FINANCING LARGE SCALE SOLAR

Large Scale Solar Conference - Sydney
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Director, Large Scale Solar Lead
April 2017
CONTENTS

1. Introduction to CEFC
2. Investment trends
3. The future of large scale solar
4. Pathway to sustainable energy security
We invest in businesses and projects which develop or commercialise clean energy technologies, as well as businesses that supply the goods and services needed to develop and commercialise clean energy technologies.
NEW SOURCES OF CAPITAL

CEFC DIRECT
Our direct investments can include both debt products and equity investments, or a combination of both.

DEBT MARKETS
We have supported green bonds and securitised vehicles in the debt markets. We also work with co-financiers to support small-scale investment opportunities.

INVESTMENT FUNDS
We invest in major clean energy projects together with other investment funds in order to catalyse investment into the sector.

INNOVATION FUND
We invest in innovative technologies and businesses that will benefit from growth or early stage capital.
SOLAR IS THE BIGGEST TECHNOLOGY INVESTMENT IN OUR PORTFOLIO

At December 31 2016

$623M
IN SMALL AND LARGE SCALE SOLAR INVESTMENT COMMITMENTS

Ocean $1
Solar Thermal $1
Generation / Distribution $45
Refrigeration $48
Bioenergy $139
Cogen $143
Industrial Process Improvement $177
Other $188
Lighting $190
HVAC, Monitoring Systems $197
Vehicles $204
Wind $439
Solar PV $623
LARGE SCALE SOLAR HAS COME A LONG WAY

CEFC was established in 2012

One year ago!

Installed capacity by 2012

Installed capacity by 2016

Projected installed capacity by ~2018

MW OF INSTALLED CAPACITY

18

354

1008
## CEFC’s RECENT LARGE SCALE SOLAR INVESTMENTS

<table>
<thead>
<tr>
<th>PROJECT</th>
<th>LOCATION</th>
<th>INVESTMENT</th>
<th>MWac</th>
</tr>
</thead>
<tbody>
<tr>
<td>PARKES, GRIFFITH, DUBBO</td>
<td>NSW (3)</td>
<td>$150m</td>
<td>110</td>
</tr>
<tr>
<td>WHITSUNDAY, HAMILTON, GANNAWARRA</td>
<td>QLD (2), VIC (1)</td>
<td>$77m</td>
<td>165</td>
</tr>
<tr>
<td>KIDSTON</td>
<td>QLD</td>
<td>$54m</td>
<td>50</td>
</tr>
<tr>
<td>ROSS RIVER</td>
<td>QLD</td>
<td>$20m equity</td>
<td>116</td>
</tr>
<tr>
<td>MOREE</td>
<td>NSW</td>
<td>$48m</td>
<td>56</td>
</tr>
<tr>
<td>BARCALDINE</td>
<td>QLD</td>
<td>$20m</td>
<td>20</td>
</tr>
<tr>
<td>DEGRUSSA</td>
<td>WA</td>
<td>$15m</td>
<td>10.6 (+battery)</td>
</tr>
</tbody>
</table>
TO ACCELERATE THE CONSTRUCTION OF THREE MAJOR SOLAR PROJECTS WITH A TOTAL VALUE OF $230 MILLION
ROSS RIVER

$225 MILLION ROSS RIVER SOLAR FARM IS EXPECTED TO GENERATE ENOUGH ENERGY TO POWER 65,000 HOMES

CEFC | TRANSFORMING CLEAN ENERGY INVESTMENT
2. INVESTMENT TRENDS
## WHAT DETERMINES ‘BANKABILITY’?

<table>
<thead>
<tr>
<th>RISK FACTOR</th>
<th>PROJECT A (EASIER TO FINANCE)</th>
<th>PROJECT B (MORE DIFFICULT TO FINANCE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EQUITY</td>
<td>Substantial equity from quality sponsor, with ability to deploy contingent equity in case of cost overruns</td>
<td>Non-investment grade equity sponsor e.g. high net worth where balance sheet/exposure appetite can only accommodate initial project cost assumptions</td>
</tr>
<tr>
<td>REVENUE: PRICE</td>
<td>Guaranteed long-term customer e.g. 10+yr contracted offtake from creditworthy counterparty</td>
<td>Intention to take merchant exposure for full project term</td>
</tr>
<tr>
<td>REVENUE: GENERATION</td>
<td>Conservative generation assumptions, consistent with observed capacity factor of equipment and best available weather data</td>
<td>Unsupported assumptions of high capacity factor, higher than observed solar resources, lack of close-to-site weather data</td>
</tr>
<tr>
<td>TECHNOLOGY</td>
<td>“Tier 1” technology providers with strong balance sheets, long term warranties (available to Project Co), limited risks identified in independent technical due diligence</td>
<td>Small/new technology providers, higher risk technology elements, short term warranties, due diligence concerns on technology risk.</td>
</tr>
<tr>
<td>CONSTRUCTION</td>
<td>Fixed price, fixed time EPC with LD regime with significant balance sheet</td>
<td>Non-fixed price or fixed time contract, project company minimising costs through multiple contracts, no clear single “guarantee” for construction and generation delivery</td>
</tr>
<tr>
<td>O&amp;M</td>
<td>Experienced operator with significant balance sheet</td>
<td>No experience</td>
</tr>
</tbody>
</table>
DEBT TRENDS

• Bespoke financing structures based on sponsors’ risk appetite eg. merchant exposure, refinancing risk
• High level of competition for fully contracted transactions
• Increased appetite for partially contracted transactions
• Still very limited bank debt appetite for full merchant transactions
• Currently some appetite for long term tenor from some banks (offshore and domestic) and export credit agencies
**EQUITY TRENDS**

- Strong influx of offshore renewable energy developers and equity investors into the Australian market, bringing offshore experience to the domestic RET task
- Slow emergence of Australian-based developers who do not have yet critical mass
- Appetite of Australian Super Funds towards ESG initiatives does not convert into material capital investments due to lack of critical mass and challenging risk profile (merchant risk, development and construction risk)
- Willingness from some developers and investors to assume some material quantum of merchant risk to capture currently high bundled energy prices
- Value For Money proposition when investing substantially prior to financial close and therefore assuming some level of project development risk
3. THE FUTURE OF LARGE SCALE SOLAR
~6GW of NEW GENERATION REQUIRED TO MEET THE 2020 RET

- 17,800GWh of eligible generation is still needed (using end of 2015 as baseline)

- Market pipeline of ~8,700GWh or 3.6GW (operating, under construction or proceeding to financial close since Jan 1 2016)

- Remaining pipeline of 2-3GW required

- Remaining investment challenge of ~$4-6bn

Source: CEFC
WHAT ROLE WILL LARGE-SCALE SOLAR PLAY?

SOLAR + STORAGE
Solar combined with storage (battery or hydro) can help turn solar into a ‘dispatchable renewable’

HYBRID PROJECTS
Solar combined with other generation technologies (such as wind) can help create a smoother generation profile

FCAS MARKET
Growing importance of participation in FCAS markets
3. TECHNOLOGY ROADMAP FOR ENERGY SECURITY
CEFC’S TECHNOLOGY ROADMAP FOR ENERGY SECURITY

Energy storage and system strength
Pumped hydro and batteries will improve energy security and balance variable renewable energy
Synchronous condensers and other technologies will help maintain grid inertia

Dispatchable renewables
Concentrated solar thermal, geothermal, hydrogen and biomass will provide dispatchable capacity to complement variable renewables and provide ancillary services

Transmission upgrades
Upgrading transmission links between NEM regions will increase energy security and help energy flow from where it is generated to where it is needed. Intraregional transmission could also unlock new energy resources

Behind the meter solutions
Smart grid technology to better enable price response demand management and virtual power plants will reduce price stress caused by peaks in electricity demand and unlock currently ‘hidden’ resources within the grid
FROM BASELOAD AND PEAKING TO A SMART GRID

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