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Senate Select Committee Inquiry into Fair Dinkum Power

The Goulburn Broken Greenhouse Alliance is pleased to take this opportunity to submit a response to the Senate Inquiry into Fair Dinkum Power.

GBGA is a formal Alliance of the thirteen councils across the goulburn valley and north east Victoria, committed to delivering mitigation and adaptation projects and sharing initiatives that support sustainable, low carbon communities. The GBGA area is 19% of the area of Victoria and represents 28% of the regional-rural municipalities in the state. The concerns in this letter are raised on behalf of the member Councils of Alpine, Benalla, Campaspe, Indigo, Mansfield, Mitchell, Moira, Murrindindi, Shepparton, Strathbogie, Towong, Wangaratta, and Wodonga.

This submission provides a regional perspective of issues that need to be considered in the development of a renewable, diversified energy network and ongoing upgrade to achieve a future distribution grid that allows involvement by energy consumers in the National Energy Market. Detailed studies by CSIRO, Alternative Technology Association, Beyond Zero Emissions, Energy Networks Australia, the Climate Council, universities and other reputable and experienced organisations have already demonstrated this transition to renewable and diversified energy is both achievable and providing economic benefit.

The need for a planned transition to renewable, diversified and equitable energy is urgent. The coordination of local energy supply into the grid network and the National Electricity Market is integral to this.

There are many examples in the GBGA region where communities recognise that the conventional energy supply system is failing their community and they are working to develop local renewable energy options. The GBGA submits that the Inquiry consider these key issues to ensure the future energy market and the energy network contributes to the economic and social development of local communities, leaving no-one behind in the energy transition.

Please note this is an overall response, not specifically addressing each of the terms of inquiry.

1. Reliable power supply is essential for economic development in the member councils of the GBGA. The current state of the grid network constrains development in many councils and communities. In most of the 13 GBGA member municipalities, projects are being developed for local renewable energy and demand management through efficiencies. These projects are both council and community led and in part respond to current energy deficiencies.
2. The GBGA is a region of high solar gain and this provides opportunity to develop solar power at large commercial farm scale through to solar on businesses and homes.



The market has also identified this with many solar farms proposed in the region. Grid constraint is affecting the ability of the region to develop these energy opportunities which would provide much needed economic development stimulus in the region.

3. Grid constraint and network condition is affecting local communities now. Some areas are experiencing regular brown/black outs which can number several times per month for up to 24 hours. The impacts are profound. Rural homes go without water when pumps are not working. Failure of power to dairies and refrigeration risks significant losses. In the interconnected economies of local communities, these losses flow onto other businesses. The history of unreliable power supply will deter investment in new ventures, and the desire of established businesses to expand and improve.
4. In the 2019 summer, many towns in the GBGA region hit temperatures that came near or exceeded records for repeated periods of several days. High night-time temperatures as well produce health threatening heatwave conditions. These heatwave conditions contribute to associated increases in death, hospital admissions and illness. These severe impacts of a warming climate only increase due to climate change. The Victorian Government analysed the heatwave impacts of Black Saturday 2009. It reported 374 deaths due to the heat across the state for that one week and the statistically significance difference was in those 65 years and older. Rural populations have a higher average age than urban areas, and lower average incomes. Energy provisions needs to include social factors as well as economic ones to develop equity in participation in local energy opportunities.
5. An example of the impacts of grid failure was the 24-hour outage on 24th January during heatwave conditions at Nagambie, Avenel and parts of Seymour. Issues arose relating to phone and internet failure due to a limited 4hrs back up battery system. No ATMs so no cash for local shops, no fuel pumps so can't leave the town, no communication and over 40 degrees on this day. Water and sewerage also had limited backup, so generators were brought in. One business experienced major loss to a mushroom crop. These impacts are more profound in rural areas where people do not have alternative options like a reliable mobile network, or live in isolated sites with neighbours many kilometres away. A power outage leaving people without water and phone communication in heatwave conditions is a very high-risk situation. Local distributed supply, coordinated with network improvements including storage, could avert these high-risk events.
6. There are 13 community energy organisations in the GBGA. More than half of these have commenced in the last 2 years, demonstrating that local communities do value and understand diversified local community energy opportunities.
7. The most advanced example is the Yackandandah community, where Totally Renewable Yackandandah and Indigo Council are working with Mondo Energy (Ausnet) to trial local energy production and the use of microgrids. The cooperation between community power and the energy company has now resulted in the installation of 1 gigawatt of community solar power in a town of 950 people. The cooperative model established between private-public-community collaborators could serve as a model for other community energy development, consistent with the requirements of distribution businesses and the network.



8. Despite the will of communities to develop local energy solutions, rural communities do not have the same technical advantages of metro areas. As well as grid issues, developments like microgrids need internet connection between parts of the system and to the internet of things to be workable. Many communities still endure mobile black spots and poor internet connectivity, which hampers the ambition of these communities to benefit from new technology.
9. Equity of access to energy supplies for lower income households and renters is also a key issue for councils, representing this vulnerable sector of their communities.
10. Notwithstanding these local developments, a significant sector of GBGA communities is being disadvantaged when they cannot participate in the local energy opportunity. Many lack resources – not being home owners, or not having up-front capital to invest in solar panels or home energy efficiencies, even though they could pay for the cost of these from savings. A modern energy economy needs to provide economic structures to allow renters and low-income households to use energy efficiently and participate in local energy opportunities, or the community will pay in increased health and social impacts. This could include regulatory structures such as an advertised building energy rating for all dwellings, to encourage all owners, including landlords, to upgrade properties for energy efficiency and solar power installation – with an expected increase in the market attractiveness of these more efficient buildings.
11. There are examples in the GBGA where councils have facilitated commercial and dairy businesses to install solar power through Energy Upgrade Agreements (EUA), a mechanism that assists businesses to access competitive long-term finance and use savings to repay this capital. Economic structures are also needed to allow low income groups to gain low interest or no interest capital, and pay back from savings. This will produce household and community benefits. However, councils do not have the administrative resources to expand the EUA programs widely.
12. Energy supply in the future will be more diversified. CSIRO estimates between 30-45% of future energy generation will be local and owned by households, business and communities. The overall grid network needs to work with this private generation. The distribution grid is an essential community service and ongoing upgrade and investment needs to be future oriented. Investigation of a future grid needs to include:
 - A planned transition from older generation centres to distributed large sources eg wind and solar farms, and storage sites like pumped hydro
 - Interaction of supply sources, from large generators to household sources, to optimise supply to users and provide the ability to feed local source into the grid
 - Identify geographic areas, where grid constraint is compromising local economic development. In these areas, new technology such as local generation/storage and mini-grids can be a more effective approach than upgrade of the distribution grid
 - Able to provide a dynamic response to the diversification in supply-demand patterns
13. Both Commercial and residential consumers have embraced rooftop solar, but the current tariff system constrains the broader potential of rooftop solar. Consumers gain benefit by using solar power in the premises before exporting to the grid, with a low feed in tariff.



This is ideal for businesses and households with peak use at the peak solar gain periods of the day. All others are exporting at low prices. This provides an incentive for battery installation when consumers are providing further private infrastructure while still paying for grid services and development. The distribution grid is an essential service and the likelihood of households and businesses to install private batteries is showing a failure of the grid to respond to future energy supply and use patterns. Storage within the grid can be used to smooth out local energy demand. Increasing daytime export, combined with local and regional storage in a modern energy network can reach a scale where it avoids costly upgrade to the poles and wires infrastructure. Solar owners need a suitable price signal to export for local benefit, rather than withdraw from the local energy economy.

14. Demand response in peak demand periods needs to be achieved through user behaviour, not by rolling blackouts as happened in Victoria on 26 January 2019. Price signals can influence consumers to reduce demand, but consistent information and education from key agencies is also crucial. In the GBGA, local communities have shown they can develop the know-how to contribute to local solutions in both supply and demand management. Cooperation between energy agencies and companies and the community during the planning and implementation of measures to balance local energy supply and demand will produce effective outcomes
15. In the Hume region, a Hume Renewable Energy Roadmap is being developed to support community to achieve a renewable energy future. This has been initiated by community and council aspirations to build renewable and distributed energy in the Hume region. The Roadmap will assist to identify areas in the region where distributed energy best serves the area and/or network development is more effective. The work has input from distribution businesses, councils, state agencies and the community. This work is well advanced and expected to finish in June 2019. The project would allow detailed information to be provided to the inquiry.

An Invitation to the Senate Select Committee

This submission shows that rural communities are informed about potential of local energy development, but their desired action is constrained by the ongoing infrastructure and technology disadvantages experienced by rural communities.

The Goulburn Broken Greenhouse Alliance is in the position to assist the Committee to access further information from councils and community energy groups in the GBGA region. Please contact Bronwyn Chapman, Executive Officer (see contact below) with any enquiries.

Cr. Marg Attley
Chair
Goulburn Broken Greenhouse Alliance



References – Links

Link to [report](#), January 2009 Heatwave in Victoria: an Assessment of Health Impacts

Link to media article in the Age

<https://www.theage.com.au/national/victoria/relief-centre-opened-near-nagambie-as-power-outage-hits-township-20190124-p50tdx.html>

CSIRO, energy Networks Australia, 'Electricity Networks Transformation Map'

https://www.energynetworks.com.au/sites/default/files/entr_final_report_web.pdf

MEMBERSHIP OF THE GOULBURN BROKEN GREENHOUSE ALLIANCE

Benalla Rural City Council

Campaspe Shire Council

Greater Shepparton City Council

Indigo Shire Council

Mansfield Shire Council

Moira Shire Council

Mitchell Shire Council

Murrindindi Shire Council

Strathbogie Shire Council

Towong Shire Council (associate)

Wangaratta Rural City

City of Wodonga

Goulburn Broken Catchment Management Authority

North East Catchment Management Authority

Department of Environment Land Water and Planning (Hume)