

## OPEN LETTER TO THE PRIME MINISTER, AND TO THE LEADER OF THE OPPOSITION.

We are a group of retired scientists and engineers in Queensland, and we are alarmed at the direction our country is being taken through your respective policies, which are virtually identical, on renewable energy. Our names are listed here. We have studied this issue for years now, and we have here outlined the serious defects in your energy policy, and asked some questions which have thus far remained **unanswered**.

**Energy Policy.** By far the greatest risk to Australia's electricity supply is the false belief that renewables (wind and solar) can be a like-for-like replacement for dispatchable fossil fuelled generators. They are not, and can never be. A One- MW wind or solar plant does not replace a One- MW coal plant. Not even close. Solar plants will produce electricity on average at 20% of their installed capacity. They produce power for little more than eight hours per day and none at all at night or on rainy days. Wind plants can be expected to produce electricity on average 25% to 30% of installed capacity, but output can be as little as 2% or as much as 70% with little warning.

Media reports in June this year referred to a "wind drought" across Southern Australia resulting in wind production being "40% below the previous corresponding period". This is a problem but masks an even more intractable false belief; that an energy grid can run on averages. It can't, because energy consumed has to be generated in real time. Just one example of that wind drought: at 2.20 PM on 5<sup>th</sup> May this year, all the wind farms in Australia (4400 MW installed capacity in WA, SA, Vic, Tas and NSW) were producing just 121MW. (That's 4400 MW capacity generating only 121MW). In fact for May and June this year this was not uncommon. Large high pressure systems over southern Australia meant little or no wind for weeks at a time.

The grid has to meet demand every minute of every day. AEMO can and does order fossil fuelled plants to produce electricity. Clearly it cannot do so for wind or solar. Just imagine Australia with a largely renewable energy system -- it is night time so no solar power is being generated, and the whole of Southern Australia is dominated by high pressure systems (this is not unusual) and wind is producing at only 2% of installed capacity! To date dispatchable fossil fuelled generators have been able to shoulder the load but as dispatchable capacity is retired this may no longer be possible, with disastrous consequences.

On the face of it the answer is storage, either battery, pumped hydro or molten salt. This brings us to the next false belief; that storage is some sort of magic pudding. The capacity of current storage technologies is miniscule compared with daily demand. Australian grid demand varies between 18,000 MW minimum and 30,000 MW maximum. Over 24 hours this works out to about 600,000 MWh per day. The Tesla battery being installed in South Australia is said to be the world's largest and to hold 129 MWh fully charged. This may be enough to support the local grid for a short time until dispatchable capacity can be started,

but an unimaginable number of Tesla batteries would be necessary to maintain grid supply for a day or a week, or even longer in the worst case.

It is not clear what the capacity of the proposed Snowy II pumped hydro might be but similar limitations apply and there has to be enough surplus energy to pump the water in the first place.

A battery in the garage may be useful for a household but it must rely on the grid for the cloudy and rainy days. However household demand is only a minor part of total demand. In the 100 % renewables future earnestly desired by many it is hard to imagine and impossible to calculate the amount of storage required to maintain supply during the inevitable periods of low wind and solar production. It is even harder to imagine ever being able to generate enough renewable energy to recharge these batteries and refill pumped storages as well as meet current demand.

**These false beliefs must be addressed in any new policy on energy.**

**Questions.** Since Australia started spending money on renewable energy, all successive governments have failed to hold any independent inquiry into the facts which should support this policy. This failure means that the majority of our citizens, who do not have the time to research the facts, are unaware of the real science. It also allows activist groups free rein to make unsubstantiated claims unchallenged. This would be a standard due diligence exercise in private industry, and would give you good justification to challenge “green” activists with facts.

**Why has no independent inquiry ever been held?**

We can find no evidence to support the assumption that the carbon dioxide content of the atmosphere can influence the climate.

**What hard evidence supports your policy?**

Australia has spent many billions of dollars on reducing emissions of carbon dioxide. At the same time you have enthusiastically endorsed coal exports, and new coal mines. Even our current coal exports wipe out any emissions saved many times over.

**How do you explain the logic here? Do you not believe your own policy?**

We know that hundreds of coal-fired power stations are now under construction around the world. Australia’s emissions of carbon dioxide already are inconsequential, and this will make them even less important.

**Why are you continuing to promote renewable energy, to the detriment of Australian industry and consumers?**

“Clean energy” is the latest euphemism in this debate. Carbon dioxide is an essential plant food through photosynthesis, and life on Earth could not exist without it. The latest information from the IPCC shows that the actual temperature increases are only a **small fraction** of those predicted by the climate models.

### **What is not “clean” about coal fired power generation?**

As experienced engineers in a wide range of industries, we can show that your policies have failed the due diligence test, are not sound economically, and do not exhibit good engineering practice. The huge increase in power pricing, through the imposition of unnecessary technical restrictions on the power grids, and distorting of the market in favour of renewable energy, have the country now facing an economic emergency, **which is entirely self-inflicted**. What remains of Australia’s heavy industry requires low cost and reliable power, and is now under very serious threat.

### **How is this consistent with good engineering and good economics?**

As engineers with considerable experience and skills in analysing problems, economic justification and project management, and who understand the problem, we ask that you answer the questions we have posed. If you are acting in Australia’s best interests you will cease this pointless, destructive and expensive flirtation with renewable energy, and hold a Royal Commission into the facts, to give credibility to future energy policy.

In the interests of Australian businesses, both large and small, we are:

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