Submission No 192

SUSTAINABILITY OF ENERGY SUPPLY AND RESOURCES IN NSW

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1. The capacity and economic opportunities of renewable energy.

Solar and wind-generated electricity is already contributing a very substantial proportion of NSW electricity needs. Due to policy failure at the Federal level, investment and innovation is being severely curtailed. NSW can provide the incentives to re-energise the market, and operate the existing grid much more efficiently.

2. Emerging trends in energy supply and exports, including investment and other financial arrangements.

However, due to failure to update, we still rely largely on old technology mechanical 'spinning reserves' for grid stabilisation services. Other nations and states are investing heavily in grid scale batteries that provide 'digital reserve'. These can respond in fractions of a second to grid stability issues, whereas the old technology requires hours or days to do so, thus the AEMO/NEM requirement to commit to these services a day in advance, thus disadvantaging semi-scheduled suppliers such as wind and solar.

3. The status of and forecasts for energy and resource markets.

The artificial near-monopoly of the present grid management is a hangover of the coal era, when the entire connected grid must be synchronised, that is, all generators turning at the same speed and phase. Modern systems (solar, wind, batteries) use electronic inverters to produce the frequency and waveform required, so can respond almost instantaneously, and are thus able to provide the very valuable frequency control ancillary services that have seen the French-owned Hornsdale Reserve pay itself off in less than three years.

4. Effects on regional communities, water security, the environment and public health.

The prospect of operating the grid in this more efficient manner, using very much coal, thus less cooling water, noxious gases, airborne particulates and coal ash wastes than at present, is attractive. Employing more workers in these future-oriented jobs can only be a positive.

5. Opportunities to support sustainable economic development in regional and other communities likely to be affected by changing energy and resource markets, including the role of government policies.

The grid-scale batteries required to effect this substantial improvement in overall efficiency, thus lower operating costs and emissions, are presently being built by overseas-owned companies. This need not be the case. The technology is well within the capacity of local engineering firms.

The state of NSW could offer investment bonds at better than market rates to finance an accelerated roll-out of such grid-scale diigitally-controlled battery reserves. A modular approach may be appropriate, in that shipping containers could be refitted and installed at each substation across the state, to dramatically improve the efficiency of the grid, and to allow best use to be made of the very many PV installations, large and small.

6. Any other related matters.

The recent trend towards burning forest 'waste' to produce 'GreenPower' electricity is a mistake. The examples in the USA and UK at Drax show that this activity, once under way, is all but ungovernable. Locally, this is being driven principally by the cumulative failure of State Forest

'acceleration' policies, and benefits only a few private trucking companies and the foreign-owned operators of the (publically funded) failed conversions of sugar mill boilers.

While 'Biomass', and several other 'Bio-' fuels are classified as zero carbon emissions, this is of course not so. The mistake has been to confuse the physics with policy. It may be desirable to favour certain fuels, but the scientific facts should not be warped to do so. The failed MIS Hardwood plantations that are presently feeding this industry will not be regrown at all, as the areas are being cleared back to pasture, so all carbon emitted by the 'Cape Byron' Condong and Broadwater Sugar Mill power stations will remain in the atmosphere.

Should this activity carry over into burning 'defective trees' from native forests, as is presently planned, the emitted carbon may be offset over the many decades taken to grow a forest - decades that the climate scientists tell us we do not have the luxury to waste - or they may never reach maturity, due to either water shortages or more frequent wildfires.

For The Earth

Gregory Hall