

Hello

My name is Mel (Melvin) Zerner & I am responding to the 2024 Gencost preliminary report in terms of the forecasting assumptions.

I am a Chartered Accountant in a general practice in Adelaide, South Australia & am very interested in the Renewable Energy options available for the future electricity generation for Australia & world-wide.

I am particularly interested in the calculations of the costings relating to Technology Capital Costs & the Levelised Cost of Electricity (LCOE).

I am supportive of Nuclear Energy (SMR) as one of the options available for future power generation in Australia & am concerned as to how the capital & operating costs have been determined.

I have the following comments/questions which apply particularly to Nuclear Energy (SMR) but would also apply to the other forms of energy generation.

1 Economic Life of Project

In Appendix Table 8.9, the Economic Life of most of the Energy options are 25 or 30 years including Nuclear (SMR).

However my reading of other literature is that Nuclear(SMR) has an estimated economic life of between 60 & 80 years which is considerably more than the other forms of energy.

How has this been reflected in the costs calculations?

For example in calculating the capital build costs of each form of energy (\$/KW), it clearly would reduce the cost per Kw if the economic life of the project were incorporated in the calculation.

The build cost should be amortised over the economic life of the project to provide a more realistic cost per Kw.

2 Efficiency & Capacity

In the same Appendix Table 8.9, the Efficiency of Nuclear(SMR) is stated as 30% in the 2023 section, whereas Large Scale Solar & Wind is 100%.

The same table has a Capacity Factor of 89% for Nuclear (SMR), Coal & Gas & only 32% to 54% for Solar & Wind under the Low Assumption option.

I consider that Nuclear should have 100% efficiency as it can operate 24/7 whereas solar & wind are heavily dependent on the weather conditions of sun & wind to maximise production of power.

How is these facts incorporated in your costings?

How is the fact that we need a reliable source of base load of power to complement solar & wind etc, incorporated in your costings?

3 Cost of Build & Operation for Nuclear

In terms of the estimated cost of construction, the report only refers to one project in the USA (UAMPS).

I have determined that there are at least 2 companies either producing or developing Nuclear SMR's – Rolls Royce SMR Ltd & Westinghouse SMR.

In the case of Westinghouse, currently 4 units are operating in China with 6 more under construction & 1 more is in operation in Plant Vogtle in Georgia.

Have you researched the costings of these projects or other projects to obtain more realistic costs of build & operation?

4 Costs to Remediate at Completion of Project

It is understood that the life of Solar & Wind constructions is 25 to 30 years & at that time the solar panels & wind turbines need to be replaced.

This would require substantial costs to remove & recycle these components & rebuild the construction.

I understand that Nuclear (SMR) plants would require some renovation & upgrade over the economic life but not a major rebuild.

Has the cost of remediation been reflected in the build & LCOE costs?

5 Use of Land & Effect on other Production

Solar & Wind projects require substantial land for the project & in many existing projects in Australia, they are located in prime primary production areas. In many case the solar farms affect the ongoing production of agricultural produce of neighbouring properties.

Nuclear (SMR) projects require minimal land.

Is there an opportunity cost built into the costings for the loss of agricultural or industrial production for each of the energy sources?

6 Cost of Energy Used to Manufacture Project Build Costs

Solar & Wind projects require substantial energy costs to manufacture the components of the project build eg solar panels, solar array framework, wind towers, wind propellers, turbines etc before they are delivered to site.

Nuclear (SMR) projects have a substantially lower energy requirement to build the nuclear reactor plant.

Have you incorporated the costs of energy used to manufacture all the components of the project build costs of each form of energy?

Can you provide more details on how you calculate the Capital Costs & LCOE costs based on the assumptions that you have determined?

I am available for a mobile phone call to further discuss the above questions if necessary.

Regards

Mel Zerner