

09 NOVEMBER 2018

ACF Submission Underwriting New Generation Investments

KEY RECOMMENDATIONS

- **RECOMMENDATION 1: BROADEN THE PROGRAM OBJECTIVES TO INCLUDE EMISSIONS REDUCTION, AND SPECIFICALLY TARGET TECHNOLOGIES THAT SUPPORT ZERO EMISSION ENERGY SOURCES.**
- **RECOMMENDATION 2: CLEARLY DEFINE ‘FIRM’ (I.E., DISPATCHABLE) ENERGY, WHICH THE ELECTRICITY SYSTEM NEEDS AND DIFFERENTIATE IT FROM ‘BASELOAD’ WHICH THE SYSTEM DOES NOT NEED.**
- **RECOMMENDATION 3: ELIGIBILITY CRITERIA SHOULD ENSURE THAT GOVERNMENT SUPPORTS CLEAN, DISPATCHABLE RENEWABLE POWER; THE SCHEME SHOULD BE MANAGED BY THE CEFC; GOVERNMENT SHOULD NOT INDEMNIFY PROPONENTS FROM FUTURE CARBON RISK; AND DEMAND SIDE MANAGEMENT SHOULD BE CONSIDERED FOR INCLUSION AS A FIRING OPTION.**

Introduction

The Australian Conservation Foundation (ACF) welcomes the opportunity to provide comment on the government’s public consultation paper: Underwriting New Generation Investments. The energy sector is Australia’s largest contributor to greenhouse gases, both in terms of electricity generation and the use of dirty energy. Our international climate change commitments and irrefutable evidence about the dangers we face as a nation and a society from climate damage¹ make it critical that Australia’s electricity sector transitions to clean, renewable energy as quickly as possible. There are numerous studies that show moving to 100% renewable energy is not only possible, but much better than fossil fuels like oil and gas on key measures—including pollution, cost, and reliability. The role for

¹ IPCC, Global Warming of 1.5 C available here: <https://ipcc.ch/report/sr15/>



government in underwriting new investment to support firm energy requires investment that supports variable renewables like wind and solar with enabling technologies like flexible dispatchable renewable energy.

Fossil fuel generation, like coal, is dirty and ill-suited to the current needs of a modernising, decarbonising system. Experts, including the Australian Energy Market Operator (AEMO) and the CSIRO², make it clear that we are moving away from an old, outdated 'baseload' generation model of the past to a different type of system with different needs, including a high level of flexibility. Government investment should support technologies suited to the future system, not the past.

Questions:

1. Which option, or combination of options, will best achieve the program objectives?

Recommendation 1: Broaden the Program Objectives to include emissions reduction and specifically target technologies that support zero emissions energy sources.

The program's primary objective, as currently defined, is to reduce wholesale electricity prices through increased competition and supply in a manner that:

- assists commercial and industrial customers' access to affordable energy supply arrangements
- improves reliability and security by increasing the level of firm and firmed capacity in the system
- minimises costs to electricity consumers and taxpayers

The effort to reduce electricity prices and improve system reliability cannot effectively be achieved without addressing the need to reduce greenhouse emissions in the electricity sector. This point has been repeatedly made by a broad range of interests and sectors.

For example, a joint statement signed by representatives of Australia's small and large businesses; conservation groups; energy network, supply and services sectors; investors; property sector; and social services sector was released on 24 October 2018 stating that:

...driving down electricity costs is urgent, and that addressing emissions and reliability are not only critical in their own right but are essential parts of achieving cost reduction.

² <https://www.energynetworks.com.au/electricity-network-transformation-roadmap>



Electricity costs are a key part of the “energy trilemma”, together with reliability and emissions reductions. Reducing electricity costs requires investment in electricity supply and unlocking this investment requires credible and stable policy. Investors will only view policy as durable if it effectively addresses all parts of the trilemma, including meeting emissions reduction commitments.

This statement, also signed by ACF, followed the government’s decision not to proceed with the emissions guarantee as part of the National Energy Guarantee (NEG). However, the central point is relevant to underwriting new power generation.

Government support for new ‘firm’ generation – no matter what form that support takes – should not treat electricity price reduction and/or reliability as separate matters. Investor certainty in the electricity sector broadly, and more specifically in terms of ‘firm’ projects, requires clear commitment to support emissions reduction and appropriate criteria that ensures emissions reduction is part of the scheme.

The following criteria, included in the Public Consultation Paper, is insufficient to ensure that emissions reductions are addressed under this scheme.

The project would be unlikely to result in an increase in electricity sector emissions to a level that is more than minus 26 per cent of the sector’s 2005 levels by 2030.

As an alternative, and to ensure that government assistance is directed at projects that complement variable renewable energy generation (i.e. solar and wind) and enable Australia’s necessary renewable energy transition rather than act to curb it, this scheme should specifically target technologies that support zero emission energy sources.

What’s needed is flexible, dispatchable renewable generation such as battery storage and pumped hydro. As noted by ARENA’s recently released report on dispatchable energy: *Comparison of Dispatchable Renewable Electricity Options - Technologies for an orderly transition*, ‘there are multiple affordable options for firm dispatchable renewable electricity generation over all time scales at 1.5 - 2 x cost of Variable Renewable Energy³’ and the costs of these technologies are continuing to fall. There is no

³ <https://arena.gov.au/assets/2018/10/Comparison-Of-Dispatchable-Renewable-Electricity-Options-ITP-et-al-for-ARENA-2018.pdf>



question that a broad selection of dispatchable renewable technologies are readily available and can couple with variable renewables to ensure a reliable grid. The lowest cost overall portfolio for Australia is through a combination of these technologies that maximise the strengths of each for specific locations and timeframes.

Recommendation 2: Clearly define ‘firm’ (i.e. dispatchable) energy, which the electricity system needs and differentiate it from ‘baseload’ which the system does not need.

The ‘firm’ energy needed in Australia’s electricity system is not ‘baseload’ energy. Dispatchable or ‘on demand’ power stations are needed to complement variable wind and solar PV.

The following explanation makes the point clearly:

A dispatchable power station is one that can supply power on demand. To do this, it must be [controllable](#) to the extent that it can respond promptly and flexibly to sudden changes in supply and demand, both unexpected and predictable.

Dispatchable power stations play a major role in balancing supply and demand. This balance is essential for maintaining the fixed frequency of alternating current and for avoiding blackouts. All dispatchable power stations incorporate some form of storage, whether it be electrical, thermal, mechanical or chemical (i.e. a stored fuel).

On the other hand, ‘baseload’ power stations are inflexible in operation. They can take from several hours to a whole day to go from cold to full power. Even when hot, they cannot easily and economically vary their outputs rapidly to meet the peaks in demand.⁴

On demand clean energy is the suite of zero emissions energy solutions that provide firm, dispatchable or flexible power and demand reduction to the grid when needed. These solutions include:

- Inherently dispatchable renewable energy technologies such as sustainable bioenergy and geothermal;
- Storage solutions (charged by renewables) including pumped hydro, batteries, renewable hydrogen and concentrating solar thermal with molten salt storage; and
- Flexible demand - demand response services.

⁴ <https://reneweconomy.com.au/is-coal-power-dispatchable-71095/>



Firm, dispatchable energy can be provided by renewable energy technologies while coal and other baseload power stations cannot fill this role.

One of the key observations of the Australian Energy Market Operator (AEMO) in assessing system needs in their recent Integrated System Plan is that there is: 'A strong role for energy storage that can shift renewable energy production and provide capacity firming support during peak load conditions to support the dispatchability of this future energy mix'.

AEMO also states that: "The investment profile and capabilities of various supply resources have changed and are projected to continue to change radically...In particular, costs of new renewable plant continue to fall, and advances and availability of storage technologies, particularly pumped hydro, flexible gas-powered generation and distributed energy resources (DER) are emerging as core components to a low cost and reliable energy future."⁵

2. Are there any alternative options, eligibility/merit criteria, and requirements that should be considered?

Recommendation 3: Eligibility criteria should ensure that government supports clean, dispatchable renewable power; the scheme should be managed by the CEFC; government should not indemnify proponents from future carbon risk; and demand side management should be considered for inclusion as a firming option.

A set of simple, practical eligibility criteria and scheme requirements would help ensure that Australian Competition and Consumer Commission (ACCC) recommendation 4 plays a positive role in supporting investment in clean dispatchable energy, not a perverse role in supporting dirty 'baseload' power like coal, which is not what the energy system or the climate needs. These should include:

- Projects to be considered should be 'on-demand', 'firm' and/or 'dispatchable', not 'baseload' power⁶.

⁵ <https://aemo.com.au/Media-Centre/2018-Integrated-System-Plan>

⁶ Baseload is slow to ramp generation up and down and operates most efficiently if it runs all the time — like coal-burning power stations. More baseload is the opposite of what we need for a modern, reliable and efficient energy system... In the future, there will be little to no room for baseload power as it will be crowded out by renewable energy supply from wind and solar that operates at close to zero marginal cost. This will be supplemented by the 'on demand', dispatchable and firm



-
- Coal, coal retrofits and gas should be banned from the scheme.
 - The scheme should be managed by the CEFC. The CEFC option was flagged by ACCC but would not be available if the scheme allowed coal and/or carbon capture and storage (CCS). CCS, for example, is a 'prohibited technology' under the Clean Energy Finance Corporation Act 2012.⁷ Coal power projects would not meet the formal guidelines for investment in low emissions technologies, as required by the Act. Altering either the Act or the guidelines⁸ would be a bad outcome and inconsistent with the CEFC mission.
 - In underwriting/signing a Power Purchase Agreement (PPA) for any new generation the government should not indemnify the proponent (generator) from any possible future climate risk, such as a possible future carbon price.
 - Alternatives to generation should also be considered, such as demand side management as a firming option.

Further, the following ACCC requirements for a project to qualify should also apply:

- Have at least three customers who have committed to acquire energy from the project for at least the first five years of operation;
- Not involve any existing retail or wholesale market participant with a significant market share (say a share of 10 per cent or more in any NEM region);
- Be of sufficient capacity to serve the needs of a number of large customers; and
- Can provide a firm product so that it can meet the needs of [Commercial & Industrial] C&I customers.

Suzanne Harter

Climate Change and Clean Energy Campaigner

Australian Conservation Foundation

Telephone: +61 3 9345 | Email Suzanne.harter@acf.org.au | [@AusConservation](https://twitter.com/AusConservation)

www.acf.org.au | Level 1, 60 Leicester Street Carlton VIC 3053

generation and storage that the ACCC report talks about, that is quick to start up and deploy" (Extract from [this](#) article by Nicky Ison).

⁷ <https://www.legislation.gov.au/Details/C2017C00265>

⁸ <https://www.cefc.com.au/media/328406/CEFC-Investment-Policies-June-2017.pdf>



