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24 September 2020

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## **SUBMISSION ON THE GRID RELIABILITY FUND BILL 2020**

The Australian Industry Group (Ai Group) welcomes the chance to make a submission on the Grid Reliability Fund Bill 2020 (the Bill). Ai Group is a peak national employer organisation representing traditional, innovative and emerging industry sectors. We have been acting on behalf of businesses across Australia for nearly 150 years. Ai Group is genuinely representative of Australian industry. Together with partner organisations we represent the interests of more than 60,000 businesses employing more than 1 million staff. Our members are small and large businesses in sectors including manufacturing, construction, engineering, transport & logistics, labour hire, mining services, the defence industry, civil airlines and ICT.

The Clean Energy Finance Corporation (CEFC) has been a successful innovation in Australian climate and energy policy. It has leveraged public finance and private partnerships to crowd capital in to areas of great importance to Australia's future, while operating with strong governance and a net financial return. We welcome the Government's decision to continue the CEFC and to build on it, including through the Grid Reliability Fund (GRF). There are two important outstanding questions to address in the implementation of the GRF: the nature of the need for reliability; and the nature of a low emissions energy system. The latter may be assisted by a small amendment to the current Bill, but on balance the Bill is positive and Ai Group encourages all Senators to pass it.

### **Context for the Bill**

Australia's energy systems are undergoing an immense transition, driven by the plunging costs of solar photovoltaic and wind generation, battery storage and other technologies; shifts in demand patterns and the more active participation of energy users in energy systems; and the imperative of reducing Australian greenhouse gas emissions, preferably to net zero by 2050, as part of global efforts to curtail climate change.

Ai Group has argued for a national vision of successful transition to guide energy and other areas of policy. Climate change is a large and intensifying threat to Australians. It is in our national interest to drive successful global efforts to limit climate change; to contribute to that success by achieving net zero emissions by 2050; to safely manage the change we cannot avoid; and to increase our competitiveness and shared prosperity in the process. Building a new energy advantage is critical to seize new opportunities while ensuring a fair and successful transition for existing industries, workers and communities. Achieving this vision requires coordination across all areas of public policy and investment.

Ai Group overall prefers energy market and policy frameworks that are outcome-focussed and technology-neutral – frameworks that pursue agreed system-wide outcomes for affordability, reliability and emissions, rather than prescribing particular solutions. It is important to leave room in our plans for market and technological surprise. The future may upset our current expectations. That said, it looks very likely that Australia's electricity systems will be increasingly dominated by cheap bulk energy from large scale wind and solar generation; that market-visible demand will be reduced and shifted by distributed solar generation and battery storage; and that finding ways to turn this variable bounty into overall system outcomes that are cheap secure and reliable will be central to constructing a new energy advantage for Australia. While keeping alert for the unexpected, makers of energy and climate policy should ensure that our frameworks are at least fit for the future we

expect.

A variety of resources and strategies can help integrate variable renewable energy: diversity in the location, orientation and technology of renewables; overbuild and curtailment of renewables; denser interconnection of regions; energy storage via batteries, pumped hydro and other technologies; flexible generation from a range of fossil and nonfossil technologies; grid-strengthening infrastructure such as synchronous condensers and grid-forming inverters; and demand-side flexibility, including shifting loads into high-supply periods and out of low-supply periods. Today peaking gas generators are the most important source of system flexibility. In the future their role is likely to reduce, though it is not yet clear which mix of approaches will be optimal.

It is important to remember that while the overall *security* of the electricity system (whether it is stable enough to supply anyone at all) is of very high value, the value of *reliable* supply (whether it can supply everyone at once) is large but far from infinite. Furthermore the achievement of higher levels of reliability comes at a cost that is ultimately borne by consumers. Policy makers need nuanced expectations of reliability, not an effective standard of perfect reliability.

There are currently a great many initiatives in place or underway in Australia to address energy reliability and the integration of higher levels of variable renewable energy, particularly within the National Electricity Market (NEM). These include:

- The regulated NEM reliability standard of no more than 0.002% expected Un Served Energy (USE), which informs the setting of the wholesale Market Price Cap (MPC, currently \$15,000/MWh). A tight market generates high prices which create the business case for low-utilisation capacity; the cap seeks to avoid excessive investment and cost by accepting some residual unreliability.
- The Interim Reliability Measure of no more than 0.0006% expected USE, adopted on a temporary basis by the former COAG Energy Council in March 2020. This does not affect the MPC, but informs the potential triggering of the Retailer Reliability Obligation (RRO, see below) and the out of market Interim Reliability Reserve (IRR) to be managed by the Australian Energy Market Operator (AEMO).
- The RRO, which if triggered by a risk of short supply obliges electricity retailers and very large customers to ensure that their expected demand for a 1-in-2 year demand scenario is covered either by financial contracts or demand response contracts. The market for financial contracts helps ensure the viability of flexible resources. The RRO is being amended to allow it to be triggered one year out from a projected shortfall, removing the current 3 year trigger. This will likely encourage liable parties to be ready to comply at any time.
- The Reliability and Emergency Reserve Trader (RERT) mechanism currently administered by AEMO contracts flexible capacity, including demand response, to support the grid in summer. RERT has grown in recent summers and will be partly folded into the new IRR.
- The Wholesale Demand Response Mechanism (WDRM) rule change recently determined by the Australian Energy Market Commission (AEMC) will enable larger energy users to sell their demand reductions and receive the prevailing wholesale price for them. Fair rewards are likely to induce a significant amount of demand response to be available year round, not just for the emergencies addressed by RERT and IRR.
- The Post-2025 NEM Design process being led by the Energy Security Board (ESB) includes many design initiatives to ensure that efficient resources are available for security, reliability and the integration of new energy.
- The proposed NSW Energy Security Target sets an extremely strong reliability goal (sufficient capacity to meet all demand in a one-in-ten-year scenario where the State's two biggest generating units are unavailable) and is accompanied by a proposed Energy Security Safeguard to incentivise peak demand reduction capacity to help meet it.
- A range of Federal and State finance, funding and support is already assisting specific assets and resources. This includes the Commonwealth-NSW bilateral energy deal; Snowy

2.0; funds to support Project Energy Connect, Victoria-NSW Interconnector West and the Marinus Link; NSW support for 170MW of dispatchable resources; support from the current SA government for virtual power plant and distributed battery programs, and from the previous government for a now-privatised emergency hybrid peaking capacity; and more.

While there are excellent individual initiatives, this cavalcade of measures is as complex and confusing as it sounds. The challenges of maintaining security and reliability while integrating very high levels of variable renewables are real. But there is a great need for coordination and integration to ensure energy users and taxpayers do not ultimately bear excessive costs.

The energy reliability outlook presented in the most recent AEMO Electricity Statement of Opportunities (ESOO) is quite reassuring in the context of the above measures. ESOO is intended to inform the market of where there are expected opportunities for investment in power resources, with the intention that these gaps be filled; it is not a prediction of what will actually happen, but an extrapolation from currently announced and approved investments, announced closures and expected demand. It is an inherently conservative process whose headline projections must ignore assets that are expected but not yet confirmed; and assets that are out-of-market, such as those contracted by AEMO for the RERT program.

For instance, in the latest ESOO the inclusion of the very large dispatchable capacity of the Snowy 2.0 project does not affect projected reliability outcomes, because the associated transmission to connect it to the NEM has not yet had regulatory approval. Other notable resources that are excluded include the SA-NSW interconnector Project Energy Connect (not yet approved, but now extremely likely to go ahead given the Federal Government's commitment of supporting funds); 170MW of dispatchable capacity to be assisted by NSW; and the demand response capacity that may be unlocked by the WDRM (which AEMO will strive to incorporate in projections from October 2021 on).

Even with all these exclusions, no region but NSW is projected to breach either the 0.002% or 0.0006% USE standards until the expected retirement of the Vales Point power station in 2029-30. Once the above assets are able to be included, it is likely that expected reliability outcomes will be well within the standards in NSW and across the NEM.

This is not a reason for complacency. Demand growth could be well above central expectations if hopes are realised for the electrification of transport and heavy industry, and the growth of energy intense industry.<sup>1</sup> And the NEM's ageing fleet of largely inflexible coal-fired generators could well retire more rapidly than currently assumed. Public policy may drive this. Equipment failures and accidents easily could. But the biggest driver of early retirement probabilities is the changing economics and dynamics of the electricity market. Renewable generation with low levelised costs and zero short-run marginal costs is taking more of the market (or in the case of rooftop solar, shrinking the demand that is even visible to the wholesale electricity market). Inflexible coal generators are seeing volumes shrink, and are having to choose between ramping up and down as best they can (slow, costly and wearing) or accepting low or even negative power prices to ensure they keep dispatching. Wholesale electricity prices have dropped substantially over the past year, and futures prices look low by recent standards. The weakest links – coal generators with the highest fuel costs, lowest reliability or least flexibility – may well accelerate their retirement in response.

Further retirements need not be problematic for reliability, security or price if we are well prepared. The range of existing reliability initiatives reviewed above will be helpful. However, there is room to ease investment in riskier or more innovative assets for reliability, and to further accelerate the development of transmission resources. The latter are subject to economic regulation approval processes that are important (to protect energy users from paying for inefficient assets) but can be

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<sup>1</sup> Equally, demand could be well below central expectations if Australia loses some of its current energy intensive industry capacity, if population growth is curtailed by an extended post-pandemic period of low immigration, or if we see further dramatic improvements in the efficiency of electricity use without commensurate progress on electrification.

frustratingly slow and limited in their consideration, and involve inadequate but hard-to-change approaches to cost-sharing between regions.

The current comforting outlook for reliability is therefore not a signal to ignore the issue, but instead to prepare for future retirements in a more methodical, less reactive way than was necessary in the extremely tight power market that followed the rapid retirement of the Hazelwood power plant in 2017.

### **Content of the Bill**

In the above context the Bill is potentially a very useful and positive initiative. The Bill would add an extra \$1b to the capital of the Clean Energy Finance Corporation, hived off in a new special account solely for GRF investments. Such investments would have to meet three particular tests:

- Support energy storage, electricity generation transmission or distribution, or electricity grid stabilisation; and
- Meet any Investment Mandate criteria from the Government relating to the investment's role in supporting security or reliability of the energy system; and
- Support the achievement of low-emission energy systems in Australia.

In other respects GRF investments would be like other CEFC investments in terms of process and governance, with two exceptions:

- GRF investments would be excluded from the requirement that at least half of CEFC investment by value must be related to renewable energy.
  - This is appropriate. While steps to sustain reliability and security become more important as renewable energy grows, they are system properties and may be most efficiently pursued at the system level rather than related to individual renewable generation projects.
- Individual GRF investments could include arrangements that did not offer a return to the CEFC, though the overall GRF portfolio would need to meet the return requirements specified in the Government's investment mandate to the CEFC.
  - This is appropriate. The menu of tools to facilitate projects may include options like contracts for difference or guarantees of minimum revenue levels, which can ease projects by cutting their risks. Such tools can be designed to offer upside benefits to the CEFC (such as a symmetrical price guarantee, where the CEFC pays out a counterparty below a strike price or is paid out itself if final prices are above the agreed level), but the ability to offer one-sided support may be useful in supporting more innovative, and risky, projects. The continuing requirement to achieve portfolio returns serves as a firm constraint on the overall scope of risk and non-return arrangements that CEFC could contemplate.

Two big questions do arise from the proposed changes:

1. What do energy systems need for reliability or security?
2. What is a low emissions energy system?

### **Defining the need for reliability**

As discussed above, electricity system security and reliability are not free, and we should be careful not to require levels that are more expensive than they are worth. Governments at all levels have been piling pro-reliability interventions on top of each other to a concerning extent. Beyond the risk of excessive investment in reliability, some of these interventions may have the effect of deterring private investment. We should prefer more competitively neutral methods, rather than arbitrary and open-ended forms of support.

Based on its existing high-quality governance and investment practices, the CEFC is a benign means of supporting reliability and security investments. However it will be necessary to closely

coordinate its activity with wider energy system planning and market development. In assessing investment proposals the CEFC should look to:

- the National Electricity Objective;
- the reliability standard prescribed in the relevant market's rules;
- guidance from the Australian Energy Market Operator and any other relevant operators, including the NEM Integrated System Plan;
- guidance from the Australian Energy Regulator on approval processes; and
- guidance from the NEM Reliability Panel.

Specifying these specific sources in the legislation is unnecessary and would likely be too inflexible, given the turnover in Australian energy institutions and policies. The Investment Mandate is a more flexible document and we encourage the Government to use it to refer the CEFC to these sources in forming a view on reliability and security.

## **Recommendations**

### **Defining a low emissions energy system**

There has been some controversy over the fact that, as the Bill's Explanatory Memorandum notes, a GRF investment could potentially include support for a gas-fired electricity generator.

In principle this need not be concerning. Low-utilisation gas peaking generation is fairly high-emitting in its own right but is also currently the most common option for firming the electricity system as cheap-but-variable renewables grow. While peakers are expensive to run they are cheap to build, and their combination with renewables can mean a lot of power at low overall cost and emissions. Other technologies can contribute to reliability and/or security (pumped hydro, batteries, demand response, synchronous condensers, grid-forming inverters, more) with lower or no emissions – though they are all within CEFC's expanded scope too, and would be competing for CEFC support.

High-utilisation combined cycle gas generation (CCGT) can also offer reliability and security services (though it is less flexible than peaking generation), and has about half the emissions of coal generation. However, CCGT is quite expensive at plausible gas prices; and residual emissions are substantial in the long term climate context. The assets are long lived, and the only way to get to deeper emissions reductions from them is carbon capture and storage, or re-fueling with hydrogen, both of which look unattractively expensive for bulk electricity. CCGT also requires much larger volumes of gas than peaking generators; as Ai Group has argued elsewhere, Eastern Australia faces significant risks of a return to a tight gas market and prices above export parity later this decade, and should be looking to manage this by moderating demand as well as encouraging supply and safeguarding the domestic market. Some of these factors will weigh on the risk and expected return of potential CCGT proposals to CEFC.

Overall, then, what matters is not the potential inclusion of individual emitting assets in a GRF portfolio, but the systemic outcomes those assets help underpin – including on emissions. As noted, the Bill provides that a GRF investment must support “the achievement of low-emission energy systems in Australia”. However, this term is not defined.

The existing *Clean Energy Finance Corporation Act 2012* (CEFC Act) provides, at s60, that the CEFC may invest in ‘low-emission technologies’ *inter alia*. That term is not defined in the Act either, but the CEFC Board is required (by s60(4) and (5)) to develop and apply its own guidelines for assessing technologies as ‘low-emission’.

The Board has done so, and current CEFC guidelines for low emissions technology state that low emissions generation technologies must have emissions no more than 50% of the level of the existing generation system they would connect to. However these guidelines do not address the GRF and would not apply to it.

So, 'low-emission energy system' is undefined in the Bill, and there is no equivalent to s60(4) and (5) of the CEFC Act explicitly tasking CEFC with developing a definition. This seems excessively ambiguous. The idea of the CEFC being able to support technologies, even those with some emissions, that support development of a low emissions grid is reasonable. A technology-neutral approach is sensible. However being neutral on technology requires a commensurate clarity about the outcome sought. CEFC needs to articulate, or be given, clear guidance on low emissions energy systems, and have access to analytical support to establish whether proposals really do contribute to achieving them.

Three steps would help clarify the situation.

Firstly the Government should guide its policies, including the CEFC, by adopting a long-term objective of net-zero emissions by 2050 for the Australian economy as a whole, and of increased social equity and global competitive advantage for Australia in a net-zero world. This would be sensible for many reasons, but would certainly ease the CEFC's task and might allay concerns raised by others with the inclusion of emitting technologies within the GRF's scope.

Secondly we suggest that the Bill be amended to:

- Expand the requirement in s60(5) of the CEFC Act for the CEFC to make guidelines defining low-emissions technology, to also require it to set out the matters to which the Board will have regard in satisfying itself that a technology supports the achievement of a low emission energy system in Australia; and
- Specify that GRF investments are low emissions technology if the Board is satisfied that they are in accordance with the guidelines.

Thirdly we suggest that the explanatory memorandum and Investment Mandate be amended to encourage CEFC to develop its guidelines in consultation with stakeholders, and to specifically mention energy market governance bodies (the Energy Security Board, AEMC, AER, AEMO and other Australian electricity system operators); the Climate Change Authority; and the Clean Energy Regulator.

The GRF and the Bill to implement it are positive proposals and would be further improved by the amendments to the Bill, Explanatory Memorandum and Investment Mandate we have suggested. We encourage the Senate to pass the Bill.

For any questions in relation to this submission, please contact Ai Group adviser Tennant Reed

Sincerely yours,

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