Adani Green Energy Limited

Analyst Visit to Solar Plant
Kamuthi – Tamil Nadu

15 April’22
Plant Location – 648 MW Solar Power Plant at Kamuthi, Tamilnadu
## Project at a Glance:

<table>
<thead>
<tr>
<th><strong>Site Location</strong></th>
<th>Sengapaddai, Pudukottai, &amp; O'Karisalkulam villages, Kamuthi Taluka, District – Ramanthpuram</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Land area in Acres</strong></td>
<td>2500 Acres</td>
</tr>
<tr>
<td><strong>Nearest Airport</strong></td>
<td>Madurai (approx. 90km from Site)</td>
</tr>
<tr>
<td><strong>Nearest Road</strong></td>
<td>Porthbanur – Kamuthi – Arrupukottai Road (Adjoining Site)</td>
</tr>
<tr>
<td><strong>Nearest Port</strong></td>
<td>Tuticorin Port, approx. 110km</td>
</tr>
<tr>
<td><strong>Nearest Railway Station</strong></td>
<td>Tiruchuli, Tamil Nadu (Approx. 25km from site)</td>
</tr>
</tbody>
</table>
One of the World’s Largest single location solar power project of capacity 648MW was commissioned in FY 2016 by the Adani Group at Kamuthi, in Tamil Nadu, with an investment of around INR 45.5 billion.

It spans a vast area of 2,500 acres, equivalent to about 950 Olympic-sized football fields. The entire facility was completed within a record eight months by nearly 8,500 dedicated personnel who worked day and night to set up this 648 MW clean energy plant.

The Kamuthi plant is now fully operational and connected with the 400 kV substation of TRANSCO, powering 265,000 homes in a suitable manner.
<table>
<thead>
<tr>
<th>Phases</th>
<th>Companies</th>
<th>Capacity</th>
<th>Cumulative</th>
<th>COD</th>
<th>Achievement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ramnad Solar Power Limited (RSPL)</td>
<td>72 MW</td>
<td>72 MW</td>
<td>8(^{th}) Feb 2016</td>
<td>Tamil Nadu's largest</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>08(^{th}) Feb 2016</td>
</tr>
<tr>
<td>2</td>
<td>Adani Green Energy TN Limited (AGETL)</td>
<td>216 MW</td>
<td>288 MW</td>
<td>11(^{th}) Mar 2016</td>
<td>India's Largest</td>
</tr>
<tr>
<td>3</td>
<td>Ramnad Renewable Energy Limited (RREL)</td>
<td>72 MW</td>
<td>360 MW</td>
<td>31(^{st}) Mar 2016</td>
<td>Asia's Largest</td>
</tr>
<tr>
<td>4</td>
<td>Kamuthi Solar Power Limited (KSPL)</td>
<td>216 MW</td>
<td>576 MW</td>
<td>18(^{th}) Sep 2016</td>
<td>World's Largest</td>
</tr>
<tr>
<td>5</td>
<td>Kamuthi Renewable Energy Limited (KREL)</td>
<td>72 MW</td>
<td>648 MW</td>
<td>18(^{th}) Sep 2016</td>
<td>World's Largest</td>
</tr>
</tbody>
</table>

**PLANT INAUGURATED BY HON’BLE CHIEF MINISTER OF TAMIL NADU AND DEDICTAED TO NATION ON 21.09.2016**
PPA execution in presence of Honourable Chief Minister of Tamil Nadu on 04th July, 2015
Site photographs: as it was in the beginning
Site Infrastructure: Temporary Stores

Precast Boundary Wall and Road
Site Infrastructure: Temporary Office & Dining Area
Material Storage Yard – Module & MMS
Foundation for MMS

MMS Erection Works
Inverter Room and Distribution Transformer Erection
HT Switchgear, Power Transformer & Switchyard

Lightning Arrestor

DC Cable Laying & Termination
Main Gate view:
Drone Monitoring

Thermal Imaging

Dust detection
Solar Power Generation flow

Block diagram:

1. SUN (Natural Energy Source)
2. SOLAR PANEL (Solar Energy, being converted to DC electricity)
3. SCB (DC electricity is being collected)
4. INVERTER ROOM (DC converted to AC electricity)
5. TRANSMISSION LINE
6. INVERTER DUTY TRANSFORMER
7. SWITCHYARD
8. POWER TRANSFORMER
9. SWITCHGEAR PANEL
## Mammoth Volume of Works:

<table>
<thead>
<tr>
<th>S No</th>
<th>Particular</th>
<th>Nos</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Total Project Land Area in Acres</td>
<td>2500</td>
</tr>
<tr>
<td>2</td>
<td>Foundations (Nos)</td>
<td>3,80,000</td>
</tr>
<tr>
<td>3</td>
<td>Module Mounting Structure (MT)</td>
<td>27,000</td>
</tr>
<tr>
<td>4</td>
<td>Solar Modules (Nos)</td>
<td>25,00,000</td>
</tr>
<tr>
<td>5</td>
<td>String Combiner Boxes (Nos)</td>
<td>5,500</td>
</tr>
<tr>
<td>6</td>
<td>Inverters (Nos)</td>
<td>576</td>
</tr>
<tr>
<td>7</td>
<td>Transformers (Nos)</td>
<td>154</td>
</tr>
<tr>
<td>8</td>
<td>Switchyards (Nos)</td>
<td>5</td>
</tr>
<tr>
<td>9</td>
<td>Perimeter Wall / Fencing (KM)</td>
<td>62</td>
</tr>
<tr>
<td>10</td>
<td>Length of Internal Roads (KM)</td>
<td>58</td>
</tr>
<tr>
<td>11</td>
<td>Length of Cables (KM)</td>
<td>7,700</td>
</tr>
<tr>
<td>12</td>
<td>Cement Consumption (MT)</td>
<td>30,000</td>
</tr>
</tbody>
</table>

---

---

---
<table>
<thead>
<tr>
<th>Kamuthi</th>
<th>AGETL</th>
<th>KSPL</th>
<th>RSPL</th>
<th>KREL</th>
<th>RREL</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC Cap</td>
<td>260MW</td>
<td>260MW</td>
<td>86MW</td>
<td>86MW</td>
<td>86MW</td>
<td>778MW</td>
</tr>
<tr>
<td>AC Cap</td>
<td>216MW</td>
<td>216MW</td>
<td>72MW</td>
<td>72MW</td>
<td>72MW</td>
<td>648MW</td>
</tr>
<tr>
<td>No of Blocks / IDT</td>
<td>44 nos</td>
<td>54 nos</td>
<td>16 nos</td>
<td>15 nos</td>
<td>15 nos</td>
<td>144</td>
</tr>
<tr>
<td>ABB INVs</td>
<td>16 nos</td>
<td>216 nos</td>
<td>12 nos</td>
<td>12 nos</td>
<td>32 nos</td>
<td>288</td>
</tr>
<tr>
<td>Hitachi INVS</td>
<td>160 nos</td>
<td>0</td>
<td>48 nos</td>
<td>48 nos</td>
<td>32 nos</td>
<td>288</td>
</tr>
<tr>
<td>Power Transformer &amp; Capacity</td>
<td>2 nos</td>
<td>2 nos</td>
<td>2 nos</td>
<td>2 nos</td>
<td>2 nos</td>
<td>10 nos</td>
</tr>
<tr>
<td></td>
<td>240MVA 33kV/230kV</td>
<td>240MVA 33kV/230kV</td>
<td>90MVA 33kV/110kV</td>
<td>90MVA 33kV/110kV</td>
<td>90MVA 33kV/110kV</td>
<td>750MVA</td>
</tr>
<tr>
<td>Transmission Towers</td>
<td>2 nos</td>
<td>24 nos</td>
<td>2 nos</td>
<td>2 nos</td>
<td>2 nos</td>
<td>32 nos</td>
</tr>
<tr>
<td>Kamuthi</td>
<td>AGETL</td>
<td>KSPL</td>
<td>RSPL</td>
<td>KREL</td>
<td>RREL</td>
<td>Total</td>
</tr>
<tr>
<td>---------</td>
<td>-------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>-------</td>
</tr>
<tr>
<td>DC Cap</td>
<td>260MW</td>
<td>260MW</td>
<td>86MW</td>
<td>86MW</td>
<td>86MW</td>
<td>778MW</td>
</tr>
<tr>
<td>AC Cap</td>
<td>216MW</td>
<td>216MW</td>
<td>72MW</td>
<td>72MW</td>
<td>72MW</td>
<td>648MW</td>
</tr>
<tr>
<td>Solar PV Modules</td>
<td>8,29,440</td>
<td>8,28,480</td>
<td>2,78,440</td>
<td>2,76,444</td>
<td>3,26,048</td>
<td>25,38,852</td>
</tr>
<tr>
<td>Make</td>
<td>SunTech Trina GCL Hanwa</td>
<td>SunTech Canadian Trina Hanwa</td>
<td>Adani SunTech Trina Hanwa</td>
<td>SunTech Canadian Hanwa Mega Cell</td>
<td>SunTech Hanwa Solar Frontier CGL First Solar</td>
<td></td>
</tr>
</tbody>
</table>
Absorption of Technology:

- Modules are sourced from Tier-1 Suppliers only
- Adopted Robotic Module Cleaning technology initiative to promote new technology and for operational feedback for the future plants in order to reduce water consumption

Ecoppia
Absorption of Technology:

New Technology adopted for pilot purpose for about 25 MW.

Bifacial module technology - 1.25 MW
Absorption of Technology:

Thin film technology - 10 MW (First Solar, Solar Frontier),
Absorption of Technology:

Seasonal Tilt technology - 5 MW.
Absorption of Technology:

Single Axis Tracking technology – 8.75 MW (Smart Track, Scorpious, Archtech, Twincity, Runsol, Insolar, Solpower of 1.25 MW each)
Absorption of Technology:

• One of the LARGEST MMS table of 8x20 landscape module (2mx1m) configuration has been considered which resulted in the optimized footprint area.

• First ever design, engineering and implementation of GROUP Control feature enabling auto adjustment output of individual inverters by single point set point by control room operator.

• For area/road lighting, Solar streetlights have been used to reduce energy consumption.

• Illumination of complete plant has been done with LED lights only to reduce energy consumption.
<table>
<thead>
<tr>
<th>Sr No</th>
<th>Items</th>
<th>Supplier</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Module Mounting Structure</td>
<td>Zhongxingbo (Arctech) &amp; Jiangsu Weir - China Ganges International &amp; Satec Envir Engineering - India</td>
</tr>
<tr>
<td>3</td>
<td>Inverters</td>
<td>Hitachi &amp; ABB</td>
</tr>
<tr>
<td>4</td>
<td>Transformers</td>
<td>ABB / Transformers &amp; Rectifiers / Schneider Electric - IDT</td>
</tr>
<tr>
<td>5</td>
<td>Switchyard / SCADA System</td>
<td>ABB</td>
</tr>
<tr>
<td>6</td>
<td>HT Switchgear / RMU</td>
<td>Siemens</td>
</tr>
<tr>
<td>7</td>
<td>Cables</td>
<td>Sterlite Industries, KEI Cables, Polycab, Apar Industries</td>
</tr>
<tr>
<td>8</td>
<td>DC Combiner Boxes</td>
<td>Jakson Engineers / Statcon Power</td>
</tr>
<tr>
<td>9</td>
<td>Cable Connectors</td>
<td>Bizlink, Taiwan</td>
</tr>
</tbody>
</table>
Generation:

Output varies depending on:

- Module temperature
- Sun's radiation (which depends on):
  - Season
  - Weather
  - Time of the day

- Majorly renewable electricity generating plants have a **Must-Run status** meaning the electricity generated here is given a preference over the electricity generated in nonrenewable electricity generating plants (thermal or nuclear plants)

- **Kamuthi is one such plant enjoying a Must-Run status**

- The only factor that could limit the supply of electricity here would be due to grid security reasons and curtailments
Modules:

- The modules selected at this plant are Crystalline Silicon modules.
- Tamil Nadu is in the Northern Hemisphere and thus, the modules are placed South facing for capturing maximum solar energy.
Slope of site along North to Southeast
- The angle of fixed tilt structures is 8 degrees
• Single Axis Tracker rotates according to the sun's movement from -45 degrees to +45 degrees

• Depending upon the season, the modules start backtracking (coming back to 0 degrees, which is parallel to the ground).

• The Programmable Logic Controller (PLC) is used to control the tracker based on the Sun's movement

• The PLC is programmed such that if the wind speeds increase above the set limit, the tracker will come back to 0 degrees for avoiding breakage of modules
Water Neutrality

Water is a precious natural resource, and its judicious use is responsibility of every company.

- AGEL has taken many initiatives to reduce its water consumption and monitors its water. The company has also declared a long-term solar panel cleaning water target of 0.7 lit/module/wash from a baseline of 1.3 lit/module/wash.

<table>
<thead>
<tr>
<th>AGEL site</th>
<th>Estimated Freshwater Consumption</th>
<th>Increased Potential Created (additional rainwater storage by pond rejuvenation)</th>
<th>Water Balance Index (Water Balance / Water Debit)</th>
<th>Water Balance status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kamuthi</td>
<td>35,670</td>
<td>52,982</td>
<td>1.48</td>
<td>Positive</td>
</tr>
</tbody>
</table>
**Fully autonomous solutions**

**Water-free**
Ecoppia robots remove over 99% of soiling on a nightly basis using a completely water-free cleaning technology that is both eco-friendly and cost effective.

**Energy independent**
Ecoppia robots have their own on-board dedicated solar module, allowing batteries to quickly charge in between operations.

**Self-cleaning**
Fully autonomous, Ecoppia robots self-clean their on-board solar panel and the cleaning microfiber elements.
Deepening and Strengthening of water bodies at Sengapaddai Village
Deepening and Strengthening of water bodies at Dadakulam Village
Deepening and Strengthening of water bodies at Pudukottai Village
Benefits of the ponds deepening:

• The water will be held in limited deepened area, reducing evaporation losses (compared to same water in the available ponds area).

• Water level in the deepened area will be relatively better, delaying this getting shallow and muddy (which may be unusable even for drinking by cattle).

• Villagers have already requested the ponds deepening under CSR and we can meet their expectations to improve our social relations with nearby community.
Semi Automatic Machine (SAM) based solar panel cleaning has shown the following benefits, compared with our conventional cleaning process:

1. Consumes less water (1.8 lit/module to 0.7 lit/module)
2. Increases cleaning capacity per day
3. Reduces cost of O&M (MW/year)
**Single Use Plastic Free**

Single-use plastic is not only harmful to the health of the people, but it is also a major reason for the deterioration of the health of the land. My country is going to ban single-use plastic in the coming years.

- Shri. Narendra Modi, PM

---

**Do’s and Don’t to Avoid Single Usage of Plastic**

#DitchTheDisposable

<table>
<thead>
<tr>
<th>Do’s</th>
<th>Don’ts</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Bring your own carry bag whenever go for shopping</td>
<td>• Allow vendor to provide any items in less than 50-micron plastic bag</td>
</tr>
<tr>
<td>• Replace plastic water bottles, cups and cutting boards with ceramic and stainless-steel products</td>
<td>• Use plastic container with recycling number 3, 6 and 7. Which can be found on bottom of the container</td>
</tr>
<tr>
<td>• Use aluminum foil to wrap food rather than plastic cling</td>
<td>• Use plastic straw, fork, plates, non-woven bags</td>
</tr>
</tbody>
</table>

---

[Images of carry bags, reusable containers, and single-use plastic items]
SUP Items – Before - After

BEFORE – Use of polythene bag to carry grocery items
AFTER – Replaced by Cotton/cotton bag

BEFORE – Use of plastic bottles for drinking water
AFTER – Use of metal bottle

Innovative Site visuals from Waste Modules

Replacement of Flex banners with Cotton/Metal board
Certificate to AGEL O&M Team

Certificate
Single-use Plastic Free
Adani Green Energy Limited

This is to certify that Adani Green Energy Limited, is Single-use Plastic Free at the solar and wind energy plants mentioned in the Annex as verified by the Confederation of Indian Industry, under the provisions of the Plastics-use Protocol: Verification and Certification (1.0).

This Certificate is valid from 27 December 2021 to 26 December 2022.

Annex
The certification applies to the following single-use plastic items:
- Cutlery (tongs, forks, spoons, plates, glasses, cups, straws, straws)
- Paper cutlery with plastic lining (plates, cups)
- Cutlery made up of Styrofoam or Thermofoam or Polyurethane (plates, glasses, cups)
- Thermocol food containers
- Plastic carry bags
- Plastic dustbin liners
- Items of decoration (including those made of polystyrene)
- Plastic sheets for wrapping food material
- Water bottles
- Plastic sheet used for spreading on dining table

Organizational Boundary: Adani Green Energy Limited’s solar and wind energy plants (under various SPV’s) mentioned in Annexure-A
Operational Boundary: Office areas, Canteen, and Operations
Material Boundary: Single-use Plastics

Reference
Verification Date: 13 December 2021 to 22 December 2021
Verification Report No.: PnP/Verification/2021/AGEL/001
Mode: On account of the COVID-19 pandemic, the verification process was virtual and followed provisions outlined in the Verification Procedure 1.0 of the Protocol. The virtual site visit has been conducted on sample basis for the solar and wind energy plants having more than 50% share of the installed capacity that has been considered for certification
CSR ACTIVITIES TAKEN UP BY ADANI GROUP IN NEARBY
We Share..........We Learn.......... (Industrial Visit)
Disclaimer

Certain statements made in this presentation may not be based on historical information or facts and may be "forward-looking statements," including those relating to general business plans and strategy of Adani Green Energy Limited ("AGEL"), the future outlook and growth prospects, and future developments of the business and the competitive and regulatory environment, and statements which contain words or phrases such as 'will', 'expected to', etc, or similar expressions or variations of such expressions. Actual results may differ materially from these forward-looking statements due to a number of factors, including future changes or developments in their business, their competitive environment, their ability to implement their strategies and initiatives and respond to technological changes and political, economic, regulatory and social conditions in India. This presentation does not constitute a prospectus, offering circular or offering memorandum or an offer, or a solicitation of any offer, to purchase or sell, any shares and should not be considered as a recommendation that any investor should subscribe for or purchase any of AGEL's shares. Neither this presentation nor any other documentation or information (or any part thereof) delivered or supplied under or in relation to the shares shall be deemed to constitute an offer of or an invitation by or on behalf of AGEL.

AGEL, as such, makes no representation or warranty, express or implied, as to, and does not accept any responsibility or liability with respect to, the fairness, accuracy, completeness or correctness of any information or opinions contained herein. The information contained in this presentation, unless otherwise specified is only current as of the date of this presentation. AGEL assumes no responsibility to publicly amend, modify or revise any forward looking statements, on the basis of any subsequent development, information or events, or otherwise. Unless otherwise stated in this document, the information contained herein is based on management information and estimates. The information contained herein is subject to change without notice and past performance is not indicative of future results. AGEL may alter, modify or otherwise change in any manner the content of this presentation, without obligation to notify any person of such revision or changes.

No person is authorized to give any information or to make any representation not contained in and not consistent with this presentation and, if given or made, such information or representation must not be relied upon as having been authorized by or on behalf of AGEL.

This presentation does not constitute an offer or invitation to purchase or subscribe for any securities in any jurisdiction, including the United States. No part of its should form the basis of or be relied upon in connection with any investment decision or any contract or commitment to purchase or subscribe for any securities. None of our securities may be offered or sold in the United States, without registration under the U.S. Securities Act of 1933, as amended, or pursuant to an exemption from registration therefrom.

VIRAL RAVAL
AGM - Investor Relations
viral.raval@adani.com
+91 79 2555 8581
Thank You