

STATUTORY REVIEW OF THE
CLEAN ENERGY FINANCE CORPORATION

CEFC SUBMISSION

FEBRUARY 2018



EXECUTIVE SUMMARY

Through its four and a half years of investing in Australia's clean energy sector, the Clean Energy Finance Corporation has demonstrated its value as an integral part of Australia's climate and energy policy framework. Under the *Clean Energy Finance Corporation Act 2012*, the CEFC's objective is to facilitate the flow of finance into the clean energy sector. It achieves this by providing capital directly to the sector and by catalysing new private sector finance. At the same time as helping to reduce Australia's carbon emissions, the CEFC earns a positive financial return.

The CEFC is now established as a major investor in clean energy in Australia. At 31 December 2017, the CEFC had committed more than \$5.8 billion in finance to 85 clean energy projects valued at more than \$16 billion since it began investing in 2013. Working with co-financing partners, the CEFC has also provided finance to around 4,000 smaller projects.

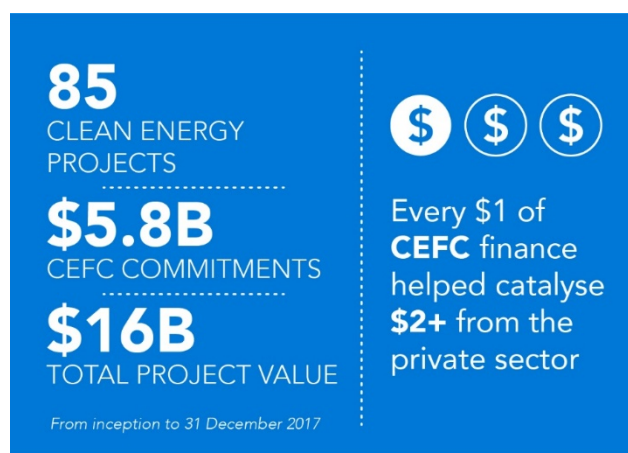
Capital needs vary across the clean energy sector. The CEFC invests in clean energy projects and companies, targeting major sources of emissions across the economy and offering conventional and innovative finance that is tailored to address gaps in private sector finance.

Through its investment activities, the CEFC engages closely with developers, businesses, entrepreneurs, governments and private financial institutions such as funds and commercial banks, building capacity in clean energy markets and catalysing further investment.

Meeting ambitious emissions reduction targets will require sustained high levels of investment across clean energy technologies for several decades. The CEFC's flexible investment framework means that it can adjust its focus and tailor its financing terms to meet evolving market needs.

The CEFC focuses on areas of the economy where CEFC finance can have a high impact in contributing to Australia's decarbonisation. Through our focus on these decarbonisation pathways, the CEFC is supporting a diverse range of industries to reduce emissions in order to ultimately achieve the Paris Agreement vision for a net zero emissions global economy in the second half of the century.

This submission discusses the CEFC's role in facilitating the flow of finance into the clean energy sector (**Part 1**) and responds to the four questions posed in the Consultation Paper (**Part 2**).



1. THE CEFC'S ROLE IN FACILITATING THE FLOW OF FINANCE INTO THE CLEAN ENERGY SECTOR

Australia's fossil-fuel dominated electricity system, its geography and its pattern of economic development mean that it has among the [highest carbon emissions per capita](#) of advanced countries.

Under the Paris Agreement, the Australian Government has committed to significantly reduce Australia's emissions. Given Australia's emissions profile, a major component of emissions reduction must be in capital-intensive sectors, including electricity, transport, manufacturing, the built environment and waste management. Reducing Australia's emissions also depends on households and small and medium-sized companies taking up clean energy technologies, and on promoting innovation to develop new and more efficient ways of reducing emissions. Meeting Australia's emissions reduction objectives will require significant levels of investment over several decades.

Through its four and a half years of investing in Australia's clean energy sector, the CEFC has demonstrated its value as an integral part of Australia's climate and energy policy framework. The CEFC's role in Australia's climate and energy policy framework – facilitating the flow of finance into the clean energy sector – is achieved by **improving access to capital** for clean energy projects and companies and by **building capacity** in clean energy markets.

The CEFC improves access to capital for clean energy projects and companies

Capital needs vary across the clean energy sector: large-scale renewable energy projects have different financing needs from cleantech start-ups, and the financing requirements in manufacturing differ from those in agribusiness or the property sector. The CEFC invests in clean energy projects and companies across the economy, offering conventional and innovative finance that is tailored to address gaps in private sector finance.

The CEFC's flexible range of direct and indirect finance lowers barriers to clean energy investment and supports the development of a robust clean energy pipeline, attracting project developers, entrepreneurs and other investors to the Australian clean energy market.

Figure 1: CEFC finance types

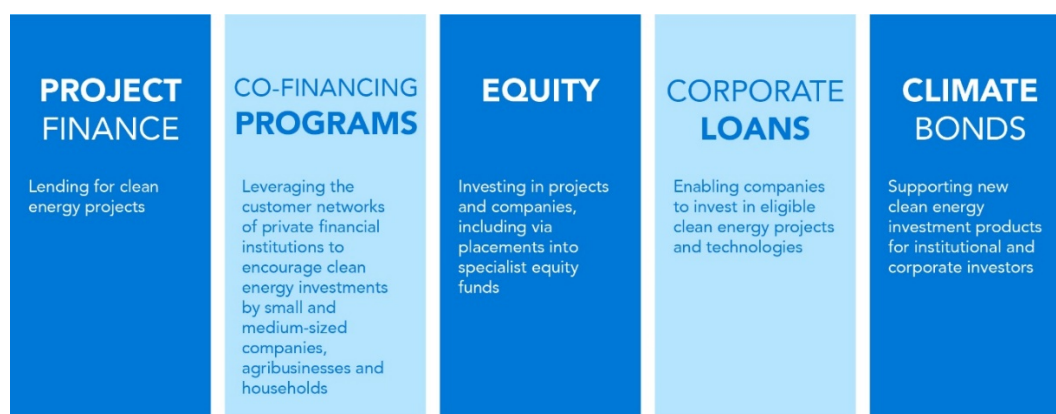
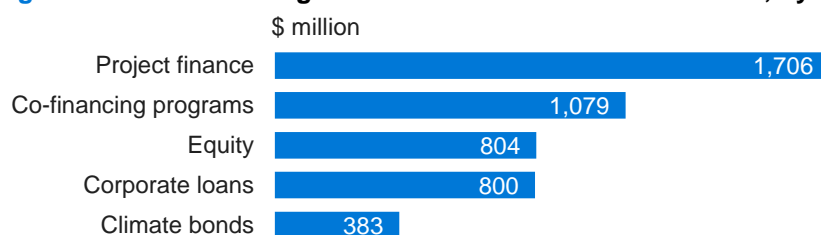


Figure 2: CEFC financing commitments at 31 December 2017, by type

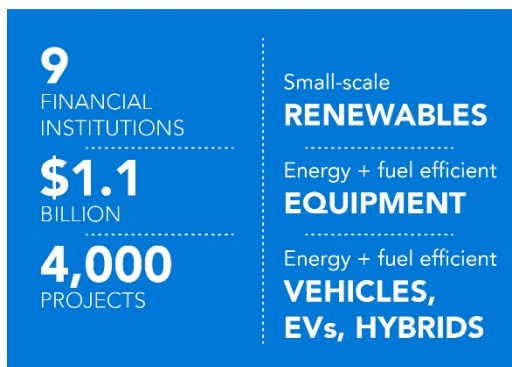


The CEFC builds capacity in clean energy markets

The CEFC is a specialist financial institution for the clean energy sector. Its single focus on clean energy means that it has a strong understanding of sector-specific opportunities and risk mitigation strategies. Through its investment activities, the CEFC engages closely with developers, businesses, entrepreneurs, governments and private financial institutions such as funds and commercial banks, helping to build capacity in clean energy markets and catalysing further investment.

In most transactions, the CEFC invests alongside other financial institutions. In those cases, the CEFC works to facilitate the flow of finance into clean energy by sharing its sector expertise and 'crowding in' other sources of capital to accelerate Australia's clean energy transition. In some instances, a cornerstone financing commitment from the CEFC helps projects secure additional private sector growth capital.

Figure 3: The CEFC's co-financing programs



The CEFC has also partnered with nine financial institutions, including major Australian banks, to provide finance to around 4,000 individual smaller projects, encouraging the switch to more energy efficient equipment and vehicles and distributed energy resources.

By investing through fund managers in infrastructure, property and other sectors, the CEFC aims to build expertise in clean energy investment among private investors.

The CEFC's participation in Australia's climate bond market has supported growing investor appetite for green investment opportunities, providing new investment products for institutional and corporate investors.

In order to catalyse private finance, the CEFC aims to demonstrate how clean energy investments achieve commercial outcomes

When financing projects in the built environment, CEFC investments are conditional on projects adopting ambitious clean energy objectives, for example by requiring new buildings to use distributed energy resources and to meet a higher energy efficiency standard than they would otherwise have achieved. This approach extends to assets in infrastructure, commercial property and community housing, and the growing health and student accommodation sectors. The CEFC is focused on extending this model to other industries such as agribusiness.

Directly through its investment activities, as well as through market reports, case studies, speeches, events, media engagement and other communications activities, the CEFC works to increase awareness of clean energy opportunities and improve market knowledge of clean energy finance structures and products to mobilise private sector investment.

The CEFC also engages with governments around the country to inform policymakers about clean energy markets, to invest in clean energy projects that help government entities reduce their emissions, and to work alongside governments to support clean energy priorities. Under the Investment Mandate, the CEFC helps to deliver specific clean energy objectives in relation to cities, the Great Barrier Reef and innovation. At the Australian Government level, the CEFC works closely with the Department of the Environment and Energy, the Department of Finance, the Department of Agriculture and Water Resources, the Australian Renewable Energy Agency (ARENA), the Clean Energy Regulator and a number of other government departments and agencies. The CEFC also works closely with state and territory governments.

The CEFC applies commercial rigour in its investment approach and invests with the expectation that its portfolio of investments overall will generate a positive financial return over the Australian Government's cost of funds. The CEFC seeks to take on the lowest acceptable level of risk to minimise the likelihood of capital losses, while taking into account the level of expected emissions reductions and other public policy benefits. Individual investments have different profiles for risk, return and emissions reduction.

By improving access to capital and building capacity in clean energy markets, the CEFC is facilitating the flow of finance into Australia's clean energy sector. **Part 2** of this submission discusses the CEFC's place in the recent history of clean energy markets in Australia in response to the questions set out in the Consultation Paper.

Figure 4: The global context for public financial institutions for low emissions projects and infrastructure

There is a long record of public financial institutions working alongside private financial markets. The CEFC is among a number of public financial institutions in advanced economies with a focus on low-carbon projects and infrastructure. Some, such as the United Kingdom's Green Investment Group, were set up solely to accelerate investment in clean energy. Development banks such as the Asian Development Bank were established with a broad remit but are now allocating part of their investment to the clean energy sector.

The OECD [notes](#) that between 2010-2012, five institutions – **Group Caisse des Dépôts** in France, **KfW Bankengruppe** in Germany, the **UK Green Investment Group**, the **European Investment Bank**, and the **European Bank for Reconstruction and Development** – provided more than €100 billion of equity investment and financing for energy efficiency, renewable energy and sustainable transport projects.

The OECD study found that those five public financial institutions used both traditional and innovative approaches to link low carbon projects with finance through enhancing access to capital, facilitating risk reduction and sharing, improving the capacity of market actors and shaping broader market practices and conditions.

There are other national green banks around the world, as well as a number of state-level green banks in the United States. The Green Bank Network is a global membership organisation for sharing best practice and lessons among public financial institutions that invest in clean energy. The CEFC is a founding member of the network and actively contributes to this initiative.

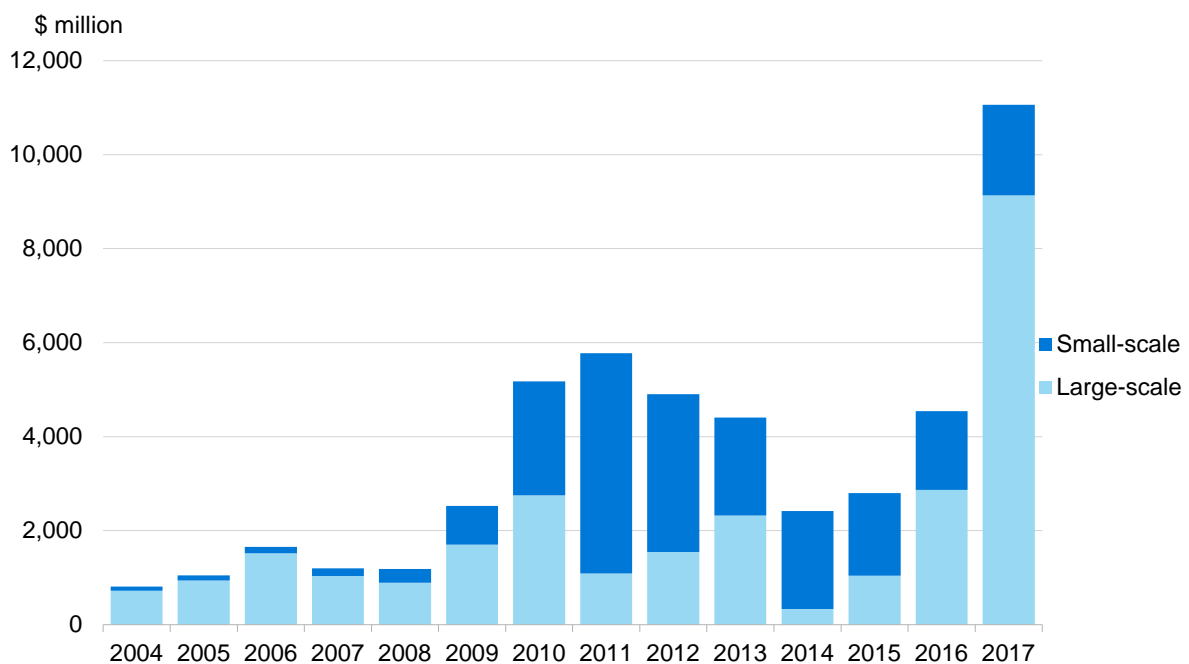
2. RESPONSES TO THE CONSULTATION PAPER QUESTIONS

Consultation Paper question 1: How has the Australian clean energy sector evolved?

The Clean Energy Finance Corporation Expert Review Panel [said](#) in 2012 that Australia's clean energy market was an 'early stage market' characterised by 'incomplete knowledge and limited experience of risk'.

Since then, Australia's clean energy market has seen significant investment, though with pronounced variation in annual levels. After a period of strong investment from 2010 to 2013, annual renewable energy investment halved in 2014 and remained relatively low in 2015 (Figure 5). Investment grew strongly in 2016, and 2017 was a record-breaking year that saw Australia ranked seventh in the world for renewable energy investment. (Data on the CEFC's investments since 2013 is set out in response to question 2.)

Figure 5: Renewable energy investment in Australia



Source: Bloomberg New Energy Finance

Note: Large-scale investment includes asset finance, public market, private equity, venture capital and R&D investment

Policy settings and market conditions have been conducive to higher levels of clean energy investment, but Australia’s clean energy market is yet to reach maturity

Australia’s clean energy market has developed considerably in the past five years. After several years of growth, an ecosystem of local and international project developers, engineers, equipment suppliers, advisers, consultants and financial institutions is now established here. Recent years have also seen growing interest in Australia from international banks, funds, project developers and equipment suppliers.

Sustained high prices for large-scale generation certificates under the 33,000 GWh Large-scale Renewable Energy Target and the improved market for power purchase agreements since 2016 have attracted domestic and international developers and financial institutions to the Australian market. Higher wholesale electricity prices and demand from state and territory government renewable energy auctions have also supported investment in large-scale renewable energy projects.

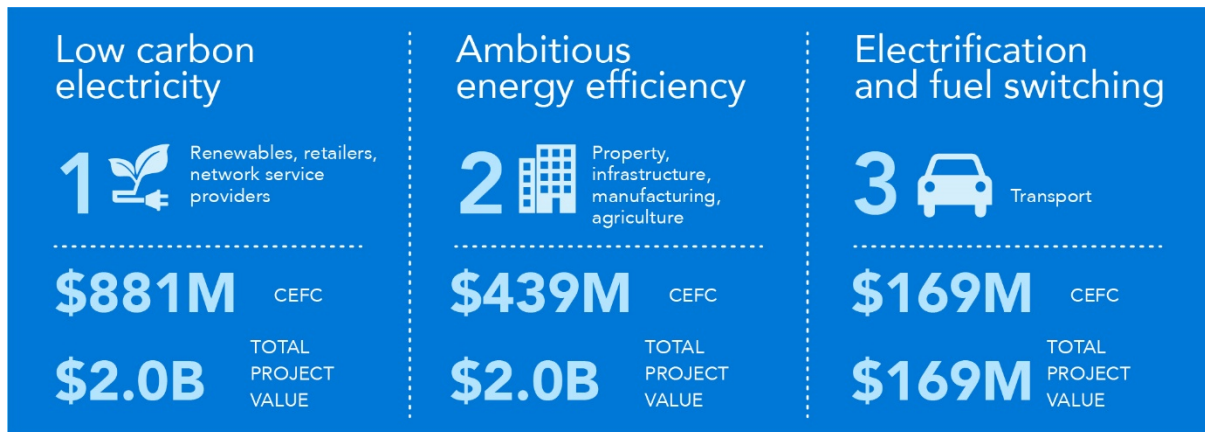
Significant market developments are allowing higher levels of renewable energy to be integrated into Australia’s electricity system. These include increasing grid-scale energy storage; proposed new investment in transmission; government support for further development of Snowy Hydro and the Tasmanian hydro system; support a solar thermal power project in South Australia, and advances in integration and forecasting technology.

The COAG Energy Council and Australia’s energy market bodies – the Australian Energy Market Operator, the Australia Energy Market Commission, the Australian Energy Regulator and the Energy Security Board – are working on policies, rules and procedures that will integrate higher levels of clean energy into Australia’s electricity supply.

Recent increases in retail electricity prices have increased demand from industrial, commercial and residential energy users for investment in distributed energy resources and energy efficiency.

Grants from ARENA and finance from the Clean Energy Innovation Fund are supporting a pipeline of new technologies reaching commercialisation. There has also been strong growth in the number of Australian clean energy start-ups, with innovation hubs and a network of seed and early-stage investors emerging to foster start-up companies.

Figure 6: CEFC investment commitments between 1 July and 31 December 2017



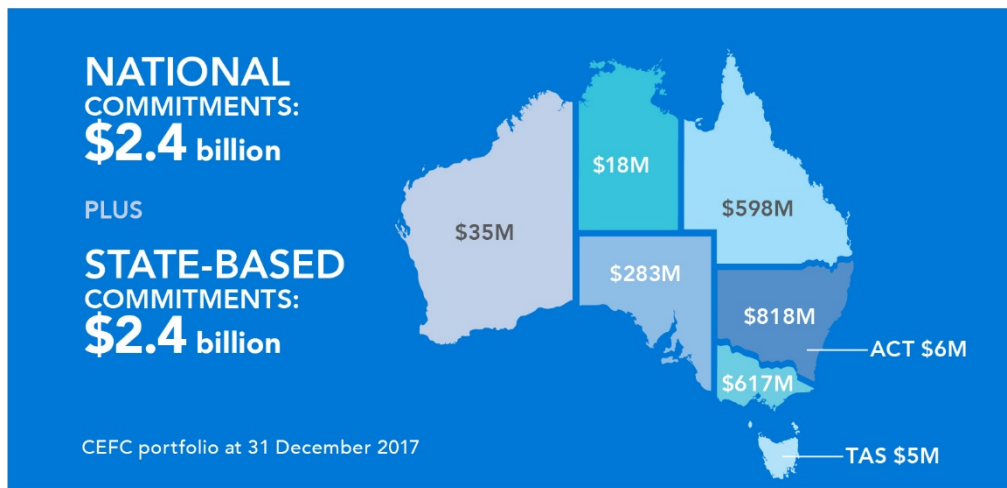
While clean energy investment levels are currently strong, Australia’s clean energy sector is yet to reach maturity

The past five years have shown that changes in policy settings, the prospect of changes in those settings, electricity prices, technology costs, interest rates, investor risk appetite, exchange rates and other factors can contribute to significant changes in investment levels from year to year. There remain many projects that are not able to secure sufficient private sector finance to proceed without CEFC investment.

Appetite for construction risk and merchant price risk remains limited among Australian banks and non-bank investors such as funds and insurance companies. Additionally, the market for corporate power purchase agreements is underdeveloped in Australia compared with other advanced economies.

At a broader level, international economic conditions and the continued availability of capital globally have supported a continued willingness of overseas investors to deploy funds in the Australian clean energy sector. However, a number of the factors supporting the market today would taper substantially in the short to medium term if global financial conditions became less expansionary or if Australian investment conditions became less favourable.

Figure 7: CEFC commitments around the Australia



Despite recent record investment levels, the task of reducing Australia's emissions remains significant

Notwithstanding strong growth in renewables, Australia still has **one of the most emissions-intensive electricity systems** among advanced economies. International Energy Agency [data](#) shows that Australia's electricity system produced 0.755 tCO₂-e per MWh in 2015, nearly twice the 0.404 tCO₂-e per MWh on average produced in OECD member countries. Coal, the most carbon-intensive fossil fuel, remains the dominant energy source for Australia's ageing electricity generation fleet, according to AEMO [data](#). Considerable additional investment in large-scale renewables, transmission and energy storage and distributed energy resources is required to decarbonise Australia's electricity system.

Improving energy efficiency is one of the most direct and cost-effective ways to reduce emissions, with the potential to lower operating costs and energy imports. Australia's [energy productivity](#) improved by only 0.4 per cent in 2015-16, well below the 15-year average of 1.7 per cent. Improving energy efficiency across Australia's transport, manufacturing, mining, residential, commercial, agriculture and construction sectors is a critical element of the national emissions reduction task.

As the electricity system decarbonises, many energy-consuming activities in transport, industry and buildings can reduce emissions by **switching from emissions-intensive fossil fuels to electricity generated from large-scale renewables** coupled with energy storage. Activities in sectors that are not suited to electrification can switch to sustainable bioenergy or other lower emissions fuel sources, also reducing emissions. These transitions will require investment in the clean energy supply chain, such as battery manufacturing and its inputs, and new biofuel production capability, as well as infrastructure such as electric vehicle charging networks.

Meeting ambitious emissions reduction targets will require further development of Australia's clean energy financing market to sustain the required high levels of investment across clean energy technologies for several decades.

Consultation Paper question 2: How effective has the CEFC been in the evolution of the Australian clean energy sector?

The CEFC is now established as a major investor in clean energy in Australia. To 31 December 2017, the CEFC had committed more than \$5.8 billion in finance directly to 85 clean energy projects valued at more than \$16 billion since it began investing in 2013 (Figure 8). CEFC has financed nine co-financing facilities that have delivered around 4,000 smaller projects across Australia.

Figure 8: CEFC investment commitments

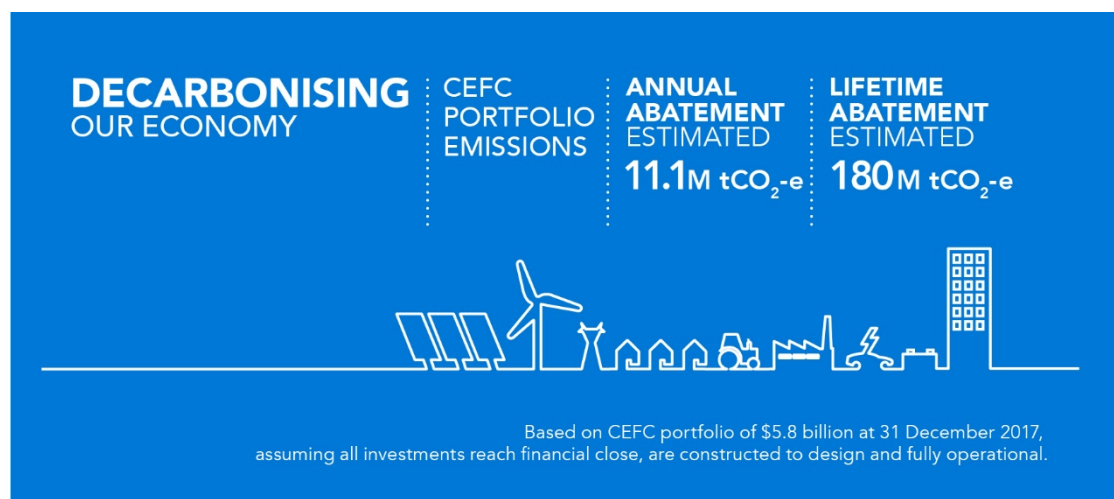
	2017-18 6 months	2016-2017	2015-2016	Since inception
CEFC contractual commitments	\$1.5 billion	\$2.1 billion	\$837 million	\$5.8 billion
Transactions	23	35	15	85
Total project value	\$4.1 billion	\$6.5 billion	\$2.5 billion	\$16 billion

Note: To 31 December 2017

Companies and projects supported by CEFC finance are making a material contribution to reducing Australia's emissions. CEFC investment commitments are expected to help realise an estimated annual emissions reduction of 11.1 million tonnes of CO₂-e, or more than 180 million tonnes of CO₂-e over the life of the projects.

The CEFC also has a significant pipeline of future transactions, with more than 120 proposals seeking more than \$8.5 billion in CEFC finance, for projects with a total value exceeding \$52 billion.

Figure 9: Decarbonising the economy

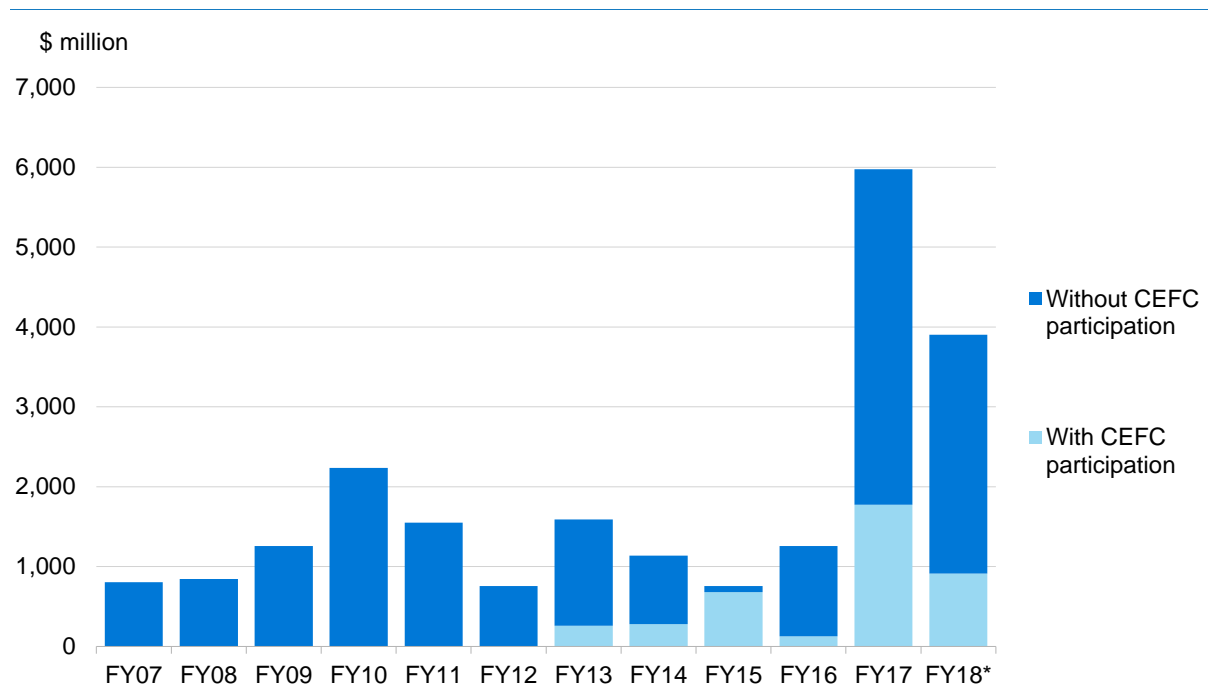


Data on the CEFC’s participation in large-scale renewable energy financing shows that the CEFC has played an important counter-cyclical role

The CEFC has contributed to a larger share of new renewable energy financing when total investment is subdued, and a smaller share when the market is more robust (Figure 10). In 2014-15, when new investment in renewables was at its lowest level in a decade, the CEFC was involved in transactions representing 90 per cent of new investment. Across the other years of the CEFC’s operation, the CEFC has been involved in transactions representing between 10 and 30 per cent of new investment.

This pattern indicates that CEFC investment ‘crowds in’ private sector investment when overall investment levels are elevated, and reduces the damaging effect of investment downturns by helping to maintain industry momentum and capacity through periods of weaker market sentiment. In this way the CEFC has demonstrated its capacity to respond flexibly to changing market conditions.

Figure 10: Large-scale renewable energy investment with and without CEFC participation



Source: Bloomberg New Energy Finance

Note: Large-scale renewable energy asset financing only; CEFC commenced investment commitments on 28 June 2013; first six months of FY18 only

The CEFC’s flexible investment framework means that it can tailor its financing terms to meet evolving market needs

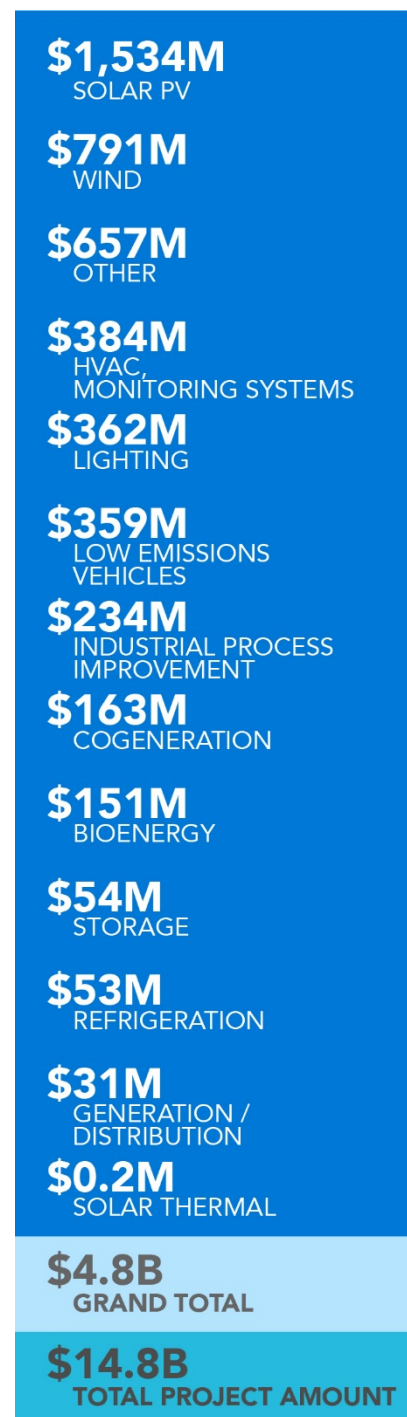
In some categories of clean energy finance, the CEFC is a long-term investor – for example, the average legal tenor of CEFC project finance loans is 11 years. While all transactions are assessed using a commercial approach, in cases where the CEFC makes long-term investments it tends to invest ‘through the cycle’, looking beyond short-term fluctuations in prices and changes in market sentiment.

The CEFC’s flexible investment framework means that it can tailor its financing terms to meet evolving market needs. For example, when energy retailers have shown reduced demand for power purchase agreements, the CEFC has developed sophisticated merchant energy price risk guidelines that have allowed it to finance partly or fully merchant (uncontracted) renewable energy projects to avoid disruption to the development pipeline. In this way, with the backing of the Australian Government’s funding, the CEFC is able to support clean energy markets through periods of policy transition and market uncertainty.

Large-scale renewables investments by the CEFC further demonstrate the organisation’s ability to respond flexibly to meet the evolving needs of the sector. Recent CEFC investments are demonstrating the commercial potential of emerging technologies that support the grid integration of renewables, such as short-term forecasting technology at Queensland’s [Oakey](#) solar farm and integrated battery storage at the South Australian [Lincoln Gap](#) wind farm. The [Kennedy](#) Energy Park demonstrates the market benefits of co-locating wind, solar and battery storage. CEFC investment in the [Kidston](#) Renewable Energy Hub is a potential precursor to the development of a substantial pumped hydro energy storage project in Queensland.

The discipline of targeting a level of return above the Australian Government’s cost of funds means that the CEFC typically lends at or as close to market interest rates as possible. Lending at market interest rates reduces the likelihood that CEFC finance will crowd out commercial finance. As required by the Investment Mandate, the CEFC looks for evidence of positive externalities and public policy outcomes when making investment decisions and determining the extent of any concessional financing.

Figure 11: CEFC invests across a broad range of clean energy technologies



The CEFC has a significant and positive impact in the clean energy financing market

CEFC finance supports a wide range of clean energy investments by households, SMEs and large businesses across many sectors.

Figure 12: Economy-wide impact of CEFC investments



The CEFC has a strong focus on demonstrating the potential of clean energy finance

The CEFC is Australia's largest debt financier for grid-scale solar PV, and the largest single investor in Australia's clean energy venture capital market through the Clean Energy Innovation Fund. The CEFC has also committed finance to several clean energy financing 'firsts', including the first climate bonds for the [Commonwealth Bank](#), the [National Australia Bank](#) and [Westpac](#); the first certified Australian dollar [green bond issued by a Australian real estate investment trust](#); the world's first [climate bond issued by a university](#), and an investment in Australia's first [peer-to-peer green lending platform](#).

The CEFC supports innovative companies in many parts of the clean energy value chain. From [lightweight energy efficiency carbon wheels](#) to [technology to integrate distributed energy resources](#), CEFC finance supports companies from start-up to commercialisation and export, helping to position Australian companies to take advantage of the global shift to clean energy.

The CEFC works collaboratively with ARENA. The two organisations have different addressable markets and different products: ARENA targets early-stage projects with grants, while the CEFC uses debt and equity investments to accelerate commercialisation and deployment. ARENA and the CEFC work directly together on the co-managed Clean Energy Innovation Fund and share information and strategy on a range of clean energy sub-sectors.

The Clean Energy Innovation Fund is emerging as an important component of Australia's climate, energy and innovation policy framework, supporting start-up Australian companies and innovators to take advantage of a potentially very large global market opportunity. In its first year of operation, the Clean Energy Innovation Fund was the largest single investor in the Australian cleantech venture capital market. By December 2017, the CEFC had committed nearly \$50 million to eight Clean Energy Innovation Fund investments, with an estimated aggregate post-money enterprise value of more than \$300 million.

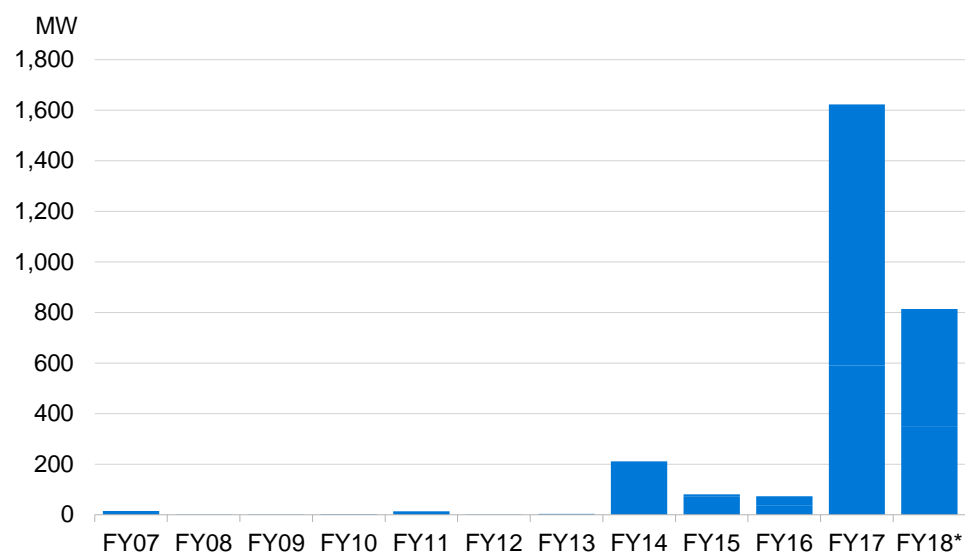
Figure 13: CEFC investments in Australia's cleantech venture capital market



Cross-sector collaboration to accelerate investment and development

The CEFC and ARENA also collaborate closely on developing Australia's large-scale solar industry. The CEFC's large-scale solar financing program was developed in FY2016 to complement ARENA's large-scale solar funding round. Together, the CEFC's financing program and ARENA's funding round brought about a dramatic increase in large-scale solar investment in Australia (Figure 14), building capacity and catalysing cost reductions in the sector.

Figure 14: CEFC and ARENA investment drives large-scale solar PV investment



Note: First six months of FY18 only
Source: Bloomberg New Energy Finance

The CEFC and ARENA are both focused on large-scale energy storage and supporting the integration of higher levels of renewable energy into the electricity grid through projects such as GreenSync's deX exchange platform and the promotion of demand management.

In some instances, CEFC finance commitments directly catalyse capital from other financial institutions without ultimately requiring CEFC investment. In the case of [Sundrop Farms' innovative solar thermal greenhouse project](#) in South Australia, the CEFC's early commitment for cornerstone debt finance helped Sundrop Farms secure private sector growth capital from a global private financial institution.

The CEFC also worked closely on financing options for Sun Metals Corporation in its early planning for a large-scale behind-the-meter solar farm to power its zinc refining operations in Queensland. CEFC involvement helped catalyse private sector finance for that project, an exemplary renewable development in the manufacturing sector at a significant scale.

A 2017 stakeholder survey conducted for the CEFC by ACIL Allen found that the CEFC has had a 'significant and positive impact in the clean energy financing market'. It found that there is 'high engagement among CEFC stakeholders' with the CEFC, that it has a good reputation for its products and services, and that its staff are rated highly for commercial acumen.

The Australian Government's 2017 climate policy review cited CEFC investments in large-scale renewables, vehicle fleets, freight infrastructure, solar thermal and pumped hydro as examples of Australian Government climate policy achievements.

Consultation Paper question 3: How has the Act enabled the CEFC to efficiently allocate its resources?

The *Clean Energy Finance Corporation Act 2012* sets up a **flexible framework** for the CEFC to make investments. The CEFC Special Account provides a stable long-term source of equity funding that allows the CEFC to offer long-term finance. The wide scope of the CEFC's investment function means that it can provide a flexible range of finance on commercial terms that meets the evolving needs of the clean energy market. The wide scope of addressable clean energy technologies – energy efficiency, low emission technologies and renewable energy – allows the CEFC to support clean energy opportunities across virtually all sectors that produce emissions or use energy.

The CEFC focuses on areas of the economy where CEFC finance can have a high impact in contributing to Australia's decarbonisation. Through our focus on these **decarbonisation pathways**, the CEFC is supporting industries to reduce emissions in order to ultimately achieve the Paris Agreement vision for a net zero emissions global economy in the second half of the century.

The CEFC **targets a commercial return and seeks to minimise its operating costs and expenses** consistent with achieving its statutory objective. In its annual reports, the CEFC benchmarks its operating costs and expenses against the operating costs and expenses of comparable entities such as the Future Fund Management Agency, the Export Finance and Insurance Corporation (Efic), and the UK Green Investment Group.

The CEFC publishes its **Investment Policies** which set out how and where it invests, its performance benchmarks and its approach to managing risk. A **Risk Management Framework** guides the organisation in monitoring and managing risks for the Corporation's investments and for the Corporation itself.

While the CEFC is not specifically required by legislation to target financial self-sufficiency, it aims to operate at no cost to taxpayers. In line with the Investment Mandate, the CEFC applies commercial rigour when making its investment decisions. This means that every investment the CEFC makes is expected to generate a return above the Australian Government's cost of funds. Investments are made on as close to market terms as possible and make use of concessionality only to deliver positive externalities and public policy outcomes.

The CEFC's invested portfolio has reached a scale where it covers the Corporation's operating costs and generates sufficient cash flows and operating profits to also cover the implied cost of funds based on the five-year Australian Government bond rate.

The **Investment Mandate** is an important tool for the Australian Government to shape the CEFC's investment priorities within the general framework of the Act. Through the Investment Mandate, the CEFC has been directed to provide support for a range of related policy objectives: supporting innovation through the Clean Energy Innovation Fund; supporting clean energy projects that contribute to the Australian Government's Reef 2050 plan through the Reef Funding Program, and promoting liveable and sustainable cities through the Sustainable Cities Investment Program. With its specialist investment focus, the CEFC has been able to respond swiftly to these directions, committing almost \$1.8 billion, alongside more than \$5.2 billion of other finance, into eligible clean energy projects across the three programs.

Consultation Paper question 4: Are there any gaps in the scope of the Act?

The CEFC has **not identified any significant gaps** in the scope of the Act that currently impede its capacity to efficiently facilitate the flow of finance into the clean energy sector.

