



POWER BULLETIN

Per capita emission in India remains low at **40%** of the global average and it will be reduced due to several strategic initiatives.

Installed capacity of RE in India is increased till **77.64** GW with the weightage of **21.8%** in the Indian Energy Basket. NTPC planted **1.45** crores of plants at different facilities.

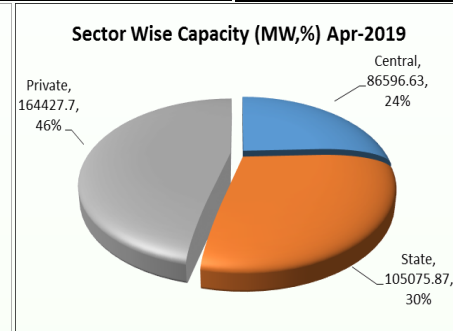
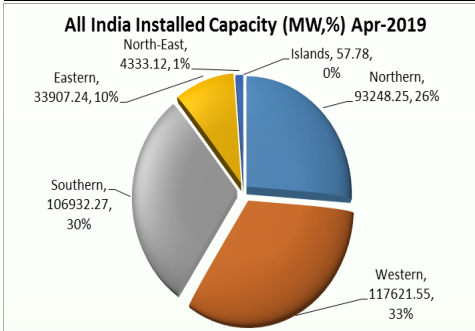


Inside

- ◆ Overview of Indian Power System for Apr - 2019 ----- 2
- ◆ PXIL & IEX Trading summary ----- 3
- ◆ Deviation Charges ----- 4
- ◆ Reactive Energy Charges For DD & DNH ----- 4
- ◆ Power Sector Activities ----- 5
- ◆ All India List of Elem. Commissioned during the FY 2019-20 - 7
- ◆ About Panacean ----- 8
- ◆ Panacean IT Services ----- 10

OVERVIEW OF INDIAN POWER SYSTEM FOR APR-2019

All India Installed Capacity (MW) as on 30-04-2019						All India Installed Capacity (MW) as on 30-04-2019		Peak Demand of DD & DNH				
Region	Thermal	Nuclear	Hydro	RES	Total	Sector	Generation (MW)	Utility	Apr-19			
Northern	57721.46	1620.00	19707.77	14199.02	93248.25				Central	86596.63	Peak Demand (MW)	Peak Met (MW)
Western	85155.11	1840.00	7547.50	23078.94	117621.55	State	105075.87	DD		341		
Southern	53217.26	3320.00	11774.83	38620.18	106932.27		Private		164427.70	DNH	818	818
Eastern	27563.64	0.00	4942.12	1401.48	33907.24	Total		356100.20				
North-Eastern	2581.83	0.00	1427.00	324.29	4333.12							
Islands	40.05	0.00	0.00	17.73	57.78							
ALL	226279.35	6780.00	45399.22	77641.64	356100.21							



All India Plant Load Factor (PLF) in (%)		
Sector	Apr-18	Apr-19
Central	76.34	74.59
State	64.38	61.42
Private IPP	55.24	60.05
Private UTL	68.15	64.40
ALL India	64.54	64.71

- Highlights of WR Grid for Apr-2019**
- Maximum Peak Demand Met:** 56222 MW
 - Energy Consumption:** Total Energy Consumption in the month of Apr-2019 was 36504 MUs at an average of 1217 MUs/day & Maximum was 1276 MUs on 26.04.2019.
 - Unrestricted Demand:** Maximum Unrestricted demand was 56242 MW and Average Peak Unrestricted demand was 50700 MW.
 - Frequency Profile:** System frequency as per IEGC band is 49.90 Hz to 50.05 Hz. Maximum, Minimum & Average Frequencies 50.29 Hz, 49.65 Hz & 50.00 Hz were respectively observed in the month of Apr-2019.
 - Voltage Profile:** All 765 KV nodes of WR were within the IEGC limit except, Tamnar, Durg and Kotra which are high voltage node. High Voltage (greater than 420 KV) at 400KV substations were observed at Khandwa, Damoh, Raipur, Raigarh, Wardha, Dehgaon, Parli, Kalwa, Karad, Amreli, Mapusa, Magarwada, Hazira & Dhule. Highest of 88.30% of time voltage remained above 420KV at Dhule.
 - Hydro Generation:** Total hydro generation of Western Region was 829.53 MUs at an average of 34.50 MUs/day in the month of Apr-2019.
 - Wind Generation:** Total wind generation was 1540 MUs at an average of 51.40 MUs/day in the month of Apr-2019.
 - Solar Generation:** Total Solar generation was 619 MUs at an average of 25 MUs/day in the month of Apr-2019.
 - Open Access Transaction Details for Apr-2019:**
 - ⇒ No. of approvals & Energy Approved in Intra-regional & Inter-regional: 139 & 1113.46 MUs.
- [Read More...](#)

List of Transmission Lines Commissioned/Ready for Commissioning During Apr-2019												Total
Sector	Central				Pvt.			State				
Voltage Level (KV)	800	765	400	220	765	400	220	765	400	230	220	
No. of Lines	0	0	1	0	0	0	0	0	1	0	7	9

List of Substations Commissioned/Ready for Commissioning During Apr-2019												Total
Sector	Central				Pvt.			State				
Voltage Level (KV)	765	400	230	220	765	400	220	765	400	230	220	
No. of Substations	1	2	0	0	0	0	0	0	7	0	13	23

Region-wise Power Supply Position (Demand & Availability) in Apr-2018 & Apr-2019						
Region	Energy (MUs)				Deficit / Surplus (%)	
	Demand		Energy Met		Apr-18	Apr-19
	Apr-18	Apr-19	Apr-18	Apr-19		
Northern	28590	30094	28170	29786	(1.5)	(1.0)
Western	33235	34875	33233	34868	0.0	(0.0)
Southern	29211	31111	29166	31109	(0.2)	(0.0)
Eastern	11752	12851	11650	12850	(0.9)	(0.0)
North Eastern	1225	1300	1174	1228	(4.2)	(5.5)
All India	104013	110231	103393	109842	(0.6)	(0.4)

Region-wise Peak Demand / Peak Met in Apr-2018 & Apr-2019						
Region	Power (MW)				Deficit / Surplus (%)	
	Peak Demand		Peak Met		Apr-18	Apr-19
	Apr-18	Apr-19	Apr-18	Apr-19		
Northern	48824	54476	48367	53985	(0.9)	(0.9)
Western	50654	56242	50434	56222	(0.4)	0.0
Southern	45946	49155	45684	49103	(0.6)	(0.1)
Eastern	21320	23349	21275	23349	(0.2)	0.0
North Eastern	2600	2848	2552	2780	(1.8)	(2.4)
All India	162492	177411	161286	176810	(0.7)	(0.3)

POWER TRADING

⇒ Emergence of IT has helped to create massive E-Commerce platforms in every walk of life. One such E-Commerce platform for transiting electricity for physical delivery, fine tuning daily requirements, sale of residual generation, optimal utilization of generating resources at marginal cost of production etc. has been made possible through the commencement of Power Exchanges.

⇒ For more information about IEX visit (www.iexindia.com); For more information about PXIL visit (www.powerexindia.com)

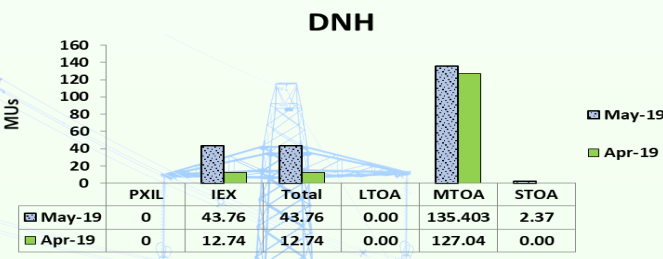
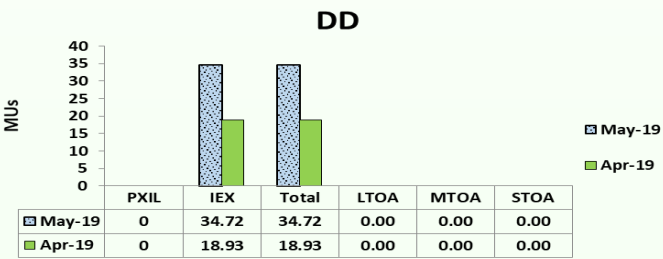


⇒ PXIL & IEX Trading summary

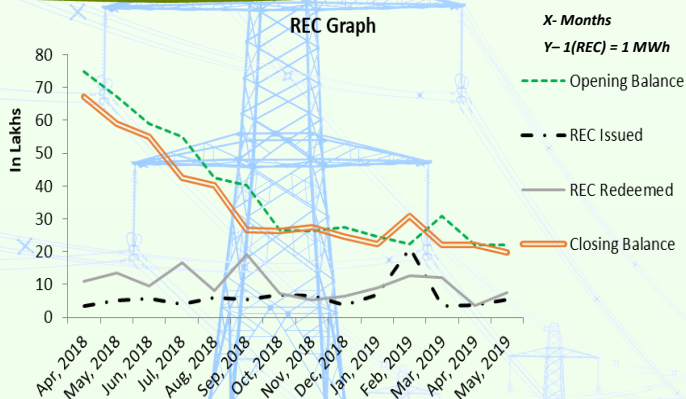
MAY-2019	PXIL					IEX				
	Buy Bid (MWh)	Sell Bid (MWh)	MCP (₹/MWh)	Cleared Volume (MWh)	Marginal Clear Volume (MWh)	Buy Bid (MWh)	Sell Bid (MWh)	MCP (₹/MWh)	Cleared Volume (MWh)	Marginal Clear Volume (MWh)
Total	5166.40	32016.40	0.00	4686.40	5166.40	4785172.15	7573595.39	3337.14	3776233.67	3772691.94
Min	0.00	0.00	0.00	0.00	0.00	3003.80	6009.38	1593.19	2929.91	2939.91
Max	10	110	4190	10	10	12990.87	19257.00	7150.81	8709.45	8709.45
Avg	4.4847	27.7920	2227.92	4.0681	4.4847	6431.68	10179.56	3337.14	5070.82	5075.58

APR-2019	PXIL					IEX				
	Buy Bid (MWh)	Sell Bid (MWh)	MCP (₹/MWh)	Cleared Volume (MWh)	Marginal Clear Volume (MWh)	Buy Bid (MWh)	Sell Bid (MWh)	MCP (₹/MWh)	Cleared Volume (MWh)	Marginal Clear Volume (MWh)
Total	136963.2	269135.2	-	135635.2	125714.7	5208152.2	8042625.1	-	4008499.7	4073247.1
Min	0.0	0.0	0.0	0.0	0.0	3061.7	6520.5	1924.6	2514.9	2484.5
Max	262.0	500.0	4240.0	262.0	200.0	12444.2	17881.8	5163.0	8901.3	9387.7
Avg	49.2	96.7	3002.3	48.7	45.2	7233.6	11170.3	3221.1	5567.4	5657.3

DD & DNH: OPEN ACCESS DETAILS



RENEWABLE ENERGY CERTIFICATE MECHANISM (REC) FROM APR-18 TO MAY-19



[Read More...](#)

REC Trading Session May-2019

Trader Company	PXIL		IEX		
	Particular	Non-Solar	Solar	Non-Solar	Solar
Total Sell Bid (REC's)	1,85,219	78,108	4,36,110	1,69,438	
Total Buy Bid (REC's)	2,20,495	1,63,143	11,48,380	6,14,170	
Clearing Price (₹/Certificate)	1,450	2,000	1,500	2,000	
Cleared Volume (REC's)	1,47,349	52,491	4,16,264	1,34,688	

POWER MARKET UPDATE: May 2019

Day Ahead Market Trades 4005 MU with Avg. MCP at Rs. 3.34 per unit

- The average Market Clearing Price (MCP) discovered in the day-ahead market was at Rs. 3.34 per unit declined 29% over Rs. 4.67 per unit in May-2018.

The average MCP during different time-periods of the month was:

- * Morning (07:00 to 10:00 Hrs): Rs. 2.59 per unit
- * Day (11:00 to 17:00 Hrs): Rs. 3.09 per unit
- * Evening peak (18:00 to 23:00 Hrs): Rs. 3.92 per unit
- * Night (01-06 Hrs and 24 Hrs): Rs. 3.50 per unit
- The day-ahead market experienced occasional transmission congestion towards import of power to Southern States leading to volume loss of 3.76 MU representing 0.10% of the total volume traded in Day Ahead Market.
- On a daily average basis 122 MU were traded in May-2019.
- The One Nation, One Price was realized for 29 days in the month of May-2019.
- On daily average basis 746 participants traded in the day-ahead power market in May-19.

[Read More...](#)

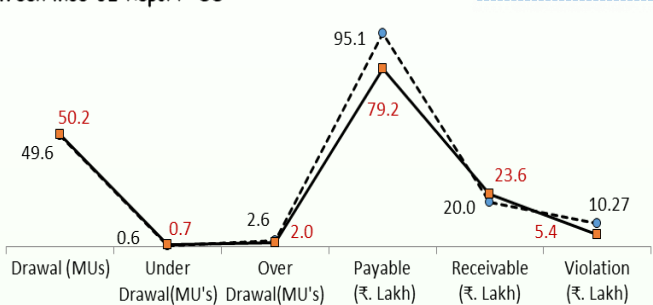
DEVIATION CHARGES

[DD User Click to get UI Report](#)
[DNH User Click to get UI Report](#)

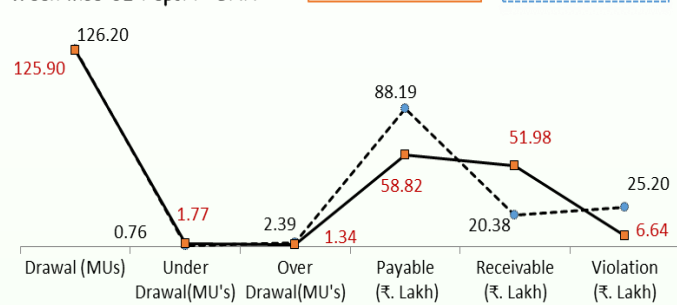
DD-Deviation Charges							
FY 2019-20	Drawl (MUs)	Schedule (MUs)	UI Drawl (MUs)		UI Charges(₹. Lakh)		
			Under Drawl	Over Drawl	Payable	Receivable	Violation
Cumulative Total up to Apr-19	219.13	204.20	1.62	16.55	533.12	43.53	74.46
20-05-2019 to 26-05-2019	50.16	48.91	0.71	1.96	79.21	23.60	5.38
20-05-2018 to 26-05-2018	52.71	45.86	0.10	6.95	243.25	2.84	--
13-05-2019 to 19-05-2019	49.61	47.57	0.60	2.64	95.10	19.99	10.27
13-05-2018 to 19-05-2018	50.49	42.62	0	7.87	284.64	0.16	--

DNH-Deviation Charges							
FY 2019-20	Drawl (MUs)	Schedule (MUs)	UI Drawl (MUs)		UI Charges (₹. Lakh)		
			Under Drawl	Over Drawl	Payable	Receivable	Violation
Cumulative Total up to Apr-19	554.00	546.16	3.06	10.90	351.92	67.45	43.06
20-05-2019 to 26-05-2019	125.90	126.33	1.77	1.34	58.82	51.98	6.64
20-05-2018 to 26-05-2018	123.51	118.41	0.33	5.42	176.40	7.83	--
13-05-2019 to 19-05-2019	126.20	124.57	0.76	2.39	88.19	20.38	25.20
13-05-2018 to 19-05-2018	121.37	117.78	0.23	3.83	132.88	5.06	--

Week wise UI Report: DD



Week wise UI Report: DNH



DD

Month	FY 2018-19 (All Freq Hz)			FY 2019-20 (All Freq Hz)		
	Under Drawl in MU's	Over Drawl in MU's	UI Rate in ₹/Unit	Under Drawl in MU's	Over Drawl in MU's	UI Rate in ₹/Unit
April	0.30	(19.56)	(2.79)	1.62	(16.55)	(3.27)
May	0.57	(27.91)	(3.43)	--	--	--
June	0.23	(24.82)	(2.61)	--	--	--
July	0.16	(31.37)	(2.54)	--	--	--
Aug	0.10	(28.24)	(2.52)	--	--	--
Sep	0.14	(33.75)	(2.92)	--	--	--
Oct	0.37	(25.13)	(2.58)	--	--	--
Nov	0.65	(19.69)	(2.48)	--	--	--
Dec	0.20	(23.87)	(2.57)	--	--	--
Jan	2.25	(6.69)	(4.20)	--	--	--
Feb	2.46	(7.70)	(3.85)	--	--	--
Mar	2.21	(13.41)	(3.69)	--	--	--
Total	9.63	(262.14)	(2.82)	1.62	(16.55)	(3.27)

DNH

Month	FY 2018-19 (All Freq Hz)			FY 2019-20 (All Freq Hz)		
	Under Drawl in MU's	Over Drawl in MU's	UI Rate in ₹/Unit	Under Drawl in MU's	Over Drawl in MU's	UI Rate in ₹/Unit
April	0.39	(22.51)	(2.70)	3.06	(10.9)	(3.62)
May	2.03	(16.76)	(3.40)	--	--	--
June	1.43	(15.89)	(2.57)	--	--	--
July	0.43	(25.32)	(2.37)	--	--	--
Aug	0.33	(35.64)	(2.35)	--	--	--
Sep	0.50	(33.89)	(2.73)	--	--	--
Oct	1.76	(26.70)	(2.64)	--	--	--
Nov	2.36	(18.13)	(2.67)	--	--	--
Dec	0.57	(27.12)	(2.56)	--	--	--
Jan	2.68	(7.65)	(3.84)	--	--	--
Feb	2.99	(8.68)	(3.68)	--	--	--
Mar	5.37	(8.02)	(5.90)	--	--	--
Total	20.84	(246.31)	(2.72)	3.06	(10.9)	(3.62)

REACTIVE ENERGY CHARGES FOR DD & DNH

FY 2019-20	DD-High Voltage				DD-Low Voltage				DNH-High Voltage			DNH-Low Voltage		
	GUJARAT		ISTS		GUJARAT		ISTS		ISTS			ISTS		
	Dok-diu	Una-diu	Mgr-Vap HV	Total	Dok-diu	Una-diu	Mgr-Vap LV	Total	Kpd-Vap HV	Kdl-Vap HV	Total	Kpd-Vap LV	Kdl-Vap LV	Total
Cumulative Total MVARh till Apr-2019	-26.4	-19.9	11113.3	11067.0	0.0	-2.8	0.0	-2.8	10373.2	10965.7	21338.9	1.4	350.4	351.8
Cumulative Total Charges in (₹) till Apr-19	3828.0	2885.5	-1611428.5	-1604715.0	0.0	-406.0	0.0	-406.0	-1504114.0	-1590026.5	-3094140.5	203.0	50808.0	51011.0
13-05-2019 to 19-05-2019	47.0	26.2	3442.7	3515.9	0.0	0.0	0.0	0.0	4230.3	2037.8	6268.1	0.0	0.0	0.0
Charges in (₹)	-6815.0	-3799.0	-499191.5	-509805.5	0.0	0.0	0.0	0.0	-613393.5	-295481.0	-908874.5	0.0	0.0	0.0
20-05-2019 to 26-05-2019	57.3	27.2	2128.7	2213.2	0.0	0.0	0.0	0.0	2632.1	2397.3	5029.4	0.0	153.6	153.6
Charges in (₹)	-8308.5	-3944.0	-308661.5	-320914.0	0.0	0.0	0.0	0.0	-381654.5	-347608.5	-729263.0	0.0	22272.0	22272.0

Note: The REC chargers has been revised to 14.5 paisa/KVARh from Apr-2019 as per clause of 6.6 of revised IEGC.

Note: Bracket Value () indicates the negative value(-ve). Note: For REC table -Ve Value indicates Receivable & +Ve Value indicates Payable.



POWER SECTOR ACTIVITIES



* MNRE

- Amendment dated 12th June 2019 to ALMM Guidelines dated 28th March 2019.

* CEA

- Minutes of the Meeting to review progress of the installation of Public Charging infrastructure (PCI) for electric vehicles in Delhi/NCR held on 10.05.2019 at CEA, Sewa Bhawan, New Delhi

* JERC

- Joint Electricity Regulatory Commission (Draft Solar PV Grid Interactive System based on Net Metering) Regulations, 2019 .
- Draft Renewable Energy Tariff Regulations, 2019

* SECI

- Extension of BID Submission Deadline : Selection of Solar Power Developers for Setting up of 2000 MW Grid-Connected Solar PV Power Projects in India (Tranche-I) Under CPSU Scheme (Government Producer Scheme) Phase-II

* CERC

- Draft Central Electricity Regulatory Commission (Power System Development Fund) Regulations, 2019
- Regulatory Compliance Application by IEX for introduction of New Bid (Order) Types at the exchange platform. Last Date extended

* MISCELLANEOUS

- CERC Dismisses Adani Green's Petition Against Power Grid Corporation.
- CERC Agrees to Extend Retrofitting Timeframe for Suzlon's 7.4 GW of Wind Projects
- Centre Advises Andhra Pradesh Government Against Revisiting Solar, Wind PPAs.
- South Africa's Kingdom of Eswatini Seeks Developers for 40 MW of Solar Projects.
- Dubai Announces RFP for Consultants to Develop Floating Solar Projects.
- Hero Future Energies to Receive \$43 Million from IFC for a 250 MW Solar Project in Rajasthan
- Zambia Awards 120 MW of Solar PV Projects
- EPC Contractors Invited to Construct 150 MW of Solar PV Projects in Gujarat
- Punjab's Akal University Installs a 1.2 MW Solar Project to Fuel its Energy Needs
- Bangladesh Signs Agreement with Saudi-Based Alfanar for 100 MW of Solar Power Projects
- Andhra Pradesh Approves DISCOM-Driven Rooftop Solar Program
- RK Singh Returns as the Union Power Minister Under PM Modi's New Cabinet.
- MNRE Asks Developers to Use Robotics for Efficient Use of Water in Solar Projects
- A Three-Member Consortium to Develop an 800 MW Hybrid Solar Project in Morocco
- Wheeling & Banking Agreement Mandatory to Receive Compensation for Solar Power Supplied
- Solar and Wind Energy Policy Roundup from May 2019

- ISA Invites Member Countries to Endorse Organizations for Developing Solar Projects
- Average Power Purchase Cost for Open Access Solar and Wind Projects Set At ₹3.60/kWh
- Solar Project Developer KPI Global Acquires a New Special Purpose Vehicle
- ABB, Sungrow, and Huawei Were Top Solar Inverter Suppliers in 2018
- Tamil Nadu Launches Procedure for Deviation Settlement of Wind and Solar Projects
- China's Cumulative Installed Solar Capacity Stands at Nearly 180 GW: NEA
- RK Singh Rallies for Removal of Priority Sector Lending Limit for Renewable Projects
- Newly Commissioned Solar Projects Drive Azure's Revenue Up 26% to \$41 Million in Q4 2019
- Gross Tariff of ₹4.49/kWh to Apply for Solar PV Projects in Uttarakhand
- Land is Still the Biggest Impediment for Large-Scale Solar Development
- Oberoi and Trident Hotels in Gurgaon to Run on Solar Power
- Off-Grid Solar Solutions Provider Oorja Wins \$100,000 for Installing Solar Pumps
- EESL Issues Tender to Procure Solar Pumps
- Amid Water Scarcity, Solar Water Pumps Come to Rescue in Cyclone-Hit Odisha
- Four-junction Tandem Thin Film Cells Have Huge Potential for Rooftop Solar: MIT Study
- Maharashtra to Renegotiate Tariffs for 1,170 MW of Auctioned Solar Projects
 - ⇒ The state commission found that tariffs bid for the solar projects were high and needed to be renegotiated.
- Kerala Electricity Board Cancels 200 MW Solar Tender
 - ⇒ Only one bidder emerged in previous tender attempts, violating competitive bidding norms.
- After April's Lull, India Auctions 1.7 GW of Solar Capacity in May 2019
 - ⇒ On the other hand, tender activity fell during the month.
- NTPC's 1.2 GW Solar Tender Gets Another Bid Extension
 - ⇒ The new bid submission deadline is July 1, 2019.
- Bihar's New Tender Calls Developers to Set Up 250 MW of Solar Projects
 - ⇒ Bids to be submitted by July 10, 2019.
- Startup Skilancer Solar Receives Funding from Alfa Ventures to Scale its Operations
 - ⇒ The investment amount is undisclosed.
- Globeleq Announces Financial Closure for its 40 MW Solar Project in Kenya
 - ⇒ The developer has entered into a power purchase agreement for 20 years with Kenya Power.
- Greenko Raises \$495 Million to Invest in 2.4 GW of Energy Storage Projects
 - ⇒ The two energy storage projects of 1.2 GW each are expected to be commissioned by 2022.
- Uttar Pradesh Proposes Solar RPO at 2% for 2019-20

Note: Click on Head lines for More Info

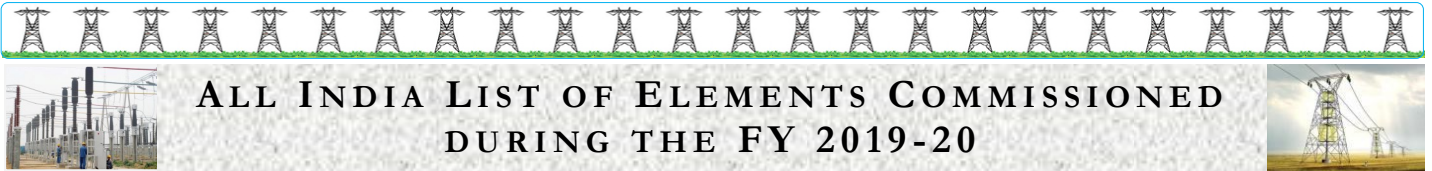


- **Mitsui to Acquire 49% Stake in Mahindra Group's Cleantech Arm**
⇒ Both companies aim to tap the commercial and industrial distributed solar markets in India.
- **ADB to Provide \$7 Million to Support a 100 MW Solar Park Project in Cambodia**
⇒ Cambodia's installed solar PV capacity is 10 MW.
- **ADB Lends \$4 Million in Loan to Afghanistan's 15 MW Solar Project**
⇒ Solar power accounts for only about 1% or 3 MW of Afghanistan's total installed generation capacity.
- **Pharmaceutical Major Cipla Set to Acquire 26% Stake in AMP Solar's SPV at ₹129 Million**
⇒ AMP Solar Power Systems is a special purpose vehicle formed for the purpose of setting up a captive solar power project in Maharashtra.
- **India's NBFC Crisis Exacerbating Financing Challenges for Utility-Scale Solar Projects**
⇒ Lending crisis brewing in the solar industry.
- **Renewable Development Firm Lightsource BP Raises £150 million to Finance Solar Projects**
⇒ The funds, provided by CDPQ, will initially be used to finance its diversified portfolio consisting of over 100 solar projects.
- **Canadian Solar Secures \$50 Million Term Loan from Credit Suisse**
⇒ Canadian Solar subsidiary sells an equity stake in solar project.
- **Panasonic Sells 90% Stake in its Malaysia Manufacturing Unit to GS Solar**
⇒ The two entities are also going to work together for research and development.
- **UK auction for power capacity for 2019-2020 clears at 0.77 pounds kW/year**
⇒ The auction secured 3,626 megawatts of electricity.
- **No power shortage in Madhya Pradesh, BJP misleading people: Congress**
⇒ Congress on Wednesday claimed that there is no power shortage in the state and blamed the BJP for misleading people in this regard.
- **Seven new countries to join Europe's largest intraday power market**
⇒ Epex Spot said Bulgaria, Croatia, Czech Republic, Hungary, Poland, Romania and Slovenia will join XBID.
- **Polish power demand hits new summer record as temperatures rise**
⇒ Poland, which generates electricity mostly from coal-fueled power stations, faces the risk of power shortages when temperatures reach extreme levels as increased demand for air conditioning and other uses can overload the system.
- **Chhattisgarh's Trishuli village has no electricity 71 years after India's Independence**
- **Sweden's Northvolt completes \$1 bn equity raise for mammoth battery plant**
⇒ It added that it had already sold a significant part of planned production volumes at a combined order value of more than \$13 billion through 2030.
- **SREI Infra and PTC India Financial Services sign pact for energy projects financing**
⇒ SREI and PFS join hands for energy projects financing.
- **Power minister pitches for flexible generation to boost renewable energy**
⇒ Under the mechanism, a generating company is allowed to establish or procure renewable energy generating capacity anywhere in the country and utilize such renewable capacities for supplying power against existing commitments.
- **Telangana govt to buy 2000 MW additional power from NTPC**
⇒ We need it from July to November of this year as the Kaleshwaram project becomes operational," said TS Transco CMD, D Prabhakar Rao.
- **Paddy: Power demand jumps 1,900 MW on Day 1**
⇒ Last year on the first day of the paddy sowing season, electricity demand in Punjab shot up by 1363 MW and touched 10184 MW over the previous day's demand of 8621 MW.
- **Nagpur: No property tax on power infra**
⇒ To exempt electricity poles and infrastructure from property tax, the state cabinet made amendments in Section 128 (a) (2) of Maharashtra Municipal Corporations Act-1949.
- **Fiat Chrysler signs EV charge point deals with Enel, Engie**
⇒ CA, which is lagging rivals in developing electrified vehicles, said last June it would invest \$10 billion over the next five years to introduce hybrid and electric cars across all regions.
- **REC eyes over 10% growth in revenue at Rs 28,000 crore this fiscal**
⇒ REC has targeted to achieve Rs 28,000 crore revenue from operations this fiscal.
- **PFC appoints Ravinder Dhillon as director projects**
⇒ Presently serving as an executive director in PFC, Dhillon has more than 34 years of experience in various areas of power sector.
- **ISA and Commonwealth Join Hands to Promote Solar Power in Member Countries**
⇒ A joint ISA-Commonwealth Solar Fund is in the pipeline.
- **NTPC and East Delhi Municipal Corporation Form JV to Start Waste to Energy Project**
⇒ The venture aims to develop an integrated waste management and energy generation facility.
- **Jhansi Smart City Issues Rooftop Solar Tenders for its Schools and Government Offices**
⇒ The projects will be developed under the CAPEX model .

List of Abbreviations

• ALMM :Approved List of Models and Manufacturers	• NBFC :Non-Banking Finance Corp.
• ADB :Asian Development Bank	• NTPC :National Thermal Power Corp.
• CEA :Central Electricity Authority	• NCR :National Capital Region
• CEO :Chief Executive Officer	• NIT :Notice Inviting Tender
• CPSU :Central Public Sector utility	• MNRE :Ministry of New & Renewable energy
• CERC :Central Electricity Regulatory Commission	• MW :Megawatt
• DISCOM :Distribution Companies	• MWh :Megawatt Hours
• DDUGJY :Dindayal Upadhyay Gramin Jyoti Yojana	• PV :Photovoltaic
• EOI :Expression of Interest	• PCI :Public Charging Infra.
• EPC :Engineering Procurement & Construction	• PTC :Power Trading Corp.
• EV :Electric Vehicle	• PFC :Power Finance Corp.
• EESI :Energy Efficiency services limited	• PPA :Power Purchase Agreement
• IEX :Indian Energy Exchange	• REC :Rural Electrification Corp.
• GW :Giga Watt	• RPO :Renewable Purchase Obligation
• JERC :Joint Electricity Regulatory Commission	• SECI :Solar Energy Corporation of India Limited
• KWH :kilo Watt Hour	• SPV :Special Purpose Vehicle
• MIT :Masachussets Institute of Technology.	• UK :United Kingdom





ALL INDIA LIST OF ELEMENTS COMMISSIONED DURING THE FY 2019-20

All India List of Substations, Transmission Lines & Generators Commissioned during Apr-2019

◆ Substations

- * 765/400 KV Bhadla SS (PGCIL) (500 MVA)
- * 400/200 KV Extn.Tumkur (Pavagada) PS(PGCIL)(500MVA)
- * 400/220 KV Bongaigaon (2nd ICT) S/s (PGCIL) (315MVA)
- * 400/220 KV Motiram Adda Gorakhpur (Aug.) (Additional T/F) (UPPTCL) (240MVA)
- * 400/220 KV Muradnagar-II Ghaziabad (Aug) (Additional T/F) (UPPTCL) (240MVA)
- * 400/220 KV Noida Sector 148 UPPTCL (500 MVA)
- * 400/220 KV Sarnath Varanasi UPPTCL (185 MVA)
- * 400/220 KV Sarojini Nagar UPPTCL (185 MVA)
- * 400/220 KV Unnao (Aug) T/F-III (UPPTCL) (315 MVA)
- * 400/220 KV Nawada S/S (HVPNL)(315 MVA)

- * 220/33 KV Kharepatan S/S (MSETCL) (25 MVA)
- * 220/132 KV Prathipadu S/S (APTRANSCO)(100 MVA)
- * 220/66 KV Pali S/s (HVPNL)(160 MVA)
- * 220/66 KV A-5 Faridabad S/s (HVPNL) (60 MVA)
- * 220/33 KV RentachintalaS/s (Aug.) (APTRANSCO) (100 MVA)
- * 220/132 KV Amethi S/s (UPPTCL)(160 MVA)
- * 220/132 KV Gajokhar Varanasi (Aug) (UPPTCL) (60 MVA)
- * 220/132 KV Gola Gorakhpur (UPPTCL) (160 MVA)
- * 220/132 KV Khurja Bulandshahr (Aug) (UPPTCL) (40 MVA)
- * 220/132 KV R.C. Green G.B. Nagar (Aug.) (UPPTCL)(60 MVA)
- * 220/132 KV Sikandrabad Bulandshahr (Aug) (UPPTCL)(160 MVA)
- * 220/132 KV Sitapur (Aug.) (UPPTCL) (160 MVA)
- * 220/132 KV Sohawal Ayodhya (Aug) T/F- II (160-100) (UPPTCL) (60 MVA)

◆ Transmission Lines

- * 400 KV Bhadla (PG) to Bhadla (RVPN) (PGCIL)
- * 400 KV LILO Jhanor-Navsari at Vav S/s (GETCO)
- * 220 kV Banda Chitrakut Line (UPPTCL)
- * 220 KV Gorakhpur PG to Gola (UPPTCL)
- * 220 KV Hapur Firad nagar (UPPTCL)
- * 220 KV kalikiri Madanapalli (AP Transco)
- * 220 KV LILO Grt Noida to Noida Sector 129 (UPPTCL)
- * 220 KV LILO Badshahpur Pali Sector 65 Gurugram (HVPNL)
- * 220KV LILO Sultanpur to Sangipur Amethi (UPPTCL)

◆ Generators

◆ Thermal

- * Nil

◆ Hydro

- * Nil

◆ Nuclear

- * Nil

All India No. of Generators Commissioned during FY 2019-20 (till Apr-2019)

Month	Thermal					Hydro					Nuclear				
	WR	NR	NER	ER	S R	WR	NR	NER	ER	SR	WR	NR	NER	ER	SR
Apr-19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

All India No. of Line Reactors (LR), Transmission Lines (T/L), Substations (S/S) and Bus Reactors (BR) FY 2019-20 (till Apr-2019)

Month	800 KV		765 KV			400 KV			230 KV			220 KV			Total							
	T/L	S/S	LR	T/L	S/S	BR	LR	T/L	S/S	BR	LR	T/L	S/S	BR	LR	T/L	S/S	BR	LR	T/L	S/S	BR
Apr-19	0	0	0	0	1	0	0	2	9	0	0	0	0	0	0	7	13	0	0	9	23	0
Total	0	0	0	0	1	0	0	2	9	0	0	0	0	0	0	7	13	0	0	9	23	0

Note 1: Data is taken from CEA and NLDC websites.

Note 2: No data for Branch Reactors (BR) and Line Reactors (LR) for the month of Apr-2019.

* Tabulated Data is up to 220 KV level.

CEA : [Read more...](#)

NLDC: [Read more...](#)



POWER SYSTEM SOLUTIONS THAT WORK FOR YOUR BUSINESS

**Can You Imagine a World Without Power?
...Because, we can't.**

We, at Panacean Energy Solution are committed to our core values integrity, excellence, enriched innovation and stand committed to nurture our talented work force and continually enhance our local insights and global perspective to bring about paradigm shift in the Indian Power Sector, through providing real solution.

We assist you to understand impact of Electricity Regulations applicable to you by providing tailor made gist of the new regulatory developments on case to case basis. With nation-wide experience of our team, and also with the valuable experience of handling overseas projects, we can assist in planning and operation of power system.



Why Panacean?

Because....We Can Energize Your Business

We're extremely serious about being your power solution advocate. We envision an Indian Power Sector enriched with solutions to enhance its capability to ensure quality power to end consumers with reliability, efficiency and economy on ethical grounds through providing "IT and network" solutions to different segments of Indian Power Sector. Maximize long-term return to Owner.

Our Clients Prefer Working Directly With Us

Because we arm them with valuable resources for contract negotiation. We help them manage the minutest detail behind their big business decisions.



More Power to You

Panacean Energy Solution





Area of Services



Power Services



- ◆ Power System Studies
- ◆ Utility Load Forecast
- ◆ Transmission and distribution planning
- ◆ Reactive Power Optimization
- ◆ Fault MVA calculation and improvements
- ◆ GPS/GIS Asset Mapping
- ◆ Load survey
- ◆ Street light survey
- ◆ Policy making
- ◆ Implementation of Electricity Act 2003 and State Regulations
- ◆ Operation and maintenance of substation
- ◆ Power System Training
- ◆ PSS@E Training
- ◆ Power Procurement under Case-I and Case-II bidding
- ◆ Tender Preparation and Management
- ◆ Project Management Consultant
- ◆ DSM Management
- ◆ Drawl and Generation schedule optimization
- ◆ Regulatory Support
- ◆ DPR preparation for submission to JERC / CEA.
- ◆ IPDS Scheme
- ◆ UDAY Scheme
- ◆ Smart city Implementation
- ◆ Techno commercial feasibility of substation
- ◆ Techno-commercial feasibility of transmission line
- ◆ T&D CAPEX optimization
- ◆ Distribution business optimization
- ◆ Transmission business optimization
- ◆ Optimal power scheduling for system operators

- ◆ Open Access implementation, operation and management
- ◆ Resources optimization in transmission and distribution business
- ◆ Training in system operation
- ◆ Support in Regulatory matters
- ◆ Energy Accounting

Renewable Energy



- ◆ Detailed Project Report preparation
- ◆ Feasibility Study for Renewable Power Generation
- ◆ EPC of Solar Power
- ◆ O&M of Renewable Power Plant Operation

Energy Efficiency

- ◆ Energy Audit
- ◆ Development of State Designated Agency
- ◆ Development of State Nodal Agency
- ◆ Power Quality Management



IT Services

- ◆ Software for Transmission and Distribution Companies
- ◆ Regulatory Information Management System
- ◆ Complaint Management System
- ◆ Customer Care Centre
- ◆ Standard of Performance
- ◆ Document Management System
- ◆ ERP for Power Company
- ◆ Energy management system
- ◆ Optimal Power Schedule

Area of Clients

Distribution Sector

- ◆ Electricity Department of Daman and Diu
- ◆ DNH Power Distribution Corporation Ltd.

Transmission Sector

- ◆ Maharashtra State Electricity Transmission Company Ltd.
- ◆ Reliance Infrastructure Ltd.
- ◆ Electricity Department of Dadra and Nagar Haveli
- ◆ Uganda Electricity Transmission Company Ltd.

Generation Sector

- ◆ Essar M.P. Power Ltd.
- ◆ Ind-Barath Power

Others

- ◆ Indian Institute of Technology, Bombay
- ◆ Alok Industries
- ◆ Abhijeet Ferrotech Ltd.
- ◆ Reliance Industries Ltd.
- ◆ Macquarie Infrastructure
- ◆ IXORA Construction
- ◆ ICRA Management and Consultancy Services
- ◆ CLP India Pvt. Ltd., Mumbai

Reach us at

Registered Office

203, Antartica – D, Lodha Aqua CHS Ltd., Opp. to Thakur Mall, Mahajanwadi, Mira Road (E) Thane – 401107, Maharashtra.

Corporate Office Mumbai

Gala No. 209, 2nd Floor, Nikisha Ind. Estate, Premises No 2, Pandurang Wadi, Mira Road (East), Thane- 401107.

Silvassa

Flat No:A1/8, 2nd Floor, above Om Sai medical store, Opp Jalaram Temple, Kilvani naka, Silvassa - 396230.

Daman

1/320, Bhidbhajan Mahadev Chawl, Wadi Falia, New Vegetable Market, Nani Daman, Daman – 396210.

Surat

206, Santiniketan Flora Business Hub, Nr. Sanskartiirth Gyanpith School, Abrama Road, Mota Varachha, Surat – 394105.



PANACEAN AT WORK FOR YOU

CONNECTING YOUR POWER NEEDS TO THE PANACEAN RESOURCES

Introduction
Power UI (Power System User Interface) is a cloud-based application specifically designed for power sectors organizations mainly, Transmission Utilities and Distribution Utilities. Presently, Power UI integrates various power system utilities such as Infrastructure management (MAPS), Complaint Management (CMS), Maintenance Management System (MMS), Regulatory Information Management system (RIMS), Inventory Management (Store).

Simple and Intuitive UI
We have kept in mind simplest ever user interface while designing the software. The user interface is so intuitive that, anyone having basic knowledge of operating computer will be able to handle various applications with ease. The technical modules only require basic training for successful operation. The software will have inbuilt guiding system for assuring hassle free completion of almost all activities.

Cloud Based:
The software run from cloud and is accessible over internet / intranet. This avoids installation of copies of software in each system. Management and upgradation of this cloud based application can become easier than ever.

Auto Backup:
The data of all enterprise applications is of utmost importance. Power UI comes with Auto Backup facility where an authorized person can schedule auto backup of full / partial data of the software. In case of data lost or hardware failure, no or minimal data is lost.

Event Notification:
The user and/or administrator will not be unaware of activities and events being carried out by the members. All activity updates will be delivered to the concerned person via appropriate notification. Apart from inbuilt notification system, such alerts can also be combined with Email and SMS notification.

IT SUPPORT TO YOUR POWER SOLUTIONS

- INFRASTRUCTUTR MANAGEMENT (MAPS)
- COMPLAINT MANAGEMENT SYSTEM (CMS)
- REGULATORY INFORMATION MANAGEMENT SYSTEM(RIMS)
- MAINTENANCE MANAGEMENT SYSTEM(MMS)
- INVENTORY MANAGEMENT(STORE)
- OPTIMAL POWER SCHEDULE

ONLINE ACCESS BROWSER COMPATIBILITY



INDEPENDENT OF DATABASE



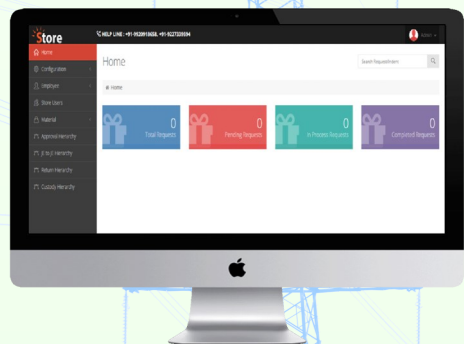
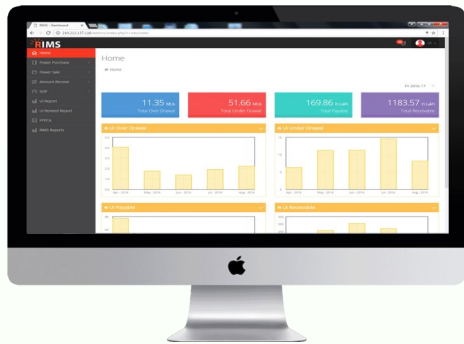
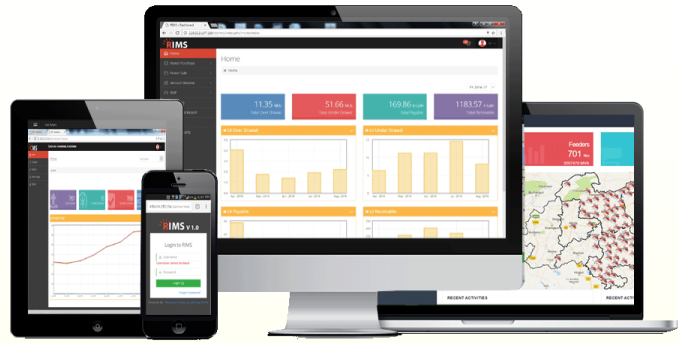
The software is compatible with Oracle, Microsoft SQL, and MySQL database.



FLEXIBLE SOLUTIONS FOR YOUR POWER NEEDS



LAPTOP, Tablet & Mobile



REGULATORY INFORMATION MANAGEMENT SYSTEM IMS

RIMS keeps track of power purchase, power sale, trading, DSM (formerly known as “UI”), SEM data, Reliability Indices etc. It translates every bit of information for successful derivation various reports as intended by State Electricity Regulatory Commission.

COMPLAINT MANAGEMENT SYSTEM MS

CMS enables utility to get in touch with its consumers. At one end it provides feedback and complaints of consumers, and on the other end it provides analytical tools for identifying time-bound resolving consumer complaints and improving consumer satisfaction.

INVENTORY MANAGEMENT SYSTEM (STORE):

Full proof inventory management is ensured by Store. With self-auditing feature of the software, it is ensured that no material is lost unknowingly. It ensures accountability at every step right from receipt of the material to usage of the material. It also provides handful information for material usage pattern, consumption of various material and its category, material expenses many more at micro level as well as macro level. This helps in improving our planning procedures and material management. Readily available audit reports enhances applicability of the module for financial compliances.

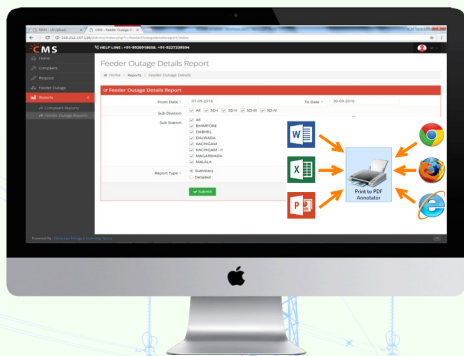
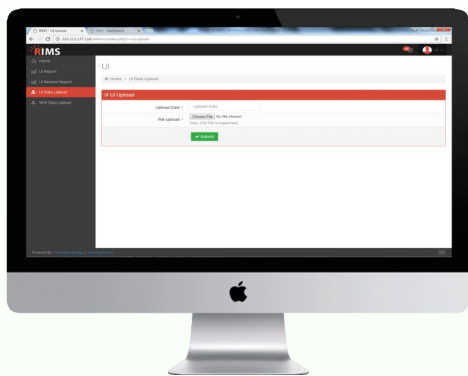


Transmission

Best Suitable Utilities

Distribution





M AINTENANCE MANAGEMENT SYSTEM (MMS)

MMS is designed to improve inbuilt maintenance management facilities and hence reduce the failure rates of equipment. With equipment being part of MMS, the concerned person is reminded for inspection and taking corrective actions. The module supports maintenance routines in various categories such as preventive maintenance, breakdown maintenance, event based maintenance, and routine maintenance. The software will ensure accountability of maintenance team and improves reliability of equipment in service.

This module contains all functionalities involved in maintenance management of a utility. Specific provisions for this objective are provided in this module as given below;

- ◆ Preventive & Routine Maintenance Operations
- ◆ Breakdown and Event based Operations

D ATA HANDLING:

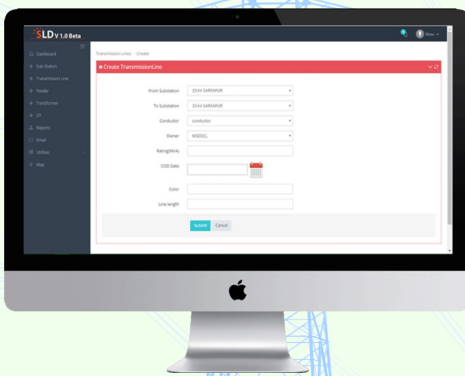
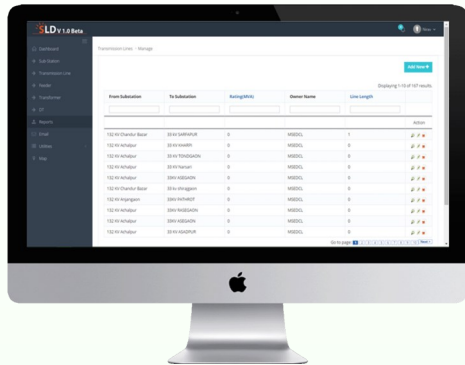
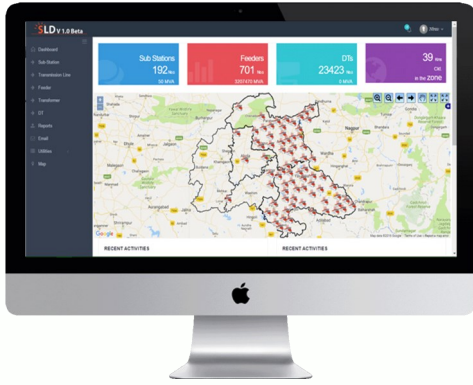
The software shall have a provision to handle huge volumes of data. Features such as import of excel files and import of data from databases shall be provided to facilitate bulk data entry and its corresponding map location display. Given below is a sample bulk data entry feature in POWERUI.

D ATA / REPORT EXPORT AND PRINTING FACILITIES:



O NLINE COMPLAINT AND FEEDBACK REPORTING

We are always listening to your feedback in terms of feature request, bug reporting, complaint, suggestion or any such thing for improving our service for your satisfaction. All such activities are only click away. User can report feedback online or by calling us on our helpline numbers.



MAPS includes infrastructure mapping of various assets of a utility. All assets with geotag (Longitude and Latitude) can be displayed and managed with ease.

POWERUI - MAPS

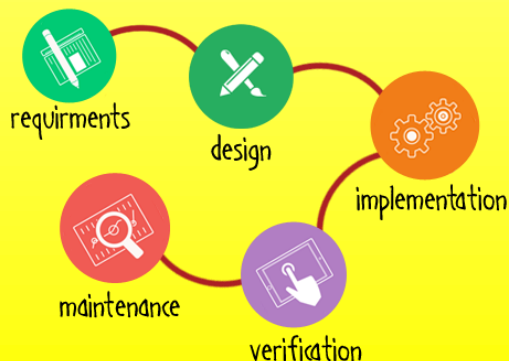
POWERUI MAPS is a map based application where all important assets and infrastructure of a Distribution company and transmission company are displayed on maps using their exact geographic coordinates. Display of all mapped distribution equipment on google maps, along with establishment of comprehensive database maintaining dynamic data of all attributes of major equipment in the distribution network is the core objective of this application. The map will be loaded with several customized user interactive features which aid in day to day monitoring and supervision of operations of the distribution network. Along with this, features facilitating operations such as assignment of O & M tasks to personnel based on equipment monitoring on map, tracking work status and review of operations on a large scale are provided in this application.

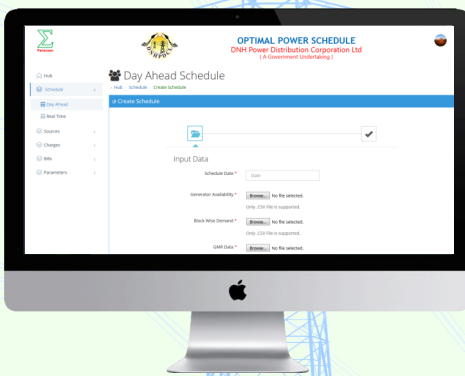
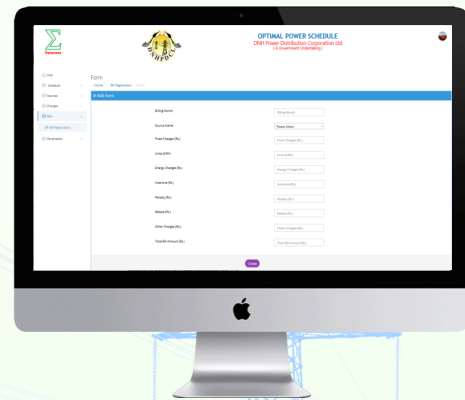
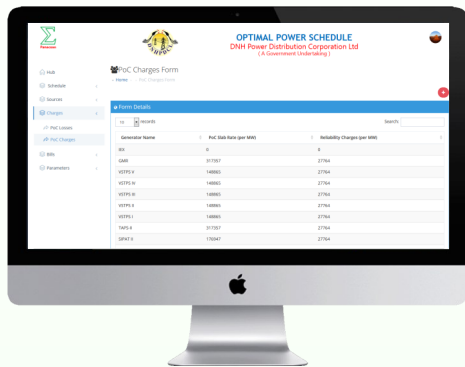
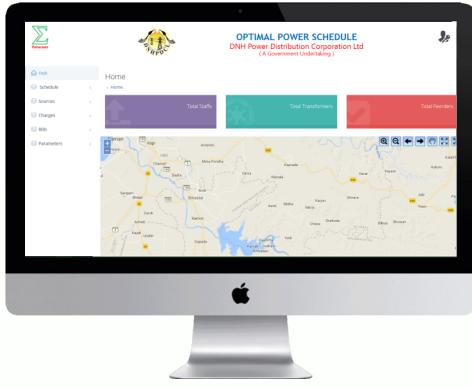
LAYER FACILITY:

Given a large and a highly dense network as that of MSEDCL, selective viewing of different components of maps is required. The Layer facility enables the user to turn ON/OFF display of certain elements on the map. This feature provides greater clarity of viewing and ease of operation of the software.

DATABASE - MAP COMMUNICATION:

Provision for any element to be inserted into the database or updation of any element in the database can be done through both map means and database means.

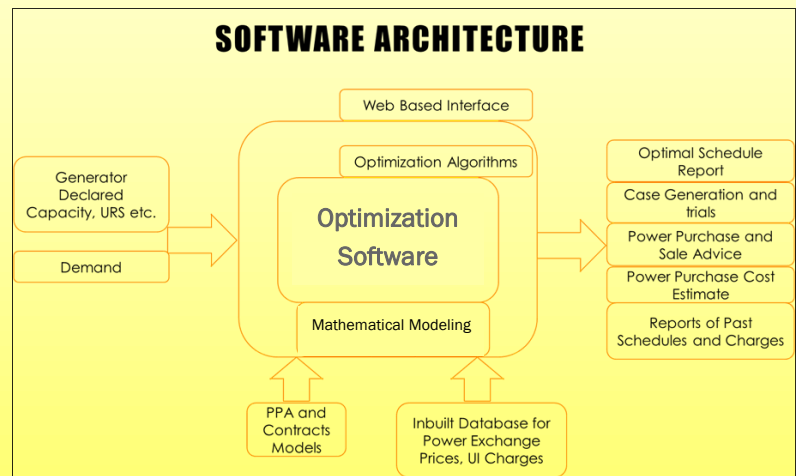




OPTIMAL POWER SCHEDULING SOFTWARE

The primary objective of this software shall be to provide Cost optimal generator wise day ahead schedule (MW) based on block wise demand of the utility and declared capacity of the generator; subject to all major constraints, with an account of all possible factors in determining the merit order of generators for each block.

Introduction: Optimal Power Scheduling is a custom made software for Power Distribution companies and load dispatch centres. Based on the principles of optimization, this software models complex issues of power purchase such as Power purchase agreements (PPA), Power Exchange, Un-scheduled Interchange (UI), and Un-requisitioned Surplus (URS) etc. into a single integrated platform using a industrial popular software to get an optimal power purchase solution. The schematic diagram of Optimal Power Scheduling Software is shown below,



FEATURES

- ◆ Day ahead and Intra-day optimal solutions for bidding.
- ◆ PPA Modelling concept, governing all PPA terms and Conditions.
- ◆ Analysis of Power Exchange and DSM prices based on Historical data.
- ◆ Indicative Power Purchase and Sale Solutions to bid optimally at the Power Market.
- ◆ Block wise Power Purchase cost estimation to explore all possible options to limit power purchase expenditure.
- ◆ Reports to analyse and summarize power scheduling over a period of time.