

The Hon Josh Frydenberg MP Minister for the Environment and Energy

Senator the Hon Mathias Cormann Minister for Finance

29 November 2016

### Investment Mandate 2016 (No 2) – Consultation Draft

Dear Ministers Josh and Mathias

Thank you for your correspondence of 24 November 2016 enclosing a consultation draft direction (Investment Mandate) for consideration of the CEFC Board, as required under section 66 of the *Clean Energy Finance Corporation Act 2012* (the **CEFC Act**). The Board welcomes the opportunity to be consulted and has asked that I respond on its behalf.

### Sustainable Cities Investment Program

The Board acknowledges and welcomes the Government's direction to make available funding to support clean energy projects and businesses that provide productivity, accessibility and liveability benefits for cities. The CEFC sees a natural affinity in its activities with the Government's agenda of more productive, accessible and liveable cities and we will work to deliver this target allocation of \$1 billion over 10 years.

### **Reef Funding Program**

The Board acknowledges and welcomes the Government's direction to make available funding to support delivery of the Government's Reef 2050 plan. While the CEFC must continue to ensure that its investments meet the complying investment criteria under the CEFC Act, we understand that the Reef Funding Program should be focused on funding to projects or businesses that have a positive co-benefit for the health of the Reef.

As highlighted in the Explanatory Statement to the Investment Mandate 2016 (No 2), in considering eligibility of investments under the Reef Funding Program we will consider investments that provide positive co-benefits that are "direct", by improving water quality, or "indirect", by reducing emissions. As set out in the Explanatory Statement, we will focus the Reef Funding Program primarily on projects located in (and businesses that provide services or products to) the water catchment areas that flow into the Great Barrier Reef World Heritage area. The CEFC will work to deliver this target allocation of \$1 billion over 10 years totalling direct and indirect Reef co-benefits.

### **Clean Energy Innovation Fund**

The Board notes the Government's direction to reduce the amount available for funding to support innovation in the clean energy sector through the Clean Energy Innovation

e info@cleanenergyfinancecorp.com.au t 1300 002 332 i +61 2 8039 0800 Fund (the **CEIF**). The Board will accordingly reduce the targeted amount under the CEIF to \$200m, noting that this \$800m reduction is a notional allocation rather than a cut in funding and that the funds will remain available in the special account for CEFC deployment in ordinary activities.

### Reporting Outcomes

The Board acknowledges the new obligation set out in the Investment Mandate to report annually on non-financial outcomes of its investments, in addition to the general financial reporting that we undertake today. We look forward to working with the Department of Environment and Energy to develop an appropriate set of criteria and performance standards to enable us to provide useful information about our activities and our investments to the Department and the market more generally.

#### Benchmark returns

As we have noted in our responses to previous Investment Mandates issued to the CEFC (in February 2015, December 2015 and May 2016), the Board remains of the view that the current Portfolio Benchmark Return for the CEFC's core portfolio (i.e. investments other than those in the CEIF) of 3% to 4% over the 5-year Australian Government bond rate remains an unrealistically high return target for this market. It does not reflect the CEFC's considered approach to risk and the composition of the current investment portfolio. We attach a copy of our previous submissions on this point for the convenience of Minister Frydenberg, as he was not one of the CEFC's Responsible Ministers at the time the responses were provided.

#### Conclusion

Subject to the comments noted above, the approach adopted in this consultation draft Investment Mandate represents an appropriate approach to allow the CEFC to support Australian Government policy priorities.

We thank you again for consultation and the constructive and positive engagement that you and your offices have offered on the Investment Mandate. The Board acknowledges this direction and, once given will undertake all reasonable steps to ensure that the CEFC complies with the Investment Mandate and the CEFC Act.

Yours sincerely

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(lillian Broadbent AO Chair Clean Energy Finance Corporation

### ATTACHMENTS CEFC's Response dated 29 Nov 2016 to Consultation Draft of Investment Mandate 2016 (No 2)

- 1. CEFC's Response dated 3 May 2016 to Consultation Draft of Investment Mandate 2016
- 2. CEFC's Response dated 1 December 2015 to Consultation Draft of Investment Mandate 2015 (No 2)
- 3. CEFC's Response dated 3 December 2014 to Consultation Draft of Investment Mandate 2015



The Hon Greg Hunt MP Minister for the Environment

Senator the Hon Mathias Cormann Minister for Finance

3 May 2016

Dear Ministers Greg and Mathias

Thank you for your correspondence of 2 May 2016 enclosing a consultation draft direction (**Investment Mandate**) for consideration of the CEFC Board, as required under section 66 of the *Clean Energy Finance Corporation Act 2012* (the **CEFC Act**). The Board welcomes the opportunity to be consulted and has asked that I respond on its behalf.

#### **Clean Energy Innovation Fund**

The Board acknowledges and welcomes the Government's direction to make available funding to support innovation in the clean energy sector through the Clean Energy Innovation Fund (the **CEIF**). The Board views the CEIF as a natural part of the CEFC's activities and is pleased to see the Government's recognition that the level of risk in such a fund will be significantly higher than that found in the CEFC's core portfolio.

We note the Government's intention that the Australian Renewable Energy Agency (**ARENA**) provide assistance with the delivery of the CEIF. The Board acknowledges ARENA's expertise in analysing the technical merits of technology and we look forward to working with ARENA to support the Government's policy objectives.

Consistent with the object of the CEFC Act, the CEFC has pursued its investment function applying commercial rigour, investing responsibly and managing risk prudently, utilising a robust, commercial risk management approach. Recognising the need to accept a higher level of risk with respect to investments in the CEIF, we will continue to apply this same approach to the activities of the CEIF. The Board considers it important to emphasise that, as the investments made in the CEIF are ultimately held by the CEFC and funded with monies allocated to the CEFC under the CEFC Act, the final decision-making authority, responsibility, and management in relation to investments in the CEIF remains with the CEFC.

#### Benchmark returns

The Board notes that the Government has amended the Portfolio Benchmark Return for the CEFC's core portfolio (i.e. investments other than those in the CEIF) to 3% to 4% over the 5-year Australian Government bond rate. While this is a minor reduction in the Portfolio Benchmark Return from the target set out in the two most recent Investment Mandates issued to the CEFC (in February 2015 and December 2015), the Board is of the view that this is still an unrealistically high return target for this market. It does not reflect the CEFC's approach to risk and the proportion of public sector counterparties (universities and councils) within the current investment portfolio.

Clean Energy Finance Corporation Suite 1702, 1 Bligh Street Sydney, NSW 2000 Australia ABN: 43 669 904 352

e info@cleanenergyfinancecorp.com.au t 1300 002 332 i +61 2 8039 0800 As participants in the financial markets are aware, global equity risk premiums as well as both credit and duration spreads on debt instruments are compressed and are at or close to long term lows. These market pressures, when coupled with the CEFC's narrow investment universe of clean energy technologies in Australia, mean that the CEFC has limited ability to access higher yielding transactions. Consequently, as expressed in my responses to the last two Investment Mandates issued to the CEFC, the Board's view remains that targeting such a high rate of return will require the CEFC to seek out-of-market returns, which will be difficult to achieve.

In relation to the benchmark return of 1% over the 5-year Australian Government bond rate set for the CEIF, the Board would also like to highlight to the Ministers that there is a very wide range of potential returns on the early stage long term investments anticipated for the CEIF. As the portfolio will be both concentrated within a single industry sector, and involve technologies that are not yet fully commercially established, the return outcome of the CEIF investments will range from full loss of the investment to a return of a multiple of the investment. This variability in investment returns will be more pronounced in the CEIF than in the core portfolio and while the benchmark return set for CEIF is lower than that set for the core portfolio, the Government should expect high volatility on a year-to-year basis from this developing portfolio of early stage assets.

### Investment stages

Finally, with the creation of the CEIF, there are now various sections of the Investment Mandate and the accompanying Explanatory Statement that describe technologies by reference to certain stages of their evolution – for example, research and development stage, beyond research and development stage but not yet sufficiently established or mature, commercially developed, etc. While the CEIF is indeed intended to make investments in technologies at earlier stages of development, it is important to understand that there is rarely a clear delineation between these various stages. Consequently, the CEFC Board will make decisions as to the appropriate vehicle (i.e. CEFC core business or the CEIF) for a particular investment based on their considered judgment of the technology, the commercial risk, and the maturity of the business involved in the investment opportunity.

### Conclusion

The Board's view is that, subject to the comments noted above, the approach adopted in this consultation draft Investment Mandate represents an appropriate approach to allow the CEFC to support Australian Government policy priorities. We believe it provides a measure of investment flexibility necessary to build a portfolio that has an acceptable level of risk appropriate to the sector and allows the CEFC to continue to achieve the public policy objectives that underpin the CEFC Act.

We thank you again for consultation and the constructive and positive engagement that you and your offices have offered on the Investment Mandate. The Board acknowledges this direction and, once given will undertake all reasonable steps to ensure that the CEFC complies with the Investment Mandate and the CEFC Act.

Yours sincerely

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**Jillian Broadbent AO** Chair Clean Energy Finance Corporation



The Hon Greg Hunt MP Minister for the Environment

Senator the Hon Mathias Cormann Minister for Finance

1 December 2015

greg and Mathias

Dear Ministers

Thank you for your correspondence received 30 November 2015 enclosing a consultation draft direction (Investment Mandate) for consideration of the CEFC Board, as required under section 66 of the *Clean Energy Finance Corporation Act 2012* (the CEFC Act). The Board welcomes the opportunity to be consulted and has asked that I respond on their behalf.

As you will be aware, the Board has had extensive opportunity to consider technology eligibility issues since the then responsible Ministers last issued a consultation draft in late June, and in respect of matters of risk and return, since the issue of the current *Clean Energy Finance Corporation (Investment Mandate) Direction 2015* in February.

The Board's view is that the approach adopted in this consultation draft Investment Mandate represents an appropriate approach that allows the CEFC to support Australian Government policy priorities while still allowing a measure of investment flexibility necessary to build a portfolio that in aggregate has an acceptable but not excessive level of risk appropriate to the sector.

The Board notes the consultation draft does not amend the Portfolio Benchmark Return. The Board's view remains that targeting such a high specific rate of return will require the CEFC to identify and contract out-of-market returns (as explained in my response to the issue of the current *Clean Energy Finance Corporation (Investment Mandate) Direction 2015*), and that this will remain a difficult return to achieve. However, we do understand from your letter that the matter is to be reviewed in early 2016 so we will defer further discussion on this point until that time.

We thank you again for consultation and the constructive and positive engagement that you and your offices have offered on the Investment Mandate. The Board acknowledges this direction and, once given will undertake all reasonable steps to ensure that the CEFC complies with the Investment Mandate and the CEFC Act.

Yours sincerely

**Jillian Broadbent AO** Chair Clean Energy Finance Corporation

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## CLEAN ENERGY FINANCE CORPORATION

The Hon. J. B. Hockey MP Treasurer

Sen. the Hon. Mathias Cormann Minister for Finance

3 December 2014

Mathias & So tal Dear Ministers

Thank you for your correspondence of 28 October 2014 (received 6 November 2014) in which you provided a draft *Clean Energy Finance Corporation (Investment Mandate) Direction 2014* ('draft proposed mandate').

Thank you also for the opportunity of our recent meeting with Minister Cormann and officials of 25 November 2014 to discuss the draft proposed mandate and the one week extension of time to provide our response. We note, and as was affirmed in the meeting with Minister Cormann, that you have drafted the proposed mandate with the objective of minimising exposure risk of taxpayers' funds in transition to the realisation of the Australian Government's objective to abolish the CEFC.

The Clean Energy Finance Corporation (CEFC) stands ready to assist in achieving the Australian Government's objectives, in so far as they are consistent with the CEFC Act. The Board shares the objective of protecting and minimizing risk exposure in the investment of public funds.

The stated object of the CEFC Act under Section 3 is "to facilitate increased flows of finance into the clean energy sector". In line with this object, the CEFC has pursued its investment function applying commercial rigour, to invest responsibly and manage risk prudently, utilising a robust, commercial risk management approach. We have sought to minimise risk through a diverse spread of investments in terms of industry, geography and counterparty within the small universe in which the CEFC is permitted to invest.

We have reviewed the draft proposed mandate, and note it requires the CEFC to maintain its existing level of portfolio risk while targeting a significantly higher investment return. This would be challenging to achieve in any financial market. It requires the CEFC to seek out additional investments that are outside market norms, in addition to carrying on its existing investment activities. The Board has a concern that your new proposed investment mandate is likely to prove to be inconsistent with the object of the CEFC Act.

As you will be aware from the 2013-14 Annual Report of the Clean Energy Finance Corporation the CEFC's current portfolio of investments consists largely of senior debt and has an overall shadow credit rating of BB. The CEFC's portfolio reflects the fact that we are a specialised, sector-focused institution. Our focus to date has been on catalysing private financiers' participation, and as such, the CEFC's investments exhibit a credit profile which matches those held by private sector

e info@cleanenergyfinancecorp.com.au t 1300 002 332 i +61 2 9038 0800 banks active in providing such facilities.

The average lifetime yield of the CEFC's investment portfolio is presently 7% **before operating costs**. The draft proposed mandate would increase the benchmark return to Consumer Price Index (CPI) plus 4.5-5.5 % **net of operating costs**. Based on long-term CPI of approximately 2.5%, and assuming operating costs around 2% during portfolio establishment, the proposed mandate would increase the target yield of the overall portfolio to 9.0% - 10.0%. This level of benchmark is commonly expected to generate negative returns approximately 4 out of every 20 years. Given the CEFC's existing investment portfolio has a lifetime yield well below this proposed new benchmark, to achieve the higher targeted rate of return on the overall portfolio, future CEFC investments would need returns significantly higher again, over and above the proposed new benchmark.

We have attached a short paper that highlights why this risk-return target is unlikely to be achieved. This paper is supported by independent analysis from Dr Steve Bishop and Professor Bob Officer which explains the observed correlation between investment risk and return. This independent analysis confirms that, like any other investor, the CEFC would need to increase its risk exposure in order to achieve the increased returns specified under the draft proposed mandate unless it can find a body of investments that demonstrate a risk-return profile inconsistent with traditional market based principles to deliver out-of-market investment returns.

We note the terms of the proposed benchmark return follow those of the *Future Fund Investment Mandate Directions 2006*. Application of a CPI based index may be appropriate for the Future Fund, as it has an unconstrained asset allocation and invests in equities, infrastructure and property, the earnings of which are broadly correlated with the CPI. It is not appropriate for the CEFC, given the object of the CEFC Act, with our constrained investment universe in the clean energy sector, the proposed Mandate's constraints on risk, and our focus primarily on debt instruments.

#### Other matters

We note that the Board has not been provided with an Explanatory Statement to the draft proposed mandate. It is our understanding that a requirement of registration on the Federal Register of Legislative Instruments is that an Explanatory Statement accompany the revised mandate. As this document is an extrinsic aid to interpretation under the *Acts Interpretation Act 1901*, and provides the detailed means of calculation of portfolio benchmark return we would expect to see a draft of that document to ensure its workability prior to publication and date of effect.

### **CEFC View**

Should the Government's objective in proposing the new mandate be to increase the CEFC's benchmark, a more appropriate and realistic benchmark portfolio return (that would meet the objective of protecting and minimising risk exposure in the investment of public funds) would be the 5 year long term government bond rate (LTGBR) + 1% **net of operating costs and provisions,** to apply when the portfolio is fully established. This would represent a significant increase in the benchmark of approximately 30%.

The CEFC view is that the 5 year long term government bond rate (LTGBR) remains the most appropriate measure for portfolio benchmark returns because it directly relates to the Government's cost of funding of the CEFC.

In its first year of operation, the CEFC has been able to make some investments exceeding the current benchmark. Market conditions for the clean energy sector increasingly point to CEFC investments increasingly focused on broad-based funding programs with banks and energy utilities for SMEs, agribusiness, local governments and the not-for-profit sector where returns are lower.

The CEFC notes Australian Government policy remains to abolish the Corporation. That is the prerogative of Government, but so long as the CEFC remains in existence, we again reiterate our utility and ability to work in a complementary way to assist realisation of other Government policy initiatives such as the Emissions Reduction Fund, in energy, environment, regional development, agriculture, industry, innovation and infrastructure.

In summary, our view is that the draft proposed mandate would have a significant negative effect on the activities of the CEFC and will likely prove inconsistent with the object of the CEFC Act.

#### Next Steps

Given the observations above we request that Ministers reconsider the proposed mandate as currently configured. I again extend the offer of availability of the CEFC to you and your officers to assist in provision of further information and or advice on this matter.

I also want to assure you that the Board will continue to pursue its duties under the CEFC Act. Consistent with our obligations under that Act, we will seek to take all reasonable steps to comply with a revised mandate, even if, as all evidence suggests, it will prove highly challenging to significantly increase the rate of return of the portfolio whilst maintaining the current portfolio credit risk profile.

Should you or your office have any questions in this regard, please do not hesitate to contact Mr Simon Every, Head of Government Affairs, by email at simon.every@cleanenergyfinancecorp.com.au or by telephone on 07 3188 1627.

Yours sincerely

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Jillian Broadbent AO Chair of the Board Clean Energy Finance Corporation



### CEFC COMMENT ON DRAFT REVISED INVESTMENT MANDATE

### **General Summary**

The CEFC currently earns an average *lifetime* investment portfolio yield of approximately 7% **before operating costs**. As the portfolio is below a target size of about 2.5 billion, operating costs are proportionally higher than market. This 7% figure represents what the CEFC writes loans and does not include cash holdings drawn as part of prefunding.

The draft proposed mandate seeks to increase the CEFC's benchmark performance rate to CPI + 4.5-5.5% **net of operating costs** (i.e. about 9-10%), *measured annually* while not increasing the risk profile of the portfolio from its current level (i.e. that which is proportionate to a return of 7% before costs).

For the CEFC to achieve a 2% higher benchmark rate of return than the current benchmark, it would ordinarily have to move from its current 90% debt-based portfolio towards equities and hence take a higher-risk profile. The CEFC Board shares the objective of protecting and minimizing risk exposure in the investment of public funds. The CEFC Board has taken a conservative risk approach and significantly limited the CEFC's current equity exposure. This is consistent with ensuring private sector participation in investments.

The analysis of Dr Bishop and Professor Officer that accompanies this brief contains an examination of the historical spread of listed Australian equity returns and Corporate Bond yields over the CPI by rating, and indicates that to achieve the new benchmark rate of return, the CEFC would be forced to increasingly move to subinvestment grade debt if its portfolio was restricted to debt securities.

Alternatively, it would need to lever up a portfolio of investment grade debt to earn the required yield to meet the benchmark. The *Clean Energy Finance Corporation Act 2012* ('CEFC Act' or 'the Act') effectively prevents the CEFC from borrowing other than for bridging, so leverage is not possible. Greater sub-investment grade debt in the CEFC portfolio will increase credit risk which the new Investment Mandate seeks to limit. In order to have a chance of meeting this proposed benchmark, the Corporation will need to fulfil its statutory obligations to find additional investment opportunities that:

- 1. produce out-of-market credit investment returns; and
- 2. involve additional equity risk and returns.

Under its existing Investment Policies the Corporation has sought to maintain a balanced portfolio approach. In order for the CEFC to continue to do this and fulfil its Investment function to service the eligible market under the CEFC Act the Corporation will need to continue providing:

• Low-risk low-return investment facilities that service manufacturing, SME, not-for-profit and government/local government sectors for energy

efficiency and on-site renewables to catalyse investment activity in areas underserviced by the traditional banking sector;

- Corporate facilities of longer tenor for energy efficiency and on-site renewables; and
- Funding for vehicles co-financed with banks and energy utilities designed to incentivise SMEs and other businesses to invest in building efficiency upgrades, top performing efficiency equipment and vehicles.

The returns targeted under the draft proposed mandate parallel those in the Future Fund mandate. However:

- The return required of the Future Fund is 'per annum over the long term', whereas that proposed for the CEFC is strictly 'per annum'.
- The Future Fund Mandate included a 'ramp up' grace period to achieve benchmark, whereas the proposed CEFC benchmark denies the CEFC such a ramp up period, and does not recognise that the CEFC portfolio currently remains sub-scale.
- The Future Fund is permitted to develop a portfolio with substantial investments in classes with higher-risk, particularly Australian and Global equities. The CEFC is restricted to Australia only investments.
- Under the CEFC Act, the CEFC's investment universe is much more restricted than the Future Fund, and hence the CEFC has more limited opportunity to find 'out-of-market' returns or additional equity risk exposure than is available to the Future Fund.
- Reflecting their different purpose, the Future Fund's portfolio is based on listed equities which are liquid, while the CEFC, in facilitating increased flows of finance into the clean energy sector, has an illiquid portfolio which is primarily debt focused.

The CEFC will meet its obligations under the Act in respect of the draft proposed mandate even though it seeks a higher return without additional credit risk. The Board notes the mandate must be consistent with the statutory object under section 3 of the Act in that it must allow the Corporation to continue to 'facilitate increased flows of finance into the clean energy sector'. Any mandate that had the effect of imposing a severe impediment on CEFC's ability to perform the functions given to it under the Act is unlikely to be considered consistent with the CEFC Act or the object of the Act.

The analysis of both the CEFC and that of Dr Bishop & Professor Officer indicate the CEFC is unlikely to be able to increase returns to the level specified in the draft proposed mandate under the above constraints. To that extent, they believe the draft proposed mandate sets a benchmark return under conditions that make it highly likely to be unachievable.

# Issue 1: The proposed target return of CPI +4.5-5.5 is unlikely to be achievable without increased risk and/or out-of-market investments.

The CEFC balances lower-risk, lower-return co-financing programs (i.e. sell through finance with major banks and utilities) with higher-risk, higher-return Project Financing activity to produce an average investment portfolio life time yield of about 7%. The sell-thru co-finance activity earns an average investment portfolio

lifetime return of 5.2%, corporate lending earns an average investment portfolio yield of 7.8%, while the project finance activity earns an average investment portfolio lifetime yield of 8.1%. This is illustrated in the table and graph below (all figures to 30 June 2014):

Segment	\$m CEFC total	\$m Total Project	Yield	Private Sector Leverage
Corporate Loans	\$116.1	\$331.8	7.8%	1.7
Project Finance	\$387.2	\$1,946.7	8.1%	3.7
Co-financing Programs	\$347.5	\$684.9	5.2%	1.0
Equity	\$80.3	\$240.6	8.5%	2.0
Total	\$931.1m	\$3,204.0m	7.0%	2.2



However the draft proposed mandate requires an investment portfolio lifetime return before operating expenses of about 9-10%, or a 2% premium over the CEFC's investment portfolio as written so far.

Our investment experience would indicate that it is generally not possible to increase return without increasing risk (unless there is some information the investor holds that the market is unaware of and hasn't correctly priced). This level of benchmark as proposed is commonly expected to generate negative returns approximately 4 out of every 20 years.

It is unlikely that the CEFC could push out the yield on its corporate lending portfolio beyond market rates. However it can seek out-of-market returns where available to complement ordinary activity.

In the event that, despite taking 'all reasonable steps', the CEFC is unable to find out-of-market investments achieving the increased benchmark, it is unlikely the CEFC can meet the risk-return conditions set down in the proposed Investment Mandate to:

- `develop a portfolio across the spectrum of clean energy technologies that in aggregate must have an acceptable but not excessive level of risk relative to the sector', and
- 'not materially increase the level of exposure to credit risk above the level of the existing portfolio as assessed at the date of the direction'.

In summary, it would be a highly challenging proposition for the CEFC (or for anyone else in the market) to both expose the portfolio to higher equity risk and find viable 'out-of-market' investments while continuing to pursue its existing broad-based investment opportunities.

### Illustrative Effect of revised Mandate on Portfolio and Activity

The first chart (Chart 1) below shows the current CEFC investment portfolio broken down by finance type and technology (as at 30 June 2014). Simplified for the purposes of illustration, it demonstrates that Project Finance (i.e. loans for primarily utility-scale renewables projects that are secured against the revenue of the projects and the projects themselves) is more profitable but generally comes with higher risk (e.g. higher construction risk, volatility in generated output or volatility in revenues).

Corporate Loans are loans secured against all of the assets of the borrowing entity, not just a project. To date in the CEFC investment portfolio, this has been mainly bioenergy and waste coal mine gas. The returns and risk are lower, mainly because of the whole-of-entity security (with assets other than the project to repay the debt if the project fails) and there can be additional revenue streams apart from energy generation.

Energy Efficiency and Rooftop PV are lower risk/lower return co-financing arrangements where the CEFC loans finance to a bank, utility or service provider who then sells through the finance to the consumer. The CEFC selects only reputable co-financing program partners, and the effect of bundling small loans together like this should be to spread risk and create an asset class with observed low historical rates of default (e.g. on par with or below finance for similar asset classes) which can then be securitised.

The red broken-line circle is in essence the average of all of these sets, plus a single large equity holding. It shows that the CEFC investment portfolio earns an average *lifetime* investment portfolio yield of 7% **before operating costs**, and has an average shadow credit rating (i.e. risk rating for debt securities) of BB.

It should be noted that this investment distribution is in our experience quite typical. The bottom left to higher right is consistent with a normal distribution of investment returns one would expect – that is, the higher the risk, the higher the return demanded.



CHART 1: CEFC INVESTMENT PORTFOLIO RISK-RETURN MATRIX AS AT 30 JUNE 2014

**Increasing Return** 

Chart 2 below shows what the CEFC currently expects its investment portfolio to look like as at 30 June 2015 (as opposed to 30 June 2014 above). It reflects market conditions in the energy sector with generation oversupply, uncertainty over both the Renewable Energy Target and long term energy policy settings generally. Many utility scale projects have payback periods of 10 to 20 years or more and the observed market conditions are that investors will not commit to capital funding investments while policy settings remain in flux.

Accordingly, the CEFC expects no growth in the share of its portfolio in Project Finance for Utility scale solar PV by end of financial year, and a contraction in share of portfolio dedicated to Project Finance for Utility scale wind. In Project Finance, we expect this to be partially offset by potential growth in larger-scale Bioenergy. We also expect Corporate Lending for Bioenergy (and perhaps for some Energy Efficiency and commercial scale Rooftop solar PV) to expand, as well as expansion in co-financing for these purposes.

The overall effect is that, as Project Finance investment opportunities in Utility scale wind and solar PV) renewables contract, we expect the CEFC's lifetime portfolio yield to fall from about 7% to between 5-6% with a commensurate shift in the overall risk profile to BB+.

### CHART 2: CEFC INVESTMENT PORTFOLIO RISK-RETURN MATRIX PROJECTED FOR 30 JUNE 2015



**Increasing Return** 

The third and final chart (Chart 3) shows the anticipated impact of the draft proposed mandate showing a hypothetical targeted CEFC portfolio which would be necessary in order to significantly increase the investment rate of return whilst seeking to maintain the current investment portfolio credit risk profile.

The CEFC would look to continue its important investment work in the energy efficiency space, supporting SMEs, manufacturing and not-for-profits, where availability of finance is a continual challenge.

However, to take 'all reasonable steps' to achieve the proposed benchmark riskreturn target, the CEFC will need to maintain balance in its portfolio by <u>additionally</u> investing in higher risk and/or higher return deals than it has to date. These higher risk/return deals might theoretically be equity investments in early stage developments, or opportunities with 'out-of-market returns'. These 'out-of-market returns' remain a hypothetical possibility only, with such opportunities only rarely identified and practically non-existent, given the CEFC's limited investment universe.



**CHART 3: IMPACT OF PROPOSED CHANGES TO CEFC INVESTMENT MANDATE** 

Increasing Return

# **Issue 2: CPI is an inappropriate base rate for the CEFC and the Future Fund benchmark is an inappropriate benchmark for the CEFC**

The Consumer Price Index (CPI) as a base rate bears no direct relation to CEFC costs (i.e. cost of government borrowings or 5 year Long Term Government Bond Rate LTGBR), its operating environment or statutory objective. The draft proposed mandate specifies a Portfolio Benchmark Return that is identical to that of the Future Fund, but the CEFC is a very different institution as the table below shows:

Attribute	Future Fund	CEFC
Reason for	To meet Commonwealth's	To facilitate increased flows of
existence	unfunded superannuation	finance into the renewables, energy
	pension liabilities which are	efficiency and emissions reduction
	growing at CPI rate through	technologies sector through
	investing	performing the investment function
Jurisdiction	No limit on where Future Fund	Must invest in projects that are
	can invest	solely or mainly Australian based
Sector	Can invest in any sector	Must only invest in renewables,
		energy efficiency and emissions
		reducing technologies (except
		nuclear and carbon capture and
		storage)
Means of	Essentially unrestricted.	Can only invest in financial assets
Investment		(cannot own real property).
		Must avoid guarantees wherever
		possible.
		Cash holdings only to service
-		lending and operations.
Investment	More or less conventional and	More or less bespoke, low volume,
Approach	high volume, low transaction	higher cost in order to meet public
	cost.	objective.
Relevance	Invests in property,	CPI is not a relevant measure in
of CPI to	Infrastructure and equities, all	debt markets.
investments	of which have yields	
Desiriente	Correlated with CPI.	Dealer and utilities to call the second
Recipients	Mainly blue chips and	Banks and utilities to sell through
01 Tayloctmont	Institutions	Drivete coster from mid tier to blue
Investment		shine and Institutions
		Public costor from Local
		Public Sector from Local
		Government inrough to rederal
		Not for Profit Sector
Doutfolio	700/ in liquid instruments	00% Debt feeugeed (illiquid)
Portiolio	Fauition (50% )	90% Debt Tocussed (IIIIquid)
Conclusion	Large investment universe to	Public purpose institution restricted
Conclusion	concrate financial returns	to investing in yory limited
		circumstances in order to drive
		technological change in energy
		soctor and more officient operav

# Issue 3: The draft revised mandate gives inconsistent direction on risk and commercial approach

The proposed changes challenge other requirements of the mandate - specifically the requirement to adopt a commercial approach to investment – which would ordinarily require that risk and return be commensurate as is commercial practice.

It follows that the requirement to increase returns without increasing credit risk would not meet the standard of a commercial approach.

Note that under both the existing and revised draft Mandates, the CEFC must:

- a. Apply commercial rigour when making its investment decisions, and
- b. While operating with a commercial approach, develop a portfolio across the spectrum of clean energy technologies that in aggregate must have an acceptable but not excessive level of risk relative to the sector.

# **Issue 4: No Explanatory Statement and uncertainty over transitional or consequential arrangements**

The detail of the actual method of calculation for the current portfolio benchmark is specified in the Explanatory Statement rather than the Mandate itself. The Explanatory Statement is also extrinsic material that may be taken account of in certain circumstances as an aid to interpretation, and hence is itself of some instructional value to the Corporation as the entity charged with administering the law.

During consultation on its existing mandate, the CEFC was supplied with, and contributed to, a draft Explanatory Statement. It is our understanding that it is a requirement of registration on the Federal Register of Legislative Instruments that an Explanatory Statement accompany the revised mandate. The CEFC would expect to be able to view the intended drafting of the Explanatory Statement so it could ensure workability of any arrangements proposed therein.



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## **Return and Risk Profiles for Investments**

Prepared by

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## Background

- 1. This opinion has been prepared jointly by Dr Steven Bishop and Professor Robert Officer.
- 2. Dr Steven Bishop is an Executive Director of Education and Management Consulting Services Pty Ltd, a business that specialises in business valuations and cost of capital estimation for regulatory and business purposes. A brief Curriculum Vita is attached.
- Professor Robert Officer is a Professor Emeritus of the University of Melbourne and has been closely involved in company tax policy and the effect of changes in company tax systems since the early 1980's. He is a board member of a number of fund managers. He has written extensively on cost of capital matters. A brief Curriculum Vita is attached.

### **Terms of Reference**

4. We have been asked for an independent view of the likely risk profile of an investment portfolio that would be expected to earn a benchmark rate of return in the order of CPI plus 650 basis points. The 650 basis points comprises a benchmark of 450 basis points plus the cost of operating a fund estimated at 200 basis points. If we take the Reserve Bank of Australia's target range for the CPI of 200 – 300 basis points then the overall benchmark rate of return is in the order of 850 to 950 basis points.

## Summary of Opinion

- 5. A basic tenet in finance is that long term returns are a function of risk. For the CEFC to achieve a higher benchmark return than the current benchmark would necessitate moving from its current 90% debt-based portfolio towards equities and hence taking a higher risk profile.
- 6. In our opinion the risk profile of a portfolio that was expected to earn 650 basis above the CPI would be similar to the average risk of a listed equity portfolio. Such a portfolio could be formed from a mix of different asset classes, some with higher and some with lower than the average market risk, a number of which are understood as not falling within the available CEFC investment universe which is limited under its Act to Australia-only investments and only financial assets (e.g. not property).
- 7. Our view is informed by a number of data points. One was from estimating the risk return trade-off as implied by the Capital Asset Pricing Model. Given the current (relatively historically low) risk free rate using the yield on Commonwealth Government Securities as a proxy and the widely used market risk premium of 6%, the expected return on a



portfolio of securities of average risk is circa 930 basis points. This is within the range of the foreshadowed benchmark rate of return.

- 8. We have examined the historical spread of listed Australian and Corporate Bond yields over the CPI by rating. If history is a guide to the future then the CEFC would need to move to sub-investment grade debt if its portfolio was restricted to debt securities. Alternatively it would need to lever up a portfolio of investment grade debt to earn the required yield to meet the proposed new benchmark. This increases risk but is not, to our understanding, permitted under the CEFC Act.
- 9. The final data point was to examine the portfolio mix of the Future Fund which has been set a similar target return. While we have not quantified the risk characteristics of the asset classes, we note that there is a substantial investment in classes with higher risk than investment grade debt, particularly Australian and Global equities.



## **Basis for Opinion**

- 10. Our view that the proposed benchmark is most likely to be achieved with an increase in the risk profile of the portfolio to one reflecting the average risk of equities is informed by:
  - the messages from the Capital Asset Pricing Model ["CAPM"] which is the current paradigm in the finance discipline. This model is widely used in the business and regulatory processes in Australia;
  - using the CAPM to assess the likely risk profile of a portfolio of investments that can be expected to meet the proposed revised benchmark;
  - examining the historical record of yields on investment grade bonds over and above the CPI to establish whether a portfolio of such bonds would meet the proposed revised benchmark; and
  - examining the nature of investments (asset classes) undertaken by the Future Fund which has been subject to a similar benchmark return rate. We understand that the proposed revised benchmark for the CEFC mirrors that of the Future Fund.

### Framework

- 11. A basic tenet of finance theory is that investors act as if they require a reward for bearing risk the higher the risk, the higher the required reward. The required reward is usually expressed in terms of a positive premium over a "risk free" rate of return.
- 12. The Capital Asset Pricing Model ["CAPM"] is the current paradigm in Finance. It reflects this basic tenet by expressing an expected rate of return on an asset as a linear function of risk with the risk premium applying above the risk free rate.
- 13. The CAPM describes the pricing of assets in the following way.

$$E(\mathbf{r}_{i}) = \mathbf{r}_{i} + E(MRP) \boldsymbol{\beta}_{i}$$
(1)

Where:

- E (r,) is the expected rate of return from investing in the asset;
- r, is the risk free rate;
- E (MRP) is the expected market risk premium and it is positive. It is defined as the expected return on the market E  $(r_m)$  less the risk free rate  $(r_r)$



- $\beta_{i}$  is the beta or risk of the asset relative to the market (It reflects the relative contribution of the asset to the risk of a well 'diversified portfolio' e.g. the market portfolio).
- 14. The model is widely used for estimating the required rate of return for investments in both 'real' and financial assets. By way of illustration, all Australian regulators use the CAPM for estimating the cost of equity in the building block approach to pricing the use of transmission and distribution assets in the utility sector. The regulators include ACCC, Australia Energy Regulator, ESCOSA (SA), Economic Regulation Authority (WA), IPART (NSW), Queensland Competition Authority (Qld). The regulated sectors include electricity, gas, water, telecommunications, ports and rail. Surveys of the private sector find the CAPM to be the most widely used approach to estimating the cost of equity. For example Kester et al (1999)<sup>1</sup> found that 73% of respondents used the CAPM for estimating the cost of equity. Truong, Partington and Peat (2005)<sup>2</sup> found 72% of respondents in their Australian Survey used the CAPM. Bishop (2009)<sup>3</sup> found 87% of respondents to the Australian survey used the CAPM for this purpose.
- 15. Typically the risk free rate used is the yield on a 10 year Commonwealth Government Security. This rate has also been used when estimating the market risk premium and it is essential that there be consistency in the term of the risk free rate used in both parts of the CAPM equation the risk free rate and the market risk premium.
- 16. In theory the CAPM can be used to assess an expected return for all financial assets e.g. both debt and equity. In practice, however the required yield on debt / bonds can be directly observed for traded debt. The risk profile is usually assessed from some form of rating process.

### **Risk Return Profile**

17. In this section we examine the current and historical risk return trade-off for equity and debt securities. From this we can infer the risk profile necessary to provide an expected return of 850 to 950 basis points under current capital market conditions.

<sup>&</sup>lt;sup>1</sup> Kester, G., Chang, R., Echanis, E., Haikal, S., Isa, M., Skully, M., Kai-Chong, T. & Chi-Jeng, W., "Capital budgeting practices in the Asia-Pacific Region: Australia, Hong Kong, Indonesia, Malaysia, Philippines, and Singapore, Financial Practice and Education, vol. 9, 1999

<sup>&</sup>lt;sup>2</sup> Truong G, G Partington & M Peat, "Cost-of-Capital Estimation and Capital-Budgeting Practice in Australia", Australian Journal of Management, Vol. 33, No. 1 June 2008

<sup>&</sup>lt;sup>3</sup> Bishop, S., "A conservative and consistent approach to WACC estimation by valuers", Value Advisor Associates, 2009. | Page 4



### CAPM and Equity Risk Return Trade-off

18. The current yield on 10 year Commonwealth Government Securities ["CGS"] is 3.3% (20 Nov 2014). We also note that the yield on Indexed CGS is 1.39%.<sup>4</sup> Using the Fisher equation below implies a market expected inflation rate of 1.8%. This is a market based view of inflation which may or may not coincide with the actual CPI used in the proposed benchmark for CEFC.

(1 + Nominal Rate) = (1 + Real Rate) (1 + Expected Inflation)

19. Adding the market risk premium most commonly used for the CAPM of 6% to the current risk free rate provides an expected return on a market portfolio of equity securities of 930 basis points i.e. from the CAPM.

Expected Return =  $r_r + E(MRP) \beta$ 

= 3.3 + 6 x 1

= 9.3%

- 20. The 6% expected market risk premium ["MRP"] has been adopted by most regulatory bodies in Australia for use in estimating the required rate of return on capital when setting prices for the regulated businesses cites above.<sup>5</sup> Further survey evidence of business practice suggests that 6% is the most widely used estimate for the MRP.
- 21. The estimate is largely derived from the long term average of historical excess returns of the market over the risk free rate. We have reservations about the level and consistent use of this number over time but acknowledge that it is widely used.<sup>6</sup>
- 22. The expected market return of circa 930 basis points derived from the CAPM is within the benchmark range proposed for the CEFC. Consequently we can assert that the benchmark of 850 to 950 basis points reflects a required rate of return commensurate with the average risk of equity securities i.e. those with a beta of 1.

<sup>&</sup>lt;sup>4</sup> RBA website

<sup>&</sup>lt;sup>5</sup> A detailed discussion of this choice is available in Australian Energy Regulator, "Better Regulation, Explanatory Statement, Rate of Return Guidelines (Appendices) December 2013 pp78 - 113

<sup>&</sup>lt;sup>6</sup> Bishop, Fitzsimmons, Officer, 'Adjusting the market risk premium to reflect the global financial crisis', The Finsia Journal of Applied Finance, Issue 1, 2011



- 23. The actual outcome for a stock of portfolio of average risk (beta of 1) will, of course, be different from this. This is the nature of risk. However the probability of the outcome being above or below should be equal.
- 24. While the actual outcome will have a similar probability of being above or below this estimate, of concern is the downside risk to capital invested in a portfolio of equities with average risk overall. If it is assumed that distribution of possible returns on the market is normally distributed (as is the case in the CAPM), then the profile of possible returns can be derived from the expected return and from the standard deviation of the distribution.
- 25. Under the assumption that the distribution of possible market returns is log normal<sup>7</sup>, there is a 16% chance that the actual outcome will fall below one standard deviation of the mean (or expected outcome), a 12% chance of the outcome being below 2 standard deviations.
- 26. While we do not know the standard deviation of the forward view of possible returns on the market we can infer from the historical record. Such an inference is consistent with the assumption that the forward view of the MRP.
- 27. The standard deviation of annual market returns for the Australian Stock Exchange over the period 1883 to 2013 is 17.5%.<sup>8</sup> For illustrative purposes we assume the distribution of expected returns is currently described by a mean of 9.3% for a single year and a standard deviation of 17.5%.<sup>9</sup>
- 28. Consequently there is an 18% chance that the actual return will be negative and erode capital.
- 29. Figure 1 shows the cumulative probability of the distribution of possible returns under an assumption that returns are described by a log normal distribution with a mean return (expected return) of 9.3% and a standard deviation of 17.5%. The area under the curve to the left of zero is the probability of the return being negative i.e. 18% in this case.

<sup>&</sup>lt;sup>7</sup> This assumes the log of the price relative (1 + rate of return) is normally distributed. Under a log normal distribution, the maximum loss is 100% of capital which better suits an assumption of limited liability.

<sup>&</sup>lt;sup>8</sup> Data from Officer see Officer 1989: Officer, R. R. (1989), 'Rates of Return to Shares, Bond Yields and Inflation Rates: An Historical Perspective', in Ray Ball, Philip Brown, Frank J. Finn and R. R. Officer(eds.), Share Markets and Portfolio Theory: Readings and Australian Evidence, University of Queensland Press., Bloomberg

<sup>&</sup>lt;sup>9</sup> The 9.3% uses a 10 year bond rate rather than a one year rate





### Figure 1: Cumulative Distribution of Possible Return on an Equity Portfolio of Average Risk

30. Table 1 describes the expected return from a portfolio of average market equity risk over a 1, 3 and 5 year period. It also shows the probability of a negative return and therefore erosion of capital. The multi-year estimates were derived with an assumption that annual expected returns are log normally and independently distributed.

### Table 1: Probability of eroding capital over various time periods

	One Year	Three Year	Five Year
Expected return	9.3%	27.9%	46.5%
Standard Deviation	17.5%	30.3%	39.1%
Probability of a Negative Return	17.6%	16.5%	14.6%



### Debt Yields and Risk Return Trade-off

- 31. We understand that portfolio of investments in the current CEFC portfolio are largely debt securities. A question arises as to whether maintaining a debt portfolio similar to the current mix would yield sufficient returns to meet the proposed revised benchmark.
- 32. We cannot answer this directly as we don't have a detailed knowledge of the Corporation's 2013-14 and risk profile of the portfolio. Nevertheless we understand from the Corporation's Annual Report that, as at 30 June 2014, the portfolio has met the current benchmark (including costs) once start-up appropriations are removed from the equation. In this regard we can assert that it is unlikely to meet the higher benchmark without increasing the risk profile. As noted in the prior section, this risk profile would need to have similar risk to the average risk of the market for equities.
- 33. We have examined the historical record of investment yields for investment grade corporate bonds since 2001 to provide some insight into the spread of yields above CPI actually achieved. Figure 2 presents the yield on traded investment grade bonds less the CPI. Table 2 provides summary statistics for the underlying data for 7 year maturing bonds. Of interest is how often a portfolio of the different rated bonds have achieved the 'premium' over the CPI in the past.
- 34. We recognise that unlisted bonds / debt may provide a liquidity premium over and above the yields on listed corporate bonds. We understand the CEFC debt investment portfolio is unlisted, consequently it may achieve higher returns than the listed counterpart as is necessary to cover the additional risk.
- 35. It is apparent from Table 2 that the average yield less the CPI for all ratings falls short of the benchmark of 650 basis points. This suggests that if history repeats itself then a portfolio of listed investment grade corporate bonds would not meet the required benchmark return.
- 36. Nevertheless there were occasions when BBB rated bond, if acquired at the time, would have provided a sufficient spread. This was during the height of the GFC when the risk spread (e.g. yield less CGS yields) were at historical highs. If BBB bonds were acquired prior to the crisis and had to be sold during the GFC then a substantive loss would have been incurred as prices of existing bonds fell to provide the required risk premium.
- 37. The market for corporate bonds is relatively illiquid consequently there are some quarters when there isn't a yield reported by Bloomberg. This leads to a different number of observations for the rating categories in Table 2 and therefore non contemporaneous data. This explains the average AAA rated spread being higher than the AA rated spread.





Figure 2: Australian Corporate Bond Yields less CPI

Source: Bloomberg, RBA Website

	AAA Bond Yield	AA Bond Yield	A Bond Yield less	BBB Bond Yield
	less CPI (%)	less CPI (%)	CPI (%)	less CPI (%)
Average	3.69	3.42	3.93	4.44
Maximum	5.58	5.60	6.52	7.97
Minimum	1.42	1.30	1.53	1.92
No. Observations	34	40	50	51
Source: Bloomberg, RB/	Ą		1	

Table 2:	Corporate	Bond	Spread	over	CPI	2001	to	2014
Table 2.	oorporate	Donia	opread	0.00	<u> </u>	2001	.0	2011

38. The market for rated debt in the USA is more liquid than in Australia and has data across a wider range of ratings. Table 3 summarises the spread of the yield on bonds less the CPI for the prior year captured quarterly. The yield data is derived from a subset of corporate bonds with the indicated rating. As a result there will be a mix of different maturing debt.

39. It is apparent that, if the investment mandate called for investment in corporate debt, it would be necessary to invest in sub investment grade bonds in the USA to earn, on average, the required 650 basis point spread. There is a step jump in risk from investment to sub-



investment grade risk (BBB to lower ratings) as is captured in Figure 3. Figure 3 shows the global cumulative default rates by rating as prepared by Standard & Poors. A question arises as to whether such a step jump is consistent with the CEFC mandate (leaving aside for the moment the legislated requirement that the CEFC's investments be 'solely or mainly Australian based').

	AAA	Bond	AA	Bond	A	Bond	BBB	Bond	BB	Bond	В	Bond	ссс	Bond
	Yield	less	Yield	less	Yield	less	Yield	less	Yield	l less	Yield	less	Yield	less
	CPI (%	6)	CPI (%	<b>%)</b>	CPI (%	⁄o)	CPI (	%)	CPI (	[% <b>)</b>	CPI (%	⁄o)	CPI (%	⁄o)
Average	1.	78	1.9	93	2.	52	3.	36	5.	18	7.0	00	12.	.98
Maximum	5.	52	6.9	93	8.	52	10	.35	14	.81	18	.32	33.	.57
Minimum	-1.	12	-0.	63	0.0	01	0.	76	2.	40	3.	53	6.8	31
No. Observations	5	3	5	3	5	3	5	3	Ę	53	5	3	5	3

### Table 3: Bond Spread over CPI 2001 to 2014 - USA Data

Source: Federal Reserve Economic Data, (BofA Merrill Lynch US Corporate A Effective Yield)



#### Figure 3: Standard & Poors Bond Default Rates

Source: Standard & Poors, Default, Transition, and Recovery:2013 Annual Global Corporate Default Study And Rating Transitions""



### Future Fund Portfolio

- 40. We understand the proposed change in mandate is one similar to that of the Future Fund. "The Future Fund's mandate is to target a return of at least CPI + 4.5% to 5.5% pa over the long term with acceptable but not excessive risk."<sup>10</sup> The proposed new CEFC mandate specifies a different requirement – "a portfolio *across the spectrum of clean energy technologies* that in aggregate must have an acceptable but not excessive level of risk *relative to the sector*" (emphasis added).
- 41. The portfolio mix chosen by the Future Fund provides useful guidance as to what a portfolio with acceptable but not excessive risk might look like for a broad-based portfolio of equities designed to meet this target return.
- 42. Table 4 summarises the asset class mix in the portfolio over the last 5 years. The portfolio is dominated by equity with the debt component decreasing over time.
- 43. The Future Fund's performance against the benchmark is captured in Figure 4. This has been extracted from the FY 2014 annual report. It is clear that it is only in recent years that long term cumulative performance has reached the benchmark.

### Table 4: Future Fund Portfolio Mix by Asset Class

	30/09/2014	30/06/2013	30/06/2012	30/06/2011	30/06/2010
Australian equities	9.0%	9.7%	10.4%	11.2%	11.8%
Global equities					
Developed Markets	24.4%	23.8%	17.5%	21.3%	21.8%
Emerging Markets	9.7%	7.1%	5.0%	5.1%	3.1%
Private Equity	8.8%	7.3%	6.4%	3.9%	3.0%
Property	5.8%	6.0%	6.4%	6.5%	5.0%
Infrastructure	7.4%	8.1%	6.4%	5.3%	4.5%
Debt Securities	11.3%	15.6%	18.3%	19.4%	21.9%
Alternative Assets	13.8%	16.6%	19.0%	18.6%	15.6%
Cash	9.8%	5.8%	10.6%	8.8%	13.1%
Size AUD M	104,483	88,889	77,012	74,213	63,074
		-	-		
Annual FY Return FY	14.3%	15.4%	2.1%	2.9%	10.6%

Source: Future Fund Update Reports on Website

 $<sup>^{10}</sup>$  See footnote 3, Future Fund Portfolio Update at 30 September 2014  $\mid$  Page 11





### Figure 4: Future Fund Performance against the benchmark

44. The investment opportunity set for the CEFC is substantially narrower than the Future Fund, an issue not addressed at this stage, however it is apparent from the investment strategy of the Future Fund that it takes a risk profile much higher than a debt portfolio – as evidenced by the large equity component of the portfolio.



## **Biographical Notes**

### Professor Bob Officer

B AgSc (Melbourne), M AgEc (New England), MBA (Chicago), PhD (Chicago), SF Fin

Bob has primarily focused on academic and consulting work. His expertise and research includes corporate and international finance, capital markets, industrial organisation, takeovers and antitrust.

He has played a substantive role in advising both regulatory bodies and regulated bodies on a whole range of issues associated with regulatory price setting for infrastructure assets. He has an international reputation for his pioneering work on the impact of dividend imputation on valuation

Bob was Chair of Victorian Funds Management Corporation until May 2006 with about \$37 billion under management and he has been integrally involved in the Australian Pension Fund industry for many years. He has held several other appointments including Chairman of both the Victorian and National Commissions of Audit, and has consulted to a large number of public, private and government organisations.

He sits on the Board and Investment committee on a number of Fund Managers Acorn Capital, CP2, JCP Investment Partners. In addition he has held seats on a number of significant government and private sector organisations.

Bob has held Professorial positions in Finance at Monash University, University of Queensland and Melbourne Business School. He has held visiting Professor roles at Stanford Graduates School of Management and the Wharton School. He is Professor Emeritus at University of Melbourne.

### Dr Steven Bishop

B Ec (Monash), MCom (Hons) (UNSW), PhD (AGSM), FCPA

Steve is a valuation and corporate finance consultant. He a founding director of Education and Management Consulting Services Pty Ltd ["EMCS"].

Steve's primary consulting interest is around the application of valuation insights to business decisions. In particular, he has guided the implementation of value-based management in a number of large and medium sized corporations. In addition, he has prepared a large number of expert opinions on matters relating to the cost of capital and business valuations.



Assignments have included business valuations for compliance, cost of capital estimation, merger and acquisition advice, the development of strategic and business plans, strategy advice, transfer pricing analysis and aspects of price determination in utility regulation.

Steve has worked in a number of industries including Aquaculture, Chemicals, Electricity, Financial Services, Forestry, Gas, Infrastructure, Minerals and Mining, Property, Rail, Retailing, Shipping & Transportation, Telecommunications, Water and Waste-water.

Steven was also a founding Executive Director of Value Adviser Associates, a business valuation and corporate advisory practise with offices in Melbourne, Brisbane and Adelaide. .Prior to VAA, Steve was a partner in L.E.K. Consulting, a world-wide management consultancy business; with Marakon Associates, as a senior manager in the firm that was a foundation consulting business in value based management principles and application; with Andersen Consulting as a Senior Manager in the Strategic Services section.

Prior to joining the consulting sector, Steve worked as an academic for over 15 years. He held academic positions at AGSM, University of NSW, Monash, Melbourne Business School and the Bendigo Institute of Technology. Steven co-authored "Corporate Finance" by Bishop, Faff Oliver and Twite (now in the 5th edition). He continues to teach in the Masters of Applied Finance offered by Macquarie University.