

Chapter 1

Introduction

1.1 On 8 February 2018, the Senate referred the provisions of the Clean Energy Finance Corporation Amendment (Carbon Capture and Storage) Bill 2017 to the Environment and Communications Legislation Committee for inquiry and report by 8 May 2018.¹

1.2 The bill would amend the *Clean Energy Finance Corporation Act 2012* (CEFC Act) to remove the prohibition on the Clean Energy Finance Corporation (CEFC) investing in carbon capture and storage (CCS) technologies.

Conduct of the inquiry

1.3 In accordance with its usual practice, the committee advertised the inquiry on its website and wrote to relevant individuals and organisations inviting submissions. The date for receipt of submissions was 13 March 2018.

1.4 The committee received 16 submissions. The submissions are listed at Appendix 1 and are available on the committee's website: www.aph.gov.au/senate_ec.

1.5 The committee also held a public hearing for this inquiry on 18 April 2018 in Melbourne. A list of witnesses who gave evidence at the hearing is at Appendix 2.

1.6 The committee thanks all of the individuals and organisations that contributed to the inquiry.

Scope and structure of the report

1.7 This report comprises two chapters. The remaining sections of this chapter provide background information relating to the bill and discuss the review of the bill undertaken by the Senate Standing Committee for the Scrutiny of Bills. Chapter 2 examines the principal issues raised by stakeholders regarding the bill. The committee's overall findings on the bill are provided at the end of Chapter 2.

Note on references

1.8 In this report, references to the committee *Hansard* transcript of the 18 April 2018 public hearing are to the proof (that is, uncorrected) transcript. Page numbers may vary between the proof and official *Hansard* transcripts.

1 *Journals of the Senate*, 8 February 2018, pp. 2634–35.

Background

1.9 This section provides background information on CCS technologies and the creation of the CEFC.

What is carbon capture and storage?

1.10 CCS is a technological process in which carbon dioxide (CO₂) from fuel combustion or industrial processes 'is captured at the point of emission and transported and stored to avoid its release into the atmosphere'. The captured CO₂ 'can be stored in deep geological formations (like oil and gas fields) or in products such as stable carbonates used as building material'.²

1.11 The Department of the Environment and Energy (the department) advised that there are 'currently 19 large-scale CCS projects either in operation or very close to operation around the world'. Most of these use captured CO₂ for enhanced oil recovery (EOR),³ although there are two operational projects involving coal-fired electricity generation. The department highlighted the following examples:

- Sleipner oil and gas project (Norway)—this project has been capturing and storing CO₂ since 1996. The captured CO₂ is injected into an offshore sandstone reservoir. As at June 2017, the CCS project has resulted in the abatement of over 17 million tonnes of CO₂ emissions.⁴
- Chevron Gorgon LNG project (Australia)—it is expected that CCS operations at this project will start this year. At full production, it is projected that approximately 4 million tonnes of CO₂ will be injected into undersea storage, reducing emissions from the facility by around 40 per cent. The department explained that the use of CCS was required by the Western Australian Government as part of the development approval for the project.⁵

1.12 The department advised that other projects in Australia are 'at the demonstration or feasibility stage', including the CarbonNet and Surat Basin projects (which involve coal power stations) and the CO₂CRC Otway Project (which involves gas processing).⁶

2 Department of the Environment and Energy, *Submission 5*, p. 3.

3 EOR refers to a range of techniques for increasing the amount of crude oil that can be extracted from an oil reservoir. One of these techniques involves the injection of gases such as carbon dioxide. EOR is discussed further in Chapter 2.

4 Department of the Environment and Energy, *Submission 5*, p. 3; Global CCS Institute, 'Sleipner CO₂ storage', www.globalccsinstitute.com/projects/sleipner%20co2-storage-project (accessed 23 March 2018).

5 Department of the Environment and Energy, *Submission 5*, p. 3.

6 Department of the Environment and Energy, *Submission 5*, p. 3.

1.13 In addition, on 12 April 2018, the Prime Minister announced that the Australian and Victorian governments would contribute \$100 million to a \$496 million Hydrogen Energy Supply Chain pilot project at Loy Yang power station and mine in the Latrobe Valley. The project, which is co-funded by a Japanese consortium, will turn brown coal into hydrogen for export to Japan. On carbon emissions, the Prime Minister's announcement stated:

Our CSIRO hydrogen and energy experts will be working with their Japanese counterparts, maximising the exchange of scientific knowledge created from the pilot, including in carbon capture and storage.⁷

Overview of the CEFC

1.14 The CEFC is a statutory authority that was established in 2012 with the object of facilitating 'increased flows of finance into the clean energy sector'.⁸ The explanatory memorandum for the legislation establishing the CEFC provided the following description of the CEFC's intended role:

[The CEFC] is a mechanism to help mobilise investment in renewable energy, low-emission and energy efficiency projects and technologies in Australia. [The CEFC] will finance Australia's clean energy sector using financial products and structures to address the barriers currently inhibiting investment.⁹

1.15 The CEFC meets its statutory objective 'by making investments which attract private sector finance, as well as through working with its strategic co-financing partners to catalyse flows of money into the sector'.¹⁰ That is, the CEFC 'invests, applying commercial rigour, to increase the flow of finance into the clean energy sector' and also 'invests with co-financiers to develop new sources of capital for the clean energy sector, including climate bonds, equity funds, aggregation facilities and other financial solutions'.¹¹

7 The Hon Malcom Turnbull MP, 'Local jobs and a new energy industry for the Latrobe Valley', *Media release*, 12 April 2018. In its announcement regarding the pilot project, AGL Energy stated that 'if expanded in the future, project partners recognise the need for carbon capture and storage'. AGL Energy, 'AGL part of world-first hydrogen energy supply chain project', *Media release*, 12 April 2018, www.agl.com.au/about-agl/media-centre/asx-and-media-releases/2018/april/agl-part-of-world-first-hydrogen-energy-supply-chain-project (accessed 20 April 2018).

8 *Clean Energy Finance Corporation Act 2012*, s. 3.

9 Explanatory Memorandum, Clean Energy Finance Corporation Bill 2012 (CEFC Bill EM), p. 7.

10 Explanatory Memorandum, Clean Energy Finance Corporation Amendment (Carbon Capture and Storage) Bill 2017 (CCS Bill EM), p. 1.

11 Clean Energy Finance Corporation (CEFC), *Submission 14*, p. 6.

1.16 Overall, the CEFC describes its mission as being:

...to accelerate Australia's transformation towards a more competitive economy in a carbon constrained world, by acting as a catalyst to increase investment in emissions reduction.¹²

1.17 The CEFC also explained that its strategic framework is designed to support the 'sectors in the Australian economy that are the largest sources of carbon emissions to reduce their emissions and ultimately to help to transform the economy to achieve net zero emissions in the second half of the century'.¹³

1.18 In total, the CEFC has received \$10 billion in appropriations to invest in clean energy. As at 30 June 2017, the CEFC had committed \$4.3 billion to projects with a total value of \$11 billion.¹⁴ The CEFC is designed to be self-sustaining, with funds returned from investments to be available to reinvest.¹⁵

Establishment of the CEFC

1.19 The decision to establish the CEFC was announced in July 2011 as part of the agreement to introduce the carbon tax reached by the then Labor Government, the Australian Greens and two independent members of the House of Representatives (Mr Rob Oakeshott and Mr Tony Windsor). As part of the agreement, it was specified that the CEFC would not invest in CCS technologies.¹⁶ The terms of reference for the expert panel chaired by Ms Jillian Broadbent AO established to provide advice to the government on the design of the CEFC likewise stipulated that the CEFC would not invest in CCS technologies.¹⁷

1.20 The CEFC was established by the CEFC Act. The CEFC Act provides that the CEFC is to invest, directly and indirectly, in 'clean energy technologies'.¹⁸ Clean energy technologies are defined to include:

- energy efficiency technologies (including technologies and enabling technologies related to energy conservation technologies or demand management technologies);

12 CEFC, *Submission 14*, p. 6.

13 CEFC, *Submission 14*, p. 6.

14 CEFC, *Annual Report 2016–17*, p. 13.

15 CEFC Bill EM, p. 8.

16 Multi-Party Climate Change Committee, *Clean Energy Agreement*, July 2011, http://content.webarchive.nla.gov.au/gov/wayback/20130905122148/http://www.climatechange.gov.au/sites/climatechange/files/documents/04_2013/MPCCC_Clean-energy_agreement-20110710-PDF.pdf (accessed 14 February 2018), p. 49.

17 The Hon Wayne Swan MP and the Hon Greg Combet AM MP, 'Experts to advise on Clean Energy Finance Corporation', *Media Release*, no. 121, 12 October 2011.

18 *Clean Energy Finance Corporation Act 2012*, s. 58.

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- low-emission technologies that the CEFC Board considers qualify as a low-emission technology; and
 - renewable energy technologies (including hybrid technologies that integrate renewable energy technologies as well as technologies and enabling technologies related to renewable energy technologies).¹⁹

1.21 The CEFC Act also gave effect to the July 2011 agreement that the CEFC would not invest in CCS technologies (discussed below).

Statutory prohibition on CCS investments

1.22 Section 62 of the CEFC Act prohibits the CEFC from investing in CCS technologies, nuclear technology or nuclear power. In addition, subsections 59(1) and (2) provide that the CEFC Board has a duty to take all reasonable steps to ensure that the CEFC's investments 'are at all times complying investments', which among other things, cannot be investments in the technologies prohibited by section 62.

1.23 The CEFC's submission advised that the expert review on the design of the CEFC acknowledged the then government's announcement that the CEFC would not invest in CCS technologies. The expert review suggested that exclusions would be examined as part of proposed periodic reviews of the investment mandate issued by the ministers responsible for the CEFC. However, the CEFC explained that the prohibition on CCS was subsequently 'elevated' to be included in the legislation establishing the CEFC. The CEFC observed that the extrinsic material used in the interpretation of legislation, such as the Minister's second reading speech and the explanatory memorandum, 'contains no particular guidance as to the reason for this approach'.²⁰

1.24 The CEFC's submission also discussed how the current prohibition on CCS investments is interpreted. The prohibition in section 62 of the CEFC relies on the definition of CCS used in the *National Greenhouse and Energy Reporting Act 2007*. That definition is as follows:

carbon capture and storage means:

- (a) the storage of a greenhouse gas substance in a part of a geological formation; or
- (b) the injection of a greenhouse gas substance into a part of a geological formation for the purposes of such storage; or
- (c) the capture, compression, processing, offloading, transportation or piped conveyance of a greenhouse gas substance, where the compression, processing, offloading, transportation or piped conveyance is for the purposes of such storage.

19 *Clean Energy Finance Corporation Act 2012*, s. 60.

20 CEFC, *Submission 14*, p. 3.

An expression used in this definition has the same meaning as in the *Offshore Petroleum and Greenhouse Gas Storage Act 2006*. For this purpose, assume that each reference in the definition of greenhouse gas substance in section 7 of that Act to a prescribed greenhouse gas were a reference to a greenhouse gas (within the meaning of this Act).²¹

1.25 The CEFC explained that this statutory formulation means the CEFC is currently not precluded from investing in:

- carbon capture *without* geological storage, such as industrial processes that capture and uses carbon; or
- carbon capture and *non-geological* storage, such as biological processes that capture and store carbon (for example, 'photosynthesis resulting in wood or soil carbon sequestration').²²

Rationale for the proposed change

1.26 The explanatory memorandum provides the following rationale for the Government's decision to propose amendments to the CEFC Act to remove the prohibition on the CEFC investing in CCS technologies:

Delivering emissions reductions under the Paris Agreement on climate change will be a significant challenge, and will require deployment of a portfolio of low emissions technologies across the world. Advice from the International Energy Agency is that carbon capture and storage has an essential role and can support a least-cost transition of the energy sector.

Here in Australia, applying carbon capture and storage technology to non-renewable electricity generation would help provide security and stability for the electricity grid while significantly reducing emissions compared to business-as-usual operation of fossil fuel fired generation.

Carbon capture and storage technology can also help reduce emissions from carbon-intensive industrial processes. Some major industrial activities have a large emissions burden from the energy and chemical reactions inherent in their production processes. The Bill provides a potential support to industrial producers who wish to address such emissions.²³

21 *National Greenhouse and Energy Reporting Act 2007*, s. 7.

22 CEFC, *Submission 14*, pp. 4–5.

23 CCS Bill EM, p. 2.

Provisions of the bill

1.27 The legislative change required to remove the prohibition on the CEFC investing in CCS technologies is straightforward: the bill would simply repeal paragraph 62(a) of the CEFC Act. As noted above, section 62 of the CEFC provides that the CEFC is prohibited from investing in CCS technologies, nuclear technology or nuclear power. The proposed amendment would have the effect of removing the reference to CCS technologies while keeping the prohibitions on nuclear technology and nuclear power in place.

1.28 The EM notes that the bill 'does not alter the CEFC's legislated appropriation or have the effect of actually requiring the CEFC to invest in carbon capture and storage projects'. Following passage of the bill, the CEFC Board would still make investment decisions independently 'in line with the other requirements of the CEFC Act as well as the Government-issued CEFC Investment Mandate'.²⁴

1.29 The bill would commence on the day after Royal Assent.²⁵

Reports of other committees

1.30 When examining a bill or draft bill, the committee takes into account any relevant comments published by the Senate Standing Committee for the Scrutiny of Bills (Scrutiny Committee). The Scrutiny Committee assesses legislative proposals against a set of accountability standards that focus on the effect of proposed legislation on individual rights, liberties and obligations, and on parliamentary propriety.

1.31 The Scrutiny Committee examined the bill in its *Scrutiny Digest No. 6 of 2017*. That committee did not comment on the bill.²⁶

24 CCS Bill EM, p. 2.

25 Subclause 2(1).

26 Senate Standing Committee for the Scrutiny of Bills, *Scrutiny Digest*, No. 6 of 2017, June 2017, p. 19.

