Submission to Inquiry: The current circumstances, and the future need and potential for dispatchable energy generation and storage capability in Australia

Terms of Reference: a. current and **future needs**

At a high level, government decisions are too often at a focalised granular level, and lead to a "death by a thousand cuts" scenario. A better approach is to start by imagining the desired future 200 years from now, then design the paths and waypoints to achieve it. Within this rapidly-changing world, the process must be revisited at least every three years. But as this is never part of the "terms of reference", and good government is undermined by self-centred politicking, we never address the question: **"What is society trying to achieve?"**

In terms of this inquiry, an example of such a future aim would be for **"a sustainable way of providing energy to specific locations." I**deally, "sustainable" should mean balancing the exothermic and endothermic processes of a system, preferably in a controlled and non-harmful way. This inevitably leads to the conclusion: endless growth is impossible within a finite system. With the high globalisation of the modern world, a globally coordinated plan is required.

Terms of Reference: d. comparative efficiency, cost, timeliness of development and delivery, and **other features** of various technologies

There are many dimensions to be considered regarding the inclusion of dispatchable energy, such as:

- Supply
- Demand
- Reliability
- Cost

Each has its own subdivisions. For example "Cost" can be split into:

- Compensation (e.g. negotiating with previous owners, such as "traditional owners", to use the area)
- Opportunity (e.g. how else might the site and funds be used?)
- Reputational (e.g. ostracism by "First World" countries if we do not lead by example or share findings)
- Punitive (e.g. tariffs imposed if there is no equivalent "carbon price"; payback for 200 years of externalisation the cost of industrialisation)
- Build (e.g. acquisition and construction)
- Mitigation (e.g. minimisation of risks and harmful effects)
- Maintenance (e.g. monitoring, repairs, upgrades)
- Security (e.g. against malicious or catastrophic events)

- Recycling (e.g. conversion of "waste" into something useful)
- Decommissioning (e.g. restoring the land to its original state)

For the "Reliability" aspect, as well as the shared areas such as Maintenance, also consider:

- Security: a vulnerability of the existing network is the reliance on a few key supply lines and interconnectors. Imagine the disruption if there was a coordinated severing of even just 3 of the largest power stations: Loy Yang, Eraring, & Bayswater.

Terms of Reference: f. Australia's research and innovation development **framework and policies**

The above suggestions are a small and amateur example of a systems design approach, presenting an alternative to the usual politician-led outcomes. Essentially, the suggestion is for a **multidisciplinary approach**, including engineers and scientists and other disciplines, rather than a lawyer- or unionist-led approach. Australia has excellent engineers and analysts, all of whom focus first on what is wanted, then on how to do it.

End of Submission