• AP was the pioneer state in the Power Sector reforms in 1998.
• In the period 2004-2014, power deficit increased to 17.6% by 2013-14.
• However, since June 2014, the power deficit has been steadily reduced to almost nil as on date.
• Andhra Pradesh is one of the three states in the country selected for implementation of Power for All (PFA)- flagship program of Govt. of India.
• AP has one of the lowest AT&C loss (10.29%) in the country – Target single digit losses
• State Utilities are among few financially healthy utilities in the country
• Andhra Pradesh is targeting 10 GW Renewable Capacity by FY 2018-19
NEW & RENEWABLE ENERGY DEVELOPMENT CORPORATION OF A.P.LIMITED (NREDCAP)

- State Nodal Agency implementing all New & Renewable Energy Programmes under one roof in Andhra Pradesh.
- Promoting all categories of RE power projects including Grid connected Solar Rooftop systems.
- Implementing programmes to meet rural energy needs such as Biogas, Improved Chulhas etc.
- Promoting off grid solar systems like lanterns, stand alone power plants, street lights, agriculture pumpsets etc.
- Having offices in all District Head Quarters.
PLANNED RENEWABLE ENERGY CAPACITY ADDITION

- It is targeted to add 10 GW capacity Renewable Energy Power Projects by the year 2018-19.
- Planned to add 18 GW renewable energy power capacity (10 GW Solar Power and 8 GW Wind Power) by the year 2021-22 which is 10% of target envisaged by Government of India.
- On promotion of 18 GW wind and solar power projects, it could be possible to avoid carbon emissions of 252 lakh metric tons every year.
- The achievements and targeted capacity addition by the year 2018-19 is as follows:

<table>
<thead>
<tr>
<th>Renewable Energy Type</th>
<th>Achievement (MW)</th>
<th>Target FY 18-19 (MW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wind</td>
<td>1416</td>
<td>4150</td>
</tr>
<tr>
<td>Solar</td>
<td>573</td>
<td>5000</td>
</tr>
<tr>
<td>Mini Hydel</td>
<td>89</td>
<td>150</td>
</tr>
<tr>
<td>Municipal Solid Waste</td>
<td>6</td>
<td>100</td>
</tr>
<tr>
<td>Industrial Waste</td>
<td>34</td>
<td>100</td>
</tr>
<tr>
<td>Biomass /Bagasse/Co-generation</td>
<td>427</td>
<td>500</td>
</tr>
<tr>
<td>Resource</td>
<td>Capacity commissioned during 2015-16 (in MW)</td>
<td>Cumulative capacity commissioned (in MW)</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>---------------------------------------------</td>
<td>------------------------------------------</td>
</tr>
<tr>
<td>Wind Power</td>
<td>400.10</td>
<td>1416.32</td>
</tr>
<tr>
<td>Solar Power</td>
<td>435.49</td>
<td>573.342</td>
</tr>
<tr>
<td>Small Hydro</td>
<td>--</td>
<td>89.098</td>
</tr>
<tr>
<td>Municipal Solid Waste</td>
<td>--</td>
<td>6.15</td>
</tr>
<tr>
<td>Industrial Waste</td>
<td>7.50</td>
<td>34.01</td>
</tr>
<tr>
<td>Biomass /Bagasse/Co-generation</td>
<td>--</td>
<td>428.57</td>
</tr>
<tr>
<td><strong>Total ..</strong></td>
<td><strong>843.092</strong></td>
<td><strong>2547.49</strong></td>
</tr>
</tbody>
</table>
SOLAR POWER PROGRAMMES

• The Solar Power potential is 38.40 GW.

• The Solar Power projects are being promoted by following means:
  - Bidding route
  - Solar Parks
  - Captive use and Third party sale
  - Canal top and Canal bund projects
  - Grid connected solar rooftop systems
  - Solar off grid systems – Agriculture pump sets, lanterns, Street lights etc.,
SOLAR POWER BIDDING

• AP Transco has allotted 619 MW capacity Solar Power Projects under bidding route.

• The tariff varies between Rs.5.25 – 5.99 / unit with annual escalation of 3% for ten years period.

• So far 404 MW capacity projects have been commissioned and remaining projects are under execution.
SOLAR PARKS DEVELOPMENT

• 4000 MW Capacity Solar Parks are being developed in Ananthapuramu, Kurnool and Kadapa Districts with the support from MNRE.

• MNRE is extending Central Financial Assistance of Rs.800 Crores (@Rs.20 Lakhs per MW) towards developing the infrastructure

• AP Solar Power Corporation Limited (APSPCL), the Joint Venture Company with equity participation from SECI (50%), APGENCO (41%) and NREDCAP (9%) is developing the necessary infrastructure in the Solar Parks.
ANANTHAPURAMU ULTRA MEGA SOLAR PARK
(1500 MW)

- NTPC is establishing 1000 MW Solar Power Project in two phases; 250 MW in phase-1 (DCR) and 750 MW in phase-2 (Open category) at N.P. Kunta, Ananthapuramu district.

- It is expected that 200 MW will be commissioned in April, 2016 and 50 MW in October, 2016.

- NTPC has entered PPA with APDISCOMs on 24.04.2015 for first phase 250 MW capacity at a levelised tariff of Rs.6.16 per KWh.

- NTPC issued NIT for balance 750 MW (6 X 125 MW open category) of Phase-II.
• PGCIL is developing the external Power Evacuation infrastructure (400/220 KV Sub-station and 440 KV lines) and APTRANSCO is executing the internal Power Evacuation works (220/33 KV pooling Sub-stations and connected transmission lines).

• Solar Energy Corporation of India (SECI) has issued RfS for development of 500 MW capacity at Galiveedu under Viability Gap Funding (VGF) scheme.

• Further, APGENCO is developing 500 MW Solar Power Project. This project is scheduled to be commissioned in 18 months from the date of award of contract.
KURNOOL ULTRA MEGA SOLAR PARK (1000 MW)

• 1000 MW Solar Power Project is being developed at Gani, Kurnool district.

• The land acquisition has been completed.

• NTPC issued Letter of Indent for 1000 MW and also entered PPA for 900 MW capacity. The lowest financial bid by the successful bidder is Rs.4.63/kWh, which is lowest ever tariff. 1000 MW is scheduled for commissioning by March 2017.
KADAPA ULTRA MEGA SOLAR PARK (1000 MW)

- It is proposed to develop 1000 MW solar Park at Mylavaram and identified 6462 acres of Government land and will be acquired by 30th June 2016.

- SECI has invited tenders for allotment of 650 MW under Viability Gap Fund Scheme and NTPC has issued tenders for allotment of 250 MW under bundling scheme.

- It is proposed to take up 100 MW with storage facility under Viability Gap Fund Scheme by SECI.

- APTRANSCO is developing transmission infrastructure for the solar park which includes 400/33 kV substation and 220/33 kV pooling substations.

- 1000 MW will be commissioned in 2017-18.
PROGRESS OF SOLAR PARK DEVELOPMENT ACTIVITIES
SOLAR CANAL TOP AND CANAL BUND SOLAR POWER PROJECTS

• 1 MW grid connected solar power project on canal top of Losari Canal, Gollavanitippa, Bhimavaram Rural Mandal, West Godavari District, being implemented by NREDCAP. The estimated project cost is Rs. 7.50 crores and MNRE is extending Rs.2.25 Crores Central Financial Assistance. The work was awarded to BHEL and 0.392 MW was commissioned on 30.03.2016 and balance capacity will be commissioned by 30th June 2016.

• 5 MW Canal Bund Solar PV Power Project on Polavaram Right Main Canal, Gollgudem village, Unguturu Mandal, West Godavari dis., is being executed by AP GENCO. The estimated project cost is Rs. 40.75 crores and MNRE is extending Rs.7.50 Crores Central Financial Assistance. The project is expected to be commissioned by July 2016.
CANAL TOP SOLAR POWER PROJECT
GRID CONNECTED SOLAR ROOFTOP SYSTEMS

• APDISCOMs issued the implementation guidelines as per the Solar Power Policy.

• The projects of capacity upto 1000 KWp at a single location will be permitted.

• Net or Gross meter option for sale of power to DISCOM.

• NREDCAP has surveyed the availability of shadow free vacant rooftop on Government buildings in all districts and

• Identified that 3,50,000 SqM of shadow free area is available, where it can be possible to set up 35 MW capacity solar rooftop systems

• It is proposed to take up 10 MW capacity in the first phase

• A target of 2000 MW is allotted to AP State by MNRE to achieve by 2021-22. So far installed 5 MW capacity Grid connected solar rooftop systems.
GRID CONNECTED ROOFTOP SOLAR

Solar Photovoltaic Modules

Sunlight

Protection devices

Inverter

Isolation Transformer

Manual Disconnect

Load/Home appliances

Interconnection Point

Bi-directional meter

Grid

www.greencleanguide.com
AGRICULTURE SOLAR PUMP SETS

• MNRE has allocated 6725 nos of solar pump sets of 3 HP/5 HP with 33% subsidy to implement in 2015-16.

• The programme is being jointly implemented by NREDCAP with APDISCOMs and Agriculture Department.

• MNRE has further sanctioned 10,000 Solar Pumpsets to A.P. State to implement in the next one year period.

• So far, 5013 Solar pump sets have been installed.

• The cost and subsidy details as per the latest tender are as follows:

<table>
<thead>
<tr>
<th>Sl No</th>
<th>Model/Capacity</th>
<th>Unit Cost (Rs)</th>
<th>Beneficiary Contribution (Rs)</th>
<th>MNRE Subsidy (Rs)</th>
<th>Funding by DISCOMs through loan from PFC (Rs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3 HP – AC Pump sets</td>
<td>3,36,378</td>
<td>40,000</td>
<td>97,200</td>
<td>1,99,178</td>
</tr>
<tr>
<td>2</td>
<td>5 HP – AC Pump sets</td>
<td>4,29,000</td>
<td>55,000</td>
<td>1,62,000</td>
<td>2,12,000</td>
</tr>
</tbody>
</table>
SOLAR PUMPSET IN OPERATION
THANK YOU