



Submission by the Energy Policy Institute of Australia (EPIA) to the Energy Security Board (ESB) on the ESB's Issues Paper Relating to Post-2025 NEM Design

1. EPIA is an independent, apolitical, technology-neutral energy policy body. Its members comprise a cross-section of companies and organisations across the energy and resources sector of the Australian economy. This submission is made by EPIA as an entity and does not represent the official views of any EPIA member.
2. EPIA reiterates below its recent submission to the Inquiry of the New South Wales Legislative Council's Standing Committee of State Development into the proposed repeal of the prohibition against uranium mining and nuclear facilities in that State:

"As the energy sector seeks to accommodate the global transition to a decarbonised world, EPIA considers that a policy of technology neutrality is essential to underpin long-term investment in the sector.

EPIA considers that a policy of technology neutrality is quite imperative to attract efficient investment in innovation.

EPIA warmly supports renewable energy generation to a level that does not impair system stability.

EPIA warns that it could be economically suicidal for the national and state economies if the existing coal-fired or gas-fired generation fleets in the National Electricity Market were to close down prematurely and cause electricity demand curtailment. A reliable, fully-functioning power system is indispensable for the welfare of the community, surely something on which virtually the entire community must agree.

EPIA considers an arbitrary ban against any non-renewable technology - whether it be coal-fired, gas-fired or nuclear power generation - will lead to distortions in the overall power system in any or all of the following ways:

- *by reducing technology diversity*
- *by reducing the level of competition*
- *by increasing weather-dependency*
- *by destabilising the system itself*
- *by reducing investor confidence and*
- *by leading to increased prices for consumers."*

5. EPIA particularly agrees with the ESB in its Issues Paper section 4.2.3 that:

“There is a risk that governments may not allow relatively high and volatile wholesale prices (scarcity pricing) for sustained periods of time sufficient to retain and attract plant and support a smooth transition. The lack of policy confidence and market interventions (like price caps and the cumulative price threshold, or the use of the RERT) could work against investment in flexible generation that rely on relatively short periods of very high wholesale prices to make their required return.

More generally, other government policy interventions (like the Underwriting of New Generation Investment initiative and various government Contracts for Difference payments) that deliver additional storage or generation capacity outside of market arrangements; evolving storage technologies; or non-market interventions that promise to lower price volatility in the wholesale market, may act to increase the risk associated with investing in flexible generation that is needed now and in the medium term.

...

The short-term nature of the NEM (both spot and contract markets) may mean revenues are not sufficiently secure and predictable over the medium to long-term to enable efficient levels of capex maintenance on existing plant and support efficient investment in new plant.”

6. EPIA reiterates from the conclusion in its Public Policy Paper 3/2018 of December 2018:

“The fundamental principles of electricity market design will need to be looked at afresh. For instance, VRE and base load energy generation are very different and may be best served by separate markets with rules that are conducive to investment in each. Multi-purpose reactors supplying both electricity and heat do not necessarily need to be governed by the same market rules.”

7. EPIA endorses what William Magwood said in his Foreword to the OECD-NEA’s 2019 Report *“The Costs of Decarbonisation: System Costs with High Shares of Nuclear and Renewables”*:

“... in the electricity systems of the future, all available low carbon generation options, nuclear energy, wind, solar photovoltaic (PV), hydroelectricity and, perhaps one day, fossil fuels with carbon capture, utilisation and sequestration, will need to work together in order to enable countries to meet their environmental goals in a cost- efficient manner. Plant-level costs do remain, of course important and we fully recognise the great strides that variable renewable energies (VRE), such as wind and solar PV, have achieved in this area in the recent past. If, according to our data, they are not yet fully competitive with nuclear power on that metric except in particularly favourable local circumstances, they soon might be. However, their intrinsic variability and, to a lesser degree, their unpredictability, imply that the costs of the overall system will continue to rise over and above the sum of plant level costs. What nuclear energy and hydroelectricity, as the primary dispatchable low carbon

generation options, bring to the equation is the ability to produce at will large amounts of low carbon power predictably according to the requirements of households and industry.”

8. EPIA believes that modern small modular reactors (SMRs) are designed to “load follow” and that they can support weather-dependent renewables. They do not need to be connected to the grid for safety. On loss of grid, they can remain in operation and are then ready to contribute to re- establishing the grid.
9. In conclusion, EPIA endorses what Dr Fatih Birol said in his Foreword to the IEA’s May 2019 Report “Nuclear Power in a Clean Energy System”:

“Without action to provide more support for nuclear power, global efforts to transition to a cleaner energy system will become drastically harder and more costly. Wind and solar energy need to play a much greater role in order for countries to meet sustainability goals, but it is extremely difficult to envisage them doing so without help from nuclear power.”

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