Pricing

Carbon markets and emissions

In the NEM. Renewable energy generation is driving NEM emissions intensity to historical low levels.

Carbon Certificates. Certificate supply/demand balance remains tight, driven by increasing business demand.

Voluntary demand. Voluntary demand continues to grow, driven by Climate Active certification. We anticipate increased demand for Australian sourced ACCUs as business Net Zero maturity increases.

NEM

Renewable energy generation is driving NEM emissions intensity to historical low levels

AEMO

Total renewable energy generation capacity continues to grow by 20% annually. Renewable energy now meets 17% of demand. This contribution has driven NEM emissions intensity to historically low levels.

Energy Action opinion

As more renewable generation enters the NEM, the price differential between traditional energy-only and green power will fall*.

* Note, AEMC 2021 Price Trends report states that, “Environmental costs are expected to go down by 13.2 per cent (or $16) over the reporting period [2021 to 2024]. This is driven by a decrease in Large-scale Renewable Energy Target (LRET) costs stemming from a reduction in the cost of large-scale generation certificates (LGCs).”

Figure 42 NEM VRE output increased by 20%

NEM VRE – annual generation

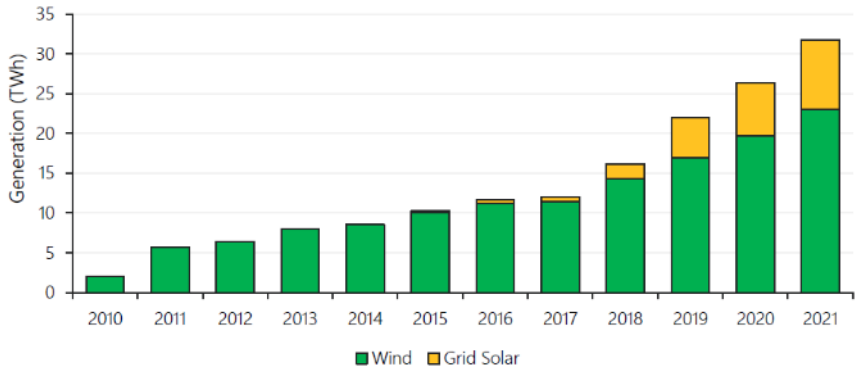
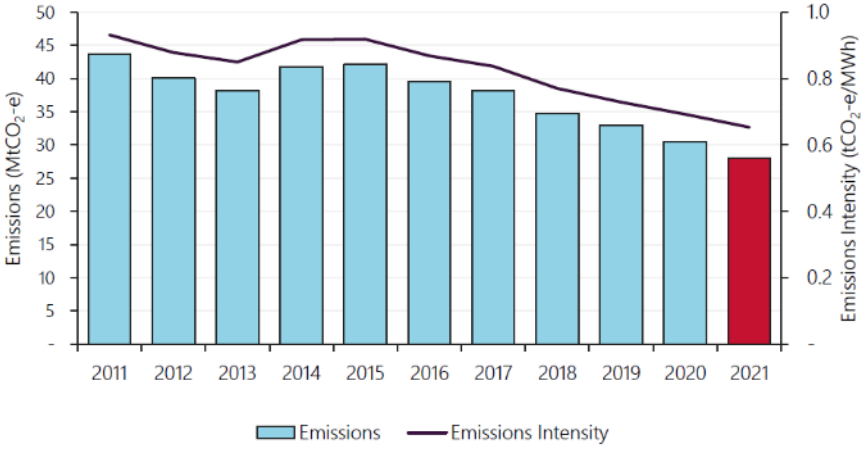


Figure 45 Record low quarterly emissions

Quarterly NEM emissions and emissions intensity (Q4s)



Source, AEMO January Quarterly Energy Dynamics Report

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Certificate Prices

Certificate supply/demand balance remains tight, driven by increasing business demand

Clean Energy Regulator

ACCU spot prices increased by $7 to $26 at the end of Q3. Trades post the end of Q3 saw the reported spot price increase to $37 in early November. Increased prices have been on the back of light volumes.

LGC spot prices increased by $7.15 to $40.40 at the end of Q3 – the highest price since January 2021. This matches historical patterns as electricity retailers secure supply in the lead up to the annual statutory surrender on 14 February next year.

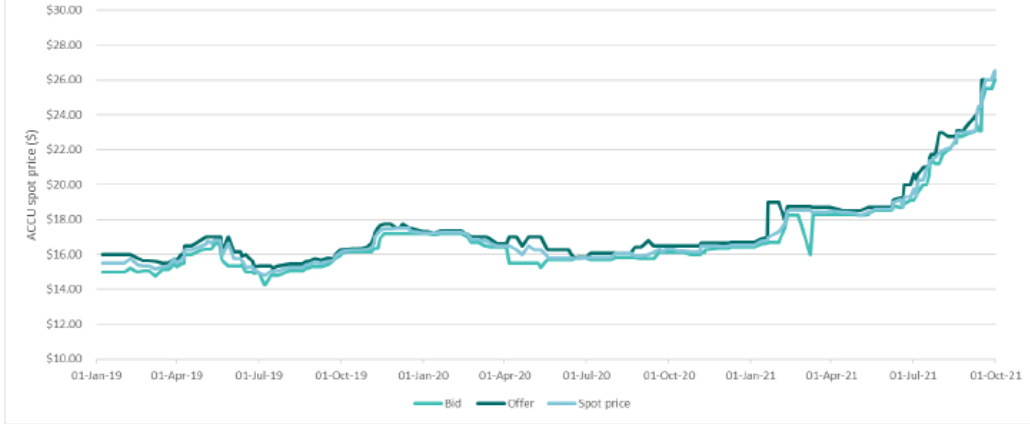
Small-scale Technology Certificates (STC) spot prices remained stable for the quarter.

Energy Action opinion

Certificate prices increased in Q3 – and have continued in Q4 – with drivers being increased business demand to achieve Net Zero targets – creating demand that is keeping pace with renewable generation certificate creation.

Certificate type	Spot price AUD (30 September 2021)	Quarterly trend
ACCU	$26.50	+$7.20
LGC	$40.40	+$7.15
STC	$38.75	-$0.15

Figure 1.9: Historical ACCU spot prices ($AUD), January 2019 to September 2021[15]



Source, Clean Energy Regulator September Quarterly Carbon Market Report

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Voluntary Demand

Voluntary demand continues to grow, driven by Climate Active certification

Clean Energy Regulator

Voluntary demand continues to grow. Climate Active participants contributed a significant 20% of the voluntary demand for both LGCs and ACCUs, while cancellation of LGCs for Green Power also increased by 34% compared to 2020.

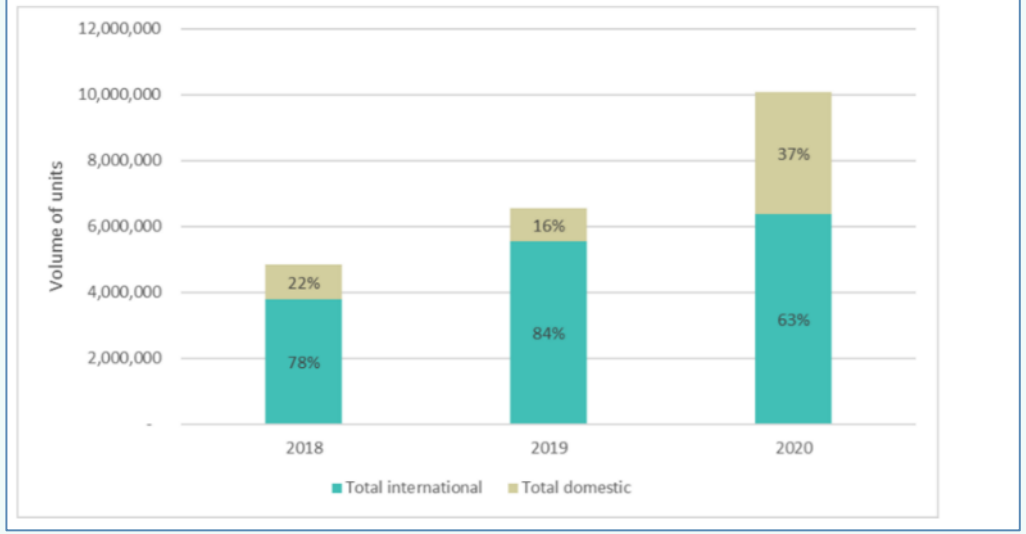
Australian carbon units and certificates are likely to gain a greater share of the Australian voluntary market. There has been increasing media interest in providing transparency on the provenance of international carbon units being cancelled in large numbers by Australian corporates. This is expected to continue, progressively shifting demand to high quality ACCUs.

Energy Action opinion

We completed our own application for Climate Active certification in December 2020. Our expectation is that Net Zero commitments from mid-sized business like ours will continue to accelerate – meaning investment in voluntary offset certificates will continue to grow.

Certificate	Renewable energy generation	Methane destruction and other emission avoidance^	Land-based projects	Total volume* 2020	Year on year growth (%)
ACCU	-	69,000	772,000	841,000	+76%
LGC (t-CO_2 - e)	2,864,000	-	-	2,864,000	+427%
CER	2,408,000	792,000	-	3,112,000	-0.1%
VER	25,000	12,000	-	157,000	-17%
VCU	2,767,000	37,000	61,000	3,108,000	+39%
Total	8,063,000	909,000	833,000	10,081,000	+54%

Figure 4.6: Volume of domestic and international units and certificates cancelled in the domestic market for voluntary purposes, 2018 to 2020



Source, Clean Energy Regulator September Quarterly Carbon Market Report

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Expert commentary:

Ed Hanna
Head of Products & Net Zero, Energy Action

The Australian carbon certificate market wakes up

With COP26 dominating the headlines in the back half of 2021, we saw renewed commitment and vigour towards Net Zero across Australian businesses.

Demand:

At the end of the year, Climate Active reported that 280 Australian businesses have now been certified as carbon neutral under the Climate Active standard, with a further 1,000 certifications expected to be issued over the next 12 months. As the Climate Active reporting cycle closed out in the second half of 2021, we saw voluntary surrender of ACCU increase 16% by 2020 – 63% of this coming from Climate Active participants.

Supply:

The CER reported 17MT CO2e of ACCU supply created through 2021, which amounts to an offset of 5% of Australia's non-electricity emissions for FY20.

Price & Outlook:

Increasingly, the quality attributes of ACCU's is driving demand from onshore buyers, despite their premium price to other certificates which meet the Climate Active standard. ACCU prices rose 180% over the year, with spot prices closing out at $47/T CO2e by December (as reported by Reputex). This is still short of the $60/T forecast, expected over coming years.

Already, this quarter, the market is reporting increased activity in Voluntary ACCU transactions, with more businesses forward-buying to head off rising costs.

Ed Hanna
Head of Products & Net Zero

About Energy Action

The status quo is no longer acceptable. Our mission is to make energy easier, cleaner, and cost less.

What we offer

Reverse Auctions. Give us 15 minutes and we'll save you 20%.

Requests For Proposals. Turn your complex needs into savings. Get portfolio and market-timing advice specific to you, including flexible purchasing arrangements.

Solar Auctions. Get solar right. Receive up to 12 solutions focused on reducing your costs and emissions.

Net Zero. Reduce your footprint at least cost.

Energy Management. Stop burning money. We simplify your energy info, put you in control of your energy costs and offer peace of mind.

Embedded Networks. The hassle-free way to on-sell energy to your tenants and create extra revenue.

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