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Australian Energy Market Operator
GPO Box 2008
Melbourne VIC 3001

Submitted by email to planning@aemo.com.au

Victoria to New South Wales Interconnector Upgrade – Project Assessment Draft Report

Snowy Hydro Limited welcomes the opportunity to comment on matters raised in the Project Assessment Draft Report (PADR) from the Australian Energy Market Operator (AEMO) and TransGrid on the Victoria to New South Wales Interconnector (VNI) Upgrade.

Snowy Hydro Limited is a producer, supplier, trader and retailer of energy in the National Electricity Market ('NEM') and a leading provider of risk management financial hedge contracts. We are an integrated energy company with more than 5,500 megawatts (MW) of generating capacity. We are one of Australia's largest renewable generators, the third largest generator by capacity and the fourth largest retailer in the NEM through our award-winning retail energy companies - Red Energy and Lumo Energy.

Snowy Hydro welcomes AEMO and TransGrid's approach for a non-traditional modular power flow control device, in preference to traditional transmission line upgrade for the NSW works. This proposal should reduce outage disruption at a lower cost to consumers in NSW while achieving the same increase in transfer capacity on the line. However any transmission outage durations and timings will require careful management to minimise negative impacts on consumers in NSW.

For the Victorian works we remain concerned that there will be significant market disruption from the South Morang to Dederang line upgrade and that the upgrade itself will not provide any material generation capacity or energy reliability benefits, or cost savings for Victorian consumers. Indeed, Victorian consumers will bear the significant cost of the line upgrade and outages and resultant market disruptions without guarantee of increased energy security. This aspect of the VNI upgrade proposal needs to be critically reviewed.

Further because the South Morang to Dederang upgrade only considers a section of the overall Victorian to NSW interconnector path it will not in itself deliver any capacity or reliability benefits to NSW because the transmission capacity constraints into NSW are north of Snowy Hydro's Tumut stations.

More broadly we believe a long term transmission planning view must be undertaken which considers the immediate and growing need for connection of storage for greater than 15 GW of utility scale storage between now and 2040 as noted by AEMO in the ISP Insights¹ paper.

¹ AEMO, 2019, "Building power system resilience with pumped hydro energy storage: An Insights paper following the 2018 Integrated System Plan for the National Electricity Market", pp7

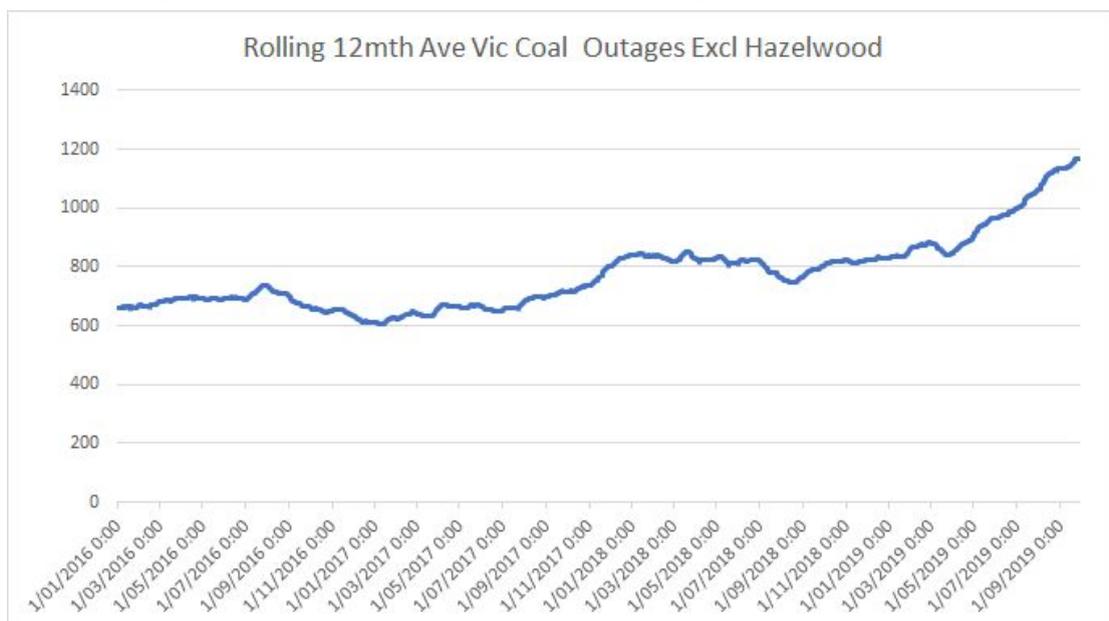
System Resilience

The proposed solution to improve the transfer capability of the Snowy to Canberra/Yass transmission corridor using modular power flow equipment will reduce the disruption and benefit consumers in NSW through lower costs. Snowy Hydro therefore support the PADR proposal for modular power flow controllers to increase utilisation of the 330 kV cut set between Snowy and Yass/Canberra.

In Victoria however there are not expected to be any capacity benefits at a time when the 2019 Victorian Annual Planning Report (VAPR) highlighted that *“the supply-demand balance remained tight in Victoria during 2018-19, with both Reliability and Emergency Reserve Trader (RERT) and load shedding activated to maintain system security in January 2019.”*² While these events were the result of extreme weather conditions and unplanned generator outages this would be further worsened by transmission outages in Victoria. Snowy Hydro continues to remain concerned with the impact of transmission outages in Victoria.

The Victorian section of the upgrade, South Morang to Dederang, is aimed to overcome a Victorian export limit but provides no significant increase in Victoria's import limit. Reducing supply to Victoria would worsen the tight demand and supply conditions in Victoria which is currently experiencing outages with the current coal fleet. Victorian coal has already started to be effectively retired due to its degrading reliability. Over the last 5 years the amount of megawatt (MW)s offline across Victorian coal plant has on average increased from around 600 MW to close to 1,200 MW. Figure 1 below shows the rolling 12 month average coal outages in Victoria. Earlier than expected coal plant retirement would also significantly tighten the supply and demand balance. It is for this reason that Victoria needs to avoid transmission outages which could result in reliability and security concerns in the NEM.

Figure 1: Rolling 12 month Average Victorian Coal Outages excluding Hazelwood³



² AEMO and TransGrid, 2019, “Victoria to New South Wales Interconnector Upgrade – Project Assessment Draft Report”, pp19

³ Snowy Hydro analysis

Cost estimate of outages

The PADR assessment of the duration and costs of the outages required to implement the credible options has been undertaken using market modelling, comparing the market costs in the 'do nothing' case with the market costs in a case with a network configuration matching that which would be required during the outage period.

Snowy Hydro understand that the outage cost represents the cost to the market from losing access to cheaper generation sources, requiring replacement with more expensive generation. However we are unclear on the following impacts

- The impact the outages will have on other lines.
- The consequence of a generator outage occurring simultaneously to a transmission outage.

The impacts mentioned above could have significant cost implications on the market with the current proposal not expected to provide material energy reliability benefits or cost savings for consumers.

Long term view

Australia's energy system is undergoing a rapid and profound transformation with a critical need to progress transmission upgrades to ensure the timely integration of renewables and large scale storage into the grid so we do not experience load shedding events. Snowy Hydro believes a long term view must therefore be seriously considered to meet the immediate and growing need for storage.

The PADR notes that *"upgrades along the Murray to Dederang path, will be assessed in the next RIT-T process focusing on the identified need to improve interconnection between Victoria and New South Wales"*⁴. Snowy Hydro however argues that the long term security of the NEM should still be considered in the current process by upgrading Murray to Dederang with new route diverse lines in conjunction with the Dederang to South Morang path upgrade to achieve a significant increment in Victoria's import capability and the future Snowy to Wagga to Bannaby line sections. This development should be brought forward to align with the commissioning of Snowy 2.0 in 2024. This would increase the overall system resilience and provide insurance against the risk of earlier exit of coal fired generation in Victoria.

The Murray to Dederang upgrade would be integrated as it connects to the SW-NSW renewable energy zones, the Snowy 2.0 Pump Hydro Energy Storage (PHES), and the proposed Project EnergyConnect (Riverlink) interconnection. AEMO identified the need for in excess of 15 GW of utility scale storage between now and 2040 which signals the need for storage in the NEM and transmission that can connect this amount of storage capacity⁵.

⁴ AEMO and TransGrid, 2019, "Victoria to New South Wales Interconnector Upgrade – Project Assessment Draft Report", pp31

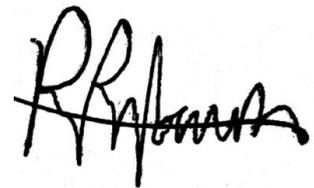
⁵ AEMO, 2019, "Building power system resilience with pumped hydro energy storage: An Insights paper following the 2018 Integrated System Plan for the National Electricity Market", pp7



For long-term security in the NEM the timelines of connection for strategic projects is vital. We continue to advocate that strategic, and low regrets projects such as HumeLink and KerangLink be implemented in a timely manner to support the resilience of the NEM. HumeLink should be brought forward to coincide with the scheduled closure of Liddell Power Station and KerangLink should align with the commercial operation of Snowy 2.0 in 2025. This would increase overall system resilience and insure against the risk of early exit of coal-fired generation in Victoria and New South Wales. To do otherwise results in escalating security and cost risks for NEM consumers who will face the subsequent reality of relying on long lead-time projects to restore confidence in the electricity supply industry.

Snowy Hydro appreciates the opportunity to respond to the PADR and any questions about this submission should be addressed by e-mail to panos.priftakis@snowyhydro.com.au.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'P. Priftakis', with a horizontal line drawn through the middle of the signature.

Panos Priftakis
Head of Wholesale Regulation
Snowy Hydro

