Can communities really improve the energy trilemma?

I have read the material and worked in the electricity market policy for over 15 years until 2017 in New Zealand (Transpower grid owner, system operator, Concept Consulting, Electricity Authority) and in Australia (AEMC, ARENA) since then.

Australia is well ahead of New Zealand in the amount of CER uptake on the back of government support for renewables, including household rooftop solar PV, for many years now.

However, in no way does this imply that New Zealand should adopt a similar strategy. Direct action, as it is referred to, is the only alternative Australia could adopt to meet its emissions reduction commitments after a decade-long Federal 'choice' not to manage emissions reduction via carbon pricing/emissions trading. Subsidies are a poor substitute but there remains a case for very temporary and targeted support in some cases to offset pre-commercial risks and costs and first mover disadvantage and provide a more even investment playing field.

According to the paper, the focus of this drive for decentralisation is based on improving all elements of the trilemma - affordability, reliability and sustainability. However, by definition, reducing the geographical scope for dealing with the trilemma is more likely to make the trilemma harder, not easier. If this was not the case, there would be no point in maintaining the national grid.

While this might not be the case in some places, I don't see any modelling in any of the references provided that would suggest which communities can have greater reliability and sustainability at lower cost. This doesn't mean it might not still be worthwhile exercise - communities may very well value their increased reliability and sustainability higher than the extra costs and be more than willing to pay for them.

Australia's policy pathway has been paved with government subsidies to homeowners, the burden of which is increasingly falling on those that rent. If there is already a lot/too much CER in local networks (due to previous government subsidy schemes) then the answer is more subsidies for a community battery and pricing signals to manage the congestion in the area (see dynamic operating envelope schemes).

However, while the various trials I've been involved with show it can work, I would like to see New Zealand skip the earlier steps (ie handouts and cross-subsidies for homeowners). The gap between haves and have nots in both Australia and New Zealand is easy to see in the home ownership statistics. Adding CER to that divide rubs salt into an already nasty wound which neither the red or blue political parties want to fix because it would require house prices to fall.

Still, if New Zealand insists on subsidies and wants to get the best bang for buck wrt a CER revolution then it should invest in:

1. Accelerating the adoption of EVs and V2G - home batteries are a puny 13kWh capacity and can't go anywhere while the average SUV EV battery will soon have 100kWh capacity, which could get your average family from Wellington to Auckland or power your average drafty kiwi home for several days.

2. Distribution network-connected batteries in local networks with diverse and flexible generation and communities interested in managing local congestion and raising community electricity network resilience. If there is no congestion and no greater than average local network vulnerability then there is little value in a community battery.

Cheers
Greg