Clean Energy Finance Corporation Submission

Structuring an Effective Financial Support Program for Renewable Energy Projects in Australia

About First Solar

First Solar, Inc. ("First Solar") manufactures solar photovoltaic ("PV") modules with an advanced thin-film semiconductor process that significantly reduces the raw material and manufacturing costs of solar modules, enabling lower solar electricity costs. By enabling clean renewable electricity at affordable prices, First Solar aims to provide the world with an economic alternative to peak conventional electricity, reducing related fossil fuel dependence, greenhouse gas emissions and peak time grid constraints. Unlike central grid generation options that are viable only in specific locations with the required natural resources and central grid transmission capacity, First Solar technology enables cost effective distributed solar electricity that can economically displace grid power during peak demand periods.

First Solar is the world's leading low-cost manufacturer of thin film PV modules, recently announcing that it has produced 5,000 MW of its solar modules since beginning commercial production in 2002 and reduced its manufacturing costs for solar modules to 74 cents per watt. First Solar has an annual manufacturing capacity of approximately 2,200 MW, which is expected to increase to 2,800 MW by the end of 2012 after the construction of a new manufacturing facility in Mesa, Arizona (USA). Many of the world's largest operating PV power plants have been constructed using First Solar modules, including:

- Sarnia, Canada - 80 MW (AC);
- Copper Mountain, USA - 58 MW (AC);
- Lieberose, Germany - 53 MW (AC);
- Brandis, Germany - 40 MW (AC); and
- Cimarron, USA - 30 MW (AC).

First Solar currently has a contracted pipeline of over 2,700 MW in the United States, and has recently begun construction on a number of ground-breaking projects, including:

- Desert Sunlight, USA – 550 MW (AC). Project to be owned by GE Energy Financial Services and NextEra Energy Inc., with power to be sold under two separate power purchase agreements to Southern California Edison (250 MW) and Pacific Gas and Electric Company (300 MW). The U.S. Department of Energy is partially guaranteeing $1.46bn in loans provided by a syndicate of private institutional investors and commercial banks. Currently under construction;
- Antelope Valley Solar Ranch One, USA – 230 MW (AC). Project to be owned by Exelon Corporation, with power sold under a power purchase agreement to Pacific Gas and Electric Company. This project was financed through Exelon's equity investment and a loan guarantee from the U.S. Department of Energy for up to $646m to support project financing;
- Agua Caliente, USA – 290 MW (AC). Project to be owned by NRG Energy, with power sold under a power purchase agreement to Pacific Gas and Electric Company. Currently under construction; and
- Topaz, USA – 550 MW (AC). Currently under construction.

First Solar is headquartered in Tempe, Arizona. Its shares trade on the NASDAQ National Market under the symbol FSLR. In October 2009, First Solar became the first pure play renewable energy company to be included in the S&P 500 composite index.

First Solar is focused on working with local partners and stakeholders to assist in developing the large-scale solar industry in Australia. First Solar is committed to sharing the learning and expertise it has developed in other geographies with Australian companies and regulators so that local industry ultimately benefits and is responsible for the sustained growth and development of the market. In April 2009, First Solar announced the supply of PV modules to Solar Shop Australia, Pty Ltd., for a 1 MW rooftop project at the Adelaide Showground. The system, installed on six separate buildings, was completed in September 2009 and is Australia's largest PV system. First Solar has supplied modules to a number of commercial projects in Australia, including:

- Adelaide Showground, Adelaide - 1 MW, 2009;
- ANZ Headquarters, Melbourne - 120 kW, 2009;
- Monash University, Melbourne – 117 kW, 2010;
- Adelaide Desalination Plant, Melbourne – 204 kW, 2010;
- VRC Flemington Grandstand, Melbourne – 30 kW, 2010; and
- Newman Airport, Western Australia – 120 kW.

In August 2011, First Solar announced Australia's first utility scale solar PV project, the 10 MW (AC) Greenough River Solar Farm, which will be constructed near Geraldton, Western Australia. The project, to be owned jointly by Verve Energy and GE Energy Financial Services, will be commissioned in mid-2012 and will create up to 150 jobs for the local region.

First Solar's Australian operations are headquartered in Sydney, with activities focused on market development, project development and project delivery. First Solar has significantly expanded its Australian operations in 2011, using the Sydney office as a base for its Asia Pacific market coverage that includes the management of regional offices in Beijing, New Delhi, Bangkok and Kuala Lumpur. First Solar has also demonstrated its support for the development of renewable energy policy within Australia, through direct engagement of key stakeholders within the renewable energy industry as well as active membership of leading industry organisations such as the Clean Energy Council and the Australian Photovoltaic Association.

Introduction

Renewable energy projects globally have been supported by a wide spectrum of financial incentive mechanisms. While many of these mechanisms have contributed to the successful adoption of a more diverse renewable energy mix; it is difficult to identify any one policy, or combination of policies, as the ideal given each market's individual conditions and motivation for introducing mechanisms to support renewable development.

In lieu of identifying a singular support mechanism that will deliver a complete solution for the Australian market, the goal of this submission is to: 1) identify the key drivers and themes of a successful financial support program for renewable energy projects; 2) provide an overview of the economics of large scale solar projects, including analysis of the "gaps" that currently exist in the Australian market; and 3) propose an appropriate CEFC structure, role, and mandate that will ensure the greatest success rate for renewable energy projects in Australia, complementing existing programs within the domestic policy framework.

This submission has been shared with key market participants and aims to create a foundation for productive policy discussions. The over-arching goal of any renewable energy support mechanism should be to bridge the commercialization gap that currently exists for a number of renewable technologies. It should not serve the function of a venture capital platform. Additionally, an ideal policy mechanism will only distribute incentives provided a technology can demonstrate a credible path to sustainable deployment without financial support. This should be the ultimate goal, to bring renewable technologies to the point where they can effectively compete with traditional energy resources without additional financial incentives.

Key Drivers of a Successful Financial Support Mechanism

Define the Program Goal, Structure, and Participation at the Outset

From the program's inception, it is imperative to establish what policy goals it is intended to support. Various examples include: an industrial policy focused on job creation, an energy policy focused on energy security or portfolio diversity, or a climate change policy focused on emissions reduction. This over-arching policy goal should be defined clearly as programs that are established to achieve limited, well-defined core objectives are the most likely to succeed. Typically, a mosaic approach attempting to achieve multiple policy goals will lead to confusion in the market place, differing policy paths, and a reduced likelihood of success.

Once the program's over-arching policy goal is defined, clearly delineate which metrics will be used to measure success, e.g. emissions avoided, MW of renewable energy installed, MWh of renewable energy delivered to load, jobs created, etc., based on the policy goal. It is necessary to ensure that the program's mechanisms are synchronized with the program's policy goals and success metrics, once defined. For example, a grant mechanism may be more effective at facilitating installed MW, but not as effective as a loan guarantee mechanism at driving broader industry engagement and participation, which is critical to creating a sustainable industry post-support mechanism.

It is also important to establish a program structure, including participation criteria, at the beginning. The responsible government agency ("Agency")[1] should explain the purpose and intended destination of support. All program participants should understand whether the intention is to fund projects, companies, manufacturing, or another purpose. Additionally, the program should have clear and objective criteria for a) participating in a project, b) applying for support, and c) accessing and utilizing that support. While it may seem obvious, a program timeline should also be well defined, with respect to both implementation and execution, and the program should have specific actions built in to ensure outcome deadlines are met.

Agencies should establish clear guidance upfront on which entities need to be involved in a project in order for it to apply for support, e.g. a utility/retailer, a bank, equity owners, technology provider. It is important to identify these players in order for them to participate in the development of program structure and criteria. While the input of these stakeholders and ensuring the opportunity for public comment and industry outreach is crucial, it must not become unnecessarily long and complicated and thus impede the goals that the program is aiming to meet.

A final consideration in program structure is that it should have the ability to support projects through a variety of mechanisms, i.e. one size does not always fit all. The structure should enable each lender or owner applicant to

[1] Agency can be a federal, state, or local level legislation, commission, supervisory board, or any entity that creates, implements, or administers renewable support mechanisms.

identify its preferred mechanism as a function of how it interacts with other project economic inputs. This allows the market to adjust to and also price the benefits of respective incentives.

Program Rules Must Be Transparent and Reliable

Once the parameters of the program have been established, they must not be subject to change. The private sector will not support, or participate in, a platform that is volatile. Visibility on policy stability is critical. Similarly, industry participants must have confidence that program funds will not be reallocated for other purposes. In addition, there must be clear guidance as to how a market mechanism will degrade over time, if at all. All attempts must be made to ensure that political considerations do not impact the direction and effectiveness of the program during its life.

One option that will bring certainty to market participants is to make the program open-ended by pre-funding the program into an irrevocable trust to be disbursed as needed. That is, the money is expended when viable projects are ready to be deployed and a) the program ends when its allocation has been exhausted, or b) the repaid funding, in the case of a loan, is re-invested back into supporting future renewable projects. This avoids the pressure to fund projects on a specific project timeline. Setting artificial deadlines can lead to supporting projects that are not viable or ready to be deployed and artificial cycles in development and investment.

The alternative to having certainty around the program, its rules, and its funding is a boom/bust cycle of renewable deployment that is disruptive to any developing industry. If any pitfall should be avoided it is this.

Private Sector Involvement Is Crucial

The private sector's involvement in, and support for, the program is the most critical factor that will contribute to its success. It is important to recognize that program should not be a replacement for private sector contribution; but a supplementary and facilitative mechanism for private sector participation. The program has a greater chance of success if it incentivizes existing stakeholders in the power sector to engage and expand their renewable foot-print. Their participation in the program, and adoption of the technologies the program supports, is also critical to the development of an industry that will be sustainable after the program ends.

In order to maximize private sector participation, there are key actions that the enabling policy should include. First, make private sector financial involvement a pre-requisite. More public funding involvement leads to higher probability of a politicized or bureaucratic process. Private investment also ensures a greater level of viability where the Agency can benefit from having private lender experience and risk sharing in the deal. Examples include, commercial lenders participating under a loan guarantee program and equity investors utilizing the tax benefits of a tax credit.

Second, require that a project's commercial and capital structure do not differ greatly from a typical private sector transaction. Also ensure that the due diligence standard, and associated liability exposure, to be met by the lender or owner applicant is commensurate with private sector standards, e.g. a lead arranger in a commercial underwriting. The program goal is to replicate the approach on future projects but without financial support mechanisms. By creating a structure that mirrors current private sector norms and expectations, the Agency will avoid inventing a synthetic structure that cannot be sustained in a typical private sector context.

Finally, enabling the private sector to select projects should not subsequently be curtailed or impeded by Agency replication of the lender or owner applicant's due diligence efforts. This may add unnecessary incremental time

and cost. For example, in a loan guarantee context, relying on private lender credit assessment enables efficiencies in the Agency process provided such efforts are not duplicated.

Project Viability Should be Viewed Holistically

The program structure should allow for proposed projects to be reviewed by the Agency as a portfolio, rather than individually. This enables the Agency to review and manage a range of risk/return profiles across a basket of different technologies, or a number of projects involving the same technology. It should be expected, that with any portfolio, not all investments will be successful.

Agencies should also provide clear guidance on which entities need to be involved in, and committed to, a project in order for it to qualify for application. Such entities include, but are not limited to: off-taker (utility/retailer), equity investor, project finance bank or syndicate, technology provider, and construction contractor. The Agency can then solicit guidance on the requirements that these entities generally need to see in a purely private sector financed project in order for them to participate. These requirements should in turn influence the criteria that a project should satisfy for the right to apply to the program, and ultimately, receive support under the program.

The program should also enable the private sector to select which projects are viable before a project can apply for program support. This will enable the Agency to rely on the private sector to filter opportunities that are viable as the private sector will accept exposure to technology and delivery risk consistent with its standard practice. The Agency will then largely not be responsible for picking winners and being exposed to the backlash associated with failed projects. Requiring program applicants to satisfy private sector project standards before qualifying for the right to apply for support will significantly relieve the Agency of its assessment, due diligence and exposure burden. An additional benefit is that the need for a long and perhaps unpredictable Agency review and appraisal process is meaningfully reduced.

The Agency should avoid establishing criteria for selection that are commercially unrealistic for the respective market, such as domestic content requirements. An example of this would be the requirement to establish a manufacturing footprint in a high-cost labour manufacturing environment, thus making the technology uncompetitive from a global market perspective. A market's program should focus on supporting what is sustainable long-term in its natural commercial environment.

As mentioned earlier, the program should have clear and objective criteria for a) participating in a project, b) applying for support, and c) accessing and utilizing that support. Specifically, this can be done by establishing:

Clear guidance on strict commercial and financial viability that all participants in the project delivery value chain (e.g. off-taker, developer, technology supplier, EPC, O&M) must satisfy in order to PARTICIPATE in a project.	Clear guidance on strict commercial and financial viability thresholds that a project must satisfy in order to qualify for the right to APPLY for program support.	Clear, objective criteria upon which projects are selected AFTER commercial viability criteria for application has been met.
For example: • All project participants must satisfy corporate financial thresholds (i.e. income statement and balance sheet metrics); • Project participants or the project itself must achieve an investment-grade rating; • Use of collateral; or • Guarantee from an investment-grade entity.	For example: • A contracted power purchase agreement from an entity capable of entering into such agreement; not just an expression of interest; • Committed financing from an entity (or syndicate) capable of facilitating such commitment, conditioned upon receipt of the financial support mechanism; not just	For example: • Requested funding support on a $/MWh and/or $/MW comparison basis; • Total emissions reduced; or • Jobs created.

	an expression of interest; • Satisfaction of certain pre-development and permitting criteria; and • Proposed technology must have already demonstrated technical, operational, commercial and financial viability at scale.	

Finally, once the application criteria are satisfied, the review process should be transparent and focus on assessing potential fatal flaws in the proposal at the outset of the review, e.g. credit rating, return-on-equity targets, technology already proven at scale, etc. This will allow for a meaningful feedback loop between the Agency and the entities providing information for further refinement of selection criteria. Independent evaluators can be useful in making the process transparent and can lend credibility to assertions that project viability is taken into account in the selection process.

Have an End Game

The Agency should establish at the outset what happens to the program when the desired policy goals are reached, that is, will the program be extended, reduced or eliminated? When determining this, it should be taken into account that the program should be focused on bridging a medium-term commercial viability gap; as opposed to supporting one-off projects that do not have a clear pathway to delivering projects without incentives. Ideally, proponents should be able to demonstrate a bridge to future projects that do not require support. For example, Project A benefits from lower cost of Government-guaranteed debt, which is not required on subsequent Project B as the technology cost has been reduced to off-set the benefit/incentive supplied to Project A or, as Project A achieves viability, the cost of capital for future projects decreases as a function of increased technology adoption and reduced risk.

To facilitate this, the program should provide a clear step-function reduction in its support over time, such as a grant amount reduction or loan guarantee percentage reduction, which is set at the outset and not changed during the course of the program. This provides a roadmap to the industry as it relates to the economic gap it needs to bridge on an incremental basis. Technology qualification for support should be capped at one project unless it can align future projects with the relevant support reduction roadmap. When a technology is unable to demonstrate its viability beyond the first project based on the available support at the time, subsequent projects utilizing that technology should not qualify under the program.

Finally, the Program should not be set-up as a one-time support event. This is not reflective of how any industry evolves and also creates a "rush to the exits" mentality that does not allow a technology to scale sensibly over time.

Structure the Program Effectively

It is important for Agencies to take into account overarching administrative structures pre- and post-policy support. From an administrative perspective, having one entity responsible for all decision-making will reduce political/bureaucratic confusion of responsibilities and inter-agency competition. To ensure that the program is unmarred by political maneuvering, the entity administering the program should have political independence and sit within a Government portfolio that will enable such independence. This can be realized by establishing a Chinese wall between the Agency and the Government department that forms the Agency, such that the Government cannot undermine Agency decisions, thereby creating market uncertainty. This divide can help to

reduce politically motivated decision-making that may lead to projects becoming lost in a time and cost limbo, eventually negating any benefits that the program provides.

Pre-Support	Post-Support
• Ensure that the Agency and program is sufficiently funded for administrative purposes in order to staff appropriately and make use of counsel and advisors as necessary; • Ensure that the Agency is staffed with sophisticated financial and commercial structuring skill-sets that have participated in private sector transactions; • Ensure accountability for transaction costs for both the Agency and private sector; • Establish controls on drawn out review and negotiation processes; • Establish a sensible due diligence burden and structure to ensure the private sector is not unduly burdened with the majority of work; and • Standardize as much of the transaction documentation as possible. Spend the time to develop the appropriate form documentation before processing applications.	• Should have structured post support monitoring and administration that are separate to the Agency origination team to avoid an inherent conflict in origination team members monitoring the deals they structured; and • Have "pull the plug" criteria for projects that are awarded funding but clearly cannot realize the initially conceived project under the premise that it is better to identify failure early to keep funds and support available for more viable projects.

Large Scale Solar – What are the Market Gaps in Australia, and How Do We Overcome Them?

The current reality is that solar PV is not Australia's lowest cost form of renewable generation. Figure 1 below provides a roadmap for the levelised cost of large-scale solar electricity in Australia and is intended to provide guidance for the industry to support and ultimately achieve the goal of deploying large-scale solar plants that are economically viable without incentives.

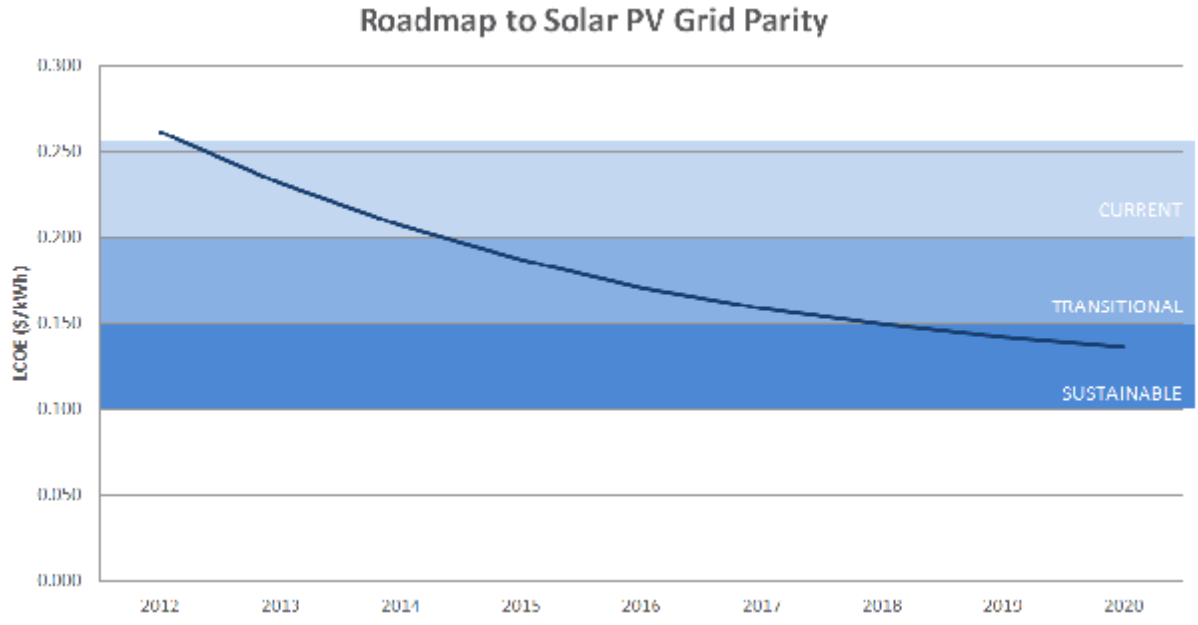

Figure 1: Roadmap to Solar PV Grid Parity

Financing Assumptions	Interest During Construction	Term Loan	Total Debt	Equity IRR (Post tax)
2012	550 bps over RFR	450 bps over RFR	60%	15%
2020	300 bps over RFR	200 bps over RFR	70%	12%

Assumptions:

1. 50 MW (AC) plant
2. One year construction
3. Development, engineering, procurement and construction costs as per First Solar projections
4. 26.5% capacity factor, 0.5% Availability Loss, 25yr PPA, No Escalation
5. Company tax rate: 30%
6. Annual inflation rate: 2.5% pa

The guidance in Figure 1 above is best explained by identifying and analysing the market gaps that handicap large-scale solar project viability today: 1) the cost of the underlying technology, 2) the capability of local industry to deliver projects, 3) the availability and cost of project financing solutions, 4) non-financial factors that impede project development, 5) insufficient market demand for renewable energy power purchase agreements ("PPAs"), and 6) a lack of deployment to date, which has curtailed technology adoption and a market awareness of the true cost and value proposition of large-scale solar.

Solar PV is Still Too Expensive

Strong global policy support and rapid market expansion have driven a dramatic reduction in the cost of solar PV in recent years, a function of both scale and innovation within the industry. For a truly sustainable market to develop, module manufacturers must continue to drive cost reduction through improvements in module technology and additional capacity expansion. Further, technology improvement and cost reduction must occur in the manufacturing of other key capital items such as inverters, transformers, trackers and system controls. These capital items are typically global in scope, and future cost reduction is anticipated to be driven by foreign government policy initiatives and global market expansion.

Large Scale Solar Projects Have Not Been Constructed in Australia

In addition to the global focus on reducing the cost of solar PV, significant cost reduction can be achieved through localizing project deployment. The large scale execution experience is unique in several respects. First, the construction of a large scale solar project involves large quantities of materials that require modular installation over a large land area, making it more like an outdoor manufacturing plant than a traditional power station. Second, given the region specific nuances of engineering and constructing solar plants, the development of a capable solar construction industry needs to be achieved locally. Third, improvements in construction capability and system optimization occur incrementally over time, through repetitive experience and analysis. As such, they cannot be fully realized after a single project. The ability to optimize a solar power plant from a cost perspective is largely driven by constructing it faster and more efficiently, which not only impacts the labor cost to construct; but also the financing cost.

Financing is Constrained by the Lack of Project Opportunities

Project experience (both global and domestic) has demonstrated that there is a significant appetite for both private sector debt and equity to be invested in large scale solar energy projects. The obstacle for large scale solar in Australia is not the lack of desire to finance a project; it is the lack of project opportunities, which in turn drive technology adoption and improved financing conditions. This issue is especially critical given that the cost of financing a plant has the greatest impact on its economic viability. Current financing barriers include: tenor (too short), coverage ratios (too high), gearing (too low), debt interest (too high) and equity (too expensive) – all of which are generally driven by a lack of experience in financing such projects and exposure to performance and operational data.

Non-Financial Factors Impacting Project Development

There are four key non-financial factors that have a material impact on project viability (and often project cost): 1) the timing and requirements of grid connection agreements, 2) the transparency, speed and management of the project permitting process, 3) the coordination and cooperation between local, state and federal government departments, and 4) the impact that policy uncertainty and political risk has on the appetite of the private sector to participate. While these factors are on the surface non-financial, they each ultimately have economic ramifications for projects. As a result, a focus on alleviating these constraints can yield financial benefits to projects without the need for additional capital commitment.

Power Purchase Agreements are Not Readily Available

Current conditions, including the market distortion of REC prices by the solar multiplier scheme, have resulted in the availability of PPAs being a key constraint to developing new renewable projects. This is only expected to constrain development in the short term, as a market framework is now in place that targets the development of Australia's renewable energy industry. Forecasted PPA prices are underpinned by rising fossil fuel prices, recently enacted carbon legislation, renewable energy legislation/targets and rising demand for power during peak daytime hours (contributing to a solar premium for correlation with high market demand/pricing). Additionally, the adverse effect of the carbon legislation on the highest emitting fossil generators will reduce supply into the market. It is critical to note that new PPAs are negotiated at the marginal cost of a generation unit, and not at the average cost of exiting generation, and that solar grid parity should be contemplated by reference to the cost of a new gas peaker plant or wind farm and not the operating cost of aging fossil generators that are not replicable in today's climate.

Bridging Market Gaps: The Policy Challenge

The most pragmatic and effective agenda for domestic policy is to focus on addressing the markets gaps that it has the potential to influence the most. As outlined above, renewable energy policy should have an end game and aim to leverage global developments, such as falling module prices and new technology evolution. It should also bridge the market gap for a defined period, while being careful not to replace or crowd out private sector participants whose involvement is necessary to deliver projects in the post-incentive market (i.e. when the gap has been completely bridged). Policy makers can best overcome the market gaps by focusing on three challenges:

SUPPORT near term projects to develop an industry and create the requisite local experience	PARTNER with the private sector to optimize commercial/financial structures and increase the viability of projects over time	CREATE a long term market framework that sustains the policy objective
This overcomes market gaps by:	This overcomes market gaps by:	This overcomes market gaps by:

• Developing an industry capability and driving down construction cost; • Building a local supply chain and improving means and methods incrementally; • Creating a better understanding of project size/structure/location as it relates to the Australian energy market (highly localized); • Increasing the familiarity and comfort with technologies amongst key stakeholders and communities; and • Driving down capital costs over time.	• Encouraging broader participation in renewable energy projects within the private sector; • Increasing competition and understanding in debt/equity markets, which will enhance the viability of the underlying projects through greater technology adoption; • Aligning the interests of the public and private sectors; and • Driving financing costs down over time.	• Providing the required visibility for the industry; • Creating a market environment that values emissions intensity, renewable energy and electricity generation; and • Enabling the opportunity for renewable energy technologies to compete unsubsidized within a long term market framework.

Clean Energy Finance Corporation: Where Does it Fit?

A policy mechanism can only be as ambitious as its mandate allows. The Clean Energy Finance Corporation ("CEFC") is not an open ended policy tool; it is intended to be commercially orientated and to make a positive return on investments. The Australian Government has stated that the CEFC will make investments into businesses and projects in the clean energy sector with the objective of facilitating the flow of funds into the commercialization and deployment of clean energy technologies. Under this mandate, the CEFC is in a strong position to bridge the commerciality gap by partnering with the private sector to optimize financial structures that will increase the viability of projects over time. The CEFC should be 1) a critical driver of near term project development and industry capability, and 2) an essential function in the creation of a long term market framework that can be sustained after the CEFC's mandate has expired.

Figure 2 below indicates the potential impact that the CEFC can have on the roadmap for large scale solar PV in Australia:

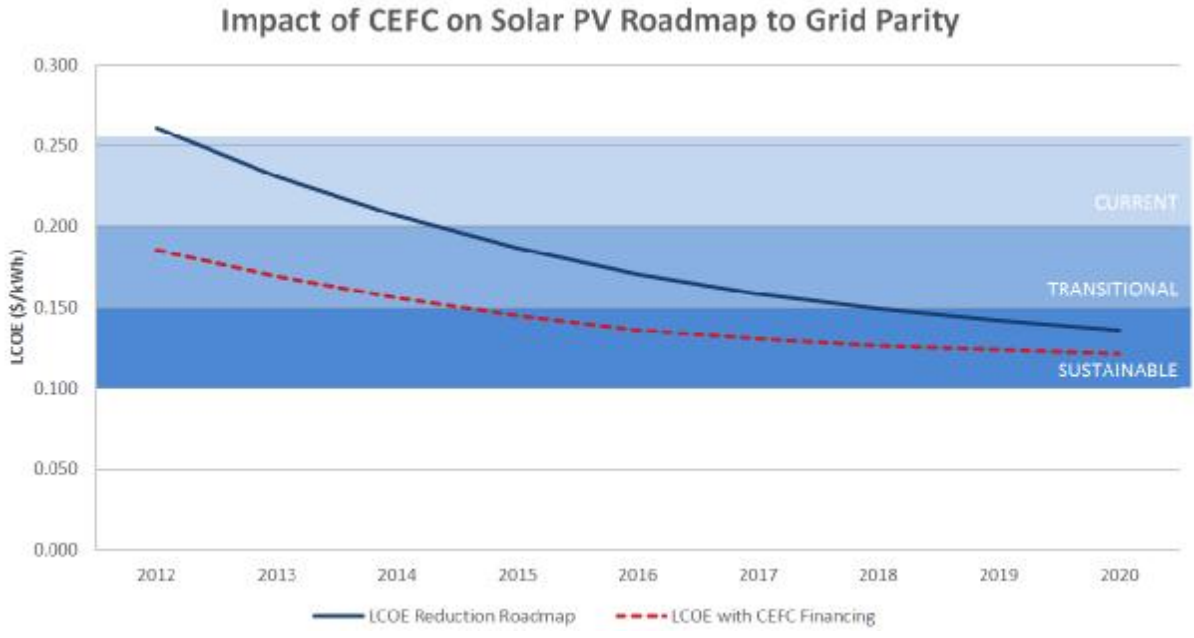

Figure 2: Impact of CEFC on Solar PV Roadmap to Grid Parity

Financing Assumptions	Interest During Construction	Term Loan	Total Debt	Equity IRR (Post Tax)
Market Financing 2012	550 bps over RFR	450 bps over RFR	60%	15%
CEFC Financing	250 bps over RFR	150 bps over RFR	80%	12%
Market Financing 2020	300 bps over RFR	200 bps over RFR	70%	12%

The impact shown in Figure 2 above is based on optimized financial structures proven in other markets, with project cost and energy yield figures remaining unchanged. It demonstrates that 1) CEFC involvement in financing projects can significantly reduce the price of solar electricity today, and 2) the role of the CEFC will become less critical over time as technology becomes more accepted domestically and construction and funding costs are reduced as a function of that experience and adoption.

Currently, solar power plants are not capable of achieving the economic viability required for large scale adoption. The CEFC can help bridge this gap through the use of one or more of the following mechanisms:

- Loan Guarantees: Reduce project borrowing costs and increase tenor by backstopping project risk
- Subordinated Debt/Tenor Arrangements: Reduce borrowing costs and increase total project debt
- Direct Equity Investments: Invest in project alongside private sector equity to attract cheaper capital

More detailed information on these policy mechanisms can be found in the Appendix to this document.

The CEFC and the Existing Policy Framework

The CEFC must fit seamlessly within the existing policy framework and complement existing programs to deliver on broader policy objectives and avoid market distortions. For large scale solar, the two key policy mechanisms that will be paired with the CEFC are the Australian Renewable Energy Agency ("ARENA") and the Renewable Energy Target of 20% by 2020 (the "RET"). It is critical to recognize none of these mechanisms can individually bridge the gap to grid parity for developing renewable technologies. It is equally critical to recognize that all three policy mechanisms have different roles to play, and therefore should not be viewed in isolation but as a harmonized suite that can be ratcheted back as a technology becomes more commercial and its need for support decreases. This approach has proven successful in international markets, including California where a state renewable energy target combined with federal tax credits and loan guarantees has driven significant adoption of large scale solar. Figure 3 below highlights the role that complementary policy mechanisms can play to create a sustainable solar market in Australia.

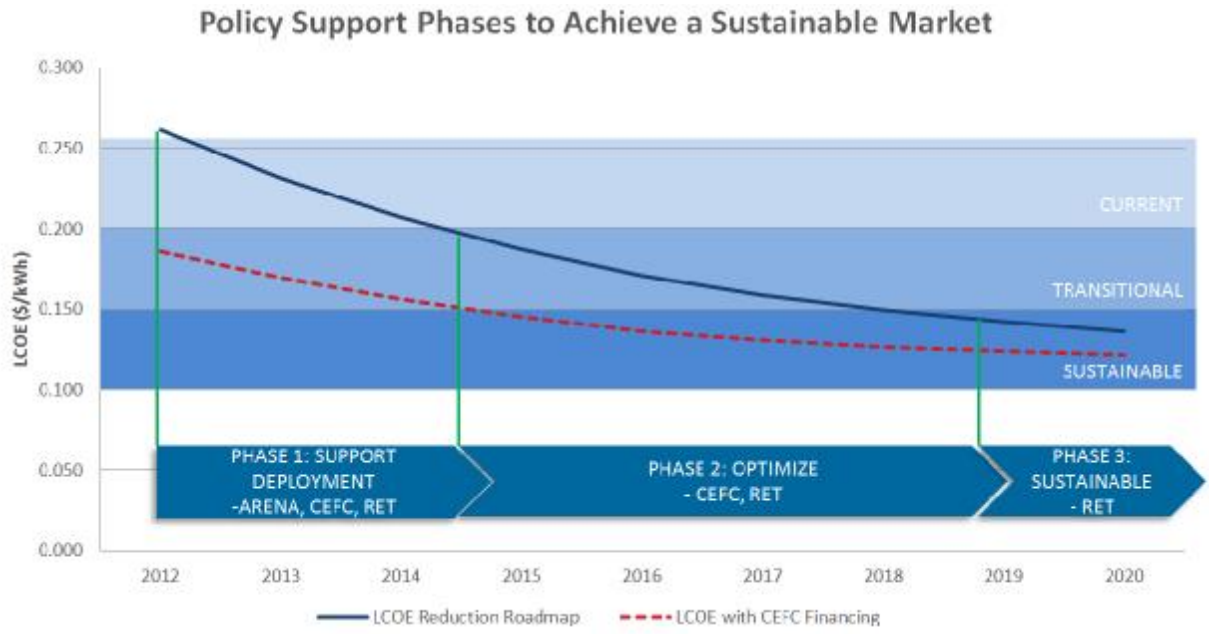

Figure 3: Policy Support Phases to Achieve a Sustainable Market

In Phase 1, the short term, there are several market gaps that need to be overcome in order for projects to be deployed. Grant funding (ARENA) is required to reduce the upfront capital cost of projects, although the amount of grant funding required will reduce as technology costs continue to improve and local construction and procurement capabilities evolve. Grant programs should be structured to encourage cost reduction and innovation, which has been successfully achieved in other markets (such as pre-announced feed-in-tariff reductions in Germany and legislated reductions in cash grants/tax credits in the United States).

In Phase 2, the medium term, grant funding is no longer required but the support of the CEFC is still necessary to optimize the project economics and enable projects to be deployed. Without the involvement of the CEFC and the RET in Phase 1, projects would still be heavily reliant on incentives and would not be capable of viability in Phase 2. The deployment of Phase 1 projects has reduced project cost and deepened the pool of capital flowing to projects, allowing the cost of solar electricity to further decrease and, eventually, for the role of the CEFC to begin to reduce (as more CEFC money is replaced by private capital). The CEFC then has the option to continue to invest in new projects alongside the private sector (potentially with more commercial returns), or withdraw and invest in other less developed technologies.

In Phase 3, the medium/long term, projects are now viable on a standalone basis and will be deployed as necessary without the need for any ARENA or CEFC funding. The underlying policy framework of the RET and the carbon legislation will have driven significant technology adoption and created a market that can support a sustainable large scale solar industry.

The California Experience: Complementary Policies Driving Renewable Energy Development

California has led the development of solar energy projects in the United States, where projects have taken advantage of federal incentive policies and state renewable energy targets to drive project development in California and the surrounding states. These mechanisms and policies include:

- Renewable Portfolio Standards ("RPS"): State-based renewable energy target of 33% by 2020 mandating the long term procurement of renewable energy for energy utilities in California. This has provided the appetite for long term power purchase agreements and has allowed market prices to fall into the same range as wind and fossil fuel agreements. The RPS has been critical in driving the demand for these projects.
- Investment Tax Credits/Cash Grants: Federally-sponsored program that allows a project to recover 30% of eligible project costs by way of a tax credit or grant. This has encouraged private sector involvement, as state companies cannot utilize the tax benefits. The 30% tax credit was legislated until 2016, after which it will reduce to 10%, which is the same benefit currently granted to non-renewable generation projects.
- Loan Guarantee Program: Federally-sponsored program administered by the Department of Energy ("DOE"), featuring direct loans from the Department of Treasury (100% DOE guarantee) and loans from commercial lenders (80% DOE Guarantee).

All three of these programs have achieved some measure of success, by driving down the cost of solar energy and underpinning project deployment and industry growth. The policies have very separate goals – upfront incentive (Investment Tax Credits/Cash Grants, Phase 1), enhanced project economics (Loan Guarantees, Phase 2) and a long term market framework (Renewable Portfolio Standards, Phase 3). Critically, all three policies have integrated successfully to yield results. The result has been an industry that has developed, strengthened and established a foundation for an unsubsidized future.

Conclusion

When developing a financial support mechanism, there are many intricacies to consider and vet. Indeed, the process of defining and implementing the mechanism can easily become sidetracked by minute details and various parties' narrow interests. To avoid potential pitfalls and create meaningful support for the renewable industry, the first step is to consider and define the overarching goals of the program while keeping in mind the optimal end state should be to bring emerging renewable technologies to the point where they can effectively compete with traditional energy resources without additional financial incentives.

Once these overarching themes are acknowledged and addressed in the high-level framework, the details can be filled in. As discussed earlier, it is important to define not just the goals of the program, but the structure and participants at the outset. For success, the rules of the program must be transparent and reliable to give assurance to the market, investors, and the general public. The private sector should be fully leveraged by using their experience to inform decision making and relying on their expertise as the primary validation mechanism for viable projects. Maximizing private sector participation is not only critical to the success of the program, but also to the sustainability of an industry after the program has been exhausted. An additional element that will contribute to the success of the program is to view project viability holistically. This means that decisions around viability should be made by looking at projects on a portfolio basis and to consider the entire process from eligibility to participate in a particular mechanism, to application, to after eligibility is determined and support is awarded. Agencies should also consider the overarching structure to set themselves and the program up for success. This includes

determining authority over the program and enabling the authority with appropriate staffing, funding, and independence. Lastly, the end game, or exit strategy should be set out upfront so that market participants are empowered with full knowledge of what to expect. This is critical to avoid boom/bust cycles that are detrimental to the industry, investors, governmental agencies, and end consumers.

While these steps are not the proverbial "magic bullet" to create an impenetrable financial support mechanism, they are the minimal elements that must be considered. If implemented wisely, they will certainly help in creating a stable market that will lead to renewable energy equality and autonomy in the future.

If structured correctly, the CEFC will contribute meaningfully to the development of large scale solar projects and the growth of capability within the domestic industry. The CEFC should consult extensively with industry to ensure that the policy mechanisms selected encourage private sector participation, are the most effective and replicable ways to resolve project financing constraints, and increase the viability of projects and adoption of technology. Finally, the CEFC must complement ARENA and the RET as a part of the broader policy framework designed to support the growth of a long term solar industry in Australia that can be sustained after the CEFC's mandate has been achieved.

Appendix – Incentive Mechanism Overview

Policy Mechanism	Description	Advantages	Disadvantages
Accelerated Depreciation	• Permits accelerated depreciation treatment for various classes of renewable generation assets – essentially shortens the useful life of a piece of capital as it's recorded for tax purposes, facilitating a lower tax liability	• Easily quantifiable	• Potentially complicated to integrate into existing tax code where not already available • Creates an uneven playing field – not everyone can monetize efficiently
Agency/Government Equity Investment	• Agency takes an equity position in a project with goal of earning a return on its equity	• Aligns Agency interests and potential returns with project equity investors • Allows Agency to benefit from successful investments	• Project economics likely will not accommodate a "market return" for Agency/Government equity • Crowds out private sector capital, curtailing long-term technology adoption by private sector given inability to engage in the due diligence on an active project and be exposed to its risk profile • Less likely to be popular in privatized electricity markets
Cash Grant	• Up-front capital contribution to the project reduces total cost • Typically milestone based payments to manage delivery risk	• Simple to absorb into a project's capital structure • Eliminates regulatory risk over the life of the project as all funding received by project completion • No ongoing Agency/Government involvement	• Fastest way to deplete available program funding – consumes capital at 100 cents on the dollar as opposed to other mechanisms which are more efficient at facilitating access to and coupling use of private capital • Incentivizes completing construction over operation/long-term performance – difficult to tie to performance of the project life (e.g. if funding is allocated on a MWh delivered basis) • Does not facilitate as wide a spectrum of industry engagement, which curtails the longer term goal of driving broad industry adoption
Credit Support Instrument	• Agency would supply letters of credit to support critical project assets (e.g. PPA) or issue guaranties in lieu of actually posting letters of credit, which could prove less burdensome administratively	• Project sponsors would not have to obtain asset security outside the program	• Complicated to administer and price • Agency takes on fundamental project development risk
Direct Loan	• Direct loan from the Agency to a project, typically at a lower rate than market debt • Typically accompanied by a private sector loan so that Agency debt sits side-by-side traditional project finance debt	• Reduces the overall cost of capital for a project • Agency benefits from private lender experience in the project • Aligns Agency with project equity	• Use of public funding (i.e. taxpayer funded Government debt) generally accompanied by greater political scrutiny • Ongoing involvement of Agency in project • Potentially crowds out private sector participation (e.g. typical project finance participants) • Less effective in markets where funding is inexpensive • Often associated with high transactional costs, given complex execution process and

			administrative burden tied to loan maintenance
Feed-in-Tariff/Supplementary Energy Payment/Contract for Difference	• Establishes a set off-take price for a specified period that all qualifying projects receive, or provides a supplementary payment that bridges the gap between the market power price and the cost of delivering the project's power • Can be set (and adjusted) by reference to a benchmark price (e.g. California's Market Price Referent) that base-lines against a fossil generation price and layers on renewable value externalities (e.g. renewable energy credits/certificates ("RECs"), certified emission reductions ("CERs"))	• Simple and easy to quantify benefit • Socializes support over a meaningful percentage of the project life • Strong track record as an industry development tool – likely to attract the most support and interest from the renewable energy industry • Enables the Agency to adapt levels of support as a function of movements in market mechanisms (e.g. if REC price increases, contract for difference decreases) • Very transparent – all participants understand what is being paid for the renewable energy	• Difficult to set appropriately, including any future guidance on reduction – however, this can be counter-balanced through the use of reverse auction mechanisms, which also enables a viability overlay • Removes competitive pressure and potentially creates a floor for pricing when the goal is to incentivize the market to drive pricing down • Requires some medium- to long-term Agency/Government involvement • Unless clearly legislated, subject to significant regulatory risk as annual revenue stream is dependent on initial policy and rate being held in place • Not well suited to deregulated/competitive retail markets
Foreign Exchange ("FX") Rate Hedge Instrument	• Agency provides FX rate hedges for projects supplied by international manufacturers	• Enables project price certainty at a lower hedging cost, although price certainty is limited to project components with foreign currency exposure	• Agency exposure to FX rate fluctuation
Interest Rate Hedge Instrument	• Agency provides interest rate hedges in order for project sponsor to lock in interest rate	• Enables sponsors involved in projects with long draw down periods, that are subject to interest rate risk, to lock in a rate	• Agency exposure to interest rate fluctuation • Complicated to administer and price • Minimal economic benefit given relatively efficient hedge market
Investment Tax Credit	• Reduces the tax liability of qualified tax-paying owners based on a percentage of the capital investment in a renewable energy project. Tax credit is generated at the time the project is in service. The benefit accrues to the owner at project completion, although may be utilized by the owner to reduce tax liability over a multi-year period	• Provides a fixed benefit that is easily quantifiable • Can be administered by relevant agencies and developers quite efficiently. For example, the U.S. Department of Treasury's 1603 Cash Grant program has awarded 3,000 grants as of October 2011	• Creates an un-even playing field – not everyone has tax capacity • Dependent on respective market's tax structure, which is not always conducive to monetizing a tax credit or incorporating a structure to facilitate • Rarely fully efficient – benefit leakage to parties not targeted by incentive
Loan Guarantee	• Back-stops private sector debt, de-risking the loan and reducing the market cost of debt. Agency/Government guarantees lender's source of capital enabling the lender to access cheaper financing while still taking on the project risk	• Facilitates a wide spectrum of industry engagement, which enhances the longer term goal of driving broad industry adoption • Enables and encourages private sector investment • Lowers the cost of funding for a project, increasing competitiveness of the economics • Efficient use of Agency capital	• Extensive Agency involvement with potential for protracted negotiation and inflated transaction cost that deters private sector participation and off-sets economic benefit of incentive • Susceptible to political considerations and influence • Some ongoing involvement of Agency in project
Production Tax Credit	• Reduces the tax liability of qualified tax-paying owners of a project based on the electrical output (measured in kWh) of	• Straightforward revenue support mechanism • Easy to quantify • Tied to performance of plant	• Creates an un-even playing field – not everyone has tax capacity • Dependent on respective market's tax structure, which is not always

	grid connected renewable facilities		conducive to monetizing a tax credit or incorporating a structure to facilitate • Complex to institute and administer • Can create market distortions (e.g. facilities can still be compensated for generating, even when price signals are negative)
Subordinated Loan/Tenor	• Loan: Agency provides direct mezzanine loans to bridge gap between debt and equity • Tenor: Agency lends pari passu with private lenders but amortizes out after private lender loan matures	• Lowers total project cost of capital • Incentivizes equity investments in projects that lack significant leverage • Provides additional capital buffer for senior lenders that are risk adverse	• Riskier position in capital structure for Agency to hold • Use of public funding (i.e. taxpayer funded Government debt) generally accompanied by greater political scrutiny • Ongoing involvement of Agency/Government in project • Adds unnecessary structuring complexity