FORSYTH BARR

NEW ZEALAND EQUITY RESEARCH

5 AUGUST 2020

Power Points
Should I Stay Or Should I Go? — August 2020

ANDREW HARVEY-GREEN
andrew.harvey-green@forsythbarr.co.nz
+64 4 495 8185

SCOTT ANDERSON
scott.anderson@forsythbarr.co.nz
+64 4 914 2219

The Clash wasn't thinking about the Tiwai Point aluminium smelter when it wrote its classic 1982 song, but it does seem appropriate given what has unfolded in the past month. Rio Tinto (RIO) announced on 9 July that it was closing NZAS by 31 August 2021. A month on and the door appears slightly ajar and news that Transpower is accelerating its lower South Island transmission project is a significant positive for Contact Energy (CEN) and Meridian Energy (MEL), our preferred electricity sector stocks, both with an OUTPERFORM rating.

Figure 1. Summary company valuation metric

Company	Price	Target price	Target return	Rating	FY20 EV/EBITDA	FY20 PE	FY20 Gross Yld	EBITDAF (NZ$m)
CEN	$6.29	$7.50	24.3%	OUTPERFORM	12.1	18.9	6.4%	449
GNE	$2.96	$2.75	-2.2%	NEUTRAL	15.4	30.3	7.1%	353
MCY	$4.70	$4.41	-2.8%	NEUTRAL	15.6	28.4	4.7%	483
MEL	$5.00	$4.80	-0.6%	OUTPERFORM	16.7	25.7	4.9%	861
TLT	$3.64	$3.50	-3.8%	OUTPERFORM	10.1	33.3	0.0%	127
TPW	$6.83	$6.55	0.6%	NEUTRAL	14.8	28.8	6.6%	186

Source: Company reports, Forsyth Barr analysis

Discussions on extension of NZAS close date ongoing

The biggest electricity story since Labour and the Green's launched their joint NZ Power policy in 2014 hit the sector when RIO announced it was closing NZAS by 31 August 2021. We recut our forecasts assuming this worst case scenario, with CEN and MEL the worst affected until transmission constraints in the lower South Island are relieved. Full details can be found in our note *Smelter's Shock Far From Fatal*, published 20 July. Discussions with MEL around pushing out the close date are ongoing and significant effort is going into looking at replacement electricity demand options. That said, we remain of the view that investors should assume NZAS is closing on 31 August 2021 and anything else is upside. We expect NZAS will be the central focus of post-result discussions. The FY20 result season kicks off on Monday, 10 August, with CEN the first to report. Sustainable dividend guidance through trough earnings in FY22 will be of critical importance, although given the fluid situation we would not be surprised if the generator/retailers dodge that particular question now.

Transpower announcement a significant positive

The most significant positive development in the past month is Transpower announcing yesterday (6 August) that it is able to bring forward a year the lower South Island grid upgrade project (the Clutha Upper Waitaki Lines Project — CUWLP). The new completion date is expected to be May 2022, meaning CEN and MEL only face nine months of limited lines capacity. The transmission project will reduce water spilling and should see the gap between South Island and North Island electricity prices close. Initial ASX futures trading since the announcement has seen the price differential between Benmore (BEN) and Otahuhu (OTA) close ~NZ$4/MWh.

Yield story looks ok despite potential dividend cuts

Despite the cut in our dividend forecasts for four of the generator/retailers (Mercury is the only one to avoid that fate), the average sector gross dividend yield is still a healthy 5.7%. Whilst the yields are not as attractive as they were, 5.7% is still a ~+5% premium to property and other bond proxies, and arguably there is no/limited downside risk.

In other news, wholesale electricity prices remain firm as hydro storage falls and electricity demand increases

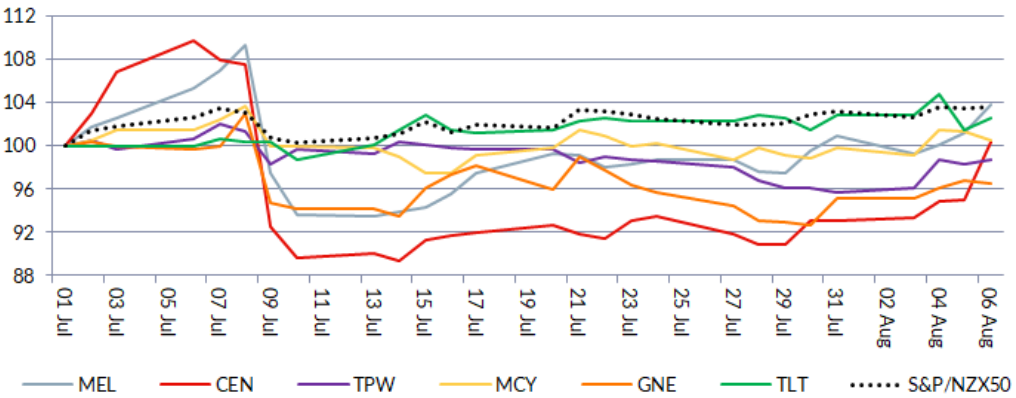
The average OTA wholesale electricity price in July 2020 was NZ$153/MWh, well above average. The main drivers of the high wholesale electricity price are low hydro storage lakes, which at month end are 73% of average, down from 79% at the beginning of the month and strong electricity demand, up +4.0% vs. the pcp (+5.4% ex-NZAS).

August 2020 Power Points

Share prices recover some lost ground after 9 July announcement

July 2020 will be remembered as the month Rio Tinto announced it is closing NZAS as of 31 August 2021 — putting the proverbial cat amongst the pigeons. As expected CEN and MEL were the worst affected, losing -17% and -14% respectively in the immediate aftermath of the closure announcement. However, since then, electricity share prices have recovered somewhat, with CEN, MCY and MEL all ahead of their 1 July price. The announcement that Transpower has brought forward its transmission was particularly positive for CEN and MEL, as they jumped +5.5% and +2.7% respectively on 6 August.

Figure 2. Share price movements since 1 July



Source: Eikon, Forsyth Barr analysis

The worst appears to be behind the sector with more good news than bad news in recent weeks. Key developments since 9 July include:

- MEL is in discussions with RIO over a possible extension to the closing date.
- Transpower announced (and has now completed) a review of its lower South Island grid upgrade project.
- Any number of alternative sources of electricity demand to replace NZAS have been mooted, including dairy coal-boiler conversion, hydrogen production, data centres, and even a Tesla gigifactory, (to be fair, most of these have little chance of going ahead, in the near-term anyway).
- The government appears adamant that there will be no additional funds going to RIO and that it will support Southland through the transition phase. To that end, it has announced investigation of a massive pumped hydro scheme at Lake Onslow (more on that later) and funding to help dairy factories convert coal-fired boilers to electricity.

Yesterday (6 August), Transpower confirmed that it will be able to complete the lower South Island grid upgrade project a year earlier than originally planned. This is a significant boost for CEN and MEL as it shortens to nine months the length of time transmission constraints will prevent all of the generation from Manapouri and the Clutha system from getting north. Trough earnings are now likely to be FY22 as opposed to FY23 (assuming NZAS still closes in August 2021). We see this as benefiting the whole sector as wholesale electricity prices are unlikely to fall as much, which in turn lifts retail prices. The early completion of CUWLP also improves MEL's bargaining position with NZAS.

In addition, a newspaper report has indicated that NZAS is contemplating restarting potline 4 and that RIO has told NZAS staff that a final decision on the future of the smelter will be made in the next 4–6 weeks. We have been unable to substantiate the rumour that potline 4 is going to re-open (and it doesn't make any intuitive sense). However, we have been able to confirm that RIO has told NZAS staff that a final decision is 4–6 weeks away.

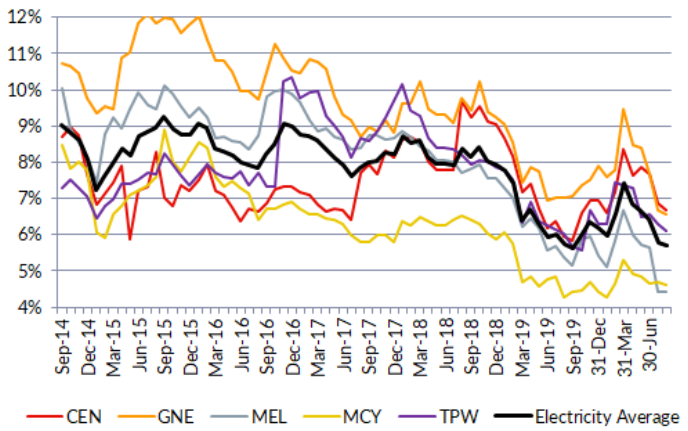
Our current forecasts assume NZAS closes on 31 August 2021, and that transmission constraints in the lower South Island exist until June 2023. Our dividend forecasts are based off the earnings assumptions. This is, therefore, a worst case scenario, with the Transpower announcement a significant positive for CEN and MEL. If NZAS remains open a little longer, that will be a further positive and if new electricity demand partially replaces NZAS, that too is upside.

What do dividend yields look like now?

Unsurprisingly, the cuts we have made to our dividend forecasts has seen the gross dividend yields fall as the share prices have not fallen to the same extent. Our reduced dividends are expected to be temporary. However, even after the cut to our dividend forecasts, the forecast gross dividend yields for CEN, MCY and TPW are ahead of their mid-2019 lows — this is encouraging as arguably there is less earnings uncertainty after our dividend cuts than there was in 2019 before NZAS announced it was closing. The average 12-month forward sector gross dividend yield is 5.7%, comparable to the average gross dividend yield in September 2019.

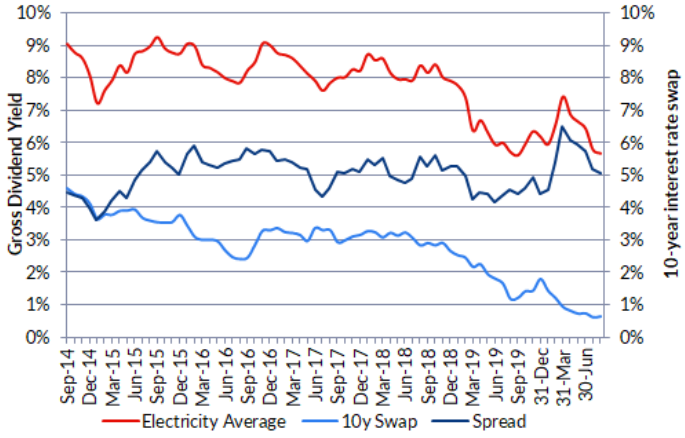
In comparison to the 10-year swap rate, the spread has closed to 5.1%, the lowest since January 2020, but is still +0.9% higher than the low observed at the end of July 2019 — despite our dividend forecast cuts.

Figure 3. Electricity stock yields



Source: Bloomberg, Forsyth Barr analysis

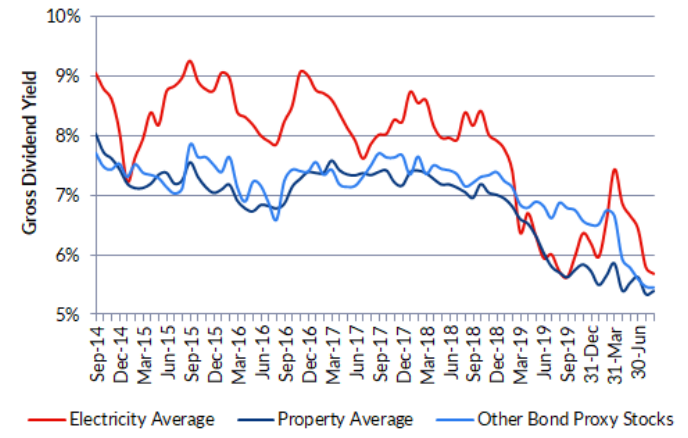
Figure 4. Sector yield vs 10-yr swap rate



Source: Bloomberg, Forsyth Barr analysis

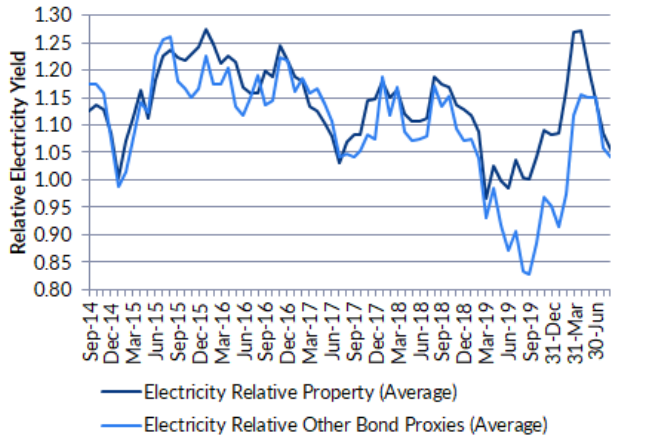
Relative to the property sector and other bond proxy stocks, the electricity sector is trading at a premium, albeit that premium has closed to 1.05x. Nevertheless, in an environment of low interest rates and with the worst possible smelter announcement behind it, the sector we believe still has significant investment appeal, particularly for long-term investors.

Figure 5. Electricity yield vs property and other bond proxy



Source: Bloomberg, Forsyth Barr analysis

Figure 6. Relative yields

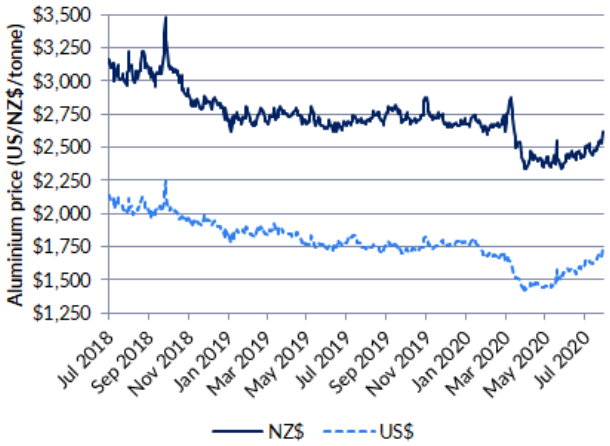


Source: Bloomberg, Forsyth Barr analysis

Ironically, aluminium prices are on a tear….

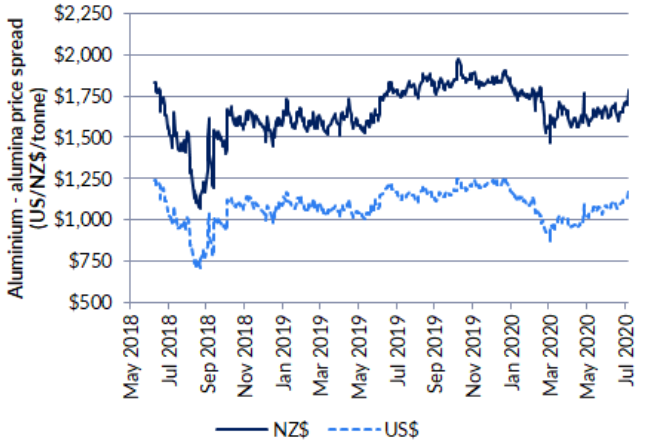
In the month that RIO decides to announce it is closing NZAS, it is somewhat ironic that aluminium has had one of its best months in recent memory. The LME aluminium is currently ~US$1,740/tonne, better than pre COVID-19 levels. The NZD price hasn't recovered to the same extent (due to the strengthening NZDUSD) and is currently ~NZ$2,600/tonne, similar to mid-March 2020 prices. The aluminium/alumina spread has similarly improved. The driver of the ~+10% improvement over the past month appears to be improved China demand. By itself, the short-term improvement in aluminium prices means nothing for NZAS, but at least aluminium prices are not a negative as RIO contemplates whether it stays open a little longer.

Figure 7. Aluminium prices



Source: IRESS, Bloomerg, Forsyth Barr analysis

Figure 8. Aluminium/alumina price spread



Source: IRESS, Bloomerg, Forsyth Barr analysis

Reporting season to be dominated by NZAS closure commentary

We expect there to be more focus on each company's response to RIO's announcement than on the results themselves, which should contain no surprises. The big issue for the companies is where to pitch dividends given the NZAS closure is still an evolving situation. More detailed analysis on what we expect from the reporting season can be found in our report published 6 August 2020 *Tiwai to Overshadow Results – FY20 Preview*. The first company to report is CEN, on Monday, 10 August.

Figure 9. FY20 reporting dates

	Contact Energy (CEN)	Genesis Energy (GNE)	Mercury (MCY)	Meridian Energy (MEL)
Reporting date	Monday, 10 August	Thursday, 20 August	Tuesday, 18 August	Wednesday, 26 August

Figure 10. Summary FY20 expectations

Company	CEN	GNE	MCY	MEL		CEN	GNE	MCY	MEL
EBITDAF (NZ$m)					**Full year dividend (incl specials) (cps)**				
FY20 forecast	**449**	**353**	**483**	**861**	**FY20 forecast**	**32.0**	**15.5**	**15.8**	**19.1**
FY19 result	518	370	505	838	FY19 actual	39.0	17.1	15.5	21.3
% change	-13%	-5%	-4%	3%	% change	-18%	-9%	2%	-10%
FY20 consensus	456	356	483	857	FY20 consensus	39.0	17.0	15.8	21.0
FY20 guidance	n/a	355-365	480	n/a	FY20 guidance	39.0	n/a	15.8	n/a
EPS (cps)					**Final ordinary dividend (cps)**				
FY20 forecast	**17.9**	**4.0**	**11.9**	**12.2**	**FY20 forecast**	**16.0**	**7.0**	**9.3**	**11.0**
FY19 result	24.6	7.1	11.9	13.0	FY19 actual	23.0	8.6	9.1	10.7
% change	-27%	-44%	1%	-6%	% change	-30%	-19%	2%	3%
FY20 consensus	17.9	5.4	11.7	12.4					

Source: Bloomberg, Forsyth Barr analysis

Onslow pumped hydro

The government has announced it will spend NZ$30m to evaluate the potential for pumped hydro development at Lake Onslow as part of its effort to alleviate dry year risk in New Zealand and reduce the need for thermal peaking generation. The study will investigate a number of options, however, Lake Onslow in Central Otago seems the most likely candidate.

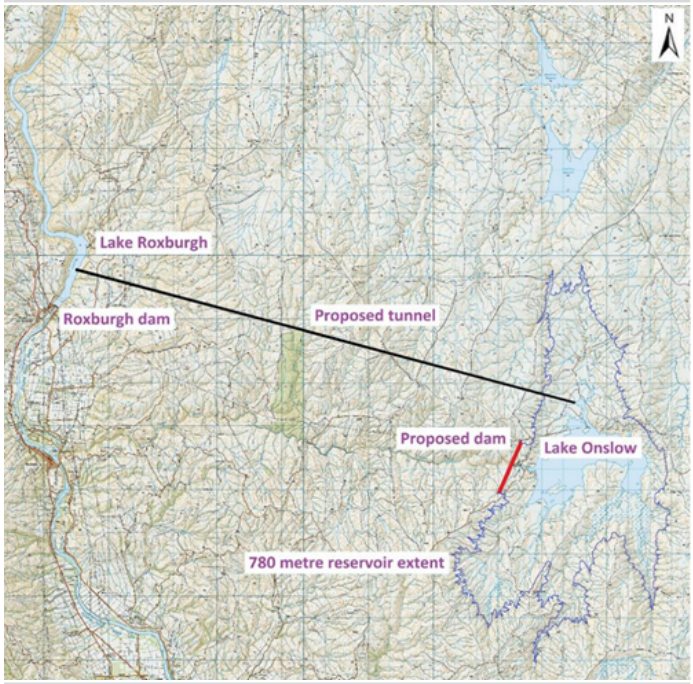
Why Lake Onslow

Lake Onslow is situated roughly 22kms inland of Roxburgh (and CEN's Lake Roxburgh dam) in Central Otago. It is a man made lake created after the damning of the Teviot River and Dismal Swamp in 1890, it was then extended in 1982 with a new dam to increase the surface area to 8.3km^2. The business case to be investigated is considering 5TWh in total hydro storage capacity, which would more than double the amount of hydro storage currently available in New Zealand. However, the original academic papers that first investigated this pumped hydro scheme looked at two bigger development options; The first option would extend only Lake Onslow and would see the surface area of the lake increase to 82km^2 with a maximum storage of 10TWh. The second option would extend both Lake Onslow and the nearby Manorburn Reservoir, creating a surface area of 120km^2 with a total maximum storage of 12TWh.

Other examples of pumped hydro

Currently ~95% of active energy storage worldwide is held in pumped hydro schemes (batteries are still minor). To highlight the size of storage available at Lake Onslow, noted below are examples of other existing and proposed pumped hydro schemes world wide.

Figure 11. Proposed scheme



Source: Majeed, M. K., Forsyth Barr analysis

Figure 12. Existing and potential pumped hydro schemes

Name	Location	Storage
Lake Onslow	New Zealand	5,000GWh
Snowy Hydro	Australia	350GWh
Wanaka/Hawea	New Zealand	211GWh
Racoon Mountain	USA	36GWh
Drakensburg	South Africa	28GWh
Bath Country	USA	24GWh

Source: University of Canterbury, Forsyth Barr analysis

How pumped hydro works

Pumped hydro is similar to the use of a battery in the sense that it is a form of energy storage. It works by using reversible turbines to pump water to an upper reservoir in periods of spill or when there is surplus energy from elsewhere in the grid, it then releases this water back down through the turbines that then generate hydro electricity when demand is high or there is a shortage of generation. There is some loss of energy due to the need to initially pump water upward, with the most efficient schemes still only operating at around 80% efficiency - i.e. for every 1MWh consumed pumping water uphill, only 0.8MWh is generated when that water is released back downhill. The main benefit of pumped hydro is to help smooth the inherent volatility in both wind and hydro generation (dry-year risk). Currently the dry-year risk is met by thermal generation assets such as the Rankine units.

Still years away

The government has indicated that the initial NZ$30m study could be completed at some stage next year. If the results of the first evaluation are positive the government will spend another NZ$70m for preliminary site studies to assess the engineering and environmental requirements. All going well, construction could start as soon as 2023, with estimated construction time at roughly four to five years. Once completed the reservoir would take roughly two years to fill assuming average hydrological conditions, meaning that if Lake Onslow were to go ahead it would not be fully operational until early next decade.

Criticisms of pumped hydro

With the recent announcement that RIO intends to close NZAS, there are questions around the need for further generation assets in the South Island, as well as questions around the grid's capability to shift even more generation northward. However, the key to the pumped hydro business case is around the timing of generation from Lake Onslow, with generation from the reservoir likely only necessary when the large South Island lakes such as Lake Pukakai are experiencing low hydrological levels. So Lake Onslow would not be competing for the transmission northward to the Cook Strait but rather replacing the lack of northbound generation in dry years from existing assets. It is also important to remember that the reservoir would not be operational until early next decade, after Transpower has completed its key transmission upgrades.

Our major issues with the proposed scheme are:

- The scheme does not solve North Island reserve generation issues, unless there is a significant upgrade to the HVDC inter-island link (more than just an additional undersea cable). Without an HVDC upgrade, the South Island cannot provide any additional support to meet North Island peak demand. North Island thermal generation is going to be needed for a long time yet.
- With NZAS likely to close, dry year risk is materially lower.
- The estimate total cost in excess of NZ$4b (excluding any HVDC transmission upgrade) — we find it hard to believe there are not better alternatives.

There are also significant issues around who will own and operate the scheme. It would not be a good outcome for the market if the government is the owner operator.

At this stage we view the scheme as unlikely to proceed, and certainly not within the next decade.

June 2020 quarterly statistics wrap

Key points from the June 2020 quarterly operating statistics:

- The June 2020 quarter saw a dip in hydro generation, with renewable generation overall at its lowest level in three years (but still a healthy 83%). With electricity demand down in the quarter due to the COVID-19 lockdown, generation fell -6% with only GNE and TPW increasing generation volumes vs. pcp. All of the electricity demand decline was in the commercial market, with mass market volumes effectively flat (noting mass market volumes includes SME volumes). MEL grew its retail base +9% vs. the pcp, whilst CEN's fixed price sales fell -15%, -34% in the commercial market as it had not been in the commercial market for most of the last year.
- The rolling 12-month fixed price variable volumes (FPVV) chart (Figure 16) highlights that load can shift relatively quickly between retailers. MEL has lifted volumes and CEN reduced volumes, mainly in the commercial market. With NZAS closing, MEL will be looking to swap NZAS demand with retail demand and the retailer we believe is most exposed is GNE given it has the largest retail book relative to its generation (assuming it closes either the Rankines or Unit 5).
- Whilst CEN's retail sales were down materially, it did add +10k customers due to the acquisition of the energyclubnz customer base at the end of June 2020. MEL had the most significant organic growth adding 4k connections, with the other three large retailers all losing connection (MCY down the most, -5k).
- COVID-19 had a bigger impact on gas and LPG volumes than electricity. On a per connection basis, electricity volumes were flat, but gas volumes were down -40% and LPG volumes/customer down -16% in the June 2020 quarter vs. the pcp.
- Whilst volumes took a hit, all of the retailers reported increases in electricity prices, in particular MCY, which had a +5.7% increase due to higher priced commercial contracts flowing through the numbers.

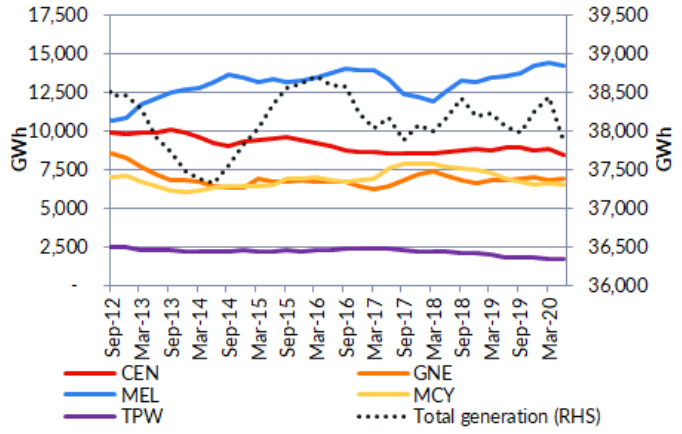
Figure 13. June quarterly stats summary

	Quarter ending Jun-19						Quarter ending Jun-20						% Change				
	CEN	GNE	MEL	MCY	TPW*	Total	CEN	GNE	MEL	MCY	TPW*	Total	CEN	GNE	MEL	MCY	TPW*
Generation (GWh)																	
Hydro	1,221	629	3,317	796	413	**6,376**	902	450	3,093	727	424	**5,596**	-26%	-28%	-7%	-9%	3%
Geothermal	844			731		**1,575**	855			724		**1,579**	1%			-1%	
Wind		5	322		147	**474**		5	348		147	**500**		0%	8%		0%
Total renewable	*2,065*	*634*	*3,639*	*1,527*	*560*	**8,425**	*1,757*	*455*	*3,441*	*1,451*	*571*	**7,675**	*-15%*	*-28%*	*-5%*	*-5%*	*2%*
Thermal generation	393	1,012				**1,405**	317	1,263				**1,580**	-19%	25%			
TOTAL generation	**2,458**	**1,646**	**3,639**	**1,527**	**560**	**9,830**	**2,074**	**1,718**	**3,441**	**1,451**	**571**	**9,255**	**-16%**	**4%**	**-5%**	**-5%**	**2%**
% Renewable	84%	39%	100%	100%	100%	**86%**	85%	26%	100%	100%	100%	**83%**	1%	-31%	0%	0%	0%
GWAP ($/MWh)	**102.2**	**116.3**	**97.1**	**117.4**	**110.0**	**105.4**	**118.3**	**133.2**	**104.4**	**121.6**	**130.0**	**116.9**	**16%**	**14%**	**8%**	**4%**	**18%**
Electricitysales(GWh)																	
Mass market	944	1,072	928	800	453	**4,197**	921	1,061	983	735	480	**4,180**	-2%	-1%	6%	-8%	6%
Commercial	662	485	666	353	210	**2,376**	438	541	757	373	113	**2,222**	-34%	12%	14%	6%	-46%
TOTAL FPVV sales	**1,606**	**1,557**	**1,594**	**1,153**	**663**	**6,573**	**1,359**	**1,602**	**1,740**	**1,108**	**593**	**6,402**	**-15%**	**3%**	**9%**	**-4%**	**-11%**
Gas sales (PJ)	0.9	2.3			0.3	**3.4**	0.8	1.0			0.3	**2.1**	-14%	-56%			13%
LPG sales (000 tonnes)		11.1				**11.1**		10.0				**10.0**		-10%			
Customers added (000)																	
Electricity	2	(2)	2	(6)	(1)	**(5)**	10	(1)	4	(5)	(2)	**6**					
Gas	1	1		(1)	0	**0**	0	0		0	1	**0**					
LPG		2				**2**		1				**1**					
Customer numbers (000)																	
Electricity	411	496	302	373	266	**1,848**	418	493	324	348	264	**1,847**	2%	-1%	7%	-7%	-1%
Gas	67	107		47	39	**260**	65	105		47	41	**258**	-2%	-2%		0%	5%
LPG		68				**68**		73				**73**		7%			
MM volume/customer																	
Electricity (MWh)	2.3	2.2	3.1	2.1	1.7	**2.3**	2.2	2.1	3.1	2.1	1.8	**2.3**	-3%	0%	-1%	-1%	7%
Gas (GJ/customer)	13.1	21.4			6.8	**13.2**	11.5	9.5			7.4	**8.0**	-12%	-55%			8%
LPG (kg/customer)		163.9				**163.9**		137.0				**137.0**		-16%			
FPVV price($/MWh)	241.4	216.1	110.8	117.5			243.8	218.2	111.0	124.2			1.0%	1.0%	0.2%	5.7%	
LWAP ($/MWh)	**108.3**	**111.1**	**103.7**	**117.2**	**114.6**	**110.0**	**121.3**	**125.9**	**109.1**	**129.0**	**129.0**	**121.2**	**12%**	**13%**	**5%**	**10%**	**13%**
LWAP/GWAP	**1.1**	**1.0**	**1.1**	**1.0**	**1.0**	**1.0**	**1.0**	**0.9**	**1.0**	**1.1**	**1.0**	**1.0**	**-3%**	**-1%**	**-2%**	**6%**	**-5%**

Source: Company reports, Forsyth Barr analysis

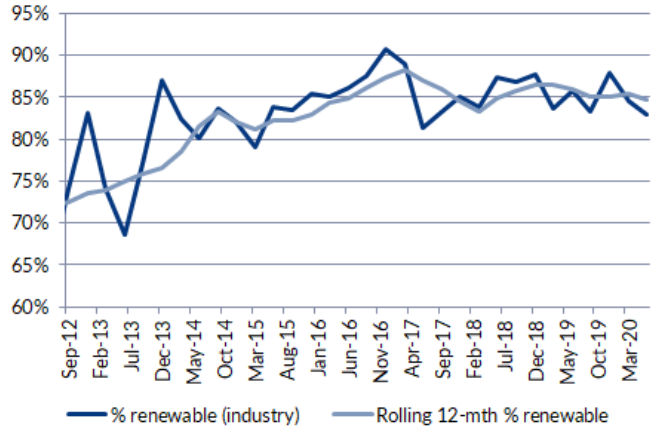
Note: TPW wind generation is Tilt Renewables generation

Figure 14. Rolling 12-month generation volumes



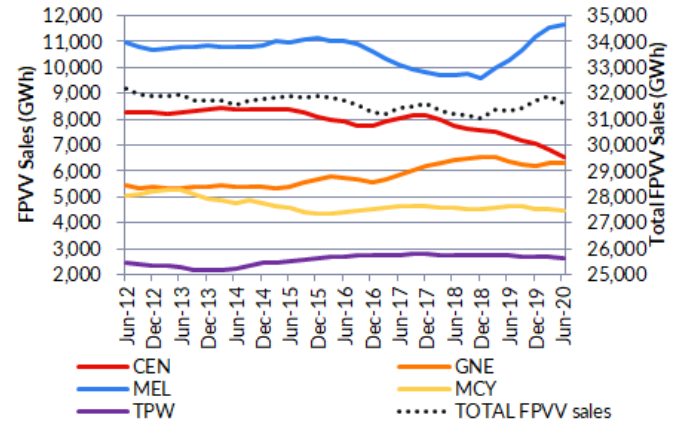
Source: Company reports, Forsyth Barr analysis

Figure 15. Percentage of generation from renewable sources



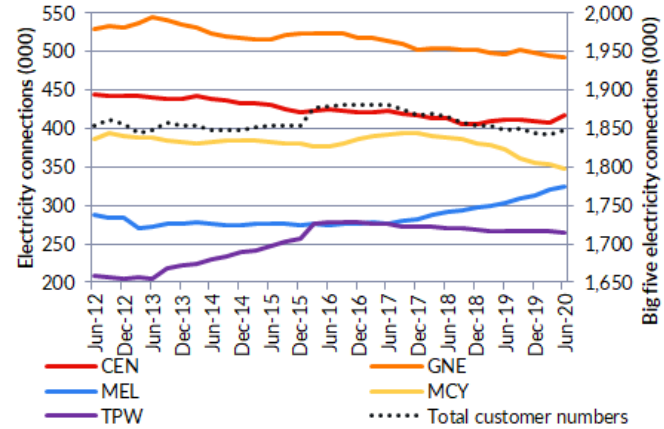
Source: Company reports, Forsyth Barr analysis

Figure 16. 12-month FPVV sales (incl share of NZAS contract)



Source: Company reports, Forsyth Barr analysis

Figure 17. Electricity connections

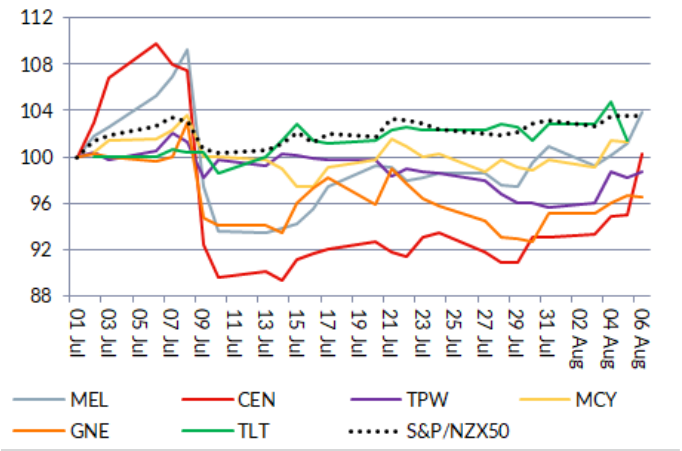


Source: Company reports, Forsyth Barr analysis

Share market performance: July 2020

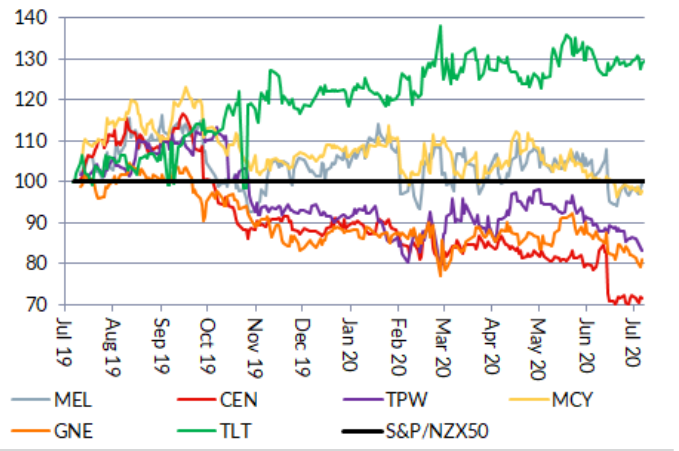
The listed electricity stocks all experienced declines on 9 July as a result of RIO's announcement that it would close the New Zealand Aluminium Smelter (NZAS), with CEN and MEL, which are the most exposed to the closure, declining -13.9% and -10.8% on the day respectively. However, from 1 July to 6 August many of the listed stocks have recovered these price declines, with MCY, MEL, TLT and CEN up +0.4%, +3.8%, +2.6% and +0.3% respectively. Whilst GNE and TPW were both down over the month, losing -3.4% and -1.3% respectively. MEL was the only electricity stock to beat the market, with the S&P/NZX50C up +3.5% over the same period.

Figure 18. Stock performance vs. S&P/NZX50C



Source: Thomson Reuters, Forsyth Barr analysis

Figure 19. 12 month performance relative to S&P/NZX50C



Source: Thomson Reuters, Forsyth Barr analysis

Market multiples and target returns

- Our electricity target prices are based on a combination of our DCF valuation (30%), market multiples (30%) and gross dividend yield (40%). We focus on year two earnings to avoid short-term hydrological conditions impacting the multiples. We continue to like the long-term outlook for the sector. Our preferred stocks are CEN, MEL and TLT (OUTPERFORM), whilst we rate MCY, GNE and TPW as NEUTRAL.

Figure 20. EBITDAF multiples

Company	Code	Price	Target Price	Target Return	Rating	Mkt Cap $m	EBITDAF (x) FY20	EBITDAF (x) FY21	EBITDAF - capex (x) FY20	EBITDAF - capex (x) FY21
Contact Energy	CEN	$6.29	$7.50	24.3%	OUTPERFORM	4,501	12.1	12.1	14.5	14.6
Genesis Energy (excl Kupe)	GNE	$2.96	$2.75	-2.2%	NEUTRAL	2,796	15.4	13.6	19.1	16.5
Mercury	MCY	$4.70	$4.41	-2.8%	NEUTRAL	6,396	15.6	15.1	18.4	17.7
Meridian Energy	MEL	$5.00	$4.80	-0.6%	OUTPERFORM	12,815	16.7	18.1	18.0	19.6
Trustpower	TPW	$6.83	$6.55	0.6%	NEUTRAL	2,138	14.8	14.5	17.1	16.7
Sector average							14.8	14.6	17.3	16.9
Tilt Renewables	TLT	$3.64	$3.50	-3.8%	OUTPERFORM	1,709	10.1	13.2	11.0	14.7
Genesis Energy (incl Kupe)	GNE	$2.96	$2.75	-2.2%	NEUTRAL	3,065	12.2	11.4	14.5	13.3

Source: Forsyth Barr analysis

Figure 21. PE multiples and dividend yields

Company	PE (x) FY20	PE (x) FY21	Adjusted PE (x) FY20	Adjusted PE (x) FY21	Cash Div Yield FY20	Cash Div Yield FY21	Gross Div Yield FY20	Gross Div Yield FY21	Free Cash Flow Yield FY20	Free Cash Flow Yield FY21
Contact Energy	32.9	35.8	18.9	19.3	5.1%	5.1%	6.4%	6.4%	5.8%	6.5%
Genesis Energy (excl Kupe)	245.2	76.0	30.3	22.7	3.5%	3.6%	4.7%	5.0%	3.3%	6.4%
Mercury	49.2	41.2	28.4	25.4	3.4%	3.4%	4.7%	4.7%	1.2%	1.1%
Meridian Energy	40.6	48.5	25.7	28.8	3.8%	3.3%	4.9%	4.3%	3.9%	4.2%
Trustpower	34.7	29.8	28.8	24.3	4.8%	4.4%	6.6%	6.1%	3.6%	4.9%
Sector average	56.2	43.8	26.1	23.9	4.1%	3.9%	5.4%	5.3%	3.6%	4.6%
Tilt Renewables	887.4	104.6	33.3	30.5	0.0%	0.0%	0.0%	0.0%	2.9%	2.4%
Genesis Energy (incl Kupe)	98.1	54.8	19.9	17.1	5.3%	4.7%	7.1%	6.6%	5.8%	8.1%

Source: Forsyth Barr analysis

Note: In calculating the GNE excl Kupe multiples, the value of Kupe is assumed to be $225m. Debt and interest has been apportioned 5% to Kupe and 95% to Energy (in line with EV proportion) and dividend in line with adjusted NPAT.

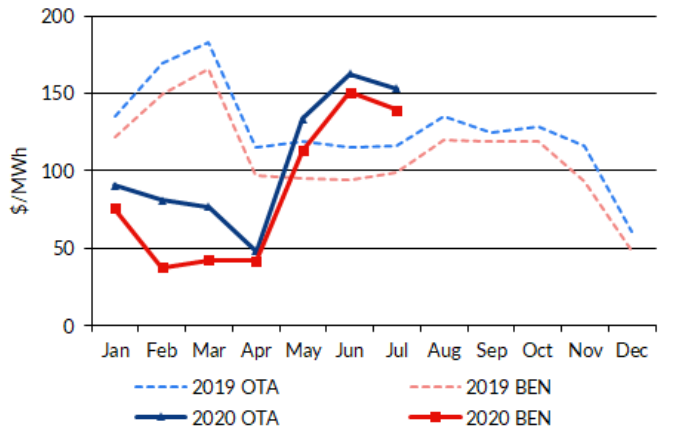
Wholesale electricity market: July 2020

Spot wholesale electricity prices and ASX futures

Wholesale prices remain elevated due to increased thermal generation

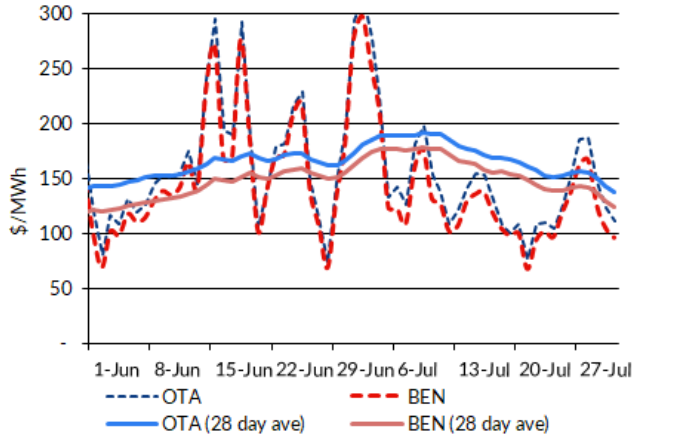
- Otahuhu (OTA) wholesale electricity prices averaged $153/MWh in July 2020, up +32% on the pcp but down -6% on June 2020. Benmore (BEN) prices were also up compared to last year, averaging $139/MWh, +40% above the pcp. These elevated wholesale electricity prices are due to both increased demand in July, likely due to colder temperatures, as well as the increased use of thermal generation as the hydro storage continues to drop.
- The price gap between the North Island (OTA) and South Island (BEN) was $14/MWh in July, slightly above the $11/MWh differential in June 2020.
- Volatility in wholesale electricity prices was similar in July 2020 to last month, with BEN prices fluctuating between $68/MWh and $298/MWh, while OTA prices were between $77/MWh and $315/MWh throughout July.

Figure 22. Average monthly wholesale electricity prices



Source: NZX Energy, Forsyth Barr analysis

Figure 23. Average daily wholesale electricity prices

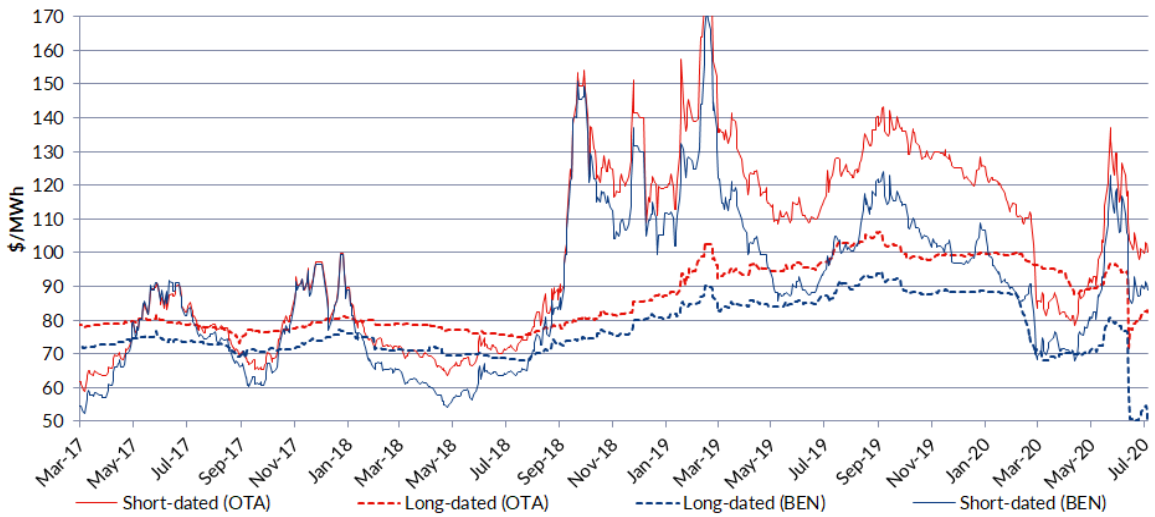


Source: NZX Energy, Forsyth Barr analysis

NZAS closure impacts futures

- Long-dated BEN futures were down sharply in July as a result of the NZAS closure announcement from Rio Tinto (RIO). Prices declined -36% from 30 June to 31 July to end the month at $50/MWh. Long-dated OTA futures were down -14% in the month to be $82/MWh as at 31 July.
- Short-dated futures were also both down in July. OTA futures were down -14% to end the month at $100/MWh and BEN futures were down -16% to average $89/MWh. These declines will also be a function of the Tiwai Point closure announcement.

Figure 24. ASX futures prices (last three years)



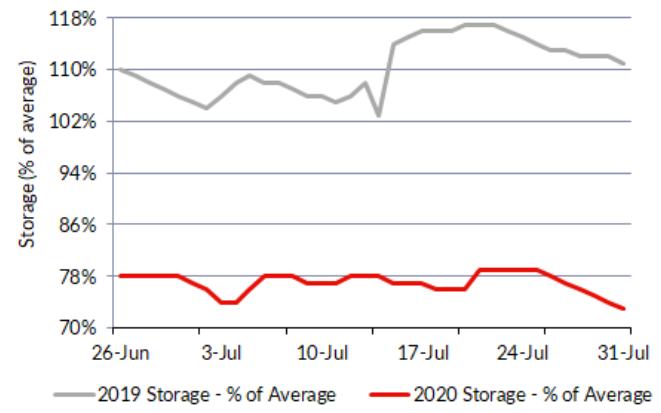
Source: Electricity Authority, Forsyth Barr analysis

Hydro storage volumes

Pukaki remains well below average

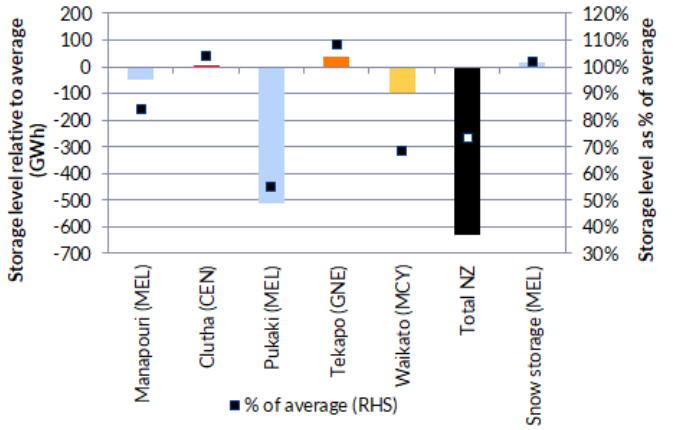
- Hydro storage lakes remain below average for this time of year, with only CEN's Clutha and GNE's Tekapo storage lakes remaining slightly above average. MEL's Pukaki (the largest hydro storage lake) is currently only at 55% of average levels. Total New Zealand storage is currently at 74% of average.
- MEL's snow storage is currently at 993GWh, and is currently +17GWh above average, although we acknowledge the volatility in this data.

Figure 25. Average lake storage levels



Source: NZX Energy, Forsyth Barr analysis

Figure 26. Key storage lake levels relative to avg (as at 30 July)



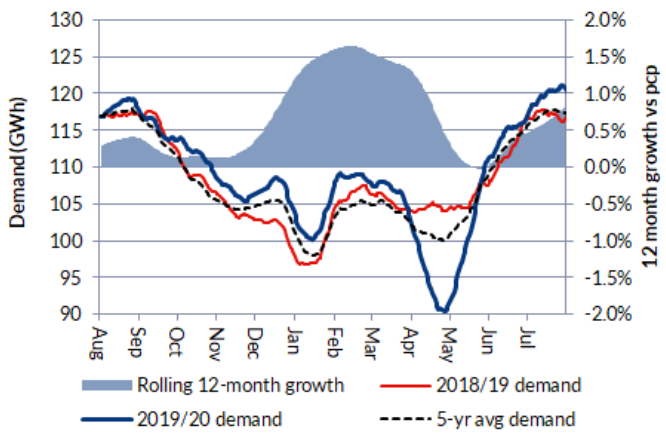
Source: EnergyLink, MEL, Forsyth Barr analysis

Demand and generation analysis

Demand continues to grow

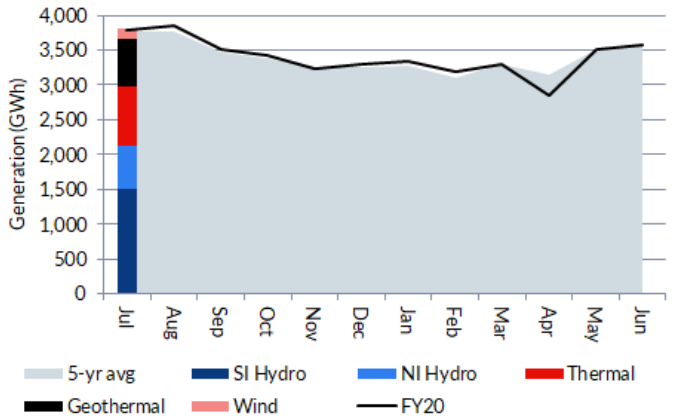
- Electricity demand for July 2020 averaged 121.2GWh/day, which is a +4.0% increase from the pcp and makes it 3 months of consecutive pcp growth. This growth in demand will be due to colder temperatures compared to July 2019, with temperatures -6.6% (-1°C) lower.
- Total New Zealand generation was 3,800 GWh in July, which is largely flat on the same period last year (+0.5%). The percentage of generation from hydro increased from 51% in June to 56% this month, entirely due to an increase in North Island hydro generation, whilst thermal generation dropped -3.7% to make up 20.6%, although this still remains well above average for the past few years and is the second highest amount since January 2018. Overall, the percentage of generation from renewable sources increased to 77% of total generation, although this remains below average.

Figure 27. Rolling 28-day average demand & rolling 12-m growth



Source: NZX energy, Forsyth Barr analysis

Figure 28. NZ generation (by technology) — fiscal year to June



Source: NZX energy, Forsyth Barr analysis

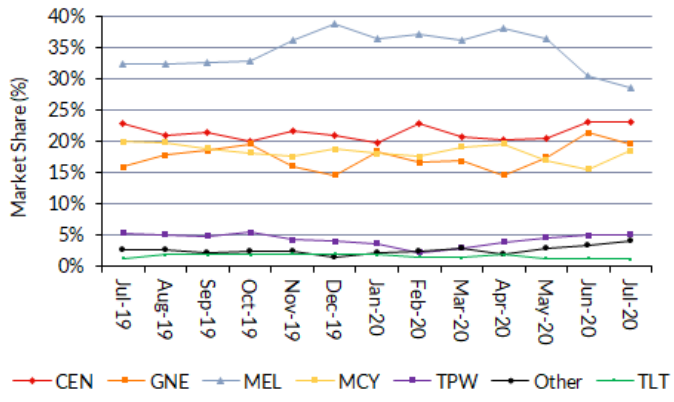
Generation market share — MCY biggest gainer

- MCY gained +2.9% market share in July 2020 compared to June to reach 18.5% of market share. GNE and MEL lost the most generation market share over the month, losing -1.8% and -1.7% respectively. MEL's generation market share of 28.7% is the lowest it has been since September 2017. TPW, TLT and CEN generation market share was largely unchanged over the month at 5.0%, 1.3% and 23.1% respectively.

CEN — Thermal generation increases

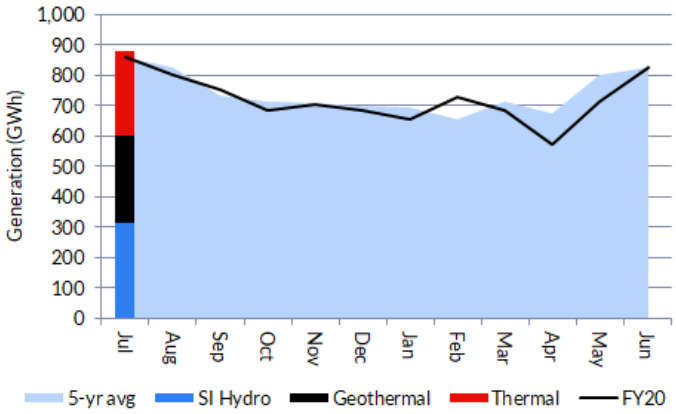
- Total CEN generation was 880GWh in July 2020, which is a +3% increase in average daily generation from the prior month, and a +6% increase on the pcp. This increase from the prior month comes as a result of average daily generation from CEN's Clutha hydro plant increasing +7.5% as well as TCC daily generation increasing by +7.4%. Compared to the pcp thermal generation was up +44%.

Figure 29. Monthly generation market share



Source: EnergyLink, Forsyth Barr analysis

Figure 30. CEN monthly generation mix (current, pcp & 5y avg)



Source: EnergyLink, Forsyth Barr analysis

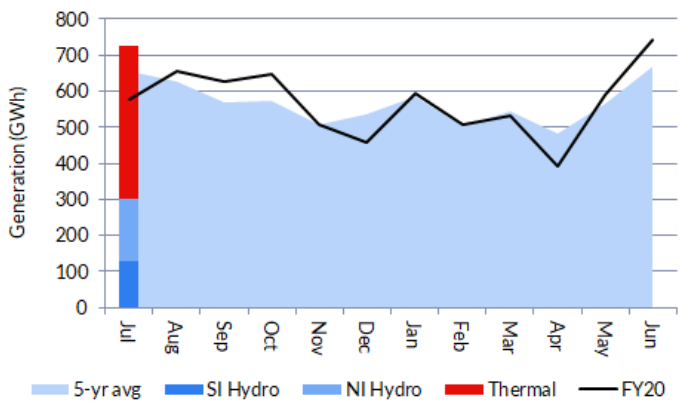
GNE — Generation falls slightly

- GNE generation was 727GWh in July, which is a -2% decrease from June but a +26% increase on the pcp. Both North Island (Tongariro) and South Island hydro (Tekapo) generation experienced increases over the month, up +51% and +50% respectively, whilst thermal generation was down -21% compared to June. Tekapo generation was a new record, with GNE running the plant at 92% of capacity for the whole month.

MCY — Hydro generation rises sharply

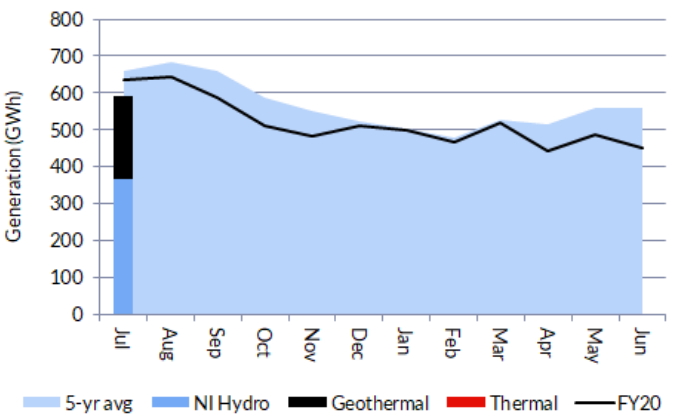
- MCY's July generation of 593GWh was a -7% decrease compared to the pcp, but a +31% increase from June. This monthly increase is a result of MCY's Waikato hydro generation increasing +57% to produce 366GWh (although this is still -8% below average for July), as well as MCY's geothermal generation increasing +4% mom.

Figure 31. GNE monthly generation mix (current, pcp & 5y avg)



Source: EnergyLink, Forsyth Barr analysis

Figure 32. MCY monthly generation mix (current, pcp & 5y avg)



Source: EnergyLink, Forsyth Barr analysis

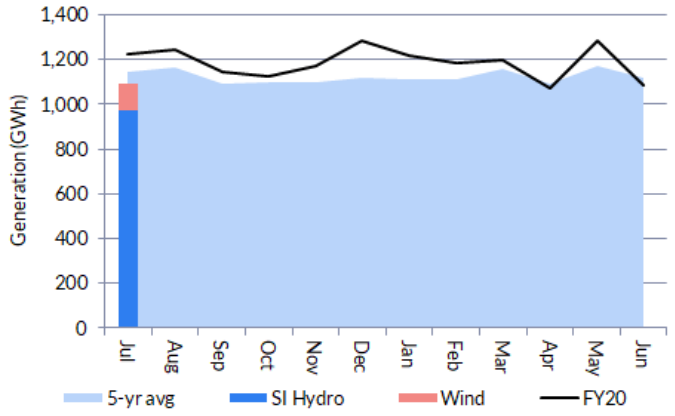
MEL — Small generation decline

- MEL average daily generation in July was down -3% compared to the prior month and largely flat on the pcp (+0.4%). Average daily hydro generation was down -2% on June whilst wind generation was down -12% month-on-month.
- MEL's hydro storage levels remain well below average, with its Pukaki storage at 55% of average and Manapouri storage at 84% of average. MEL's snow storage is broadly in line with average (102% of average) at 993GWh.

TPW — Generation improving

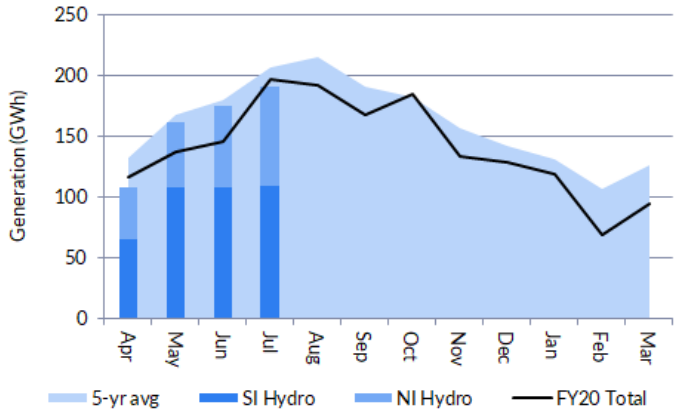
- We estimate that TPW generation was 191GWh in July, up +9.3% compared to June and TPW's highest monthly generation since August 2019. This increase was due primarily to TPW's North Island hydro increasing +23% over the month as all of TPW's hydro generation assets in the North increased apart from Mangaho. Both wind and South Island hydro generation also increased +10% and +1% respectively.

Figure 33. MEL monthly generation mix (current, pcp & 5y avg)



Source: EnergyLink, Forsyth Barr analysis

Figure 34. TPW monthly generation mix (current, pcp & 5y avg)



Source: EnergyLink, Forsyth Barr analysis

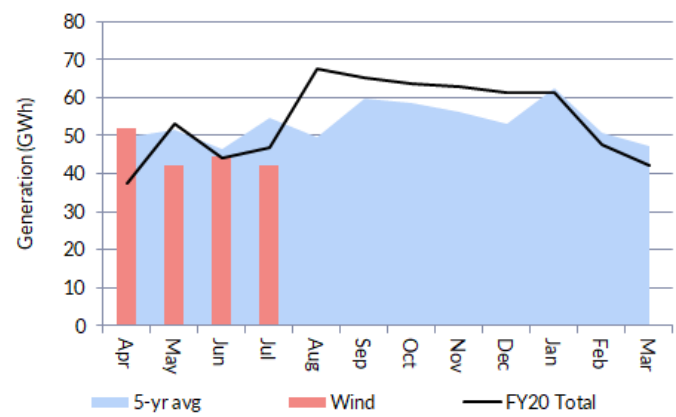
TLT — Small wind improvement

- Our estimate for TLT's July generation of 49GWh is an increase of +6% in terms of daily average generation compared to June 2020. This comes due to improved wind conditions, but remains well below the elevated levels experienced through the back half of last year.

Generation prices — GWAP down in July across the board

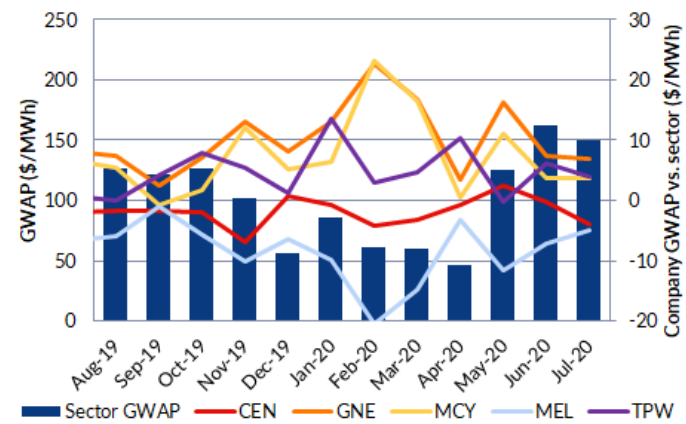
- The average generation weighted average price (GWAP) was $150/Wh in July, down -8% from $162/MWh in June. All of the big five generators experienced a decline in prices. GNE had the highest GWAP at $157/MWh, while MEL received the lowest GWAP over the month of $145/MWh. CEN, MCY and TPW received $146/MWh, $154/MWh and $154/MWh respectively.

Figure 35. TLT monthly generation mix (current, pcp & 5y avg)



Source: EnergyLink, Forsyth Barr analysis

Figure 36. Avg generation weighted average price (GWAP)



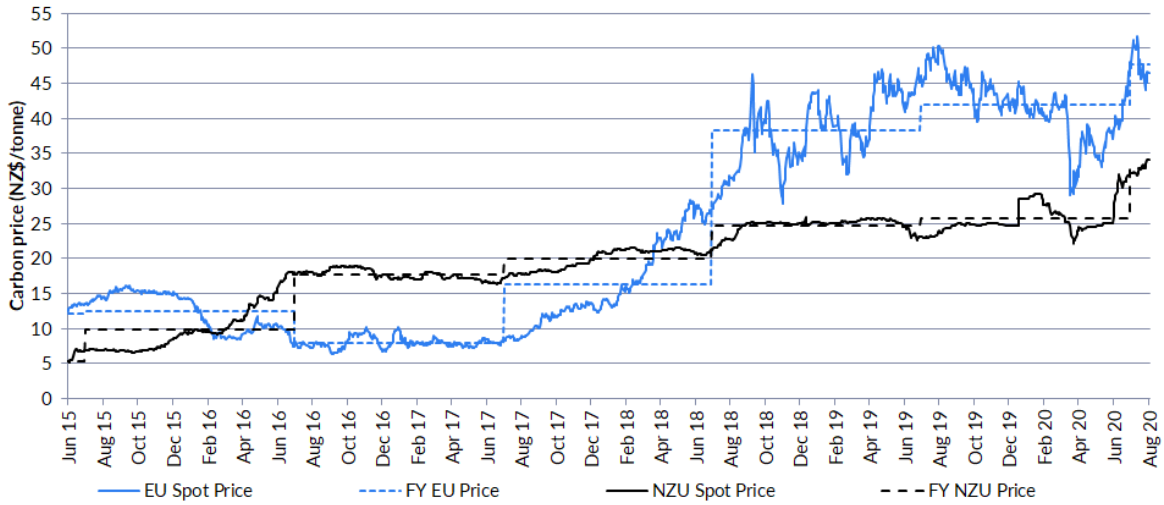
Source: EnergyLink, Forsyth Barr analysis

Carbon prices

NZ carbon prices — Units at record highs

- NZ carbon units ended July at $34.10/unit, the highest unit price recorded, after starting the month at $32.25/unit. This increase will be due to the Fixed Price Option (FPO) officially being raised to $35 from $25 in June 2020. The auction is due at some stage in 2021.
- EU carbon units fell slightly over the month to end at €26.3/unit (~NZ$46.7/unit), down from €27.7/unit (NZ$48.1/unit) at the start of the month.

Figure 37. Price of carbon (NZ$/tonne)



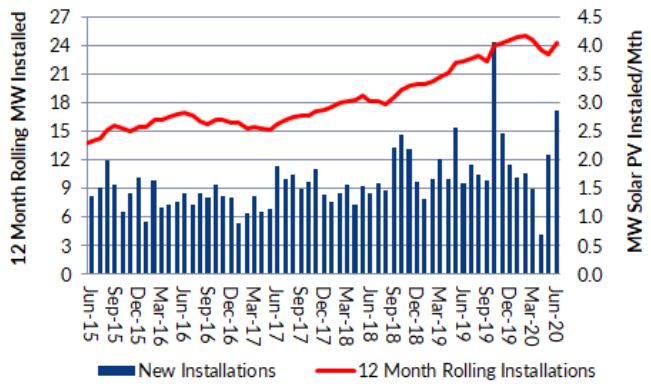
Source: Bloomberg, Forsyth Barr analysis

Solar PV installations

Rate of installation continues to decline

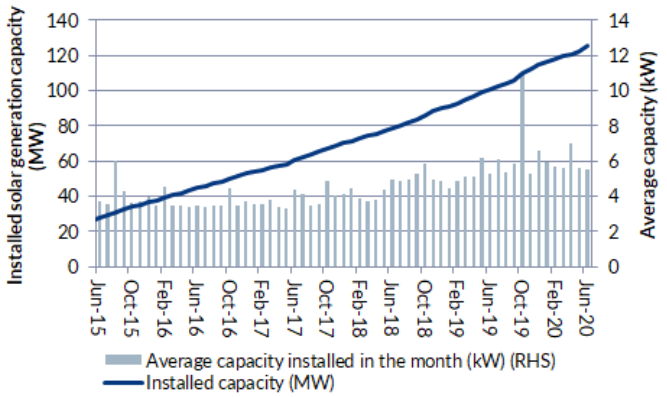
- There was 2.68MW of new solar capacity installed in June 2020 with 361 new solar connections. This is a +40% increase in monthly MW installed compared to the prior month; as installations continue to rise post Alert Level 3 and 4 lockdown. Total solar capacity is now 125MW with 27,845 solar ICPs.

Figure 38. Solar PV capacity installed



Source: Electricity Authority, Forsyth Barr analysis

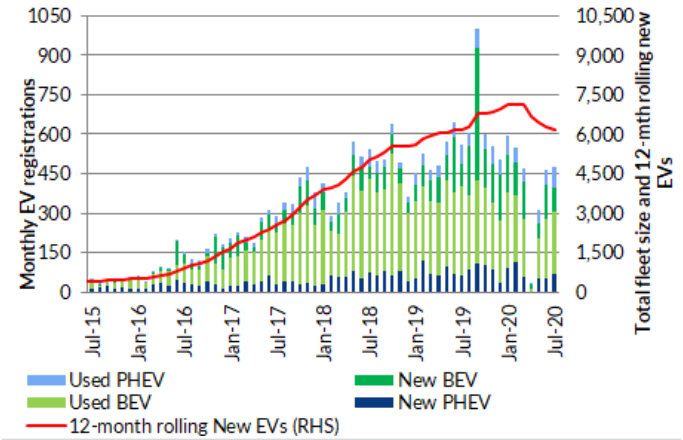
Figure 39. Average size of system and total capacity installed



Source: Electricity Authority, Forsyth Barr analysis

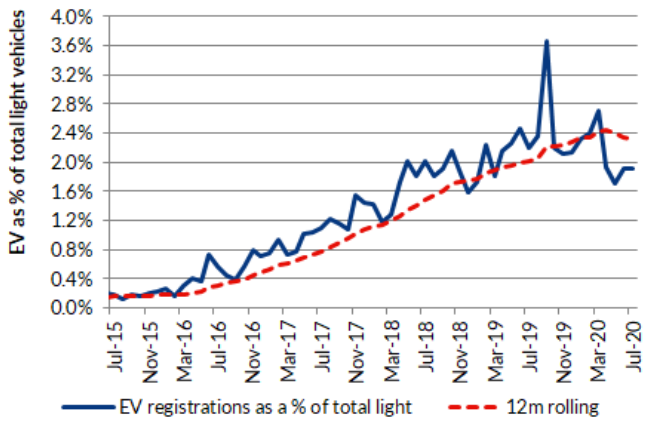
Electric vehicle (EV) registrations

Figure 40. EV registrations



Source: Ministry of Transport, Forsyth Barr analysis

Figure 41. EV registrations % of total light vehicle registrations

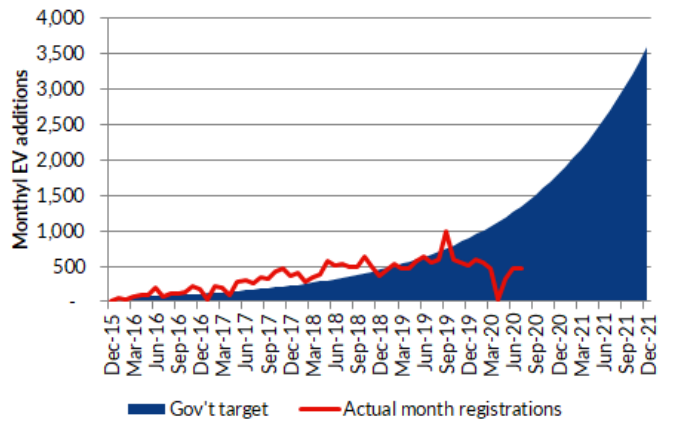


Source: Ministry of Transport, Forsyth Barr analysis

EV registrations largely flat month on month

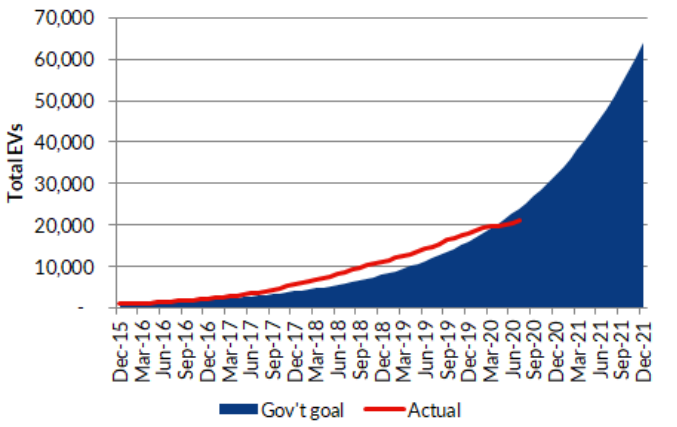
- In July 2020 there were 477 EVs registered, of which 160 were new. The number of EVs registered was largely flat on last months 463 registrations, but June was up significantly compared to 314 in May. July registrations remain below levels experienced in the months pre COVID-19. The total number of EVs registered is now 21,011, -2,962 below the government target number of EVs to have been registered by now. It appears that monthly EV registrations have flattened out since May 2018.
- New EVs made up 1.3% of total new light vehicles registered in July 2020, which is down from 1.7% in June, whilst overall number of EVs per light vehicle registered (including used vehicles) was flat mom at 1.9%. The rolling 12-month percentage of EVs per light vehicle has dipped slightly following three months of low registration numbers and is currently at 2.3%

Figure 42. Monthly EV registrations vs. govt target



Source: Ministry of Transport, Forsyth Barr analysis

Figure 43. Total EVs registered vs. govt target



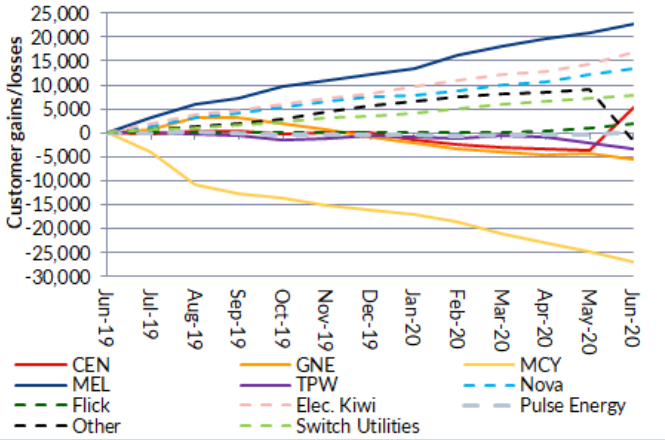
Source: Ministry of Transport, Forsyth Barr analysis

Retail electricity customers

CEN gains energyclubnz's connections

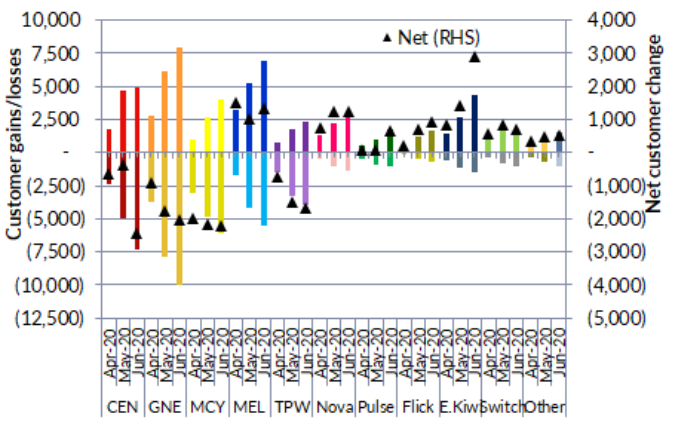
- CEN gained +9,221 connection in June, largely as a result of buying the customer book of energclubnz which is exiting the market. MEL was the only of the other big generator/retailers to gain connections, adding +1,817 customer connections compared to May 2020. TPW, GNE and and MCY lost -1,300, -1,362 and -2,181 connections respectively as MCY continues its string of consecutive monthly losses.
- Electric Kiwi had the best month of the tier 2 retailers, adding +2,549 connections. Switch Utilities, Flick Electric, Pulse Energy and Todd Energy also all made gains over the month, adding +677, +946, +566 and +1,278 connections respectively.
- In June MEL was also the only large retailer to gain customers through switching (which excludes market growth), gaining +1,331 connections.

Figure 44. Cumulative 12-mth electricity customer gains/losses



Source: EA, Forsyth Barr analysis

Figure 45. Customer switches (excludes market growth)

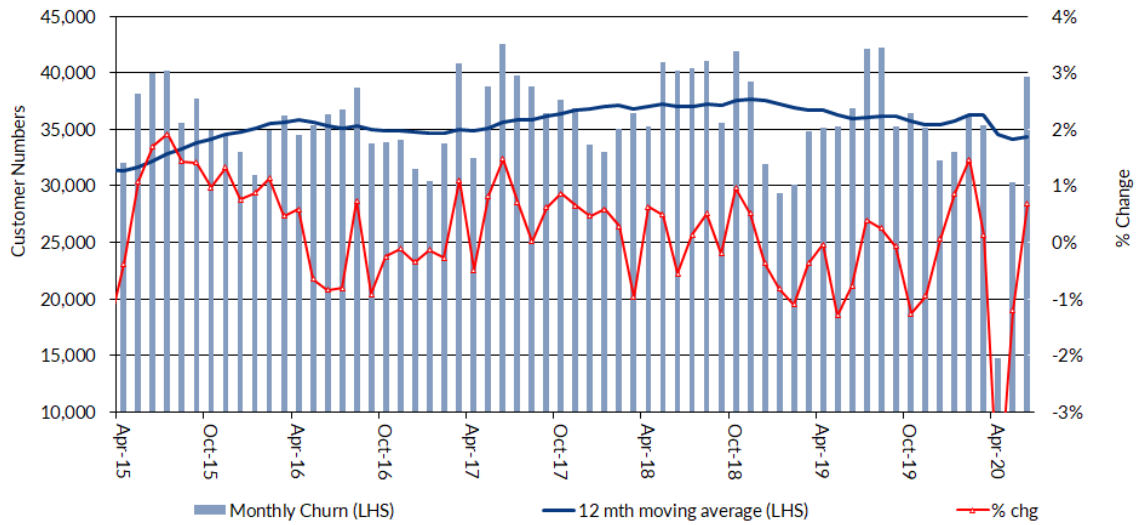


Source: EA, Forsyth Barr analysis

Connection churn

- There were ~39,600 customer switches in June 2020, which is a +7.6% increase on the pcp and +30.8% on the prior month. The months in the middle of the year generally experience elevated levels of switching, and this is the highest churn number since August 2019. The percentage of switches by traders increased from 29% in May to 36% in June, with moving switches as a percentage decreasing from 70% to 64% over the month.

Figure 46. Electricity connection churn

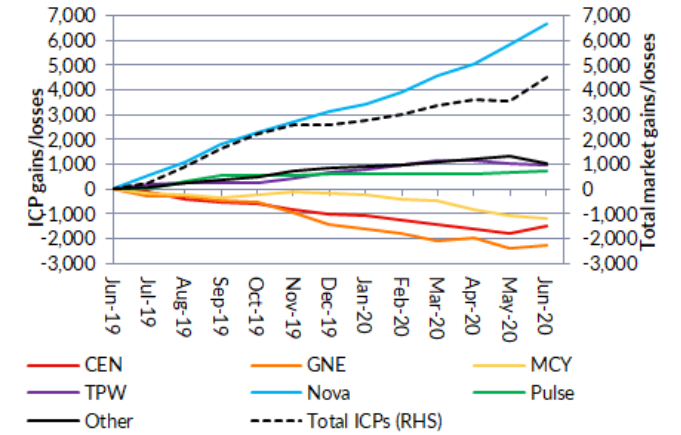


Source: EA, Forsyth Barr analysis

Retail gas customers

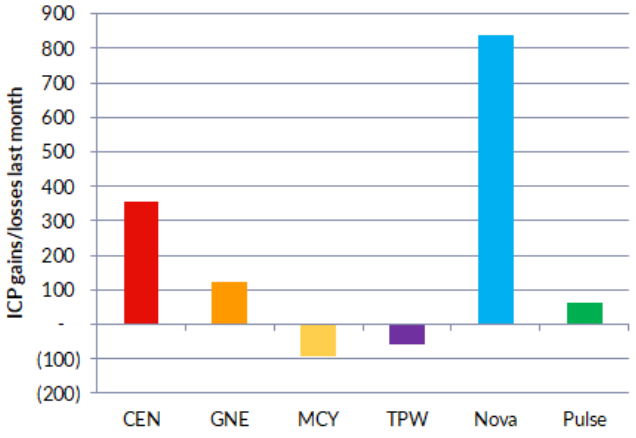
- At time of publishing the gas customer data for July 2020 is not available.

Figure 47. Gas connection gains/losses over the past 12-months



Source: Gas Industry Co, Forsyth Barr analysis

Figure 48. Gas connection gains/losses in June 2020



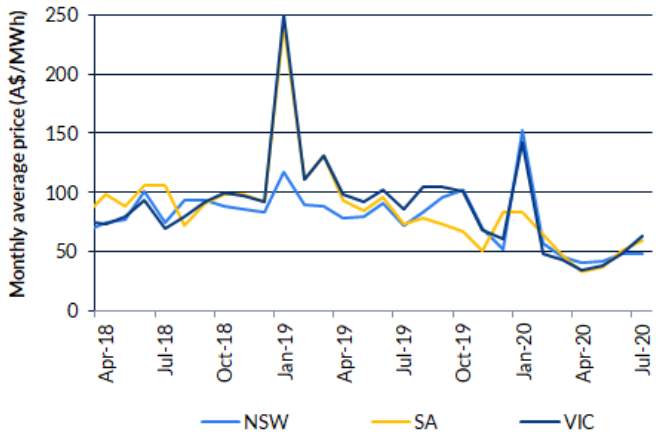
Source: Gas Industry Co, Forsyth Barr analysis

Australian electricity market

Wholesale electricity prices well below pcp levels

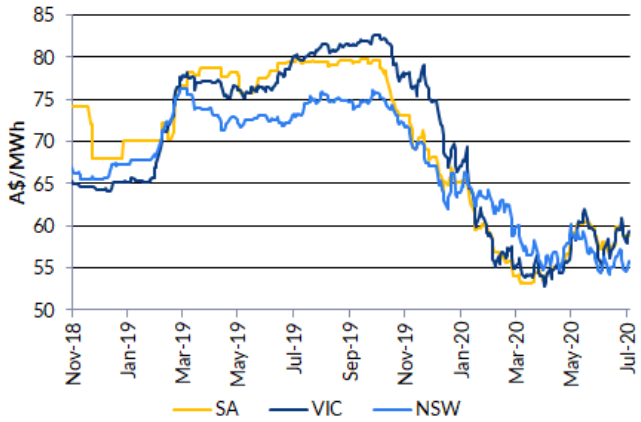
- NSW, SA and VIC wholesale electricity prices were all down sharply on the pcp, down -33%, -20% and -26% respectively. NSW averaged A$48.0/MWh throughout July which is largely unchanged from the month before. SA and VIC wholesale electricity prices averaged A$59.3/MWh and A$63.6/MWh over the month.
- FY21 futures were all up in July. VIC futures had the largest increase, up +9% compared to the end of June to finish the month at A$59.7/MWh. SA and NSW FY21 futures rose by +2% and +3% over the month respectively to sit at A$54.5/MWh and A$57.2/MWh.

Figure 49. Australian wholesale electricity price (A$/MWh)



Source: AEMO, Forsyth Barr analysis

Figure 50. Australian FY21 futures prices (A$/MWh)

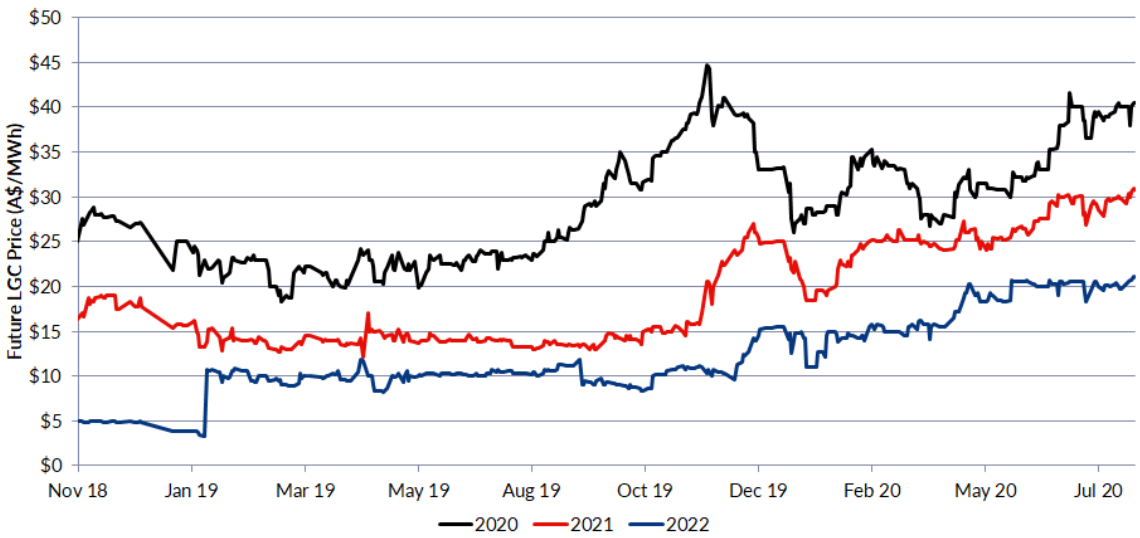


Source: Thomson Reuters, Forsyth Barr analysis

Renewable energy certificates (LGC) spot prices increase slightly

- 2020 LGC prices were up +1.3% over July to end the month at A$40.5/MWh, and have since risen again to currently be A$41.5/MWh. These prices are well above the prices experienced in July 2019 of A$23.3/MWh.
- Long-dated 2021 LGC prices rose by +2.8% over the month to end at A$30.9/MWh, whilst 2022 LGC prices also increased, up +2.7% to sit at A$21.1/MWh.

Figure 51. Renewable energy certificate prices (LGC)



Source: Bloomberg, Forsyth Barr analysis

Key statistics

New Zealand electricity market statistics

Figure 52. Key statistics — New Zealand

	Jul-19	Jun-20	Jul-20	% Chg pcp	% Chg mom
Average Monthly Prices					
OTA avg ($/MWh)	$ 115.7	$ 162.5	$ 153.3	32.4%	-5.7%
HAY avg ($/MWh)	$ 104.3	$ 154.0	$ 142.8	36.9%	-7.3%
BEN avg ($/MWh)	$ 98.7	$ 150.8	$ 139.1	40.9%	-7.8%
Avg Daily Generation (GWh)					
CEN	27.8	27.6	28.4	2.3%	2.8%
% of NZ Generation	22.8%	23.2%	23.2%	1.8%	-0.2%
GNE	19.3	25.4	24.0	24.2%	-5.6%
% of NZ Generation	15.8%	21.3%	19.6%	23.6%	-8.4%
MCY	24.2	18.5	22.7	-6.5%	22.3%
% of NZ Generation	19.9%	15.6%	18.5%	-7.0%	18.7%
MEL	39.6	36.2	35.1	-11.2%	-2.8%
% of NZ Generation	32.4%	30.4%	28.7%	-11.6%	-5.6%
TPW	7.9	7.3	7.7	-1.7%	5.9%
% of NZ Generation	6.5%	6.1%	6.3%	-2.2%	2.8%
Daily Demand (GWh)					
Demand (excl Tiwai)	102.3	102.9	107.8	5.4%	4.7%
NZAS demand	14.3	13.6	13.5	-6.0%	-0.8%
Total NZ Demand	116.6	116.5	121.2	4.0%	4.1%
Hydrology (% of average)					
Average hydro inflows	116%	75%	138%	19.2%	85.2%
Average hydro storage	111%	81%	77%	-30.6%	-4.9%
Month end hydro storage	111%	78%	73%	-34.2%	-6.4%
ASX futures as at:	**31-Jul-19**	**30-Jun-20**	**31-Jul-20**		
Short-dated OTA	$ 120.3	$ 116.5	$ 100.2	-16.7%	-14.0%
Long-dated OTA	$ 97.4	$ 95.0	$ 81.6	-16.1%	-14.1%
Short-dated BEN	$ 97.3	$ 106.3	$ 88.8	-8.8%	-16.4%
Long-dated BEN	$ 87.1	$ 78.4	$ 50.0	-42.6%	-36.2%

Source: NZX Energy, EnergyLink, Thomson Reuters, Forsyth Barr analysis

Australian electricity market statistics

Figure 53. Key statistics Australia

	Jul-19	Jun-20	Jul-20	% Chg pcp	% Chg mom
Average Monthly Prices					
NSW avg (A$/MWh)	$ 71.6	$ 48.1	$ 48.0	-33.0%	-0.2%
SA avg (A$/MWh)	$ 73.9	$ 50.3	$ 59.3	-19.7%	18.0%
VIC avg (A$/MWh)	$ 85.9	$ 48.7	$ 63.6	-26.0%	30.7%
Electricity Futures for FY21:	**31-Jul-19**	**30-Jun-20**	**31-Jul-20**		
NSW avg (A$/MWh)	$ 73.2	$ 55.1	$ 55.6	-24.0%	0.9%
SA avg (A$/MWh)	$ 79.9	$ 57.2	$ 58.8	-26.5%	2.8%
VIC avg (A$/MWh)	$ 80.3	$ 55.5	$ 59.7	-25.7%	7.6%
Spot and Future LGC Prices	**31-Jul-19**	**30-Jun-20**	**31-Jul-20**		
2020 (A$/MWh)	$ 23.3	$ 40.0	$ 40.5	50.0%	1.3%
2021 (A$/MWh)	$ 13.2	$ 30.1	$ 30.9	85.0%	2.8%
2022 (A$/MWh)	$ 10.3	$ 20.6	$ 21.1	55.0%	2.7%

Source: Bloomberg, AEMO. Thomson Reuters, Forsyth Barr analysis

Industry news

Rio Tinto (RIO) to close NZAS

- RIO announced on 9 July that it intends to shutter the New Zealand Aluminium Smelter (NZAS) and had given notice to MEL that its power contract will end in August 2021. The announcement comes as a result of the strategic review initiated by RIO in October 2019, with RIO citing high energy costs and a challenging aluminium industry outlook as the key reasons behind the closure. The closure will materially impact all of the listed electricity companies; for more information and analysis on the closure refer to our note *Electricity Sector: Smelter's Electric Shock Far From Fatal* published 20 July.

Listed sector company news

Contact (CEN)

- CEN has appointed James Kilty to the Deputy CEO role and Jacqui Nelson as the new Chief Generation Officer. Kilty was formerly the Chief Generation and Development Officer whilst Nelson was most recently General Manager of Operations for the company.

Trustpower (TPW)

- TPW has said that the hydro provisions in the National Policy Statement on Freshwater management arbitrarily exclude small generators, and that the exemptions for larger hydro schemes should apply to all generators of hydro electricity. The carve out provisions take in to account the reduced carbon emissions that come from hydro as well as the environmental impact of water quality standards.
- TPW has announced it will take the EA to the High Court around the methodology behind changes to the Transmission Pricing Methodology (TPM). It believes the EA inflated its own role and restricted Transpower in the decision-making process. The EA has said it is comfortable in the process it undertook.

Tilt Renewables (TLT)

- TLT has installed its first wind turbine at the Waipipi wind farm, the largest wind turbine (4.3MW) in the country. There are 31 turbines to be installed and TLT expects the operation to be online in the first quarter of 2021, with a total installed capacity of 133.3 MW and expects to produce average annual generation of 455 GWh.
- The Australian regulator AEMO has delayed TLT's Dundonnel Wind Farm in Victoria due to concerns around the wind farm's ability to offer voltage support at the point of connection in the event of a fault on the network. TLT CEO Deion Campbell has said that they have been following the commissioning plan initially outlined in 2018, however, TLT is still in discussions with AEMO and that there isn't clarity around how long the delay will last. As a result, TLT has revised its FY21 EBITDAF guidance range downward to between A$65m and A$80m assuming average wind conditions.

Vector (VCT)

- VCT, in conjunction with Amazon, are developing a new platform that they hope will increase use of distributed energy and batteries as well as improve the affordability and reliability of electricity. The New Energy Platform is an "internet of things" and analytics solution for the sector and will be introduced first in New Zealand and Australia,

Political / regulatory news

- As a result of a recommendation from the Electricity Price Review (EPR) the government has announced it will create an advocacy council for small electricity consumers as well as a group to provide advice and co-ordinate across government, industry and NGOs to alleviate energy hardship. Both organisations are part of the councils' $17m funding to reduce energy hardship in the country, and Minister Megan Woods said she expects both to be up and running by the end of this year.
- Transpower has announced it will accelerate the timetable for the Clutha Upper Waitaki Lines Project (CUWLP) by one year, now aiming to complete the upgrades in May 2022. This comes after Transpower announced it would review its timetable as a result of RIO's 9 July 2020 announcement. Transpower has said that May 2022 is achievable but there is scope for completion to be even sooner if further acceleration initiatives are possible during the upgrades.
- The Electricity Authority (EA) has extended the preliminary consultation period for the Undesirable Trading Situation (UTS) by one week with submissions now open until Tuesday 18 August.
- The Green Party is pushing for the installation of rooftop solar panels and batteries in state homes to boost renewable generation and create jobs in its new Clean Energy Plan policy. If all current state homes were fitted it would result in roughly 250MW of generation, however, the Green Party acknowledge that not all state homes would be appropriate for solar. The policy also includes NZ$250m for small-scale community generation and smart grid projects.

Other industry news

- The government has announced a $30m investigation into the viability of a pumped hydro scheme at Lake Onslow in the South Island. The scheme would be located ~22km away from CEN's Roxburgh dam hydro plant. For further information on the scheme please refer to the front of this note. The government also announced a $70m investment to increase the electrification industrial and process heat in the Lower South Island, including transmission lines upgrades as well as direct support to help users convert coal boilers to electricity.
- The National New Energy Development project, Ara Ake, was officially launched on 23 July, and is a joint venture between Venture Taranaki and the New Zealand Government. The CEO is former Vector executive Dr Christiano Marantes, and there are a number of board members from within the energy industry, including: Rob Cambell, Elena Trout, Dr Will Edwards, Rick Shera and Lovina McMurphy.
- BlueScope Steel, the owners of the Glenbrook NZ Steel Mill has said it reviewing the viability of the plant, citing lower expectations of future sustainable earnings. The company has said that the proposed TPM changes could lead to an increase of between NZ$3.5m and NZ$9.5m, casting doubt over profitability going forward. The company will provide an update when it releases its full year results in August.
- Fonterra has said that despite the closure of Tiwai possibly leading to cheaper electricity in the South Island, it is still likely to use wood rather than electricity in its seven dairy plants in the South. Fonterra has said that there are significant costs and engineering challenges involved in switching to electricity and that switching from coal to wood in its boilers is the most impactful way to reduce its emissions.
- Emrod Technology are set to test the world's first long-range wireless electricity transmission technology as an alternative to underground copper cabling. Powerco has invested in a proof of concept trial of the technology, and say the wireless transmission could be used to deliver electricity to remote customers as well as keep power on for customers while undergoing maintenance on existing transmission.
- The Kupe gas plant experienced an unplanned production outage on 3 July that resulted in a 41TJ per day shortfall until the plant was returned to normal production levels on 6 July.
- OMV continues to have issues with the Pohokura gas field, with production operating well below levels expected as result of the maintenance work undertaken in early 2020. OMV has announced a new maintenance schedule for the coming months that will see periodic reductions in production of up to 100TJ from 18 August through to 8 September. The Pohokura production was around 200TJ/day in mid-May and between 180–190TJ/day before the maintenance work was undertaken earlier in the year.
- The Major Electricity Users Group (MEUG) is seeking partners in renewable energy projects, and will select bids for projects through to September or October. The group estimates there is potential to reduce carbon emissions by up to 500,000 tonnes annually through new projects.
- The Petroleum Exploration and Production Association of New Zealand (PEPANZ) has said that New Zealand's gas reserves are being run down and that natural gas production is forecast to decline by 60% over the next 10 years. PEPANZ says that new gas supplies are much more difficult to bring to market now as a result of the government's move to end new exploration permits beyond onshore Taranaki in 2018.

Contact Energy Limited (CEN)

Priced as at 06 Aug 2020 (NZ$)	**6.29**

12-month target price (NZ$)*	**7.50**
Expected share price return	19.2%
Net dividend yield	5.1%
Estimated 12-month return	24.3%

Key WACC assumptions	
Risk free rate	2.00%
Equity beta	0.88
WACC	6.7%
Terminal growth	1.5%

Spot valuations (NZ$)	
1. DCF	6.61
2. Market multiples	7.43
3. Dividend yield	7.64

DCF valuation summary (NZ$m)	
Total firm value	5,928
(Net debt)/cash	(1,197)
Less: Capitalised operating leases	
Value of equity	4,731

Profit and Loss Account (NZ$m)	**2018A**	**2019A**	**2020E**	**2021E**	**2022E**
Sales revenue	2,275.0	2,519.0	2,077.3	1,954.9	1,701.3
Normalised EBITDA	**479.0**	**518.0**	**449.4**	**446.4**	**393.1**
Depreciation and amortisation	(220.0)	(205.0)	(215.5)	(224.2)	(232.8)
Normalised EBIT	**264.0**	**313.0**	**233.8**	**222.2**	**160.3**
Net interest	(84.0)	(70.0)	(56.0)	(53.5)	(51.0)
Depreciation capex adjustment	96	102	110	112	117
Tax	(48.0)	(72.0)	(50.3)	(47.2)	(30.6)
Minority interests	0	0	0	0	0
Adjusted normalised NPAT	**228.6**	**277.5**	**237.8**	**233.2**	**195.7**
Abnormals/other	(94)	67	(108)	(112)	(117)
Reported NPAT	**135.0**	**345.0**	**129.5**	**121.4**	**78.7**
Normalised EPS (cps)	31.9	38.8	33.2	32.6	27.3
DPS (cps)	32.0	39.0	32.0	32.0	32.0

Growth Rates	**2018A**	**2019A**	**2020A**	**2021A**	**2022A**
Revenue (%)	9.4	10.7	-17.5	-5.9	-13.0
EBITDA (%)	-4.4	8.1	-13.2	-0.7	-11.9
EBIT (%)	-11.4	18.6	-25.3	-5.0	-27.8
Normalised NPAT (%)	9.0	21.4	-14.3	-2.0	-16.1
Normalised EPS (%)	9.0	21.4	-14.3	-2.0	-16.1
Ordinary DPS (%)	23.1	21.9	-17.9	0.0	0.0

Cash Flow (NZ$m)	**2018A**	**2019A**	**2020E**	**2021E**	**2022E**
EBITDA	**479.0**	**518.0**	**449.4**	**446.4**	**393.1**
Working capital change	37.0	(20.0)	(10.6)	(4.6)	2.0
Interest & tax paid	(110.0)	(111.0)	(110.7)	(109.2)	(93.1)
Other	(27.0)	14.0	0	0	0
Operating cash flow	**379.0**	**401.0**	**328.1**	**332.6**	**302.0**
Capital expenditure	(82.0)	(63.0)	(89.0)	(65.0)	(66.3)
(Acquisitions)/divestments	6.0	382.0	0	0	0
Other	(7.0)	0	0	0	0
Funding available/(required)	**296.0**	**720.0**	**239.1**	**267.6**	**235.7**
Dividends paid	(201.0)	(251.0)	(279.1)	(229.0)	(229.0)
Equity raised/(returned)	1.0	0	0	0	0
(Increase)/decrease in net debt	**96.0**	**469.0**	**(40.0)**	**38.5**	**6.7**

Balance Sheet (NZ$m)	**2018A**	**2019A**	**2020E**	**2021E**	**2022E**
Working capital	(22.0)	(3.0)	6.6	10.2	7.2
Fixed assets	4,221.0	4,094.0	3,971.5	3,816.2	3,653.7
Intangibles	441.0	425.0	425.0	425.0	425.0
Right of use asset	32.0	32.0	32.0	32.0	32.0
Other assets	404.0	132.0	132.0	132.0	132.0
Total funds employed	**5,076.0**	**4,680.0**	**4,567.1**	**4,415.5**	**4,250.0**
Net debt/(cash)	1,410.0	918.0	958.0	919.5	912.8
Lease liability	38.0	25.0	25.0	25.0	25.0
Other liabilities	901.0	955.0	946.8	933.1	914.1
Shareholder's funds	2,727.0	2,782.0	2,637.2	2,537.9	2,398.1
Minority interests	0	0	0	0	0
Total funding sources	**5,076.0**	**4,680.0**	**4,567.1**	**4,415.5**	**4,250.0**

Valuation Ratios	**2018A**	**2019A**	**2020E**	**2021E**	**2022E**
EV/EBITDA (x)	12.5	10.9	12.1	12.2	13.9
EV/EBIT (x)	22.6	18.1	23.2	24.5	34.0
PE (x)	19.7	16.2	18.9	19.3	23.0
Price/NTA (x)	2.0	1.9	2.0	2.1	2.3
Free cash flow yield (%)	6.6	7.5	5.3	5.9	5.2
Net dividend yield (%)	5.1	6.2	5.1	5.1	5.1
Gross dividend yield (%)	6.0	7.7	6.4	6.4	6.4

Capital Structure	**2018A**	**2019A**	**2020E**	**2021E**	**2022E**
Interest cover EBIT (x)	3.4	4.9	4.6	4.8	3.9
Interest cover EBITDA (x)	5.7	7.4	8.0	8.3	7.7
Net debt/ND+E (%)	34.1	24.8	26.6	26.6	27.6
Net debt/EBITDA (x)	2.9	1.8	2.1	2.1	2.3

Key Ratios	**2018A**	**2019A**	**2020E**	**2021E**	**2022E**
Return on assets (%)	5.0	9.8	4.9	4.8	3.6
Return on equity (%)	4.9	6.3	4.9	4.8	3.3
Return on funds employed (%)	4.6	9.5	4.7	4.6	3.5
EBITDA margin (%)	21.1	20.6	21.6	22.8	23.1
EBIT margin (%)	11.6	12.4	11.3	11.4	9.4
Capex to sales (%)	3.6	2.5	4.3	3.3	3.9
Capex to depreciation (%)	37	31	41	29	28
Imputation (%)	48	64	65	65	65
Pay-out ratio (%)	100	101	96	98	117

Operating Performance	**2018A**	**2019A**	**2020E**	**2021E**	**2022E**
Hydro generation (GWh)	3,479	4,232	3,752	3,887	2,767
Geothermal generation (GWh)	3,323	3,257	3,331	3,324	3,324
Thermal generation (GWh)	1,812	1,422	1,360	1,092	385
Total Generation (GWh)	**8,614**	**8,911**	**8,443**	**8,302**	**6,475**
GWAP ($/MWh)	85	129	100	88	68
Gas consumed (PJ)	17.5	13.9	13.2	10.5	3.8
Gas price ($/GJ)	6.1	7.1	7.5	8.0	8.1
Retail electricity volumes (GWh)	6,997	6,554	5,694	5,537	5,492
Electricity customers (000)	413	411	418	411	403
Average usage/customer (MWh)	8.7	8.6	8.5	8.6	8.6
Average retail price ($/MWh)	242	244	245	242	235
LWAP ($/MWh)	91	138	108	96	75
LWAP/GWAP	1.07	1.07	1.08	1.09	1.11
Retail gas volumes (PJ)	2.9	3.1	3.1	3.1	3.1
Gas customers (000)	65	67	66	66	65
Average gas sales price ($/GJ)	24.6	23.6	23.9	24.8	25.2

Genesis Energy Limited (GNE)

Priced as at 06 Aug 2020 (NZ$)	**2.96**

12-month target price (NZ$)*	**2.75**
Expected share price return	-7.1%
Net dividend yield	4.7%
Estimated 12-month return	-2.4%

Spot valuations (NZ$)	
1. DCF	2.37
2. Market multiple	2.88
3. Dividend yield	2.99

Key WACC assumptions	
Risk free rate	2.00%
Equity beta	0.88
WACC	6.8%
Terminal growth	1.5%

DCF valuation summary (NZ$m)	
Total firm value	3,762
(Net debt)/cash	(1,308)
Less: Capitalised operating leases	
Value of equity	2,454

Profit and Loss Account (NZ$m)	**2018A**	**2019A**	**2020E**	**2021E**	**2022E**
Sales revenue	2,304.5	3,410.0	3,323.7	3,055.8	2,538.6
Normalised EBITDA	**360.5**	**369.5**	**352.7**	**377.9**	**366.6**
Depreciation and amortisation	(205.7)	(196.5)	(225.6)	(226.8)	(229.7)
Normalised EBIT	**154.8**	**173.0**	**127.1**	**151.1**	**137.0**
Net interest	(74)	(73)	(71)	(64)	(57)
Associate income	0	0	0	0	0
Tax	(22)	(27)	(15)	(24)	(22)
Deprecation capex adjustment	71	92	113	117	133
Adjusted normalised NPAT	**129**	**165**	**154**	**180**	**191**
Abnormals/other	(109)	(100)	(120)	(117)	(133)
Reported NPAT	**20**	**65**	**35**	**63**	**58**
Normalised EPS (cps)	12.8	16.1	14.9	17.1	18.0
DPS (cps)	16.9	17.1	15.5	14.0	14.0

Valuation Ratios	**2018A**	**2019A**	**2020E**	**2021E**	**2022E**
EV/EBITDA (x)	11.8	11.6	12.2	11.4	11.8
EV/EBIT (x)	27.6	24.8	34.0	28.6	31.5
PE (x)	23.2	18.4	19.9	17.3	16.5
Price/NTA (x)	1.9	1.7	1.8	1.9	2.0
Free cash flow yield (%)	5.2	5.4	5.7	8.1	6.7
Net dividend yield (%)	5.7	5.8	5.2	4.7	4.7
Gross dividend yield (%)	7.5	7.6	7.1	6.6	6.6

Growth Rates	**2018A**	**2019A**	**2020A**	**2021A**	**2022A**
Revenue (%)	18.1	48.0	-2.5	-8.1	-16.9
EBITDA (%)	5.9	2.5	-4.5	7.1	-3.0
EBIT (%)	-2.0	11.8	-26.5	18.8	-9.3
Normalised NPAT (%)	-18.9	28.2	-6.6	16.6	6.1
Normalised EPS (%)	-19.6	26.3	-7.9	15.2	5.0
Ordinary DPS (%)	1.8	0.9	-8.9	-9.8	0.0

Capital Structure	**2018A**	**2019A**	**2020E**	**2021E**	**2022E**
Interest cover EBIT (x)	1.4	2.2	1.7	2.4	2.4
Interest cover EBITDA (x)	4.9	5.0	5.0	5.9	6.5
Net debt/ND+E (%)	37.7	36.8	37.7	36.0	34.8
Net debt/EBITDA (x)	3.3	3.4	3.5	3.0	2.8

Cash Flow (NZ$m)	**2018A**	**2019A**	**2020E**	**2021E**	**2022E**
EBITDA	**360.5**	**369.5**	**352.7**	**377.9**	**366.6**
Working capital change	32.7	(27.3)	(0.3)	43.0	(5.5)
Interest & tax paid	(119.8)	(123.1)	(100.1)	(108.0)	(102.1)
Other	(6.9)	15.1	(7.4)	0	0
Operating cash flow	**266.5**	**234.2**	**244.9**	**312.9**	**259.0**
Capital expenditure	(107.7)	(68.5)	(69.3)	(64.5)	(53.0)
(Acquisitions)/divestments	0.3	(0.2)	(2.9)	0	0
Other	0	0	0	0	0
Funding available/(required)	**159.1**	**165.5**	**172.7**	**248.4**	**206.1**
Dividends paid	(147.7)	(131.6)	(138.6)	(115.2)	(116.6)
Equity raised/(returned)	(1.1)	(1.3)	(0.1)	0	0
(Increase)/decrease in net debt	**10.3**	**32.6**	**34.0**	**133.2**	**89.5**

Key Ratios	**2018A**	**2019A**	**2020E**	**2021E**	**2022E**
Return on assets (%)	2.4	3.5	2.7	3.6	3.4
Return on equity (%)	3.0	3.4	2.0	3.1	3.0
Return on funds employed (%)	3.6	3.7	2.8	3.5	3.3
EBITDA margin (%)	15.6	10.8	10.6	12.4	14.4
EBIT margin (%)	6.7	5.1	3.8	4.9	5.4
Capex to sales (%)	4.7	2.0	2.1	2.1	2.1
Capex to depreciation (%)	52	35	31	28	23
Imputation (%)	80	80	90	100	100
Pay-out ratio (%)	132	106	105	82	78

Balance Sheet (NZ$m)	**2018A**	**2019A**	**2020E**	**2021E**	**2022E**
Working capital	89.8	111.8	100.4	57.4	62.9
Fixed assets	3,430.0	3,773.1	3,651.7	3,509.5	3,340.9
Intangibles	364.3	364.0	357.9	353.6	347.5
Right of use asset	0	0	0	0	0
Other assets	84.0	120.8	122.8	122.8	122.8
Total funds employed	**3,968.1**	**4,369.7**	**4,232.9**	**4,043.3**	**3,874.1**
Net debt/(cash)	1,206.1	1,293.1	1,284.5	1,167.1	1,079.6
Lease liability	0	0	0	0	0
Other liabilities	805.6	931.6	896.4	876.7	853.8
Shareholder's funds	1,956.4	2,145.0	2,051.9	1,999.5	1,940.7
Minority interests	0	0	0	0	0
Total funding sources	**3,968.1**	**4,369.7**	**4,232.9**	**4,043.3**	**3,874.1**

Operating Performance	**2018A**	**2019A**	**2020E**	**2021E**	**2022E**
Renewable generation	3,084	2,835	2,337	2,887	2,724
Gas generation	3,392	2,586	2,942	1,946	1,507
Coal generation	657	1,410	1,515	876	0
Total GNE generation (GWh)	**7,133**	**6,831**	**6,794**	**5,708**	**4,231**
GWAP ($/MWh)	92	143	111	107	82
Retail electricity					
Electricity customers (000)	504	499	492	470	440
MM/SME volumes	4,169	4,077	4,140	4,015	3,801
TOU volumes	1,811	1,992	2,037	1,817	1,217
Total fixed price volumes (GWh)	**5,980**	**6,068**	**6,177**	**5,832**	**5,018**
Average MM usage/cust (kWh/yr)	8,240	8,126	8,333	8,315	8,345
Average FPVV price ($/MWh)	206	210	213	210	214
LWAP ($/MWh)	92	139	107	105	79
LWAP/GWAP	1.01	0.97	0.96	0.98	0.96
Line losses (%)	5.3	5.4	5.6	5.6	5.6
Kupe production					
Gas production (PJ)	11.8	11.8	10.9	10.1	9.2
Oil production (k barrels)	532.8	472.9	382.7	340.0	428.9
LPG production (k tonnes)	45.9	50.6	47.7	44.5	40.9
Kupe EBITDAF ($m)	115.4	109.0	94.4	86.5	90.7
Energy EBITDAF ($m)	245.2	260.5	258.3	291.3	276.0
GNE EBITDAF ($m)	**360.6**	**369.5**	**352.7**	**377.9**	**366.6**

Mercury NZ Limited (MCY)

Priced as at 06 Aug 2020 (NZ$)	**4.70**

12-month target price (NZ$)*	**4.41**
Expected share price return	-6.2%
Net dividend yield	3.4%
Estimated 12-month return	-2.8%

Spot valuations (NZ$)	
1. DCF	3.36
2. Market multiple	4.85
3. Dividend yield	4.77

Key WACC assumptions	
Risk free rate	2.00%
Equity beta	0.88
WACC	6.8%
Terminal growth	1.5%

DCF valuation summary (NZ$m)	
Total firm value	5,780
(Net debt)/cash	(1,211)
Less: Capitalised operating leases	
Value of equity	4,569

Profit and Loss Account (NZ$m)	**2018A**	**2019A**	**2020E**	**2021E**	**2022E**
Sales revenue	1,798.0	2,000.0	1,748.1	1,762.0	1,619.3
Normalised EBITDA	**566.0**	**505.0**	**483.0**	**499.2**	**479.0**
Depreciation and amortisation	(201.0)	(204.0)	(207.5)	(209.0)	(212.3)
Normalised EBIT	**365.0**	**301.0**	**275.5**	**290.2**	**266.7**
Net interest	(91.0)	(75.0)	(57.5)	(59.2)	(62.7)
Associate income	2.0	1.0	6.8	(2.9)	(0.8)
Tax	(91.0)	(73.0)	(47.5)	(65.9)	(58.9)
Depreciation capex adj	57.6	77.8	63.0	89.5	89.1
Adjusted normalised NPAT	**255.6**	**239.0**	**225.3**	**251.7**	**233.4**
Abnormals/other	(6.6)	118.0	(70.0)	(89.5)	(89.1)
Reported NPAT	**249.0**	**357.0**	**155.3**	**162.2**	**144.3**
Normalised EPS (cps)	18.8	17.6	16.6	18.5	17.1
DPS (cps)	15.1	15.5	15.8	15.8	15.8

Valuation Ratios	**2018A**	**2019A**	**2020E**	**2021E**	**2022E**
EV/EBITDA (x)	13.1	14.5	15.0	14.7	15.3
EV/EBIT (x)	20.1	24.2	25.7	25.5	27.5
PE (x)	25.0	26.8	28.4	25.4	27.4
Price/NTA (x)	2.0	1.8	1.9	1.9	1.9
Free cash flow yield (%)	3.9	3.2	1.1	1.0	2.5
Net dividend yield (%)	3.2	3.3	3.4	3.4	3.4
Gross dividend yield (%)	4.5	4.6	4.7	4.7	4.5

Growth Rates	**2018A**	**2019A**	**2020A**	**2021A**	**2022A**
Revenue (%)	12.6	11.2	-12.6	0.8	-8.1
EBITDA (%)	8.2	-10.8	-4.4	3.3	-4.0
EBIT (%)	7.9	-17.7	-6.5	1.7	-7.5
Normalised NPAT (%)	1.8	-6.5	-5.7	11.7	-7.3
Normalised EPS (%)	2.9	-6.4	-5.7	11.7	-7.3
Ordinary DPS (%)	3.4	2.6	1.9	0.0	0.0

Capital Structure	**2018A**	**2019A**	**2020E**	**2021E**	**2022E**
Interest cover EBIT (x)	4.7	6.7	4.5	4.9	4.2
Interest cover EBITDA (x)	6.2	6.7	8.4	8.4	7.6
Net debt/ND+E (%)	70.8	61.8	66.5	70.1	73.6
Net debt/EBITDA (x)	2.2	2.2	2.5	2.7	2.9

Cash Flow (NZ$m)	**2018A**	**2019A**	**2020E**	**2021E**	**2022E**
EBITDA	**566.0**	**505.0**	**483.0**	**499.2**	**479.0**
Working capital change	4.0	2.0	53.7	(33.0)	(12.8)
Interest & tax paid	(192.0)	(148.0)	(147.8)	(144.9)	(141.8)
Other	(4.0)	(33.0)	(8.0)	0	0
Operating cash flow	**374.0**	**326.0**	**381.0**	**321.2**	**324.4**
Capital expenditure	(127.0)	(122.0)	(308.0)	(254.9)	(161.4)
(Acquisitions)/divestments	(139.0)	215.0	0	54.5	0
Other	1.0	12.0	4.7	(5.4)	(3.5)
Funding available/(required)	**109.0**	**431.0**	**77.6**	**115.5**	**159.5**
Dividends paid	(273.0)	(208.0)	(214.1)	(215.0)	(215.0)
Equity raised/(returned)	(50.0)	0	0	0	0
(Increase)/decrease in net debt	**(214.0)**	**223.0**	**(136.5)**	**(99.5)**	**(55.5)**

Key Ratios	**2018A**	**2019A**	**2020E**	**2021E**	**2022E**
Return on assets (%)	7.1	7.8	4.0	4.4	4.1
Return on equity (%)	6.0	4.6	4.7	4.7	4.3
Return on funds employed (%)	5.8	4.7	4.2	4.4	4.1
EBITDA margin (%)	31.5	25.3	27.6	28.3	29.6
EBIT margin (%)	20.4	15.1	16.2	16.3	16.4
Capex to sales (%)	7.1	6.1	17.6	14.5	10.0
Capex to depreciation (%)	69	67	168	136	85
Imputation (%)	100	100	100	100	90
Pay-out ratio (%)	80	88	95	85	92

Balance Sheet (NZ$m)	**2018A**	**2019A**	**2020E**	**2021E**	**2022E**
Working capital	63.0	63.0	14.3	47.3	60.1
Fixed assets	5,370.0	5,528.0	5,636.7	5,686.2	5,639.0
Intangibles	85.0	62.0	60.1	60.6	61.4
Right of use asset	0	0	0	0	0
Other assets	385.0	521.0	516.2	518.6	521.4
Total funds employed	**5,903.0**	**6,174.0**	**6,227.2**	**6,312.7**	**6,281.8**
Net debt/(cash)	1,264.0	1,096.0	1,228.5	1,328.0	1,383.5
Lease liability	0	0	0	0	0
Other liabilities	1,306.0	1,498.0	1,482.5	1,466.8	1,451.2
Shareholder's funds	3,333.0	3,580.0	3,516.2	3,463.4	3,392.6
Minority interests	0	0	0	0	0
Total funding sources	**5,903.0**	**6,174.0**	**6,227.2**	**6,258.2**	**6,227.3**

Operating Performance	**2018A**	**2019A**	**2020E**	**2021E**	**2022E**
Hydro	4,947	4,006	3,706	3,924	4,016
Geothermal	2,757	2,894	2,812	2,841	2,841
Wind	0	0	0	181	562
Total MCY Generation (GWh)	**7,704**	**6,900**	**6,518**	**6,946**	**7,419**
GWAP ($/MWh)	86	139	109	106	78
Electricity sales					
Electricity customers (000)	388	373	346	341	348
MM volumes	3,278	3,182	2,917	2,790	2,812
TOU volumes	1,200	1,319	1,467	1,600	1,747
Total Fixed Price volumes (GWh)	**4,478**	**4,501**	**4,384**	**4,390**	**4,559**
Spot Sales	891	780	729	732	736
Net CFD's	2,110	1,665	1,881	2,069	2,069
Total Sales (GWh)	**7,479**	**6,946**	**6,993**	**7,191**	**7,363**
Average usage per cust (MWh/yr)	11.4	11.8	12.3	12.8	13.2
LWAP ($/MWh)	92	145	112	111	82
LWAP/GWAP	1.06	1.04	1.03	1.05	1.06
Average FPVV price ($/MWh)	113	113	117	116	111
Line losses (%)	5.6	5.1	5.1	5.2	5.1
Energy margin ($m)	730	667	658	679	663
Operating costs ($m)	(205)	(199)	(192)	(200)	(205)
Other revenue ($m)	41	37	17	20	21
MCY EBITDAF ($m)	**566**	**505**	**483**	**499**	**479**

Meridian Energy Limited (MEL)

Priced as at 06 Aug 2020 (NZ$)	**5.00**

12-month target price (NZ$)*	**4.80**
Expected share price return	-4.0%
Net dividend yield	3.3%
Estimated 12-month return	-0.7%

Spot valuations (NZ$)	
1. DCF	3.55
2. Market multiple	5.25
3. Dividend yield	5.39

Key WACC assumptions	
Risk free rate	2.00%
Equity beta	0.84
WACC	6.8%
Terminal growth	1.5%

DCF valuation summary (NZ$m)	
Total firm value	10,913
(Net debt)/cash	(1,817)
Less: Capitalised operating leases	
Value of equity	9,096

Profit and Loss Account (NZ$m)	**2018A**	**2019A**	**2020E**	**2021E**	**2022E**
Sales revenue	3,297.0	4,104.0	3,544.1	3,528.9	3,001.1
Normalised EBITDA	**666.0**	**838.0**	**861.1**	**797.5**	**655.4**
Depreciation and amortisation	(21.0)	(276.0)	(314.4)	(310.7)	(306.7)
Normalised EBIT	**398.0**	**562.0**	**546.8**	**486.7**	**348.6**
Net interest	(81.0)	(83.0)	(83.7)	(79.5)	(77.1)
Associate income & other	(19.0)	(14.0)	(10.0)	(22.0)	0
Tax	(95.0)	(133.0)	(126.7)	(107.9)	(76.0)
Minority interests	0	0	0	0	0
Reported NPAT	**203.0**	**332.0**	**326.4**	**277.4**	**195.5**
Abnormals/other	157.8	149.3	172.3	167.4	178.9
Adjusted normalised NPAT	**360.8**	**481.3**	**498.7**	**444.8**	**374.4**
Normalised EPS (cps)	14.1	18.8	19.5	17.4	14.6
DPS (cps)	19.2	21.3	19.1	16.7	16.7

Valuation Ratios	**2018A**	**2019A**	**2020E**	**2021E**	**2022E**
EV/EBITDA (x)	21.2	17.0	16.6	18.1	22.0
EV/EBIT (x)	35.5	25.4	26.2	29.6	41.3
PE (x)	35.5	26.6	25.7	28.8	34.2
Price/NTA (x)	2.7	2.4	2.5	2.5	2.7
Free cash flow yield (%)	1.4	4.4	3.6	3.8	2.7
Net dividend yield (%)	3.8	4.3	3.8	3.3	3.3
Gross dividend yield (%)	4.9	5.4	4.9	4.3	4.2

Growth Rates	**2018A**	**2019A**	**2020A**	**2021A**	**2022A**
Revenue (%)	16.7	24.5	-13.6	-0.4	-15.0
EBITDA (%)	1.4	25.8	2.8	-7.4	-17.8
EBIT (%)	1.3	41.2	-2.7	-11.0	-28.4
Normalised NPAT (%)	-3.1	33.4	3.6	-10.8	-15.8
Normalised EPS (%)	-3.1	33.4	3.6	-10.8	-15.8
Ordinary DPS (%)	1.5	10.9	-10.2	-12.8	0.0

Capital Structure	**2018A**	**2019A**	**2020E**	**2021E**	**2022E**
Interest cover EBIT (x)	4.7	6.6	6.4	5.8	4.5
Interest cover EBITDA (x)	8.2	10.1	10.3	10.0	8.5
Net debt/ND+E (%)	71.3	76.9	88.4	96.3	112.1
Net debt/EBITDA (x)	2.2	1.7	1.8	1.9	2.5

Cash Flow (NZ$m)	**2018A**	**2019A**	**2020E**	**2021E**	**2022E**
EBITDA	**666.0**	**838.0**	**861.1**	**797.5**	**655.4**
Working capital change	(34.0)	(36.0)	(54.9)	22.0	11.6
Interest & tax paid	(186.0)	(200.0)	(279.6)	(231.1)	(197.9)
Other	(19.0)	33.0	3.0	(22.0)	0
Operating cash flow	**427.0**	**635.0**	**529.6**	**566.3**	**469.1**
Capital expenditure	(247.0)	(69.0)	(73.1)	(76.2)	(128.3)
(Acquisitions)/divestments	23.0	0	0	0	0
Other	0	0	0	0	0
Funding available/(required)	**203.0**	**566.0**	**456.5**	**490.1**	**340.8**
Dividends paid	(486.0)	(500.0)	(545.6)	(427.9)	(427.9)
Equity raised/(returned)	(2.0)	(2.0)	0	0	0
(Increase)/decrease in net debt	**(285.0)**	**64.0**	**(89.1)**	**62.2**	**(87.0)**

Key Ratios	**2018A**	**2019A**	**2020E**	**2021E**	**2022E**
Return on assets (%)	4.4	5.7	5.7	5.1	3.9
Return on equity (%)	4.3	6.1	6.0	5.1	4.0
Return on funds employed (%)	4.6	5.9	5.8	5.3	3.9
EBITDA margin (%)	20.2	20.4	24.3	22.6	21.8
EBIT margin (%)	12.1	13.7	15.4	13.8	11.6
Capex to sales (%)	7.5	1.7	2.1	2.2	4.3
Capex to depreciation (%)	n/a	28	25	27	45
Imputation (%)	68	66	70	75	65
Pay-out ratio (%)	136	113	98	96	114

Balance Sheet (NZ$m)	**2018A**	**2019A**	**2020E**	**2021E**	**2022E**
Working capital	(17.0)	(24.0)	(3.1)	(3.1)	(14.7)
Fixed assets	7,941.0	8,825.0	8,659.2	8,425.6	8,245.5
Intangibles	60.0	59.0	56.5	55.7	57.3
Right of use asset	0	0	0	0	0
Other assets	291.0	383.0	403.0	381.0	381.0
Total funds employed	**8,275.0**	**9,243.0**	**9,115.7**	**8,859.2**	**8,669.1**
Net debt/(cash)	1,461.0	1,424.0	1,592.1	1,529.8	1,616.9
Lease liability	0	0	0	0	0
Other liabilities	1,991.0	2,362.0	2,284.8	2,241.0	2,196.3
Shareholder's funds	4,823.0	5,457.0	5,238.8	5,088.3	4,856.0
Minority interests	0	0	0	0	0
Total funding sources	**8,275.0**	**9,243.0**	**9,115.7**	**8,859.2**	**8,669.1**

Operating Performance	**2018A**	**2019A**	**2020E**	**2021E**	**2022E**
Hydro generation	11,266	12,326	12,753	12,353	10,600
Wind generation	1,263	1,244	1,471	1,430	1,430
Total NZ generation (GWh)	**12,528**	**13,570**	**14,224**	**13,783**	**12,030**
GWAP ($/MWh)	83	123	91	81	54
Overseas generation (GWh)	581	730	642	713	810
Overseas GWAP ($/MWh) (NZD)	151	96	119	92	77
Overseas customer numbers (000)	97	110	136	153	164
NZ electricity customers (000)	**291**	**302**	**324**	**349**	**380**
Average usage per cust (MWh/yr)	13.5	13.2	13.9	13.8	13.8
Mass market volumes	3,824	3,901	4,342	4,657	5,023
Time of use volumes	2,157	2,338	3,034	3,594	4,205
Total fixed price volumes (GWh)	**5,981**	**6,239**	**7,376**	**8,251**	**9,228**
NZAS sales	5,011	5,310	5,359	5,011	842
Sell CFDs	2,278	2,239	2,529	1,902	2,902
Buy CFDs	(2,222)	(1,965)	(2,731)	(1,995)	(1,496)
Total Sales (GWh)	**11,047**	**11,823**	**12,533**	**13,169**	**11,476**
Average FPVV price ($/MWh)	105	105	108	105	98
LWAP ($/MWh)	88	132	96	90	64
LWAP/GWAP	1.06	1.07	1.05	1.10	1.19
Lines losses (%)	5.3	5.9	5.7	5.5	5.5

Tilt Renewables Limited (TLT)

Priced as at 06 Aug 2020 (NZ$)	**3.64**

12-month target price (NZ$)*	**3.50**
Expected share price return	-3.8%
Net dividend yield	0.0%
Estimated 12-month return	-3.8%

Spot valuations (NZ$)	
1. DCF	3.25
2. Multiple	3.54
3. n/a	n/a

Key WACC assumptions	
Risk free rate	2.00%
Equity beta	0.94
WACC	7.4%
Terminal growth	1.5%

DCF valuation summary (NZ$m)	
Total firm value	1,080
(Net debt)/cash	447
Less: Capitalised operating leases	
Value of equity	1,527

Profit and Loss Account (A$m)	**2019A**	**2020A**	**2021E**	**2022E**	**2023E**
Sales revenue	193.3	170.2	152.5	186.1	186.4
Normalised EBITDA	**134.8**	**117.5**	**90.3**	**107.3**	**106.8**
Depreciation and amortisation	(83.6)	(72.5)	(60.1)	(84.8)	(83.1)
Normalised EBIT	**51.2**	**45.0**	**30.3**	**22.5**	**23.7**
Net interest	(30.1)	(39.4)	(10.7)	(17.3)	(12.3)
Other	(2.0)	(8.5)	0	0	0
Tax	(6.9)	(4.7)	(5.8)	(1.5)	(3.4)
Depreciation capex adjustment	55.4	46.9	37.9	54.8	53.6
Normalised NPAT	**69.0**	**47.4**	**51.7**	**58.5**	**61.6**
Abnormals/other	(56.8)	431.1	(37.9)	(54.8)	(53.6)
Reported NPAT	**12.2**	**478.4**	**13.8**	**3.7**	**8.0**
Normalised EPS (cps)	14.7	10.1	11.0	12.5	13.1
DPS (cps)	1.1	0	0	0	1.3

Valuation Ratios	**2019A**	**2020A**	**2021E**	**2022E**	**2023E**
EV/EBITDA (x)	15.3	13.6	17.0	17.0	16.8
EV/EBIT (x)	40.2	35.4	50.7	80.9	75.9
PE (x)	23.1	34.3	31.6	27.6	25.9
Price/NTA (x)	2.5	1.4	1.7	1.7	1.7
Free cash flow yield (%)	4.7	2.6	2.1	5.8	5.7
Net dividend yield (%)	0.3	0.0	0.0	0.0	0.4
Gross dividend yield (%)	0.3	0.0	0.0	0.0	0.4

Growth Rates	**2019A**	**2020A**	**2021E**	**2022E**	**2023E**
Revenue (%)	22.4	-11.9	-10.4	22.0	0.2
EBITDA (%)	29.9	-12.8	-23.1	18.8	-0.5
EBIT (%)	91.4	-12.2	-32.7	-25.6	5.2
Normalised NPAT (%)	49.0	-31.3	9.1	13.3	5.2
Normalised EPS (%)	-0.6	-31.3	9.1	13.3	5.2
Ordinary DPS (%)	-65.0	-100.0	n/a	n/a	n/a

Capital Structure	**2019A**	**2020A**	**2021E**	**2022E**	**2023E**
Interest cover EBIT (x)	1.7	1.1	2.8	1.3	1.9
Interest cover EBITDA (x)	4.5	3.0	8.4	6.2	8.7
Net debt/ND+E (%)	34.6	-54.6	18.3	10.9	2.3
Net debt/EBITDA (x)	2.6	n/a	2.3	1.1	0.2

Cash Flow (A$m)	**2019A**	**2020A**	**2021E**	**2022E**	**2023E**
EBITDA	**134.8**	**117.5**	**90.3**	**107.3**	**106.8**
Working capital change	0.6	39.8	(57.0)	(0.4)	(1.8)
Interest & tax paid	(41.7)	(57.8)	8.5	(0.6)	(1.2)
Other	(8.6)	(49.4)	0	0	0
Operating cash flow	**85.0**	**50.2**	**41.9**	**106.3**	**103.9**
Capital expenditure	(90.8)	(322.9)	(406.3)	(7.0)	(7.1)
(Acquisitions)/divestments	0	455.0	0	0	0
Other	0	(3.9)	(3.9)	(3.9)	(3.9)
Funding available/(required)	**(5.8)**	**178.3**	**(368.3)**	**95.4**	**92.8**
Dividends paid	(10.6)	0	0	0	0
Equity raised/(returned)	259.9	(1.1)	(260.0)	0	0
(Increase)/decrease in net debt	**243.5**	**177.3**	**(628.3)**	**95.4**	**92.8**

Key Ratios	**2019A**	**2020A**	**2021E**	**2022E**	**2023E**
Return on assets (%)	3.3	2.6	1.5	1.1	1.2
Return on equity (%)	10.5	4.0	5.5	6.2	6.5
Return on funds employed (%)	3.6	4.2	1.9	1.5	1.7
EBITDA margin (%)	69.7	69.0	59.2	57.7	57.3
EBIT margin (%)	26.5	26.4	19.9	12.1	12.7
Capex to sales (%)	47.0	189.7	266.5	3.8	3.8
Capex to depreciation (%)	109	445	676	8	9
Imputation (%)	0	0	0	0	0
Pay-out ratio (%)	7	0	0	0	10

Balance Sheet (A$m)	**2019A**	**2020A**	**2021E**	**2022E**	**2023E**
Working capital	14.3	(38.3)	16.6	15.1	14.9
Fixed assets	1,066.7	1,000.7	1,347.9	1,271.2	1,196.3
Intangibles	0.5	0.5	0.5	0.5	0.5
Right of use asset	0	13.4	13.4	13.4	13.4
Other assets	114.3	9.0	9.0	9.0	9.0
Total funds employed	**1,195.9**	**985.2**	**1,387.4**	**1,309.1**	**1,234.0**
Net debt/(cash)	346.4	(417.9)	210.4	115.0	22.2
Lease liability	22.9	125.5	125.5	125.5	125.5
Other liabilities	170.6	94.3	114.4	127.8	137.5
Shareholder's funds	656.0	1,183.3	937.1	940.8	948.8
Minority interests	0	0	0	0	0
Total funding sources	**1,195.9**	**985.2**	**1,387.4**	**1,309.1**	**1,234.0**

Operating Performance	**2019A**	**2020A**	**2021E**	**2022E**	**2023E**
Australia installed capacity (MW)	440	170	506	506	506
NZ installed capacity (MW)	197	197	197	330	330
TLT installed capacity (MW)	**637**	**367**	**703**	**836**	**836**
Australia wind generation (GWh)	1,395	1,170	1,331	1,771	1,771
NZ wind generation (GWh)	658	664	672	1,119	1,119
TLT wind generation (GWh)	**2,053**	**1,834**	**2,003**	**2,890**	**2,890**
Price assumptions					
Australia REC price (A$/MWh)	78.3	65.2	23.0	23.7	24.2
SA wholesale price (A$/MWh)	81.0	56.0	56.2	50.7	49.0
VIC wholesale price (A$/MWh)		85.8	73.9	64.0	54.5
Australia PPA price (A$/MWh)	94.8	94.5	55.8	57.8	58.9
NZ PPA price (NZ$/MWh)	64.8	63.7	64.8	66.1	67.1
Australia spot sales (GWh)	155	365	905	458	458
Australia PPA sales (GWh)	1,239	805	426	1,313	1,313
Australia spot revenue (A$m)	34	53	62	25	23
Australia PPA revenue (A$m)	117	76	24	76	77
Australia revenue (A$m)	**151**	**129**	**110**	**115**	**116**
NZ revenue (A$m)	**42**	**42**	**42**	**71**	**71**
Australia EBITDAF (A$m)	**109**	**93**	**66**	**62**	**61**
NZ EBITDAF (A$m)	**25**	**24**	**25**	**46**	**46**

* Forsyth Barr target prices reflect valuation rolled forward at cost of equity less the next 12-months dividend

Trustpower Ltd (TPW)

Priced as at 06 Aug 2020 (NZ$)	**6.83**

12-month target price (NZ$)*	**6.55**
Expected share price return	-4.1%
Net dividend yield	4.4%
Estimated 12-month return	0.3%

Spot valuations (NZ$)	
1. DCF	6.05
2. Market multiples	6.19
3. Dividend Yield	7.50

Key WACC assumptions	
Risk free rate	2.00%
Equity beta	0.88
WACC	6.7%
Terminal growth	1.5%

DCF valuation summary (NZ$m)	
Total firm value	2,526
(Net debt)/cash	(617)
Less: Capitalised operating leases	
Value of equity	1,894

Profit and Loss Account (NZ$m)	**2019A**	**2020A**	**2021E**	**2022E**	**2023E**
Sales revenue	1,030.1	989.9	933.3	917.4	910.0
Normalised EBITDA	**222.2**	**186.5**	**190.1**	**190.7**	**182.9**
Depreciation and amortisation	(47.2)	(42.6)	(47.2)	(47.1)	(47.1)
Normalised EBIT	**175**	**144**	**143**	**144**	**136**
Net interest	(28)	(32)	(26)	(25)	(24)
Depreciation capex adjustment	19	(2)	9	8	7
Tax	(45)	(32)	(35)	(36)	(34)
Minority interests	(2)	(3)	(3)	(3)	(3)
Normalised NPAT	**117**	**74**	**88**	**89**	**83**
Abnormals/other/depn adj	(26)	21	(6)	(6)	(5)
Reported NPAT	**91**	**95**	**81**	**83**	**77**
Normalised EPS (cps)	37.1	23.6	28.0	28.2	26.4
DPS (cps)	74.0	32.5	30.0	30.0	30.0

Valuation Ratios	**2019A**	**2020A**	**2021E**	**2022E**	**2023E**
EV/EBITDA (x)	12.0	14.7	14.6	14.5	15.1
EV/EBIT (x)	15.2	19.0	19.4	19.3	20.4
PE (x)	18.4	28.9	24.4	24.2	25.9
Price/NTA (x)	1.8	2.0	2.0	2.1	2.1
Free cash flow yield (%)	4.2	3.6	5.0	5.0	4.8
Net dividend yield (%)	10.8	4.8	4.4	4.4	4.4
Gross dividend yield (%)	13.2	6.6	6.1	6.1	6.1

Growth Rates	**2019A**	**2020A**	**2021A**	**2022A**	**2023A**
Revenue (%)	5.2	-3.9	-5.7	-1.7	-0.8
EBITDA (%)	-17.6	-16.1	1.9	0.3	-4.1
EBIT (%)	-21.6	-17.8	-0.7	0.5	-5.5
Normalised NPAT (%)	-17.3	-36.4	18.4	1.0	-6.6
Normalised EPS (%)	-17.3	-36.4	18.4	1.0	-6.6
Ordinary DPS (%)	0.0	-4.4	-7.7	0.0	0.0

Capital Structure	**2019A**	**2020A**	**2021E**	**2022E**	**2023E**
Interest cover EBIT (x)	6.8	4.9	6.0	6.4	6.2
Interest cover EBITDA (x)	7.9	5.9	7.3	7.8	7.6
Net debt/ND+E (%)	58.6	64.8	65.6	66.1	67.2
Net debt/EBITDA (x)	2.5	3.3	3.2	3.2	3.3

Cash Flow (NZ$m)	**2019A**	**2020A**	**2021E**	**2022E**	**2023E**
EBITDA	**222.2**	**186.5**	**190.1**	**190.7**	**182.9**
Working capital change	(47.1)	1.7	5.5	5.4	7.9
Interest & tax paid	(74.8)	(77.1)	(56.8)	(56.7)	(54.9)
Other	20.0	10.9	(0.6)	(0.6)	(0.6)
Operating cash flow	**120.3**	**121.9**	**138.2**	**138.7**	**135.3**
Capital expenditure	(31.1)	(44.7)	(30.9)	(31.7)	(32.3)
(Acquisitions)/divestments	8.1	20.2	0	0	0
Other	0	(6.8)	(6.8)	(6.8)	(6.8)
Funding available/(required)	**97.3**	**90.6**	**100.5**	**100.3**	**96.2**
Dividends paid	(190.4)	(156.7)	(95.5)	(93.9)	(93.9)
Equity raised/(returned)	(1)	(1)	0	0	0
(Increase)/decrease in net debt	**(94.5)**	**(67.4)**	**5.1**	**6.4**	**2.3**

Key Ratios	**2019A**	**2020A**	**2021E**	**2022E**	**2023E**
Return on assets (%)	7.2	8.0	6.8	6.9	6.6
Return on equity (%)	9.7	6.9	8.3	8.5	8.1
Return on funds employed (%)	7.2	5.6	6.0	6.1	5.8
EBITDA margin (%)	21.6	18.8	20.4	20.8	20.1
EBIT margin (%)	17.0	14.5	15.3	15.7	14.9
Capex to sales (%)	3.0	4.5	3.3	3.5	3.5
Capex to depreciation (%)	98	142	92	95	96
Imputation (%)	55	100	100	100	100
Pay-out ratio (%)	199	138	107	106	114

Balance Sheet (NZ$m)	**2019A**	**2020A**	**2021E**	**2022E**	**2023E**
Working capital	(0.3)	(8.2)	13.8	14.8	13.8
Fixed assets	1,924.7	1,836.4	1,828.5	1,820.9	1,813.2
Intangibles	37.0	38.7	37.7	37.4	37.7
Right of use asset	0	35.5	35.5	35.5	35.5
Other assets	114.8	100.2	72.6	66.2	59.4
Total funds employed	**2,076.2**	**2,002.6**	**1,988.2**	**1,974.8**	**1,959.5**
Net debt/(cash)	557.4	616.7	611.6	605.2	602.9
Lease liability	0	36.1	36.1	36.1	36.1
Other liabilities	269.8	249.8	251.9	253.2	253.8
Shareholder's funds	1,224.4	1,076.2	1,062.2	1,051.3	1,034.8
Minority interests	24.6	23.8	26.4	29.1	31.8
Total funding sources	**2,076.2**	**2,002.6**	**1,988.2**	**1,974.8**	**1,959.5**

Operating Performance	**2019A**	**2020A**	**2021E**	**2022E**	**2023E**
NZ electricity revenue	861	804	748	723	706
Gas revenue	29	30	33	34	36
Telecommunication revenue	88	98	96	108	116
Other revenue	52	58	56	52	53
Total revenue	**1,030**	**990**	**933**	**917**	**910**
Generation (GWh)	1,995	1,758	1,841	1,896	1,896
NZ GWAP ($/MWh)	125	107	102	66	62
Mass market sales (GWh)	1,845	1,817	1,847	1,792	1,777
TOU sales (GWh)	880	826	659	743	746
Spot sales (GWh)	1,021	972	865	932	935
Total Sales (GWh)	**3,746**	**3,615**	**3,370**	**3,466**	**3,459**
LWAP ($/MWh)	131	109	103	68	64
LWAP/GWAP	1.04	1.01	1.01	1.03	1.03
Electricity customers (000)	267	266	263	260	257
Usage/customer (MWh)	6.8	6.8	7.0	6.9	6.9
Revenue/MWh sold ($)	230	222	222	208	204
Gas customers (000)	39	41	42	43	44
Volume/customer (GJ)	26.5	24.9	25.7	25.7	25.7
Telco customers (000)	96	104	110	115	119
Revenue/customer ($)	963	983	1,003	1,013	1,023

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