

CLEAN ENERGY FINANCE CORPORATION
EXPERT REVIEW

REPORT TO GOVERNMENT

MARCH 2012

**THE CLEAN ENERGY FINANCE
CORPORATION**

REPORT OF THE EXPERT REVIEW PANEL

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CLEAN ENERGY FINANCE CORPORATION EXPERT REVIEW

OFFICE OF THE CHAIR

28 March 2012

The Hon Wayne Swan MP
Deputy Prime Minister and Treasurer
Parliament House
CANBERRA ACT 2600

Senator the Hon Penny Wong
Minister for Finance and Deregulation
Parliament House
CANBERRA ACT 2600

Dear Ministers

Since the establishment of the Expert Review Panel for the Clean Energy Finance Corporation (CEFC) on 12 October 2011, we have consulted broadly and sought submissions across the sector. The Panel appreciated the generosity of time given by individuals in those consultations and the quality and content of the submissions which we received.

Across the Panel and the Secretariat, each submission was given due consideration and the common themes have been captured in this report.

In preparing this report, the Panel, both through our own research and reading the submissions, reinforced its view of the positive role the CEFC can play in the Government's vision for a cleaner energy future, tackling climate change, lowering carbon emissions and transforming Australia's energy sector.

Energy is critical to economic growth. Price changes in the global energy market have been responsible for a number of shocks to world growth, and Australia's economic growth remains vulnerable to these energy market changes. It is important for Australia to have the lowest possible cost of energy as we move to a carbon constrained world. Our country is challenged in transitioning itself to a lower emissions economy, but doing so better positions Australia with a range of future outcomes. The investment required for this transformation is substantial and our consultations with stakeholders have made us aware of inhibitors which challenge the mobilisation of funds into this early stage sector.

The establishment of a \$10 billion fund dedicated to invest in clean energy will catalyse and leverage the flow of funds for commercialising and deploying renewable energy, low-emissions and energy efficiency technologies. In this way we will be preparing and positioning the Australian economy and industry for a cleaner energy future.

The Panel sees that it would be appropriate for the CEFC to invest on the premise that existing Commonwealth policies continue to operate, principally the Renewable Energy Target and the carbon price. This approach together with its specially appropriated funds, clean energy sector focus, target rate of return around the Government's cost of funds, and recognition of the broader economic benefits of the positive externalities of its investments, can combine to make transactions acceptable to the CEFC where they have been unacceptable to private financiers.

This investment task is challenging. The CEFC will need to manage the tensions arising from the interaction of an ambition for a public policy outcome, a mandate to invest where the market has not, an expectation for CEFC to operate with minimal budgetary assistance and the allocation of concessionality, while not distorting the aspects of the market that operate efficiently. Investing in the projects subject to the Renewable Energy Target complicates the task. As a Government initiative, the ultimate goal for the CEFC is to have the net benefits of its activities outweigh the costs.

By working with the market to build industry capacity, the Panel believes the CEFC can deliver on this challenge. It will do so by taking a case-by-case approach to analysing potential investments, applying a commercial filter to test their viability and, if appropriate, tailoring a financial package to suit the investment. The tools that the CEFC will have at its disposal in tailoring investments are a capacity to provide funds, change the allocation of risk amongst the participants, lengthen the available tenor for loans, and offer an appropriately concessional cost of funds.

This report establishes the broad principles to guide the direction of the CEFC. The Panel has proposed a flexible mandate for the CEFC to enable the corporation to respond to changing circumstances and opportunities. Much of the detailed work in operations and strategies of the CEFC can only be done once the corporate entity, Board and CEO are in place which will be prior to the corporation beginning investment operations from 1 July 2013.

Ultimately, the Panel believes that the CEFC will play an important role in furthering Australia's place in a cleaner energy world and developing the technology, design, construction and operating skills to do so. Australia requires these skills to integrate cleaner energy technologies with our existing energy infrastructure and markets. The development of these skills will benefit our economy, employment and competitive position and expand the ambit of real options for Australia's future energy generation. Australia's geography, renewable resources and adaptive engineering skills are well suited to our playing a significant global role in this sector.

I join my colleagues in recommending this report to you.

Yours sincerely



Jillian Broadbent AO
Chair
CEFC Expert Review Panel

THE EXPERT REVIEW PANEL

The Government appointed an Expert Review Panel on 12 October 2011 to advise on the design of the Clean Energy Finance Corporation (CEFC). The panel comprises Ms Jillian Broadbent, AO (Chair), Mr Ian Moore and Mr David Paradise.

Since committing to undertake the Review, the Panel has consulted widely and received over 170 submissions from wind generators, renewable energy companies, integrated and independent electricity retailers, infrastructure operators, financial institutions, community and individuals. These were sourced domestically and internationally. In developing the role for the CEFC, the Panel sought to review the financing experiences in the industry to understand the market failures or barriers that participants encounter and which may prevent the investment required to position Australian industry to be competitive in a future cleaner energy world.

The Panel is grateful for the level of stakeholder interest and support for the Review. Public submissions are at www.cefcexpertreview.gov.au and listed in Appendix A.

The Panel was supported by a Secretariat and Deloitte Touche Tomatsu was engaged as a consultant. Professor Ross Garnaut, Mr Tony Wood and the Investor Group on Climate Change provided valuable comments in the later stages of preparing this report.

MS JILLIAN BROADBENT AO

Ms Broadbent is a member of the Board of the Reserve Bank of Australia, Non-Executive Director of ASX Limited, Woolworths Limited, and Chancellor of the University of Wollongong. She has extensive executive experience in domestic and international banking, financial markets and risk management, principally with Bankers Trust Australia. Ms Broadbent's 30 year banking career has given her experience in all forms of financing across the risk spectrum, from equity through to secured debt and the appropriate pricing differentials involved.

MR IAN MOORE

Mr Moore has 35 years of banking, finance, insurance and actuarial experience. He is currently on the Board and Audit Committee of the responsible entity for Challenger Infrastructure Fund and Challenger Diversified Property Fund. He was previously on the Board and Chairman of the Risk Committee of hedge fund, Artesian Capital Management.

MR DAVID PARADICE

Mr Paradise is the founding principal of Paradise Investment Management which has \$6.5 billion under management, with offices in Australia and the United States of America. He has 30 years of experience in small company investing across both listed and unlisted investments.

TERMS OF REFERENCE

Reporting to the Deputy Prime Minister and Treasurer, the Hon Wayne Swan MP and the Minister for Finance and Deregulation, Senator the Hon Penny Wong, the Chair and Review members are requested to:

1. Develop an implementation plan for the establishment of the CEFC.
2. Develop and recommend a proposed investment and operating mandate for the CEFC, with the mandate reflecting:
 - 2.1 the market area in which the CEFC will operate, including broad guidelines for how the corporation would invest and manage risk;
 - 2.2 how it will approach the intention that funding be divided into two streams:
 - 2.2.1 a renewable energy and enabling technology stream which will have one half of the funding allocated,
 - 2.2.2 an energy efficiency and low-emissions technology stream which will have half of the funding allocated and will be able to fund renewable energy projects in addition to the dedicated stream;
 - 2.3 how the CEFC is positioned within the broader objectives of the Government's Clean Energy Future Package.
3. Consistent with statutory requirements and the guidance set out in Governance Arrangements for Australian Government Bodies, suggest appropriate governance principles and mechanisms, including:
 - 3.1 responsibilities, powers and statutory duties of office holders including the Board, Chair and Chief Executive Officer;
 - 3.2 appropriate Board structure, representation and skills;
 - 3.3 reporting obligations of the Board;
 - 3.4 relationship between the Board and responsible Ministers; and
 - 3.5 duties and functions of the CEFC employees.
4. In the context of the proposed operating mandate, assess how the CEFC will interact with other Australian Government bodies and initiatives, including the Australian Renewable Energy Agency and Low Carbon Australia Limited. Where appropriate, recommend a path for transitioning from the current arrangements to arrangements which streamline support for cost-effective carbon reduction.
5. In conducting the Review, the Chair is to put in place a process for consulting key stakeholders, including wind producers, about the role of the CEFC and its relationship with the Renewable Energy Target.

CONTENTS

Covering letter	iii
The Expert Review Panel	v
Terms of Reference	vi
Executive Summary	ix
List of recommendations	xiv
CHAPTER 1: OPERATING ENVIRONMENT	1
<hr/>	
Operating environment	1
Global action	2
Economic environment	3
Financing cleaner energy	5
CHAPTER 2: INVESTING IN CLEAN ENERGY	9
<hr/>	
Investing in clean energy	9
Operating framework	11
Principle One: Australian clean energy sector focus	13
Funding streams	13
Renewable energy	14
Low-emissions technology	15
Energy efficiency	15
Manufacturing	16
Exclusions	17
CHAPTER 3: COMMERCIAL APPROACH	19
<hr/>	
Principle Two: Commercial approach	19
Stage of commercialisation	20
Interaction with the renewable energy target	21
Community and regional generation projects	23

CONTENTS

CHAPTER 4: ADDRESSING FINANCIAL BARRIERS	25
Principle Three: Addressing financial barriers	25
Availability	25
Tenor	27
Cost	27
Barriers specific to CEFC investment areas	28
Renewable energy	28
Low-emissions	30
Energy efficiency	30
Positive externalities	32
The operating framework in practice	32
CHAPTER 5: RISK MANAGEMENT	35
Risk management	35
The CEFC's challenge	35
A risk conscious organisation	35
Risk management structure	41
CHAPTER 6: GOVERNANCE	43
Governance	43
Investment mandate	43
CEFC Board	44
Interaction with other Australian Government programs	47
CHAPTER 7: IMPLEMENTATION STEPS	51
Implementation steps	51
Commencement of investment operations	51
Risk management and compliance framework	52
APPENDIX A — CONSULTATIONS AND SUBMISSIONS	59
APPENDIX B — REFERENCES	63

EXECUTIVE SUMMARY

The Clean Energy Finance Corporation (CEFC) was announced as part of the Government's *Clean Energy Future* Plan. The CEFC will be a \$10 billion fund dedicated to investing in clean energy. The Government already has a Renewable Energy Target (RET) and a carbon price will begin on 1 July 2012 to drive investment towards new energy sources. The CEFC will supplement these initiatives to catalyse and leverage the flow of funds for commercialisation and deployment of renewable energy, low-emissions and energy efficiency technologies necessary for Australia's transition to a lower carbon economy.

In conducting the Review, the Expert Panel (the Panel) consulted widely with the industry and stakeholders. It received over 170 submissions. The submissions supplemented the Panel's own research in forming the recommendations of this report.

GLOBAL MOVE TO CLEANER ENERGY

Australia is a late starter in the transformation to clean technology due to its access to low cost fossil fuels. This transformation will require substantial capital which the private sector alone may not be able to provide. Governments globally are acting to support a shift to cleaner energy sources. The CEFC can build on the experiences of dedicated government organisations similar to the CEFC that operate in the United States of America, the United Kingdom, Germany, China and Brazil.

Current global financial conditions, the complex nature of Australia's electricity markets, the cost of renewable energy, and the preference of investing institutions for listed assets inhibit the financing of the clean energy sector.

A VISION FOR THE CEFC

The CEFC is a mechanism to help mobilise investment in renewable energy, low-emissions 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.

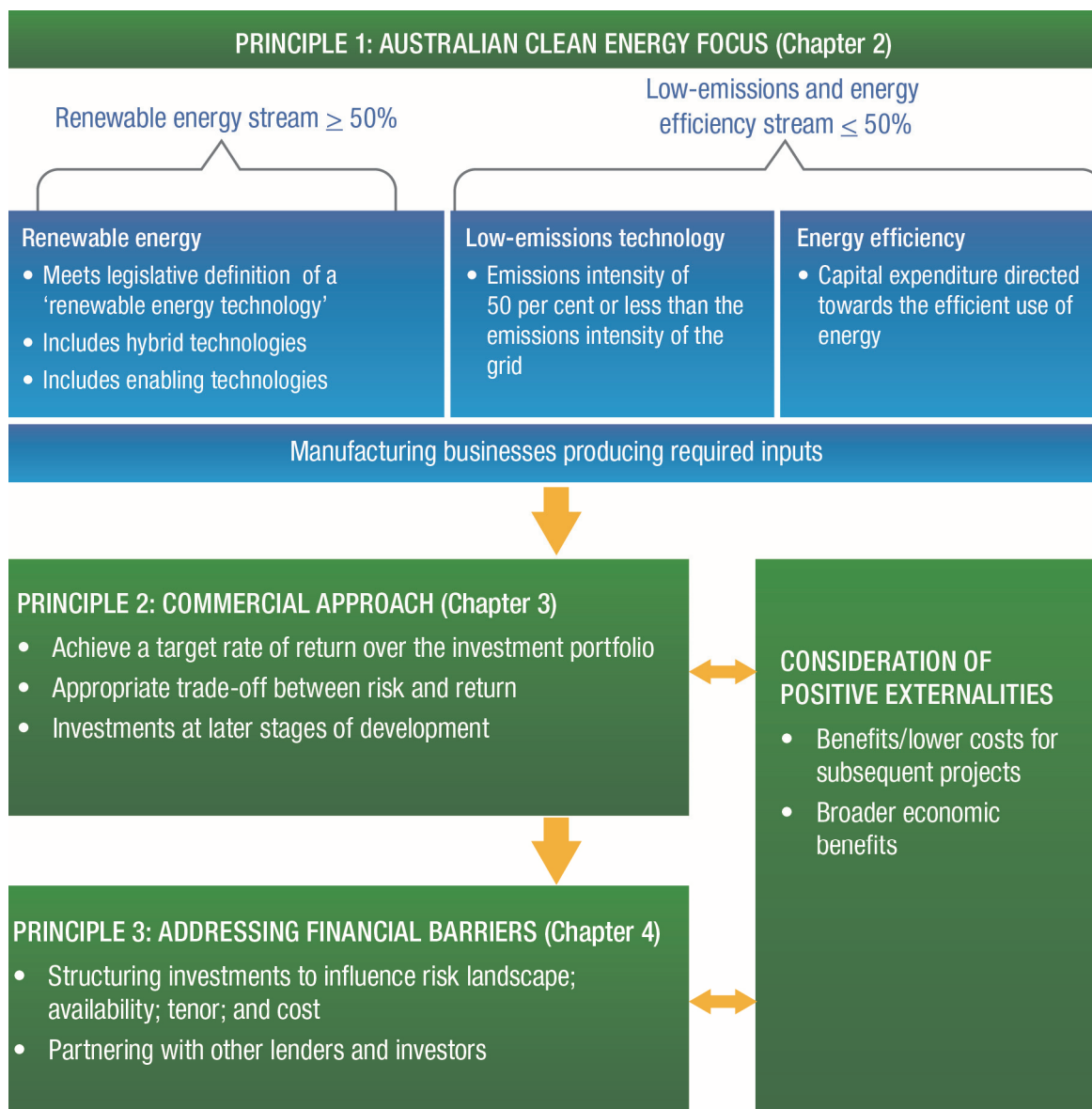
The Panel considers an appropriate objective to be:

apply capital through a commercial filter to facilitate increased flows of finance into the clean energy sector thus preparing and positioning the Australian economy and industry for a cleaner energy future.

The CEFC will be challenged in achieving this objective as there is a tension between funding the clean energy sector, applying a commercial filter, and maintaining the financial self-sufficiency of the corporation.

OPERATING FRAMEWORK

The scope of the CEFC’s operations will be guided by an operating framework to ensure the CEFC achieves its objective. The operating framework is based on three principles that will direct where and how the CEFC will invest.



PRINCIPLE ONE – CLEAN ENERGY SECTOR FOCUS

The CEFC will focus its investments in the clean energy sector, namely on renewable energy, low-emissions and energy efficiency technologies in Australia, as well as manufacturing businesses that produce the required inputs.

The CEFC will allocate its funding within two streams: 50 per cent or more of funds will be allocated to the *renewable energy stream* and up to 50 per cent will be allocated to the *low-emissions and energy efficiency stream*.

The Panel proposes that the definition of renewable energy should be sufficiently general to afford the CEFC Board flexibility to respond to the dynamic renewable energy market. Accordingly it proposes to adopt the same approach as in the *Australian Renewable Energy Agency (ARENA) Act 2011* that takes the ordinary meaning of renewable energy.

Consistent with the Government's overarching policy of reducing the emissions intensity of the energy sector over time, the threshold for low-emissions technology should be set at a level substantially less than the current intensity of the electricity grid. The preferred threshold for low-emissions technology is at, or below, 50 per cent of the emissions intensity of the grid. This will allow the threshold to be adjusted as the energy sector changes in response to the carbon price and the RET.

The CEFC's direct investments in the energy efficiency area will focus on large-scale projects where the primary purpose of the capital expenditure is on energy efficiency. Smaller scale energy efficiency projects could be financed indirectly through a third party aggregating these transactions.

Demand management is not energy efficiency. However, to the extent that it lowers future network upgrade costs and defers investment in new generation, it is a valuable tool in minimising the cost of moving to a cleaner energy future. Therefore, the Panel recommends the CEFC consider enabling technologies associated with demand management in the ambit of the energy efficiency area.

PRINCIPLE TWO – COMMERCIAL APPROACH

The CEFC will apply a commercial filter to investment decisions. It will focus on projects and technologies at the later stages of development. It will invest responsibly and manage risk so it is financially self-sufficient and achieves a target rate of return.

The filter will not be as stringent as the private sector equivalent, as the CEFC has a public policy purpose and values any positive externalities being generated. Consequently, it has different risk/return requirements. For a given return, the CEFC may take on higher risk and, for a given level of risk, due to positive externalities, may accept a lower financial return. While focusing on the later stages of project development, the CEFC should still be able to invest in market demonstration projects provided they pass the commercial filter and are assessed to be able to produce a positive return. To achieve the target rate of return, the portfolio will need to earn a rate sufficient to incorporate a margin for losses and operating expenses.

This focus on later stage developments, together with the CEFC's commercial filter, distinguishes the corporation's role from some other government initiatives. Interaction between the CEFC and other government initiatives is important to support projects and technologies along the innovation chain.

Investing in the renewable sector, the CEFC will be cognisant of the potential impact on other market participants when considering investment proposals. The Panel considers that any projects it funds should remain eligible for large-scale generation certificates.

PRINCIPLE THREE – ADDRESSING FINANCIAL BARRIERS

Submissions and consultations identified several common financial barriers to funding cleaner energy projects. In addition, certain inhibitors are relevant to the CEFC's specific

investment areas of renewable energy, low-emissions and energy efficiency technologies.

The CEFC, as a financial institution able to offer concessional finance, has capacity to directly influence financial barriers. The individuality of each project necessitates a case-by-case approach. The CEFC can tailor concessionality in each case and apply it through availability, tenor or cost of finance or by absorbing additional risk. In setting the terms, the CEFC will provide only the least generous terms required for the proposal to go ahead (that is as close to market terms as possible).

The CEFC will invest on the premise that existing Commonwealth policies continue to operate, principally the RET and the carbon price. This approach together with: its specially appropriated funds; its clean energy sector focus; a target rate of return around the government's bond rate; and a recognition of the broader economic benefits of the positive externalities of its investments, can combine to make transactions acceptable to the CEFC where they have been unacceptable to private financiers.

As a dedicated fund seeking to facilitate Australia's transition to cleaner energy, the CEFC should seek to build a knowledge base, collecting information and, subject to confidentiality agreements, disseminate it to industry and other stakeholders. This includes knowledge about technologies, project development and financial products.

ILLUSTRATIVE PROCESS

An illustrative investment assessment process is in chapter 4. This assessment process brings together the three principles of the operating framework and highlights the case-by-case approach the CEFC will take in assessing proposals and tailoring assistance.

RISK MANAGEMENT

The CEFC will have sound risk management practices in place that instil confidence that risks are identified and managed effectively. This is critical because the CEFC will be operating in an environment with limited opportunities to diversify its portfolio and under a mandate to invest where financial institutions currently have limited appetite. To effectively manage this, the CEFC needs the right people and robust policies, supported by a sound risk management and compliance framework.

GOVERNANCE

To be efficient, effective and accountable, the CEFC will need a robust governance structure. The CEFC will make management, operational and investment decisions independently of the Government. The CEFC will operate in a transparent and publicly accountable way to provide assurance to the Government, taxpayers and the market that the corporation is managing public money prudently within the parameters set by the Government in the enabling legislation and the investment mandate.

To achieve transparency in its operations, the CEFC will produce annual reports. Annual reports will include audited financial statements, set out the CEFC's establishment and operating costs, remuneration and allowances of Board members and key staff, and details of all contracts. Further, the CEFC will develop and publish guidelines for assessment of potential projects and publish the financial details of all investments made.

The Board will be appointed by the Government and be responsible for making management, operational and investment decisions for the CEFC. The CEO will undertake the day-to-day operations with support from senior executives. Clearly defined lines of responsibility will be developed, with ultimate responsibility for all decisions resting with the Board. The CEFC will remain accountable by operating within the parameters of the investment mandate, to be developed by the Government in consultation with the Board once enabling legislation is passed and the Board appointed. Through the investment mandate, the Government will articulate its broad expectations on how the CEFC invests and is managed by the Board.

LOW CARBON AUSTRALIA LIMITED

As part of the *Clean Energy Future* Plan, the CEFC needs to complement other Australian Government policies and programs. The Review highlighted a clear overlap in responsibilities with Low Carbon Australia Limited. The Panel recommends that after the establishment of the CEFC, the Board discuss with the Government options for building on the systems already developed to fund energy efficiency, either by Low Carbon Australia becoming part of the CEFC or the CEFC funding some renewable energy operations through Low Carbon Australia.

IMPLEMENTATION

It is intended the CEFC begin investment operations from 1 July 2013. Between the passage of the enabling legislation and investment operations beginning, substantial effort will be required to set up the organisation. This pre-investment stage involves establishing the Board, agreeing on the investment mandate, engaging staff and setting up the critical infrastructure that will ensure transparent and accountable governance, strong risk management and best practice administration.

With the complexity in both financial markets and energy markets, the approach to investments will be staged. This is intended to balance the need for the CEFC to begin to deploy its capital early, while providing time for the corporation to build the capacity to identify, assess and manage direct investments. Initially, as the CEFC builds its capability and portfolio, it is anticipated that the majority of its investments will be loans rather than equity.

LIST OF RECOMMENDATIONS

CHAPTER 2: INVESTING IN CLEAN ENERGY

- 2.1 The CEFC's funding of \$2 billion per annum for five years from 2013-14 be specially appropriated in its enabling legislation.
- 2.2 The CEFC has flexibility in executing its investment mandate subject to appropriate risk management and governance frameworks.
- 2.3 The objective of the CEFC is to apply capital through a commercial filter to facilitate increased flows of finance into the clean energy sector thus preparing and positioning the Australian economy and industry for a clean energy future.
- 2.4 The CEFC invests only in commercial activities that are principally located in Australia.
- 2.5 The CEFC makes its investments in two streams:
- a renewable energy stream
 - a low-emissions and energy efficiency stream.
- Investing 50 per cent or more of available funds in the renewable energy stream should be a goal rather than a binding constraint. The CEFC will report on the actual allocation between the investment streams.
- 2.6 The CEFC uses the definition of 'renewable energy technologies' in section 4 of the *Australian Renewable Energy Agency Act 2011*:
- Renewable energy technologies includes: (a) hybrid technologies; and (b) technologies (including enabling technologies) that are related to renewable energy technologies.*
- 2.7 The CEFC sets the eligibility threshold for low-emissions technology at 50 per cent of the emissions intensity of electricity generation in Australia and applies an equivalent threshold for projects that do not involve electricity generation. The threshold will be reset annually based on updated data.
- 2.8 The CEFC can finance capital expenditure that is directed towards the efficient use of energy and the application of demand management enabling technologies.
- 2.9 The CEFC treats manufacturing businesses as eligible for investment where they produce later stage inputs for renewable energy, low-emissions technology and energy efficiency projects.

CHAPTER 3: COMMERCIAL APPROACH

- 3.1 The CEFC uses the disciplines of a commercial organisation in its investment assessments and risk management while operating to achieve a public policy outcome.
- 3.2 The CEFC will assess investment proposals on a case-by-case basis applying a commercial filter and using a range of tailored financing instruments.
- 3.3 The CEFC focuses on projects and technologies at the later stages of development but does not exclude projects in the demonstration stage that can pass the commercial filter.
- 3.4 Any investments by the CEFC will not impact on the project's eligibility for large scale generation certificates under the Renewable Energy Target. The CEFC will be cognisant of the potential impact on other market participants when considering investment proposals.

CHAPTER 4: ADDRESSING FINANCIAL BARRIERS

- 4.1 The CEFC, as a general principle, seeks to co-finance investments.
- 4.2 The CEFC can channel a proportion of its funds to the market through intermediaries and pooled funds. Intermediaries must operate and manage funds under parameters consistent with the CEFC's investment mandate.
- 4.3 Consistent with its commercial filter, the CEFC will offer finance on the least generous terms possible for the project to go ahead.

CHAPTER 5: RISK MANAGEMENT

- 5.1 The Board will have an effective risk management system in place prior to commencing investment operations.

CHAPTER 6: GOVERNANCE

- 6.1 The Government sets the direction and broad mandate of the CEFC but does not direct the CEFC in relation to specific investments.
- 6.2 The CEFC will be transparent in its operations and reporting.
- 6.3 The CEFC will develop and publish guidelines for potential proponents.
- 6.4 The CEFC Board should:
 - comprise up to seven members, including the Chair
 - be appointed on a part-time basis for a set term, with a provision for re-appointment` and with remuneration set by the Remuneration Tribunal

LIST OF RECCOMENDATIONS

- comprise members with substantial experience and expertise who have professional credibility and appropriate standing in the community
 - comprise people with skills and experience in: banking and finance; investment management; venture capital and private equity; clean energy sector technologies and engineering; and/or the environmental sector
 - exclude Commonwealth employees.
- 6.5 The CEFC Board is to:
- set policies on the CEFC's investment strategy and its risk management and determine benchmarks for assessing its performance
 - have governance responsibility for investment decisions, risk management and operations
 - be able to delegate selected powers to the CEO and senior executives but remains accountable
 - be able to appoint and remove the CEO and set their remuneration
 - be able to engage consultants to provide services.
- 6.6 The CEFC be exempt from the Government's Commonwealth Procurement Guidelines but demonstrate value for money in all procurements through consistent and transparent procedures.
- 6.7 CEFC employees are engaged under an alternative employment framework developed by the CEFC, and not under the *Public Service Act 1999*.
- 6.8 The CEFC's operations are reviewed by the end of 2016-17.
- 6.9 After it is established, the CEFC enters into direct discussion with the Government on whether Low Carbon Australia could be absorbed into the CEFC or if the CEFC could direct some of its funding through Low Carbon Australia. Any consideration would need to address:
- how Low Carbon Australia aligns with the governance structure of the CEFC
 - how Low Carbon Australia's carbon neutral accreditation program could be implemented outside the CEFC
 - how Low Carbon Australia's experience in the energy efficiency area aligns with the CEFC's model.

CHAPTER 1

OPERATING ENVIRONMENT

OPERATING ENVIRONMENT

As a consequence of access to and reliance on cheap fossil fuels, Australia is a late starter in the transition to cleaner energy. Diversifying Australia's sources of energy and harnessing abundant renewable resources not only helps reduce carbon emissions, but competitively positions Australia by reducing industries' exposure to global energy prices. The lead times are long and earlier action towards this transformation minimises its ultimate cost and disruption to the economy.

A vibrant clean energy sector requires capital. Because the fund is dedicated to the sector and will take a commercial approach, the Clean Energy Finance Corporation (CEFC) can facilitate the mobilisation of this capital through using its own \$10 billion and leveraging a multiple of this from private financiers. It is intended that the value of this capital would be maintained and, over time, would generate a positive return.

The Expert Review Panel (the Panel) acknowledges that when there is full knowledge, understanding and experience with risk, an efficient market will optimally allocate capital. However, Australia's clean energy market is an early stage market, characterised by incomplete knowledge and limited experience of risk. The combination of this with other market barriers is inhibiting the efficient allocation of capital.

History has many examples of the journey towards more efficient markets; the Australian financial market's development over the past 30 years is one. In the clean energy sector in particular, uncertainty, and the costs of participation and execution, inhibit efficiency. The CEFC would support the clean energy market's transition towards greater efficiency. During this transition, it will be difficult to predict which technologies will be the lowest cost in the long-term. By being open to all technologies, the CEFC will expand options rather than try to pick winners.

By allocating capital in this way, the CEFC can create and maintain real options for cleaner energy, generating capacities and technologies. These real options will minimise the risk that Australia loses its position as a low cost energy producer in a carbon constrained world and improves our readiness for when the world requires a lower carbon impact from its suppliers. In conducting this Review, the Panel was encouraged by the level of global activity occurring in the clean energy space and its consequent economic opportunities. The CEFC can assist Australia to take advantage of these opportunities.

GLOBAL ACTION

The global market for renewable and low-emission energy is dynamic and evolving. The International Energy Agency acknowledges a sizeable ongoing investment is needed to affect a shift towards cleaner energy, large enough to shift the world towards a 450ppm carbon dioxide concentration trajectory and mitigate dangerous climate change.

The sheer scale of the investment task requires collaboration between the private and public sectors. National governments are channelling their efforts through numerous mechanisms, including mandating targets, direct pricing of carbon, and establishing or refocusing existing financing bodies to fund clean energy projects.

In developing the model for the CEFC, the Panel has drawn on the experiences of clean energy financing mechanisms used overseas, adapting them as appropriate to suit the structure of the financial markets, energy market and clean energy regulatory system in Australia. In the pursuit of best practice, the Panel expects the CEFC to continue to interact with overseas clean energy sector-focused organisations.

The United Kingdom's Green Investment Bank has an initial commitment of £3 billion. The Green Investment Bank begins operations in April 2012 with the explicit objective of accelerating the private sector's investment in the United Kingdom's transition to a green economy.

The United States Department of Energy has issued loans and guaranteed loans to encourage early stage commercial use of new or significantly improved technology in energy projects. Across the programs administered by the Loan Program Office, around 35 projects received loans and loan guarantees worth around US\$35 billion between September 2009 and September 2011. While this facility has been criticised for a few high profile failures, an audit completed in February 2012 concluded that the vast majority of the loans are expected to perform well.

KfW, Germany's main development agency, is a significant financier of green energy. KfW generally does not lend directly, rather it provides commercial banks with liquidity at low rates and long maturities. Commercial banks conduct due diligence and once approved, the bank on-lends the KfW funds. KfW provides funding to 80 per cent of Germany's newly installed wind energy and 40 per cent of solar panels installed in 2010. It will commit over €100 billion for investments in the energy sector over the next five years.

China provides funds to clean energy through its development banks. The China Development Bank allocated US\$30 billion in credit to the top five solar manufacturers in China, enabling solar producers to expand significantly. By 2010, six of the top ten solar photovoltaic manufacturers were in China, up from two out of the top ten in 2006. In addition, China's renewable energy laws provide incentives to renewable energy projects and drive substantial investment in wind power, which grew 100 per cent each year between 2005 and 2009.

The Brazilian Economic and Social Development Bank (BNDES) provides long-term finance with a strong clean energy focus. In 2011, BNDES approved financing of approximately US\$1.8 billion for the construction of wind farms. Brazil's electricity market has one of the lowest carbon emission intensities in the world. Nearly three quarters of the country's installed generation capacity is represented by hydro sources. To meet its

expanding need for energy in a growing economy, Brazil is investing in other renewables and they now account for a further 8 per cent of capacity, bringing Brazil's total renewable capacity to around 83 per cent.

These financing bodies successfully broaden the base of their domestic clean energy industries. The CEFC will leverage on their experience and seek to capture similar benefits for Australia.

ECONOMIC ENVIRONMENT

Europe and other key markets are experiencing economic and financial volatility and it is uncertain how long these conditions will continue. These global market dynamics and the Australian financial market's structure and concentration are reducing the availability of the long-term funds required for cleaner energy.

GLOBAL FINANCIAL CONDITIONS

Financing of clean energy projects is difficult in the current global and national macroeconomic conditions. The private sector appetite for investment in this sector has fallen sharply from pre-2008 levels.

There are structural weaknesses in the major developed economies in the form of significant financial and fiscal imbalances and, in the case of many countries in Europe, weak international competitiveness. These dynamics will take a long time to play out. With both sides of the North Atlantic having limited scope for policy to respond to further deterioration in economic and financial conditions, this difficult funding environment may become the norm over the coming decade. In this environment, the risk appetite of investors is subdued, with the clean energy sector competing for scarce funding with governments, banks and other corporations. All face a large wall of maturing debt to refinance over coming years.

As Europe adopted new renewable energy technologies early, Australian subsidiaries of European banks have actively provided renewable energy finance. However, as European banks face difficulties sourcing international funds and are under pressure to improve their capital ratios, many are selling global assets and exiting international financing operations. This has reduced the availability of credit in syndicated lending in Australia. Another result of this financial disquiet is a reduced willingness of global investors to fund longer term assets. Global banking regulation, in the aftermath of the global financial crisis, requires banks to more closely align the tenor of their assets and liabilities. These factors negatively impact on the price and availability of the long-term funds required for cleaner energy.

NATURE OF THE AUSTRALIAN FINANCIAL MARKET

The Australian economy is well serviced by a prudent and stable banking system. The sector is very concentrated. Australian banks have provided project finance for large renewable energy projects, typically wind projects with power purchase agreements (PPAs) in place, and corporate finance for commercial energy efficiency projects. It is not their role to act as frontier lenders or investors, so they are reluctant to take risks on new technologies or invest in the scaling up of technologies to commerciality.

While Australian banks are better positioned than their European counterparts, their profit growth is slowing and they are cutting back on costs. Several Australian banks have reduced their staff numbers in clean energy financing.

Superannuation funds and institutional investors predominantly invest in liquid bond, property and equity markets, and hesitate to undertake the knowledge development and associated costs required for new horizon investments. Consequently limited track record, lack of standardisation and experience in investing in this sector limit investments in clean energy through fund managers. Some exceptions are:

- Industry Funds Management Pty Ltd, the owner of Australia's largest renewable energy company, Pacific Hydro Pty Ltd
- VicSuper Pty Ltd, a \$30 million investor in Cleantech Australia Fund
- Retail Employees Superannuation Pty Ltd (REST), a direct investor in the Collgar Wind Farm in Western Australia's central wheat belt.

The Investor Group on Climate Change 'would welcome any action from the CEFC to enhance the attractiveness of the risk/return profile of investments in the clean energy sector. Such action would help build a viable market and broaden the base of suitable investments for institutional investors. These investments can provide a hedge against other portfolio investments adversely impacted by a carbon price.'

Renewable energy and low-emissions technologies have a slower path to commerciality and are seen as new horizon investments. These technologies consequently struggle in Australia to attract capital, both in the early stage and in the next stages of development. Submissions acknowledge the need for early stage equity. This need has not been satisfied as Australia does not have a deep venture capital sector. Later stage private equity tends to prefer industry sectors with longer track records and where the upside value is more readily captured through resale.

With limited capital support from venture capital or private equity some companies resort, sub-optimally, to accessing capital through listed public equity. This subjects them to share price volatility and listing responsibilities, which can be distracting. The return for repeated equity raisings can test shareholders' willingness to provide additional equity.

ENERGY INDUSTRY STRUCTURE

Energy markets are complex and Australia's is no exception. It has many stakeholders: consumers, generators, network providers, retailers, grid operators, regulators, and governments. The numerous regulators and network providers have multiple objectives: reliability, safety, pricing, and investment returns. Australia's market is also highly concentrated and vertically integrated, and constrained by a physical structure reflecting historically low energy pricing and the use of centralised large fossil fuelled generators. It is characterised by long lead times and the need to build in capacity to meet peak demand and to ensure a high level of energy security.

The current structure of Australia's eastern electricity market was shaped by industry restructuring that began in the 1990s as part of a wider process of competition reforms. As part of this process, state and territory governments disaggregated their state owned electricity utilities into separate generating, transmission, distribution and retail

businesses. Some states also took a further step to privatise their generation and retail businesses.

The objective of these reforms was to transition Australia's energy market towards a more efficient model to facilitate access, ease regional supply and demand imbalances and improve the capacity to respond to price mechanisms. Much progress has been made but the market remains in a state of evolution.

The introduction of renewable energy and distributed energy as new energy sources is changing the market landscape. The required regulatory changes are a further challenge and are continually revisited by government. This is evidenced in the multitude of reviews that are scheduled or underway:

- The new Climate Change Authority will undertake a series of reviews in the coming years on:
 - the operation of the Renewable Energy Target – second half of 2012
 - emissions reduction targets and trajectories – February 2014
 - the carbon pricing mechanism – December 2016
 - the National Greenhouse and Energy Reporting System – conducted every five years
- The Australian Energy Market Commission is reviewing the regulatory framework governing electricity transmission in view of likely changes in generation fuel mix and location.
- The Australian Energy Market Commission also is considering electricity and gas rule change requests from the Australian Energy Regulator and a group of large energy users. These rule change requests seek to change the way revenues are set for electricity and gas network businesses. The draft determination is due late 2012.
- The Australian Energy Market Operator is conducting a staged review of the operation and design of the Short Term Trading Market, demand hubs and adequacy of short and medium term gas market information across the eastern seaboard. A final report is due end March 2012.

FINANCING CLEANER ENERGY

With the abundance of coal in Australia, our cost of electricity is one of the lowest in the world. In the absence of any pricing of the negative environmental impact of generating electricity from fossil fuels, cleaner energy is more expensive. Governments globally have intervened to address this price difference. The commercial viability of renewable energy projects has consequently been dependent on these government interventions. In Australia, these have been principally in the form of grants, the Renewable Energy Target (RET) and the recently legislated carbon price. The RET and the carbon price will be driving investment in cleaner energy. The long lead times and substantial level of capital already invested in fossil fuel energy make the process of change incremental rather than transformational.

Beyond the relative cost of clean energy, other barriers exist which slow the process of change and adversely affect the ability of projects to be funded. The submissions and consultations undertaken by the Panel identified a number of common financial barriers that the CEFC will be able to impact. The submissions also identified a range of non-financial barriers including technology risk, early mover disadvantage and the structure of grid. Ultimately, all these barriers impact on the risk/return appetite of potential financiers and their consequent willingness to invest.

TECHNOLOGY RISK

In a new industry, investors often face insufficient information. While the complex technology is routine to the project proponents, financiers need to learn about the technology and the most appropriate way to fund its use. This technology risk is difficult for an investor to assess and requires specific knowledge of the competitive market for the technology and the alternatives to it.

Without a long performance history, the application of new and emerging clean energy technologies present an additional risk for investors because of the possibility the technology may fail or be superseded. This risk is manifested in the availability, tenor and cost of finance for both projects and technologies.

EARLY MOVER

As has been demonstrated in many industries, with deployment, technology costs fall. This occurs through learning and the consequent economies of scale. As a technology matures, the accuracy of performance and development costs improves. Renewable energy technologies are no exception to this dynamic. We have seen this reflected in the dramatic decrease in the price of solar photovoltaic panels over the last three years.

Early movers incur innovation costs that may not be recouped by them but benefit subsequent projects. These costs include developing and testing the technology, pioneering a solution, navigating the regulatory environment and convincing the community and the finance sector about the merits of the technology. Even if a technology has been successfully deployed overseas, the structure of the industry and characteristics of the energy sources often mean the technology cannot be readily replicated in Australia without significant adaptation. While geothermal energy is widely used overseas, Australia's particular geology requires further technological developments to overcome difficulties accessing the resource.

These early mover disadvantages can lead to underinvestment in newer cleaner energy technologies. Many submissions focused on the value of the positive spillovers that would accrue to the Australian market, our businesses, and ultimately our economy by funding projects at scale.

GRID

The structure of the grid was cited in many submissions as an inhibiting factor for investment in renewable energy and distributed generation.

Large scale renewable energy resources may not be located near the grid. It can therefore be uneconomic for the first remote renewable generator that is built near the resource to bear the full cost of extending the grid.

Distributed low-emissions generation, such as cogeneration and trigeneration, has the potential to reduce peak demand on the grid because it is located near to energy users and its power output can be controlled by the owner of the unit. To deliver this outcome distributed generation must be able to export to the grid. The electrical capability of the grid and the lack of appropriate feed-in tariffs for distributed generation are inhibitors to the generation of electricity from these sources. The *Garnaut Climate Change Review – Update 2011* observed that ‘when the network company can profit from investing less rather than more, then it will seek ways to foster distributed generation and to set economically efficient tariffs.’

CHAPTER 2

INVESTING IN CLEAN ENERGY

INVESTING IN CLEAN ENERGY

Australia's shift towards cleaner energy will require substantial investment in the deployment of new generation capacity over the next decade. Accessing capital will be critical to this investment occurring, especially at a time when access to finance is increasingly difficult. The early stage of the clean energy industry and the market barriers encountered during the industry's development exacerbate the challenge of mobilising these investment funds.

The CEFC is part of a suite of Commonwealth Government initiatives designed to transform the Australian economy for a cleaner energy future. The RET and carbon price will be the primary drivers in this. However, as the Grattan Institute argued, 'an emissions trading scheme does a fine job at forcing switching between fuels and available technologies, but a poor job at developing and deploying technologies with the potential to be lower cost into the future'. The CEFC will work with the private sector to support the development and deployment of technology in Australia by mobilising investment in renewable energy, low-emissions and energy efficiency projects and technologies.

The CEFC requires an overarching objective that guides the direction of the corporation, yet is sufficiently flexible to allow the CEFC Board to respond to changing market circumstances and opportunities. The Panel considers an appropriate objective to be:

apply capital through a commercial filter to facilitate increased flows of finance into the clean energy sector thus preparing and positioning the Australian economy and industry for a cleaner energy future.

The CEFC will build towards achieving this objective by financing individual investments, catalysing private sector funds and releasing the broader economic benefits the investments carry.

While each investment will individually support the sector, it is the cumulative impact of the positive externalities of expanding the sector experience, moving down the cost curve and creating third party benefits, which are essential to positioning Australia for a cleaner energy future. These strengthen the foundation for the ultimate goal to create a vibrant Australian clean energy sector with real options for future energy generation and, in the longer term, the jobs and export opportunities it brings. The CEFC will have regard to these positive externalities in making investment decisions and setting the terms for an investment.

The objective is certainly challenging. The CEFC will need to manage the tensions arising from the interaction of: an ambition for a public policy outcome; an expectation for the CEFC's financial self-sufficiency; a mandate to invest where the market has not; and the allocation of concessionality, while not distorting the aspects of the market that operate efficiently.

To be effective, the CEFC needs to be flexible in its decision making, its operations and in executing its investment mandate. At the same time, the Panel recognises this flexibility must be subject to rigorous processes and accountability to stakeholders.

The following chapters outline the Panel's approach to how the CEFC could achieve its objective and manage these tensions. The CEFC would work with proponents on a case-by-case basis to assess the financial viability of the investment, the current barriers to its funding and the scope to progress the project with CEFC funds.

The CEFC would operate on the basis of a continuation of Commonwealth policies, principally the RET and the carbon price. This, combined with its specially appropriated funds, a target rate of return around the Government's cost of funds, its clean energy sector focus and a recognition of the broader economic benefits of positive externalities, can make investments acceptable to the CEFC where they have been unacceptable to private financiers. The effect will be to change the real and perceived risk landscape of clean energy sector financing thus catalysing greater private sector investment than would otherwise be available.

RECOMMENDATION 2.1

The CEFC's funding of \$2 billion per annum for five years from 2013-14 be specially appropriated in its enabling legislation.

RECOMMENDATION 2.2

The CEFC has flexibility in executing its investment mandate subject to appropriate risk management and governance frameworks.

RECOMMENDATION 2.3

The objective of the CEFC is to apply capital through a commercial filter to facilitate increased flows of finance into the clean energy sector thus preparing and positioning the Australian economy and industry for a cleaner energy future.

OPERATING FRAMEWORK

In its Terms of Reference, the Panel was asked to develop and recommend a proposed investment and operating model for the CEFC. Once the CEFC is established, the Government will issue an investment mandate which will provide guidance to the Board in relation to its investment strategy.

The Panel has recommended an operating framework (Figure 2.1) which could form the basis of the investment mandate. The operating framework is a set of three principles that will direct where and how the CEFC will invest.

Principle one – Australian clean energy sector focus (Chapter 2)

The CEFC will focus its investments on renewable energy, low-emissions technology and energy efficiency in Australia, as well as manufacturing businesses that produce the required inputs.

Principle two – Commercial approach (Chapter 3)

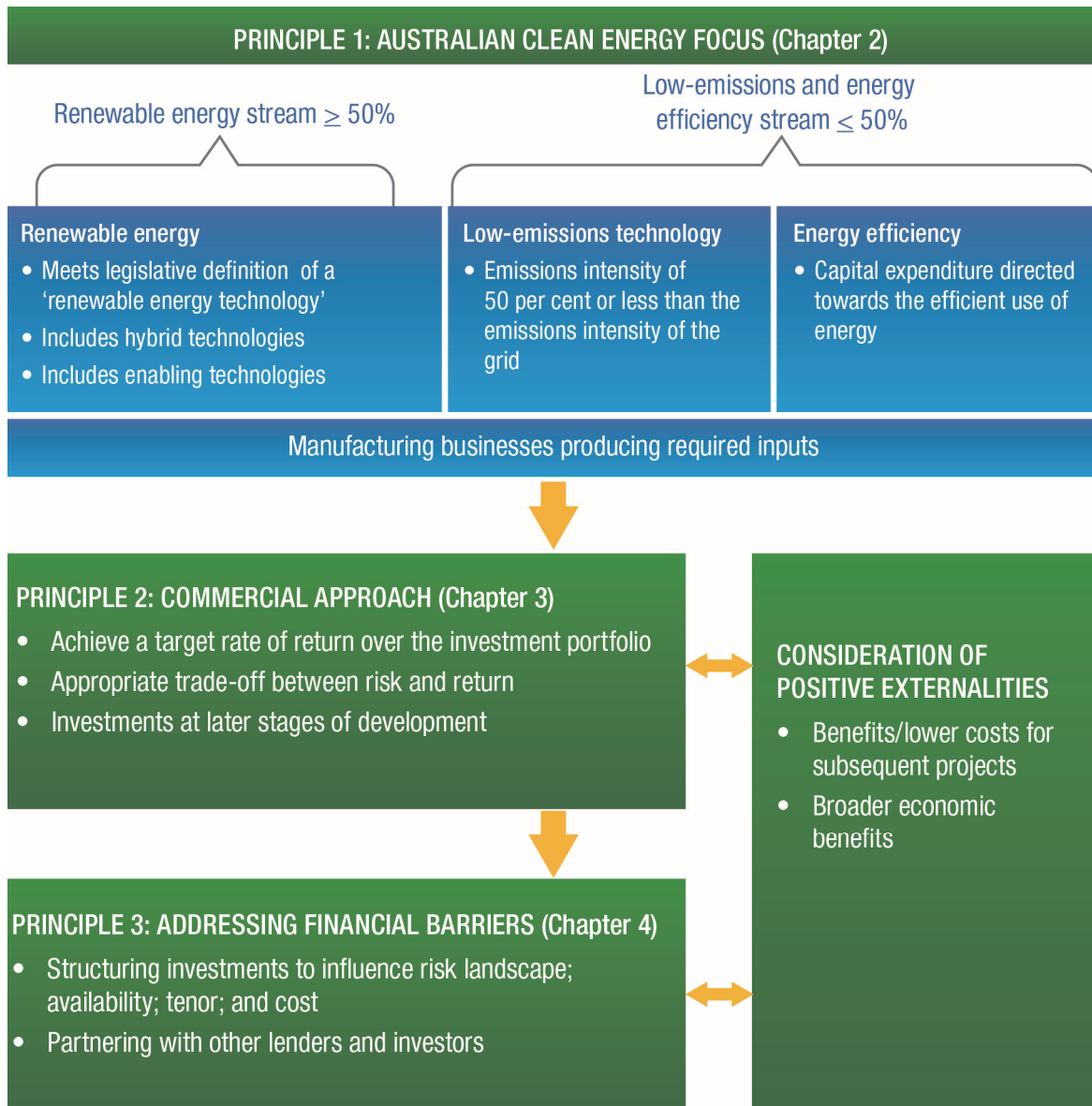
The CEFC will apply a commercial filter to investment decisions. It will focus on projects and technologies at the later stages of development. It will invest responsibly and manage risk to achieve a target rate of return and be financially self-sufficient.

Principle three – Addressing financial barriers (Chapter 4)

The CEFC will look to the presence of financial barriers and determine whether an investment can be structured to overcome those barriers. It will then consider any positive externalities before determining the terms offered.

An **Illustrative Investment Assessment Process (Box 4.1)** brings together these three principles and shows how they could work in practice.

Figure 2.1 Operating Framework



PRINCIPLE ONE: AUSTRALIAN CLEAN ENERGY SECTOR FOCUS

The first principle of the operating framework addresses the sector focus. The focus of investments will be within a defined segment of Australia's clean energy sector, primarily covering electricity and fuels. There are three areas within this focus: renewable energy, low-emissions and energy efficiency technologies. The CEFC will also have a cross-cutting interest in manufacturing businesses that focus on producing the inputs for those areas. The parameters defining eligible investment areas will allow enough flexibility to respond to emerging opportunities.

The Panel regards it as paramount that CEFC investments must be principally located in Australia. This requirement would not exclude foreign participation in projects operating in Australia.

RECOMMENDATION 2.4

The CEFC invests only in commercial activities that are principally located in Australia.

FUNDING STREAMS

In its Terms of Reference, the Panel was asked to consider: 'how it will approach the intention that funding be divided into two streams:

- a renewable energy and enabling technology stream which will have one half of the funding allocated
- a low-emissions and energy efficiency technologies stream which will have half of the funding allocated and will be able to fund renewable energy projects in addition to the dedicated stream'.

For administrative reasons, the streams should be altered so that 50 per cent or more of funds be allocated to the *renewable energy stream* and up to 50 per cent of funds could be allocated to the *low-emissions and energy efficiency stream*.

While the Panel supports the ambition behind the two-stream approach, it considers that adhering to strict interpretation is impractical and could limit the Board's ability to respond to opportunities in the market as they arise. The Board will not have control of the number of proposals that are presented, their timing or into which stream they fit. Therefore, the Panel recommends that the funding streams be regarded as a goal and its performance against this goal be disclosed in the reporting process.

RECOMMENDATION 2.5

The CEFC makes its investments in two streams:

- a renewable energy stream
- a low-emissions and energy efficiency stream.

Investing 50 per cent or more of available funds in the renewable energy stream should be a goal rather than a binding constraint. The CEFC will report on the actual allocation between the investment streams.

RENEWABLE ENERGY

The definition of renewable energy should be sufficiently general to afford the CEFC Board flexibility to respond to the dynamic renewable energy market.

The definition of ‘renewable energy technologies’ in the *Australian Renewable Energy Agency (ARENA) Act 2011* is not prescriptive, but rather takes the ordinary meaning of renewable energy. It includes the application of sources of renewable energy such as solar, wind, hydro, wave, geothermal, biomass and biofuels. This allows the legislation to remain current by recognising that the ordinary meaning can change over time as technologies evolve. Use of this definition builds consistency between the CEFC and ARENA’s operations.

The CEFC’s possible approach to hybrid technologies and energy storage was raised in a number of submissions. The application of these technologies can make renewable projects more economic by overcoming intermittency issues and capturing any spikes in prices. The definition of renewable energy technologies encompasses hybrid and enabling technologies, including storage, and accordingly these may be funded by the CEFC.

The ambit of this definition of renewable energy also covers enabling infrastructure such as transmission lines and new and upgraded interconnectors. These investments can accelerate the deployment of clean energy technologies and ensure Australia can take full advantage of its world class distributed clean energy resources.

RECOMMENDATION 2.6

The CEFC uses the definition of ‘renewable energy technologies’ in section 4 of the *Australian Renewable Energy Agency (ARENA) Act 2011*:

Renewable energy technologies includes: (a) hybrid technologies; and (b) technologies (including enabling technologies) that are related to renewable energy technologies.

LOW-EMISSIONS TECHNOLOGY

Stakeholders' views on which technologies can be categorised as 'low-emissions' ranged from efficient coal fired generation to technologies with no greenhouse gas emissions.

Consistent with the Government's overarching policy of reducing the emissions intensity of the energy sector over time, the threshold for low-emissions technology should be set at a level substantially less than the current intensity of the electricity grid. However, as the market develops, this level needs to move either by legislative update or an automatic mechanism resetting the threshold. The preferred approach is to set the threshold for low-emissions technologies as a proportion of the emissions intensity of the grid. This allows the threshold to adjust as the energy sector changes in response to the RET and carbon price.

The Panel considers that the operational emissions intensity of low-emissions technology should be at or below 50 per cent of the emissions intensity of the grid, which is currently 0.416 tCO₂-e/MWh.¹

This threshold is substantially less than the current intensity of the grid and represents a fair and appropriate cut off for low-emissions technology. The rationale for setting the threshold at 50 per cent is to encompass fuel cells, distributed electricity generation, cogeneration and trigeneration using gas. Where distributed generation produces both heat and power (cogeneration and trigeneration) an allowance will be made for the usable heat that is produced when calculating the emissions intensity. Alternatively, these could be funded as an energy efficiency project.

RECOMMENDATION 2.7

The CEFC sets the eligibility threshold for low-emissions technology at 50 per cent of the emissions intensity of electricity generation in Australia and applies an equivalent threshold for projects that do not involve electricity generation. The threshold will be reset annually based on updated data.

ENERGY EFFICIENCY

Energy efficiency is a generic term covering industrial capital equipment, domestic appliances, building insulation and double glazing, as well as low-emissions technology that reduces the energy intensity of providing heat and power. The Panel supports innovative and effective energy efficiency projects and technology. Therefore, the CEFC will consider funding capital expenditure that is directed towards the efficient use of energy. It is intended that the CEFC's direct investments would focus on large scale projects where the primary purpose of the capital expenditure is energy efficiency. Smaller scale energy efficiency projects could be financed indirectly through the aggregation of these transactions by a third party.

¹ tCO₂-e/MWh: Tonnes of carbon dioxide equivalent emissions per megawatt hour of electricity output. This figure is based on 2009-10 data, the most recent year for which complete data is available.

Combined heat and power units are generators of electricity and can be potentially funded as an energy efficiency project or as a low-emissions technology as indicated in the low-emissions section above.

The CEFC needs to consider how it intends to operate within the energy efficiency sector as the smaller size of the projects would need to be balanced against the corporation's due diligence and transaction costs. In practice, for small scale projects, it is likely the CEFC will welcome the opportunity to work with third parties to package energy efficiency investments. An illustrative model which could be expanded by the CEFC is that of Low Carbon Australia Limited which co-invests with companies with significant customer reach. Its products can then be accessed by small and medium sized businesses through the large financial, utility or leasing companies with whom Low Carbon Australia partners, including the National Australia Bank and Origin Energy. This is an effective means of demonstrating and catalysing change in the marketplace on a wider scale, and of achieving private sector financial leverage to realise greater total investment than Low Carbon Australia could achieve investing alone.

It is recognised that demand management is distinct from energy efficiency. However, to the extent that it lowers future network upgrade costs and defers investment in new generation, it is a valuable tool in minimising the cost of moving to a cleaner energy future. Therefore, the Panel recommends the CEFC consider enabling technologies associated with demand management within the ambit of the energy efficiency area.

RECOMMENDATION 2.8

The CEFC can finance capital expenditure that is directed towards the efficient use of energy and the application of demand management enabling technologies.

MANUFACTURING

The CEFC will invest in manufacturing businesses that produce later stage inputs for renewable energy, low-emissions technology and energy efficiency projects. In addition, the Panel expects that investments in each of these areas will have a positive impact on specialised manufacturing in Australia.

Submissions from Australian union organisations proposed that proponents of projects be required to provide Australian Industry Participation Plans (under which contracts worth at least \$20 million are required to provide Australian firms the opportunity to participate in procurements). The Panel notes that Australian manufacturing firms providing inputs to the clean energy sector will be eligible for direct CEFC funding and will also reap indirect benefits through the development of the industry.

RECOMMENDATION 2.9

The CEFC treats manufacturing businesses as eligible for investment where they produce later stage investments for renewable energy, low-emissions technology and energy efficiency projects.

EXCLUSIONS

The Government has announced the CEFC will not invest in carbon capture and storage projects or technology. In addition, developing nuclear technology or nuclear power is inconsistent with long held and current Government policy, and is excluded. Exclusions will be examined as part of proposed periodic reviews of the CEFC investment mandate (discussed in chapter 6).

CHAPTER 3

COMMERCIAL APPROACH

PRINCIPLE TWO: COMMERCIAL APPROACH

The second principle of the Panel's recommended operating framework is taking a commercial approach. This is critical to the financial self-sustainability of the CEFC and will be accompanied by tight accountability and transparency requirements as the corporation will be making decisions about the application of public funds. It will use the disciplines of a commercial organisation in its investment assessments and risk management while operating to achieve a public policy outcome.

The commercial approach requires investments be developed beyond the research and development stage, have a positive expected rate of return and have the capacity to repay capital.

Applying a commercial filter provides a basis for evaluating investment proposals so the CEFC can best meet its mandated target rate of return provided by the Government. The filter will not be as stringent as the private sector equivalent, as the CEFC has a public policy objective and can recognise that projects have the capacity to generate positive externalities. Consequently, it has different risk/return requirements. For a given return, the CEFC may take on higher risk and for a given level of risk, due to the positive externalities, it may accept a lower financial return. The intention is a higher risk will have the prospect of a higher overall return. The CEFC needs to carefully analyse and assess the expected risks and returns of each investment. To achieve the target rate of return, the portfolio will need to earn a rate sufficient to incorporate a margin for losses and operating expenses.

BOX 3.1 TARGET RATE OF RETURN

The Government will set out the financial objectives of the CEFC in the investment mandate, including a target rate of return. The target will likely be a nominal return on investment assessed over the entire portfolio across time, including an allowance for losses and operating expenses.

The Panel considers that the Government borrowing rate is an appropriate target; it signals the Government's expectation that the CEFC maintain the value of its investment portfolio.

To cover investments across the stages of commercialisation and address the CEFC's capacity to influence the risk landscape, the corporation needs scope to utilise a range of financial instruments. In the changing energy market, full access to financial instruments

would allow tailoring of structure, tenor and cost to meet individual project requirements and market needs generally. The Government envisages the CEFC will offer debt and equity on commercial and concessional terms. In the early stages of the investing phase, it is anticipated the majority of the CEFC's investments will be loans and not equity. In that period, the CEFC will be building a track record of investing and developing its internal risk management framework. The Panel sees limited application for loan guarantees. Within the \$10 billion appropriation, they are unlikely to be the most cost effective mechanism for the borrower.

Stakeholders also suggested additional instruments. The Panel considers suggestions to design and grant tax exemptions or raise capital in the market by issuing bonds would lie outside the CEFC's mandate and legislative powers.

RECOMMENDATION 3.1

The CEFC uses the disciplines of a commercial organisation in its investment assessments and risk management while operating to achieve a public policy outcome.

RECOMMENDATION 3.2

The CEFC will assess investment proposals on a case-by-case basis applying a commercial filter and using a range of tailored financing instruments.

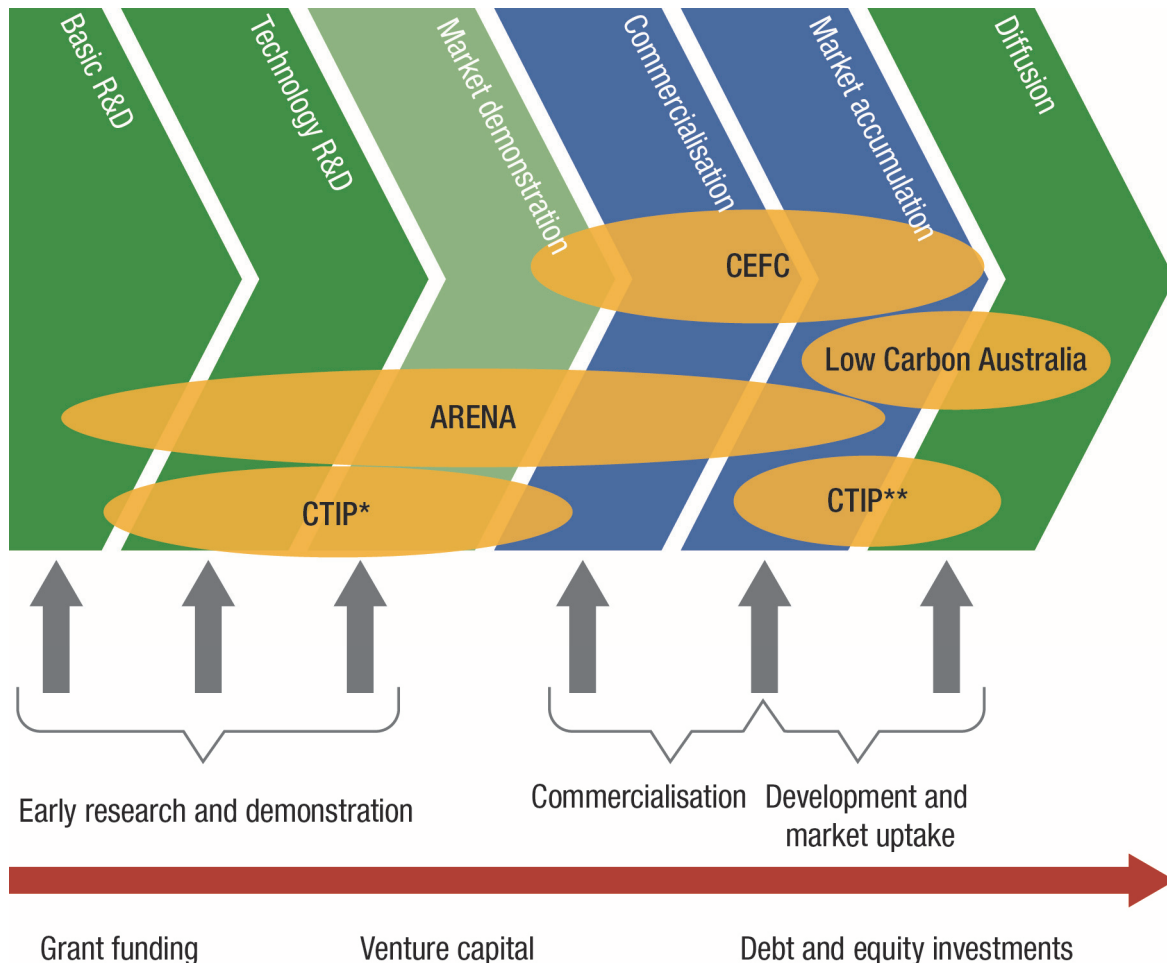
STAGE OF COMMERCIALISATION

Project and technology developments have many stages. The demand for the CEFC to invest across the stages of development was raised in submissions and consultations, albeit with varying emphasis on where the corporation's priorities should lie. Suggestions included: funding research and development; investing in novel technologies that could lead to large scale transformational change; bringing forward the commercial deployment of a range of cleaner energy technologies; and focusing on established and mature technologies.

The Panel recommends the CEFC position itself at the later stages of project development: not at the research and development stage where significant grant funding is focused, but those projects ready for commercialisation and deployment. At these later stages of development, the technology should have a track record of technical performance and projects should have the capacity to generate a financial return. The CEFC should still be able to invest in market demonstration projects provided they pass the commercial filter.

This focus on later stage developments together with the CEFC's commercial filter distinguishes the corporation's role from some other government initiatives (Figure 3.1). ARENA will provide grant funding for renewable energy projects at the research and development, and early stage demonstration stages. Low Carbon Australia operates a \$100 million revolving fund for providing energy efficiency finance in the commercial and industrial sectors. The \$1.2 billion Clean Technology Program includes three programs and will improve energy efficiency in manufacturing industries. Interaction between the CEFC and other government initiatives is important to support projects and technologies along the innovation chain.

Figure 3.1 Position of the CEFC on the innovation chain



Note: CTIP* – Clean Technology Innovation Program; CTIP** – Clean Technology Investment Program and Clean Technology Food & Foundries Investment Program. These are grant programs.
Source: adapted from Grubb (2004) and Garnaut (2008)

RECOMMENDATION 3.3

The CEFC focuses on projects and technologies at the later stages of development but does not exclude projects in the demonstration stage that can pass the commercial filter.

INTERACTION WITH THE RENEWABLE ENERGY TARGET

The Terms of Reference requests the Panel to consult with key stakeholders about the role of the CEFC and its relationship with the RET. In undertaking this Review, the Panel held consultations with and sought submissions from wind generators and other interested parties. Some expressed the view that under current conditions, the 20 per cent target may not be met.

The interaction of the CEFC and the RET was raised as an issue of concern. Views conflicted on how the CEFC could or should manage this interaction.

The key concern, raised by several wind generators, was that if the CEFC financed projects eligible for large scale generation certificates (LGCs), it could disrupt the market by affecting the returns of existing renewable projects with merchant risk. In addition, it could change the competitive landscape for other viable renewable projects which may have already incurred project development costs.

Other submissions pointed out that as wind is currently the lowest cost producer, the RET is being met principally by wind generation. The Grattan Institute's view on the limitations of emissions trading schemes equally applies to the RET, namely it is not facilitating the development and deployment of technologies with the potential for lower costs in the future. The Panel sees diversity of generation as insurance to Australia securing the lowest cost of energy in a carbon constrained world.

Some suggestions were that projects funded by the CEFC: be ineligible for LGCs under the current RET targets; be eligible for LGCs but that the target be specifically increased to encompass their generation or be contained to enabling technology, infrastructure or renewable energy projects outside of the RET.

The Panel considers that any project the CEFC funds should remain eligible for the LGCs. The Panel has not addressed the appropriateness of any adjustment to the overall 20 per cent target as this will be the subject of a separate review in the second half of 2012 by the Climate Change Authority.

In considering this issue the Panel was aware that the projects eligible for LGCs represent a significant proportion of the renewable energy sector. A requirement of the CEFC is that 50 per cent or more of funds be directed to the renewable energy stream. To exclude the CEFC from financing projects within the RET would significantly inhibit the corporation in achieving its objective and the public policy intention of facilitating increased flows of finance into the clean energy sector thus preparing and positioning the Australian economy and industry for a cleaner energy future.

The CEFC, in investing in the renewable sector, will be cognisant of the potential impact on other market participants when it considers viable projects that are assessed to have positive externalities. The CEFC will commit to keep the sector informed to enable it to incorporate the corporation's activities into their market analysis.

The CEFC also will look to viable opportunities that enhance the deployment of renewable energy but do not directly impact on the RET, like transmission infrastructure, storage, biofuels and off-grid projects.

RECOMMENDATION 3.4

Any investments by the CEFC will not impact on the project's eligibility for large scale generation certificates under the Renewable Energy Target. The CEFC will be cognisant of the potential impact on other market participants when considering investment proposals.

COMMUNITY AND REGIONAL GENERATION PROJECTS

The momentum in the development of regional and community renewable and energy efficiency projects under both state and commonwealth initiatives is considerable. The lessons and data from programs such as Solar Cities and Queensland's powersavvy program, which piloted remote power generation in smaller communities and is being extended, may inform CEFC projects.

The development of community generation projects is a worthy initiative. With Australia's broad land mass, regional and remote power generation will play an important role in building renewable energy capacities and in our transitioning to a lower-emissions environment.

The Panel received numerous submissions from individuals, community groups and companies proposing the CEFC support community generation projects. Examples of successful community owned wind farms are the Hepburn Wind project in Victoria and the Denmark Community Windfarm in Western Australia. These have generated substantial interest as they provide a working model for communities wanting to take more control of their energy supply. Submissions also highlighted significant obstacles faced by community projects. They require early stage development work and lack a strong balance sheet and a performance history to attract the necessary bank financial support.

Community based projects may need a package of assistance where the project initially progresses through local community efforts and seeks to attract grant funding. At the later stage of project development, when the community organisation is ready to apply for bank finance, the CEFC could work with a financial institution to aggregate a number of community projects and thus facilitate their progression.

CHAPTER 4

ADDRESSING FINANCIAL BARRIERS

PRINCIPLE THREE: ADDRESSING FINANCIAL BARRIERS

The third operating principle is to look to the presence of financial barriers and determine whether an investment can be structured to overcome those barriers and whether the positive externalities justify doing so.

The rationale for the decision to establish the CEFC and invest \$10 billion was to address market barriers that inhibit the financing of clean energy projects. Accordingly, the Panel investigated the nature of these barriers and where and how the CEFC might operate, tailoring its concessionality and the level of risk it is prepared to take.

The Panel identified a number of common financial barriers. These were: availability, tenor and cost of finance. In addition, a number of issues were relevant to the CEFC's specific investment areas of renewable energy, low-emissions technology and energy efficiency.

The impact of these barriers is specific to each project and will not apply consistently across the sector. Ultimately, barriers affect the risk/return assessment of potential financiers and their consequent willingness to invest. The Panel acknowledges that the individuality of each project necessitates a case-by-case approach with each project potentially receiving different terms. These terms would be the least generous terms required for the project to go ahead.

The CEFC can reduce some of the barriers identified, but others are beyond the scope of its influence.

AVAILABILITY

STATE OF THE MARKET

An overarching theme of the submissions to the Panel was simply the lack of available finance. International economic circumstances exacerbate this situation and European banks, who were active participants in lending syndicates for renewable energy, are now less so.

Clean energy financing is long-term, capital intensive and lacks a performance history. The financial upside of renewable energy is, once installed, the capacity to generate power at low operating costs. This upside is long-term and heavily discounted in traditional financial modelling. In addition, financing renewable energy requires providers

to invest resources in developing the necessary knowledge and experience to undertake it. A number of submissions cited the costs associated with conducting due diligence on renewable energy projects and the lack of standardisation of projects. Assessment of the quality of the resource and potential production variability are central to the due diligence process. However, the cost of undertaking these assessments can be a deterrent. In addition, unique factors in clean energy projects do not lend themselves to a standardised assessment and approval process. Without these economies of scale, the financial sector underinvests in its capacity to service the industry. As bank lending has slowed, banks are reassessing their marginal businesses and some have cut back their commitment to the clean energy sector.

Wind energy has generally been able to be financed as the risk/return metric is understood, projects have often secured a PPA and there is a track record of transactions. Westpac, however, indicated that even these more mature clean energy technologies can experience a liquidity gap and that the CEFC would have a role to play in leveraging greater private sector investment into the market.

CEFC APPROACH

The CEFC will generate the greatest impact on the availability of funding if it can leverage its \$10 billion by catalysing private capital into the sector. Private sector financiers could include banks, investment managers, specialised funds, private equity funds and renewable energy divisions of large corporations. There are two distinct, but related, goals here: to increase the total amount of funding available; and to enhance the expertise and capacity of the financial sector to fund the clean energy sector.

The relationship between the CEFC and the private sector envisages both direct investment and indirect investment by the CEFC. Direct investment would include debt or equity in projects or clean energy businesses. Indirect investment would cover investing via a pooled fund. If the CEFC invests in a pooled fund, the fund will need to operate and manage funds under parameters consistent with the CEFC's investment mandate.

As suggested in a number of submissions, indirect investments would include investing in entities that aggregate smaller transactions, particularly in energy efficiency projects that may be too small for banks to pursue, yet require their expertise and due diligence capacity.

Through its direct and indirect investments, the CEFC can influence the risk landscape for co-investors. Specifically, the risk landscape can be changed by adjusting the capital structure of an investment, so that the CEFC's capital is subordinate to private investors' debt or equity. These adjustments will leverage additional investment from private lenders and investors and, in time, improve the risk/return attractiveness of the sector.

With commerciality being the primary filter for investments, in the initial stages of the CEFC, the support of a co-financier is expected to be a prerequisite for the CEFC to provide finance. From a longer term and strategic perspective, combining the resources of the CEFC with that of other financial intermediaries will create synergies, increase the effectiveness of the corporation, and more effectively build investor experience and confidence in the clean energy sector.

RECOMMENDATION 4.1

The CEFC, as a general principle, seeks to co-finance investments.

RECOMMENDATION 4.2

The CEFC can channel a proportion of its funds to the market through intermediaries and pooled funds. Intermediaries must operate and manage funds under parameters consistent with the CEFC's investment mandate.

TENOR

STATE OF THE MARKET

The disconnect between the tenor of debt sought by proponents of clean energy projects and that on offer is substantial. Due to long-term payback periods, clean energy proponents prefer funding tenors exceeding ten years. Yet banks are reluctant to lend beyond five years, as they are financed largely by shorter term liabilities.

There is always a tension between debt providers and equity owners on the appropriate leverage and the term of the debt. Shorter tenors of debt create a re-financing risk that may be unacceptable for equity holders. An injection of equity capital would change the risk profile for debt providers, but such equity capital has proved scarce.

Long payback periods alone are not a barrier to obtaining finance. Mining and public infrastructure projects have been able to secure equity finance and longer term debt with some price competitiveness, but in these sectors, there is a performance history and consequently a greater understanding of the risks and returns involved.

CEFC APPROACH

The CEFC will be provided with specially appropriated funds, so that it will not have the constraint of requiring matched liabilities. The CEFC can consequently provide longer term debt maturities than private sector lenders. Many submissions indicated that the provision of longer tenor debt will facilitate the participation of other private lenders and equity investors in the clean energy area.

COST

STATE OF THE MARKET

Increased capital requirements on banks and reduced mobility of long-term finance globally have put upward pressure on banks' underlying cost of funds and, consequently, their lending rates.

Renewable energy projects have low ongoing operating costs, but require high upfront investment, so their viability is particularly sensitive to the cost of capital. Australian investors have less experience in renewable energy, so they attach a higher risk premium to reflect this.

Risk and the cost of funds are inextricably linked. Proponents of clean energy projects often try to reduce the cost of funds by changing the risk profile of their projects through long-term pricing contracts with electricity retailers or the market. However, the concentrated and vertically integrated structure of the retail market leaves the three major retailers in the National Electricity Market with significant market power over PPAs. This vertical integration, together with limited liquidity in the renewable energy certificate and energy hedging markets, have been challenging for new clean energy projects.

CEFC APPROACH

With capital the dominant component in long-term, clean energy investments, a lower cost of funds significantly affects a project's commercial viability and its attractiveness to private sector funders.

The CEFC would recognise and take into account the broader economic benefits of positive externalities from an investment. It, therefore, will have the ability to provide concessional finance. This concessionality can take the form of lower pricing, higher risk or longer term finance.

In offering concessional finance, the CEFC will still assess proposals on a case-by-case basis through its commercial filter. This will involve assessing the risk/return profile of the transaction and, through its risk management framework, its impact on the concentration of risk within the CEFC portfolio. The CEFC will seek to provide finance on the least generous terms possible for the project to go ahead (that is as close to market terms as possible).

RECOMMENDATION 4.3

Consistent with its commercial filter, the CEFC will offer finance on the least generous terms possible for the project to go ahead.

BARRIERS SPECIFIC TO CEFC INVESTMENT AREAS

In addition to financial barriers, there are a number of barriers specific to renewable energy, low-emissions and energy efficiency technologies.

RENEWABLE ENERGY

The challenge is to transition from centralised and dependable fossil fuels to a cleaner energy source. Structures associated with the existing system need to be adapted for the decentralised and intermittent nature of renewable energy.

VARIABILITY OF FUEL SOURCE

Most renewable energy supply is intermittent and depends on weather. A wind turbine is affected by wind speed and direction; solar is affected by cloud cover and the time of day. Security and reliability of the grid requires this intermittency to be managed with back-up

power, which increases the need for stand by generation, and creates an added cost. In addition, this intermittency of production can cause problems for the electrical system more broadly.

ANZ Bank noted that this variability of supply, flows through to cashflow variability. When the intermittent nature of the resource is compounded by electricity and LGC price variability, cashflows can become too risky to attract sufficient capital.

LOCATION

Australia has significant renewable energy resources, but their location can be far from the existing electricity grid. Under current arrangements, funding the infrastructure to connect to the grid falls to the project proponent and requires a substantial capital outlay. Given the capital sensitivity of these projects, this additional burden may make a project unviable and is a significant barrier to the commercialisation and deployment of renewable energy in Australia.

POWER PURCHASE AGREEMENTS

The ability to obtain a PPA seriously affects the commercial viability of a renewable energy project. Without a PPA, there is no long-term buyer at a known price. This exposes any potential investor to substantial merchant risk.

MANAGEMENT EXPERTISE

Venture capital and private equity companies cite the lack of demonstrated management experience in start-up clean energy enterprises as a consideration in rejecting potential investments. Managers of clean technology companies often come from a specialist research and development background, having developed the technology from the beginning. However, further commercial development requires management and operational expertise.

REGULATORY

Electricity generation is a highly regulated market. There have been dramatic changes in Commonwealth solar photovoltaic rebates and state feed-in tariffs and these have made investors wary of the regulatory risk in this sector. There is concern about the interface between the RET and the carbon price and even the continuation of these policies.

Obtaining planning and environmental approvals and grid access can be a significant barrier. Negative community responses and recently introduced and proposed changes to Victorian and New South Wales planning rules governing the location of wind turbines increase the planning and approval time and, consequently, the cost of projects.

CEFC APPROACH

The CEFC has little capacity to address some of these barriers.

Many submissions encouraged the CEFC to take on project price risk in the absence of PPAs. There will be some scope, though limited, for the CEFC to take electricity price risk. Capacity to absorb this risk will be constrained within a limit established by the Board.

The CEFC would be open to proposals that involve extending and connecting the grid to a renewable resource, but its commercial filter would take into account the timing and likelihood of other users of the grid extension.

With regard to regulatory risk, the CEFC will operate on the basis of existing Australian Government policies continuing. Private financiers are reluctant to take this view.

LOW-EMISSIONS

Distributed low-emissions energy systems, such as cogeneration and trigeneration, may have difficulty selling electricity into the grid. The owner of the generator can capture the benefits of the energy used onsite, but may not receive a fair price for the energy exported. This limits the use of these technologies to larger businesses that can use all of the energy produced onsite.

The *Garnaut Climate Change Review – Update 2011* noted that producing downstream electricity through distributed generation has other advantages which are hard for the distributed generator proponent to capture, such as the avoidance of network expenditure if the output of the distributed generator is correlated with the demand peak.

CEFC APPROACH

Without the ability to export to the grid, smaller scale distributed low-emissions generation is limited to owners of buildings and businesses that can use the heat and power that these units generate on their own premises. The CEFC will be open to proposals from these parties.

However, for those parties that require the ability to export to the grid to make their projects economically viable, a price for this generation would need to be secured as economic viability is a prerequisite for CEFC funding.

ENERGY EFFICIENCY

In contrast to renewable energy, a wide range of energy efficiency technologies and products are already cost competitive and are considered 'low hanging fruit' in terms of cost and pay back periods. Despite this, energy efficiency projects face challenges in competing for capital, building economies of scale and overcoming split incentives.

BUSINESS PRIORITIES

Energy efficiency projects face special difficulties in commanding attention. As noted by the Australian Industry Group, industrial energy efficiency projects need to compete within limited capital budgets and frequently are deferred in favour of investments in the company's core competency. Similarly, Westpac noted a lack of prioritisation around energy efficiency projects. This is a consequence of the low cost of Australian energy and, in many cases, the small project size.

This may be rational behaviour for individual companies, but it foregoes the wider benefits from efficiency in terms of emissions reductions and the reduced need for investment in the network.

SCALE AND TRANSACTION COSTS

The scale, spread and tailoring of energy efficiency projects act as inhibitors.

There is a wide, and often confusing, variety of efficiency options at a cost/competitive stage. Businesses can incur high transaction costs choosing appropriate projects, which are often small in absolute terms. The challenge in commanding business attention can be compounded by the process of quantifying the expected energy efficiency gains upfront.

Despite these difficulties, submissions highlighted the opportunities available for financial institutions to aggregate investments and create economies of scale. The Commonwealth Bank of Australia noted the potential to aggregate a large number of relatively small projects (typical energy efficiency projects range from \$0.5 million to \$5 million) to deliver the required scale.

LACK OF INCENTIVES

Historically, Australia has experienced low cost energy supply with a heavy reliance on coal and gas power generation. These low prices have not provided sufficient incentive to undertake energy saving activities, even for industry. However, recent investments in the electricity supply system and the passing on of these costs to users has seen electricity prices rise, with retail electricity prices up 40 per cent from three years ago. Given the likelihood of further increases in electricity prices over the next decade, energy efficiency projects may gain more focus.

One issue that particularly affects energy efficiency projects is misalignment of incentives. Under existing long-term commercial rental leases, a building owner has no incentive to invest in energy efficiency as they cannot capture the value to the tenant until the lease is renegotiated.

Some schemes have been developed to assist property owners in overcoming these split incentives. Low Carbon Australia has led efforts to develop innovative financing mechanisms for building energy efficiency. It has paired with Origin Energy to provide upfront capital financing to install energy efficiency improvements that are repaid through utility bills. A similar initiative provides finance that is repaid through council rates.

The absence of sufficient pricing signals reduces the incentive for users to cut peak demand and allow a reduction in the required system capacity. A wider adoption of time-of-use pricing, would heighten consumer awareness and encourage demand management. This would lead consumers to change their energy consumption patterns and ultimately to purchase more energy efficient appliances. AGL is a strong voice on the societal benefits of time-of-use pricing.

CEFC APPROACH

The CEFC acknowledges that energy efficiency projects may not be prioritised by building owners and businesses. The CEFC would welcome the opportunity to work with financial institutions, Low Carbon Australia, AusIndustry and other parties to facilitate the financing of energy efficiency projects, including aggregating them to create economies of scale.

POSITIVE EXTERNALITIES

Positive externalities will flow from each CEFC investment. These positive externalities are necessary if the CEFC's objective is to be achieved. They flow initially as spillover benefits to subsequent projects. Over time, they will have a broader cumulative impact across the sector, on carbon emissions and contribute to the task of preparing and positioning the Australian economy for a cleaner energy future. The CEFC will have regard to these positive externalities in making investment decisions and determining the extent of concessionality for an investment.

Spillover effects occur through technologies progressing along the innovation chain and moving down the cost curve. They also flow from improvements in technology design, construction and operating skills and financing structures. Subsequent projects can improve their viability by capturing these positive externalities.

Being dedicated to the clean energy sector, the CEFC will be in a good position to build a knowledge base about technologies, project developments, and financing structures from which, subject to commercial confidentiality, all sector participants can benefit.

Several submissions highlighted that financial institutions have only limited capacity to assess technology risks and suggested that the CEFC could assist in this area. This knowledge base will take time to develop, but the sharing of this knowledge can contribute to spreading the positive externality benefits and could be a pathway to increased engagement in the sector by institutional investors. This knowledge sharing would also extend to other areas of government supporting the clean energy sector.

The Investor Group on Climate Change indicated that the opportunity to co-invest with the CEFC would improve the transparency of investment opportunities and, in so doing, provide confidence to investors to deepen their own expertise in clean energy markets.

Beyond the spillover effects to subsequent projects and the potential for knowledge sharing, as the CEFC's investments are made and projects progress, the sector will mature. This progress to maturity is critical if Australia is to develop the skills and expertise to capture the employment and industry opportunities available and ultimately to provide us with a range of real options for energy production in the future.

THE OPERATING FRAMEWORK IN PRACTICE

An illustrative investment assessment process is detailed in Box 4.1. This assessment process brings together the three principles of the operating framework and highlights the case-by-case approach that the CEFC will take in assessing proposals and tailoring assistance.

BOX 4.1 ILLUSTRATIVE INVESTMENT ASSESSMENT PROCESS

The CEFC's assessment process for new investments will be developed in response to the Government's investment mandate and the Board's investment strategy. The Panel expects that the Investment Assessment Process will be redeveloped and refined over time as the CEFC receives and assesses proposals.

Information required from the proponent

- An overview of the proposal and its business case
- The debt and equity providers and the extent of their commitment
- The financial barriers currently inhibiting this transaction
- Investment terms sought from the CEFC
- The positive externalities that will flow from the transaction. For example:
 - Third party benefits/cost reductions that cannot be captured by the proponents
 - Broader economic benefits

Will the proposal be funded?

The proposal needs to:

- be within the CEFC's Australian clean energy sector focus
- be above minimum transaction sizes set by the Board
- demonstrate a positive return and capacity to repay capital
- offer an acceptable risk for the return
- result in an acceptable concentration of risk within the CEFC portfolio
- have priority against competing proposals within the balance of the \$2 billion per annum budget.

On what terms will the proposal be funded?

Proposals will be assessed on a case-by-case basis and the terms offered will differ between transactions.

The CEFC will offer market terms less an allowance for concessionality, with the proviso that financing will only be provided on the least generous terms for the proposal to go ahead (that is as close to market terms as possible). Concessionality can be in the form of lower pricing, higher risk and longer term finance.

This level of concessionality will take into account:

- the CEFC's target portfolio rate of return
- the extent and type of barriers that need to be overcome
- an assessment of the value of positive externalities
- market impact.

The level of concessionality offered may or may not enable the proposal to proceed.

CHAPTER 5

RISK MANAGEMENT

RISK MANAGEMENT

To be effective, the CEFC needs to be flexible in its decision making, its operations and in executing its investment mandate. At the same time, the Panel recognises this flexibility must be subject to rigorous processes and accountability to stakeholders.

Accountability entails:

- sound risk management and reporting
- good governance and transparent decision making.

This chapter focuses on sound risk management and reporting. Governance and transparency are discussed in Chapter 6.

THE CEFC'S CHALLENGE

The CEFC is a dedicated clean energy sector fund with specially appropriated funds committed in enabling legislation and must take risks to achieve its public policy objective. These risks arise as a consequence of limited opportunities to diversify its portfolio by sector and a mandate to operate where, in the current climate, financial institutions have limited appetite.

To effectively manage these risks and fulfil its mandate, the CEFC needs to have in place, prior to commencing its investment operations, robust policies that are supported by sound processes and infrastructure. As the CEFC is a publicly owned and accountable entity, it must act appropriately and demonstrate to the Government and the public that it is operating in a manner consistent with the Government's expectations and within its investment mandate.

A RISK CONSCIOUS ORGANISATION

The CEFC will need to establish a sound risk management framework to assure the Government that all significant risks are identified and managed effectively. The framework needs to be aligned with the Board's and Government's risk appetite as established in the investment mandate and statement of expectations.

Risk management is an interactive process that will evolve with the growth and development of the CEFC.

An effective risk management system is based on a culture that:

- understands the material risks the CEFC faces
- manages those risks appropriately in line with the Board's risk appetite.

A culture of risk management should be embedded throughout the CEFC. The process to achieve this needs to be built from the top of the corporation through the example that the Board sets, in their interaction with management and by rewarding management for building a risk conscious culture. Understanding and considering risk before taking action or setting policy must be integral to the CEFC's psyche.

The Board, executives and staff of the corporation need to be conscious of the CEFC's national purpose and their responsibility in serving taxpayers' interests as managers of public sector funds. Executing the investment mandate will require the recruitment of professionals, experienced in managing the specific types of risk in the corporation. Their work would be supported by robust risk policies and procedures across the CEFC.

The Board would ensure the CEFC is structured (using charters, committees, risk infrastructure and policies) and resourced (with risk and compliance personnel) to focus on risk management. In particular, in areas where the CEFC does not have the specialist expertise, the corporation would engage external resources.

BOARD RESPONSIBILITIES TO OVERSEE RISK

Risk oversight is a key responsibility of the Board and encompasses:

- setting risk parameters and adjusting them over time in light of regulatory requirements and the investment mandate and strategy of the CEFC
- approving the risk framework and related policies
- ensuring the CEFC has risk management infrastructure, people, processes and technology, consistent with the complexity of the investment activities and risks it faces.

SELF-SUSTAINABILITY

Financial self-sustainability is an expectation of the Government. The Panel recognises the sound financial performance of the CEFC is in the public interest and considers it a prerequisite to fulfil the CEFC's objective of facilitating funding in the clean energy sector. Financial self-sufficiency is the capacity for the CEFC to operate without requiring ongoing Government budgetary assistance beyond the \$57.3 million from 2012-13 already announced to support its establishment and operating costs.

Self-sustainability is important, as the duration of the CEFC's investments are likely to extend well beyond the term of current funding commitments. Over the life of such investments, an experienced team must be maintained to administer the investments, monitor their performance and actively manage those that may not perform to expectations. Self-sustainability is also critical to building and retaining a specialist team to manage the CEFC's unique and complex portfolio.

As the CEFC builds its investment portfolio it will generate a return to support its operations. The CEFC would have a lower target rate of return than other market participants. That return would be set under the investment mandate and incorporate a sufficient margin to recover the CEFC's potential losses and operating costs so the entity is self-sufficient on a portfolio basis.

An implication of a concessional rate of return on investments is that the net present value of the difference between the CEFC investment rate of return and that of the market is recorded as an upfront loss, under accounting standards. These losses are recorded upfront for accounting purposes irrespective of the actual performance of the investments. If the loan subsequently performs as expected, the upfront loss would unwind over the life of the investment. For reputational reasons, it is important to differentiate these accounting losses that arise through the CEFC providing concessional finance, from any real losses so stakeholders clearly understand the underlying result. The CEFC would adhere to generally accepted accounting standards (in accordance with International Financial Reporting Standards) in preparing its published accounts. Given the public interest and the complex nature of the investments, clearly communicating the accounting treatments and actual performance will be important.

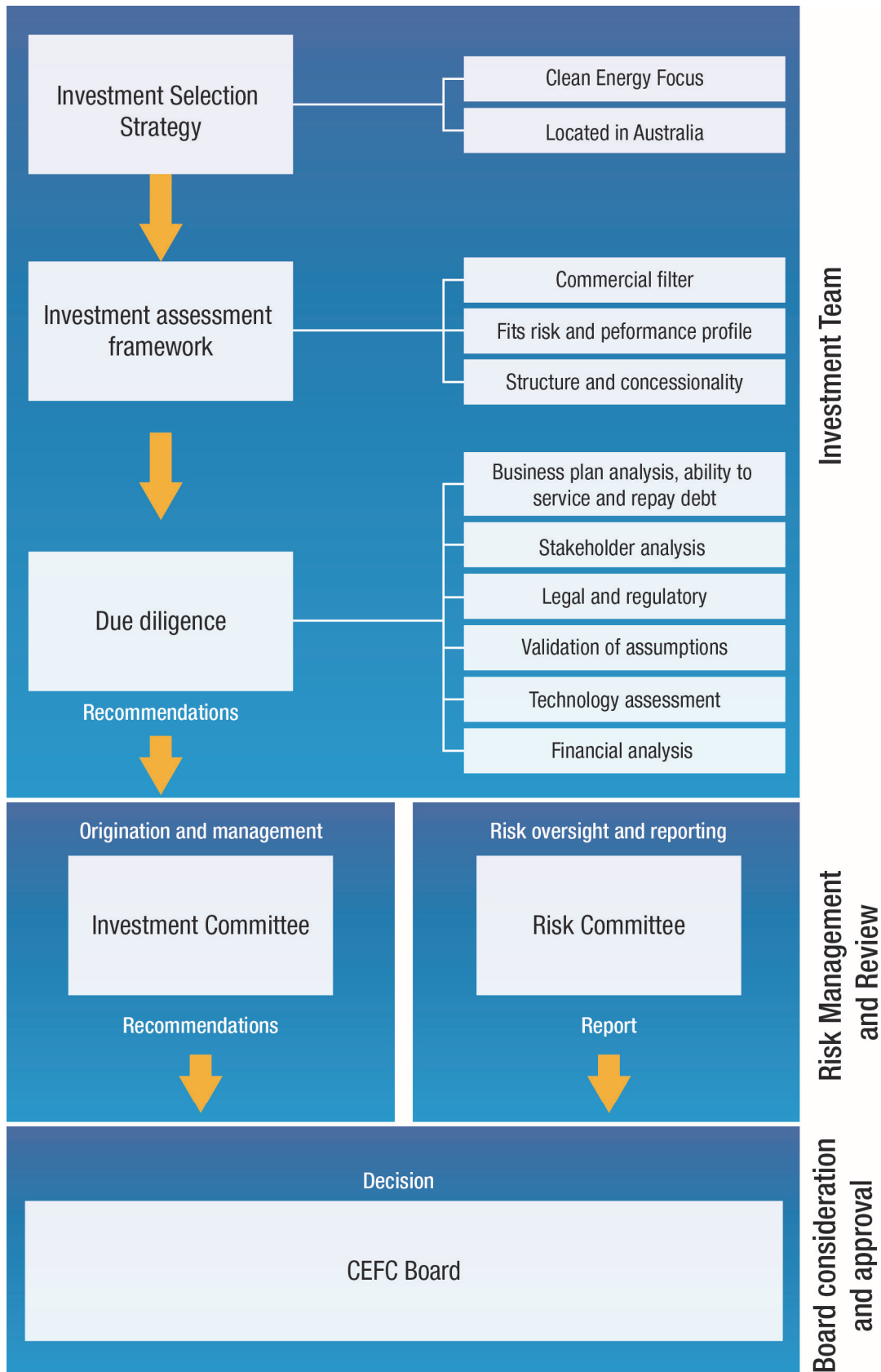
It is crucial to a self-sufficient organisation that sound risk identification and management are embedded in the investment process. The reputation of the CEFC depends on this.

INVESTMENT PROCESS

Investment proposals would be assessed against the Board's approved risk parameters and policies. Following management's recommendations, proposals would be vetted by an investment committee prior to final Board consideration. A risk committee would provide ongoing monitoring of individual transactions and the diversification within the portfolio.

The indicative process is illustrated below (Figure 5.1).

Figure 5.1 Evaluating and monitoring investments



Specific risks would be considered across the various stages of the investment process. These are categorised as investment selection, asset management and reputation.

INVESTMENT SELECTION

Technology risk

Technology risk associated with each investment is a critical part of the proposal assessment. To this end, the investment team would include technology specialists, with external assistance sought in areas where the CEFC does not have in-house resources or requires further support.

Operating risk

The CEFC would examine each investment for operational issues and risks. These would cover: construction; renewable energy resource; input prices; maintenance contracts; management; and the performance of other debt and equity partners.

Regulatory risk

Project viability may be affected by regulatory changes. While the CEFC would assume that Australian Government policies, including the RET and carbon price, will continue, there could be changes at other levels of government.

Legal and capital structure risk

Risks arise from inadequate documentation. This would be reviewed to ensure the CEFC's legal position is adequately protected.

The CEFC would have a detailed understanding of the capital structure and the contractual risk allocations between financiers. Any subordination of returns would pose additional risks to the CEFC. The CEFC would closely examine the degree and extent of any subordination.

Counterparty and credit risk

A counterparty may not fulfil its contractual obligations. Such a risk can arise with direct counterparties of the CEFC or a project counterparty. The CEFC would need to assess all counterparties to ensure they are within the CEFC's credit risk parameters.

Refinancing risk

Due to the long term nature of many clean energy projects, it is likely that debt would not be fully amortised by its maturity date. Accordingly, the CEFC would need to assess the project's ability to refinance in commercial markets at the maturity date.

Price risk

Clean energy prices (renewable energy certificates and electricity prices) are volatile and heavily influenced by government policy. This price risk inhibits securing funding. Many submissions expressed their strong desire for the CEFC to accept electricity price risk. Capacity for the CEFC to absorb this risk would be constrained within an established limit.

Interest rate risk

As the CEFC is funded by a special appropriation rather than by its own liabilities, it is not anticipated that the CEFC will carry any interest rate exposure. It is expected that the target rate of return would be a blend of fixed and floating government interest rates, reflecting the weightings of interest rate terms in the CEFC's investment portfolio.

ASSET MANAGEMENT

The CEFC would consider each investment in the context of the construction of the portfolio, which would be subject to ongoing monitoring.

Portfolio construction

A key principle of risk mitigation in a financial institution is portfolio diversification and the setting of maximum concentration limits and maximum single investment amounts. Being a sector specific fund, the scope for diversification is limited. To contain the effect of any loss, the CEFC would seek to diversify across geography, technologies, projects, counterparties, co-financing partners and financial instruments. The CEFC would stress test the impact on the portfolio of different scenarios.

Ongoing monitoring of investments

The CEFC would monitor the portfolio on an ongoing basis and evaluate each investment against its investment case. Any early warning signs of underperformance and potential losses would be proactively managed.

Regular reports to the Board would be used as a basis to report to key stakeholders.

REPUTATION

Damage to the CEFC's reputation could curtail the activities of the corporation and erode stakeholder support. The Board would set the tone from the top to establish a culture based on ethical behaviour, risk awareness, compliance with policy and procedures and transparency.

The Panel recognises the CEFC needs to comply with its statutory obligations and as custodian of public funds, any non-compliance affects the Government's reputation.

The CEFC can learn from the experience of similar organisations in establishing their own infrastructure and compliance framework.

Independence

The CEFC's enabling legislation would establish the Board's independence in its investment decisions from the political process. Any challenge to this would be detrimental to the CEFC's reputation.

Impacts on market participants

Addressing market barriers carries the risk of affecting other market participants. Accordingly, it would be incumbent on the CEFC to be aware of the linkages and interdependencies within the clean energy market to minimise any unintended consequences.

RISK MANAGEMENT STRUCTURE

Figure 5.2 is a possible organisational structure, with key responsibilities lying with the CEFC Board, the audit committee, investment committee, risk committee and the CEO. The final structure will evolve over time and be subject to the specific preferences of the Board and executive management. Accordingly, the following is purely an indicative structure of the linkages and reporting lines in a conceptual risk management framework.

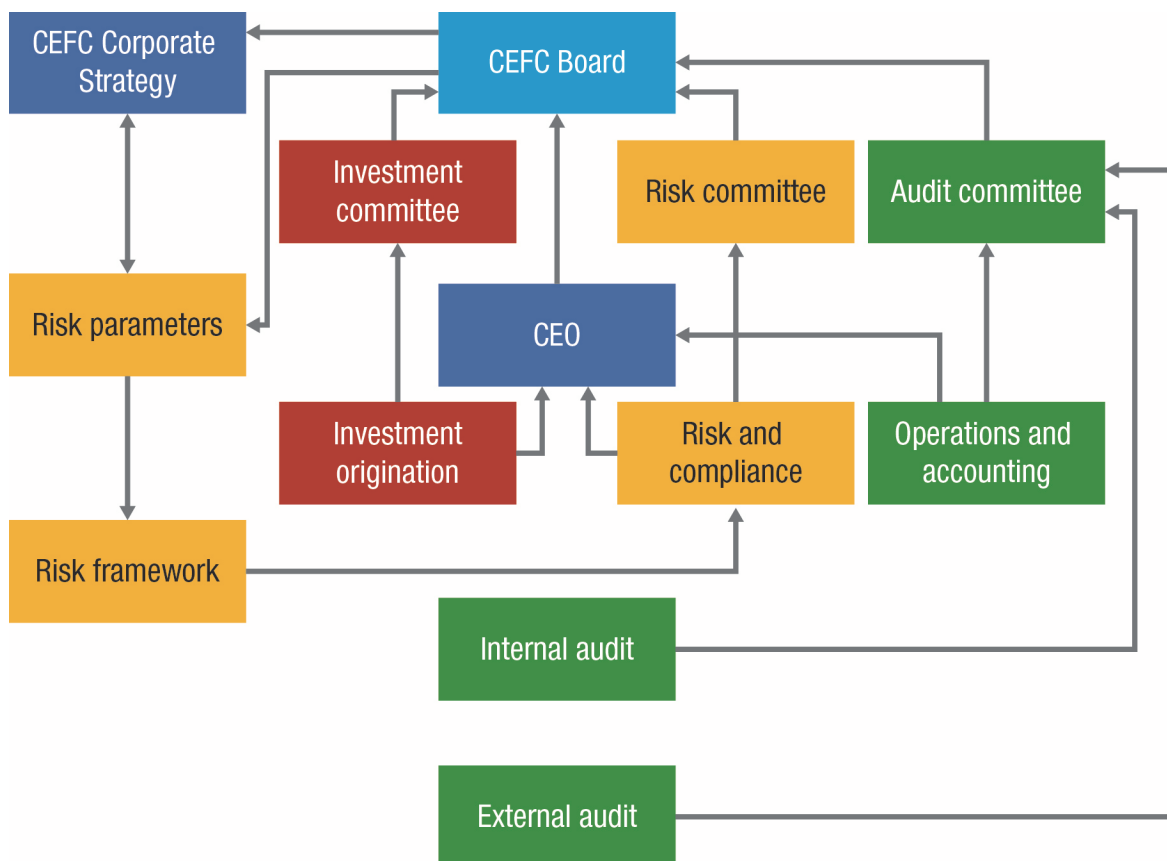
The CEFC would embed the risk framework by maintaining a risk and control register to identify key risks and those responsible for ensuring the controls are operating effectively. A self-assessment process would be implemented to promptly identify breaches and assure the Board that controls operate effectively across the corporation.

The structure also highlights the segregation of the investment origination function from the risk function, as well as the internal and external independent audit functions and reporting lines to the Board.

RECOMMENDATION 5.1

The Board will have an effective risk management system in place prior to commencing investment operations.

Figure 5.2 Proposed risk management structure



CHAPTER 6

GOVERNANCE

GOVERNANCE

The Government announced that legislation will establish the CEFC in the first half of 2012. This enabling legislation will set the framework for the CEFC and determine how the corporation is directed, controlled and held to account. The Government will provide an investment mandate that includes guidance to the Board on the objectives and parameters under which the CEFC will operate.

INVESTMENT MANDATE

The Government will articulate its broad expectations on how the CEFC invests and is managed by the Board through an investment mandate, separate from the enabling legislation. The Panel's recommendations for the CEFC operating framework (Chapters 2, 3 and 4) provide the basis for the investment mandate.

The experience of the Future Fund provides a model to develop the CEFC's investment mandate. In that case, the Government issued the mandate as a written direction to the Future Fund Board of Guardians. The investment mandate was a legislative instrument tabled in Parliament, developed in consultation with the Board of Guardians. This approach is appropriate for the CEFC.

As with the Future Fund, accountability and transparency can be enhanced through the Government issuing a statement of expectation to the CEFC. The Board would respond by outlining how it would meet these expectations in a statement of intent. The exchange of statements would be made public and could be updated periodically.

As the CEFC's operating market is dynamic, the Panel considers it would be appropriate for the Government to periodically review the investment mandate in consultation with the Board.

INDEPENDENCE

To manage funds prudently, and assess individual projects for commercial viability, the CEFC needs to function and operate independently of the Government. The Panel considers this could be best achieved if the CEFC were established under the *Commonwealth Authorities and Companies Act 1997*.

While acting as an independent decision making body, the CEFC will operate within the parameters set for it by the Government and be transparent and accountable for its

decisions. The Panel recommends that the Government have powers of direction over the broad mandate of the CEFC, but not be able to direct it on specific investments.

RECOMMENDATION 6.1

The Government sets the direction and broad mandate of the CEFC but does not direct the CEFC in relation to specific investments.

TRANSPARENCY

The CEFC will be transparent in its operations and reporting. This transparency assures the Government and the community the CEFC is managing public money prudently, consistent with the enabling legislation and investment mandate.

The CEFC will report regularly on its operations. Information covered in these reports will include:

- audited financial statements
- impact of concessionality on published accounts
- establishment costs (in the initial years)
- operating costs
- subject to confidentiality, an outline of individual investments including the level and type of concessionality provided
- a breakdown of investments by investment stream and technology.

The CEFC must be transparent in its activities in order for market participants to be fully informed.

The CEFC will look to develop high level guidelines on how proponents may apply for CEFC financing and how proposals are assessed.

RECOMMENDATION 6.2

The CEFC will be transparent in its operations and reporting.

RECOMMENDATION 6.3

The CEFC will develop and publish guidelines for potential proponents.

CEFC BOARD

The roles and responsibilities of the Board and senior executives need to be clear. Within the parameters set out in the investment mandate, the Board will have overall responsibility for investment decisions and oversight of risk.

APPOINTMENTS

The Panel considers that a Board of up to seven members, including the Chair, is appropriate to ensure sufficient capability and expertise. Prior to commencing investment operations, a smaller Board may be considered.

The Government will appoint Board members in consultation with the Chair. Appointments will be part-time, for a set term with a provision for reappointment. The Remuneration Tribunal should determine their remuneration.

Board appointees need substantial experience and expertise, professional credibility and appropriate standing in the community. In selecting potential appointees consideration should be given to actual or perceived conflicts of interest. Once established, the Board will develop a conflicts of interest policy.

The Board will comprise people with skills and experience in: banking and finance; investment management; venture capital and private equity; clean energy sector technologies and engineering; and/or the environmental sector. Consideration could be given to international experts on the Board. Consistent with a mandate to make investment decisions independent of the Government, Commonwealth employees should be ineligible for appointment to the Board.

RECOMMENDATION 6.4

The CEFC Board should:

- comprise up to seven members, including the Chair
- be appointed on a part-time basis for a set term, with a provision for re-appointment and with remuneration set by the Remuneration Tribunal
- comprise members with substantial experience and expertise who have professional credibility and appropriate standing in the community
- comprise people with skills and experience in: banking and finance; investment management; venture capital and private equity; clean energy sector technologies and engineering; and/or the environmental sector
- exclude Commonwealth employees.

POWERS AND RESPONSIBILITIES

The Panel sees the Board as having overall responsibility for investments. Where the Board delegates authority to the CEO and senior executives, ultimate responsibility for investments remains with the Board. The Board will develop and put in place guidelines and policies for these delegations. Performance assessments of the CEFC should make appropriate allowance for its mandated clean energy sector focus, inherent risks and its public policy objective.

The Board would be responsible for the appointment and removal of the CEO, adopting a process based on merit and transparency. This would be in consultation with the Government, with the Board determining the terms and conditions of employment.

The Chair will facilitate communication between the Board and the CEO and act as a contact point for the responsible ministers. The Board is responsible for ensuring that the CEFC meets its obligations under the enabling legislation and other legal obligations.

As part of the corporate structure, sub-committees including an investment committee, audit committee and risk committee may be established to support the Board. The Panel sees that the structure may need to change over time.

Requirements for procurement should reflect the CEFC's commercial environment. The CEFC will need to demonstrate value for money in all procurements through consistent and transparent procedures. This includes a comparative analysis of all relevant costs and benefits for each proposal throughout a procurement process. Doing this promotes the use of resources in an efficient, effective and ethical manner and ensures decisions are accountable and transparent. The Panel recommends excluding the CEFC from the Government's Commonwealth Procurement Guidelines.

RECOMMENDATION 6.5

The CEFC Board is to:

- set policies on the CEFC's investment strategy and its risk management and determine benchmarks for assessing its performance
- have governance responsibility for investment decisions, risk management and operations
- be able to delegate selected powers to the CEO and senior executives but remains accountable
- be able to appoint and remove the CEO and set their remuneration
- be able to engage consultants to provide services.

RECOMMENDATION 6.6

The CEFC be exempt from the Government's Commonwealth Procurement Guidelines but demonstrate value for money in all procurements through consistent and transparent procedures.

CHIEF EXECUTIVE OFFICER

The CEO will be responsible for day-to-day operation of the CEFC and employment of the senior executives. The CEO, with the senior executive team, will provide support and advice to the Board and be responsible for implementing the decisions made by the Board.

The CEO will develop and implement financial reporting, employment, risk management and compliance frameworks. The CEO would represent the CEFC at Parliamentary estimates hearings and other Parliamentary enquiries as required.

EMPLOYEES

The CEFC will need specialist staff with the necessary expertise and experience to achieve its objective. Accordingly, the employment framework should be flexible enough to enable the CEFC to recruit suitably qualified staff. The Panel recommends that the CEFC be exempt from the *Public Service Act 1999* and that the CEFC implement its own employment framework.

RECOMMENDATION 6.7

CEFC employees are engaged under an alternative employment framework developed by the CEFC, and not under the *Public Service Act 1999*.

REVIEW OF OPERATIONS

The enabling legislation will commit capital funding of \$2 billion per year for five years from 2013-14. Prior to the end of this capital funding period, the Panel considers it would be appropriate to review the operations of the CEFC. That review could encompass the effectiveness of the CEFC, the parameters of its investment mandate and the areas of the corporation's focus. This review will inform the role of the corporation after the five year funding period.

RECOMMENDATION 6.8

The CEFC's operations are reviewed by the end of 2016-17.

INTERACTION WITH OTHER AUSTRALIAN GOVERNMENT PROGRAMS

A range of Government policies and programs have been established, or will expand their operations, as part of the *Clean Energy Future* Plan. As the CEFC is part of this package, it needs to complement these policies and programs.

The CEFC will develop and maintain relationships with relevant stakeholders in government, industry and academia to increase its knowledge base and connections.

AUSTRALIAN RENEWABLE ENERGY AGENCY

A critical partnership for the support of renewable energy is between the CEFC and ARENA. As the CEFC seeks to promote technology along the innovation chain, the projects funded by ARENA provide a potential pipeline of projects for the CEFC. Consequently, the CEFC and ARENA need to maintain an active ongoing dialogue.

AUSINDUSTRY

The CEFC also will need to complement the Clean Technology Investment Program and the Clean Technology Innovation Program managed by AusIndustry. The Clean Technology Investment Program provides grants to companies that are large energy users to invest in energy efficiency and emission reductions by switching to lower-emissions energy sources or installing new manufacturing equipment, processes or facilities. The Clean Technology Innovation Program provides grants to support the research, development and commercialisation of clean technology products, processes and services, including low-emissions technology and energy efficiency. The CEFC and AusIndustry need to work together to ensure that the policy objectives are met.

LOW CARBON AUSTRALIA

The Australian Government established Low Carbon Australia Limited in 2010. Its company constitution provides a very broad investment mandate to deliver a range of investment options to improve the Australian natural environment. Currently, Low Carbon Australia operates two programs:

- The Energy Efficiency Program provides debt finance and advice to eligible businesses and the public sector to upgrade commercial buildings and industrial processes for cleaner energy use.
- The Carbon Neutral Program accredits organisations that have products, services or operations certified as carbon neutral under the National Carbon Offset Standard.

The Energy Efficiency Program operates as a revolving investment fund to demonstrate to the market how to significantly improve energy efficiency in the non-residential building sector and industry. This program constitutes the bulk of Low Carbon Australia's work program.

As a small fund, in order to leverage the size of the finance it is bringing to market, Low Carbon Australia co-invests in innovative financing arrangements with companies with significant customer reach. Once it identifies partners, Low Carbon Australia effectively outsources much of the project origination and marketing strategy for its finance programs to these private sector partners.

Low Carbon Australia's funding covers operational costs for several years but its limited capital funding is insufficient to regenerate its capital base, once the initial pool is invested at the end of 2012-13. Consequently, Low Carbon Australia has raised the possibility of it being viewed as a pilot for the CEFC's energy efficiency role, and for it to be incorporated into the CEFC.

Low Carbon Australia's experience and expertise would provide a valuable resource for the CEFC in gearing up its own activities under the low-emission and energy efficiency stream, and expedite the CEFC's delivery on its objectives. Alignment would also avoid confusion over the role of the two organisations, addressing concerns about duplication and inconsistencies.

RECOMMENDATION 6.9

After it is established, the CEFC enters into direct discussion with the Government on whether Low Carbon Australia could be absorbed into the CEFC or if the CEFC could direct some of its funding through Low Carbon Australia. Any consideration would need to address:

- how Low Carbon Australia aligns with the governance structure of the CEFC
- how Low Carbon Australia's carbon neutral accreditation program could be implemented outside the CEFC
- how Low Carbon Australia's experience in the energy efficiency area aligns with the CEFC's model.

CHAPTER 7

IMPLEMENTATION STEPS

IMPLEMENTATION STEPS

COMMENCEMENT OF INVESTMENT OPERATIONS

Following passage of the enabling legislation, a number of steps need to be taken before the CEFC is in a position to commence investing funds. This chapter outlines the proposed approach and key milestones for setting up the CEFC. It takes account of the lessons learnt from establishing international organisations similar to the CEFC and other government organisations in Australia, including the Future Fund.

A high level outline of the key milestones is provided in Figure 7.1 and more detailed tasks are listed in Figure 7.2.

APPOINTMENTS

The first task will be the appointment of the CEFC Board by the Government.

A key priority for the Board will be to recruit the CEO and core personnel who will progress the setting up of the corporation.

THE INVESTMENT MANDATE

The Government will work with the Board to establish the investment mandate. The recommendations on the CEFC's operating framework (Chapters 2, 3 and 4) provide the basis for establishing the investment mandate.

Key parameters to include in the investment mandate are the CEFC target rate of return and any limits on concessionality. The Government has announced that it expects the CEFC to achieve a positive return in the long term. The return needs to be adjusted for the extent of concessionality as determined under the accounting standards.

KEY POLICIES

During the pre-investment phase, the Board will need to develop:

- a Board Charter – to clarify its role and the risk and control framework
- an investment strategy and related policies, consistent with the investment mandate
- high level guidelines for investment proponents

CHAPTER 7 IMPLEMENTATION STEPS

- a method for assessing its financial performance which allows for the accounting impact of concessionality
- a broad operational structure including the role of any sub-committees
- conflicts of interest policy.

The CEO, in consultation with the Board, will need to:

- develop a forward budget
- secure and set up office accommodation
- develop an employment framework
- recruit the senior executive team
- implement a risk management and compliance framework (detailed below)
- manage communication with stakeholders and external parties
- develop procurement processes.

The organisational structure of the CEFC will evolve as it builds capacity and the policies and frameworks become embedded. During the initial stages, it may be necessary to recruit advisors and consultants to provide support to the Board.

INITIAL OPERATING STRATEGY

As the CEFC builds its capability and portfolio, it is anticipated that the majority of its investments will be loans rather than equity.

Initially, it may be necessary to have interim staffing on secondment from various Australian Government departments or contract personnel to meet operational requirements pending more permanent staffing arrangements. This would enable the CEFC to facilitate operational activities associated with its establishment. The Panel notes that a similar arrangement was put in place during the start up of the Future Fund.

The CEFC may also need flexible service arrangements for financial reporting and payroll processing in this initial phase to enable the corporation to ramp-up its operations faster and more effectively by leveraging the experience of these service providers.

RISK MANAGEMENT AND COMPLIANCE FRAMEWORK

Chapter 5 outlined the high level risk management issues that the CEFC will need to address. The Board with the support of the senior executive team will be responsible for developing the frameworks and putting the systems in place.

The risk management framework will need to be supported by specific policies that will be created to define responsibilities across the CEFC. Such policies will be driven by the strategies developed by the CEFC Board, and are likely to include:

- investment policy – setting out the process for approving investments and risk limits
- delegated authorities – setting out the authorisation levels across the CEFC
- operational policies – such as accounting, valuation, and human resources.

Given the importance of the risk management systems to the integrity of the organisation, the Board will need to be satisfied that these systems are in place before the CEFC begins investing.

Figure 7.1 — Key milestones for the establishment of the CEFC

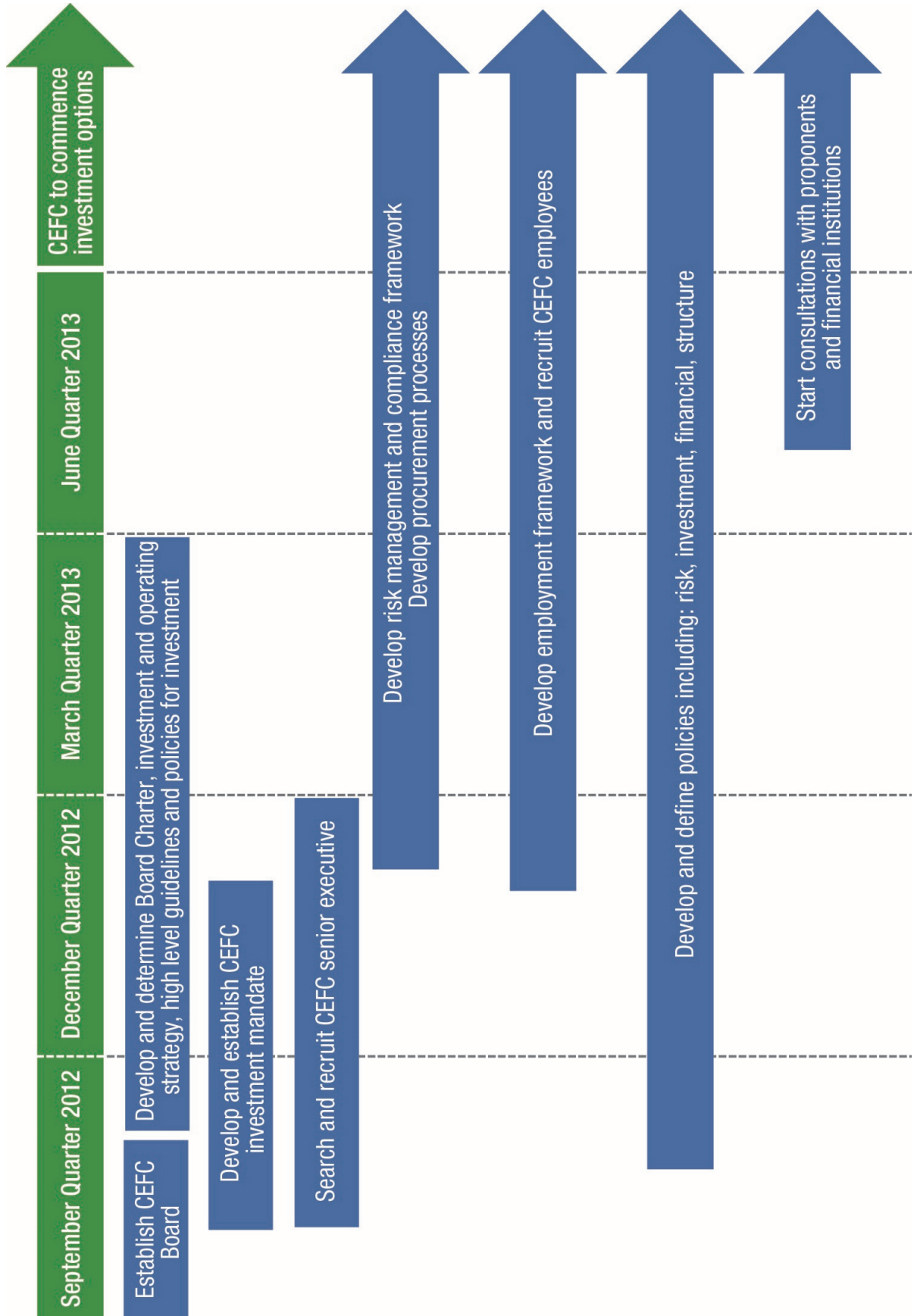


Figure 7.2 — CEFC key tasks during the pre-funding phase

	SEPTEMBER QUARTER 2012	DECEMBER QUARTER 2012	MARCH QUARTER 2013	JUNE QUARTER 2013
GOVERNANCE	<ul style="list-style-type: none"> • Establish CEFC Board • Develop investment mandate • Arrange financial delegations 	<ul style="list-style-type: none"> • Establish investment mandate • Establish sub-committees • Develop Board Charter, investment and operating strategy, high level guidelines and policies for investment • Develop organisational structure • Develop CEFC employment framework • Plan the workforce • Establish the corporate planning and reporting frameworks 	<ul style="list-style-type: none"> • Determine and publish Board Charter, investment and operating strategy, high level guidelines and policies for investment management, procurement activities • Respond to Statement of Intent • Develop and publish Statement of Intent 	<ul style="list-style-type: none"> • Establish risk management systems • Start internal audit monitoring • Start monitoring and reviewing systems
RECRUITMENT & RESOURCING	<ul style="list-style-type: none"> • Commence search for CEO and senior executives 	<ul style="list-style-type: none"> • Appoint CEO and senior executives 	<ul style="list-style-type: none"> • Start to recruit other key personnel 	<ul style="list-style-type: none"> • Continue recruitment process

Figure 7.2 — CEFC key tasks during the pre-funding phase (continued)

	SEPTEMBER QUARTER 2012	DECEMBER QUARTER 2012	MARCH QUARTER 2013	JUNE QUARTER 2013
OPERATIONS		<ul style="list-style-type: none"> Document operational policies and procedures (financial operating procedures, financial and human resource delegations, accounts management, procurement activities communications and stakeholder relations etc.) 	<ul style="list-style-type: none"> Develop the high level plan for the range of investments in the first year 	<ul style="list-style-type: none"> Start consultations with financial institutions, project developers and the energy sector
COMMUNICATION		<ul style="list-style-type: none"> Design and establish the CEFC website Determine stakeholder engagement strategy 	<ul style="list-style-type: none"> Develop communication products and materials Design forms and templates Implement email enquiry process 	<ul style="list-style-type: none"> Establish application process and portal

Figure 7.2 — CEFC key tasks during the pre-funding phase (continued)

	SEPTEMBER QUARTER 2012	DECEMBER QUARTER 2012	MARCH QUARTER 2013	JUNE QUARTER 2013
CEFC ACCOMMODATION AND ESTABLISHMENT	<ul style="list-style-type: none"> • Arrange temporary accommodation • Australian Company Number (ACN) • Australian Business Number (ABN) • Arrange for common seal • Register for payroll tax • Organise financial drawing rights • Draw down funds • Set up bank accounts • Arrange insurance 	<ul style="list-style-type: none"> • Arrange tenancy lease and plan fit-out plan • Plan IT and telephone infrastructure plan for equipment needed (video conferencing arrangements, copiers etc.) • Scope Risk Management System (RMS), Financial Management Information System (FMIS) and Human Resource Management System (HRMS) • Select accounting software • Review recruitment plan • Arrange service contracts (cleaning, security) 	<ul style="list-style-type: none"> • Finalise tenancy lease and fit-out • Establish IT and telephone infrastructure • Install equipment • Implement records management system • Implement RMS, FMIS and HRMS 	<ul style="list-style-type: none"> • Establish corporation in own premises • Test systems (RMS, FMIS, HRMS) • Design, test and install application system (for example data base management system)

APPENDIX A — CONSULTATIONS AND SUBMISSIONS

The Expert Review Panel met with many representative bodies, clean energy companies, energy retailers, banks, investment funds, industry associations, state governments, community groups and individuals in its consultations, and received many submissions.

To supplement the consultation process, the Panel sought written submissions from stakeholders and their experiences on the key themes for the review:

- the scope for the operations of the CEFC
- the market gap in financing low-emissions technologies
- how this gap in financing could be overcome
- how the CEFC could work with other government and market organisations.

It received over 170 submissions and over 200 emails from individuals and groups associated with the 100 per cent Renewable Community Campaign.

The Panel would like to thank all the representatives and individuals who contributed towards the consultation process. Public submissions were received from:

450 Parts Per Million	Australian Centre for Renewable Energy Board
ACCIONA Energy Oceania	Australian Coal Association
AGL	Australian Community Energy
Alister Huth	Australian Conservation Foundation
Alternative Technology Association	Australian Council of Trade Unions
Andrew Lang	Australian Energy Market Operator
Andrew McLennan	Australian Industry Greenhouse Network
Andrew Morgan	Australian Industry Group
ANZ	Australian Manufacturing Workers Union
AquaGen Technologies	Australian Solar Energy Society
ARCA Group Investments	Australian Solar Institute
Arid Lands Environment Centre	The Australian Workers' Union
Australian Academy of Technological Sciences and Engineering	Australian Youth Climate Coalition
Australian Air Quality Group	Baker and McKenzie
	Beyond Zero Emissions

APPENDIX A
CONSULTATIONS AND SUBMISSIONS

Ceramic Fuel Cells Limited	EnGen Institute
Chartered Secretaries Australia	Engineair Pty Ltd
Chris Goodman	Ergon Energy
City of Melbourne	Exigency Management
City of Sydney	First Solar
Claude Walker and Dr James Prest	Fotowatio Renewable Ventures
Clean Energy Angel Fund	General Electric
Clean Energy Council	Gerard Dover
Clean Energy for Eternity	Granite Power
Clean Point Selective Energy	Grattan Institute
Climate Change Balmain-Rozelle	Greenpeace Australia
The Climate Group	Ground Swell Bass Coast
The Climate Institute	Hannan Einav Levy
Climate Works Australia	Hepburn Wind
Columbus Group	Horizon Power
Community Power Agency	Ian MacBean
Coolah Wind Farms	Investor Group on Climate Change
Council of Capital City Lord Mayors	Jack Gilding
CVC Limited	James Wight
David White	Jan Harper
Denmark Community Windfarm Inc	John Brenan
Doctors for the Environment Australia	Katoomba Area Climate Action Now
Ed Campbell	Kerry Dawborn
Elisabeth Fenwick	Kuth Energy
Embark Australia Ltd	Latrobe City Council
Emille Boulot	Lean Emissions Alliance
Energy Developments	Leanne and Christian Hanvey
Energy Efficiency Council	Low Carbon Australia
Energy Supply Association of Australia	

Loy Yang Marketing Management Company	Rainbow Power Company Ltd
Lyn Hovey	Ranges Energy
Mark Diesendorf	Ray Astbury
Matt Parmeter	Recurrent Energy
Michael Cahill and Isabelle Derouet	Renewable Energy South Australia
Microbiogen Pty Ltd	Renewable Newstead
MirusWind Pty Ltd	REpower Australia
Moreland Energy Foundation	Responsible Investment Academy
Mount Alexander Sustainability Group	RMDSTEM Limited
Mount Alexander Sustainability Group (2)	Rob Youl
National Carbon Capture and Storage Council	Rosemary and Arthur Lathouris
New England Wind	Royal Bank of Scotland
NewSouth Innovations	Samsung
Nigel Waters	Santos
North West Renewable Energy Community Group	SCA Hygiene Australasia
NSW Office of Environment and Heritage	See-Change
Ocean Power Technologies Australasia and Victorian Wave Partners	Simon Jones
Origin Energy	Solar Millennium
Pacific Hydro	Solar Turbo
Parramatta Climate Action Network	South Australian Government
Paul Jephson	Starfish Ventures
Permaculture Blue Mountains	State Street Global Advisors
Phil Bradley	Stephen James
Qantas	Sun Power Corporation Australia
Queensland Conservation Council	Suntech Power Australia
Queensland Office of Clean Energy	Sustainable Energy Association of Australia
	Sustainable Living Armidale
	Sydney Capital Partners

APPENDIX A
CONSULTATIONS AND SUBMISSIONS

Tasmanian Department of Economic
Development, Tourism and the Arts

Union Fenosa Wind Australia

Vestas Australian Wind Technology

Visy Industries Australia

Western Australian Department of the
Premier and Cabinet

Westpac

William Adlong

Wind Farm Developments

Wise Group

WWF Australia

Zamzam Green

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