CLEANaS
CLEAN ENERGY ASSOCIATION OF NEWCASTLE AND SURROUNDS

Committee Secretary
Senate Standing Committees on Environment and Communications
PO Box 6100
Parliament House
Canberra ACT 2600

11 March 2018

Clean Energy Finance Corporation Amendment (Carbon Capture and Storage) Bill 2017 Submission

Dear Secretary

Thank you for the opportunity to provide input to the *Clean Energy Finance Corporation Amendment (Carbon Capture and Storage) Bill 2017*.

The Clean Energy Association of Newcastle and Surrounds (CLEANaS) supports the current *Clean Energy Finance Corporation Act 2012* and rejects the proposed amendment to remove Paragraph 62(a) that prohibits the Clean Energy Finance Corporation (CEFC) from investing in technology for carbon capture and storage (CCS).

CCS as a technology is expensive, still in development phase, lacks technical and financial feasibility, and projects are high risk and should not be included in the remit of CEFC.

CLEANaS is the Clean Energy Association of Newcastle and Surrounds, a not-for-profit association formed in 2012 by a group of locals passionate about clean energy. CLEANaS is dedicated to driving the uptake of clean energy that our region can transition from our current dependency on fossil fuels to a more competitive and sustainable local economy. We will achieve this by working with our partners to demonstrate profitable community-led and community-owned clean energy projects; raise the profile of clean energy in the local economy through education and awareness raising; and by improving access to financing mechanisms and affordable technologies so that investment and activity grow. Our initiatives must deliver a win-win for local community investors, local enterprise and, of course, our environment.

CEFC describes themselves as:

> *"The CEFC is a specialist clean energy financier,* ***investing with commercial rigour to increase the flow of finance into renewable energy, energy efficiency and low emissions technologies****. We invest in projects with the strongest potential for decarbonisation, including low carbon electricity, such as solar, wind, battery storage and bioenergy; ambitious energy efficiency, such as property, infrastructure,*

> *manufacturing and agribusiness; and electrification and fuel switching, such as vehicles and biofuels."*

In 2016-2017, CEFC invested almost $2.1 billion in clean energy and energy efficiency with a total project value of over $6.4 billion. The CEFC has successfully kick-started large scale renewable energy investment in Australia, assisting with Australia's commitment to the Paris Agreement, ratified by Australia in November 2016, to contribute to the international effort to limit the global temperature rise from pre-industrial levels to two degrees Celcius or less. Renewable Energy and Energy Efficiency provide an effective low cost path to reduce carbon emissions.

CCS is expensive. The US Energy Information Administration report "*Levelized Cost and Levelized Avoided Cost of New Generation Resources in the Annual Energy Outlook 2017*" estimated that the Levelized Cost Of Electricity (LCOE) for CCS was more expensive than solar PV, onshore wind, hydroelectric, biomass, geothermal, gas and nuclear. Only offshore wind and solar thermal were considered more expensive. For example CCS LCOE is 123.3 USD/MWh compared to 85 USD/MWh for Solar PV and 63.7 USD/MWh for onshore Wind.

The International Energy Agency's (IEA) 2013 Technology Roadmap for CCS noted that CCS has so far been developing at a slow pace, with many years expended on research and development, and with "*rather limited practical experience*". IEA noted that "*the largest challenge for CCS deployment is the integration of component technologies into large-scale demonstration projects*". IEA also noted the lack of development of strong business models for CCS.

CCS projects are high risk and speculative. In 2009, Australian Federal Government announced the CCS Flagships program as part of the Clean Energy Initiative in the 2009 Federal Budget to support the construction and demonstration of large-scale integrated CCS projects in Australia. The Australian Government announced that Australia would take a leadership role in driving the global goal of launching at least 20 large-scale, integrated CCS demonstration projects globally by 2010, for broad deployment of CCS by 2020. However, the Australian National Audit Office, in their 2017 report titled "Low Emissions Technologies for Fossil Fuels" which reported on the CCS Flagships program, detailed their findings that the program funding of $217 million had been expended and that:

> *"None of the CCS Flagships projects met the original timeframe or reached the stage of deployable technology as originally envisaged in the program design."*

Reasons given why the projects did not meet this timeframe included: technical feasibility; absence of suitable storage options; and financial feasibility.

There is no certainty that re-injected CO2 will remain in situ in perpetuity. In the final report of the CCS Flagships South West Hub project, a peer review technical assessment noted that "proposed risk containment target was exceeded" with half of the modelled scenarios CO2 reaching a level considered to be de-facto 'leakage', and considered that it was more likely than not (~80%) probability that over 1% (1Mt CO2) would ''leak''.

The CEFC provides an effective vehicle for the continued investment in Renewable Energy and Energy Efficiency providing a low cost effective path for reducing emissions in line with Australia's commitments with the Paris agreement. CCS should not be included in the remit for the CEFC.

Thank you for considering our submission,

Sincerely,

Alec Roberts
CLEANaS Chair
on behalf of CLEANaS