

# The iron triangle of energy realism

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Possibly the most powerful argument against the quest for Net Zero can be briefly stated using the Iron Triangle of Power Supply, bearing in mind the logic of testing (or falsification, as Karl Popper called it).

The three aspects of the triangle are:

- Continuous input of power to the grid. Adequate input is required all the time, not just most of the time or almost all the time.
- Wind droughts and especially windless nights break the continuity of input from wind power when there is no solar.
- There is effectively no storage to bridge the gaps (despite all the talk about batteries and pumped hydro).

Consequently, the proposition that the grid can run on wind and solar power is falsified (ruled out) and there is no justification for the decision to contaminate the grid with subsidised and mandated intermittent input from environmentally ruinous wind and solar facilities.

In defiance of the Iron Triangle, the official position is that we just need more installed wind and solar facilities, and more storage. That is stated by the Prime Minister, the Climate and Energy Minister, and the CEO of the Australian Energy Market Operator (AEMO). It is dutifully repeated by all the usual suspects in the ABC and the mainstream media, although

over a hundred leading journalists have received the briefing notes from the Energy Realists of Australia over the last three years.

The briefing notes were compiled by an elite squad of almost-dead white males and Ben Beattie, recruited to work with The Energy Realists of Australia – joking, of course.

### **What is the point of more wind and solar capacity?**

Wind and solar can *displace* coal (to a point that we have almost reached), but they can't *replace* it.

The rate of exit from coal is not accelerated by increasing penetration on good wind and solar days, it is limited by the lowest level of output on nights with little or no wind, as a convoy travels at the speed of the slowest vessel, the water penetrates the levee at the lowest point, a chain is only as strong as the weakest link and stock get out of the yard through gaps in the fence even if the rest of the fence is built to the sky.

### **What storage?**

Batteries can be dismissed very quickly by comparing the capacity of the biggest batteries in the world with the amount of power required to get through a windless night. Journalists don't help by reporting the capacity of batteries in MW instead of MWh (megawatt hours). Scribes who report MW instead of MWh should be promptly escorted from the building with their personal effects thrown into the street after them.

More words are required to describe the inadequacy of pumped hydro because there are many large schemes around the world, and there are some small ones in Australia already. However, I am not aware of any large scheme that runs on wind and solar alone. The largest facility at Bath, Philadelphia (US), runs entirely on coal and nuclear power to enable those plants to run continuously at their optimum output.

### **Conclusion**

We need to keep enough conventional power, mostly coal power, to meet the highest levels of demand at dinner times in high summer and deep winter, until we have nuclear power on deck.

A note on the logic of testing that was mentioned at the start of this piece. It has gone missing in science (on walkabout?) since it became generally accepted in the 1960s that Thomas Kuhn's paradigm theory (science by consensus) had superseded Karl Popper's critical approach (forming a preference after rigorous testing and comparison of rival theories.) That is an important topic for another day.

*Got something to add? Join the discussion and comment below.*