

## Infra Energy Solution

PACE recognizes the importance of passive infrastructure equipment in the telecom and networks industry and offers advanced power solutions for infra to help units of all scales. We offer a wide range of power solutions and global services to telecom operators, integrators, and network manufacturers. Customers can now upgrade and manage their passive communication or telecom infrastructure equipment remotely by accessing them through public wired and wireless networks. PACE, offers advanced range of power solutions for infra, and reliable products for all kinds of applications. With an excellent combination of high quality components and standard application procedures, PACE delivers world class solutions to its customers worldwide. PACE infra solutions for telecom sites include End-2-End solutions & supplies. We manufacture close to 80,000 products in the power supply sector that have been installed across different sites across India & oversea as per the standards. Further our services includes but not limited to:-



## Infra Solutions Supply

### 1. Tower Solution

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| <ol style="list-style-type: none"><li>1. Monopole Towers</li><li>2. Four Pole Angular Towers</li><li>3. Four Pole Tubular Towers</li><li>4. Three Pole Angular Towers</li></ol> | <ul style="list-style-type: none"><li>• Three Pole Tubular Towers</li><li>• Roof Top Towers</li><li>• Stub Towers &amp;</li><li>• Mast</li></ul> |
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### 2. Shelter & Cabinets Solutions

1. Small Shelters for BTS Site with all the electrical accessories
2. Medium Shelters for BSC Site with all the electrical accessories
3. Large Shelters for MSC Site with all the electrical accessories

### 3. Battery Chillers & Cabinets

1. DC Active Cooled Panel Battery Outdoor Chillers for various size of VRLA Batteries includes electrical accessories
2. DC Active Cooled Metal Battery Outdoor Chillers for various size of VRLA Batteries includes electrical accessories
3. FCU Cooled Panel Battery Outdoor Chillers for various size of VRLA Batteries includes electrical accessories
4. Dual Cooling with DC Aircon & FCU Cooled Battery Outdoor Chillers for various size of VRLA Batteries includes electrical accessories

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#### 4. Hybrid Transmission Rack Cabinets

1. Hybrid Transmission Rack cabinets Comprising of Customized Dimensions and free space
2. Available in various type of cooling system as DC Active Cooled, FCU Cooled, Heat Exchanger and Dual Cooling
3. Hybrid Transmission Rack for BTS indoor as well as outdoor Solution with free mounting space modular Design.
4. Hybrid Transmission Rack for SMPS and monoblock Batteries with free mounting space modular Design.

#### 5. PACE Infra Cooling Solutions

1. DC-AC operated Split Air-conditioners for Various capacities and loading
2. DC operated Air-condoning solution for Telecom site for major OPEX savings.
3. AC Operated air-conditioning system for the sites having utility supply available
4. Precision Air-conditioning system for Data Center sites
5. Free Cooling Unit solution.
6. Heat Exchanger cooling Solution.

#### 6. AC & DC Diesel Generators

1. Small Capacity DC Generators variable speed for Major savings up to 10 KW.
2. Small Capacity AC Diesel Generators Three phase as well as single Phase
3. Outdoor standalone AMF solution having existing DG Sets
4. Outdoor standalone high capacity tanks up to 7000 Liters.
5. Fuel monitoring system Solution, Pressure & Capacity based solution.

#### 7. Deep Cycle VRLA Battery Banks

1. Front Terminal mono block Battery Bank with Lower AH Rating
2. Deep Cycle Battery Bank Solution in various AH Capacities.
3. OPvZ Battery Solution for Solar Application.
4. Battery Energizer for increasing the efficiency and life of the battery by more than 100%.

#### 8. Power Management Solution

1. Integrated Power Management system Solution
2. Integrated Power Management unit
3. PAC Telecom Power Hub- Contactor less Technology Solution

**Site Survey** PACE Teams fully adapted to various telecom site conditions ranging from desert areas to water bodies and mountain terrains, dry to tropical weather, rural to dense urban clutter having full acquaintance with tools and programs required. **Site Design and Development** The design and development of sites is critical not only to optimal functioning of the system, but also to reducing running O&M costs, assuring safety of personnel, enhancing quality of service and extending cycle time. All design and construction drawings and specifications for a new site are provided by PACE teams ensuring that the design is adequate for the site conditions and customer approved prior to construction & includes the following:- Site walks and Site layout Access and load considerations Fabrication area for construction activities Temporary power, Utility sources and Resources needed **Geotechnical parameters & considerations** Tower and shelter foundations designs Grounding system design and Soil resistivity Soil Test & Tower foundation drawings Site labeling & clearance **Tower design** Self-supporting, guyed, monopole, stub or pole& Rooftop Towers Tower and antenna mounts heights and azimuths Wind load, twist & design as per the antenna loads Platforms, ladder or pegs, marking and lighting **Shelter or equipment room design** Shelter design as per the teleco requirement considering the Ambient outside temperature of environment, Heat insulation, lighting, grounding, power, alarm system, firefighting, feed-through, door, RF, cable trays, anti-static, etc. Floor plan and equipment connectivity. Temperature,



humidity, and cleanliness requirements Site specifications for construction materials, insulation type, size and distance, existing conditions, and predicted growth **Site development drawings** Site plan, existing and/or new road profiles Grounding system drawings Drainage requirements, grading and sediment control plan Utility plan and installation details Shelter, tower and relevant foundation plans Fence enclosure and guy anchor fence if applicable Drawings are maintained to reflect the intended design of the site and keep track of the way the site was actually built **Site Construction**

- Preparation and submittal of As-Built Drawings
- Site preparation and leveling
- AC Power distribution design & drawing
- Civil Work
- Towers foundation
- Shelters foundation
- Integrated Power Management System foundation
- Outdoor Battery Chiller Cabinet foundation
- Generator and Fuel Tank foundation
- Boundary Wall

### **Installation and Commissioning**

- Installation, testing & commissioning of hybrid passive power equipment systems and accessories.
- Mounting cable trays brackets, jumpers and connectors, Grounding kits, clamps and caballing.
- Transmission line identification and labeling
- Hybrid DC Power, A/C power, generators, Deep cycle batteries and/or solar panels and alarms integration.
- Fuel tank and piping along with integration to the NOC server & Backup generator.
- Hybrid cooling system installation DC as well as AC operated.
- Fire-fighting and smoke detection systems, in built in case of outdoor systems.
- Supply and install alarm termination box including the necessary wiring to the termination points.
- Database download, start up, testing, commissioning and integration

**Acceptance and Integrations** Our sites are verified compatible through its quality assurance / quality control before inviting the customer for site acceptance.

- Network passive power equipment tests whereby each element is tested separately and independently. A hardware inventory check is performed and documented
- Integration tests to verify that power equipment's integration is working properly and that the network site up time is 100%.
- System, subsystem or system extension tests verify that the system is properly working after all other tests have been passed. All applicable areas of the site are inspected, tested and documented before being presented to customer
- Access road construction.
- Utility connection.
- Tower construction and installation according to specs
- Shelter placement and/or construction
- Concrete compressive strength requirements
- Site AC power, transfer switch functionality and alarms
- HVAC equipment and alarms (including high & low temperature and high humidity)
- Generator functionality and alarms
- Smoke detection and fire-fighting equipment
- UPS functionality and alarms
- Tower lighting functionality and alarms
- Equipment properly installed, spacing and level, cabinets and racks secured
- Cable runway system properly installed
- Proper sealing for floor and transmission line entry ports, holes and opening



- Adequate lighting requirements
- Safety items available, fuel tank in secure place
- Proper grounding at transmission line entry port, tower, fencing and gate, generator and support skids
- Surge protectors
- Feeder and cable installation (length, inter-distance, bending, labeling)
- General workmanship
- Signage posted
- Site and building clean and free of trash and debris
- As-built site, building and tower drawings