Submission No 117

INQUIRY INTO IMPACT OF RENEWABLE ENERGY ZONES (REZ) ON RURAL AND REGIONAL COMMUNITIES AND INDUSTRIES IN NEW SOUTH WALES

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Date Received: 31 January 2025

Submission to Legislative Council Inquiry into

Impact of Renewable Energy Zones (REZ)
on rural and regional communities and industries
in New South Wales

This submission suggests that concurrent with the declaration of a REZ, there should be a plan to **upgrade local single phase branch lines to three phase**. The significant benefits of doing so for farmers, regional communities, and NSW as a whole are outlined, and it is submitted this would go a long way towards reducing community angst by providing tangible and long-lasting benefits.

Background

An REZ is generally declared where there is wind or sunlight to be harvested, but inadequate transmission infrastructure to send the electrons to Sydney.

So what happens next is that HV transmission lines are planned, to the consternation of the locals who suffer significant uncertainty, then gain no direct benefit if/when they are built.

There is a requirement [NSW Transmission Infrastructure Strategy] to build out the transmission infrastructure at the lowest possible price -so transmission lines go above ground - rather than best value for money, which might see them underground.

So there is community backlash against not just the wind farms (and, to a lesser extent, solar farms), but also the transmission lines which connect them to Sydney. The latter at least is avoidable.

At the same time, to support the pretense that “large scale renewables are the cheapest form of electricity”, many elements of the true costs of same are externalised: damage to the environment, loss of enjoyment of land, mental health issues, reduced land values, end-of-life remediation etc.

And for the same reason (ie to reduce their overall cost), the compensation offered does not properly reflect the above elements. Nor is it offered to the general public who are casually impacted every time they see more of the natural environment industrialised.

There is growing recognition that it doesn’t much matter whether industrial renewables are the cheapest, because:

1. All electricity is priced at the highest accepted bid at the time (as opposed to the price it was bid at), so it is only cheap when renewables supply 100% of power needs, and
2. At those times when the price would crash because renewables do supply 100% of power needs, the Capacity Investment Scheme underwrites the losses (at the taxpaying consumer’s expense), effectively boosting the price.

Consumer Energy Resources

Of course, there is a well-known alternative to all this, which has the support of most Australians: “Consumer Energy Resources”, think rooftop solar, but more recently encompassing batteries.

In policy terms, there is encouraging movement on this front lately, including:

- National Consumer Energy Resources Roadmap – Powering Decarbonised Homes and Communities

It is recognised that if consumer resources are coordinated effectively, they can help lower costs for all consumers by offsetting the need for billions of dollars in grid-scale investment.

From an individual household perspective, if you have a battery, you can export power to the grid and get paid for energy time-shifted to when it is needed (typically just after dusk).

The problem is that there are limits to how much one can export, for example:

- Single-phase: perhaps 3 to 5 kW
- Three phase: perhaps 10-15 kw

Using AEMO's historical data, it is possible to calculate an upper bound on how much one could have earned per 1kw of allowed export:

- 2022: $1609
- 2023: $ 860
- 2024: $1175

Most of the regional distribution network is single phase. Taking Essential Energy as an example, they generally impose a 3kw export limit in rural areas.

So the ability of a rural farmer to contribute energy when needed is severely constrained, as is their monetary incentive (3 x the above numbers as a historical guide).

There is growing recognition of the need for flexible export limits:

- AER's "Export limit guidance note" of Oct 2024
- AER's "Insights into Australia's growing two-way energy system" performance report of Dec 2024

However, there is so far no public recognition by Government that single phase lines need to be migrated to three phase, much less any policy support for it.

Instead, what is happening is that farmers needing three phase power are often installing it themselves and disconnecting from the grid, which is bad for the system as a whole.

The National Consumer Energy Resources Roadmap does have National Reform Priority "P.1 Enable consumers to export and import more power to and from the grid", but stops short of any recognition of the single phase impediment.

If the single phase lines in rural NSW – many of which date from the 1960's - were upgraded to three phase, then many farmers can and would invest in batteries and export power to the grid at prevailing wholesale prices (via a retailer such as Amber). After all, they'll need these batteries over time as tractors and other diesel machinery are replaced with electric versions. With its support for higher loads, even those who don't wish to export power would benefit from 3 phase (as their existing machinery is electrified). Indeed, over time the lack of 3 phase power will become a major impediment for NSW farmers.

Unfortunately, as mentioned, there is no NSW government program to progressively upgrade rural branch lines.

A great starting point would be that wherever landholders are impacted by an REZ, the Government should be committed to upgrading the local electricity lines to 3 phase. This would also be a great opportunity to install optical fibre alongside.

This is a win-win, a definite win by empowering locals (pardon the pun), and a win for the broader community which gets cheaper power.

By prioritising the branch line upgrades starting with those closest to major population centres, the need for new HV transmission lines farther afield could also be reduced.