FORSYTH BARR

Power Points

February 2020 — HVDC Constraints Starting to Bite

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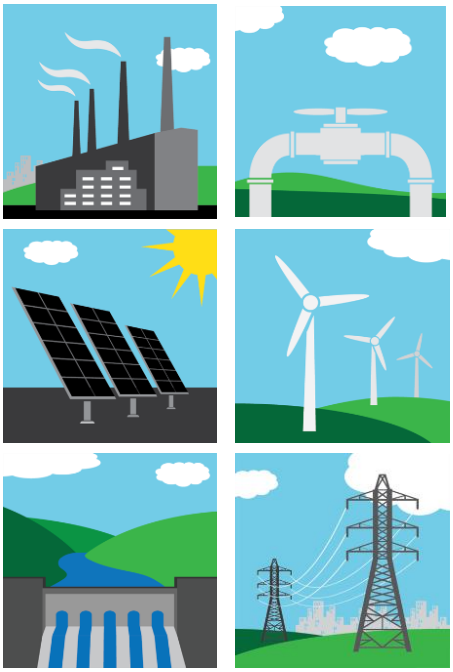


The gap between wholesale electricity prices at Otahuhu (OTA) and Benmore (BEN) was ~$14/MWh in January 2020, which is largely the same as January 2019, despite the stress on the wholesale market caused by the HVDC outages in late January. However, in early February we are starting to see the gap between North and South Island wholesale prices increase with an average price differential between OTA and BEN of ~$41/MWh through the first three days of the month. With ongoing constraints planned through to April, we expect to see this market stress continue.

MEL the best performer in Dec 2019 quarter

Meridian Energy (MEL) had the best performance in the second quarter, increasing its electricity prices +3.4%, as well as increasing hydro generation volumes (+14.5% vs 2H18), and customer numbers (+4,000). This is another strong quarter for MEL following the strong hydro generation and commercial sales volumes in the September 2019 quarter.

1H20 reporting season is upon us

Unsurprisingly, following its strong quarter performance we expect MEL will be the only of the big five generator/retailers to lift earnings, with a forecast EBITDAF of $466m, up +20% compared to 1H19. Contact Energy (CEN) is the first cab off the rank, reporting on Monday 10 February. We expect CEN to report a weaker first half than last year with a forecast EBITDAF of $220m. Despite strong wholesale electricity prices and above average hydro storage volumes, we forecast total sector EBITDAF to be down -6% compared to 1H19, to $1.11b.

Calling RIO's bluff

We have reiterated our view that Rio Tinto (RIO) is unlikely to close the NZAS aluminium smelter, and are calling RIO's bluff that without more favourable terms the smelter will be shut down. We believe closure of the smelter makes little sense in the context of both carbon emissions and climate change, despite its high point on the cost curve. However, we are less sure as to whether RIO will continue to retain its 79% shareholding in NZAS, with a potential sale far more likely than a closure. Further details can be found in our report *Calling RIO's Bluff, 3 February 2020.*

Figure 1. Summary company valuation metric

		Target	Target		FY20			EBITDAF
Ticker	Price	Price	Return	Rating	EV/EBITDA	PE	Gr Yld*	NZ$m
CEN	$7.16	$7.85	15.1%	OUTPERFORM	13.7	22.1	6.6%	444
GNE	$3.14	$3.15	5.9%	OUTPERFORM	15.2	32.1	7.5%	362
MCY	$5.06	$4.60	-5.8%	NEUTRAL	15.6	28.3	4.3%	511
MEL	$5.15	$4.40	-10.4%	NEUTRAL	16.9	25.7	5.2%	863
TLT	$3.40	$3.70	8.8%	OUTPERFORM	14.5	18.5	0.0%	137
TPW	$7.44	$7.75	8.7%	NEUTRAL	14.6	24.3	6.3%	203

Source: Eikon, Forsyth Barr analysis *Includes any forecast special dividend

Investment View

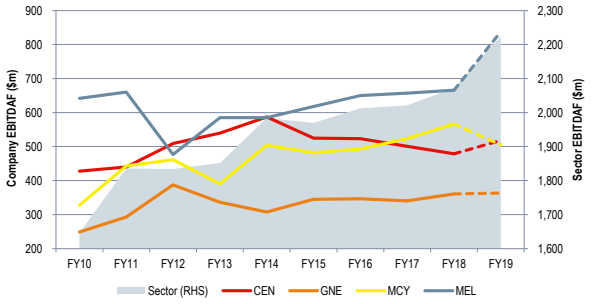
We continue to like the long-term outlook for the sector and maintain our view than NZAS will not be closing. Our preferred stocks are CEN, GNE & Tilt Renewables (TLT) (OUTPERFORM), whilst the other stocks, MCY, MEL & Trustpower (TPW) are NEUTRAL.

Power points — February 2020

The 1H20 reporting season is upon us

The 1H20 reporting season is upon us, with CEN the first to report on Monday 10 February. The only electricity generator/retailer we expect will lift earnings in 1H20 is Meridian Energy (MEL), with sector EBITDAF slipping -6% to $1.11b, only the second time in the past decade sector earnings have fallen. Whilst 1H20 wholesale electricity prices have been above average and hydro generation reasonable, 1H20 is lapping a very strong period. In addition, Mercury (MCY) and CEN have sold assets contributing ~$31m of the fall in earnings, Genesis Energy's (GNE) generation fuel costs have increased +$21m, and CEN and MEL are paying $10m to Transpower to start lower South Island transmission work.

Figure 2. Historical company EBITDAFs



Source: Company reports, Forsyth Barr analysis

Figure 3. Summary 1H19 forecasts

Company	CEN	GNE	MCY	MEL
Reporting date	10 Feb	21 Feb	25 Feb	26 Feb
1H20 EBITDAF forecast ($m)	220	167	254	466
1H19 Actual ($m)	291	196	302	389
% Chg	-24%	-15%	-16%	20%
1H20 EPS Forecast (cps)	8.9	1.9	6.3	7.5
1H19 Actual (cps)	14.9	4.3	8.4	5.6
% Chg	-41%	-54%	-25%	33%
1H20 Div forecast (incl Special) (cps)	16.0	8.6	6.3	8.3
1H19 Actual (incl Special) (cps)	16.0	8.5	6.2	8.1
% Chg	0.0%	1.8%	1.6%	2.5%

Source: Company reports, Forsyth Barr Analysis

Figure 4. Summary 1H20 EBITDAF forecast change vs pcp and commentary

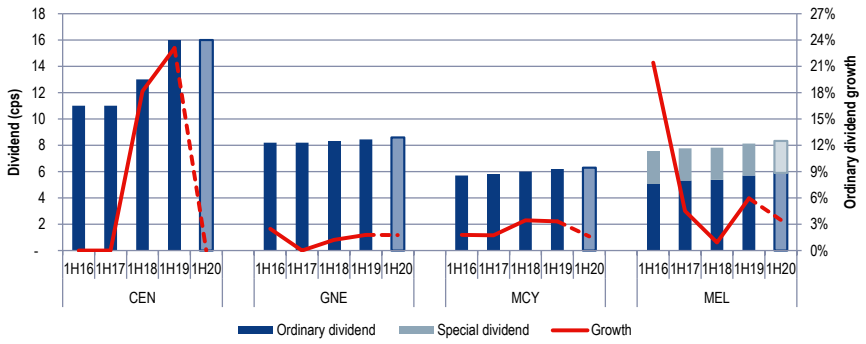
	EBITDAF $m	Chg %	Key drivers
CEN	(71)	-24%	Sale of LPG and Ahuroa gas storage, tougher hydro conditions in 1Q20 and gas constraints all combined to lower earnings
GNE	(29)	-15%	A planned Kupe outage and big increases in thermal generation fuel costs are the main driver of lower earnings
MCY	(48)	-16%	Sale of Metrix business in 2H19 and lapping a very strong hydro period has lowered EBITDAF
MEL	77	20%	Another stunning period for MEL, with above average hydro generation and a strong retail performance
Sector	**(71)**	**-6%**	Only the second year in the past decade with negative sector earnings growth, due mainly to asset sales and strong pcp results

Source: Forsyth Barr analysis

Modest dividend growth expected despite weaker earnings

We are forecasting sector dividends to lift +1.6%, with MEL providing the biggest increase as it is the only generator/retailer expected to deliver earnings growth. Whilst sector earnings have tracked backwards in 1H20, we do not expect anything other than the businesses at least maintaining their dividend. There is sector confidence in a stronger 2H20. MEL had been planning to update the market on its capital management programme, but given the NZAS uncertainty, we expect it to delay that update.

Figure 5. Historic first half dividends



Source: Company reports, Forsyth Barr analysis

Possible market upgrades/downgrades post-result — sector FY20 outlook

There is reasonable divergence of current FY20 EBITDAF forecasts amongst analysts, with GNE being the exception. Company earnings revisions could be material, with MEL (up) and CEN (down) the two with the greatest potential change.

Figure 6. FY20EBITDAF market forecasts

	CEN $m	GNE $m	MCY $m	MEL $m
Forsyth Barr	**444**	**362**	**511**	**863**
Market low	444	362	484	766
Consensus (median)	**472**	**369**	**511**	**807**
Market high	505	377	523	863
Range ($m)	61	15	39	97
Range (% vs. consensus)	13%	4%	8%	12%
Guidance	480*	360–380	510	n/a

Source: Forsyth Barr analysis
*CEN has indicated mean hydrology EBITDAF should be ~$480m. It also indicated at its ASM that hydrology in 1Q20 was well below average.

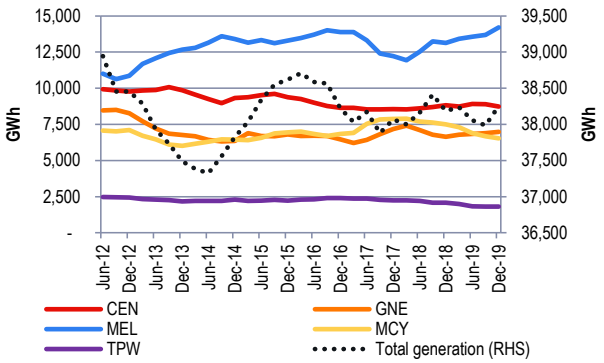
December 2019 quarterly statistics wrap

MEL was clearly the strongest performer in 2Q20. It was the only large generator to lift renewable generation volumes and the only retailer to add customer numbers, (although GNE did also grow its retail sales +3%). It also had the biggest growth in electricity prices (up +3.4%).

Key points from the December 2019 quarterly reports:

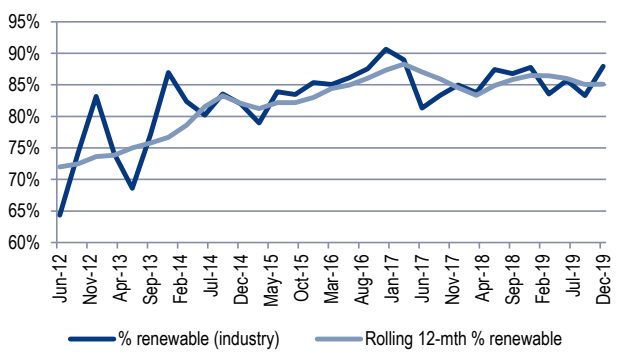
- Both BEN and OTA short-dated prices have continued to react to the rain event in November, down -6% and -4% over December 2019 respectively. Short-dated BEN ended December 2019 at $97/MWh.
- Total hydro generation was up +3% vs. pcp — courtesy of MEL. Its hydro generation increased +14% following the heavy rain in late November, early December. In contrast, CEN's hydro generation fell -9% vs. pcp, despite the heavy rain.
- MCY geothermal outages and positive demand growth (+3%) meant NZ generation was 88% renewable, the same as the pcp.
- Gas sales volumes fell -2% due to GNE, the largest gas retailer, selling -5% less gas.
- The large retailers as a group lost -7,000 electricity connections and -1,000 gas connections in 2Q20, highlighting the continued challenges for the large players. MEL was the only retailer to add electricity connections, which were up +4,000.
- Retail price growth was mixed, with only MEL and MCY successfully lifting prices. This is a modest disappointment given wholesale electricity price strength and considering all retailers lifted average prices in 1Q20.
- The sector LWAP/GWAP ratio was flat on the pcp, with GNE the only generator/retailer with a ratio below 1.00.

Figure 7. Rolling 12-month generation



Source: Company reports, Forsyth Barr analysis

Figure 8. Percentage of renewable generation



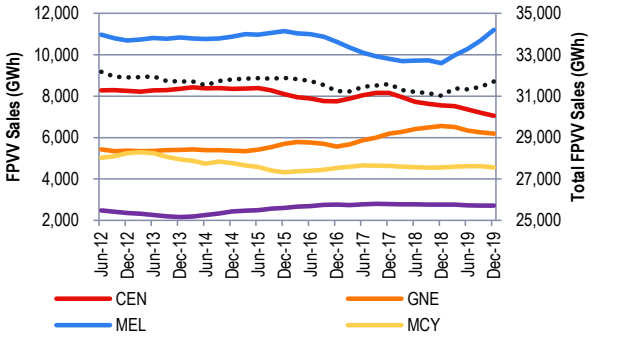
Source: Company reports, Forsyth Barr analysis

Figure 9. Quarterly statistics summary

	Quarter ending Dec-18						Quarter ending Dec-19						% Change					
	CEN	GNE	MEL	MCY	TPW *	Total	CEN	GNE	MEL	MCY	TPW *	Total	CEN	GNE	MEL	MCY	TPW *	Total
Generation (GWh)																		
Hydro	1,163	711	2,774	1,002	490	**6,140**	1,064	693	3,176	928	482	**6,343**	-9%	-3%	14%	-7%	-2%	**3%**
Geothermal	793			721		**1,514**	795			648		**1,443**	0%			-10%		**-5%**
Wind		5	289		150	**444**		7	401		183	**591**		40%	39%		22%	**33%**
Total renewable	*1,956*	*716*	*3,063*	*1,723*	*640*	***8,098***	*1,859*	*700*	*3,577*	*1,576*	*665*	***8,377***	*-5%*	*-2%*	*17%*	*-9%*	*4%*	***3%***
Thermal	221	906				**1,127**	156	994				**1,150**	-29%	10%				**2%**
TOTAL generation	**2,177**	**1,622**	**3,063**	**1,723**	**640**	**9,225**	**2,015**	**1,694**	**3,577**	**1,576**	**665**	**9,527**	**-7%**	**4%**	**17%**	**-9%**	**4%**	**3%**
% Renewable	90%	44%	100%	100%	100%	88%	92%	41%	100%	100%	100%	88%	*3%*	*-6%*	*0%*	*0%*	*0%*	***0%***
GWAP ($/MWh)	**190.1**	**212.9**	**176.3**	**204.2**	**199.7**	**192.7**	**93.7**	**108.2**	**87.4**	**103.5**	**103.0**	**96.0**	**-51%**	**-49%**	**-50%**	**-49%**	**-48%**	**-50%**
Electricity sales (GWh)																		
Mass market	790	925	926	748	414	**3,803**	802	948	1,111	663	421	**3,945**	2%	2%	20%	-11%	2%	**4%**
Commercial	782	489	526	319	227	**2,343**	599	507	738	339	223	**2,406**	-23%	4%	40%	6%	-2%	**3%**
TOTAL FPVV sales	**1,572**	**1,414**	**1,452**	**1,067**	**641**	**6,146**	**1,401**	**1,455**	**1,849**	**1,002**	**644**	**6,351**	**-11%**	**3%**	**27%**	**-6%**	**0%**	**3%**
Gas sales (PJ)	0.66	1.82			0.19	**2.67**	0.69	1.73			0.20	**2.62**	5%	-5%			1%	**-2%**
LPG sales (000/t)	12.0	8.9				**20.8**	-	10.4				**10.4**	-100%	17%				**-50%**
Customers added (000)																		
Electricity	(1)	(0)	3	(5)	(1)	**(4)**	(1)	(5)	4	(5)	(1)	**(7)**						
Gas	-	1		-	-	**1**	(1)	(1)		-	-	**(1)**						
LPG	(91)	2				**(89)**	-	1				**1**						
Customer numbers (000)																		
Electricity	406	502	297	381	269	**1,854**	410	497	314	356	265	**1,842**	1%	-1%	6%	-7%	-1%	**-1%**
Gas	65	107		48	38	**258**	66	106		47	40	**258**	1%	-1%		-2%	5%	**0%**
LPG	-	66				**66**	-	71				**71**		8%				**8%**
MM volume/customer																		
Electricity (MWh)	1.9	1.8	3.1	2.0	1.5	**2.0**	2.0	1.9	3.6	1.8	1.6	**2.1**	0%	3%	14%	-5%	3%	**4%**
Gas (GJ)	10.2	17.1			5.1	**10.4**	10.5	16.3			4.9	**10.1**	3%	-4%			-4%	**-3%**
LPG (kg)	264.3	136.3				**188.9**		146.1				**146.1**	-100%	7%				**-23%**
FPVV prices ($/MWh)	248.4	205.0	97.5	110.9			246.4	204.9	100.8	112.6			-0.8%	-0.1%	3.4%	1.6%		
LWAP ($/MWh)	**199.5**	**210.4**	**187.8**	**211.5**	**207.2**	**202.1**	**99.4**	**104.2**	**93.1**	**109.5**	**105.1**	**100.8**	**-50%**	**-50%**	**-50%**	**-48%**	**-49%**	**-50%**
LWAP/GWAP	**1.049**	**0.988**	**1.065**	**1.036**	**1.037**	**1.049**	**1.061**	**0.963**	**1.066**	**1.058**	**1.020**	**1.050**	**1%**	**-3%**	**0%**	**2%**	**-2%**	**0%**

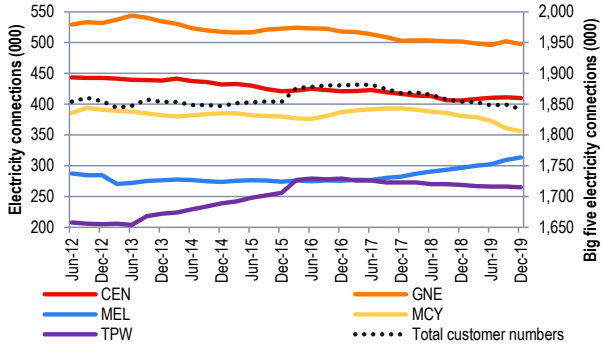
Source: Company reports, Forsyth Barr analysis

Figure 10. Fixed price variable sales volumes



Source: Company reports, Forsyth Barr analysis

Figure 11. Electricity connections

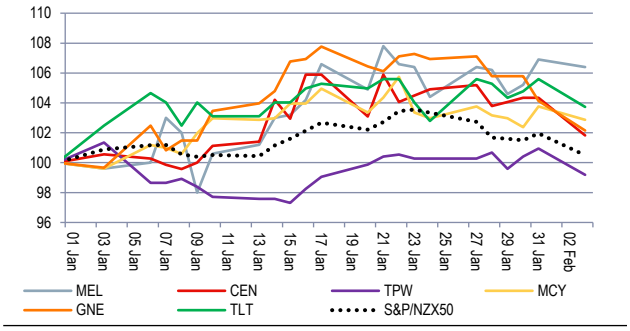


Source: Company reports, Forsyth Barr analysis

Share market performance: Jan 2020

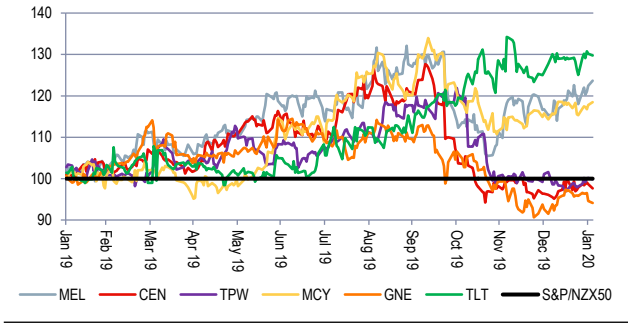
In January, only TPW fell, down -0.8% from 31 December to 3 February. All of the other electricity stocks both increased and beat the NZX 50 which was up +0.5% over the same period. MEL was the largest gainer up +6.4% due to a combination of a strong December generation performance and it continuing to recover from the news of the NZAS strategic review announced late 2019. TLT's share price also performed well in January up +3.7%. CEN, GNE and MCY increased +1.8%, +2.1%, and +2.9% respectively.

Figure 12. Stock performance vs. S&P/NZX50C



Source: Thomson Reuters, Forsyth Barr analysis

Figure 13. 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 and maintain our view than NZAS will not be closing. Our preferred stocks are CEN, GNE & TLT (OUTPERFORM), whilst the other stocks, MCY, MEL & TPW are NEUTRAL.

Figure 14. 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	$7.16	$7.85	15.1%	OUTPERFORM	5,123	13.7	12.5	16.4	14.8
Genesis Energy (excl Kupe)	GNE	$3.14	$3.15	5.9%	OUTPERFORM	2,840	15.2	13.1	18.9	15.7
Mercury	MCY	$5.06	$4.60	-5.8%	NEUTRAL	6,879	15.6	15.3	18.3	17.8
Meridian Energy	MEL	$5.15	$4.40	-10.4%	NEUTRAL	13,199	16.9	18.1	18.2	19.6
Trustpower	TPW	$7.44	$7.75	8.7%	NEUTRAL	2,329	14.6	14.2	16.6	16.1
Sector average							**15.2**	**14.5**	**17.7**	**16.7**
Tilt Renewables	TLT	$3.40	$3.70	8.8%	OUTPERFORM	1,596	14.5	17.7	15.7	19.4
Genesis Energy (incl Kupe)	GNE	$3.14	$3.15	5.9%	OUTPERFORM	3,232	12.2	10.8	14.4	12.5

Source: Forsyth Barr analysis

Figure 15. 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	36.4	30.3	22.1	19.7	5.4%	5.5%	6.6%	7.0%	4.4%	5.4%
Genesis Energy (excl Kupe)	178.1	58.6	32.1	21.8	3.6%	4.2%	4.8%	5.7%	3.5%	4.9%
Mercury	44.4	38.0	28.3	25.3	3.1%	3.2%	4.3%	4.5%	1.5%	1.3%
Meridian Energy	39.6	44.4	25.7	28.0	4.2%	4.3%	5.2%	5.3%	3.9%	3.8%
Trustpower	27.3	25.3	24.3	22.7	4.6%	4.6%	6.3%	6.3%	2.7%	4.4%
Sector average	**49.9**	**37.6**	**26.3**	**23.3**	**4.2%**	**4.3%**	**5.5%**	**5.8%**	**3.2%**	**4.0%**
Tilt Renewables	3.3	13.4	18.5	23.7	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Genesis Energy (incl Kupe)	79.1	39.7	20.8	16.2	5.5%	5.6%	7.5%	7.7%	5.8%	6.9%

Source: Forsyth Barr analysis
Note: In calculating the GNE excl Kupe multiples, the value of Kupe is assumed to be $410m. Debt and interest has been apportioned 10% to Kupe and 90% to Energy (in line with EV proportion) and dividend in line with adjusted NPAT.

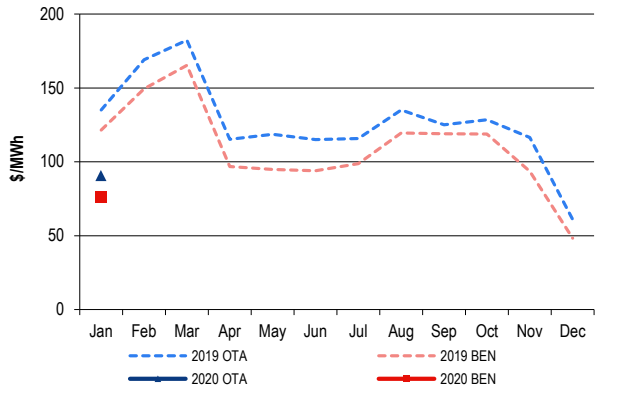
Electricity market: January 2020

Spot wholesale electricity prices and ASX futures

Electricity prices begin to reflect outages — but only after January

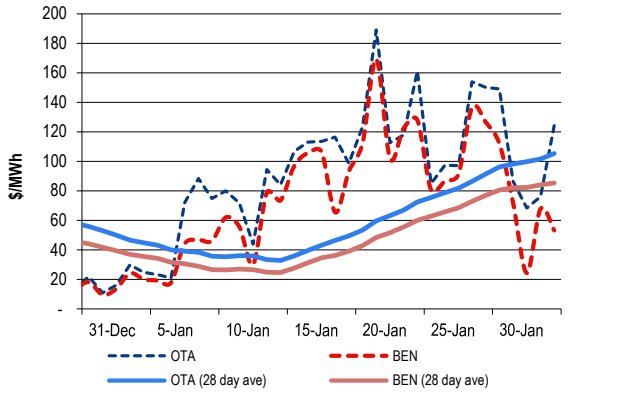
- Otahuhu (OTA) average wholesale electricity price was $91/MWh for the month, down -33% on the pcp. Benmore (BEN) wholesale prices were also down, averaging $76/MWh for the month, which is -38% below the pcp. These low prices are largely due to the high hydrology levels experienced early in January following the November/December 2019 rain event.
- Despite the HVDC outages from 18–31 January, the gap between North Island (OTA) and South Island (BEN) wholesale electricity prices were the same in January 2020 as they were in January 2019 at ~$14/MWh. However, on 1 February there was a full outage of the HVDC link which saw the gap between OTA and BEN reach $44/MWh. The price split has continued this week with the heavy rainfall event in the lower South Island.

Figure 16. Average monthly wholesale electricity prices



Source: NZX Energy, Forsyth Barr analysis

Figure 17. Average daily wholesale electricity prices

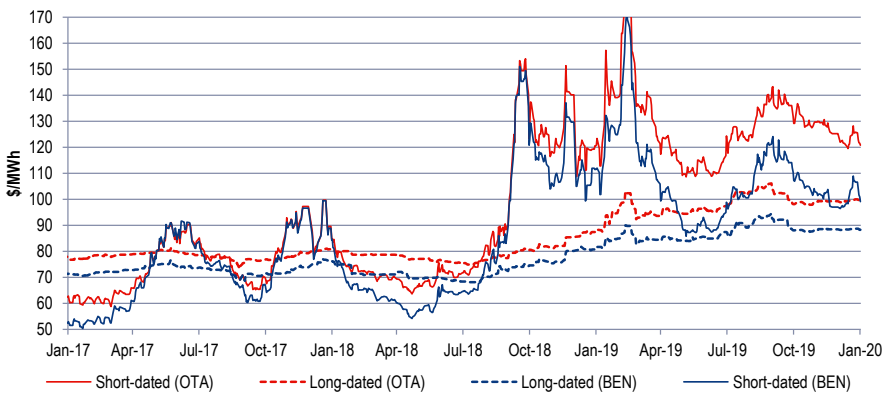


Source: NZX Energy, Forsyth Barr analysis

ASX futures stable in January 2020

- Short-dated OTA futures experienced the largest percentage change over January 2020, down -3.6% from $125/MWh at the end of December, to $121/MWh as at 31 January. Short-dated BEN futures peaked at $108/MWh on 21 January, but came down again to end the month at $99/MWh.
- Long-dated OTA and BEN futures were largely unchanged throughout the month, and finished at $100/MWh and $88/MWh respectively.

Figure 18. ASX futures prices (last three years)



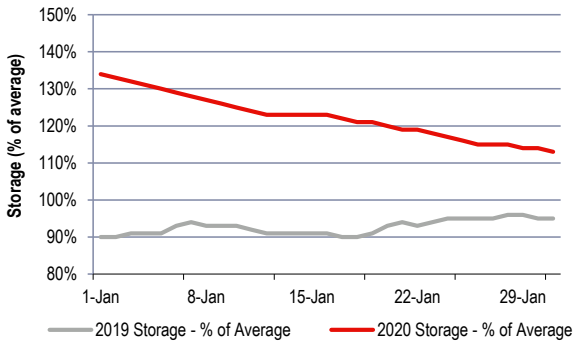
Source: Electricity Authority, Forsyth Barr analysis

Hydro storage volumes

Hydro storage levels remain above average

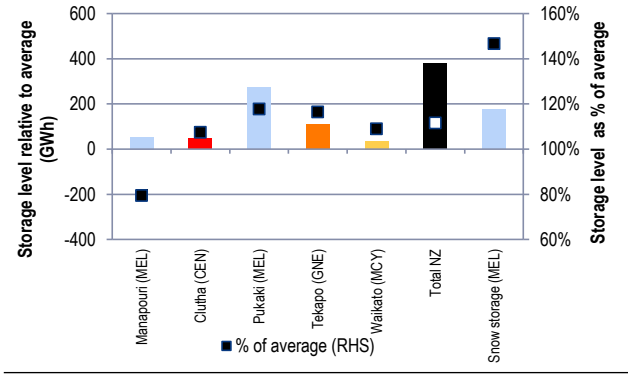
- Hydro storage levels have continued to decrease from the highs experienced in late November/early December 2019; however, all lakes apart from Manapouri remain above average volume for this time of year. Energylink data has total NZ controlled hydro at 3,631GWh, which is +563GWh more than the same time last year. With Lake Pukaki (MEL), and Lake Tekapo (GNE) both still ~+17% above average hydro storage volumes.
- MEL's snow storage levels continue to be well above average (+47%), currently sitting at 553GWh, which is +412GWh more than the same time last year.

Figure 19. Average lake storage levels



Source: NZX Energy, Forsyth Barr analysis Note: Up until 14 Jan is a FB estimate

Figure 20. Key storage levels relative to average (as at 30 January)



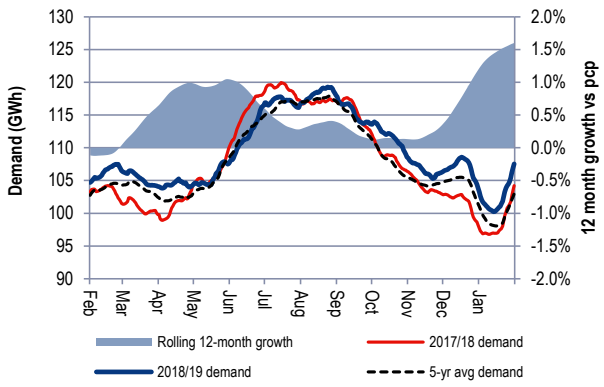
Source: EnergyLink, MEL, Forsyth Barr analysis

Demand and generation analysis

Strong demand growth continues

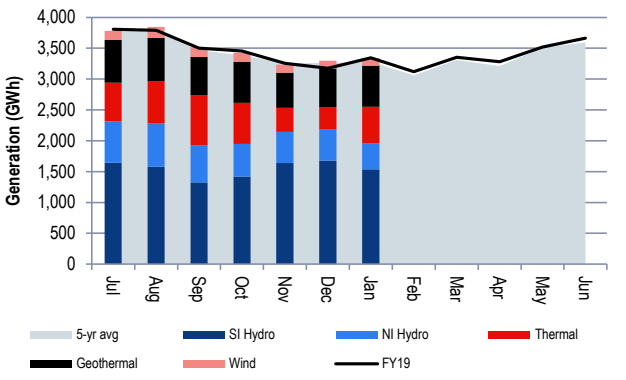
- Electricity demand for January 2020 was 105.6 GWh/day, which is largely unchanged from December 2019 (-0.3%), but up +2.5% on the pcp. Demand excluding Tiwai told a similar story, up +3.5% from January 2019 to average 91.4 GWh/day. NZAS demand was unchanged from last month at 14.2 GWh/day.
- Total January 2020 generation was 3,340GWh, a +1.3% increase from December 2019 but a -0.2% decrease from the pcp. Despite the planned outages of the HVDC, the percentage of generation by technology was largely the same as January last year, although thermal generation was up +88% mom following a weak December 2019.

Figure 21. Rolling 28-day average demand & rolling 12-mth growth



Source: Electricity Authority, Forsyth Barr analysis

Figure 22. NZ generation (by technology) – fiscal year to June



Source: EnergyLink, Forsyth Barr analysis

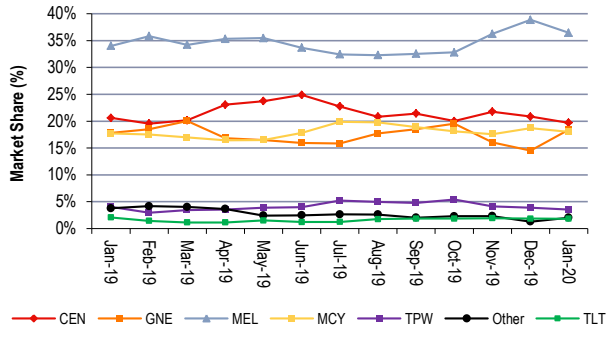
Generation market share — TPW continues to decline

- TPW had its fourth consecutive month of generation market share losses, down -0.3% to reach ~4%, its lowest since April 2019. CEN, MEL and MCY also lost market share over the month, down -1%, -2% and -1% respectively. MEL's loss was expected though as the hydro generation volumes in December 2019 return to more normal levels. GNE had the best month, gaining +4% to reach 18% and recouping all of its December 2019 market share losses and more.

CEN — Hydro generation falls

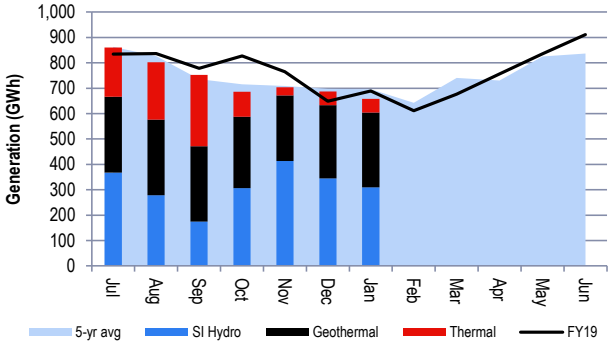
- Total CEN generation for January was 658GWh, down -5% from the prior month. This decrease was largely due to both the thermal TCC unit producing no electricity (down from 23GWh in December), and the Clutha hydro generation down -10% or -35GWh from December. However, the Stratford Peaker increased +21GWh following two months of almost no generation.

Figure 23. Monthly generation market share



Source: EnergyLink, Forsyth Barr analysis

Figure 24. CEN monthly generation mix (current, pcp and 5-yr avg.)



Source: EnergyLink, Forsyth Barr analysis

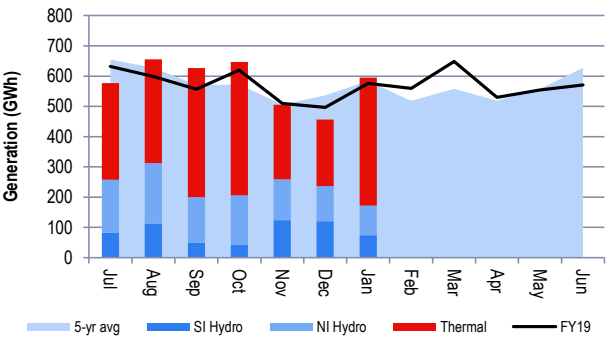
GNE — only generator to increase generation in January

- GNE January 2020 generation was up +28% from the prior month to 614GWh. Both North Island (Tongariro) and South Island (Tekapo) hydro generation decreased materially, down -24% and -29% respectively, as hydro levels returned to normal. However, the Huntly Rankine unit increased monthly generation from 8GWh to 188GWh helping to increase GNE's total generation.

MCY — Kawerau geothermal generation back to normal

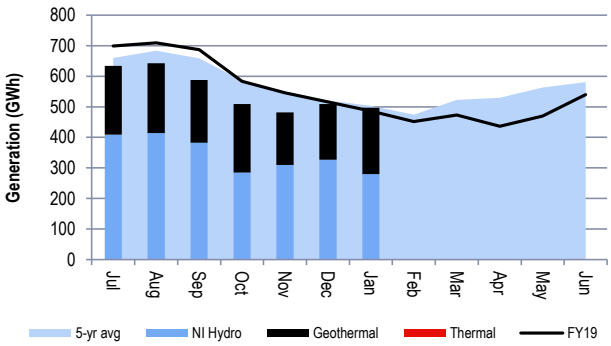
- MCY's generation of 497GWh for January 2020 was a -2% decrease from December, but a +2% increase on the pcp. Similar to other generators, it was MCY's hydro generation which fell, with its Waikato hydro down -14% to 280GWh. This was partially offset by an increase in generation from MCY's Kawerau geothermal plant, up 39GWh from a weak December 2019. This increase returns Kawerau to a level of generation more in line with the average.

Figure 25. GNE monthly generation mix (current, pcp and 5-yr avg.)



Source: EnergyLink, Forsyth Barr analysis

Figure 26. MCY monthly generation mix (current, pcp and 5-yr avg.)



Source: EnergyLink, Forsyth Barr analysis

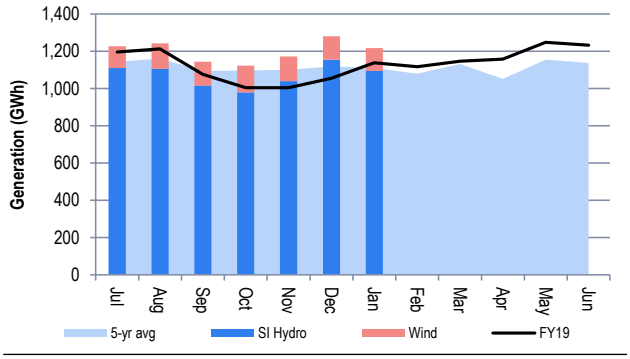
MEL — Hydro storage volumes remain elevated

- MEL generation in January was down -5% mom, as both its hydro and wind generation fell, down -5% and -2% respectively. MEL's Waitaki hydro was largely unchanged from the prior month, but Manapouri hydro generation decreased -11% mom (although Manapouri hydro generation was up +34% on pcp). MEL continues to enjoy hydro storage volumes above average, as it has for the last 12 months, currently sitting at 2,051GWh (111%) of average.

TPW — North Island hydro generation declines sharply

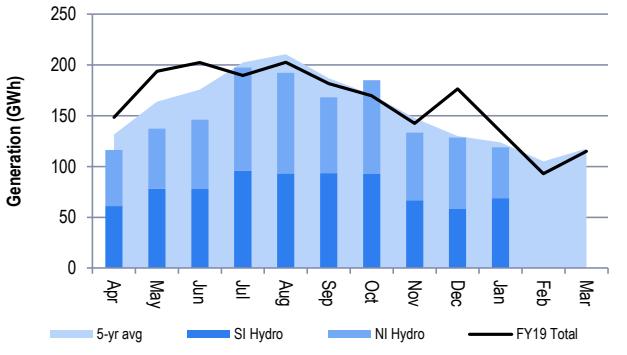
- We estimate that TPW generation for January 2020 was 119GWh, down -8% mom and -12% on the pcp. South Island hydro increased +10GWh but this was offset by a -20GWh decrease in generation from TPW's North Island hydro plants. The South Island hydro generation increase comes as Waipori hydro plant comes back online following a two month decrease in generation due to an outage that began in November 2019.

Figure 27. MEL monthly generation mix (current, pcp and 5-yr avg.)



Source: EnergyLink, Forsyth Barr analysis

Figure 28. TPW monthly generation mix (current, pcp and 5-yr avg.)



Source: EnergyLink, EA, Forsyth Barr analysis

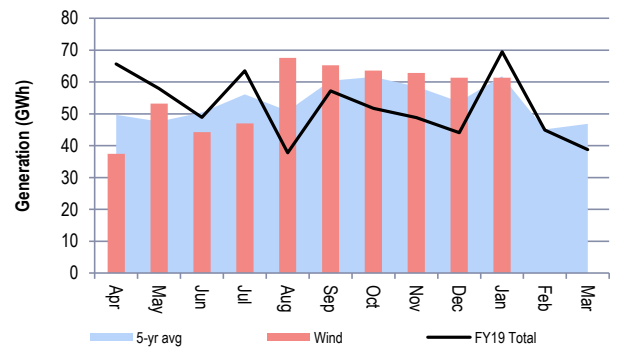
TLT — generation levels remain stable

- Our estimate for TLT generation in January 2020 was 61GWh, unchanged from December 2019. This makes it six months of largely unchanged production as TLT continues to experience above average wind generation.

Generation prices — all big five generator/retailers increase GWAP in January

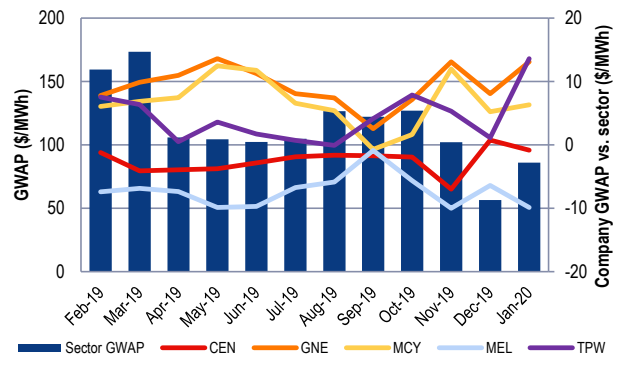
- The average generation weighted average price (GWAP) was $86/MWh. This is a +52% increase from December 2019 following the low prices that came as a result of the heavy rainfall in late November. MEL again had the lowest average GWAP, reporting $76/MWh for the month, whilst TPW had the highest GWAP for January at $100/MWh.

Figure 29. TLT monthly generation mix (current, pcp and 5-yr avg.)



Source: EnergyLink, EA, Forsyth Barr analysis

Figure 30. Average generation weighted average price (GWAP)



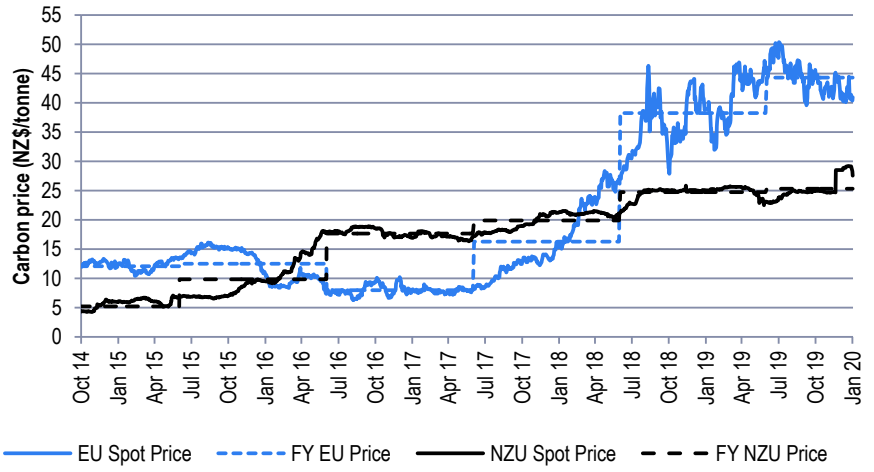
Source: EnergyLink, Forsyth Barr analysis

Carbon prices

NZ carbon prices — Unit prices remain high following increase price cap

- NZ carbon unit prices ended January at $27.55/unit after peaking at $29.2/unit on 20 and 21 January. Prices continue to trade around the $28/unit mark following the government's announcement in December that it would increase the unit price cap.
- EU carbon units were trading at €23.9/unit (NZ$41/unit) at the end of January, down from €24.6/unit at the end of December 2019. The average EU carbon unit price also decreased, down -3.9% from NZ$43/unit in December to NZ$41.3/unit in January.

Figure 31. Price of carbon (NZ$/tonne)



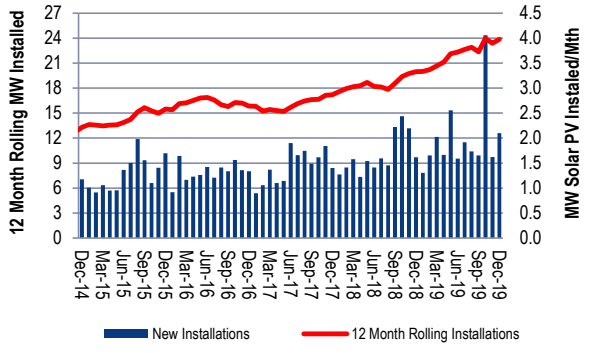
Source: Bloomberg, Forsyth Barr analysis

Solar PV installations

Solar installation growth trending downward

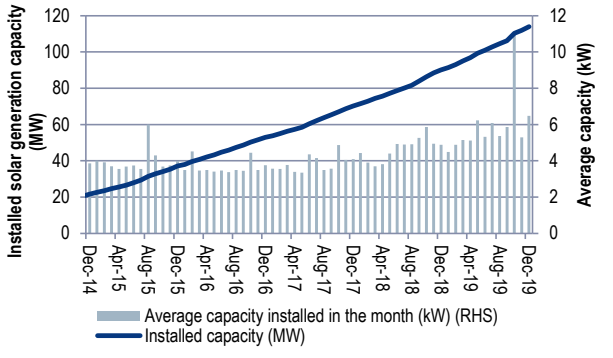
- There were 256 new solar installations in December 2019, down -27% on the pcp, making it six months in a row of negative pcp growth. Installed capacity over the month was 2.1MW which brings total installed capacity to 114MW with 26,054 connections.

Figure 32. Solar PV capacity installed



Source: Electricity Authority, Forsyth Barr analysis

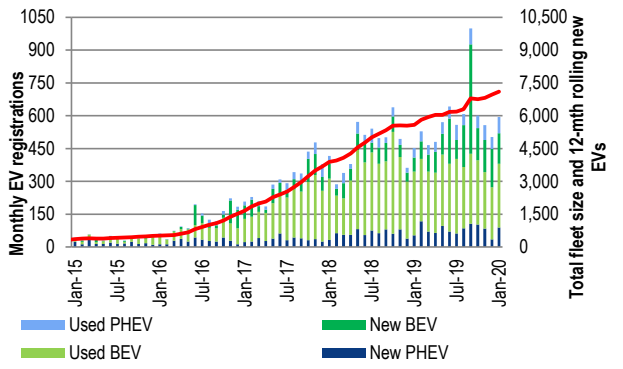
Figure 33. Average size of system and total capacity installed



Source: Electricity Authority, Forsyth Barr analysis

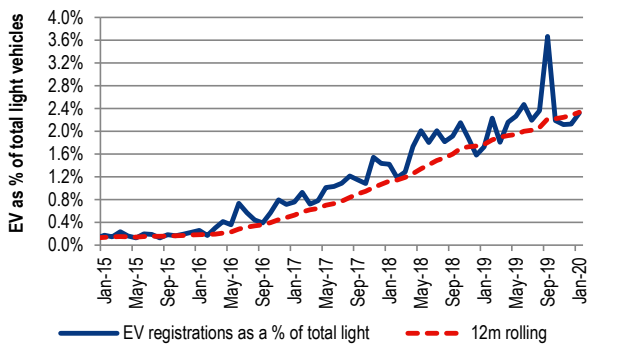
Electric vehicle (EV) registrations

Figure 34. EV registrations



Source: Ministry of Transport, Forsyth Barr analysis

Figure 35. EV registrations as % of total light vehicle registrations

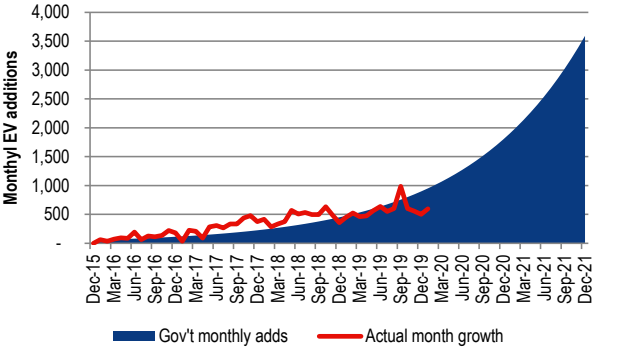


Source: Ministry of Transport, Forsyth Barr analysis

EV registrations up on last month

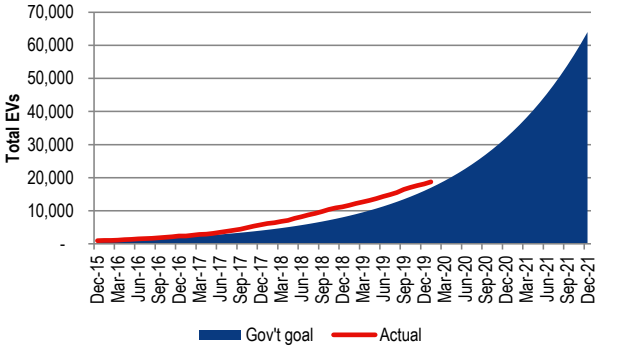
- In January 2020 there were 594 EVs registered, of which 228 were new. This is a slight uptick from last month's 503 registrations. Total EVs registered is now ~18,700, as the surplus gap between current registrations and government planned registrations continues to shrink.
- EVs made up 1.8% of new light vehicles registered and 2.9% of all used light vehicles. The rolling 12-month percentage of EVs per light vehicle registration continues to increase, now sitting at 2.3%.

Figure 36. Monthly EV registrations vs. government target



Source: Ministry of Transport, Forsyth Barr analysis

Figure 37. Total EVs registered vs. government target



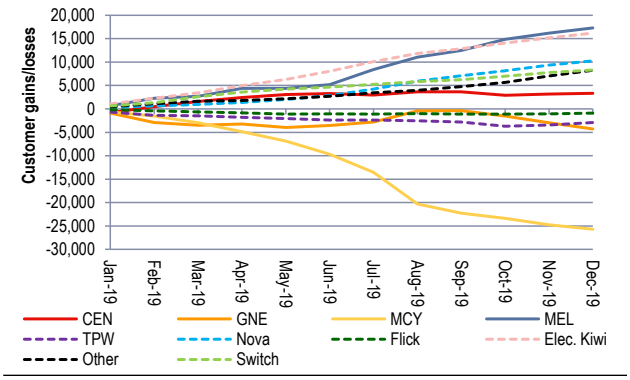
Source: Ministry of Transport, Forsyth Barr analysis

Retail electricity customers

Another month of customer losses for MCY.

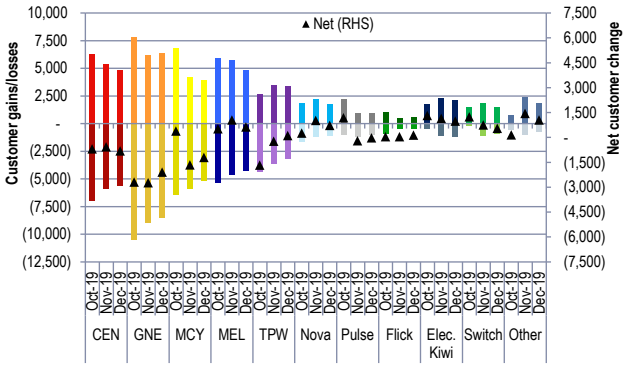
- MCY lost -978 connections over December 2019, making it 23 consecutive months of connection losses for the generator/retailer. GNE was the only other member of the big five to lose connections, with -1,306 lost over the month. CEN, MEL and TPW gained +146, +1,117 and +544 connections respectively.
- In December 2019 MEL gained the most customers through switching (which excludes market growth), gaining +626 customers over the month.

Figure 38. Cumulative 12-mth electricity customer gains/losses



Source: Forsyth Barr analysis

Figure 39. Customer switches (excludes market growth)

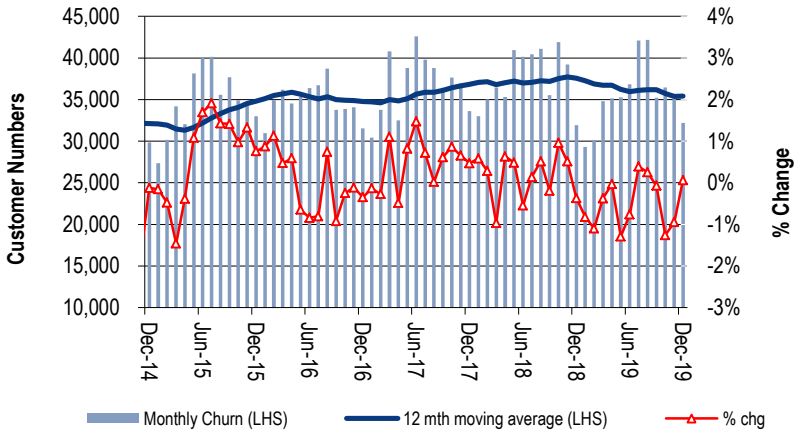


Source: Forsyth Barr analysis

Connection churn

- In December 2019 there were ~32,200 customer switches, which is largely in line with December 2018 (+1%). December and January are generally months with less customer churn, and December 2019 was no different, with the lowest number of switches since February 2019.

Figure 40. Electricity connection churn



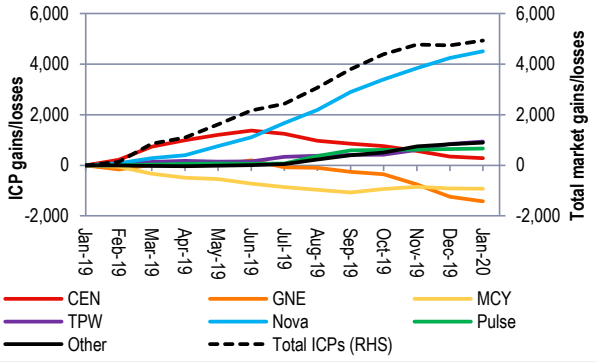
Source: Electricity Authority, Forsyth Barr analysis

Retail gas customers

CEN continues its run of losses

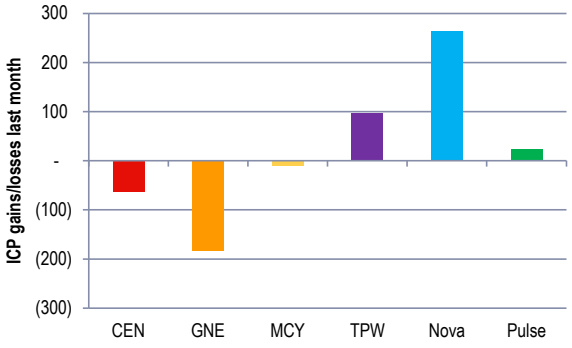
- CEN lost -63 gas connections in January 2020, making it six consecutive months of connection losses. GNE and MCY lost -184 and -11 connections respectively, whilst TPW was the only of the big five generator/retailers to add connections, gaining +97 over the month.
- Since January 2019 only GNE and MCY have lost connections, with -1,427 and -930 less respectively. CEN and TPW both increased customer numbers over the year (+284 and +936 respectively), however, Nova has gained the most, with +4,513 new connections over the 12 months.

Figure 41. Gas connection gains/losses over the past 12-months



Source: Gas Industry Council, Forsyth Barr analysis

Figure 42. Gas connection gains/losses in January 2020



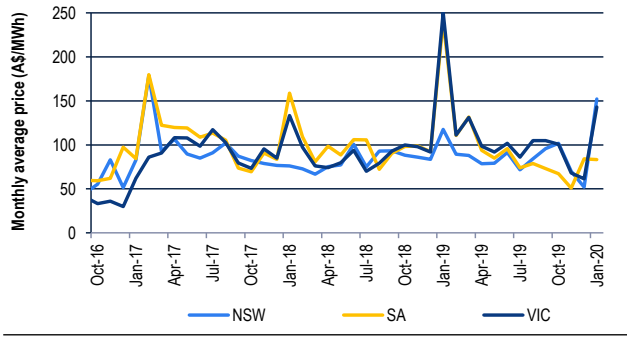
Source: Gas Industry Council, Forsyth Barr analysis

Australian electricity market

Futures prices decline

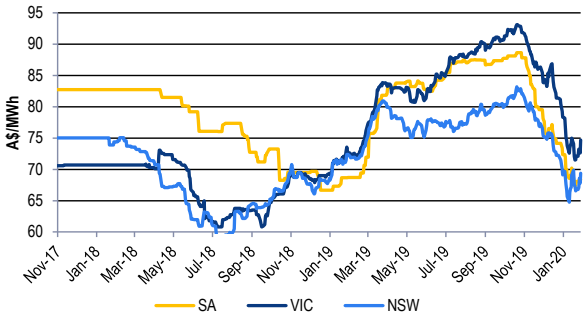
- NSW average wholesale electricity prices were A$152/MWh in January 2020, up +30% on the pcp, and up from A$52/MWh in December 2019. However, SA and VIC average wholesale electricity prices were down -65% and -43% on the pcp respectively.
- FY21 futures were down across the board in January compared to the prior month. VIC had the largest percentage decline, down -8%, to end the month at A$74.7/MWh. NSW and SA futures ended the month at A$69.4/MWh and A$68.4/MWh respectively.

Figure 43. Australian wholesale electricity price (A$/MWh)



Source: AEMO, Forsyth Barr analysis

Figure 44. Australian FY21 futures prices (A$/MWh)

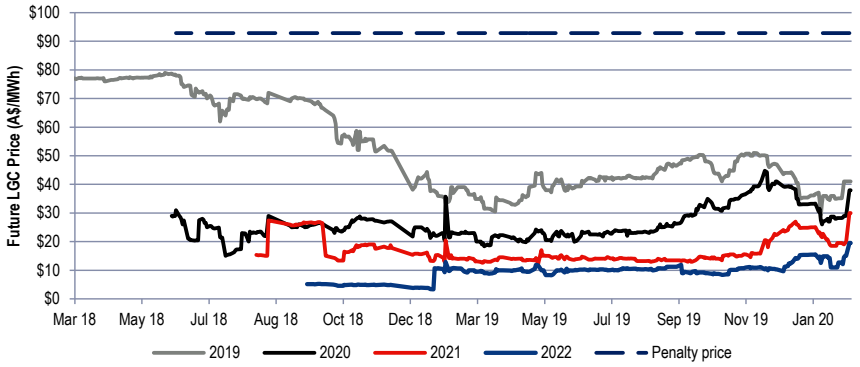


Source: Thomson Reuters, Forsyth Barr analysis

Renewable energy certificate (LGC) prices decline

- LGC prices were down in January, from A$40.5/MWh at the end of December 2019, to A$36/MWh as at 4 February. Prices dropped down to A$31.5/MWh in early January but regained most of this decline over the rest of January.
- Long-dated LGC prices rose +39.3% over the month to reach A$19.5/MWh as at 4 February. 2020 prices lifted +A$4.75/MWh or +20% over the same period.

Figure 45. Renewable energy certificate prices (LGCs)



Source: Bloomberg, Forsyth Barr analysis

Key statistics

New Zealand electricity market statistics

Figure 46. Key statistics – New Zealand

	Jan-19	Dec-19	Jan-20	% Chg pcp	% Chg mom
Average Monthly Prices					
OTA avg ($/MWh)	$ 135.1	$ 61.0	$ 90.5	-33.0%	48.3%
HAY avg ($/MWh)	$ 125.1	$ 52.2	$ 87.0	-30.4%	66.8%
BEN avg ($/MWh)	$ 121.5	$ 48.4	$ 75.8	-37.7%	56.5%
Avg Daily Generation (GWh)					
CEN	22.2	22.2	21.2	-4.5%	-4.3%
% of NZ Generation	20.6%	20.9%	19.7%	-4.3%	-5.5%
GNE	19.2	15.4	19.8	3.0%	28.3%
% of NZ Generation	17.8%	14.5%	18.4%	3.2%	26.6%
MCY	19.1	19.9	19.4	1.7%	-2.4%
% of NZ Generation	17.7%	18.7%	18.0%	1.9%	-3.7%
MEL	36.7	41.3	39.3	7.0%	-5.0%
% of NZ Generation	34.0%	38.8%	36.4%	7.1%	-6.2%
TPW	6.6	6.1	5.8	-11.7%	-5.1%
% of NZ Generation	6.1%	5.8%	5.4%	-11.5%	-6.3%
Daily Demand (GWh)					
Demand (excl Tiwai)	88.3	91.8	91.4	3.5%	-0.4%
NZAS demand	14.8	14.2	14.2	-3.9%	0.4%
Total NZ Demand	103.1	105.9	105.6	2.5%	-0.3%
Hydrology (% of average)					
Average hydro storage	93%	115%	132%	42.2%	14.3%
Month end hydro storage	95%	135%	113%	18.9%	-16.3%
ASX futures as at:	**31-Jan-19**	**31-Dec-19**	**31-Jan-20**		
Short-dated OTA	$ 120.9	$ 125.2	$ 120.8	-0.1%	-3.6%
Long-dated OTA	$ 88.3	$ 99.3	$ 99.5	12.7%	0.3%
Short-dated BEN	$ 111.5	$ 97.0	$ 99.1	-11.1%	2.1%
Long-dated BEN	$ 81.7	$ 88.5	$ 88.3	8.1%	-0.2%

Source: Forsyth Barr analysis

Australian electricity market statistics

Figure 47. Key statistics – Australia

	Jan-19	Dec-19	Jan-20	% Chg pcp	% Chg mom
Average Monthly Prices					
NSW avg (A$/MWh)	$ 117.5	$ 52.1	$ 152.3	29.7%	192.4%
SA avg (A$/MWh)	$ 241.0	$ 84.0	$ 83.2	-65.5%	-1.0%
VIC avg (A$/MWh)	$ 250.3	$ 61.4	$ 143.0	-42.9%	132.9%
Electricity Futures for FY21:	**31-Jan-19**	**30-Dec-19**	**31-Jan-20**		
NSW avg (A$/MWh)	$ 72.4	$ 71.6	$ 69.4	-4.1%	-3.1%
SA avg (A$/MWh)	$ 68.7	$ 74.2	$ 68.4	-0.4%	-7.8%
VIC avg (A$/MWh)	$ 73.1	$ 81.2	$ 74.7	2.2%	-8.0%
Spot and Future LGC Prices	**31-Jan-19**	**31-Dec-19**	**4-Feb-20**		
Spot (A$/MWh)	$ 33.5	$ 40.5	$ 36.0	7.5%	-11.1%
2019 (A$/MWh)	$ 35.8	$ 36.2	$ 41.0	14.7%	13.4%
2020 (A$/MWh)	$ 20.4	$ 33.3	$ 38.0	86.3%	14.3%
2021 (A$/MWh)	$ 12.9	$ 25.0	$ 30.0	133.5%	20.0%
2022 (A$/MWh)	$ 10.4	$ 14.0	$ 19.5	88.4%	39.3%

Source: Forsyth Barr analysis

Industry news — January 2020

Listed sector company news

Contact (CEN)

- CEN has announced its CEO succession plan, with Mike Fuge to start in the Chief Executive role on 24 February 2020. Outgoing CEO, Dennis Barnes, will remain on for five days following Fuge starting and then will leave the company on 28 February.

Meridian (MEL)

- MEL has appointed Rory Blundell as group strategy manager, replacing Gillian Blythe. Blundell comes from the Electricity Authority where he was the general manger of Market Performance, before that he was with CEN for 11 years.

Mercury (MCY)

- MCY has announced that Matthew Olde, former Metrix CEO, will be leaving the company on 6 March following 10 years with MCY. Lucie Drummond, who is the Risk Assurance Officer, has joined the executive team.

Political / regulatory news

- The Electricity Authority (EA) announced on 30 January that it would introduce a back-stop scheme that would force MEL, MCY, CEN and GNE to quote wholesale prices in a fixed band during market making periods. The companies would be subject to the price banding if they broke their ASX arrangements three times over a 90 day period. We interpret this move as the EA managing political expectation.
- A cabinet paper released this week highlights that the Climate Change Minister, James Shaw, intends to reduce the compensation that EITE firms receive. Shaw says that a reassessment of criteria and rates is needed. The Government has already introduced a phase-down of the percentage of credits companies received; however, Shaw believes these reductions are too slow.

Other industry news

- Foodstuffs has committed to building a 1.166MW grid-connected solar panel system on the roof of its new North Island offices. Foodstuffs estimate the 2,915 panel system will generate 1.5GWh a year and is to be installed in the September quarter.
- Fonterra is switching from coal to wood pellets in its 43MW boiler at its Te Awamutu manufacturing site. The move will reduce Fonterra's carbon emissions by 84,000 tonnes a year.
- OMV reported in late January that its Pohokura gas field's POW-2 had returned to production, however, at only half of its previous output. This reduced production led to an extension in the time frame of its planned January outages from 23 January to 27 January. There is still more production reductions planned in both February and March.
- Waitomo Group has announced that it will create a hydrogen refuelling network throughout New Zealand in a partnership with green hydrogen developer Hiringa Energy. The hydrogen refuelling stations will initially only be in four locations, but the aim is to add a further 20 stations across both islands.
- NZAS Chief Executive Mark Hamilton has said that NZAS should be eligible for a 'prudent discount' on its transmission pricing. The discount applies to companies who can prove it would be cheaper to build their own transmission rather than use shared infrastructure, and generally requires the company to have a business plan in place showing the feasibility of the power line construction. However, Hamilton has said they would not be allowed to build duplicate lines from Manapouri and has asked the Energy Minister, EA and Transpower to amend the rule.