The Murray Valley: The Clean Energy Valley

Submission to AEMO | July 2017

Submission on behalf of Mildura Rural City Council, Swan Hill Rural City Council and Gannawarra Shire to the Australian Energy Market Operator in response to the Western Victoria Renewable Integration Project Specification Consultation Report

Summary

The north west of Victoria is primed to become the new centre of power generation for the State. Three councils in the region, Mildura Rural City Council, Swan Hill Rural City Council and Gannawarra Shire are working together to make this a reality.

- The north west of Victoria has the climate, location, land and infrastructure to become the centre for solar power generation for south east Australia
- These attributes have been recognised by Australian and international investors with more than $4 billion of solar power projects currently with planning approvals or planning applications
- Local government is a key partner and is uniquely placed to work with stakeholders to maximise this opportunity
- Significant network infrastructure is required to facilitate the proposed investment but the potential benefits to our region, to Victoria and to South Eastern Australia are game changing

The Murray Valley – the Clean Energy Valley

Our region has the natural advantages that make it ideal to become the generation centre for clean renewable electricity to power Victoria's and South East Australia's future.

The north west has the optimal environmental conditions for solar energy projects in Victoria with between 8 and 9 hours of sunshine per day, annual average temperature of 23.7^{o}C, an average 132 clear days each year and an average solar exposure per day of over 18 MJ/square metre.

Our region has significant available, affordable land suited to large scale solar array installation. Much of it is currently marginal, flat agricultural land situated with access to the Ballarat –Horsham – Red Cliffs – Kerang – Bendigo 220 kV transmission lines which traverse the region or to the 66kV distribution network. We have also received interest from companies interested in combining solar with battery storage.

Our community is supportive. With large scale solar projects having been seriously discussed for more than a decade in the region, our community is well versed in the benefits and of the economic diversification this investment will bring to our region.

Situated as it is in the north-west of Victoria, our region's location provides access to the whole of South Eastern Australia. Given our natural advantages, it is not surprising that our region has seen

extraordinary levels of investor interest for the development of large scale solar and renewable energy generation projects.

$4 Billion Potential Investment Pipeline

Australian and international investors have submitted proposals to our Councils for significant numbers of large scale solar generation projects and battery storage projects.

Currently there are in excess of 40 project proposals either in discussion with or at varying stages of the planning permit process with our three councils. Together these proposals amount to over 2544MW of generation and more than 200MW of battery storage with a total investment of over $4 billion.

If the majority of these projects are delivered, the level of investment in our region represents a game changing opportunity for our communities. The development phase will produce many hundreds of construction jobs, support a significant number of trade and service businesses and will inject new economic activity into our regional centres, including opportunities such as tourism experiences and attractions.

Importantly, the region's manufacturing businesses are currently paying higher energy costs given the distance from the power source over 800 km away in Gippsland and the loss through transmission. With large scale renewable energy in close proximity, the energy loss on the line will be reduced significantly. Given energy is one of the major costs to manufacturing business, large scale renewable energy projects will assist regional areas to be more competitive.

The region is already the Victorian centre for solar energy innovation and with the right incentives would become a world leader in solar technology.

When operational, they will go a long way to help meeting the Victorian RET, support national energy grid security given our unique location at the intersection of three states and will play a key role in helping to transition Victoria and Australia to a clean energy future.

Table 1 – Potential Renewable Projects North West Victoria

Stage	Capacity	Cost Estimate
Permit Granted	834 MW	$1.35 billion
Planning Application Stage	410 MW	$ 550 million
Pre-Planning Discussions	1300 MW	$ 2.02 billion
Total Generation Capacity	**2544 MW**	
Battery Storage Projects	235 MW	$ 340 million
Total $ investment		**$4.26 billion**

Data: Mildura RCC, Swan Hill RCC, Gannawarra Shire

Local Government is a Key Partner

Local government as the planning authority has a unique view of the entire investment pipeline throughout the development process. From pre-planning proposals, land identification, public consultation right through to the construction phase.

Local government also plays an important role in understanding community concerns, engaging with our communities to increase local knowledge of the proposals and facilitate local supplier engagement to promote improved economic outcomes for the region.

As three Councils working together, our objective is to maximise the investment in large scale solar and other renewable electricity generation in our region. To do so, we will work closely with state and federal governments, our communities, regulators, power companies and proponents.

We will work with stakeholders to develop a clear plan to transform the Murray Valley into Australia's Clean Energy Valley.

Infrastructure Investment and Policy Certainty Required

While Local Government can play its role, there are key issues outside its remit that need addressing in order to realise this opportunity. The delivery of these projects relies upon the removal of constraints from the network.

The transmission system in Western Victoria[1] is at capacity. AEMO has identified that if the *projected volume of new generation connects into the grid, generators may be constrained or disconnected* due to the thermal limits and system strength of the Western Victorian transmission system[2].

These identified limitations have triggered AEMO to undertake a Regulatory Investment Test for Transmission (RIT-T) for the Western Victorian transmission system. The RIT-T is an economic cost-benefit test used to assess and rank different electricity transmission investment options to address an identified need.

> *"New generators connecting to this part of the Victorian electricity network are expected to be heavily constrained by emerging thermal limitations on the 220 kilovolt (kV) transmission system, with up to half of their energy output curtailed (depending on proximity to constraints).*
>
> *System strength in Western Victoria is low due to the electrical distance between local terminal stations and connected synchronous plant. This limits the amount of non-synchronous (renewable) generation that may be connected to the existing Western Victoria network."*
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> *AEMO: Western Victoria Renewable Integration, Project Specification Consultation Report. April 2017.*

[1] "Western Victoria", in the context of this RIT-T, is defined as the Central Highlands, Wimmera Southern Mallee, Mallee, Loddon Campaspe, and parts of the Great South Coast.

[2] AEMO: *Western Victoria Renewable Integration, Project Specification Consultation Report*, Published: April 2017 Available at: http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Planning-and-forecasting/Victorian-transmission-network-service-provider-role/Regulatory-investment-tests-for-transmission

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Our councils are advocating for transmission system investment that will provide sufficient capacity to achieve the highest generation capacity possible in our region. This would include options to augment the 220kV transmission lines between Horsham, Red Cliffs, Wemen and Kerang as well as other options to augment the system and improve system strength.

Response to the Project Specification Consultation Report (PSCR)

As set out above, the potential generation capacity seeking to connect to the electricity grid in north west Victoria exceeds 1500 MW which is the upper limit with 220kV system augmentation that PSCR options outline.

Specifically the current pipeline of projects predicts high generation between Horsham sub-station and Red Cliffs, around Red Cliffs, Wemen and Kerang. This would indicate the need for new transmission line capacity Horsham to Red Cliffs, Red Cliffs to Wemen to Kerang, Kerang to Bendigo and Red Cliffs to Buronga.

The Councils would like PSCR to consider new options to expand the capacity of the network to exceed the identified 1500MW upper limit with 220kV system augmentation that would allow additional proponents to access the national transmission lines. This would mean upgrading the lines to either 275 kV or 330 kV transmission lines. Given the environmental advantages and ability to connect power into three states to secure the national energy grid, return on investment analysis should be considered for this expanded option.

As a minimum, our councils recommend that the options outlined at *7.2 220kV network augmentations* be completed.

7.2 220kV network augmentations

This option relates to new 220 kV transmission line capacity and includes, but is not limited to:

- *Thermal uprate of the existing transmission line.*
- *Re-conductor of the existing transmission line.*
- *Upgrade of the existing 66kV sub-transmission lines to 220 kV transmission lines, where* applicable (in the Mildura region this would potentially include 66kV line from Sea Lake through Ouyen to Red Cliffs and from Red Cliffs to Wemen.
- *Installation of a new transmission line, with single or double circuits. Any new transmission lines on new structures will require the acquisition of new easements (such as easement widening).*
- *New transmission lines can be built with 500 kV, 330 kV, or 275 kV transmission towers, initially operated at 220 kV, to allow these lines to be uprated to a higher voltage in future.*

AEMO: Western Victoria Renewable Integration, Project Specification Consultation Report. April 2017.

Given the significant investment anticipated in this region, transmission towers will need to be built with the capacity for at least 330 kV transmission towers.

In addition, the Councils recommends the extension of the transmission network from Buronga in New South Wales to Red Cliffs under Option *7.3 275 kV or 330 kV network augmentations* should be pursued if the new interconnector from Robertstown in South Australia to Buronga with a voltage of either 275 kV or 330 kV is implemented. This will allow the region to be the heart of renewable energy for the three states and increase national grid security.

While these involve considerable lead time and investment, the potential overall benefits to the region, Victoria and South East Australia are enormous and, we would argue, outweigh these costs.

We would be grateful for the opportunity to discuss in more detail with AEMO the benefits to our communities of the investment associated with the development of large scale renewable energy generation in our region.

Energy Policy

Our councils are also advocating for energy policy certainty. The past decade has seen policy changes and uncertainty impede investment in renewable energy generation. Enormous resources (monetary and physical) have been expended by large scale renewable energy proponents, councils, governments, land owners and power utilities to determine commercial viability in an uncertain environment, gambling on augmentation on transmission networks to provide additional capacity into the national grid and create investment in regional areas.

Investor confidence depends on transparent markets, clear policy direction, and integrated climate and energy policy[3]. It is imperative that investors, particularly international companies, have consistent government policy both at State and Federal levels to ensure confidence in projects.

To achieve our aim of maximising investment and realise the potential large scale renewable power generation in north west Victoria, we are urging State and Federal Government's and both sides of politics to work more closely to provide the policy certainty required.

For further information please contact:

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[3] Wood et al. Powering Through, Grattan Institute, June 2017 available at https://grattan.edu.au/report/powering-through/