Get SUNplugged

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Welcome to the Webinar on

Developing Bankable Solar Projects

Date: Wednesday, May 06, 2020
Time: 4 pm onwards

In conversation with

Mr. Chintan Shah
Director (Technical)

Mr. Kushagra Nandan
Co-founder & President

Mr. Harvinder Singh
Head - Project Finance

Moderated by

Mr. Prashant Mathur
Chief Marketing Officer

E-mail: cs@adani.com | www.adanisolar.com | /adanisolar
Webinar on Developing Bankable Projects
Session by Mr Kushagra Nandan,
Co-founder Sungrow Energy
A Leading Global Distributed Solar Company

- Office
- Projects Developed
- Projects Designed

Global Project Portfolio: 300+ MW
- Designed across the globe

Portfolio across South East Asia: 150+ MW
- Solar power projects delivered globally

One of India's leading distributed solar companies
- Cities covered: 60+

SunSource is an investee company of the State Bank of India (SBI) and U.K. Government
Realizing the dream of running the world on clean and smart technologies

We aim to make clean energy and technology a simple alternative for all organizations
## SunSource | Customized Business Models

<table>
<thead>
<tr>
<th>PPA/BOOT</th>
<th>LEASING</th>
<th>EPC – O&amp;M</th>
<th>EPC/BOT</th>
</tr>
</thead>
</table>
| • We own, install, and operate a rooftop solar system on the site host’s property  
• Customers pay for power (kWh) the solar systems produce | • We install, own & operate a solar project on the host’s property  
• The site host pays for the solar project through monthly installments  
• The site host further receives benefits in terms of energy savings or FiT income  
• Interest rates vary; lease term varies from 15-25 years  
• Performance guarantee and warranty provided for the lease term | • Engineering  
• Procurement  
• Supply  
• Construction & Implementation  
* After the operating and maintaining the solar power plant for the agreed time period, the solar power plant is then handed over to the client. | • Engineering  
• Procurement  
• Supply  
• Construction & Implementation  
• Testing & Commissioning  
• Operation & Maintenance  
* After the commissioning the solar power plant is then handed over to the client. |

SunSource is a leading Integrated Solar IPP with a proven expertise in EPC
SunSource | A Unique Opportunity

Integrated Profile
- End to End solutions - We structure and deploy capital to design, build and develop the solar power plants to Operate and Maintain the projects for the duration of the contract
- Flexible offerings across the value chain. High quality equipment

A Reliable Partner
- Experienced developer with 150+ projects across 24+ states in India and 6 countries globally for marquee customers
- Strong Leadership Team and an uncompromising long term approach
- Backed by Neev Fund – A PE fund backed by SBI and the UK Government’s DFID

Innovative Solutions
- Existing portfolio include Hybrid (Solar + Storage and Solar + Diesel), Floating Solar, Ground Mount Solar (fixed tilt, seasonal tilt, single-axis tracker) and Rooftop Solar (Industrial Sheds, RCC Roofs, Carports and Ballasted) projects
- Developed one of India’s first grid connected private solar projects and Hybrid solar projects in 2013

Guaranteed Savings
- Tariffs lower than grid tariff in most states
- Cheaper than any other existing alternative source of power

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## End-to-End Solar Development and Execution Services

<table>
<thead>
<tr>
<th>Phases</th>
<th>Project Development</th>
<th>Engineering - Procurement - Construction Management (EPC-M)</th>
<th>Asset Management</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Early Stage</td>
<td>Financial Closure</td>
<td>Operation &amp; Maintenance</td>
</tr>
<tr>
<td></td>
<td>Late Stage</td>
<td>Authorization &amp; Pre-Construction</td>
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</tr>
<tr>
<td><strong>Our Services</strong></td>
<td>Site audit &amp; feasibility</td>
<td><strong>Technical &amp; financial analysis</strong></td>
<td>• Maximize PR &amp; meeting PPA requirement</td>
</tr>
<tr>
<td></td>
<td>Preliminary Engineering</td>
<td>• Term sheets negotiation with financial institutions</td>
<td>• Billing and other administrative functions</td>
</tr>
<tr>
<td></td>
<td>Detailed Project Report (DPR) &amp; techno-commercial proposals</td>
<td>• Legal agreements and documents execution</td>
<td>• Continuous asset optimization to maximize asset performance</td>
</tr>
<tr>
<td></td>
<td>Power Purchase Agreement feasibility establishment</td>
<td>• Detailed Engineering</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Government agencies liaison</td>
<td>• Procurement &amp; scheduling of solar components &amp; contracts</td>
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<tr>
<td></td>
<td>&amp; Permits &amp; approvals</td>
<td>• Meet technical, financial &amp; reporting requirement</td>
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<td>Term sheet/LOI with the client</td>
<td>• Community outreach as needed</td>
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<td></td>
<td>Source project capital</td>
<td>• Meet Government requirement</td>
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**We support every phase of solar project development**

*Timelines depend mainly on size of projects and other project-specific factors.*
A Global Organization With Local Expertise

High Focus on Project Quality

- Presence across 24 states in India and 6 countries globally
- Covered over 350+ rooftops in 60+ cities
- Technology and design flexibility to support customized local solutions
- Strategic partnership with leading infrastructure players
- Won various leadership awards including the BW Businessworld 40 under 40 Award, the ‘Google Global Impact Challenge Award’, the EESA Excellent EPC in Energy Storage Award, the ‘DLA Entrepreneur of the Year Award’, and the ET Now Green Future Leadership Award, among others

Local Development Expertise

These capabilities clubbed with world class global tie ups have made SunSource a preferred partner for its C&I customers.
Full-Stack Asset Management Offerings by In-House Team

ON-SITE OPERATIONS & MAINTENANCE
- On-site and corporate teams to monitor and tackle any deviations
- Critical deviations escalated to CEO
- Regular check-ups and cleaning of solar power plants
- Spare parts and inventory management including timely inverter replacement
- Plant security
- Warranty claim activities and records

REMOTE MONITORING
- Production and performance analysis report
- Alarms, incidents and interventions report
- Network operating center (NOC) software for real-time monitoring of the asset, improving performance and system life
- Offered on a standalone basis as well

Managing performance of 100+ sites & optimizing power output through diligent monitoring & maintenance
SunSource | A Unique Opportunity

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• End to End solutions - We structure and deploy capital to design, build and develop the solar power plants to Operate and Maintain the projects for the duration of the contract
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• EXIM Bank empaneled, MNRE channel partner, SP1A rated by CARE
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<td>• Construction planning, project management</td>
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<td>• Meet technical, financial &amp; reporting requirement</td>
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We support every phase of solar project development

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### Efficient Financing for EPC/Developers

#### Term Financing options* for Behind The Meter (BTM) solar

- SBI - World Bank Line at an attractive interest rate of ~8.5%
- PNB – ADB line and REC-KFW line is also available at similar interest rate

#### What will help: Working capital support

- For PPA projects: Working capital line or corporate financing to support IPPs with short term financing needs, reducing time to execute projects
- For Capex projects: Financing lines with 3-5 years term for repayment for off-takers, expanding solar savings option to less creditworthy C&I clients

* Currently available
Challenges faced by EPC/Developers in financing and refinancing:

<table>
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<th>Financing availability &amp; delays</th>
<th>Longer timeline of project sanction leading to delay in project execution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regulatory challenges</td>
<td>Liquidity issue in the industry due to NBFCs not participating or showing much interest in financing rooftop projects</td>
</tr>
<tr>
<td>Technology acceptability</td>
<td>Low acceptability for new technology or formats, like BESS (battery system) and open access projects</td>
</tr>
<tr>
<td></td>
<td>Ad hoc policy changes by regulatory agencies.</td>
</tr>
<tr>
<td></td>
<td>Lack of working capital funds and non fund based limit restricting higher number of execution.</td>
</tr>
<tr>
<td></td>
<td>Lack of innovative products in financing like financing for lease financing etc.</td>
</tr>
</tbody>
</table>
Challenges faced by Lenders in financing and refinancing:

**Major challenges faced by Lenders:**

- Lack of good experienced EPC players/developers
- Lack of policy support, ad hoc changes in policy
- Off-takers falling below investment grade
- Quality compromise by some developers/EPC to win projects
- Lack of focus on Environment, Health and Safety (EHS)
- Lack of focus on key equipment selection
Efficient Financing To-Do’s

Let’s define "Efficient" financing

- Time efficient
- Scale efficient
- Flexible

Let’s pinpoint common bottlenecks for Lenders & Developers

- Regulatory uncertainty: changes in rules, policies
- Less defined technical standards
- Lack of commonly accepted benchmarks and information on technology

Let’s think about possible solutions (for discussion only)

- Create lines of working capital for qualified companies: to resolve liquidity and delay issues
- Define indigenous standardization processes like BIS standards, customized to the solar industry
- Create knowledge dissemination initiative from IIT’s and elsewhere with periodic updates on technology parameter and cost movements - e.g. annual, to act as references

Low hanging fruit – there are many more possibilities!

* Currently available
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Session by Mr Harvinder Singh, Head Project Finance, Amplus Solar
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**Amplus Background: Leader in C&I Energy Solutions**

**Amplus Overview**

- One of India’s largest dedicated owners & operators of distributed energy solutions for Commercial and Industrial (C&I) customers
- Current Solution Offerings:
  - On-site projects (Rooftop and Ground mounted)
  - Open Access projects
  - Energy Storage Solutions
  - Residential Solar
- In-house and end-to-end execution capabilities resulting in one of the lowest EPC costs and highest quality standards
- 100+ exclusive channel partners with success fee arrangement ensures low cost business development
- Portfolio of 575 MWp of contracted capacity spread across India
- Strong relationship with 200+ C&I customers with strong credit profiles
- Healthy pipeline of leads and local collaborations across targeted countries in Southeast Asia and the Middle East

**Presence in C&I Solutions**

- **Amplus Offices**
- **Operational and Under Construction Sites**
- **BD Hubs**
- **OSM Hubs**
- **Amplus domestic presence**
- **Amplus international presence**

**Growth of the company**

<table>
<thead>
<tr>
<th>Contracted (MW)</th>
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<tbody>
<tr>
<td>1</td>
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</tbody>
</table>

**Number of customers**

- 1
- 14
- 104
- 204
- 385
- 575
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EVOLUTION AS THE MARKET LEADER

- Expansion to South East and Middle Eastern markets using existing MNC customer base and creating local business development teams
- Implementing new open access solar projects in the state of Haryana, Uttar Pradesh, Chhattisgarh and Karnataka
- Developing new business streams based on battery storage, energy efficiency and electric mobility

- March 2019
  - Capacity: 385 MWp
  - 260+ sites ranging from 20 kWp to 175,000 kWp
  - 175+ C&I customers of high credit quality

- March 2018
  - Commissioned 175 MW Open Access plant in Karnataka
  - Launched energy storage business with project for MBEL toil plaza

- June 2016
  - Largest Indian acquisition of C&I rooftop portfolio from Sun Edison India
  - Commissioned in-house remote monitoring and analytics system development

- March 2016
  - Capacity: 14 MW
  - Pipeline: 30+ MW
  - Commissioning of India’s largest captive single-location C&I rooftop project
  - Setup of state-of-the-art remote operations center in Gurugram

- May 2015
  - Capacity: 1.5 MW
  - Pipeline: 6 MW
  - Amplus installs its first rooftop solar project of 100 kWp

- November 2013
  - Amplus zeroes down on distributed solar as the future growth area

- 2010-13
  - Incorporated and focused on direct supply of power to C&I customers
  - Foray into development of various coal, co-generative and wind projects
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Industry Overview

Installed Capacity (%)

- Thermal
- Nuclear
- Hydro
- Renewable

Target 175 GW by 2022

As of March 31, 2020, Total Renewable installations 87 GW.

Sources: CEA, MNRE, Bridge to India
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**Lenders Overview**

<table>
<thead>
<tr>
<th>Types of Lenders</th>
<th>Category</th>
<th>Active in Renewable Sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Banks</td>
<td>Private Sector</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Public Sector</td>
<td>Yes, but mostly look for recourse funding.</td>
</tr>
<tr>
<td></td>
<td>Foreign</td>
<td>Yes, but with short term financing structures (Mini-perm)</td>
</tr>
<tr>
<td>Institutional Investors</td>
<td>NBFC (IFCs)</td>
<td>Yes</td>
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<tr>
<td></td>
<td>IDFs</td>
<td>Yes, but can finance project post 1 year of operations.</td>
</tr>
<tr>
<td></td>
<td>Mutual Funds/Insurance</td>
<td>Yes, but with some credit enhancement structures.</td>
</tr>
<tr>
<td>Development Banks/Multi Laterals</td>
<td>Indian</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Foreign</td>
<td>Yes, but they have limitation on percentage of exposure</td>
</tr>
</tbody>
</table>
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Key Components of Solar Project - Lender’s perspective

Lenders Risk appetite is considerably lower than that of a equity investor
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Counterparty impact on Credit Rating of Asset…….
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Project Finance over project life

Timelines (Years)

<table>
<thead>
<tr>
<th></th>
<th>Development Phase</th>
<th>Construction Phase</th>
<th>Stabilisation Phase</th>
<th>Operational Phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>10% Equity</td>
<td>90% Equity + Long Term Project Finance</td>
<td>100% Equity + Long Term Project Finance</td>
<td>1st Refinance Cost Reduction + Topup Debt Payment of prepayment penalty and Processing Fee</td>
</tr>
<tr>
<td>0.5</td>
<td></td>
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<td></td>
<td>2nd Refinance Cost Reduction + Payment of Processing Fee</td>
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<tr>
<td>1.5</td>
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<td>3.5 - 4</td>
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<td>8 - 9</td>
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<table>
<thead>
<tr>
<th>Project Stage</th>
<th>Alternative Options</th>
</tr>
</thead>
</table>
| Development and Construction Finance       | - Construction finance (Mix of trade loan and Short Term loan upto project stabilisation Phase)  
                                        | - Platforms backed by Indian Corporate can avail Corporate Loans from PSU lenders.  
                                        | - SBLC backed structures to defer equity infusion. Equity to include Sub Debt component. |
| Operational Stage (post stabilization)     | - Better credit rating provides comparatively low cost funding.                     
                                        | - Non recourse or limited recourse                                                  
                                        | - Option to go for fixed rate loans available.                                     
                                        | - Portfolio Financing (rooftop or smaller size projects)                           |
| Operational Stage (post 1.5 – 2 year)      | - Refi the Sub debt part of the equity.                                             
                                        | - Take out financing option provided IIFCL can be explored.                       |
| Operational Stage (post 3 year)            | - Green Bond                                                                         
                                        | - Credit enhancement structures (partial guarantee schemes)                       |
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Utility Business ...

it's a marathon not a sprint
Webinar on Developing Bankable Projects
You’re invited

Webinar on

Selecting critical components of Solar Power plant

Date: Friday, May 15, 2020
Time: 4pm onwards

In Conversation with our Team of Experts