Addendum to Investor Roadshow Presentation: NZAS Closure Discussion

November 2019
New Zealand Aluminium Smelter (NZAS) has announced strategic review
— 13% of national energy demand – impact of downsizing or closure will impact New Zealand energy market

The smelter has been a significant part of New Zealand’s electricity demand since it commenced operation in 1971.

When it restarted a 4th potline in December 2018, its consumption grew to 13% of New Zealand’s national electricity consumption.

In October 2019, a Strategic review was initiated to determine the ongoing viability of the operation.

Key points relevant to the review:
• Outcome to be announced by the end of Q1 2020.
• 12 month notice period for termination of Meridian’s electricity supply contract
• c. $260m in closure costs
Closure would release significant energy into lower South Island

Transmission constraints will limit energy travelling north to load centres where it could displace existing thermal generation.

**NEW ZEALAND ELECTRICITY DEMAND (TWH)**

- **Upper North Island**
- **Central North Island**
- **Lower North Island**
- **Upper South Island**
- **Lower South Island**

Transmission is a challenge for energy moving north to displace other generation.

Significant investment in transmission assets is required to enable transmission of South Island generation into the North Island. Transpower indicate up to $600m and a 5–8 year time frame to undertake the required upgrade work.

Energy constrained in Lower South Island will have most significant impacts on prices and generator revenue in the South Island.

Impacts on North Island generation and retail segments will be muted until transmission challenges are resolved.

Electrification of industrial heat, displacing existing coal use in the South Island may present as an attractive alternative to investment in transmission to enable greater supply to the North Island, from a government policy perspective.
Impact of NZAS exit on Genesis is expected to be limited
— Net short generation position in South Island benefits from lower prices whilst a flexible portfolio in the north provides opportunities to adjust in response to market changes

Genesis’ North Island generation and customers are insulated from the impacts of electricity constrained in the South Island.

Excess South Island electricity is likely to lead to increased spill from hydro lakes and South Island wholesale power prices could drop significantly.

Competition for retail margins may intensify while wholesale prices are low but contract terms, customer inertia and expectation of prices returning to natural equilibrium will dampen impacts.

*average of FY18 and FY19
Transmission upgrades will be required

— If Tiwai closes these upgrades take 5 to 8 years and the $600m cost means it may not be the best option for the consumer

Retail is a shock absorber

- Wholesale price is only ~35% of customers bill
- Retail prices respond slowly
- Genesis Energy retail market share is approx. 24% of New Zealand

Electricity Price Comparison (2000-2016)

Transmission upgrades needed

- Initially the link between lower SI to Upper SI is constrained: Water gets trapped in the lower SI negatively impacting all of CEN’s hydro - half of its renewable generation and c. a third of MEL hydro. This link will take up to three summers to upgrade – The upgrade is in 5 parts of which two are already complete. A further NZ$110m spend is needed to complete the upgrade.
- Water gets trapped in upper SI. This would need a DC upgrade (4th Pole) that could take up to 8 years to complete – a cost of NZ$150m.
- The NI would also require two major line upgrades, lower NI to Central NI links – NZ$250-300m of Transpower spend.
Analyst views & research
— The following analysts have issued recent independent research on the NZAS strategic review

Enerlytica: John Kidd, john.kidd@enerlytica.co.nz

Forsyth Barr: Andrew Harvey-Green, andrew.harvey-green@forsythbarr.co.nz

UBS: Aaron Ibbotson, aaron.ibbotson@ubs.com

Craigs / Deutsche Bank: Grant Swanepoel, grant.swanepoel@craigsip.com

Jarden / Credit Suisse: Nevill Gluyas, nevill.gluyas@jarden.co.nz

Macquarie: Stephen Hudson, stephen.hudson@macquarie.com
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