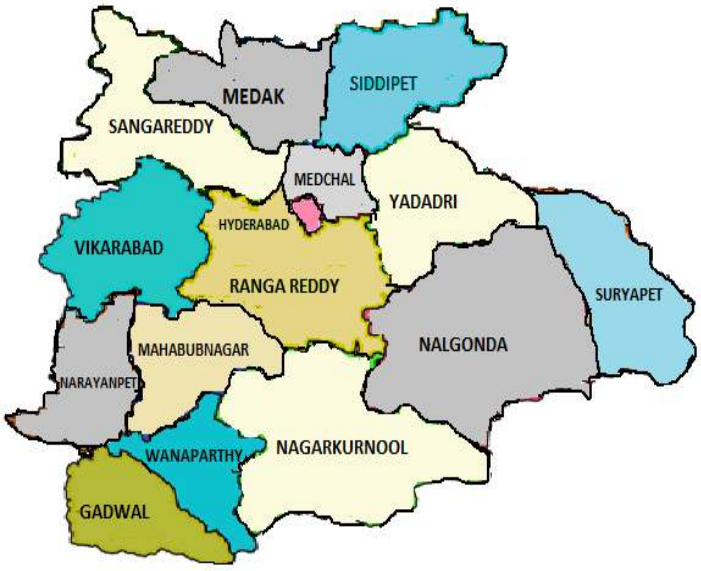
SOUTHERN POWER DISTRIBUTION COMPANY OF TELANGANA LIMITED

(Distribution & Retail Supply Licensee)

Filing of ARR & Proposed Wheeling Tariffs for Distribution Business for Fourth Control Period (FY 2019-20 to FY 2023-24)



16th December, 2019

d) Smart Grid Project

- TSSPDCL has formulated Smart Grid Pilot Project covering Jeedimetla and Shapur Nagar sections in Jeedimetla industrial Area of Rangareddy North circle. **Ministry of Power (GoI) has sanctioned the scheme for Rs.41.82Crs with 50% grant on 20-08-2013** & the implementing agency is M/s. ECIL under the guidance of M/s. CPRI (Project Management Consultant (PMC)). An agreement was concluded with M/s. ECIL for an amount of Rs.34.9 Cr.
- The Smart Grid Pilot Project at Jeedimetla was completed by 30th March'2019 and GOI/MoP has released grants so far Rs.8.74 Cr.
- The objective of the project is to measure the functionalities viz., (a) Advanced Metering Infrastructure (AMI) for residential consumers (b) Outage Management (c) Power quality Management and (d) Peak Load Management.
- Under the scheme, 8800Nos. Single Phase Whole Current RF (Radio Frequency – 865MHz license free Bandwidth) Smart Meters are installed, commissioned & integrated for domestic and commercial in Shapur nagar & Jeedimetla sections and 49Nos. 11KV Feeders are automated by deploying/erecting Autoreclosers, Sectionalizers, Fault Passage Indicators, and 3-Way and 5-Way RMUs.
- The Control Center comprises the Data Servers, Application Servers, Network Management Servers, Distribution Management Servers (DMS), Front end Servers, UPS, Video Projection Systems (VPS), GPS and Routers, Firewalls etc. The communication link between DCU & Control Centre is GSM/GPRS with MPLS.
- **Working principle of Smart Meters:** The meters data will be collected by local Data Concentrator Unit (DCU) by applying RF Zigbee technology with a range of 100m range. The collected data/received data which are available in the DCU will be sent to HES (Head End Server) Smart Grid Control Centre at Erragadda by using GSM/GPRS. The Smart Meters will send the data every 15min to HES to measure, monitor and controlling from remote end i.e., it is an online system and we can measure the load profile of individual consumer, outage management and quality of power and to supply 24X7 power continuously.

- **Working principle of Automation Devices:** Each 11KV feeder is equipped with 1No. Autorecloser & 3Nos. Sectionalisers, FPIs and RMUs. The 11KV network will be ring connected but radially operated. The Automation equipment is imported from South Korea and they are pole mounted devices whereas RMUs are ground mounted. All automation devices are being communicated with DMS by Internet Service Provider (ISP)/Vodafone.
- Autoreclosure – 71Nos, Sectionalisers – 89Nos, FPIs – 176Sets, 3 Way RMUs – 22Nos. & 5 Way RMUs – 40Nos.
- Whenever the fault occurs in 11KV Feeder whether it is momentary or permanent fault, ground fault or phase fault, the faulty section is isolated by the Sectionalizer and supply will be restored to the balance healthy section by Autoreclosure within 5 Seconds. Thus, the breakdown time is reduced drastically and sales will be improved.
- Under this Smart Grid Pilot Project, TSSPDCL has planned to go ahead with Pre-paid mechanism of all installed meters which are installed at Jeedimetla in due course. At present, the installed meters are Postpaid mode and the meters are under observation and its data validation is under study.
- **Benefits of Smart Meters:**
    - Automatic meter reading.
    - Prevention of suppression of wrong readings/exceptionals.
    - Improvement of billing efficiency.
    - Reduction of AT & C losses
    - Remote disconnection & reconnection of services.
    - Power Quality measurement such as Voltage sag/swell, poor Power Factor, frequency.
    - To maintain reliable & quality power (24x7) to all consumers.
    - To detect theft of Energy.
    - To measure the Power ON/OFF of individual consumers.
    - To measure the reactive power & voltage.
    - To measure performance indices such as SAIDI/SAIFI Feeder wise & DTR wise