



GUJARAT POWER RESEARCH & DEVELOPMENT CELL

(A Govt. of Gujarat Initiative)

Gujarat Urja Vikas Nigam Ltd

ABOUT US

Gujarat Power Research and Development (GPRD) Cell is a research center established by the Government of Gujarat for Gujarat Urja Vikas Nigam Limited (GUVNL) and its subsidiary Companies namely GSECL, GETCO, DGVCL, MGVCL, UGVCL and PGVCL.

GPRD Cell is working under Gujarat Urja Vikas Nigam Ltd (GUVNL) and is funded by the Government of Gujarat through the GUVNL. GUVNL is a parent Company of GSECL, GETCO, DGVCL, MGVCL, UGVCL and PGVCL. GSECL is looking after the electricity generation, GETCO is looking after the transmission of electricity and DGVCL, MGVCL, UGVCL and PGVCL are distribution Companies looking after the distribution, operation and maintenance of the electricity up to the consumer level in Gujarat.

The success of the leading Companies depend on the strength of their efforts employed towards R&D. Such Companies spare and spend a huge amount of funds for the R&D activities. With this concept and considering the future requirements of the power, an independent R&D Cell, called GPRD cell has been established.

VISION

To be a globally recognized R&D organization in the power sector so as to strengthen the growth engine of the State and the Nation.

MISSION

To innovate, develop and implement advance technologies for

- Providing facilities and opportunities for creation of knowledge, blue print of futuristic technologies and new business opportunities
- Committing itself for societal good in all walks of human endeavor at macro as well as grassroots levels
- Improving energy efficiency of power network
- Improving electrical safety
- Improving power quality and power reliability
- Improving customer services
- Harnessing renewable energy for environmental benefits
- Improving employee efficiency
- Searching of creative minds
- Improving managerial and decision making tools.

VALUES

Linking tomorrow with today's energy by

- Respect
- Devotion
- Honesty
- Loyalty
- Ethics
- Team Spirit

PRACTICING OF R & D

The Cell is equipped with necessary infrastructural facilities, manned with fully dedicated engineers having aptitude and who can employ their skills, expertise and knowledge to research activities, who have been selected from GUVNL & its subsidiary Companies, through a transparent vigorous process.

The Study, Development and Experiments are carried out for innovations, updating or further improvement in designs of different type of materials being used in the power sector, improvement in network components & efficiency, safe implementation of automation, IT enabled applications, discretionary cultivation of the renewable energy resources, exploring energy storage, Electric Vehicles etc.

GPRD Cell is an independent cell to work & carry out pilot projects to achieve its motto. The Cell is guided by three layers committee. Upper most committee is chaired by Additional Chief Secretary, Energy and Petrochemical Department, GoG, Gandhinagar.

RESEARCH & DEVELOPMENT

AREAS OF GPRD CELL ARE AS UNDER:

- IT & Automation
- Energy Efficiency, Smart Grid & Advance Metering
- Energy Security (Energy Resources Solar, Wind & Others)
- Power Quality, Safety & System Improvement

IMAGINE

INNOVATE

IMPLEMENT

RESEARCH & DEVELOPMENT PROJECTS

The GPRD Cell is engaged in Research and Development in Electricity era. The Cell has also taken up many research activities which are related with Energy Efficiency of Power Network, Power Quality and Power Reliability, Renewable Energy for environmental benefits, improving customer services etc.

For achieving above conception, total 30 Research Projects are completed and 52 Research Projects are at ongoing level. Major Research Projects are listed as under:

COMPLETED RESEARCH PROJECTS

- Load Management Transformer (LMT) earlier it was PAT
- Watch Dog Transformer with load setting
- Air Break Switch with Communication ABEB
- Mobile App GPS/GIS based Asset Mapping
- Stone Less Drop Out Fuse (11 KV SLDO Fuse):
- HT AB Switch with Earth Blade (HT ABEB)
- HTMC (HT Metering Cubical)
- Wedge Connectors for Lossless Connections:
- FRP x arm for DO Fuse of T/C
- Mobile App guide 126 & 135
- Covered Conductor designing for dense coconut trees and forest
- Redesigning of Transformer Center Structure Dimension
- Eco-friendly Earthing System
- PLC/RF - LoRA Communication Technology
- Geo-Mapping of Earth resistivity measurement data of villages under Vijapur Division, UGVCL

ON GOING RESEARCH PROJECTS

- Geo-Urja
- Surya Shakti Kishan Yojana - SKY AG.
Feeder Solarization Scheme
- On line Testing of metering set of HT consumer Installation
- Common meter reading software using meter API_Universal Modem
- LoRA WAN Communication Technology for existing DLMS meters
- Pole Erection Device
- Pilot Project for 11KV VAR compensation with Step less Voltage regulator
- Conductor Stringing Device (CSD)
- On field Safety Improvement by Live line indicator
- Effect of harmonics and its solution
- Smart Feeder Monitoring System for Power Distribution Network
- Mobile App for vigilance Activity
- LT AB Switch with Earth System (LT ABES)
- AL-59-Tech specs
- Common Line Earthing for HT feeder
- Best Practices of other utilities
- Assessing impact of EV on power sector
- Wind Turbine
- Load Break Switch with Earth Blade-Communicable
- Ideal Transformer Center
- GSECL-steam Turbine
- Ester Oil in Distribution System
- Feeder Pillar
- Drone Survey
- Integrated Solar Lighting System (ISLS)
- Battery Storage -Challenges of RE integration, storage and load pattern stabilization
- Development of SMART Ecosystem for Energy Metering and communication for system reliability, quality control and revenue generation
- Study for feasibility of reuse of cooling tower blow down water from bhavnagar lignite thermal power station in irrigation in nearby villages
- Research project to study RS 485 Modbus Based AMR technology for Group Energy meter installations.
- Feeder panel Relay- Snapping of Conductor

OUR PATENTS

Patent means to grant a property right by a legal authority to an inventor. This grant provides the inventor special rights for patented procedure, design or invention for a preselected period. Any new useful enhancement or development, invention or discovery of any new and valuable method, device, creation or configuration of substance or material can obtain the patent, subject to the condition and necessities of the law.

This cell has filed nine applications of Patents as per below:

- On-Line Testing Set up (OLTS)
- Watch Dog Transformer
- Remotely communicable HT ABEB
- Remotely Controllable Capacitor Bank System for VAR Compensation of Feeder
- Dynamic VAR Compensation with HT Capacitors
- Stone-less DO Fuse (SLDO)
- Air Break Switch with Earth Blade Facility with FRP Base Channel(ABEB)
- Conductor Stringing Device
- Earth Enhancement composition for improving earthing quality



CONNECTING GPRD CELL & IITGN

for Research Oriented Activities & Knowledge Sharing
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FOR MORE DETAILS, PLEASE CONTACT US WITHOUT HESITATION,
WE ARE READY TO HEAR AND SERVE YOU AT:



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(A GOVT. OF GUJARAT INITIATIVE)

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