

# Quarterly Update

September 2016

## Market Update

### United States (US) renewable and solar market update

The US solar industry continued to grow strongly, with 2,051 Megawatts (**MW**) of solar PV installed in Q2, a rise of 43% year-on-year. The solar industry reached 31.6 Gigawatts (**GW**) of total installed capacity by the end of H1 2016, enough to power approximately 6.2 million homes across the US.

Since 2006, the US solar market has grown an average of 65% annually and the outlook for the industry remains strong. According to Greentech Media Research (**GTM**), the US has over 10 GW of utility-scale photovoltaic (**PV**) projects under construction. Supported by the extension of the Investment Tax Credit (**ITC**) scheme, 13.9 GW of new PV installations are forecasted to come on-line during 2016, an 85% increase over 2015 installations. Utility-scale PV is forecast to account for over 70% of new capacity additions nationwide. During Q2, North Carolina and California continued to dominate the growth of the solar PV market, accounting for 54% of installations.

The state of California ranked first amongst US states in quarterly solar installations with 969 MW of solar capacity added in Q2 2016. California now has 15 GW of solar capacity; enough to power around 3.8 million homes. Demand for solar installations in California continues to be underpinned by the state's excellent solar resource,

## Highlights

- Construction continues on the Fund's first asset
- Post quarter end, the Fund secured its second asset

improving construction economics and supportive government policy. The state's Renewable Portfolio Standards (**RPS**) legislation mandates 33% of California's electricity consumption to be procured from renewable energy sources by 2020. California has made significant progress towards this goal, with around 26% of energy consumption currently sourced from renewables, but requires significant further investment to meet the 2020 target.

The North Carolina market ranked second amongst US states in solar additions in Q2 2016 with 144 MW of solar capacity installed during the period, bringing the state's installed total to 2.4 GW. This growth has been driven by both federal and state incentives, and the positive outlook for the North Carolina economy and long term power prices. Over the next five years, North Carolina is forecast to install over 3.6 GW of solar generation capacity. This growth will require significant funding and is expected to present numerous opportunities for investors.



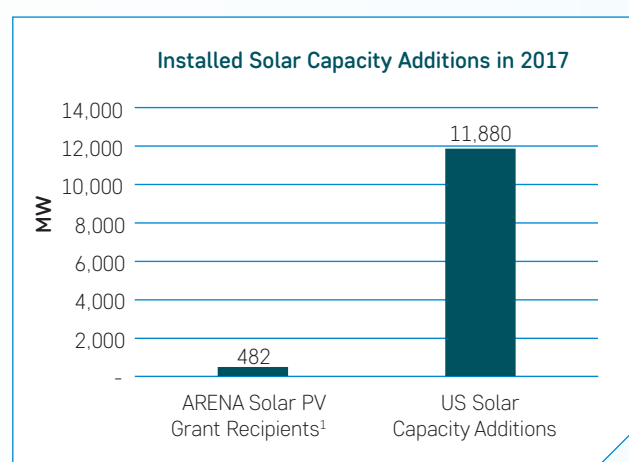
In August 2015, the Obama administration announced the Clean Power Plan (**CPP**) which intends to reduce carbon pollution from power plants, the nation's largest source, while maintaining energy reliability and affordability. The mandated transition from fossil fuels to renewable sources of energy generation would provide significant stimulus for the US solar industry whilst also delivering benefits to the broader economy. It is estimated that by 2020 the CPP, once fully implemented, would reduce carbon pollution from the power sector to 32% below 2005 levels, generate savings of US\$20 billion in climate benefits, and US\$14 to US\$34 billion in health benefits. Enactment of the enabling legislation has been delayed whilst the US Supreme Court reviews the legislation. The Democratic presidential candidate, Hillary Clinton, has stated her support for the CPP and has also announced plans to install half a billion solar panels by the end of their first term. These would more than double current industry and incumbent government growth plans, with anticipated investments of US\$200 billion in excess of current projections across all industry supply chains. NES is positioned well to benefit from this strong outlook and remains positive on investment opportunities in the US, irrespective of the election outcome.

#### Australian renewable and solar market update.

The biggest development for the Australian solar market in 2016 was the Australian Renewable Energy Agency's (**ARENA**) completion of its recent \$100m round of the "Large-scale Solar PV – competitive round", part of the Advancing Renewables Program. This program, in which utility scale solar farms bid for subsidy funding, has been a catalyst for the renewed development of utility scale solar projects in Australia over recent years.

In its previous update, it was noted that 20 applicants submitted detailed proposals for a share of the \$100 million. On 8 September, ARENA announced that 12 of these applicants were to be awarded solar grants totalling \$92m. Last year, when ARENA had initially earmarked the funding for the current round, it aimed to support solar projects with a combined capacity of around 200 MW. After the competitive tender process, and given continuing cost reductions across the solar supply chain, the \$92 million of allocated funding will support projects with an estimated combined capacity of 482 MW and total cost of \$1.06 billion.

These projects will contribute to the expansion of Australia's large-scale solar capacity from 240 MW to 720 MW, covering 10% of the capacity build required to meet the 2020 Renewable Energy Target (**RET**), and provide enough electricity to power approximately 150,000 average-sized Australian homes. The awarded projects are located in Queensland, New South Wales and Western Australia, and ARENA expects the solar plants to be operational by the end of 2017. While a significant expansion, the added solar capacity of 482 MW<sup>1</sup> equates to only 4% of the 12 GW forecast 2017 build in the US market.



Source: ARENA, GTM Research

New Power Purchase Agreements (**PPA**) continue to be signed at a slow, but encouraging, rate. This is an important trend for the growth of the Australian solar industry, as it gives solar developers and investors certainty about future project revenue streams and helps to underwrite project equity and debt investment. The importance of PPAs to the Australian solar industry has been recognised by a number of State governments, who have implemented programs that provide this revenue certainty to projects.

Following the ARENA announcement, the QLD Government increased its "Solar120" PPA program from 120MW to 150MW. This followed the increase from 60 to 120MW in August 2016. Following its announcement in June of a similar scheme to purchase output from approximately 40MW of ARENA-shortlisted projects, the NSW Government is expected to shortly announce which of the five NSW projects awarded ARENA funding have secured offtake contracts.

<sup>1</sup> ARENA projects must be operational by January 2018 as a condition of grant receipt

## Australian new technology developments - Storage

An area of much focus for technology companies, utilities, project developers and investors is energy storage. One of the inherent challenges of solar PV is that it is an intermittent generation technology. Other generation technologies such as thermal (gas and coal), hydro and geothermal can be "dispatched" (turned on and off) at any time that fuel is available. In contrast, without accompanying energy storage, solar can only be dispatched during solar (daylight) hours. However, solar energy produced can be used to charge a battery, heat a liquid or other medium, or pump a liquid to a reservoir. This allows the energy to be stored for later release during non-solar hours or when demand increases beyond the immediate generating capacity of the solar PV plant. Until recently, the cost and/or complexity of storage was a limiting factor but continued innovation and the learning curve effect, particularly in battery storage, mean that storage on a small and large-scale is closer to being competitive with other dispatchable generation.

South Australia is currently a focal point for storage technology in Australia, with recently announced plans for the world's largest single large-scale solar and battery storage facility, as well as a concentrating solar power (CSP) and storage facility. The solar and battery developer also plans to build another plant of a similar size in Northern Queensland, and the CSP plus storage developer is already successfully operating a similar project in Nevada. These plans demonstrate an increasing confidence by developers and investors in the potential competitiveness of storage projects within Australia over the medium term. Separate to its large scale solar PV process, ARENA has also been active in funding a number of small and test programs for solar plus storage projects. However, the cost of energy produced by CSP projects is still, on average, more than double the cost of Solar PV projects.<sup>2</sup> The large size of CSP projects required to reach economies of scale can also be prohibitive to the adoption of the technology in many applications.

## Global renewable and solar market update

According to GTM Research, global solar installed capacity is expected to rise to 73 GW in 2016 (from 55 GW in 2015), fuelled by significant demand from the US (as outlined above), and China.

China is projected to install approximately 26.4 GW of new solar capacity this year, positioning it on the top of the

global list for new capacity additions. Along with China, other countries exhibiting strong growth prospects include the US, Japan, India and the UK - these countries, are forecast to collectively contribute 80% of total global solar capacity additions during 2017.

Despite strong growth figures for solar observed in the first half of 2016, GTM expects a slight slowdown in overall installations globally for the second half of 2016, primarily in geographies where NES is not currently active, including the Chinese and Japanese markets.

A slowdown in the Chinese market is forecast largely as a result of an 11% reduction in the government's solar feed-in-tariff (**FiT**). Separately, the UK and Japan are likely to experience a similar slowdown in installations following the conclusion of the UK Renewables Obligation Certificates (**ROC**) Scheme for utility solar, and an 11% FiT reduction in the Japanese market, both in April 2016. NES continues to global markets but remains focused on investing in markets such as the US where annual growth rates over 2016 are expected to be strongly positive.

Central and South America continue to be focal points for solar development. In August, the outcome of a Chilean energy auction was announced with developer Solarpack setting a record low bid for solar PV at US\$29.10/MWh; in an auction where the average price across all awarded bids was US\$47.59/MWh, down 40% from the previous average of US\$79.34. Project development in Mexico continues, following the successful competitive auctions in April, and there are upcoming auctions elsewhere in South America including Argentina and Brazil.

The Solarpack record in Chile was short-lived however, with a new record low price of US\$24.20/MWh bid for a 350 MW Abu Dhabi solar farm in a September renewable energy tender. As solar rapidly becomes cost competitive with other thermal and renewable sources of energy, there will be an increasing number of opportunities in the growing global market.

The Indian solar industry is another market continuing to gain traction. Research by Mercom Capital Group shows India has already added a record 3.3 GW of solar capacity this calendar year. With a 21 GW pipeline of solar projects, a further 1.5 GW is expected to be commissioned in Q4 2016. India's installed solar capacity is expected to grow by 127% through 2016, enabling India to potentially overtake the UK as the world's fourth largest solar market.

<sup>2</sup> Lazard's Levelized Cost of Energy Analysis – Version 9.0



## Fund Update

### Portfolio update

Construction of the Fund's first acquisition, the North Carolina 43 MW Project (**NC-31**), has been ongoing during the quarter. The site continues to receive deliveries of key construction equipment to the laydown yard as pictured below. Significant progress in construction of the site foundations has been made over the past quarter.

At quarter end, the project had completed the inverter skid foundations and the majority of main structure foundations. The PV modules and project cabling deliveries were also tracking ahead of schedule with two thirds of modules already delivered to the site. As pictured below, installation of a number of these PV modules is currently underway.

Electrical trenching, tracker component assembly and substation build are also scheduled to commence over the next two weeks.

On 8 October a hurricane made landfall in the US and caused flooding and damage to various regions in the North Carolina and other states. Prior to the hurricane making landfall, a comprehensive disaster mitigation plan was enacted to protect the NC-31 site. Despite the extreme weather no material damage was reported. However, there remains the potential for slight delays to the project commencement as a result. A number of shipping ports shut down during the adverse weather which is likely to cause minor delays to the delivery of some materials to the NC-31 site. Gransolar has reported that a number of construction teams intend to increase working hours to offset this delay.

### NC-31: first panels mounted



### Transaction Update

Following the end of the quarter, the Fund was pleased to announce it had executed binding agreements to acquire a majority interest in its second asset. The asset is a 47.6 MW (DC) solar PV project in Maxton, North Carolina (**Project or NC-47**), developed by Vivo Power USA LLC (**Vivo**) and will be purchased on completion for a total consideration of US\$47.3 million (excluding transaction fees). Vivo will retain a minority interest and will be involved in the ongoing management of the asset. The Project's objective is to achieve an initial 5-year average annual yield of 6.4% based on the Fund's US\$47.3 million investment<sup>3</sup>.

The transaction is expected to be completed in the second quarter of 2017 once the Project reaches its commercial operations date.

The Project is an ideal second asset for the Fund, located West of NC-31 on land leased for 20 years with options to extend to 40 years. It uses similar high quality equipment, and also has a long-term energy off-take contract from Duke Energy Progress, Inc., which is part of the largest electric power holding company in the United States. Furthermore, the relative proximity of NC-47 and NC-31 is expected to facilitate resource sharing and deliver operational synergies.

For further details see the Fund announcement dated 26 October, 2016.

### NC-31: site laydown yard



<sup>3</sup> The yield received by investors will be lower once the agreed fees of the Manager and Responsible Entity are deducted.

### Transaction pipeline

Along with negotiating and executing the acquisition of its first two assets, the Fund is continuing to develop a pipeline of transaction opportunities, with a number of live negotiations underway. Over the past quarter the Fund has:

- Reviewed 300 MW of solar projects in Australia
- Conducted in-depth review of 660 MW globally (Australia, US, Singapore, Korea)
- Submitted bids or initial expressions of interest for 640 MW

The Fund is continuing to engage with highly regarded developers, contractors, manufacturers, utilities and other stakeholders to identify quality acquisition and partnership prospects. The Fund's first acquisition in August has helped further establish its presence in the US market.

The size of the US solar industry, along with its strong growth prospects, translates to a very positive Fund view on the opportunities to deploy capital and achieve attractive returns.

Australia's excellent natural solar resources, coupled with a domestic solar industry that is still in a state of relative infancy compared with other markets, supports the Fund's optimistic outlook for future domestic investment opportunities. With the completion of the latest ARENA funding round, the Fund expects opportunities in Australia to ramp up through 2017 – 2018.

The Fund also continues to assess further investment opportunities, with the Investment Manager remaining optimistic of the opportunity to continue acquiring attractive assets

### Important Notice

This Quarterly Update (**Update**) has been prepared by the Investment Manager (**New Energy Solar Manager Pty Limited**) of New Energy Solar. An investment in the Fund is subject to various risks, many of which are beyond the control of the Investment Manager and the Responsible Entity of the Fund. The past performance of the Fund is not a guarantee of the future performance of the Fund.

This Update contains statements, opinions, projections, forecasts and other material (**forward looking statements**), based on various assumptions. Those assumptions may or may not prove to be correct. None of the Investment Manager and the Fund, their officers, employees, agents, analysts nor any other person named in this Update makes any representation as to the accuracy or likelihood of fulfilment of the forward looking statements or any of the assumptions upon which they are based.

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## About the Fund

New Energy Solar is a sustainable investment fund initially focused on investing in large-scale solar farms.

The Fund's objective is to help investors generate positive social impact alongside attractive financial returns through the combination of distributions from operating solar assets and growth through to new acquisitions and developments in the solar and renewables sectors.

The Fund will focus on acquiring and maintaining a diversified portfolio of solar and renewable energy assets across the globe, with an initial focus on solar assets with contracted cash flows in the US, Australia, and select Asian Markets.

The Fund is an unlisted stapled entity consisting of New Energy Solar Fund (**Trust**) and New Energy Solar Limited (**Company**) (together **New Energy Solar** or the **Fund**).

## Board of the Fund



**Alex MacLachlan**

**Chairman of the Responsible Entity and the Company**

- CEO Funds Management Dixon Advisory
- Previously Head of Energy, Australasia, for UBS AG
- Advised many of the world's leading energy companies, including BHP Billiton, Woodside, Oil Search, and Shell



**Tristan O'Connell**

**Director of the Responsible Entity**

- Chief Financial Officer, Dixon Advisory
- 20 years' experience in corporate, financial and management roles
- Previously financial controller of Tullett Prebon in Australia, one of the world's leading inter-dealer broker firms



**Tom Kline**

**Director of the Responsible Entity and the Company**

- Chief Executive Officer, New Energy Solar
- Previously a member of the Power, Utilities and Infrastructure team at UBS AG where he advised some of Australia's largest energy generators such as EnergyAustralia
- Advised Australian energy and utility companies on the proposed introduction of the Carbon Pollution Reduction Scheme



**Warwick Keneally**

**Director of the Company**

- Head of Finance, Funds Management Dixon Advisory
- Previously worked at a number of chartered accountancy firms including KPMG in Australia and London
- Expertise in complex insolvency and restructuring engagements across Europe, UK and Australia

## Key Advisors

**Alistair Craib**

**Industry Consultant**

- 15 years' of funds/asset management, principal investment, debt finance, corporate advisory, construction and operations experience
- Previously CEO of the \$800 million Collgar Wind Farm in Western Australia. Oversaw initial project assessment, asset acquisition and financing, construction and initial operations
- Previously worked at UBS Asset Management and Macquarie Infrastructure and Specialised Funds division

For additional information see: <http://www.newenergysolar.com.au/>