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20 February 2020

AEMO

2020 Draft Integrated System Plan

Via Electronic Lodgement

**Draft 2020 Integrated System Plan (ISP)**

UPC/AC Renewables (UPC) welcomes the opportunity to provide feedback on the draft 2020 Integrated System Plan (ISP).

Firstly, UPC would like to express its view that AEMO has significantly improved the process to develop the 2020 ISP. UPC also commends the engagement being progressed by AEMO and would encourage this engagement to continue to finalise the 2020 ISP and subsequent ISPs.

Secondly, this submission outlines a number of key areas of both interest and concern from UPC's perspective as a developer, investor, owner/operator of renewable energy assets. Our aim in providing these comments is to ensure a robust and realistic ISP is developed, the actionable projects selected are adequately "tested" and that ultimately the plan has good prospects in terms of longevity. UPC feels at this stage there is a risk the 2020 ISP may become out of date quickly if some of the issues are not addressed prior to finalising the ISP.

One other aspect UPC is concerned about is that information contained in the ISP is, as far as practicable, reflective of the reality of the system and some of the feedback on assumptions are similar to our feedback in the previous ISP. AEMO should recognise that many stakeholders, particularly those not directly engaged in the NEM as participants, will see the ISP as a comprehensive, even definitive, source of information and utilise it as such. This can create issues in process like financing, if lenders read information published in the ISP that is reflective of high level "guidance" or coarse assumptions-based modelled outcomes, rather than reflecting the practical realities of the market or the transmission investment process.

The following sections outline these primary areas of interest and concern to UPC and hopefully will assist AEMO in finalising the 2020 ISP.

### **Consideration of the NSW Government Central West REZ**

UPC strongly supports the need for the ISP to more explicitly model the recently announced 3000+ MW Central West REZ in NSW as part of the NSW Electricity Strategy. This proposal is being progressed quickly and is likely to be well progressed prior to the release of the 2020 ISP. This policy is likely to promote more renewable development in NSW than has been reflected in the draft ISP modelling, which should be more explicitly considered in the ISP modelling, in a similar way to the QRET or VRET policies across the border.

UPC believes the potential of the Central West REZ is understated in the ISP. In particular, there are substantial wind resources of a quality that is likely to make economic sense under the NSW Government's policy. A greater role of wind in conjunction with solar (and potentially a role for utility scale storage) will lead to more effective utilisation of the required transmission investment. Additional cost-competitive solar resources beyond those identified by the Draft ISP are also likely within the Central West region. An example includes UPC's recently announced 800MW Valley of Winds Wind project (<https://valleyofthewinds.com.au/>) in addition to the 4,500MW of approved or planned developments.

UPC considers in the process of finalising the 2020 ISP, a sensitivity examining this policy should be performed as this could have a material impact on the business case for, the optimal size and the timing of the "QNI medium" or "QNI heavy" projects. UPC is of the view that over-reliance on major interconnection upgrades when NSW has ample high quality renewable energy resources is a risky approach from the perspective of potential cost overruns (notorious for such projects), delays in developing the transmission projects, future climate vulnerability of interconnectors and the practical reality that locational price signals will lag transmission planning information and decisions – i.e. it will take some time for the QNI upgrades to drive the "optimal" level of investment in NSW and in the meanwhile, investors may continue to see the (relatively higher) prices in the NSW market and continue to develop projects in NSW for longer than the overall ISP modellings suggests is efficient.

To help the market fully understand the potential role of the Central West REZ in helping to meet NSW's energy needs, the ISP should identify specific augmentation options available to supply the Central West REZ, noting there is now over 5,300MW of renewables approved or planned.

### **VNI West preferred route**

UPC favors transmission upgrades/developments that promote high utilisation of the transmission assets, so as to reduce the overall per unit cost of delivering energy to customers. In developing VNI West, consideration should be given to tapping into a diverse resource mix to help improve the

utilisation of the transmission link. To this extent, transmission lines that enable multiple energy sources such as solar, wind, energy storage, etc should be favoured. Based on this and the lower cost route for VNI West, UPC considers that the route via Shepparton is superior, as it is the lowest cost option, enables similar renewable energy potential and passes through zones with both solar and wind potential. As such, this route may be a better longer term and more strategic option. UPC understands that there may be additional benefits of the Kerang route through helping to address the current curtailment issues in the Murray REZ, although this may not account for the additional cost or the ability to promote a more diverse energy source. In a sense, UPC believes that the market should not have to pay for a suboptimal transmission investment in order to effectively “bail out” investors which may have made poor decisions with respect to the location of generation in Victoria.

### **Marinus Link and Tasmania proposition**

UPC is encouraged by the desire to continue to push ahead with getting Marinus Link shovel ready. We are disappointed in the detail that the full Marinus Link is only needed in the Step Change case and feel this does not reflect the value of the opportunity in Tasmania. Even using the ISP data, Tasmania has the cheapest wind resources due to the excellent capacity factors but also provides a diverse wind resource to better compliment South Australia, Victoria and NSW wind/solar generation. We also note the lowering of the North West Tasmania wind farm capacity factors since the last ISP and consider the new value again understates the actual wind resource in this area and actually further discounts the value of developing Marinus Link. We will discuss this more later but UPC did identify this last year and there is now over 2 years of wind data that supports these capacity factors.

Added to the lowest cost renewable energy in the NEM, is the fact that the pumped hydro opportunities in Tasmania are significantly lower cost than any generic pumped hydro projects in any other region. In particular, we note that in the assumptions report on pumped hydro by Entura, the Tasmanian opportunities are at least 30 percent lower cost than the theoretical Victorian projects. We note the results in the Central case seem to favor the Victoria pumped hydro developments despite Marinus Link being present, creating the ability to tap into the pumped hydro and wind opportunities in Tasmania. It is difficult to reconcile in this case that up to 700 MW of pumped hydro is developed in Victoria but no pumped hydro is developed in Tasmania. Similar outcomes are seen in the Step Change case with a preference for Victorian wind/pumped hydro despite lower cost options in Tasmania being available through Marinus Link. UPC would encourage AEMO to look to reconcile this, particularly considering the positive outcomes from the TasNetworks RIT-T Project Assessment Draft Report for Marinus Link.

Finally, UPC expects to achieve the Development Approval for the Robbins Island and Jim’s Plain Renewable Energy Parks by mid to late 2020. The first stage of this is due to start construction mid 2021 and consist of 500 MW development aligned with UPC understanding of the transmission capability at Sheffield in Tasmania where it will ultimately connect. We expect this to be operational

by early 2023. While not defined as committed under AEMO planning guidelines, UPC considers adding a development of this magnitude could materially change the drivers for Marinus Link and potentially this could be tested as a sensitivity.

#### **Where are the large scale batteries or gas peaking plant ?**

There is no development of large scale batteries or peaking gas plant at all in the Central case although discussions in workshops promote batteries and gas as part of the solution. UPC notes the following statement in the draft 2020 ISP that reiterates this narrative:

*“5-21 GW of new dispatchable resources are needed in support. New flexible gas generators could also play a greater role if gas prices materially reduce.”*

While it is acknowledged that Virtual Power Plants (VPPs) play a larger role, they seem to be more defined as behind the meter batteries rather than large scale batteries or batteries integrated with large scale renewables. This outcome raises questions over the modelling, as the market continues to identify large scale batteries, integrated with large scale solar and wind, as a solution with such projects being implemented even at today’s costs (in some cases, such as Lincoln Gap, without any subsidy). It may be worth AEMO commenting on this or making it clearer that the VPP volumes are considered to incorporate this battery opportunity. Otherwise it would seem the modelling isn’t reflecting the current market trends and hence the robustness of the ISP could be questioned.

In terms of the comment on new flexible gas generators playing a role if prices materially reduced, it would seem this applies to base load operations rather than flexible peaking plant. While market prices would not support the base load operations of gas with the currently assumed high gas prices, it is difficult to see there isn’t a role for gas peakers to play in generating to meet extreme demand periods where the marginal cost of running gas is well below the market prices experienced during these events. Yet there is no gas peaking development in the Central case or Step Change case which seems counter-intuitive. Again this raises questions over the assumptions in the model, the ability of the ISP to reflect real world considerations and hence may call into question the outcomes of the modelling and the ISP’s conclusions.

#### **Wind and REZ Modelling**

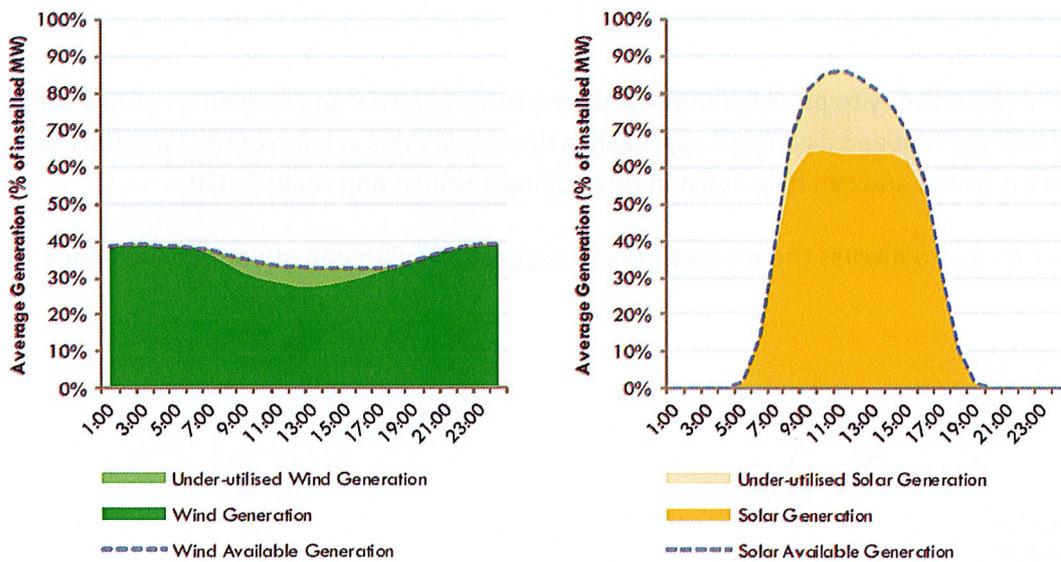
UPC notes the North West Tasmania capacity factor for wind farms has been reduced since the original ISP. This reduction is contrary to UPC’s own modelling over the past 2 years from wind monitoring data located in the North West Tasmania for the Robbins Island and Jim’s Plain Renewable Energy Parks. This monitoring has shown average wind speed is greater than 10 metres per second and we can expect capacity factors closer to 50 percent (i.e. similar to the original ISP). We have done detail siting of turbines to define a capacity factor for a 500 MW stage 1 of these projects around 49 percent. While the change may be small, the use of this higher number would improve the energy

cost and further lower the cost of renewable development from the North West Tasmania REZ. UPC is able to provide this real time data to help calibrate the wind production potential from the North West REZ, if AEMO considered this useful.

**Average Utilisation of Utility Generation**

UPC is concerned that the ISP augmentations proposed will not allow efficient generation investment and that congestion and poor MLF outcomes will continue. Figure 8 from the 2018 ISP (below) suggests an average solar curtailment level of around 15-20% and we wish to understand what level of curtailment is assumed in the 2020 ISP. Without associated storage, to soak up the solar “spillage”, curtailment at these levels is unlikely to be economically sustainable and would suggest the modelling is not reflective of real world investment decision making.

**Figure 8 Average utilisation of utility-scale renewable generation (wind [left] and solar [right], Neutral scenario)**



UPC therefore suggests that the 2020 ISP publish the forecast congestion and MLF outcomes in the ISP models and confirm that these levels of congestion will still support future investment in the modelled new capacity.

**Transmission Procurement Lead Time**

Given the long lead times for procurement and construction, UPC is concerned that the Group 3 (and some Group 2) ISP plans are not realistic without carrying out early works activities and accelerating planning and environmental approvals and land security in particular. Examples of the types of activities that this would include are planning studies, route investigations, community consultation

and easement acquisition. UPC suggest that that the ISP identify least regret early works activities to ensure transmission projects can be delivered on time with a high degree of certainty.

### **Snowy 2.0**

It would appear the timing, need and likelihood of Snowy 2.0 has not been questioned or tested to a any real extent. This is despite the fact it hasn't met some of the AEMO "committed project" criteria (i.e. planning approvals or connection agreements). While UPC considers that pumped hydro will be important in the NEM in the future, the timing of Snowy 2.0 seems optimistic for such a large and complex project and based on recent budget increases and challenges.

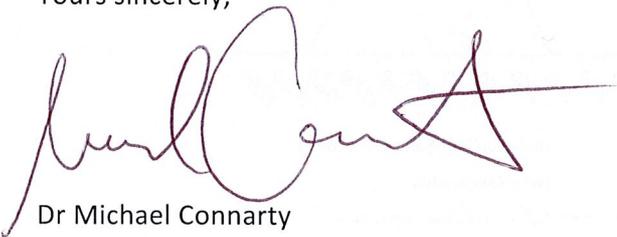
In addition, such a large project can also influence the timing of subsequent developments and potentially change the focus of the ISP actions. Hence, UPC would encourage AEMO to test a delay, potentially up to 5 years, of Snowy 2.0 and any subsequent transmission lines needed to see how this impacts on the timing and benefits of the ISP actionable projects.

### **Conclusion**

UPC welcomes the opportunity to provide feedback on the Draft 2020 ISP and welcomes AEMO's high level of industry engagement and its refined approach in developing this version of the ISP. UPC hopes that this feedback is useful and can help assist in developing a robust and realistic ISP.

As always, we are happy to discuss these concerns and suggestions with you at your convenience.

Yours sincerely,



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