25 July 2022

Anna Collyer
Chair
Energy Security Board & Australian Energy Market Commission
Level 15, 60 Castlereagh Street
Sydney, NSW 2000
(via online submission)

Capacity Mechanism – High-level Design Paper – Submission

Dear Anna,

The Clean Energy Finance Corporation (**CEFC**) welcomes the opportunity to make a submission in response to the Energy Security Board's (**ESB's**) Capacity Mechanism High-level Design Paper.

The CEFC is responsible for investing $10 billion in clean energy projects on behalf of the Australian Government and was established to facilitate increased flows of finance into the clean energy sector. The CEFC supports the development of a secure, reliable and affordable electricity system whilst lowering emissions through its investment activities, including large-scale renewable energy, energy storage and other initiatives in accordance with the 'grid firming' focus of our Investment Mandate. The CEFC considers the potential effects on reliability and security of supply when evaluating renewable generation investments and prioritises investments, including network solutions, that will support reliability and security of electricity supply.

Given the CEFC's unique role in the Australian energy market, we are of the view that the most valuable perspective we can bring to policy makers is as an investor who invests in the public interest with commercial considerations in mind. The observations we make are from our perspective as a financial investor (albeit one with a specific policy objective to facilitate a low-carbon transition). The views and approach of the financial investment community are critical to Australia's ability to cost-effectively fund our energy transition.

We estimate that somewhere in the order of $100 billion will be needed to fund new solar, wind, transmission, storage and ancillary services over the coming two decades. The cost of capital will be a key determinant of end-consumer charges, given the high fixed cost / low operating cost nature of the investments to be made. There is ample domestic and international capital available if the risk and return settings are appropriate for financial investors. However, we note that large financial investors are generally risk averse. Given the complexity of the Australian energy market, any market redesign should consider how it might impact the investment community's perception of risk.

The CEFC has a strong focus on investing in large scale solar, wind, battery and grid projects as part of Australia's important renewable energy transition. Over its lifetime, the CEFC has committed over $2.6 billion of financing to wind and solar projects, including 42 large-scale wind and solar projects that generated c.3.6GW of new capacity. Increasingly we are focusing on investing in batteries, as demonstrated by our investments in the Hornsdale and

Victorian big batteries ($210 million committed), however noting that this market is in its early stages due to high capital costs and emergent acceptance of grid capabilities.

The CEFC also invests in essential grid expansion and augmentation as part of Australia's important renewable energy transition. The CEFC has committed market gap financing of $295 million to support the construction of Project EnergyConnect, $125 million to support the grid connection needs of Snowy 2.0 and are actively working to support a number of other Renewable Energy Zones (**REZs**) and transmission projects.

Our submission focuses on issues that are most relevant to our role and experience as a clean energy investor. Our submission provides our high-level perspective and the CEFC also looks forward to continuing to contribute to the detailed design through the ESB's technical working groups.

Transitional impacts on investment

In order to make an investment in the large, high upfront capital cost assets that are solar, wind, storage and transmission assets a financial investor needs sufficient visibility on the revenue stream it will receive over the life of the investment.

We note that the introduction of a capacity mechanism will be a significant change to the operating framework of the NEM. The capacity mechanism will impact market settings, such as a possible reduction in the market price cap to avoid over-paying for capacity at peak times (Question 37), as well as spot and contract markets, potentially changing the sources of generator revenue.

There are also a number of design issues that remain to be resolved. It is unclear currently how significantly the proposed mechanism will impact on the sources of revenue and levels of risks faced by clean energy generation and storage assets and how this will compare to the incumbent fossil fuel fleet, noting a desire to retain reliability and security while transitioning to a low emissions future. We understand that the detailed design is not necessarily straightforward and requires significant time and effort.

These factors create uncertainty for investors looking at long term asset investment. Early signals on the scale of change and timely resolution to the design process are critical to avoid any delay in the significant investment needed in the next decade to meet the ambition of the Integrated System Plan (**ISP**) step change scenario.

We also note that concerns about capacity shortages may arise in the nearer term. An additional driver, for example, is the impact of minimum generation requirements for thermal assets at times of low demand and high renewable energy generation. Given the lead time needed for new zero emissions assets additional measures may be needed to ensure capacity resources in the short-term whilst not embedding high emissions solutions for the longer-term.

New capacity

We support the ESB view that "longer-term investment support is necessary to support the financing of new capacity investment" and that this should be "consistent with the NEM's transition to net zero emissions."

The design of this will be important for new renewable and storage assets. With the ISP as a reference, we note the need to accelerate bulk energy investment (solar and wind) in order to provide capacity as coal retires. This bulk energy has an important interaction with storage and dispatchable assets, helping to reduce the need in some cases and providing low-cost energy for charging storage for later dispatch.

Creating the right investment signals for new storage capacity is an important goal, with utility scale and distributed storage playing a major role in the ISP forecasts, particularly where arbitrage opportunities are reduced due to a lowering of the market price cap and volatility.

Different choices in the detailed design of the mechanism will favour different types of technologies. For example, different design choices may favour capex-light / opex heavy solutions (gas) over high capex / low opex solutions (battery/hydro). Different incentives may be needed for balancing assets that address peaks and troughs in demand than for dispatching assets that play a bigger role in weather droughts.

Based on experience with the Large-scale Renewable Energy Target a time period of around 15 years for support is likely necessary (Question 17) for new utility scale investments. We note that the NSW Long-Term Energy Service Agreement (**LTESA**) program is using 20-year default contract terms for generation, 14 years for chemical batteries and 40 years for pumped hydro.

We welcome the ESB's view that availability throughout the year and during periods of system stress should be considered (Question 27 and 28). While an appropriate weighting between different factors may be able to be determined, consideration should also be given to different contracts or auctions to support the different system needs.

Transmission

We support the ESB's view that the benefits of interconnection should be realised through the mechanism. Interconnection can lower overall costs for consumers and allow a faster energy transition to support Australia's emission reduction goals. We also support the ESB's view that the two broad approaches to recognise inter-regional capacity are both considered further (Question 40 and 41). An important consideration will be the interaction with jurisdictional schemes that support new capacity, and what effect these have in considering capacity resources within and outside regions.

Transition and emissions context

Climate change has significant implications for Australia's energy sector through physical risks such as higher temperatures and bushfire weather, and transition risks such as policy, technology and demand changes.

To avoid the worst impacts of climate change, Australia, through the United Nations Framework Convention on Climate Change (**UNFCCC**) and the Paris Agreement, has agreed warming should be limited to well below 2 degrees Celsius above pre-industrial levels with an aspiration to limit to 1.5 degrees. Australia has committed to reducing its emissions by 43 per cent below 2005 levels by 2030 under the Paris Agreement and has committed to reach net zero emissions by 2050.

These goals imply relatively rapid decarbonisation of the energy sector over coming decades whilst demand for electricity rises due to electrification. As the ESB has noted, our electricity sector is undergoing a once-in-a century transformation to clean energy sources.

Under the 2022 ISP, the step change scenario sees NEM emissions falling to just 34 per cent of their 2020 levels by 2030, and 5 per cent by 2050. To support the electrification of the economy, replace coal fired generation and provide consumers with the lowest cost supply, AEMO forecast under the step change scenario that by 2050 there will be a nine-fold increase in utility scale renewable energy, a five-fold increase in distributed PV and approximately 31 GW of distributed and 16 GW of utility scale storage capacity.

Our view is that NEM reform should be aimed at creating the right investment signals to meet the ISP step change scenario.

As such it is important to embed the principle of continued emissions reduction in the NEM design. In our view it is not possible to develop an enduring market design without further considering the physical and transition risks of climate change, which in turn will impact investability. We note that the ESB is seeking guidance from Energy Ministers on how they can design-in emissions requirements and better integrate energy and emissions policy. We believe that this will be critical to ensuring the transition to a lower emissions electricity system occurs in a time period compatible with the ISP step change scenario, in particular providing clear investment signals for new resources including dispatchable storage.

It is also important that the interactions of investment signals created by a capacity mechanism with jurisdictional schemes is considered and coordinated. This includes interactions with the investment signals created by REZs where demand for generation to locate at scale in the REZ is needed to support the efficiencies delivered under REZs.

Further engagement / consultation

We very much value the opportunity that the ESB has provided to enable the CEFC to provide input into this process. Should you wish to discuss this submission further, please contact Owen Pascoe (Associate Director – Research): owen.pascoe@cefc.com.au.

Yours sincerely

Ian Learmonth
Chief Executive Officer