

Power Scenario In Indian Grid

Total Installed Capacity - Source : Central Electricity Authority (CEA)

| Sector | MW | % of Total |
|----------------|-----------------|------------|
| Central Sector | 93,477 | 25.2 |
| State Sector | 1,03,322 | 27.9 |
| | 1,73,549 | 46.9 |
| Total | 3,70,348 | |

| Fuel | MW | % of Total |
|-------------------|-----------------|------------|
| Total Thermal | 2,30,600 | 62.8 |
| Coal | 1,98,525 | 54.2 |
| Lignite | 6,610 | 1.7 |
| Gas | 24,955 | 6.7 |
| Diesel | 510 | 0.1 |
| Hydro(Renewable) | 45,699 | 12.4 |
| Nuclear | 6,780 | 1.9 |
| RES (MNRE) | 87,269 | 23.6 |
| Total | 3,70,348 | |

All India Installed Capacity (in MW) of Power stations

| Region | Thermal | Nuclear | Hydro | RES (MNRE) | Grand Total |
|------------------|--------------------|----------------|------------------|------------------|--------------------|
| Northern | 60,801.05 | 1620.00 | 20,085.77 | 16,870.11 | 99,376.93 |
| Western | 85,281.61 | 1840.00 | 7622.50 | 26,043.13 | 12,0787.00 |
| Southern | 54,509.99 | 3320.00 | 11,774.83 | 42,473.52 | 1,12,078.34 |
| Eastern | 27,385.05 | 4639.12 | 1499.16 | 364.64 | 4,523.46 |
| North Eastern | 2,581.83 | 0.00 | 1577.00 | 364.64 | 4,523.46 |
| Islands | 40.05 | 0.00 | 0.00 | 18.19 | 58.24 |
| All India | 2,30,599.57 | 6780.00 | 45,699.22 | 87,268.74 | 3,70,347.52 |

National and Regional load dispatching centres

- Power System Operation Corporation Limited (POSOCO) is a wholly owned Government of India enterprise under the Ministry of Power.

- It was earlier a wholly owned subsidiary of Power Grid Corporation of India Limited (PGCIL). It was formed in March 2009 to handle the power management functions of PGCIL.
- It is responsible to ensure the integrated operation of the Grid in a reliable, efficient, and secure manner.
- It consists of 5 Regional Load Despatch Centres and a National Load Despatch Centre (NLDC).
- National Load Despatch Centre (NLDC) has been constituted as per Ministry of Power (MOP) notification, New Delhi dated 2 March 2005 and is the apex body to ensure integrated operation of the national power system.
- Function: for optimum scheduling and despatch of electricity among the Regional Load Despatch Centres.

-To monitor grid operations

-To exercise supervision and control over the inter-state transmission system

-To optimize scheduling and dispatch of electricity within the region

-To keep accounts of quantity of electricity transmitted through the regional grid.

-To carry out real time operations of grid control and dispatch of electricity within the region in accordance with the Grid Standards and Grid Code.

Regional Load Dispatch Centers Rids

- The five RLDCs in India are owned, operated and maintained by Power Grid Corporation of India Limited (POWERGRID) which is the Central Transmission Utility (CTU) of the country
- Northern grid: Delhi, Haryana, Himachal Pradesh, Jammu and

Kashmir, Punjab, Rajasthan, Uttar Pradesh, Uttarakhand
99376.93MW

- Western grid: Maharashtra, Gujarat, Madhya Pradesh, Chhattisgarh, Goa, Daman and Diu, Dadra and Nagar Haveli 1,20,787.24MW
- Eastern grid: Bihar, Jharkhand, Odisha, West Bengal, Sikkim 33523.32MW
- Southern grid: Tamil Nadu, Karnataka, Kerala, Andhra Pradesh, Telangana, Pondicherry 1,12,078.34
- North-Eastern grid: Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura 4523.46MW Total: 370347.52MW

Southern Regional Grid

- Southern regional grid is an electrical system comprising of 6,51,000 Sq. km of area with 5 States namely Andhra Pradesh, Karnataka, Kerala, Tamilnadu, Telangana and Union Territory of Pondicherry, Generating Stations at Central and State Sector, Independent Power producing stations, State DISCOMS and STUs etc.
- The Southern region has an installed capacity of 74367 MW as on 31/07/2016 with 30,347 MW in State Sector and 10490 MW in Central Sector and 33530 MW IPPs.
- The States are inter connected with each other through 765/400/220 kV network. Southern Region is connected to Western region through HVDC Back-to-back (2x500MW) link at Bhadrawathi in WR and to Eastern regions through HVDC back-to-back link (2x500 MW) at Gazuwaka in SR and ±500 kV Bipolar HVDC link (2x1000 MW) from Talcher in ER to Kolar in SR as well as 765 kV 2 x Single Circuit Sholapur- Raichur Interconnector to facilitate exchange of power from surplus to deficit region

State as well as wheeling of power.

- For the year 2015 – 16 had seen Southern Region in meeting a maximum demand of 40899 MW and average daily energy consumption of 780 MUs which are 7.3% and 4.7% respectively higher than the previous year. There was about 6800 MW generation addition during the year. During the year 2015-16 the Southern Region has witnessed a maximum consumption of energy of 929.57 MUs on 22nd March'16 (4.13% rise compared to 2014-15) and the maximum peak demand of 40899 MW on 21st March'16 (7.3% rise compared to 2014-15) as against the respective maximum values 892.70 MU and 38090 MW met last year.
- Southern Region has met a maximum demand of 41,607 MW on 7th April 2016

Tamil Nadu State Load Despatch Centre (SLDC)

Grid Operation in TN started by November 1964. The first Load Despatch Centre was operated from Erode.

Subsequently, the main Load Despatch Centre was formed in 1986 at Chennai and Sub Load Despatch Centre at Madurai.

In accordance with section 32 of Electricity Act, 2003 roles and functions of SLDCs are as under :

The SLDCs shall be the Apex Body to ensure integrated operation of the Power system in a State.

SLDCs shall :Be responsible for optimum scheduling and dispatch of electricity within a state in accordance with the contracts entered into with the licensees or the generation companies operating in that State.

Functions of SLDCs

- Monitor grid operation
- Be responsible for carrying out real time operation for grid control and dispatch of electricity within the State through secure and economic operation of the State Grid in accordance with the grid standards and state grid code
- Keep accounts of the quantity of electricity transmitted through State Grid.
- Exercise supervision and control over the inter-state transmission system.