

17 January 2020

Energy Security Board
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Submitted electronically: info@esb.org.au

Energy Security Board Converting the Integrated System Plan (ISP) into Action - Consultation on Draft ISP Rules

Snowy Hydro Limited welcomes the opportunity to comment on matters raised in the Consultation Paper from the Energy Security Board (ESB) on the Consultation on Draft Integrated System Plan (ISP) Rules.

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.

Resolving the ability for the transmission network to accommodate the energy mix of the future is currently the single most important issue in the NEM. Timely and appropriate decisions made today will determine the direction, cost effectiveness and sustainability of the NEM for decades. There is a critical need to progress transmission upgrades to ensure the timely and economically efficient growth and integration of renewables and large scale storage into the grid. Investment in transmission infrastructure, including inter-regional connections, will ensure acceptable system security and reliability is delivered, and will underpin investment in new renewable generation and increase competition in the market so as to put downward pressure on prices to benefit consumers. The ISP has a crucial role in coordinating generation and transmission investment in the NEM which, due to the regulatory frameworks of the NEM, cannot be provided by any other means.

Snowy Hydro strongly supports a more actionable ISP. The proposed ISP rules will ensure alignment between the ISP and Regulatory Investment Test for Transmission (RIT-T) and promote the National Electricity Objective (NEO) by creating a more timely and effective regulatory process, which will lead to more efficient transmission planning. The RIT-T process will remain relevant even with the inclusion of the earlier stages through a streamlined process in recognition of the ISP process.

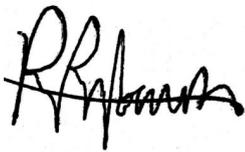
Snowy Hydro supports changes to the current Rules in the implementation of an actionable ISP that ensure that clear statutory powers are available, and establish thoroughly defined roles, processes and accountabilities in relation to the Rules. Snowy Hydro has the following specific comments on the actionable ISP rules:

- The ISP should focus on the power system needs, which include the market reliability standard, relevant transmission reliability standards, power system security and public policy needs. With respect to public policy needs, AEMO should incorporate State and Federal government environmental and energy policies that require firm generation to be connected to the NEM, this inclusion is appropriate and timely.

- The Rules framework should allow AEMO the flexibility to respond to issues emerging during the ISP development process and consider a number of linkages and interdependencies with other elements of the planning framework, including TNSPs' annual planning reports and the last resort planning power.
- The ISP regime should partially replace many current RIT-T obligations of TNSPs in order to avoid duplication of planning and modelling by the TNSPs. This includes integrating the ISP with existing planning processes conducted under the NER by TNSPs and converting the requirement for AEMO to prepare the National Transmission Network Development Plan (NTNDP) each year into a new regime for AEMO to prepare an ISP.
- Rules should address transitional issues, including recognition of previous ISPs as meeting the new rules and the application of the new rules to RIT-Ts currently underway.
- For projects such as the Humelink and VNI West (formerly KerangLink) for which the RIT-Ts are already underway, we support the transitional arrangements proposal by the ESB that if a RIT-T has already commenced for a project identified in the 2020 ISP, then the TNSP will be able to choose whether to apply the new streamlined RIT-T process or the current process.
- We support the ESB's proposed model that stakeholders will be able to raise a dispute within 30 days of the publication of the final ISP.
- The AER Guidelines to include the ISP would help to avoid a proliferation of guidelines and promote consistency. This proposal would allow AEMO to identify the ISP development path with some consultative scrutiny.

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

Yours sincerely,



Panos Priftakis
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DETAILED SUBMISSION

Actionable ISP

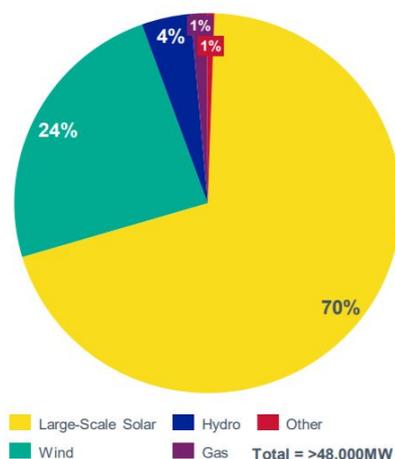
Australia's energy system is undergoing a rapid and profound transformation with a critical need to progress transmission upgrades to ensure the timely and cost-effective integration of renewables and large scale storage into the grid. The NEM is past the tipping point of firmed renewables being the most economic form of new generation, with AEMO identifying the need for up to 21 GW of utility scale storage between now and 2040, which highlights the need to replace 63 per cent of Australia's coal-fired generation that will reach the end of its technical life¹. This long term view must therefore seriously consider not only the immediate and growing need for storage, but must also address the long-term requirement for connecting the forecast volumes of utility scale storage which, from the perspective of energy security and low cost to consumers, must include significant amounts of deep storage.

Strategic transmission projects identified in the ISP therefore cannot afford further delay and need to become actionable. The increase in cheap but variable and intermittent renewable electricity generation is forcing the exit of coal, by placing pressure on those assets physically and economically, and introducing system reliability and stability issues. This firming and de-risking of renewables will provide certainty to support further investment in new renewable generation and supply the energy needs of the NEM at the lowest cost.

New transmission is critical to ensure energy security in the future and will bring new generation and competition into the market, including Snowy 2.0, so as to put downward pressure on prices to benefit consumers.

There is a significant amount of variable renewable energy projects being developed and more are planned, as noted by TransGrid in Figure 1 below from 2019. Some of the very best and cheapest renewable resources in the NEM are located in NSW and these are the areas most affected by the absence of transmission, and conversely have the most to contribute to the NEM as a result of building the ISP. The key to unlocking this low cost energy, as well as harnessing the complementary capabilities of the Snowy region, is efficient transmission links.

Figure 1: Current connection enquiries to TransGrid network % (2019)²



¹ AEMO, 2019, "Draft 2020 Integrated System Plan"

² TransGrid Transmission Annual Planning Report 2019

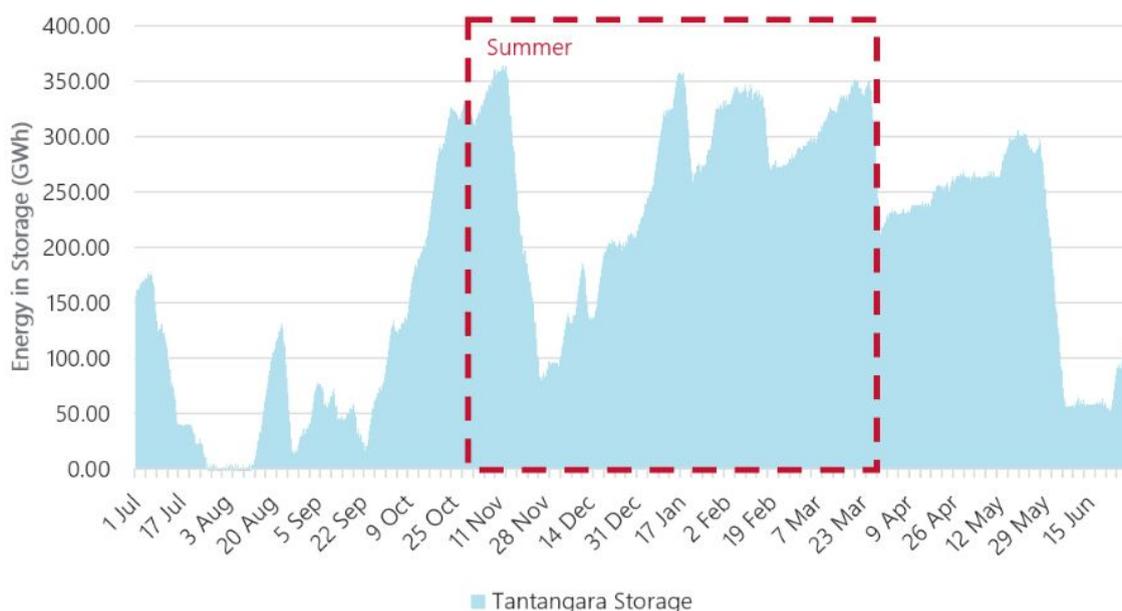
The current transmission network was designed for an era that has passed. The outcome of stasis, of failing to build the transmission grid to accommodate the new NEM, will be felt through higher prices for customers. We therefore agree with the direction of the draft ISP Rules (and indeed the 2020 draft ISP itself) which recognise the need for reform.

The AEMO Insights Paper to the ISP noted the important role that pumped storage and strategic transmission developments can play in improving the efficiency of the system, lowering costs to consumers and increasing the resilience of the NEM. The paper notes the following:

- *“Increased transfer capability between the Snowy area and Sydney (HumeLink) would maximise the reliability and resilience benefits from Snowy 2.0 at lowest cost for New South Wales consumers.*
- *Advancing augmentations between Snowy Mountains and Bannaby is projected to help support Sydney under peak load conditions.*
- *One week’s storage in Snowy 2.0 in 2030-31 saves approximately \$86 million more on average in fuel costs (ultimately benefiting consumers), compared with equivalent storage capacity with only six hours storage, across weather years modelled.*
- *Deep pumped-hydro stations (Tumut 3 and Snowy 2.0) are projected to be able to take advantage of spare energy during the shoulder seasons and use this for pumping, particularly during spring, and then generate to meet high demand periods throughout the year. “*

The technical appendices to the 2020 draft ISP model Tantangara under the 'central' scenario in Summer 2039/40³. The scenario shows how indispensable deep storage capability of Snowy 2.0 is during renewable energy droughts. Over a two week period, Tantangara is run down from 350GWh to 78GWh in order to manage a generation deficit in the NEM.

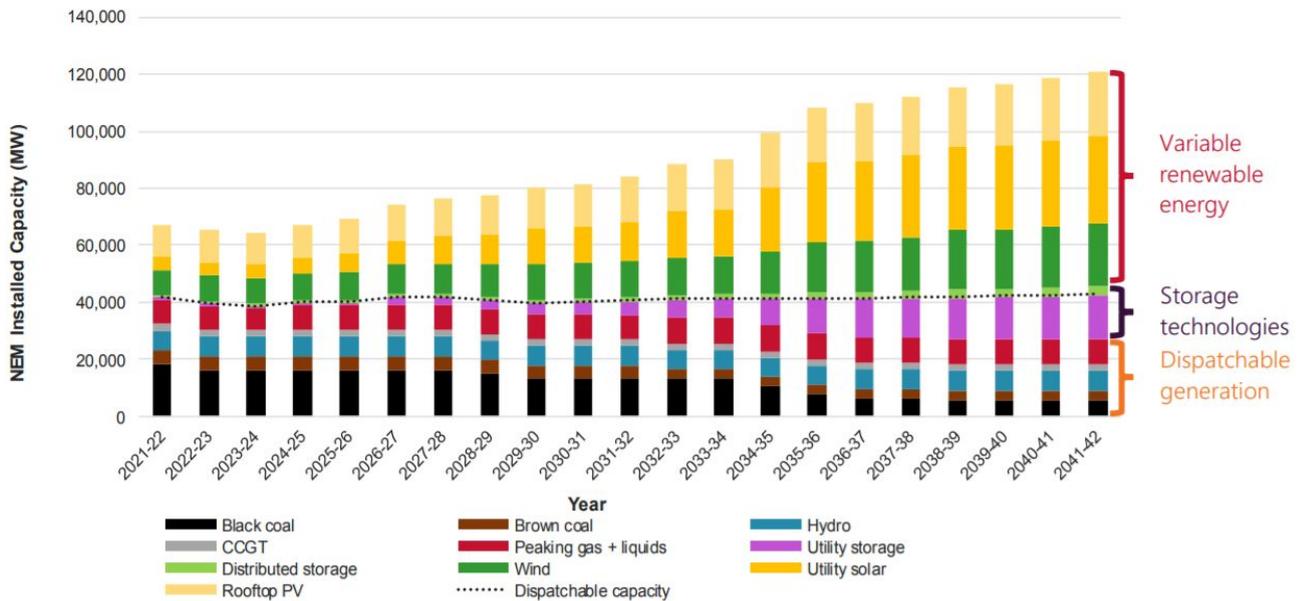
Figure 2: Hourly energy in storage in Tantangara in 2039-40



³ AEMO, Draft 2020 Integrated System Plan Appendices, pp68

Further to this the AEMO Insights Paper noted that as the NEM transitions from thermal generation to more renewables, new transmission links are needed to connect renewable energy zones, improve interconnectivity between NEM states and ensure new projects have access to the shared network⁴. Figure 3 from the Insights Paper highlights the rate of coal-fired power station retirements is expected to accelerate requiring new sources of firm and flexible capacity.

Figure 3: Forecast NEM generation capacity in the ISP insights development plan, Neutral scenario⁵



Snowy Hydro notes the increased recognition of the benefits of interconnection and hydro storage in the 2020 AEMO ISP, and in particular the value of accelerating the VNI West transmission project. AEMO modelling demonstrates the needs and benefits of a new interconnection between New South Wales and Victoria. It identifies that the VNI West connection with Snowy will give Victoria much needed dispatchable capacity, to maintain reliability when the next major power station retires.⁶

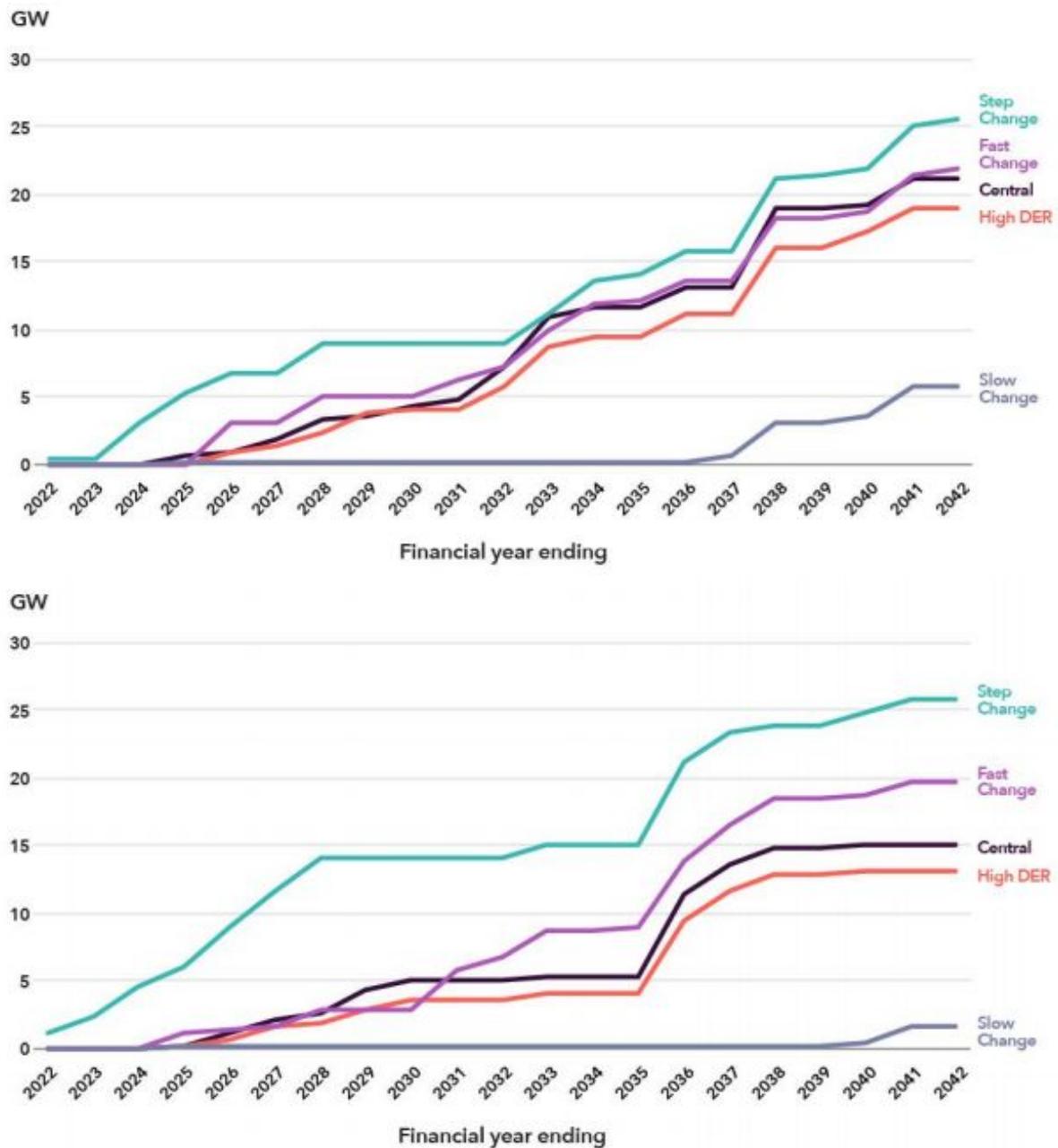
The 2020 AEMO ISP identifies the development of over 30 GW of new grid-scale renewables is needed in all but the Slow Change scenario, which will replace approximately 15 GW or 63 per cent of Australia’s coal-fired generation that will reach the end of its technical life and so likely retire by 2040. The transmission grid needs targeted augmentation to provide capacity, balance resources and unlock Renewable Energy Zones (REZs) noting the most cost-effective way to provide the required connection capacity for VRE is to develop strategically placed interconnectors in conjunction with REZs.

⁴ 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

⁵ Ibid

⁶ AEMO, 2019, “Draft 2020 Integrated System Plan”

Figure 4 New NEM VRE build, solar (top) and wind (bottom)⁷

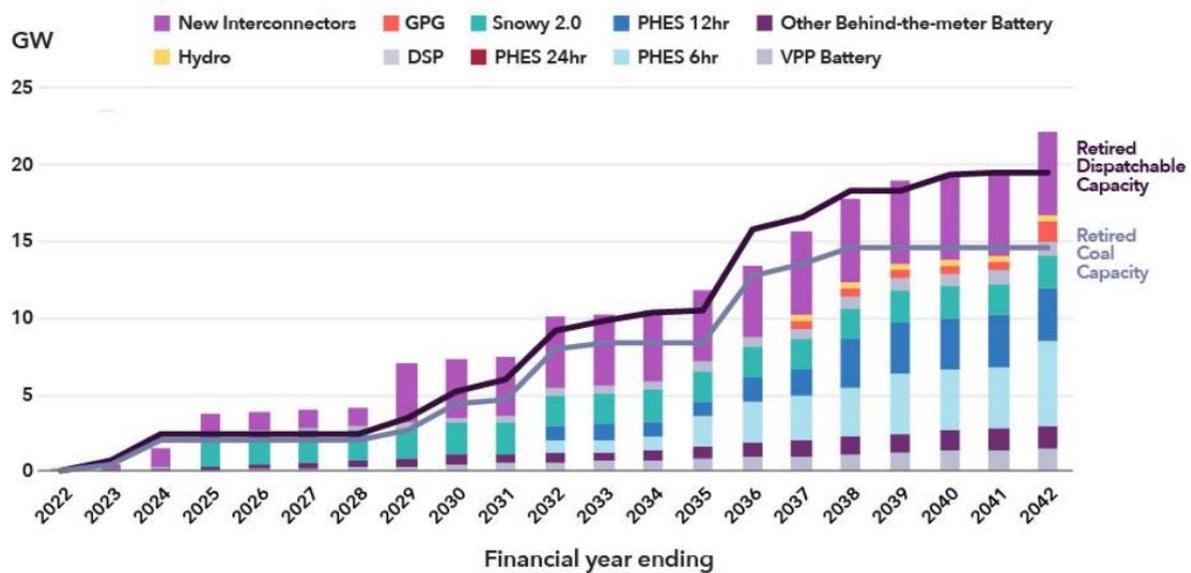


Further to this, in analysing the need for new dispatchable resources, the AEMO 2020 ISP notes that 5-21 GW of new dispatchable resources, such as utility-scale pumped hydro or battery storage, are needed in support. This is to firm up the inherently variable distributed and large-scale renewable generation. According to the AEMO 2020 ISP the growth in storage is broadly aligned with timing of coal-fired generation retirements, as shown in Figure 5. “New interconnectors are also included in this figure as they also help to smooth out local VRE variability by increasing resource diversity across the system.”⁸

⁷ AEMO, 2019, “Draft 2020 Integrated System Plan”

⁸ AEMO, 2019, “Draft 2020 Integrated System Plan”

Figure 5: Announced retirements and corresponding builds in Central scenario to help firm VRE⁹



Transmission is currently the single most important issue in the NEM and beyond. The timely decisions made today will determine the direction and sustainability of the NEM for decades.

Snowy Hydro believes that past network investment has been, in part, poorly planned and targeted, and that this has been a major cause of high electricity prices. However, while there has been a historical over-investment in the distribution network, more recently there has been a lack of strategic transmission investment. The NEM needs timely and necessary improved transmission interconnection between SA, VIC, NSW and QLD which will increase competition in wholesale markets helping to reduce prices. In addition greater transmission interconnection between States would massively reduce the threat of reliability issues across the NEM.

Failure to commit to appropriate infrastructure now will hinder the transition which places greater importance on the connection of strategic projects. A core foundation of a smooth transition in the NEM is an actionable ISP with the timelines of interconnection for strategic projects vital. The cost benefit analysis in the RIT-T will still however mitigate the risk of under- and over-investment by identifying all viable options for a particular action, and assessing their costs and benefits under different future scenarios, taking into account the likelihood of those scenarios occurring.

The ISP is able to show the economic benefits under all scenarios including the timing of some elements under different assumptions, particularly relating to the rate of change and the progress of proposed major energy storage initiatives. The Regulatory Investment Test for Transmission (RIT-T) process in the current form is too slow for delivering timely strategic transmission projects unless it also includes a more actionable ISP.

We therefore support the approach adopted in the draft ISP Rules, under which the ISP will consider the strategic transmission requirements of the NEM, and the ISP Rules will provide a mechanism to give effect to those requirements. With the increase in variable renewable generation, and the gradual retirement of the existing thermal fleet, it is critical that transmission planning is coordinated to maximise efficiency and consumer utility.

⁹ Source: AEMO 2020 ISP

ISP purpose

AEMO has done a comprehensive job with the inaugural ISP. The ISP should continue to develop a whole of system plan for the efficient development of the power system that achieves power system needs in the long-term interests of customers, and to:

- *trigger the regulatory investment test for transmission (RIT-T) process for actionable ISP projects; and*
- *inform decisions in relation to ISP development opportunities.*¹⁰

The ISP should focus on identifying transmission projects which are strategic and nationally significant investments. Snowy Hydro agrees that the ISP should focus on the power system needs which include the market reliability standard, relevant transmission reliability standards, power system security and public policy needs. With respect to public policy needs, AEMO should incorporate State and Federal government environmental and energy policies into its central case where there is a current policy commitment with clear articulation of when and how it impacts the power system, and one of the following sets of criteria are met:

1. *“commitment has been made in an international agreement;*
2. *the policy has been enacted in legislation;*
3. *there is a regulatory obligation in relation to a policy;*
4. *there is material funding allocated in a State or Federal government budget;*
5. *the COAG Energy Council, or the SCO has advised AEMO to incorporate the policy.”*¹¹

Transmission will also be driven by public policy established by state and federal laws or regulation requiring firm generation to be connected to the NEM. Unlike the AER’s RIT-T process, a mechanism is required for local and regional transmission planning processes to consider transmission needs driven by public policy requirements established by state and federal laws or regulation. With public policy requiring firm generation to be connected to the NEM, this inclusion is appropriate and timely.

Interactions with TNSP planning processes

Snowy Hydro understands that the implementation of an actionable ISP requires changes to the current Rules relating to transmission planning and investment. We support the ISP regime partially replacing many current RIT-T obligations of TNSPs in order to avoid duplication of planning and modelling by the TNSPs. Market modelling should be drawn from AEMO’s work on the ISP such that:

- *“The ISP replaces the Project Specification Consultation Report (PSCR), identifying the need that the investment should meet, together with an ISP candidate option that should be considered by the RIT-T.”*¹²
- A number of linkages and interdependencies are considered with other elements of the planning framework, such as the current regulatory framework establishing linkages between the Transmission Annual Planning Reports (TAPRs) and the National Transmission Network Development Plan.

¹⁰ Energy Security Board, “Converting the Integrated System Plan into Action - Consultation on Draft ISP”, November 2019, pp4

¹¹ Energy Security Board, “Converting the Integrated System Plan into Action - Consultation on Draft ISP”, November 2019, pp8

¹² Energy Security Board, “Converting the Integrated System Plan into Action - Consultation on Draft ISP”, November 2019, pp4

- *“The draft ISP Rules replace the current requirements of the old NTNDP (Rule 5.20) with a regime that allows for stand-alone documents for annual “System Security Reports”, NSCAS Reports, System Strength Reports and Inertia Reports.”¹³*

The extent to which ISP deadlines are prescribed however in the Rules and what level of prescription in the Rules is appropriate for the ISP process should be left with the appropriate regulatory bodies to decide. The Rules framework should allow AEMO the flexibility to respond to issues emerging during the ISP development process. Where new information is available to AEMO that can materially change the outcome of a RIT-T that has either commenced, or due to be commenced prior to the publication of the next ISP, it is important that AEMO publish an update to the ISP that highlights the new information and the impact on the ISP development path¹⁴. Only recently AEMO’s ISP Insights document suggested that if the probability of an early closure of Yallourn exceeds 20 per cent, then VNI West (formerly KerangLink) should be built, at the earliest, by 2026-27.

Snowy Hydro believes the timelines of strategic transmission investment is vital in an ever-changing energy market. Any change to a closure date for any significant station should require AEMO to reassess the timeline of a transmission investment project. The ISP is a dynamic document that will be updated in the future to reflect the changing nature of the power system and the need for innovation.

Transitional arrangements Location in draft ISP Rules

Snowy Hydro believes it is necessary to establish transitional arrangements to implement the new framework. We support the ESB’s proposal that the transitional arrangements should:

1. include deeming provisions that deem the 2020 ISP process to have met the new requirements;
2. apply the new RIT-T framework to projects identified in the 2020 ISP; and
3. apply the streamlined post RIT-T regulatory arrangements (e.g. removal of preferred options assessment) to all RIT-Ts following the making of the final ISP Rules.

The draft ISP also identifies Humelink and VNI West (formerly KerangLink) as an actionable ISP project. With both RIT-T processes underway we support the transitional arrangements proposal by the ESB that if a RIT-T has already commenced for a project identified in the 2020 ISP, then the TNSP will be able to choose whether to apply the new streamlined RIT-T process or the current process. Failure to facilitate the timely completion of strategic transmission projects could amount to a gamble on the reliability of the NEM.

The timing of VNI WEST is vital as it will provide insurance against an early closure of Yallourn which has partly led AEMO to recommend a completion date of 2026-27¹⁵. In regards to VNI West, AEMO intends to run both RIT-T and ISP rules consultations in parallel, and coordinate and integrate outcomes ensuring submissions to either process will be considered in each, and integrate these into the subsequent modelling and review on a coordinated basis. We support this approach as it will allow for the optimal routing of this interconnector, e.g. via Kerang or Shepparton, will be assessed during the consultations on the draft ISP and VNI West PSCR¹⁶. Snowy Hydro believes that after the

¹³ Energy Security Board, “Converting the Integrated System Plan into Action - Consultation on Draft ISP”, November 2019, pp14

¹⁴ Energy Security Board, “Converting the Integrated System Plan into Action - Consultation on Draft ISP”, November 2019, pp13

¹⁵ AEMO, 2019, “Draft 2020 Integrated System Plan”

¹⁶ AEMO, 2019, “Draft 2020 Integrated System Plan”

final 2020 ISP is published and the actionable ISP rules come into effect, this project is expected to be transitioned to the new rule framework.

Consultation process

The ISP requires a significant amount of forecasting and consulting with stakeholders which makes AEMO publishing the ISP at least every two years appropriate with more frequent updates if there is new information released. The publication for the ISP strikes an appropriate balance between the need for timely updates and the need for in-depth consultation. The ISP should undertake a rigorous stakeholder consultation engagement to deliver the ISP which includes a full consultation process on the inputs and assumptions (such as fuel costs) that feed into the ISP. This proposal would allow AEMO to identify the ISP development path with some consultative scrutiny and should it be necessary for AEMO to use confidential data as an input to the ISP, AEMO would be required to release indicative data in such a way that does not compromise confidentiality.

Dispute resolution

The RIT-T can be delayed by individual interests through the disputes process as under the RIT-T participants can delay or remove beneficial projects, particularly where there is uncertainty. It is therefore important where possible to not duplicate and repeat analysis and consultations which had already been undertaken by the ISP.

A thorough and comprehensive ISP consultation process would remove the need for a RIT-T dispute process and AER RIT-T determination process. Although the ISP AEMO planned consultation would reduce the need for disputes to be called, the ESB proposal would allow stakeholders to raise concerns regarding the ISP if they believe that their issues are significant and have not been addressed by AEMO in its ISP development. Snowy Hydro supports the ESB's proposed model that stakeholders will be able to raise a dispute within 30 days of the publication of the final ISP.

