Submission to the Renewable Energy Target (RET) Review Issues Paper

1. Background

First Solar is the world's largest and lowest cost manufacturer of solar photovoltaic (PV) modules. First Solar supplies proven thin film PV module products that have been deployed in over 6,000 MW of projects worldwide including many of the world's largest solar PV projects. First Solar is a vertically integrated organisation, with the capabilities to deliver every component of the solar development value chain with a focus on optimising cost, reliability and bankability. First Solar is at the forefront of utility-scale solar project construction in Australia, recently delivering on the 10 MW (AC) Greenough River Solar Project near Geraldton, Western Australia. The project is ten times larger than any other operating solar power plant in the country and highlights First Solar's capability to leverage its global project experience to deliver solar PV projects within Australia. First Solar currently has a global contracted pipeline of over 3,000 MW and is predominantly focused on the delivery of utility scale solar PV systems.

First Solar's Australian operations are headquartered in Sydney, with activities focused on market development, project development and project delivery. In 2012 First Solar was selected with AGL Energy to deliver 159 MW (AC) in utility scale solar PV projects in Western New South Wales under the Federal Government's Solar Flagships Program. 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.

2. Summary

First Solar strongly supports the existing 41,000 GWh Large-scale Renewable Energy Target (LRET) 2020 as well as the interim annual targets. These targets are appropriate, clear and effective ways of promoting the objectives of the Renewable Energy (Electricity) Act 2000 (the Act). First Solar is firmly of the opinion that investor certainty and stable policy commitment are the main anchors of a successful LRET, and requests that the Authority attributes the appropriate weighting to these recommendations in its review.

Reducing the existing LRET target of 41,000 GWh by 2020, as promoted by some stakeholders, will threaten the investment in developing renewable energy technologies by limiting the demand for the energy they produce. Such a situation will lead to several undesirable consequences, including:

I. **A less economically efficient renewable energy industry** - as money spent developing next generation renewable energy technologies will be foiled by the absence of a

market bridge to bring technologies to commercialisation and maturity. This will limit the likelihood that non-wind renewable technologies are able to penetrate the conventional generation mix and improve the cost, profile and quality of supply;

II. **An adverse impact on the environmental landscape**. A reduced LRET target will necessitate an increased amount of emissions from fossil fuels and constrain the development of increasingly environmentally friendly renewable energy generation. For example, utility scale solar PV projects are able to generate electricity with no moving parts, no water consumption and no emissions but will be unable to compete with conventional generators if demand for renewable energy is reduced; and

III. **An inequitable outcome for companies that have invested in the Australian renewable energy market based on the existing target of 41,000 GWh**. For example, First Solar established a presence in Australia in mid-2009, and has now invested significant capital in a localised engineering, procurement and construction team as well as an Australian supply chain capability. The decision to invest in the Australian market was directly linked to the nature and longevity of the 45,000 GWh target that was introduced in 2009.

The LRET underpins the long-term business case for utility scale PV in Australia. The target, combined with potential complementary support from the Australian Renewable Energy Agency (ARENA) and the Clean Energy Finance Corporation (CEFC), will drive the development of a sustainable, productive utility-scale solar industry in Australia. Central to this is the fixed target of 41,000 GWh, and not a percentage based target or an ongoing adjustment mechanism (consistent with the reasons outlined by the Tambling Review in 2003). Any effort made to adjust the target based on change in energy forecasts is counter to the purposes of having a fixed GWh target and will result in the unfavourable economic, environmental and inequitable outcomes outlined above.

The CEFC is a complementary policy mechanism that is based around the assumption of an existing LRET. If structured correctly, the CEFC will be able to complement the existing LRET target without the need for any change. This will result in:

I. A more cost effective renewable energy industry, and a reduced impact of the LRET on electricity ratepayers;

II. A more diverse renewable energy mix, with the CEFC supporting the commercialisation, demonstration and deployment of additional renewable energy technologies that can contribute to the LRET (such as utility scale solar PV, geothermal, wave);

III. A more sustainable renewable energy generation mix, with the diverse generating portfolio reducing LRET impacts on network infrastructure, local communities and technologies; and

IV. A more equitable LRET mix, with the CEFC supporting technology and geographic diversity to mitigate the effect of the first mover advantage for wind.

3. LRET Complementing Existing Support Mechanisms and Market Forces

ARENA and the CEFC must fit seamlessly within the prevailing policy framework and complement existing programs to deliver on broader policy objectives and avoid market distortions. For large scale solar, the key policy mechanisms that will be paired with the LRET are the programs and functions administered by ARENA and the CEFC. It is critical to recognise none of these mechanisms can individually bridge the gap to grid parity for developing renewable technologies. It is equally critical to recognise that all three policy mechanisms have different roles to play, and therefore should not be viewed in isolation but as a harmonised suite that can be wound 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.

In 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). This goal cannot be met by a single project or single funding round; it will require commitment to multiple projects over a number of years, providing a platform for the local capability to be built gradually through repeated project deployment.

In the medium term, the need for grant funding will decrease and eventually disappear, leaving the technology with the ongoing support of the CEFC to optimise the project economics and encourage deployment. The involvement of the RET and potentially the CEFC in ARENA-sponsored projects provides an avenue to reduce project cost and deepen the pool of capital flowing to projects, allowing the cost of solar electricity to further decrease. This will also entrench a policy framework that is prepared for maturity, and reduces the risk of a “valley of death” scenario when a technology is no longer eligible for ARENA funding yet is not viable under the LRET/CEFC framework alone.

In the medium/long term, projects will be 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 LRET and the carbon legislation will have driven significant technology adoption and created a market that can support a sustainable large scale solar industry.

4. 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 both within California and in 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 utilise 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), enhanced project economics (Loan Guarantees) and a long term market framework (Renewable Portfolio Standards). 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 unsubsidised future.

5. Conclusion

It is a generally accepted view, and one that has been exemplified in multiple jurisdictions, that unless a renewable energy policy is fundamentally flawed, it is highly preferable to maintain it in its current form than to amend it. This is especially the case given the long lead-times associated with originating, developing and constructing renewable generation. There are many examples where the dramatic alteration or winding back of a regulatory mechanism has

resulted in the implosion of a renewable industry, often ensuring that it will take years for it to recover. Regardless of the respective arguments in favour of reducing or increasing the RET, the simple fact remains that leaving it in its current form will give it the greatest chance of a long-term successful outcome. The alternative approach will only serve to drive local and international investment in Australia's renewable industry away, potentially for good.