

Professor Mary O’Kane
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Dear Professor O’Kane,

Thank you for the opportunity to provide a submission to the NSW Energy Security Taskforce.

We also attach our submission to the Finkel Review which is relevant to the current NSW task force terms of reference.

As you may be aware, the Tomago Smelter is located in the Hunter Valley, New South Wales. It is a world scale smelter with revenues of approximately \$1.5 Billion, supporting 1800 jobs and contributing \$800 Million to the Hunter Region economy.

Energy affordability and system reliability are serious concerns for the Tomago Aluminium Company (TAC) with the smelter being materially impacted by surging energy prices and a constant threat of interruptions to the power supply, which is critical to our operations. The following general points we believe are relevant to the task force deliberations.

Affordability:

TAC currently has 5% (438,000 MWhrs pa) of its electricity consumption exposed to the NEM spot electricity price. This price is volatile and changes every 30 minutes on a continuous basis.

The early demise of affordable baseload generation (conventional thermal) in the network combined with the effect from unprecedented gas price increases has pushed Electricity prices to levels that are unaffordable to a smelter that is competing in a global market. It must be remembered that aluminium is a centrally priced commodity; the London Metals Exchange determines the daily price and smelter cost increases cannot be passed on to the market.

Variable NEM spot prices are exacerbated by the bidding behaviour of large generators with substantial market power. TAC believes that urgent action is required to modernise the NEM rules to address abuse of the system around capacity withdrawal and apparent price gouging. Exhibit 1 (identifying details redacted) is an example of uncompetitive behaviour by a generator in the NEM in recent times.

Absent any improvement in electricity prices in the near term, TAC will be forced to reduce its power consumption and output to avoid large losses on this production. There will be flow-on impacts to the operation’s economic contribution to NSW and the Hunter Valley.

Reliability:

The TAC facility runs 24hrs a day, 365 days a year every year. The reliability of the electricity network is the major business-critical risk for the business. Despite this, TAC performs a very valuable role in preserving system security and can be called on to perform 'managed blackouts' to prevent the system outages recently experienced in South Australia.

- With the ability to reduce a large load, very quickly (potentially 2 potlines, or ~600 MW simultaneously). There are very few large interruptible loads in NSW can offer this capability. Most recently on February 10 this year, TAC was able to avoid rolling blackouts being imposed in NSW.
- TAC's load is time sensitive however. Up to 1 hour is manageable with notice; instability increases exponentially beyond this with a catastrophic potline freeze likely to occur if the power outage exceeds three hours. This is not a hypothetical scenario, as evidenced by the loss of some 70% of cells due to potline freeze at Alcoa Portland (Victoria) in December 2016, due to extended load interruption.

Absent TAC's load and the flexibility it provides for short term interruptions as required by the market operator, NSW grid stability would be compromised.

TAC is experiencing more interruptions since the divestment by NSW of Macquarie Generation.

- TAC is concerned that load interruptions post Macquarie Generation divestment in September 2014 have become longer and more frequent. There is a real risk of a Portland style potline freeze if plant operating parameters are not respected.
- Following a load curtailment notice and subsequent interruption in Jan 2014, we experienced 4 failed attempts to re-energise potline 1. As a consequence, total time off was 2 hours, 35 mins resulting in 11 failed pots.

TAC remains concerned that the system restart capability in NSW is inadequate to prevent a complete freeze of all potlines following a system black event.

- NSW system black restart procedures are critical to avoid a complete freeze of all potlines which could result in the permanent closure of the smelter.
- In the 1990s, TAC pot design provided around 8 hours of thermal reserve and a restart within 5 hours of a system black event could be managed. However, new energy efficient cell technology has lowered the thermal reserve to <3 hours.
- Re-energising times outside of this window would lead to catastrophic cell freezing.
- An urgent review of the system restart protocols is required to ensure that sensitive loads such as the Tomago Smelter can have power restored in adequate time to avoid a complete freeze of all potlines.

The early demise of baseload power generation not only pushes up energy prices, it is a significant risk to the long term viability of the smelter

- The rapid uptake of intermittent renewable energy within the NEM, driven by the RET scheme is resulting in baseload thermal generating capacity being closed down prematurely, with no consideration being given to how the future baseload power demand will be met.
- In TAC's opinion there is no clear policy by any level of Government for a managed transition to a sustainable level of renewable energy. Utility scale energy storage solutions are either unproven (batteries) or many years away (Snowy pumped hydro).
- The recent closure of Hazelwood (Vic) will, in our view, reduce the NEM's capacity to ensure adequate supply in future peak demand scenarios in NSW.
- AGL have flagged closure of Liddell in ~2022, a further decline in baseload power capacity.
- Our question to the task force is: "With firm baseload generation declining, how does NSW intend to ensure adequate system capacity and reliability, particularly in times of peak demand (e.g. summer heatwaves)?"

As I'm sure you can appreciate, these matters are of serious concern to Tomago's shareholders and employees. I would welcome the opportunity to discuss these matters in more detail with your Taskforce in person at a convenient time.

Yours Sincerely



Matt Howell
Chief Executive Officer

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