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Dr Kerry Schott AO
Independent Chair
Energy Security Board
info@esb.org.au

Dear Ms Schott,

RE: National Energy Guarantee Draft Detailed Design for Consultation

Dow Chemical Australia welcomes the opportunity to make a submission on the National Energy Guarantee Draft Detailed Design for Consultation Paper.

This submission addresses both the Energy Security Board (ESB) elements and the Commonwealth elements released in June 2018.

Dow Chemical Australia is part of the Materials Science Division (Dow) of DowDuPont (NYSE: DWDP). Dow Australia and New Zealand has four plants and three commercial centers with approximately 350 employees across the joint geography. The Material Science Division combines science and technology knowledge to develop premier materials science solutions that are essential to human progress. The division has one of the strongest and broadest toolkits in the industry, with robust technology, asset integration, scale and competitive capabilities that enable it to address complex global issues. DowDuPont Materials Science's market-driven, industry-leading portfolio of advanced materials, industrial intermediates, and plastics businesses deliver a broad range of differentiated technology-based products and solutions for customers in high-growth markets such as packaging, infrastructure, and consumer care. DowDuPont intends to separate the Materials Science Division into an independent, publicly traded company (Dow).

Dow Chemical Australia supports the intent and ongoing application of the National Electricity Objective (NEO): *"to promote efficient investment in, and efficient operation and use of, electricity services for the long-term interests of consumers of electricity with respect to:*

- *price, quality, safety and reliability and security of supply of electricity*
- *the reliability, safety and security of the national electricity system."*

With this intent and application of the NEO, Dow Australia submits the following response to the consultation paper:

1. Executive summary - General comment

Power reliability is built upon three pillars, within the context of a long-term strategic energy policy: 1) security (i.e. ability to meet demand every minute of every day), 2) firmness (ability to meet demand over the intermediate term), and 3) adequacy of power generation (ensuring sufficient investment in generation over strategic time frames). The NEG design addresses firmness and adequacy, but consideration must be given to whether security (i.e., to avoid brown outs) is fully addressed by the NEG.

A census of dispatchability is required to define dispatchable generation capacity that exists in the market today - not all coal-fired power generation is dispatchable by design. As intermittent renewables grow in

total capacity, dispatchable power generation must also scale to address the intermittency challenge and ensure the security pillar of reliability.

The balance between emissions reductions, affordability, and reliability must also be addressed. Today, Australia has neither energy storage nor adequate load that can be shed at higher price. Although the technology is evolving, batteries are not ready for widespread grid-scale application for extended periods and pumped hydro is not available in all areas. Similarly, there is insufficient demand response (i.e. such as certain industrial demand) to offset rapid changes in supply. As a result, a grid with a high proportion of intermittent renewables will require a high installed capacity of dispatchable power that is often unused (i.e. when renewables are providing sufficient power for the grid). In order to recover the cost of large capital investments over short periods of operation, a high power price is required - which challenges the affordability goal of the NEG.

2. Executive summary – Three year material gap

When material gaps emerge due to impending retirement of existing generation capacity, then a trigger at three years is sufficient notice for planning. However, in a market with competitive power pricing, demand would be expected to grow over time. If the reliability obligation triggers due to insufficient supply growth - three years may not be sufficient to permit, plan, and construct the necessary generation capacity.

3. Executive summary – Predetermined proportionate costs

What is the "predetermined proportionate cost per MW" and how will it be set? If it is too low, retailers will pay and little will change while if it is too high, the system would likely end up with too much capacity.

4. Executive summary – Dispatchable definition

While coal can be dispatchable, it is not inherently dispatchable unless designed to be. A framework to define dispatchability and whether a coal plant qualifies as dispatchable should be implemented for greater market transparency.

5. 2.7 – General comment

Competition must also be ensured for fuel sources and for the delivery of those fuels to generators. Specifically, open access gas pipelines are required to ensure the most competitive fuels for power plants and avoid monopoly rents being passed to power consumers. Similarly, fair competition between types of generation must be based on sound national energy policy which links the most competitive sources of energy (gas, coal, wind, solar, etc.) to consumers through sound, efficient, open access infrastructure.

6. 3 – Emissions targets

Dow supports a technology neutral approach to achieving the three NEG objectives of emissions reductions, affordability and reliability of supply. An important catalyst for reaching these objectives is providing investment certainty for the power generation industry.

7. 3.3.3 – Large scale Generation Certificates

There is a need for greater certainty on the use of Large Scale Certificates (LGCs) under the scheme. Where there is no long-term certainty, eg beyond 2021, their uptake and therefore value is likely to diminish.

8. 3.4.3 – External offsets

Although climate change is a global problem and requires global solutions, allowing international offsets to domestic emissions obligations would create significant uncertainty and verification difficulties which are likely impossible to overcome in the real world. Experience with the European approaches suggests potential for widespread abuse when international offsets with limited potential for audit are admitted.

9. 3.6.1 – LRET continuation

The Finkel Review found that "the Large-scale Renewable Energy Target scheme should remain unchanged to the end of its design life, but not be extended in its current form". What are the reasons that the LRET must be continued past 2020? In what ways is it unique from the provisions of the NEG?

10. 4.6 – Qualifying contracts

Trade repositories are essential in ensuring that those offering firmness are in fact doing so. Without that auditable record, the likelihood for fraud will increase markedly.

In making an individual submission on the National Energy Guarantee Draft Detailed Design for Consultation Paper, Dow Australia also lends its broad support to the work and submission of Chemistry Australia of which we are an active member.

Finally, I would like to like to reiterate the words of Chemistry Australia *“for Australian manufacturing to be globally competitive, it must be able to regain the previous competitive advantage of energy supply and affordability, while supporting emissions reduction.”*

The Australian Trilemma remains the key proposition that the NEG must address in order to restore Australia’s competitive advantage in manufacturing. This must remain a key principle for the development, implementation and management of the National Energy Guarantee (NEG).

Should you require any clarification or follow up to our submission, please contact our Corporate Affairs Leader, Taimor Hazou on 03 9956 7593 or by email at thazou@dow.com.

Kind regards

A handwritten signature in black ink, appearing to read "Louis A. Vega". The signature is fluid and cursive, with a large initial "L" and "V".

Louis A. Vega

President Dow Australia & New Zealand

and Vice President, Olympic & Sports Solutions
The Dow Chemical Company