Victorian Bioenergy Network

28/05/2021

VBN Submission on the Draft ISP Methodology

Dear Sir/Madam,

The Victorian Bioenergy Network makes the following submission to the AEMO Draft ISP Methodology.

The draft ISP methodology has a number of glaring omissions. Primarily the total lack of any consideration of power from bioenergy and the potential role of bioenergy in firming electricity supply. While a significant amount of the draft methodology is committed to the potential of unproven hydrogen technologies there was no mention of either the existing contribution of bioenergy or its potential.

According to the Clean Energy Council, 1.4% of Australia's electricity generation is currently from bioenergy, while by contrast it is 9% in Austria and Sweden, 10% in Germany, 12% in Denmark and up to 19% in Finland. The International Energy Agency's market analysis and forecast report, Renewables 2018, identified modern bioenergy as the 'overlooked giant within renewable energy'. A report for the International Renewable Energy Agency, Renewable Power Generation Costs in 2017, found the cost of electricity from biomass to be equal to that from onshore wind projects, and well within the range of maximum and minimum costs of fossil fuel generation. Bioenergy is a proven, dispatchable, baseload electricity technology. According to a 2019 IRENA report on power generation costs, modern bioenergy plants have capacity factors ranging from 85% to 95%. Average capacity factor for wind power in SE Australia is 30% to 35% and solar power is 21%. This means you need to install up to three MW of wind and four to five MW of solar PV to generate the same amount of electricity over a 12-month period as a one bioenergy plant. A 24 MW biomass CHP installed in 2018 by MSF Sugar in Queensland for $86 million had a capital cost of $3.6 million per MW. According to a recent CSIRO GenCost report, wind power has an installed cost of $1.95 million per MW and large scale solar PV an installation cost of $1.41 million per MW. When you add sufficient battery storage to deliver similar dispatch ability, the capital costs are considerably higher than the operating and fuel costs for bioenergy.

It's surprising the 60 MW waste to energy project proposed by Australian Paper in Victoria's Latrobe Valley wasn't considered at least. There are a number of other waste to energy plants either proposed or under development in Eastern Australia and their potential impact on electricity supply should be included. Other such projects include the Mt Piper Energy Recovery Project or the Swanbank Energy from Waste plant in Queensland.

While the potential impact of electric vehicles has been included, there is no consideration given to the even greater potential impact of the shift from gas space heating and hot water to electric heat pumps. This is likely to add significant demand to winter evening peaks. A similar situation already applies in summer during heat waves. There is significant potential to shift this seasonal demand away from the electricity grid using district heating and cooling systems connected to bioenergy CHP/cooling plants and this option should be considered.

The draft methodology includes using past stream flow records to predict future generation potential. This approach ignores the likely impact of climate change on future rainfall, and therefore stream flow, as predicted by the CSIRO climate change research. Failure to factor in expected changes to hydro capacity will increase the vulnerability of the electricity grid.

While the methodology indicates natural gas will play a large role in managing the variability of wind and solar, there is no mention of the potential impact of a carbon tax on gas prices. Given global trends, it's likely Australia will be forced to adopt some form of tax by our trading partners. Using carbon capture and storage technologies will add considerably to the capital and operating cost of fossil fuel based generation.

AEMO should also consider the localised issues which the ISP may face during implementation, and the likely impact which this may have on an effective and timely decarbonisation of the NEM. To understand the potential challenges which excessive network augmentation poses, AEMO need look no further than the current implementation of the Western Victoria Transmission Network Project. This project - having been through several preliminary review stages with limited scope - is now facing opposition from community groups, clean energy advocates, local government bodies, and State & Federal Members of Parliament. This is due to traversing built-up areas, locations of environmental significance, and prime agricultural land. Localised, appropriately-sized electricity and heat generation from biomass largely obviates the need for excessive grid augmentation and its associated challenges, and instead builds local industry, energy resilience and social acceptance.

In summary, the potential and competitive costs of obtaining power from or by reducing need for power by sourcing heat or transport fuels from biomass and biowastes by a number of mature technologies has been almost entirely overlooked in this report. The models, examples and economics of developing energy, including electricity from biomass, can be found in the many countries that are already well along the path to transitioning to a zero net GHG target. Germany is already getting 5% of power from anaerobic digestion of putrescible wastes. Sweden is already getting over 21% of transport fuels from biomass. Austria is already getting about 20% of all power and space heating from biomass, across Europe non-recyclable combustible wastes provides 4-8% of power from the EU-15 countries (with over 50% of this waste being biomass).

The Victorian Bioenergy Network urges that these and the many other examples of the potential for utilising Australia's very large annual amounts of economically available and sustainable biomass and biowastes be seriously considered in development of a comprehensive report on ISP Methodology by AEMO.

Yours sincerely,

Daryl Scherger – Secretary,

Victorian Bioenergy Network.

Mob: 0497 609 944