INTEGRATED POWER DEVELOPMENT SCHEME (IPDS)

Review of SCADA /DMS Implementation

27 Feb 2017
Venue – Power Finance Corporation Ltd, New Delhi
SCADA/DMS – Progress on Map

Map showing the states and union territories of India with various markers indicating the progress of SCADA/DMS installations. The markers include:
- Green markers with a circle: Completed
- Green markers with a square: CC installed
- Red markers with a square: CC to be installed
- Yellow markers with a square: Targetted for communications in FY
- Purple markers with a square: Targetted for completion in FY

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Map not to Scale
• Set-up dedicated SCADA team for project implementation as well as Control centre operations and field activities.

• Expedite award /installation of SCADA enablers RMU, Sectionlizer, FPIs and keep Substation SCADA ready. Provide locational details of SCADA enablers.

• Do & expedite progressive end to end testing for RTU / FRTU and ensure timely and progressive payments as per milestones for proper cash flow.

• Facilitate GIS based DMS data to SIA. In case of problem in GIS data from ITIA, DMS network with single line diagram may be drawn & populated for DMS functions.
Get feeder and town-wise daily /monthly SAIFI/ SAIDI Reports generated from SCADA.

Ensure proper connectivity of network with NBSP.

Wherever 3G is not available, 2G connectivity for FRTU may be considered till the time it is upgraded.

Timely Outage for commissioning shall be provided.

Provide secured login to view SCADA from web-client link from DISCOM website.

Functioning of SCADA of completed/ commissioned RTU/FRTU shall be by deployment of manpower (States such as TN & Maharashtra have led the way).
• DISCOMs requested for time extension of the project for completion from MoP have been given the same from time to time. Accordingly, state utilities were advised to extend the contract timeline with their respective SIA which shall done immediately to keep project live.

• DISCOMs shall also take pragmatic view processing of running bills, keeping in view the cash-flow for the projects. Utilities may retain provisional LD, based on appropriate rationales for the delay and final decision may be taken at the time of contract-closure.

• Network security / Cyber security standard compliance

Advisories are without prejudice to terms and conditions and scope of Contract between SIA and utility.
<table>
<thead>
<tr>
<th>States</th>
<th>Extension granted till for TPIEA-IT verification</th>
</tr>
</thead>
<tbody>
<tr>
<td>AP</td>
<td>Mar-17</td>
</tr>
<tr>
<td>Chhattisgarh</td>
<td>Dec-17</td>
</tr>
<tr>
<td>Punjab</td>
<td>Mar-17</td>
</tr>
<tr>
<td>Bihar</td>
<td>Mar-17</td>
</tr>
<tr>
<td>Gujarat</td>
<td>Dec-17</td>
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<tr>
<td>Maharashtra</td>
<td>Mar-17</td>
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<tr>
<td>Tamilnadu</td>
<td>Jun-17</td>
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<tr>
<td>Rajasthan</td>
<td>Sep-17</td>
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<tr>
<td>MP</td>
<td>Mar-18 (BPL GWL ). Jun-18 (JBP)</td>
</tr>
<tr>
<td>Kerala</td>
<td>Sep-17 (ERN, KZK ) Nov-17(TVM)</td>
</tr>
</tbody>
</table>
SCADA CC Commissioning (Balance 3 - Achieved – 4)

- 2 Chattisgarh (Durg-Bhilai, Raipur)
- 1 Puducherry

SCADA CC Commissioning

- Balance - Chattisgarh, Puducherry
- Achieved - West Bengal, Kerala
Target by Mar 31, 2017

SCADA compl/ functional with commiss’d RTU/FRTU
(Achieved- 11, Near Ach- 9, Balance- 7)

- WEST BENGAL: 2
- UTTARAKHAND: 1
- TELANGANA -NORTH: 1
- TAMILNADU: 7
- RAJASTHAN -AJMER: 1
- RAJASTHAN- JODHPUR: 2
- PUNJAB: 1
- MAHARAstra: 4
- GUJ- MGVCL: 1
- AP-SPDCL: 2
- AP-EPDCL: 1
- ASSAM: 1

Completion * Near Completion * Balance tgt in FY

* SCADA functioning of completed /commissioned RTU/FRTU
Effective use of SCADA

- Operation Monitor for preventive maintenance
- Equipment health monitoring for longevity
- SAIFI /SAIDI report (Planned/Unplanned) & placement on SLD
- Report of limit violations
- Power Quality Analysis
- Loss pocket analysis
## Equipment Health Monitoring

### SCADA/DMS System

#### RTU & FRTU Monitor

<table>
<thead>
<tr>
<th>No.</th>
<th>Object Name</th>
<th>State</th>
<th>Primary Chn No</th>
<th>Runtime</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PURA_2_RTU</td>
<td>Unknown</td>
<td>-1</td>
<td>0:0:0</td>
</tr>
<tr>
<td>2</td>
<td>MAN MARG_RTU</td>
<td>Running</td>
<td>31</td>
<td>470 Days, 0:24:54</td>
</tr>
<tr>
<td>3</td>
<td>OR-3 J. NAGAR_RTU</td>
<td>Running</td>
<td>32</td>
<td>446 Days, 12:36:30</td>
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<tr>
<td>4</td>
<td>ROAD NO. 1-C VKIA</td>
<td>Running</td>
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<td>451 Days, 16:28:23</td>
</tr>
<tr>
<td>5</td>
<td>ROAD NO. 9F_RTU</td>
<td>Running</td>
<td>61</td>
<td>329 Days, 16:26:26</td>
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<tr>
<td>6</td>
<td>YA DHAR NAGAR_RTU</td>
<td>Running</td>
<td>59</td>
<td>506 Days, 9:29:50</td>
</tr>
<tr>
<td>7</td>
<td>JOTHWARA_2_RTU</td>
<td>Running</td>
<td>9</td>
<td>495 Days, 20:22:2</td>
</tr>
<tr>
<td>8</td>
<td>IGU NAGAR_RTU</td>
<td>Running</td>
<td>1</td>
<td>836 Days, 3:51:20</td>
</tr>
<tr>
<td>9</td>
<td>MANDI_RTU</td>
<td>Running</td>
<td>65</td>
<td>442 Days, 19:25:8</td>
</tr>
<tr>
<td>10</td>
<td>HI UPAJ MANDI_RTU</td>
<td>Running</td>
<td>63</td>
<td>421 Days, 17:57:10</td>
</tr>
<tr>
<td>11</td>
<td>NI PHATAK_RTU</td>
<td>Running</td>
<td>66</td>
<td>498 Days, 16:27:38</td>
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<tr>
<td>12</td>
<td>MANDIR_RTU</td>
<td>Running</td>
<td>27</td>
<td>545 Days, 0:45:8</td>
</tr>
<tr>
<td>13</td>
<td>RTU</td>
<td>Running</td>
<td>5</td>
<td>675 Days, 19:56:0</td>
</tr>
<tr>
<td>14</td>
<td>JOTHWARA_RTU</td>
<td>Running</td>
<td>2</td>
<td>252 Days, 14:31:11</td>
</tr>
<tr>
<td>15</td>
<td>IKAR COLONY_RTU</td>
<td>Running</td>
<td>7</td>
<td>410 Days, 7:11:8</td>
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<tr>
<td>16</td>
<td>E MART_RTU</td>
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<td>52</td>
<td>393 Days, 0:44:6</td>
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<td>17</td>
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<td>510 Days, 13:10:15</td>
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<td>I_RTU</td>
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<td>20</td>
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<td>21</td>
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<td>Running</td>
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<td>606 Days, 8:41:4</td>
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<td>22</td>
<td>RATHNAGAR_RTU</td>
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<td>4</td>
<td>641 Days, 23:50:58</td>
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**Refresh Data**
## Equipment health monitoring

### Operation Monitor

<table>
<thead>
<tr>
<th>Substation</th>
<th>Name</th>
<th>Description</th>
<th>State Changes</th>
<th>State Changes Limit</th>
<th>State Changes OL(%)</th>
<th>Fault Trips</th>
<th>Fault Trips Limit</th>
<th>Fault Trips OL(%)</th>
<th>Last State Change Time</th>
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<td>Bhargu Nagar new Dummy Relay</td>
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<td>DARMU Tel</td>
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</tbody>
</table>
### ASSAM – Guwahati

**SANC DATE**: October’2011, *Completion by Mar 17*  
**AWARD DATE**: Sep. 2012 (Chemtrols)

| Part-A (SCADA) town – Guwahati |
|-------------------|-------------------|
| **One Town** | **SANC Cost**: Rs 21.82 Cr |
|                  | **Disb**: Rs 12.75  
|                  | **Released to SIA**: Rs 6.19 |

#### RTU Progress
- **S/S**: 36  
- **RTU Installed**: 30  
- **Link Availability**: 26  
- **RTU (E to E)**: 13

#### FRTU Progress
- **RMU+Sect**: 62  
- **FRTU Installed**: 50  
- **Link Availability**: 50  
- **FRTU (E to E)**: 3
- 8 S/S are functional
- 5 Sub- Stations not constructed
- 4 sites are having new panel issue
- 10 sites are compact substation where (ABB-2, Schneider-7 Travida -1 ) make equipments were installed which needs to be integrated with RTU
- In Big Bazaar S/s , FRTU will be installed in place of RTU
- 50 FRTUs to be E-to E tested
West Bengal- Asansol

<table>
<thead>
<tr>
<th>SANC DATE : October’2011, Completion Oct 16</th>
<th>AWARD DATE : February’2013 [Chemtrols]</th>
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</thead>
<tbody>
<tr>
<td>3 Towns</td>
<td>SANC Cost : Rs 32.94 Crs</td>
</tr>
<tr>
<td></td>
<td>Disb : Rs 9.88 Crs, SIA payment : Rs 7.58 Cr</td>
</tr>
<tr>
<td>Part-A (SCADA) towns – 3 (Kolkata, Asansol, Siliguri)</td>
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</table>
**West Bengal - Siliguri**

<table>
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<tr>
<th>Towns</th>
<th>SANC Cost (Rs)</th>
<th>Disb (Rs)</th>
<th>SIA Payment (Rs)</th>
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</thead>
<tbody>
<tr>
<td>3 Towns</td>
<td>32.94 Crs</td>
<td>9.88 Crs</td>
<td>7.58 Cr</td>
</tr>
</tbody>
</table>

**SANC DATE:** October’2011, **Completion Oct 16**

**AWARD DATE:** February’2013 [Chemtrols]

- **Part-A (SCADA) towns – 3 (Kolkata, Asansol, Siliguri)**

![RTU Progress Chart]

- **S/S**
- **RTU Installed**
- **Link Feasibility**
- **RTU(E to E)**
West Bengal - Kolkata

SANC DATE : October’2011, Completion Oct 16

AWARD DATE : February’2013 [Chemtrols]

3 Towns  | SANC Cost : Rs 32.94 Crs
Disb : Rs 9.88 Crs, SIA payment : Rs 7.58 Cr

Part-A (SCADA) towns – 3 (Kolkata, Asansol, Siliguri)

**RTU Progress**

- 45 S/S
- 37 RTU Installed
- 40 Link Feasibility
- 0 RTU(E to E)

**FRTU Progress**

- 69 RMU+Sect
- 43 FRTU Installed
- 69 Link Feasibility
- 0 FRTU(E to E)
- Balance RTU of Siliguri & Asansol to be E to E Tested
- SIA/ Utility Team to conduct concurrent testing at sites and towns required
- DCPS, Modem dispatch is in progress
APEPDCL- Visakhapatnam

SANC DATE: 27.09.2013
Completion by Sep 16 (Requested upto 31 Mar 17)

| 1 Town | SANC Cost: Rs 9.75Cr : Award 10.04 Cr |

AWARD DATE: LOA Dt: 07-01-14,
Agt.Dt: 08-07-14 (Awarded to M/s. Chemtrols)
Disbursement: Rs 2.93 Cr, Released to SIA: Rs 5.57 Cr

Part A (SCADA) towns – 1 (Visakhapatnam)

RTU Progress

FRTU Progress

- S/S
- RTU Installed
- Link Feasibility
- RTU(E to E)

- RMU+Sect
- FRTU Installed
- Link Feasibility
- FRTU(E to E)
- FO switch installed at 6 S/S
- NBSP , M/s Bharti Airtel has to extend the connectivity for balance 22 locations . Not done
- Interim solution - using SIM instead of MPLS is being exercised till establishment
- DCPS, Modem ,MFT AND 30 FRTUs to be supplied
APSPDCL - Vijayawada

SANC DATE : 22.02.2011  Completion by Mar’17
AWARD DATE : 21.01.13 (CHEMTROLS LTD)

3 Towns  | SANC Cost : Rs 39.19 Crs
Disb : Rs 11.76 Crs Released to SIA : Rs 15Cr

Part-A (SCADA) towns – 3 (Vijayawada, Guntur & Nellore)

<table>
<thead>
<tr>
<th>RTU Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td>S/S</td>
</tr>
<tr>
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</tr>
<tr>
<td>21</td>
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<tr>
<td>4</td>
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<table>
<thead>
<tr>
<th>Link Feasibility</th>
<th>RTU(E to E)</th>
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</thead>
<tbody>
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</table>

<table>
<thead>
<tr>
<th>FRTU Progress</th>
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</thead>
<tbody>
<tr>
<td>RMU+Sect</td>
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<tr>
<td>100</td>
</tr>
<tr>
<td>51</td>
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<td>2</td>
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<tr>
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</table>

<table>
<thead>
<tr>
<th>Link Feasibility</th>
<th>FRTU(E to E)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
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</table>
SCADA /DMS IMPLEMENTATION

- SANC DATE : 22.02.2011 Completion by Mar’17
- AWARD DATE : 21.01.13 (CHEMTROLS LTD)
- 3 Towns SANC Cost : Rs 39.19 Crs
- Disb : Rs 11.76 Crs Released to SIA : Rs 15Cr
- Part-A (SCADA) towns – 3 (Vijayawada, Guntur & Nellore)

### RTU Progress

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<thead>
<tr>
<th>S/S</th>
<th>RTU Installed</th>
<th>Link Feasibility</th>
<th>RTU(E to E)</th>
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</thead>
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<tr>
<td>21</td>
<td>21</td>
<td>2</td>
<td>4</td>
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### FRTU Progress

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<th>RMU+Sect</th>
<th>FRTU Installed</th>
<th>Link Feasibility</th>
<th>FRTU(E to E)</th>
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<tbody>
<tr>
<td>100</td>
<td>51</td>
<td>2</td>
<td>2</td>
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</tbody>
</table>
APSPDCL - Nellore

SANC DATE: 22.02.2011  Completion by Mar’17

AWARD DATE: 21.01.13 (CHEMTROLS LTD)

3 Towns  SANC Cost: Rs 39.19 Crs

Disb: Rs 11.76 Crs Released to SIA: Rs 15Cr

Part-A (SCADA) towns – 3 (Vijayawada, Guntur & Nellore)

**RTU Progress**

- **S/S**
- **RTU Installed**
- **Link Feasibility**
- **RTU(E to E)**

**FRTU Progress**

- **RMU+Sect**
- **FRTU Installed**
- **Link Feasibility**
- **FRTU(E to E)**
NBSP, M/s Bharti Airtel has to extend the connectivity

Interim solution - using SIM instead of MPLS is being exercised till establishment

FAT of DCPS for FRTU to be done

DCPS FAT for RTU staged on 5 Feb 2017 to be supplied and commissioned.
Telangana- North - Warangal

SANC DATE: 22.02.2011 Completion by Dec 16

<table>
<thead>
<tr>
<th>1 Towns</th>
<th>SANC Cost: Rs 12.47 Crs.</th>
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</thead>
</table>


Disb: Rs 3.74 Crs, SIA Payment: Rs 2.33 Cr

Part-A (SCADA) towns – 1 (Warangal)

RTU Progress

- S/S
- RTU Installed
- Link Feasibility
- RTU(E to E)

FRTU Progress

- RMU+Sect
- FRTU Installed
- Link Feasibility
- FRTU(E to E)
- FRTUs to be installed
- SIM to be arranged and End to End test to be conducted
- DCPS is yet to be delivered
Telangana- South - Hyderabad

SANC DATE : 30.06.2011 Completion by Dec 16

AWARD DATE : 17.11.2012 (M/s. Chemtrols )

| 1 Town | Sanction : Rs 65.15 Crs | Disb : Rs 19.55 Crs, SIA Payment : 4.44 Cr |

Part-A (SCADA) towns – 1 (Hyderabad UA)

**RTU Progress**

- S/S: 228
- RTU Installed: 225
- Link Feasibility: 74
- RTU (E to E): 55

**FRTU Progress**

- RMU + Sect: 917
- Link Feasibility: 0
- FRTU (E to E): 0
FRTUs to be installed
Balance RTU to be E to E tested
SIM to be arranged and End to End test to be conducted
DCPS is yet to be delivered
Gujarat- MGVCL - Vadodara

SANC DATE: Dec 2010 Completion by DEC16

AWARD DATE: Feb-Apr 2013 (Chemtrol)

6 Towns SANC Cost: Rs 138.51Crs
Disb: Rs 41.55 Crs

Part-A (SCADA) towns – 6 (Ahmedabad, Baroda, Bhavnagar, Jamnagar, Rajkot, Surat)

RTU Progress

FRTU Progress

- S/S
- RTU Installed
- Link Feasibility
- RTU(E to E)

- RMU+Sect
- FRTU Installed
- Link Feasibility
- FRTU(E to E)
- 3G SIM shall be available
- FRTU End to End testing to be completed
**Gujarat- UGVCL -Ahmedabad**

**SANC DATE : Dec 2010 Completion by DEC16**

**AWARD DATE : Feb-Apr2013 (Chemtrol)**

<table>
<thead>
<tr>
<th>6 Towns</th>
<th>SANC Cost : Rs 138.51Crs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disb :</td>
<td>Rs 41.55 Crs</td>
</tr>
</tbody>
</table>

**Part-A (SCADA) towns – 6 (Ahmedabad, Baroda, Bhavnagar, Jamnagar, Rajkot, Surat)**

---

**RTU Progress**

- **S/S RTU Installed**
- **Link Feasibility**
- **RTU(E to E)**

**FRTU Progress**

- **RMU+Sect**
- **FRTU Installed**
- **Link Feasibility**
- **FRTU(E to E)**

---
- Utility to provide to provide shutdown for RTU/ FRTU
- Permission for installation of tower from GETCO not provided
Gujarat- PGVCL - Rajkot

SANC DATE : Dec 2010 Completion by DEC16

AWARD DATE : Feb-Apr2013 (Chemtrol)

6 Towns  SANC Cost : Rs 138.51Crs
Disb : Rs 41.55 Crs

Part-A (SCADA) towns – 6 (Ahmedabad, Baroda, Bhavnagar, Jamnagar, Rajkot, Surat)
**Gujarat- PGVCL - Bhavnagar**

<table>
<thead>
<tr>
<th>SANC DATE : Dec 2010 Completion by DEC16</th>
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<tbody>
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</tr>
<tr>
<td></td>
<td>Disb : Rs 41.55 Crs</td>
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<td>Part-A (SCADA) towns – 6 (Ahmedabad, Baroda, Bhavnagar, Jamnagar, Rajkot, Surat)</td>
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**RTU Progress**

<table>
<thead>
<tr>
<th></th>
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<th>3</th>
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<tr>
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**FRTU Progress**

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<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
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</thead>
<tbody>
<tr>
<td>RMU+Sect</td>
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<td></td>
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<tr>
<td>Link Feasibility</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>FRTU(E to E)</td>
<td></td>
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Gujarat- PGVCL - Jamnagar

<table>
<thead>
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<th>SANC DATE : Dec 2010 Completion by DEC16</th>
<th>AWARD DATE : Feb-Apr2013 (Chemtrol)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 Towns</td>
<td>SANC Cost : Rs 138.51Crs</td>
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</table>

Part-A (SCADA) towns – 6 (Ahmedabad, Baroda, Bhavnagar, Jamnagar, Rajkot, Surat)

**RTU Progress**

<table>
<thead>
<tr>
<th>S/S</th>
<th>RTU Installed</th>
<th>Link Feasibility</th>
<th>RTU(E to E)</th>
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<tbody>
<tr>
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**FRTU Progress**

<table>
<thead>
<tr>
<th>RMU+Sect</th>
<th>FRTU Installed</th>
<th>Link Feasibility</th>
<th>FRTU(E to E)</th>
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<tbody>
<tr>
<td>343</td>
<td>0</td>
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</table>
- Utility to provide to provide shutdown for RTU/ FRTU
- Permission for installation of tower from GETCO not provided
- FRTU Installation is lagging
**Gujarat- DGVCL - Surat**

<table>
<thead>
<tr>
<th></th>
<th>SANC DATE : Dec 2010 Completion by DEC16</th>
<th>AWARD DATE : Feb-Apr 2013 (Chemtrol)</th>
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<tbody>
<tr>
<td>6 Towns</td>
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</tr>
<tr>
<td>SANC Cost</td>
<td>Rs 138.51 Crs</td>
<td>Disb : Rs 41.55 Crs</td>
</tr>
</tbody>
</table>

Part-A (SCADA) towns – 6 (Ahmedabad, Baroda, Bhavnagar, Jamnagar, Rajkot, Surat)

**RTU Progress**

- **S/S**: 24
- **RTU Installed**: 23
- **Link Feasibility**: 0
- **RTU (E to E)**: 0

**FRTU Progress**

- **RMU+Sect**: 276
- **FRTU Installed**: 0
- **Link Feasibility**: 0
- **FRTU (E to E)**: 0
- Utility to provide to provide shutdown for RTU/ FRTU
- Permission for installation of tower from GETCO not provided
- RTU/FRTU installation to be expedited
**Maharashtra - Nashik**

<table>
<thead>
<tr>
<th>SANC DATE</th>
<th>Completion by Dec 2016 (Mar’17 requested)</th>
</tr>
</thead>
<tbody>
<tr>
<td>June-2011 - 8 towns</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>AWARD DATE</th>
<th>DEC -2011 (SIEMENS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disb : Rs 48.48 Crs</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>8 Towns</th>
<th>SANC Cost : Rs 116.57Crs</th>
</tr>
</thead>
</table>

Part-A (SCADA) towns – 8 *(Amravati, Solapur, Sangli, Malegaon, Greater Mumbai, Pune, Nashik and Kolhapur)*

---

**RTU Progress**

- **S/S**
- **RTU Installed**
- **Link Feasibility**
- **RTU(E to E)**

<table>
<thead>
<tr>
<th>Progress</th>
<th>Number</th>
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<tbody>
<tr>
<td>S/S</td>
<td>34</td>
</tr>
<tr>
<td>RTU Installed</td>
<td>28</td>
</tr>
<tr>
<td>Link Feasibility</td>
<td>22</td>
</tr>
<tr>
<td>RTU(E to E)</td>
<td>0</td>
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</tbody>
</table>
SANC DATE : June-2011 -8 towns
Completion by Dec 2016 (Mar’17 requested)

AWARD DATE : DEC -2011 (SIEMENS)

8 Towns | SANC Cost : Rs 116.57Crs
Disb : Rs 48.48 Crs

Part-A (SCADA) towns – 8 (Amravati, Solapur, Sangli, Malegaon, Greater Mumbai, Pune, Nashik and Kolhapur)
Maharashtra – Greater Mumbai

SANC DATE: June-2011 - 8 towns
Completion by Dec 2016 (Mar’17 requested)

<table>
<thead>
<tr>
<th>8 Towns</th>
<th>SANC Cost: Rs 116.57 Crs</th>
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<tbody>
<tr>
<td></td>
<td>Disb: Rs 48.48 Crs</td>
</tr>
</tbody>
</table>

Part-A (SCADA) towns – 8 (Amravati, Solapur, Sangli, Malegaon, Greater Mumbai, Pune, Nashik and Kolhapur)

**RTU Progress**
- S/S
- RTU Installed
- Link Feasibility
- RTU(E to E)

**FRTU Progress**
- RMU+Sect
- FRTU Installed
- Link Feasibility
- FRTU(E to E)
### Maharashtra - Pune

**SANC DATE**: June-2011 - 8 towns  
*Completion by Dec 2016 (Mar’17 requested)*

<table>
<thead>
<tr>
<th>8 Towns</th>
<th>SANC Cost: Rs 116.57 Crs</th>
<th>AWARD DATE: DEC -2011 (SIEMENS)</th>
<th>Disb: Rs 48.48 Crs</th>
</tr>
</thead>
</table>

Part-A (SCADA) towns – 8 (Amravati, Solapur, Sangli, Malegaon, Greater Mumbai, Pune, Nashik and Kolhapur)

#### RTU Progress

- **S/S**: 83
- **RTU Installed**: 64
- **Link Feasibility**: 2
- **RTU(E to E)**: 0

![RTU Progress Chart](chart.png)
Maharashtra - Sangli

SANC DATE: June-2011 - 8 towns

Completion by Dec 2016 (Mar’17 requested)

AWARD DATE: DEC -2011 (SIEMENS)

8 Towns | SANC Cost: Rs 116.57Crs
Disb: Rs 48.48 Crs

Part-A (SCADA) towns – 8 (Amravati, Solapur, Sangli, Malegaon, Greater Mumbai, Pune, Nashik and Kolhapur)
- R-COMM /BSNL to deliver links
- Completion for functioning of commissioned RTU/FRTU is to be given for Kolhapur and Nashik
Uttarakhand - Dehradun

**SANC DATE:** JAN 12 *Completion by JAN 17*

<table>
<thead>
<tr>
<th>1 Towns</th>
<th>SANC Cost: Rs 16.55 Crs.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Disb: Rs 8.25 Crs SIA Payment: Rs 4.07 Cr</td>
</tr>
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</table>

**AWARD DATE:** DEC 14

**Part-A (SCADA) towns – 1 (DEHRADUN)**

---

**RTU Progress**

- **S/S:** 23
- **RTU Installed:** 13
- **Link Feasibility:** 9
- **RTU (E to E):** 8

**FRTU Progress**

- **RMU+Sect:** 364
- **FRTU Installed:** 160
- **Link Feasibility:** 194
- **FRTU (E to E):** 80
Delay in installation of RTU/ FRTU installation

MPLS Connectivity issue in some sites to be resolved

SIM errors in AIRTEL SIMs to be resolved

SCADA enabler work to expedited to complete project in Jan’17
**Punjab - Jalandhar**

- **SANC DATE**: November 2011 *Completion by Aug. 16*
- **AWARD DATE**: Feb. 2015 (Siemens)
- **3 Towns**
  - SANC Cost: Rs 52.36 Crs
  - Disb: Rs 15.71 Crs

**Part-A (SCADA) towns – 3** (Amritsar, Jalandhar & Ludhiana)

### RTU Progress
- **S/S**: 20
- **RTU Installed**: 10
- **Link Feasibility**: 5
- **RTU(E to E)**: 3

### FRTU Progress
- **RMU+Sect**: 0
- **FRTU Installed**: 0
- **Link Feasibility**: 0
- **FRTU(E to E)**: 30
Punjab - Amritsar

SANC DATE: November 2011 Completion by Aug.16

AWARD DATE: Feb. 2015 (Siemens)

3 Towns SANC Cost: Rs 52.36 Crs

Disb: Rs .15.71 Crs

Part-A (SCADA) towns – 3 (Amritsar, Jalandhar & Ludhiana)
Punjab - Ludhiana

SANC DATE : November 2011 Completion by Aug.16

AWARD DATE : Feb. 2015  (Siemens)

3 Towns  SANC Cost : Rs 52.36 Crs

Disb : Rs .15.71 Crs

Part-A (SCADA) towns – 3 (Amritsar, Jalandhar & Ludhiana)
• RTU and FRTU installation /End to End to be speeded up
• Link availability to be ensured
Rajasthan – JdVVNL - Jodhpur

SANC DATE : MAR 10(3) & JUN 10 (2)  
Completion Dec 16 - Jan 17

AWARD DATE : AUG 2012 (DONGFANG)

<table>
<thead>
<tr>
<th>5 Towns</th>
<th>SANC Cost : Rs 151Crs</th>
<th>Disb : Rs 45 Crs</th>
</tr>
</thead>
</table>

Part-A (SCADA) towns – 5 (Jaipur, Kota, Ajmer, Jodhpur, Bikaner)

**RTU Progress**

- S/S: 53
- RTU Installed: 49
- Link Feasibility: 49
- RTU(E to E): 47

**FRTU Progress**

- RMU+Sect: 3
- FRTU Installed: 148
- Link Feasibility: 0
- FRTU(E to E): 0
Rajasthan – JdVVNL - Bikaner

SANC DATE: MAR 10(3) & JUN 10 (2)
Completion Dec 16 - Jan 17

AWARD DATE: AUG 2012 (DONGFANG)

5 Towns | SANC Cost: Rs 151Crs
Disb: Rs 45 Crs

Part-A (SCADA) towns – 5 (Jaipur, Kota, Ajmer, Jodhpur, Bikaner)

### RTU Progress

<table>
<thead>
<tr>
<th>S/S</th>
<th>RTU Installed</th>
<th>Link Feasibility</th>
<th>RTU(E to E)</th>
</tr>
</thead>
<tbody>
<tr>
<td>36</td>
<td>35</td>
<td>35</td>
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### FRTU Progress

<table>
<thead>
<tr>
<th>RMU+Sect</th>
<th>FRTU Installed</th>
<th>Link Feasibility</th>
<th>FRTU(E to E)</th>
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</thead>
<tbody>
<tr>
<td>116</td>
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</table>
Rajasthan – AVVNQL - Ajmer

<table>
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<tr>
<th>5 Towns</th>
<th>SANC Date: MAR 10(3) &amp; JUN 10(2)</th>
<th>Completion Dec 16 - Jan 17</th>
<th>AWARD DATE: AUG 2012 (DONGFANG)</th>
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<tr>
<td>SANC Cost: Rs 151Crs</td>
<td>Disb: Rs 45 Crs</td>
<td></td>
<td></td>
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</table>

Part-A (SCADA) towns – 5 (Jaipur, Kota, Ajmer, Jodhpur, Bikaner)

**RTU Progress**

- **S/S**: 21
- **RTU Installed**: 20
- **Link Feasibility**: 20
- **RTU(E to E)**: 16

**FRTU Progress**

- **RMU+Sect**: 118
- **FRTU Installed**: 0
- **Link Feasibility**: 0
- **FRTU(E to E)**: 0
### Rajasthan – JVVNL - Jaipur

<table>
<thead>
<tr>
<th>SANC DATE</th>
<th>MAR 10 (3) &amp; JUN 10 (2)</th>
<th>COMPLETION DEC 16 - JAN 17</th>
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<tr>
<td>5 Towns</td>
<td>SANC Cost : Rs 151Crs</td>
<td>Disb : Rs 45 Crs</td>
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<tr>
<td>Part-A (SCADA) towns – 5 (Jaipur, Kota, Ajmer, Jodhpur, Bikaner)</td>
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</tbody>
</table>
Rajasthan – JVVNL - Kota

SANC DATE : MAR 10(3) & JUN 10 (2)  
Completion Dec 16 - Jan 17

AWARD DATE : AUG 2012 (DONGFANG)

5 Towns | SANC Cost : Rs 151Crs
Disb : Rs 45 Crs

Part-A (SCADA) towns – 5 (Jaipur, Kota, Ajmer, Jodhpur, Bikaner)

### RTU Progress

- **S/S RTU Installed**
- **Link Feasibility**
- **RTU (E to E)**

### FRTU Progress

- **RMU+Sect**
- **Link Feasibility**
- **FRTU (E to E)**

**Progress Data**:
- **RTU Progress**:
  - 29
  - 12
  - 15
  - 12

- **FRTU Progress**:
  - 700
  - 0
  - 0
  - 0
Despite project completion extended by MoP/PFC in Jan’17, Rajasthan DISCOMs are yet to extend contract with SIA.

- FRTU installation to be expedited by SIA and SIMs to be provided.
- DISCOM to make progressive milestone payment for end to end test.
### Tamil Nadu - Chennai

**SANC DATE:** December 2010 Completion by Dec 16

<table>
<thead>
<tr>
<th>7 Towns</th>
<th>SANC Cost: Rs 182.17 Crores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part-A (SCADA) towns – 7 (Chennai, Trichy, Madurai, Tirunelvelli, Salem, Tiruppur, Coimbatore)</td>
<td></td>
</tr>
</tbody>
</table>

#### RTU Progress

- **S/S:** 183
- **RTU Installed:** 156
- **Link Feasibility:** 156
- **RTU (E to E):** 125

#### FRTU Progress

- **RMU+Sect:** 1905
- **FRTU Installed:** 1717
- **Link Feasibility:** 1717
- **FRTU (E to E):** 1410
SCADA IMPLEMENTATION UNDER APDRP – TS NPDCL, TELANGANA

**SANC DATE**: December 2010 Completion by Dec 16

<table>
<thead>
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<th>SANC Cost: Rs 182.17 Crores</th>
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</thead>
<tbody>
<tr>
<td>Part-A (SCADA) towns – 7 (Chennai, Trichy, Madurai, Tirunelvelli, Salem, Tiruppur, Coimbatore)</td>
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**TamilNadu - Salem**

<table>
<thead>
<tr>
<th>RTU Progress</th>
<th>FRTU Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td>S/S</td>
<td>RTU Installed</td>
</tr>
<tr>
<td>RMU+Sect</td>
<td>FRTU Installed</td>
</tr>
<tr>
<td>Link Feasibility</td>
<td>RTU(E to E)</td>
</tr>
<tr>
<td>Link Feasibility</td>
<td>FRTU(E to E)</td>
</tr>
</tbody>
</table>

- **RTU Progress**: 6 6 6 6
- **FRTU Progress**: 334 194 334 124
TamilNadu - Tirupur

SANC DATE: December 2010 Completion by Dec 16

7 Towns

SANC Cost: Rs 182.17 Crores

Part-A (SCADA) towns – 7 (Chennai, Trichy, Madurai, Tirunelveli, Salem, Tiruppur, Coimbatore)

**RTU Progress**

<table>
<thead>
<tr>
<th>S/S</th>
<th>RTU Installed</th>
<th>Link Feasibility</th>
<th>RTU(E to E)</th>
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<tbody>
<tr>
<td>12</td>
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**FRTU Progress**

<table>
<thead>
<tr>
<th>RMU+Sect</th>
<th>FRTU Installed</th>
<th>Link Feasibility</th>
<th>FRTU(E to E)</th>
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<tbody>
<tr>
<td>369</td>
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<td>119</td>
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</table>
TamilNadu - Coimbatore

SANC DATE: December 2010 Completion by Dec 16

7 Towns

SANC Cost: Rs 182.17 Crores

Part-A (SCADA) towns – 7 (Chennai, Trichy, Madurai, Tirunelvelli, Salem, Tiruppur, Coimbatore)

**RTU Progress**

- S/S
- RTU Installed
- Link Feasibility
- RTU (E to E)

**FRTU Progress**

- RMU+Sect
- FRTU Installed
- Link Feasibility
- FRTU (E to E)
- Balance FRTU Commissioning to be expedited
Madhya Pradesh – Bhopal

SANC DATE: MAR & JUN 2011

<table>
<thead>
<tr>
<th>Towns</th>
<th>SANC Cost: Rs 103Crs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bhopal, Gwalior, Jabalpur, Indore &amp; Ujjain</td>
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AWARD DATE: Dec’2011 (DONGFANG)

<table>
<thead>
<tr>
<th>Disb: Rs 31 Crs</th>
</tr>
</thead>
</table>

Part-A (SCADA) towns – 5

Bar Chart:
- S/S
- RTU Installed
- Link Feasibility
- RTU(E to E)
**SCADA IMPL UNDER APDRP – TS NPDCL, TELANGANA**

<table>
<thead>
<tr>
<th>Date</th>
<th>Details</th>
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<tr>
<td>SANC DATE</td>
<td>MAR &amp; JUN 2011</td>
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<td>Award Date</td>
<td>Dec’2011 (DONGFANG)</td>
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<td>Towns</td>
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<tr>
<td>SANC Cost</td>
<td>Rs 103Cras</td>
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<tr>
<td>Disb.</td>
<td>Rs 31 Crs</td>
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**Part-A (SCADA) towns – 5 (Bhopal, Gwalior, Jabalpur, Indore & Ujjain)**

**RTU Progress**

- **S/S**
- **RTU Installed**
- **Link Feasibility**
- **RTU(E to E)**
Madhya Pradesh – Indore

SANC DATE: MAR & JUN 2011
AWARD DATE: Dec’2011 (DONGFANG)

<table>
<thead>
<tr>
<th>5 Towns</th>
<th>SANC Cost: Rs 103Crs</th>
<th>Disb: Rs 31 Crs</th>
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Part-A (SCADA) towns – 5 (Bhopal, Gwalior, Jabalpur, Indore & Ujjain)

![RTU Progress Chart]

- S/S
- RTU Installed
- Link Feasibility
- RTU(E to E)
### Madhya Pradesh – Ujjain

<table>
<thead>
<tr>
<th>SANC DATE : MAR &amp; JUN 2011</th>
<th>AWARD DATE : Dec’2011 (DONGFANG)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 Towns</td>
<td>Disb : Rs 31 Crs</td>
</tr>
<tr>
<td>SANC Cost : Rs 103Crs</td>
<td></td>
</tr>
</tbody>
</table>

Part-A (SCADA) towns – 5 (Bhopal, Gwalior, Jabalpur, Indore & Ujjain)

#### RTU Progress

![RTU Progress Chart]

- **S/S**: Blue bars
- **RTU Installed**: Orange bars
- **Link Feasibility**: Green bars
- **RTU(E to E)**: Red bars
Madhya Pradesh – Jabalpur

SANC DATE: MAR & JUN 2011

<table>
<thead>
<tr>
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AWARD DATE: Dec’2011 (DONGFANG)

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Part-A (SCADA) towns – 5 (Bhopal, Gwalior, Jabalpur, Indore & Ujjain)

![RTU Progress Chart]

- Link Feasibility
- RTU Installed
- Link Feasibility2
- RTU(E to E)
- Acute Delay in installation of enablers (Actual Sanction inclD Enablers)
- DMS data and locational details to be provided
### Bihar – Patna

<table>
<thead>
<tr>
<th>SANC DATE : Aug 2012 Completion by Sept 16</th>
<th>AWARD DATE : DEC 2012 (M/s. SCHNEIDER)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Town</td>
<td>SANC Cost : Rs 22.02 Crs</td>
</tr>
</tbody>
</table>

Part-A (SCADA) towns – 1 (Patna)

#### RTU Progress

- **S/S**: 51
- **RTU Installed**: 46
- **Link Feasibility**: 10
- **RTU(E to E)**: 0

#### FRTU Progress

- **RMU+Sect**: 305
- **FRTU Installed**: 289
- **Link Feasibility**: 305
- **FRTU(E to E)**: 0
RTU /FRTU End to End test to be expedited
GIS integration to be done
Chhattisgarh, Kerala, Puducherry

- **Chhattisgarh –**
  
  **Both CC to be commissioned - Pending**
  - UPS PO placed on 23 Feb
  - FRTU order placed on 21 Feb
  - Temporary arrangement with 2 nos 10KVA UPS to power up CC is being made till ordered UPS is delivered
  - Hardware and software installation/ commission to be expedited

- **Kerala –**
  
  **CC commissioned in Feb 17**
  - RTU/FRTU installation and End to End test to be expedited

- **Puducherry –**
  
  **CC to be commissioned**
Operation Monitor
Operation Monitor
R-APDRP RT-DAS

Real Time Feeder DAS at Substation Level
Operation Monitor
Operation Monitor

O/C  E/F  MFT

2  0  0  0  1  0  0
Operation Monitor

After month or year

SAIDI P U T 5.5 2.0 7.5 Hr
SAIFI P U T 19 4 23

SAIDI P U T 2 0 2 Hr
SAIFI P U T 1 0 1

SAIDI P U T 0 3 3 Hr
SAIFI P U T 0 1 1

SAIDI P U T 13 0 0 Hr
SAIFI P U T 2 10 23

SAIDI P U T 7 0 7 Hr
SAIFI P U T 7 0 7
धन्यवाद।

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