Introduction

Never has a president of the United States made the job of newsletter writers more difficult. As we write this introduction (again) at the end of March, financial markets are bracing themselves for "liberation day" on 2 April (presumably chosen to avoid being the butt of April fools jokes). While the temptation is to say something wise and prescient – the chances of being immediately contradicted, and then contradicted again 24 hours later, are high. Within this environment, as writers of newsletters we certainly try and spare a thought for investors, as it's one thing re-write a pithy intro, it's another to unwind a complicated trade based on geopolitics!

Uncertainty is high. Trump ran on a platform of upsetting the status quo and is delivering (upsets) in spades (sparing a thought now for our Canadian cousins). In Australia, we are at the *official* start of an election campaign, the outcome of which has huge implications for Australia's energy transition (our particular focus) and the polls and betting markets put the outcome as a coin flip (with a minority government of some sort, the most likely outcome).

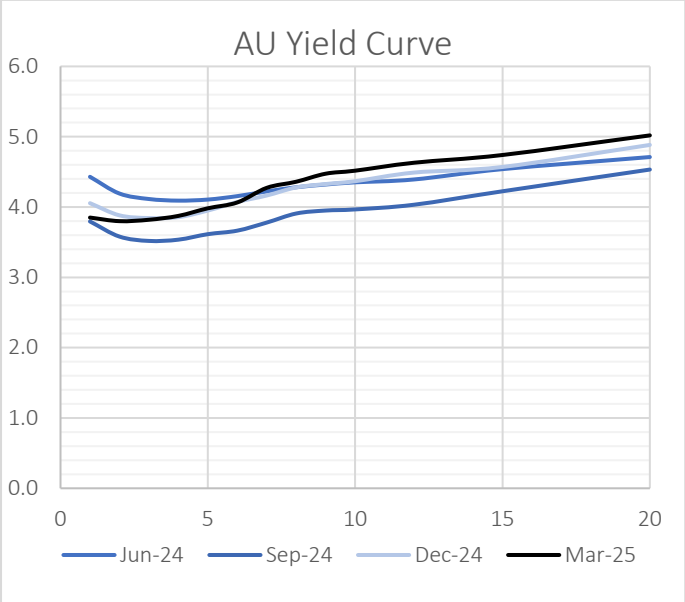
Within this environment, markets and economic participants are pulling their heads in. Equities are down – but in the grand scheme of things – only modestly. Business and consumer confidence is crashing. Credit markets are also notably weaker. For example, US high yield bond spreads have widened from 2.9% at the end of December 2024 to 3.2% today (see two charts below). On a short-term basis this looks like a substantial move – and if it continued would portend poorly for both equities and broader credit (weaker credit is almost always the canary in the coal mine as the market rolls over). But market participants have been conditioned to "buy the dip" and time will tell if it is different this time.

Markets Update

The exuberance in equity markets after the election of Donald Trump has been washed away. Tariffs, geopolitical tensions and government spending have cast doubts about the future growth of the US economy. Investors have been spooked by the uncertain path of future policy and whether the economy will be able to continue to grow at more than 2% in 2025.

The Federal Open Market Committee (FOMC) has kept the interest rates unchanged this year. In the March meeting, the committee noted that inflation was moving towards the 2% target but still remains elevated. The committee's forecast for future path of inflation has moved up and expects inflation to return to the target 2% by 2027. The committee also noted that the Trump government is implementing significant policy changes in four distinct areas: trade, immigration, fiscal policy, and regulation. It is the net effect of these policy changes that will matter for the economy and for the path of monetary policy and would like to separate the signal from the noise as the outlook evolves. The market is concerned about the future trajectory of growth and as a result the shorter end of the forward curve has shifted downwards. There has also been notable activity in credit spreads as high yield spreads jumped by approximately 50 bps during the quarter. From a historical perspective, 50 bps jump does not immediately flash fear signals in the market, but the market is pricing changing credit conditions going forward.

In Australia, the Reserve Bank delivered a rate cut this quarter, bringing the official cash rate down from 4.35% to 4.1%. The December quarter's underlying inflation reading of 3.2% provided support to the Board's view that inflation was sustainably moving towards the 2-3% target rate. However, the future path of inflation and interest rates remains uncertain as the RBA navigates through an election, tight labour market and weak growth in output. There has not been much activity on the Australian forward curve and it continues to be upward sloping.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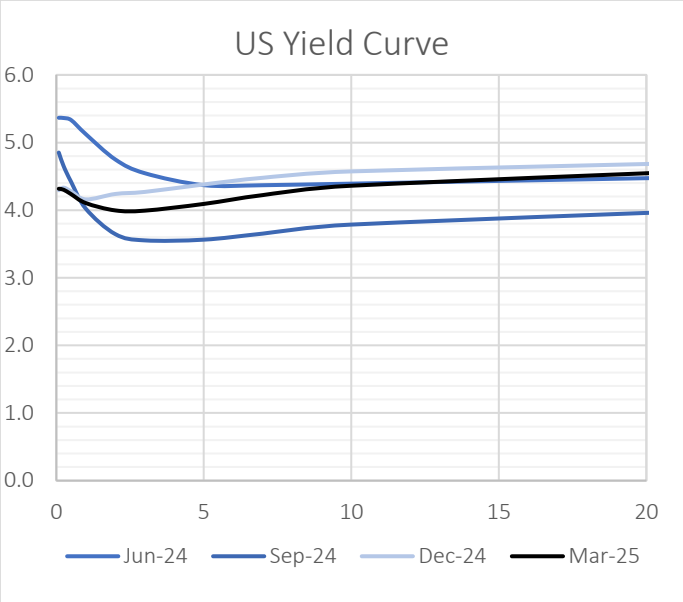
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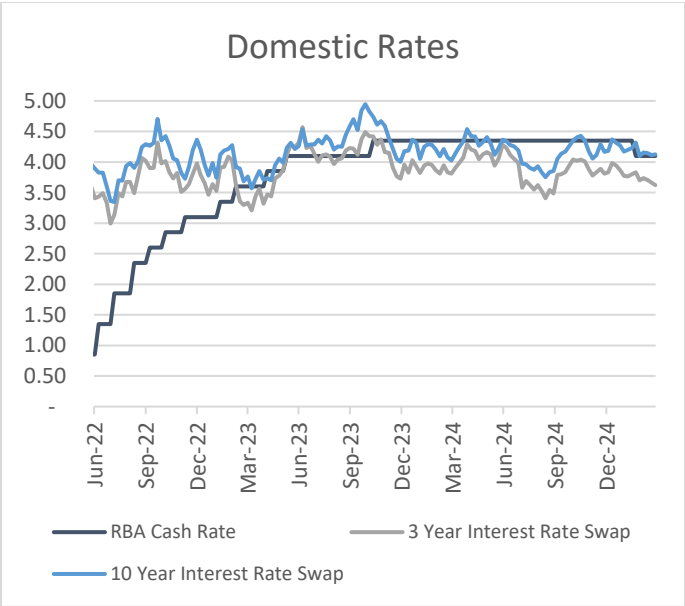
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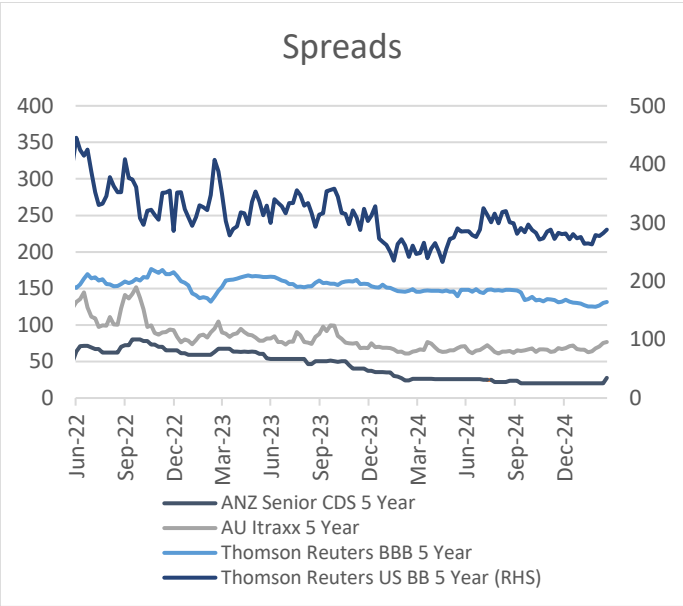
RBA Cash Rate
3 Year Interest Rate Swap
10 Year Interest Rate Swap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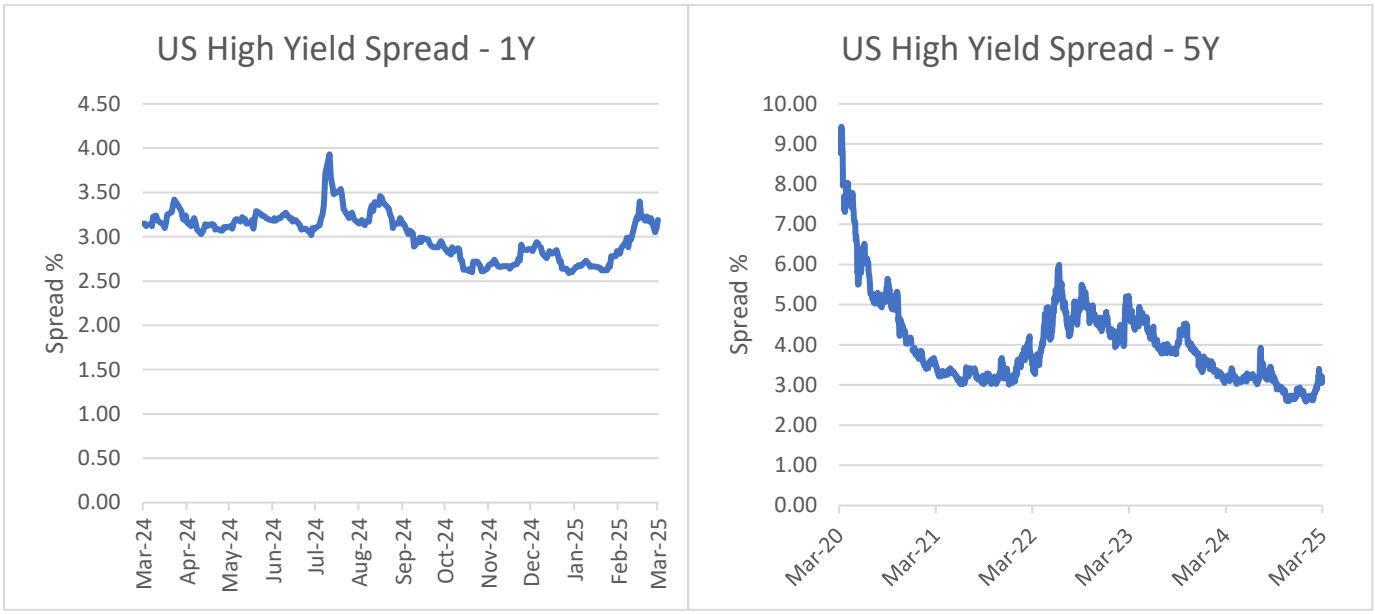
ANZ Senior CDS 5 Year
AU Itraxx 5 Year
Thomson Reuters BBB 5 Year
Thomson Reuters US BB 5 Year (RHS)



Source: Refinitiv Eikon, ICE BofA US High Yield Index Option-Adjusted Spread

New issuance and refinancing

Detailed below is publicly available infrastructure debt issuance for the quarter:

Date	Borrower	Instrument	Size ($m)	Term (Yrs)	Pricing (bp above BBSY)
13/1/25	Praeco	Loan	211.2	5	
22/1/25	Quinbrook Infrastructure Partners	Loan	722		
24/1/25	Alinta Energy	Loan	235	7	175
31/1/25	AusNet Services	Subordinated note	650	30	
7/2/25	Amp Energy – SA Battery Project	Loan			
7/2/25	ElectraNet	Bond	400	6.4	ASW + 133
3/3/25	Zenith Energy	Loan	1,900	5	200
4/3/25	Transgrid	Subordinated note (floating)	1,000	30	205
4/3/25	Transgrid	Subordinated note (fixed to floating)	400	30	ASW + 225
11/3/25	EnergyAustralia	Loan	620		
19/3/25	Acciona	Loan	453		
19/3/25	SA Power Networks	Loan	285	3	88
19/3/25	SA Power Networks	Loan	250	10	145
25/3/25	Equis	Loan	260		

Source: LoanConnector

Equity and other news

- Kwetta, a New Zealand-based EV charging and power grids start-up has raised to $16.2 million in a series A funding round led by Blackbird Ventures to pursue opportunities in Australia and Europe.
- Stonepeak-backed renewables developer Ampyr Energy Global is set to become the sole owner of NSW's 1,000MWh Wellington battery energy storage system after agreeing to buy out co-investor Shell's 50 per cent stake.
- Lightsource BP's deal to sell five utility-scale solar farms to BJEI Australia, agreed in December 2023, has collapsed after hitting the expiry date of receiving FIRB approvals.
- Infratil and the Future Fund have leveraged their pre-emption rights to acquire a 12.5 per cent stake in CDC Data Centres that was held by the Commonwealth Superannuation Corporation.
- Foresight Solar Fund Limited has kicked off an auction for a 230-megawatt portfolio of Australian solar farms, after flagging the mooted divestment last year to pay down debt. The deal is expected to be between $200 million and $300 million on an enterprise valuation basis.
- Remote power specialist Zenith Energy has swelled its lender lineup to 14 banks, as it finalises a $1.9 billion refinancing amid a sale process for 50 per cent of the business.
- Future Fund is in advanced talks to take a stake in NSW electricity transmission company Transgrid.
- The two-year-old Dexus Wholesale Airport Fund is raising funding from high-net-worth investors to lob a bid for a 9.7 per cent stake in the Melbourne and Launceston airports.
- Lazard is taking bids for 100 per cent of Edify Energy, said to have a solar and battery pipeline of around $3 billion.
- Adamantem has invested $24 million into Microgrid Power, an installer and operator of solar microgrids for multi-tenanted commercial and industrial buildings.

- Australian Retirement Trust is in advanced discussions to sell down a minority stake in New Zealand power lines company Powerco. Dexus Group's infrastructure unit, an existing investor, is the preferred buyer of the circa 9 per cent slice of Powerco.
- QIC is in the final stages of securing a sizeable equity injection for Perth-based Pacific Energy.
- Amp Energy has reached financial close on the project financing of stage 1 of its Bungama BESS. The financing for the merchant battery includes equity from Carlyle, Amp's owner, and non-recourse senior debt facilities from Commonwealth Bank of Australia, Westpac Institutional Bank and Export Development Canada.
- Lendlease has sold its Capella Capital infrastructure financing business to Japanese trading company Sojitz Corporation for $235 million.
- FRV has acquired the 140MW Axedale solar project and 50 MW/100 MWh battery energy storage system (BESS) 20km east of Bendigo from Acen Australia. The project is near the completion of permitting.
- Energy Vault has agreed to buy the 125 MW/1000 MWh Stoney Creek battery project near Narrabri from Australian developer Enervest. Stoney Creek has a 14-year underwriting agreement from the NSW government through its latest long duration storage tender.
- Brisbane-based EcoJoule Energy, a provider of pole-mounted community energy storage units and voltage regulation devices, has secured $15 million from an investor group led by Ellerston Capital's Industrial Growth Fund and Fifth Estate Asset Management.
- Potentia Energy, a joint venture between Enel Green Power and Inpex, has acquired a 1.2 GW renewable energy portfolio in Australia from DIF and CBUS. The portfolio includes over 700 MW of operational wind and solar assets and 460 MW in late-stage development. It includes an 80 per cent stake in Bright Energy investments.
- Hydro Tasmania has inked a new 10-year electricity supply deal with the GFG Alliance-owned Liberty Bell Bay manganese smelter at George Town, where the majority renewables power mix makes it one of the greenest ferroalloy producers in the world.
- Tilt Renewables has acquired the 113MW Boco Rock wind farm in New South Wales.
- The successful proponents of the NSW Roadmap – Tender Round 5 (South West Renewable Energy Zone Access Rights and Long Duration Storage LTESA) were announced. They are ACEN's 800MW/11,990MWh Phoenix pumped hydro energy storage project, Enervest's 125MW/1,000MWh Stoney Creek BESS and Eku Energy's 100MW/800MWh Griffith BESS.
- The successful proponents of the Capacity Investment Scheme WEM Clean Dispatchable were announced. They are PGS Energy's 324MW/1,200MWh Boddington Giga Battery, Atmos Renewables' 100MW/400MWh Merredin Big Battery, Neoen's 150MW/615MWh Muchea Battery and Frontier Energy's 80MW/380MWh BESS at its Waroona Renewable Energy Project.

Source: AFR, RenewEconomy

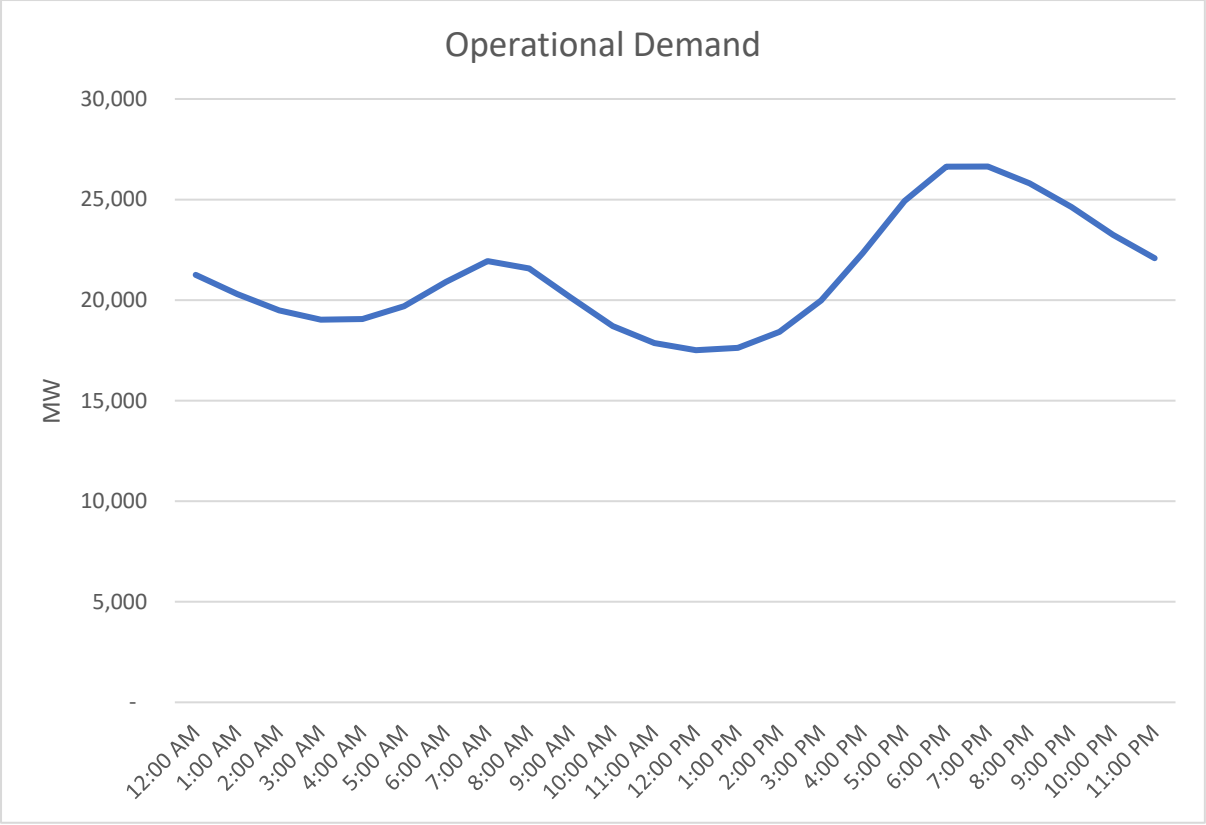
Batteries - Move over gas, batteries are about to take over the NEM

This is a reasonably long article, but work with us as we give context and background explaining why we are at a profound juncture in the energy transition in our local market.

It feels like yesterday, but it has been almost eight years since the 100 MW Hornsdale Power Reserve, the first large utility scale battery in Australia, was commissioned in the National Electricity Market (NEM). Since then, we have seen rapid increase in utility scale batteries across the NEM. There are currently 18 large scale operational batteries in the NEM with a combined capacity of 1.65 gigawatts (GW) and an additional 10 GW of battery projects are under construction which are expected to connect to the National Electricity Market (NEM) over the next two to three years. This avalanche of new batteries is about to change the market dynamics of the NEM.

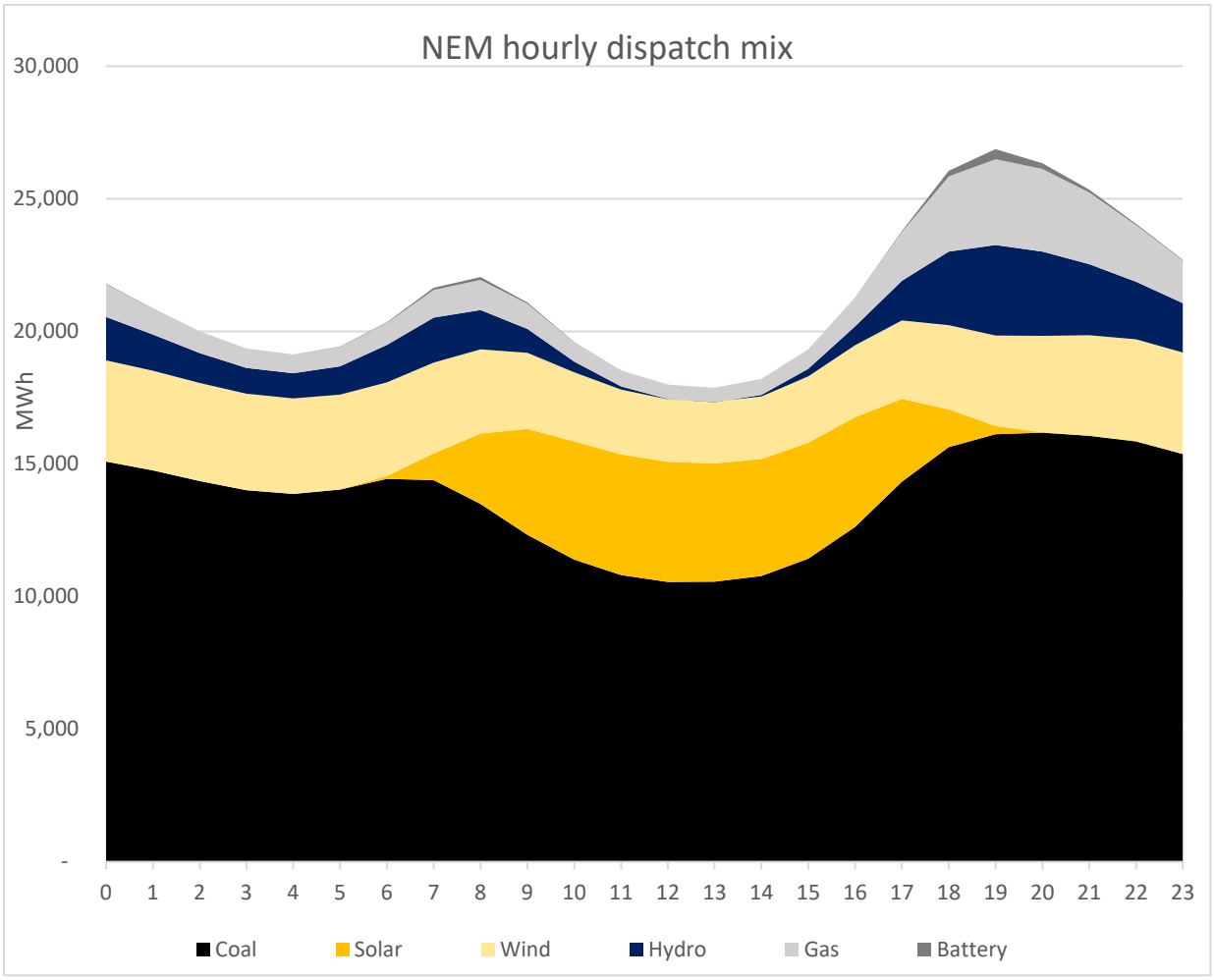
Before we consider the market dynamics, it is important to consider demand for electricity in the NEM. By demand, we mean operational demand which, in simplistic terms, means demand net of any forms of embedded behind the meter generation in a state (think of rooftop solar, household batteries and small-scale utility scale solar). This is different from underlying demand which consists of all electricity consumed within a state regardless of where the electricity is generated, behind or front of the meter. From here on, when we refer to demand, we mean operational demand.

The chart below shows average hourly operational demand in the NEM for 2024. Demand follows the typical duck-curve whereby demand is the lowest in the middle of the day when the sun is shining, and rooftop solar generation is at its peak. Demand picks up in late afternoon and peaks in the evening.



Source: Nemreview

Now let's consider who is supplying this demand on an hourly basis:



Source: Nemreview

During daylight hours, coal and solar are the dominant forms of supply, delivering more than 80% of demand. Coal powerplants have operational constraints which require them to maintain minimum generation levels to ensure that they can operate at stable levels and ramp up to supply electricity during peak periods.

Solar is a zero marginal cost generator and therefore supplies electricity as long as the sun is shining. In the middle of the day, these two players are price insensitive and continue supplying electricity irrespective of demand (and consistent with this, it is not uncommon for electricity prices to be negative during this period).

However, as we enter evening hours, the market dynamics change. There is heightened demand during evening hours as household demand for electricity picks up. As the sun sets, solar generation wanes and is replaced by additional coal, hydro, gas peakers and wind whenever it is available.

Let's focus our analysis on the three hours starting from 6pm and ending at 9 pm. Total demand across the NEM during these hours on an hourly average basis is approximately 26 gigawatts (GW). The biggest source of supply during these three hours comes from coal fired power plants, providing on average 16 GW of electricity. Followed by gas and hydro, which combined together, provide approximately 6 GW of supply. Then, there is wind generation, which intermittently provides 4 GW of supply (on average).

Finally, the thin layer of grey icing on our stacked area chart is formed by batteries which are currently supplying 0.3 GW of peak energy demand. That, at the moment, the small fleet of batteries earns very high returns (because they are extremely nimble and are able to cherry pick the periods with the very highest electricity prices) but aren't particularly important in terms of the overall supply/demand mix or price setting behaviour.

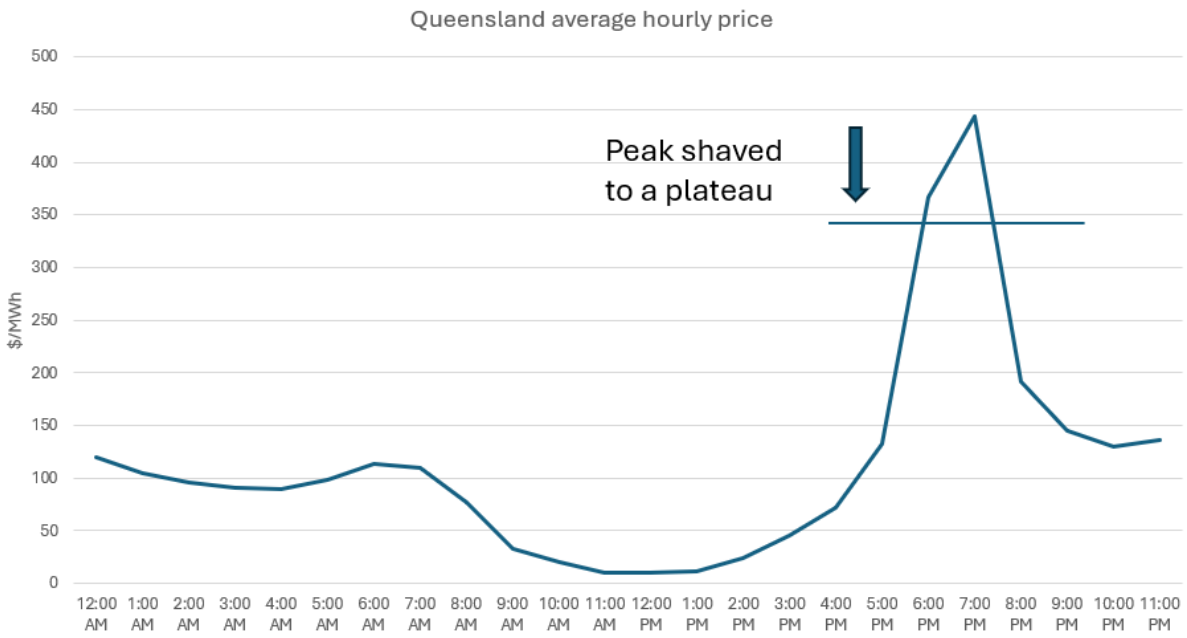
Unlike solar and wind, all other forms of generators have a marginal cost to supply. Coal and gas must burn fuel to generate electricity and therefore have a marginal fuel cost to supply electricity. Whereas hydro and batteries have an opportunity cost to supply. Most hydro plants in Australia have a dual purpose, to generate electricity and to store water for agricultural irrigation purposes. This creates an incentive where a hydro plant operator, when deciding when to dispatch their water, effectively needs to decide which periods will offer the highest revenues (and additional dispatch now comes at the opportunity cost of lower dispatch later). This optimisation would usually occur over a few weeks or a month (ie, I need to dispatch *x* gigalitres of water over this period for irrigation purposes, what is the optimal pattern of dispatch that delivers the highest electricity revenue?).

Batteries are effectively very similar to hydro, but over a shorter time horizon. Most batteries have warranties that allow them to dispatch at a rate of one cycle per day (full discharge, and this, combined with their financing/cost structures, incentivise batteries to dispatch at regular (ie daily) intervals. Thus, optimising battery dispatch (for our purpose here we are ignoring FCAS revenue) is a case of trying to charge when electricity prices are lowest (eg in middle of the day) and then deciding when in the next 24 hours to dispatch this power to earn the highest revenue. This is usually in the evening peak. Thus, a key dynamic to keep in mind in the period ahead, is that most batteries will fully cycle their capacity every day.

Prices in the NEM are set on a five-minutely interval. Each generator submits a bid stack for a trading day, specifying how much power they are willing to supply at different price bands. To arrive at a price for a given five-minute interval, the Australian Energy Market Operator (AEMO) orders the bids from each generator from the lowest price to the highest. AEMO dispatches generators in ascending order of their offer prices. The bid from the last generator that meets the demand requirement for the interval sets the clearing price for all generators (and is consistent with the all the operational/transmission constraints necessary for stable operation of the grid). During peak hours, the marginal generator is usually a gas generator. Gas has the highest marginal fuel cost and therefore gas bids to be dispatched only when the price is high enough to cover fuel costs. Hydro and batteries have historically been shadow pricing gas which allows them to rank ahead of gas in the bid stack but essentially receive the price that was set by gas. Coal bids in a manner which ensures that it is dispatched reflecting its lack of flexibility.

With the influx of new batteries, bidding behaviour and the role of gas in peak supply is about to change. Let's bring the three hours of peak demand together (6-9pm in the chart above) and change our units of electricity to Gigawatt hours (GWh) so we can keep the physicists happy. During these three hours, coal provides 48 GWh of electricity. In the near-term, we don't expect much change in these 48 GWh as coal is not the marginal generator and does not dictate how price is being set in peak hours. The real land grab is about to occur in the 9 GWh that are being supplied by gas and hydro each. To keep the maths simple, 10 GW of new batteries provide on average two hours of storage which unlocks 20 GWh of new supply. This new supply is very competitive compared to a gas generator from a marginal cost perspective and batteries are highly incentivised to cycle every day (or near to this). As a result, batteries are incentivised to supply roughly their 20 GWh in our peak window at a price that covers charging costs.

But the question you might ask is who is likely to make room for these colossal electric piggybanks? The answer is straightforward, it will be gas at first. Instead of shadow pricing gas, batteries will be setting prices and undercutting gas on the bid stack enabling them to be dispatched in priority and use their budgeted cycle for the day. This will force gas to make a less frequent appearance during peak hours. In fact, our expectation is that there will be some evening peaks where gas plays a very limited role, and the evening surge in demand can be met by hydro and batteries alone. For hydro, the piggybacking will shift from gas to batteries, and it will continue to shadow price the marginal generator to be dispatched albeit at lower prices.



Source: Nemreview

So, what can we expect from the future? This supply change will have a big impact on evening peak prices. Further, instead of an evening price spike, we expect an evening plateau as competition from batteries to get dispatched would be expected to drive prices down.

This flattening of the shape will improve the relative economics of longer duration batteries – but that's another story.

Trump, Tariffs, China and Decarbonisation

The last quarter has seen an intense focus on Trump and tariffs and their implications for markets. What is the mix between bluff and long-term strategy for Trump and tariffs is unclear.

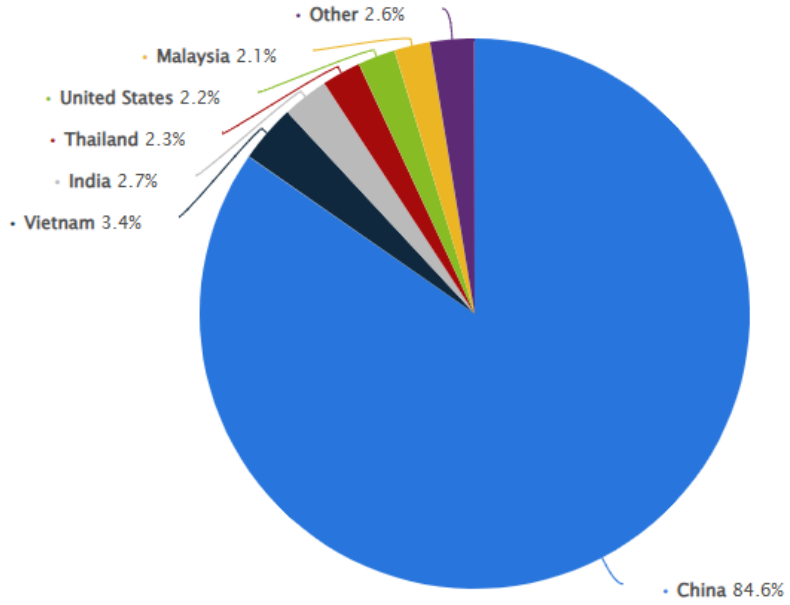
However, it seems likely that Trump intends to increase tariffs on China and to coerce US trading partners to also apply tariffs on Chinese imports. Clearly the economic and geopolitical implications of this are large – both for the world in general, given China's size and role as factory to the world, and to Australia in particular, given China is our largest trading partner. Tariffs would have important direct impacts, but the likely retaliatory moves as well as potential exchange rate moves would also have huge implications for investors.

This article doesn't try and unpick those, rather it highlights the important role that China plays as an equipment supplier for the energy transition and decarbonisation.

The energy transition has many facets, but China is the largest single supplier across the energy transition supply chain.

For example, in solar PV modules, as of 2023 (see chart below), China had over 84% market share in solar module production. Furthermore, they dominate up and down the supply chain with even higher market shares in the solar cell and polysilicon (precursors to solar modules) markets.

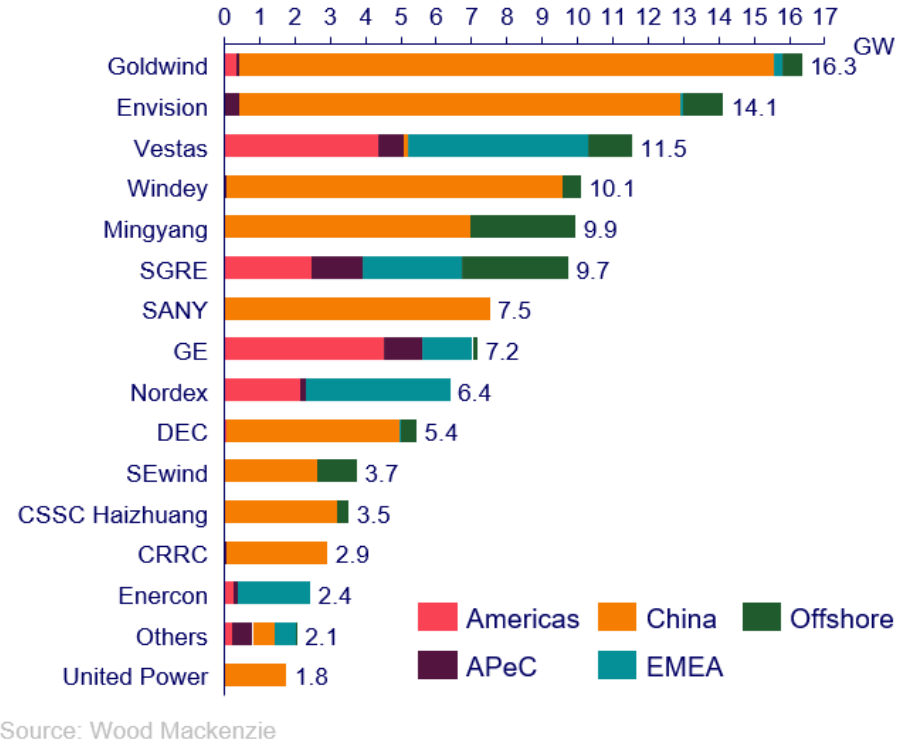
Chart 1: China Share of Solar Module Production - 2023



Source: Statista

The supply chain for wind turbines is a bit more international – with GE in the US and Vestas in Europe being large global players – but China is still at the top of the leaderboard with Goldwind and China is the largest end market for wind turbines in the world. Point of fact, in 2024 China installed 86GW and 288GW of solar in 2024 alone (for reference Australia installed 4GW of utility scale wind and solar).

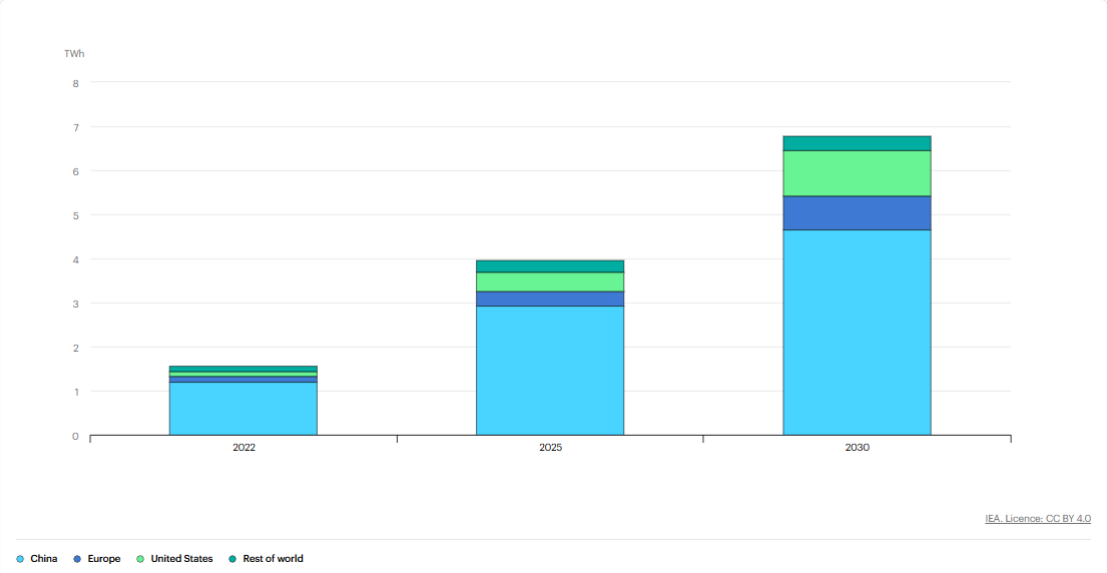
Chart 2: Top Original Equipment Manufacturers – Wind Turbines – 2023 (GW)



Source: Wood Mackenzie

Lithium-ion batteries are increasingly playing a crucial role in the energy transition. While the technology may have been invented in the US and commercialised in Japan, they are being mass manufactured in China. The chart below shows historic and projected lithium ion manufacturing capacity. China absolutely dominates.

Chart 3: Lithium-Ion Battery Manufacturing Capacity



Source: IAEA

What does this mean? It is perfectly possible to put tariffs on China. However, within the context of the energy transition there are many sectors where China has dominant market share and would be irreplaceable (at least in medium term). In this world, the economic incidence of the tariff would clearly be to just push up the cost of this equipment for end users.

That is, there is a real risk that tariffs on China equals an additional cost on the energy transition.

The energy transition is already proving to be more expensive than might have been expected pre-Covid. The post Covid world has seen a sharp run up in build costs and, just as importantly, a sharp rise in interest rates. A switch from fossil fuels to renewable energy is inherently a switch from low capex/high opex (fossel fuels) to high capex/low or zero opex (renewables). Higher interest rates make this switch much more expensive (eg the levelised cost of wind has gone from circa $50/MWh to more than $100/MWh) and higher capex costs relative to history just make the problem worse.

Thus, a key risk from tariffs on China is that it makes a transition, that has already proved more expensive than hoped, yet more expensive again.

Fixed income returns from asset consultant's perspective

Over the past few years, I have often been asked for my opinion on a fixed income or credit strategy offering double digit returns. Caveat emptor and do your own research is always my advice - but I thought it might be useful to share a mental model from my asset consulting days for assessing a range of credit/fixed income strategies.

My approach, before getting bogged down in the specifics of the manager/product, was always to:

1. try and figure out what their investment universe was. That is, what is the product actually investing in?
2. try and establish a listed/benchmark return for that investment universe.

Establishing a listed/benchmark return is useful for two reasons.

Firstly, you can use the attributes of this benchmark to assess what the yield to maturity (net of defaults) of the investment universe and use this to assess the manager's return projections. For example, if a manager says they are going to mainly invest in Australian government bonds (10yr current yield to maturity 4.5%) and they say they are going to return 7-10% then you should be sceptical.

This is also useful for credit strategies. It is always interesting to check the alignment between the return targets of managers and the credit profile of their target investment universe. Take the US for example, current BBB spreads are approximately 1.5% and current high yield spreads (that is for issuers rated BB and below) are currently circa 3.2% (that is a total return of around 7.25%). Most asset consultants assume the long-term return from listed equities is risk free plus 4-6% (and a debt strategy offering higher than equity returns should be a potential red flag). For other countries and sectors, it is usually pretty easy to get some relevant benchmarks.

If a manager's forecast returns are way out of line with these benchmarks - then the question is how are they earning this additional return? Usually, there are two options, either the manager's strategy is based on making capital gains over and above the underlying asset yield - and you need to form a view of whether this is reliable and repeatable, or the there are other risks (eg subordination, illiquidity, leverage, derivates etc) that you need to form a view on whether you are comfortable accepting and whether the additional return is reasonable compensation. There are no free lunches.

Secondly, the benchmarks provide a useful guidepost for assessing past performance. Has the manager/product delivered historic returns that are consistent with the broader universe?

One key factor, for fixed income investors, with backward looking return outcomes is that base rates rose very substantially in 2022 and 2023. This means that any fixed income strategy which had meaningful fixed rate exposure - that is exposure to long-term interest rates - will have recorded capital losses (and relatively weak absolute performance in 2022 and 2023). For example, the five year return to the Bloomberg Ausbond Composite index to for the five years to end Feb was minus 0.6% per annum. If a manager says they take long-term base rate exposure and are reporting historic returns of 10%+ then there is probably something off.

My overarching comment for assessing all managers, don't be a deer trapped in the headlights of returns. Look under the hood. Figure out how they are generating their returns and whether you are comfortable that this is repeatable and are willing to accept the risks involved. Finally, no investment should be viewed in isolation, each manager/product should be assessed for its ability to deliver the role it is meant to play within the broader portfolio.