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12 December 2011

CEFC Secretariat
Commonwealth Treasury
Canberra
Australia

cefc@treasury.gov.au

Dear Sir / Madam,

The Clean Energy Council (CEC) welcomes the opportunity to provide input into the critical design elements of the Clean Energy Finance Corporation (CEFC). We believe that the CEFC represents a unique opportunity to provide the institutional and financial support necessary to accelerate the development and deployment of a broad range of clean energy technologies to become a part of Australia's mainstream energy mix. Taking advantage of Australia's world leading clean energy resources and driving Australian innovation and ingenuity can ensure that Australia delivers on the target to achieve 20% of energy from renewable energy sources at least cost, and then go above and beyond that target.

The Clean Energy Council (CEC) is the peak body representing Australia's renewable energy and energy efficiency industries. Its priorities are to:

- create the optimal conditions in Australia to stimulate investment in the development and deployment of world's best clean energy technologies;
- develop effective legislation and regulation to improve energy efficiency; and
- work to reduce costs and remove all other barriers to accessing clean energy.

The CEC works with its members and the government to identify and address the barriers to efficient industry development in the energy efficiency and stationary energy sector. The clean energy industry and its members contribute to the generation of electricity using wind, hydro, solar, biomass, geothermal and ocean energy as well as other emerging technologies and service providers in the energy efficiency sector including solar hot water and cogeneration.

The creation of a Clean Energy Finance Corporation (CEFC) is a significant progression in the development of effective policy to drive new clean energy technologies in Australia. Achieving the significant acceleration necessary in the rate of clean energy and energy efficiency investment requires that current market mechanisms be supported and supplemented in targeted ways. The CEFC has a critical role to play to drive and promote the necessary acceleration of private sector capital, risk management and financial services participation in the energy sector's transformation.

To overcome current market constraints and accelerate commercialization and deployment of low carbon technologies, support is needed in the construction of financial transactions in a way that will enable use of conventional capital markets products such as debt financing, private equity, venture capital and capital from longer term equity investors (like superannuation funds) at an affordable cost.

A summary of the key points the CEC wishes to raise in this submission are as follows:

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- It is imperative that the CEFC is established as quickly as is practically possible.
- The CEFC must be designed with strong organisational and investment governance that is independent of government and not constrained by government policy or budgetary cycles.
- The executive, investment management, transaction origination and governance capabilities of the CEFC must possess the expertise necessary to ensure delivery of the CEFC's core objectives.
- CEFC must have flexibility to design and evolve over time a suite of financial products and services, including loan guarantees and co-investment, that will be equip the CEFC to leverage private capital most effectively to accelerate the deployment of clean energy technologies.
- The development and deployment of clean energy in Australia face a range of market and non-market barriers. These must also be addressed and stable and long term policy settings established in order to complement the objectives of the CEFC
- Financing infrastructure investments including transmission augmentation and extension and new and upgraded interconnectors has the potential to support the accelerated deployment of clean energy technologies and ensure Australia can take full advantage of its world class, distributed clean energy resources. This should be one of the priorities of the CEFC.
- The sources and level of clean energy production, and therefore the dynamics of the market for Renewable Energy Certificates may be impacted by the activities of the CEFC. The CEFC must be cognisant of this impact and ensure, as much as possible that investment certainty in these commercial, least cost renewable energy projects is not undermined.

The CEC has commissioned Deloitte to survey a range of clean energy investors to better understand the needs of the investment community in increasing and accelerating the level of investment in emerging clean energy technology. This report will be made available in the coming weeks.

The CEC looks forward to discussing many elements of this submission further with the CEFC secretariat and review board. Please contact me on 03 9929 4105 or kane@cleanenergycouncil.org.au to discuss this further.

Kind regards

[original signed]

Kane Thornton

Director of Strategy & Operations

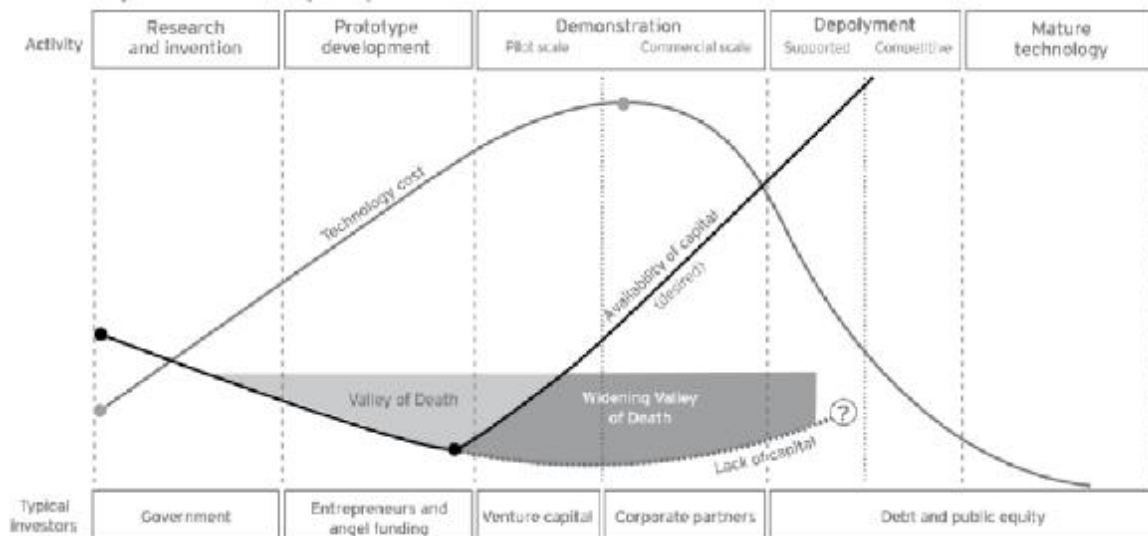
1. How do you expect the CEFC to facilitate investment?

The creation of a Clean Energy Finance Corporation (CEFC) is a significant step in the development of effective policy to drive new clean energy technologies in Australia.

The CEFC should operate as an independent financing agency for clean energy technologies that have progressed beyond the research and development stage (covered by ARENA) but are still beyond the reach of conventional debt financing, venture capital and even angel financing. This may be for a number of reasons: their costs may be beyond the range of existing schemes (like the RET) and there remains uncertainty about how quickly costs can be reduced; they may be operating in immature or undeveloped segments of the existing market; they may provide benefits in the electricity system for which market mechanisms do not currently provide a means of valuation and value recognition. Fundamentally, they may deliver the prospect of substantial greenhouse gas abatement but require the full scarcity cost of carbon to be reflected in market pricing in order to be cost effective.

The CEFC should therefore be open to all clean energy sources of generation and energy efficiency, primarily focusing on the demonstration of emerging technologies and the deployment of pre-commercial technologies. The commercialization of these projects faces what is commonly known as the 'Valley of Death'.

As outlined in the below figure, the 'Valley of Death' is a stage of technology development in which a technology (or a project utilising a technology) requires large amounts of finance to (a) achieve scale in order to drive down technology costs, and (b) demonstrate technology capability in order to remove perceptions of technology risk. In short, large amounts of finance are required at a very time when comparative high cost and perceived technology risk mean that finance is least available on commercial terms. This issue is explored in more detail in Attachment B.



The CEFC should target barriers and market failures to attract private investment, aiming to address those gaps with the least public investment required. This should include clean energy technologies that have been demonstrated internationally, but still face barriers being deployed at scale within Australia, or are being deployed in a unique or innovative manner.

The CEFC should support a portfolio of technologies at different stages in the demonstration and deployment stages of the technology development lifecycle. This will also allow it to manage risk/reward across the CEFC portfolio.

Importantly, the CEFC should complement, and operate closely with, Infrastructure Australia, which identified a true national energy market (including grid extension), as a national priority. For example, infrastructure investment to tap cost effective clean energy resources could be treated as national priority infrastructure projects.

It is irrational to wait until a high enough price on emissions is in place to commence research in technologies to reduce emissions. Private sector market participants will not invest in scale-up to bring down clean energy technology costs, or in demonstration at scale to eliminate perceptions of technology risks, in the absence of clear commercial incentives to do so. Australia's capital markets do not currently have commercial incentives to make these investments. Therefore it is the natural and crucial role of government to fill this gap by creating a vehicle like the CEFC, which can implement an investment strategy designed to bring forward the longer term economic benefits of scale demonstration and deployment of clean energy technologies and projects.

The CEFC will be a critical vehicle for driving the Government's dual objectives of meeting emissions reductions targets and maximising the economic benefits from a strong clean economy, including new industry development and export opportunities, creation of jobs and investment in the regions.

2. Are there principles beyond financial viability that could be used to prioritise investments, such as emissions impact or demonstration affect?

Suggested Principles

The CEFC should provide financing for products and technologies outside the reach of private sector investors in order to take technologies to full private financing. Noting this, it is suggested the following principles should frame the risk appetite and investment objectives of the CEFC.

The CEFC should:

- consider investments assuming long term scarcity pricing of carbon emissions (with appropriate discounting for positive technology risk);
- assess the applicability of Australia's comparative advantage in the technology's development and deployment;
- include potential flow-on benefits of projects (technology, economic, environmental and social);
- consider the likelihood and extent to which the project or technology will be successful and contribute in the long term to be part of Australia's future energy mix at least cost.
- explore opportunities and design financing arrangements to maximize leverage of private sector finance.

The CEFC's need to focus on acceleration of the deployment and demonstration of clean energy technologies distinguishes it from other existing funds and agencies which are primarily focused at early stage R&D and proof of concept. Government investment in research and development is normal. The funding of universities, research institutions like the CSIRO and other programs are typical examples of government investment in risky, pre-commercial research. Government investment in projects and technologies is not bounded by the same constraints as the private sector. Governments are empowered to address broader objectives in the national interest beyond the reach of private investors. The Snowy Mountains Hydro-Electric Scheme and the Apollo Program are iconic examples of important and successful programs that could only be delivered by governments.

Eligibility Criteria

The CEFC needs to set and explain clear criteria for financing eligibility in order to fill the financing gap left between ARENA and full private sector financing for proven and emerging clean energy technologies.

Eligible technologies should have already be proven to work in an applied/pilot stage and are ready for increased scale of production or output to reach commercialization, as well as be able to demonstrate they can or have the clear potential to affordably deliver significant emissions reductions at scale.

Emissions Impact

Climate change is, by definition, a risk-based policy framework. There is the risk of global inaction or insufficient action; the risk of scientific error in assessing both the hazard and the mechanisms to reduce it; regulatory risks in predicting the design, pace and ambition of domestic and international policy; and there are technology risks in predicting both which new clean technologies will work, and those that are at risk of being stranded by the subsequent evolution of cleaner and/or cheaper rivals.

It is unsurprising therefore that the most ambitious clean technology venture capital financiers tend to invest mainly in technologies that offer incremental improvements to proven technologies. These are able to deliver the prospect of a payback in a time frame which is considered acceptable by investors. This is useful but on its own it risks not delivering the transformation needed in the constrained timeframe identified to address the risk of dangerous climate change. To counter this, the CEFC should consider investments based on assessment of their emissions abatement impact.

3. What are the opportunities for the CEFC to partner with other organisations to deliver its objectives?

The CEFC should leverage from the vast institutional, industry and government capability in the development and deployment of clean energy. The CEFC should also explore opportunities to partner with appropriate existing finance and investment organisations, research and academic bodies and clean energy industry innovation centres to maximise the impact of the CEFC on the clean energy sector.

4. How could the CEFC catalyse the flow of funds from financial institutions?

The CEFC should work closely with private sector financiers to determine what they need to invest in developing clean technologies, and then design the criteria and milestones for projects accordingly in order to deliver successful technologies to full private investment.

It is fundamental that the CEFC has a full and active understanding of what this will entail. The CEFC should not, as a fundamental principle, crowd out or compete with private sector investment. Rather it should operate in a way that facilitates and augments such investment.

Similarly to the Export Finance and Insurance Corporation (EFIC) and the UK's Green Investment Bank, the CEFC should be equipped with a suite of financial instruments to be prudently utilised to complement and leverage private capital. A key element in the construction of successful transactions is the need for stable, long-term off-take arrangements that provide adequate certainty, stability and sufficiency of revenue. The CEFC should seek to support this.

In the same manner that traditional infrastructure projects are financed with various forms of public fiscal support dependant on project risk, the CEFC should apply financial instruments which may include:

- *Loan guarantees* – as utilised by EFIC and the US Loan Guarantees program.
- *Co-investment* – debt and equity including direct, portfolio or seed investment, as applied by Low Carbon Australia.
- *Grants* – while this would remain the focus of ARENA, CEFC could have an important role in structuring the delivery mechanisms for ARENA grant funds such as by providing grant-supported revenue streams.
- *Tax measures* – administering tax policy (such as R&D tax credits and new infrastructure tax provisions under Infrastructure Australia) and advising ATO.
- *Policy risk insurance* – and other insurance products as utilised by EFIC.
- *Direct project participation* – such as PPPs and off take agreements/feed in tariffs, as are commonly applied to infrastructure projects across Australia.
- *Climate Bonds* – like EFIC, raising additional funds through the bond issues with the government's AAA credit rating.

5. What experiences have firms in the clean energy sector had with trying to obtain finance; have term, cost or availability of funds been the inhibitor?

The CEC has commissioned Deloitte to survey a range of clean energy investors to better understand the needs of the investment community in increasing and accelerating the level of investment in emerging clean energy technology. This report will be made available in the coming weeks.

6. What non-financial factors inhibit clean energy projects?

A range of financial and non-financial barriers inhibit the accelerated development and deployment of clean energy in Australia. These are summarised below.

Asymmetric information leading to delayed investment

Industrialised economies have been increasing the rate of greenhouse gas emissions from energy generation and other human activities since the 19th century. Emissions have accelerated significantly in the second half of the 20th century, while realization of the risk of dangerous climate change only commenced at the very end of the century.

As a result most clean energy technologies are under-developed for the scale of the reform required. Because climate change is a time constrained problem, we need to accelerate development of and investment in these technologies to have available the suite of technologies needed to deliver an affordable transition to a decarbonized economy.

Undervalued externality

Recent analysis by Deutsche Bank estimated the full scarcity pricing of each tonne of greenhouse emissions globally to be around USD\$100 per tonne. This means the market, even with the introduction of a nominal price on greenhouse emissions, is undervaluing the cost of greenhouse emissions, and therefore the value of any technology that delivers greenhouse gas abatement.

This market failure is likely to be remedied over time as a comprehensive global agreement on emissions reduction is secured and the full cost is internalised.

In the interim, technologies which have lower or zero greenhouse emissions will be undervalued by the market. While investors may be aware of the true cost of greenhouse emissions (and therefore the value of low or zero emissions technologies), uncertainty over the application of this cost will constrain their ability to incorporate it into projects, even though they may be operating for 30 years or longer.

Long payback period = low IRR

As a result of the gradual imposition of a carbon price, the payback period for clean energy projects is likely to be longer than for conventional infrastructure projects. This is likely to constrain conventional investors.

Scale of investment

Unlike other recent computer and internet technology booms, the cost of energy generation research, development, deployment and commercialization tends to be on a much bigger scale. This makes it harder to raise sufficient capital and increases the scale of risk.

Regulatory uncertainty

Governments are now moving variously to impose a constraint on greenhouse emissions. It is a process that will require both domestic action and international agreement. But it remains uncertain. Most businesses agree this action will occur but are uncertain by what mechanisms and at what pace. This uncertainty will continue to act as a major barrier to investment until resolved.

Technology risk

Like other technology booms, there remain basic technology risks: principally that the technology being developed either fails, or is superseded by its competitors. These risks overlaid against the scale, regulatory

uncertainty and longer payback push many clean energy investments to or beyond pure conventional financing.

7. Are there special factors that inhibit energy efficiency projects?

There are a wide range of special factors that inhibit energy efficiency projects in Australia. While the CEFC is likely to focus on larger scale energy efficiency opportunities, Appendix A provides some context and detail on the challenges facing domestic scale energy efficiency opportunities which will have some relevance.

8. How do you see the CEFC fitting with other government initiatives on clean energy?

Effective operation of the CEFC will rely on carefully executed interaction with other clean energy initiatives. Most significantly, this includes with ARENA and the RET.

The objectives and operation of the CEFC must be considerate of the need for many projects to also secure financial support from ARENA in some form.

The establishment and operation of ARENA should also give significant consideration to the CEFC and its role, as well as recognise the historical challenges in distributing grant funding in a timely and effective manner that progresses the development of clean energy technology in Australia. It is also important that previous or current commitments for grant funding are not delayed during the design and implementation of both ARENA and the CEFC.

The following provides a more detailed outline of the interaction of the CEFC with RET.

Inclusion of CEFC projects in the enhanced Renewable Energy Target (eRET)

A fundamental definitional issue is whether clean energy projects financed by the CEFC are eligible for Renewable Energy Certificates (RECs) under the RET.

Inclusion of CEFC projects in the RET will:

- Make deployment of those projects more affordable for the CEFC and other investors, and therefore allow the CEFC (and ARENA) to support a greater number of projects.
- Assist with the achievement of the 20% RET by 2020.
- Ensure that project proponents gain valuable learnings on the operation of the RET and negotiation of REC output from projects.

Conversely excluding CEFC projects from the RET will make their financing more expensive and excluded projects would therefore likely consume more of the CEFC's investment capital.

Impact on the REC market

It can be expected that the CEFC may finance a wide range of technologies from earlier stage (such as for example wave technology which might otherwise be 5-10 years away from commercialisation) to technologies that are fully commercial but constrained by market failures and difficulty obtaining long term debt financing under reasonable terms. The distribution of its investment portfolio across each of these technology stages will determine the extent of additional REC volume that may be supplied into the REC market. This presents a number of challenges.

The extent of the impact on the REC market will be determined by a number of factors:

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- Volume of additional RECs likely to be produced over time and subsequently the level of REC production from technologies that might not otherwise be commercial until a later date.
- Price at which these additional RECs can be sold onto the REC market.
- Uncertainty introduced into the REC market as a consequence of the potentially significant investments – and subsequent change in supply/demand dynamics – that could be made in different technologies over time.

There are a variety of ways these issues may be minimized and/or addressed. CEC recommends the CEFC give further consideration to the range of mitigation strategies that can ultimately ensure the CEFC is effective in accelerating the development and deployment of pre-commercial technologies while not inhibiting the deployment of commercial technologies within the RET.

Appendix A - Energy efficiency barriers in the residential market.

The CEC considers it critical that the objectives of Government policy are aligned in some way to the rules and objectives of the National Electricity Market. Misaligned incentives will continue to act as an ongoing barrier to renewable energy and energy efficiency projects being facilitated at the level envisaged by State and Federal Governments when first introducing policy measures.

This ongoing overlapping of areas of responsibility and lack of a coherent co-ordination of energy efficiency policy has resulted in confusion, a lack of relevant information reaching consumers and ongoing inefficiencies in program delivery.

Lack of relevant information for consumers

This is reflected in research completed by Auspoll for the Clean Energy Council outlined below. A nationwide survey of 1000 participants was conducted by Auspoll for the CEC in June 2011. The poll found that Australian households wanted more support to save energy and money on their electricity bills. While 95 per cent of people surveyed said they were concerned by rising energy costs and 89 per cent said they were willing to take action to use less energy, half knew little or nothing at all about the key aspects of their energy use. This confirmed early indications based on enquiries from the public to member companies and to the CEC itself that the appetite in the community for more information is on the rise. The survey also identified that one of the key factors affecting consumers is a general feeling of a lack of control over their electricity costs and a lack of information about the differences that energy efficiency or energy conservation actions will make on electricity costs.

In order for consumers to be able to make informed choices about the way they use electricity, access to information and data on their own use of electricity is crucial. The Auspoll research found that many people would welcome greater control over their energy usage. There was strong support for the use of home electricity meters that display, in real time, the amount of electricity that households use. Providing accurate information to consumers about their energy use and a detailed breakdown of their billing tariff will lead to consumers being able to make informed choices about the way they use electricity.

Transaction costs for consumers

Price alone cannot be expected to drive the uptake of energy efficiency, especially in low-income households which do simply not have the available capital to upgrade to more energy efficiency appliances. Prior to pricing being used as a tool to effect behaviour change the Government should ensure appropriate groundwork has been laid to remove the barriers to energy efficiency investments, ensuring consumers have access to programs for support and in particular that low-income households have an effectively operating, sufficiently funded support program.

It is our view that transaction costs should take into explicit consideration the opportunity cost of time faced by most consumers when it comes to making decisions about energy use. Ensuring DSP policies are geared to take these factors into account looking specifically from the perspective of the consumer is critical, especially given the multiple layers of potential engagement – in retail outlets, through electricity retailers, State and Federal Government programs, network businesses, consumer and welfare organisations.

Carbon price revenue to fund these low-income support programs

The CEC advocates for carbon price revenue to be dedicated to fund these low-income support programs. While the \$100 million dedicated in recent policy announcements by the Federal Government makes a

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start, a significant additional funding will be required to reach the 1 million households identified by ACOSS and the Brotherhood as requiring support by 2020. The right market conditions and regulatory requirements are required to enable third parties to facilitate consumer decision making. Flexible pricing options, open access and incentives to retailers to encourage the uptake of DSP opportunities are needed.

The key policy mechanism to provide a framework for driving investment in energy efficiency and demand side response across the residential and industrial sectors should be the establishment of a National Energy Savings Initiative. Such a scheme could incorporate and allow for transition of existing state-based white certificate schemes and be extended to those states currently without coverage.

This national approach would allow for a range of energy efficiency goods and services to be provided to energy users within a sustainable framework, which compared with the on-again, off-again grant and rebate processes of the past, provides industry with greater long term certainty for sustainable growth.

National consistency will also reduce transaction costs for obligated parties and reflect the nature of the operation of the electricity market ensuring least cost outcomes. Specific areas of focus for harmonization in the first instance should include product eligibility, transaction costs and training and accreditation.

Barriers to deployment of smaller scale distributed renewable energy projects

The relevant authorities also need to address the barriers to the deployment of smaller scale distributed renewable energy projects. Embedded generation such as solar photovoltaic, cogeneration and trigeneration are vital methods of enhancing a building's energy efficiency and can also assist in the deferral of investment in network infrastructure. The current connection rules and arrangements of the NEM act as a disincentive to the deployment of such projects and the rules need to be altered to make it easier to connect projects. Likewise the approvals process for installing renewable energy equipment needs to be simplified and standardised across jurisdictions to encourage organisations to make such an investment.

Access to capital is vital to bring energy efficiency projects and products to market. Capital support in the form of tax incentives, low interest loans, specific R& D funding and project funding for demonstration projects is also required to ensure the investment needed to bring energy efficiency technologies to the market.

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Clean Energy Council

Attachment B – Navigating the valley of death, a report for the Clean Energy Council by Ernst & Young.