



GRIHA

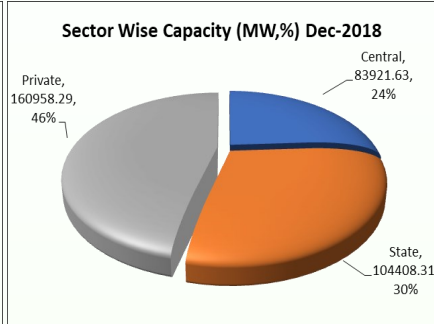
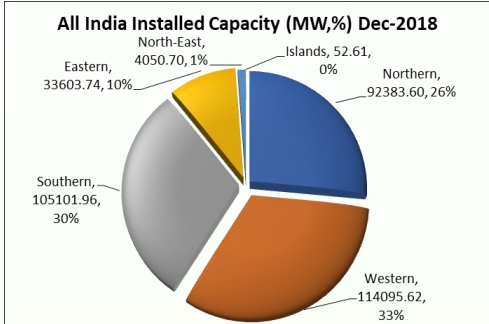


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OVERVIEW OF INDIAN POWER SYSTEM FOR DEC-2018

All India Installed Capacity (MW) as on 31-12-2018						All India Installed Capacity (MW) as on 31-12-2018		Peak Demand of DD & DNH				
Region	Thermal	Nuclear	Hydro	RES	Total	Sector	Generation (MW)	Utility	Dec-18			
Northern	57061.46	1620.00	19707.77	13994.37	92383.60				Central	83921.63	Peak Demand (MW)	Peak Met (MW)
Western	82675.11	1840.00	7547.50	22033.01	114095.62	State	104408.31	DD		328		
Southern	53617.26	3320.00	11774.83	36389.87	105101.96		Private		160958.29	DNH	803	803
Eastern	27301.64	0.00	4942.12	1359.98	33603.74	Total		349288.23				
North-Eastern	2331.83	0.00	1427.00	291.87	4050.70							
Islands	40.05	0.00	0.00	12.56	52.61							
ALL	223027.35	6780.00	45399.22	74081.66	349288.23							



All India Plant Load Factor (PLF) in (%)		
Sector	Dec-17	Dec-18
Central	72.77	73.27
State	53.78	57.96
Private IPP	52.61	53.38
Private UTL	48.99	48.51
ALL India	58.72	60.48

- Highlights of WR Grid for Dec-2018**
- Maximum Peak Demand Met:** 54943 MW
 - Energy Consumption:** Total Energy Consumption in the month of Dec-2018 was 34408 MUs at an average of 1110 MUs/day & Maxi-mum was 1156 MUs on 06.12.2018.
 - Unrestricted Demand:** Maximum Unrestricted demand was 55160 MW and Average Peak Unrestricted demand was 46250 MW.
 - Frequency Profile:** System frequency as per IEGC band is 49.90 Hz to 50.05 Hz. Maxi-mum, Minimum & Average Frequencies 50.25 Hz, 49.67 Hz & 49.97 Hz were respectively observed in the month of Dec-2018.
 - Voltage Profile:** All 765KV nodes except Wardha, Tamnar, Durg and Kotra (high voltage node) of WR were within the IEGC limit. High Voltage (greater than 420 KV) at 400KV substations were observed at Khandwa, Damoh, Nagda, Raipur, Raigarh, Bhilai, Wardha, Dhule, Parli, Boisar, Kalwa, Karad, Kasor, Amreli, Vapi, Mapusa, Kala, Magarwada, Hazira and Dehgam. Highest of 61.26% of time above 420KV observed at Dehgam.
 - Hydro Generation:** Total hydro generation of Western Region was 754.26 MUs at an average of 24.33 MUs/day in the month of Dec-2018.
 - Wind Generation:** Total wind generation was 1323 MUs at an average of 42.7 MUs/day in the month of Dec-2018.
 - Solar Generation:** Total Solar generation was 619 MUs at an average of 20 MUs/day in the month of Dec-2018.
 - Open Access Transaction Details for Dec-2018:**
 - ⇒ No. of approvals & Energy Approved in Intra-regional:123 & 557.72 MUs.
 - ⇒ No. of approvals & Energy Approved in Inter-regional:214 & 2085.24 MUs.
- [Read More...](#)

List of Transmission Lines Commissioned/Ready for Commissioning During Dec-2018												Total
Sector	Central				Pvt.			State				
Voltage Level (KV)	800	765	400	220	765	400	220	765	400	230	220	
No. of Lines	0	1	0	0	1	1	0	0	0	0	7	10

List of Substations Commissioned/Ready for Commissioning During Dec-2018												Total
Sector	Central				Pvt.			State				
Voltage Level (KV)	765	400	230	220	765	400	220	765	400	230	220	
No. of Substations	0	1	0	0	0	0	0	0	1	0	9	11

Region-wise Power Supply Position (Demand & Availability) in Dec-2017 & Dec-2018						
Region	Energy (MUs)				Deficit /Surplus (%)	
	Demand		Energy Met		Dec-17	Dec-18
	Dec-17	Dec-18	Dec-17	Dec-18		
Northern	27581	29452	27123	29031	(1.7)	(1.4)
Western	31573	32498	31558	32493	(0.0)	(0.0)
Southern	26813	27692	26785	27656	(0.1)	(0.1)
Eastern	9692	10758	9639	10742	(0.5)	(0.1)
North Eastern	1284	1322	1259	1298	(1.9)	(1.8)
All India	96943	101722	96364	101220	(0.6)	(0.5)

Region-wise Peak Demand / Peak Met in Dec-2017 & Dec-2018						
Region	Power (MW)				Deficit /Surplus (%)	
	Peak Demand		Peak Met		Dec-17	Dec-18
	Dec-17	Dec-18	Dec-17	Dec-18		
Northern	46038	48631	45360	47645	(1.5)	(2.0)
Western	49806	53402	49635	53185	(0.3)	(0.4)
Southern	42622	45288	42458	45288	(0.4)	0.0
Eastern	18058	19335	17733	19247	(1.8)	(0.5)
North Eastern	2333	2541	2314	2511	(0.8)	(1.2)
All India	152827	163888	151567	162609	(0.8)	(0.8)

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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)

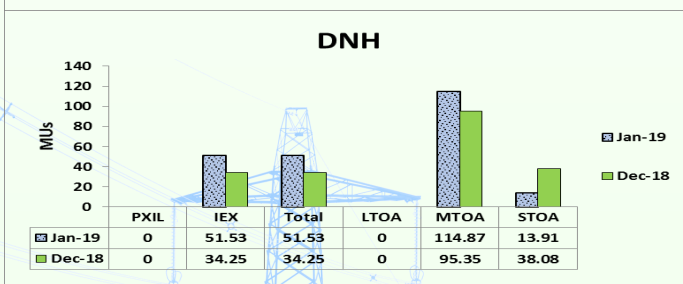
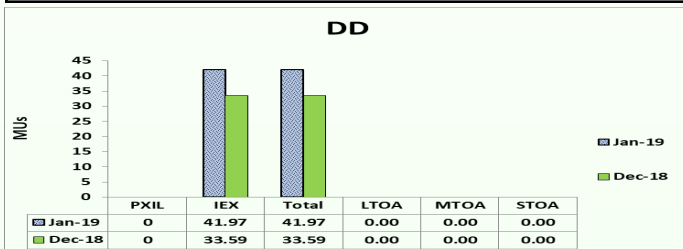


⇒ PXIL & IEX Trading summary

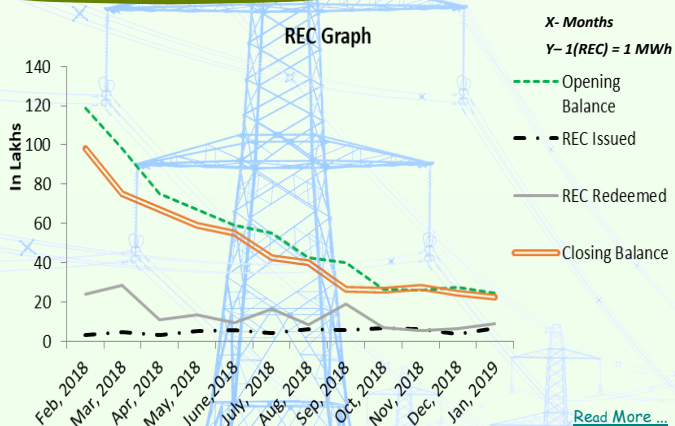
JAN-2019	PXIL					IEX				
	Buy Bid (MWh)	Sell Bid (MWh)	MCP (₹/MWh)	Cleared Volume (MWh)	Marginal Clear Volume (MWh)	Buy Bid (MWh)	Sell Bid (MWh)	MCP (₹/MWh)	Cleared Volume (MWh)	Marginal Clear Volume (MWh)
Total	28220.0	154210.0	-	0.0	0.0	4863875.4	7651553.6	-	3280860.2	3287269.9
Min	0.0	0.0	0.0	0.0	0.0	2664.7	4277.9	1498.8	2172.9	2172.9
Max	126.5	510.0	3250.0	0.0	0.0	12944.8	20686.4	6775.6	8007.0	8007.0
Avg	9.5	51.8	851.8	0.0	0.0	6537.5	10284.4	3330.3	4409.8	4418.4

DEC-2018	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	40193.0	71050.0	-	1200.0	1200.0	4567625.5	7224555.6	-	3058698.1	3066292.3
Min	0.0	0.0	0.0	0.0	0.0	2934.3	4920.0	1749.8	2404.2	2404.2
Max	451.5	400.0	6520.0	300.0	300.0	10977.4	18070.8	6537.8	7113.7	7113.7
Avg	14.0	24.7	2805.4	0.4	0.4	6139.3	9710.4	3305.0	4111.2	4121.4

DD & DNH: OPEN ACCESS DETAILS



RENEWABLE ENERGY CERTIFICATE MECHANISM (REC) FROM FEB-18 TO JAN-19



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REC Trading Session Jan-2019

Trader Company	PXIL		IEX	
	Particular	Non-Solar	Solar	Non-Solar
Total Sell Bid (REC's)	111,772	120,687	453,371	241,580
Total Buy Bid (REC's)	280,078	102,268	765,770	589,311
Clearing Price (₹/Certificate)	1,501	1,500	1,500	1,750
Cleared Volume (REC's)	98,574	21,249	393,316	97,277

POWER MARKET UPDATE: January 2019
 Day Ahead Market Trades 3,281 MU with Avg. MCP at Rs. 3.33 per unit

- The average Market Clearing Price (MCP) discovered in the day-ahead market was at Rs. 3.33 per unit, registered 4% increase over Rs. 3.20 per unit in Jan-2018.

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

- * Morning (07:00 to 10:00 Hrs): Rs. 4.26 per unit
- * Day (11:00 to 17:00 Hrs): Rs. 3.69 per unit
- * Evening peak (18:00 to 23:00 Hrs): Rs. 3.88 per unit
- * Night (01-06 Hrs and 24 Hrs): Rs. 1.97 per unit
- With trade of 3,281 MU, the volume in the day-ahead market saw an increase of 7% month-on month (M-o-M) basis and decline of 3% year-on-year (Y-o-Y) basis. On a daily average basis about 106 MU were traded.
- The One Nation, One Price was realized for 18 days in the month of Jan-2019.
- On daily average basis 686 participants traded in the day-ahead power market in January-19.

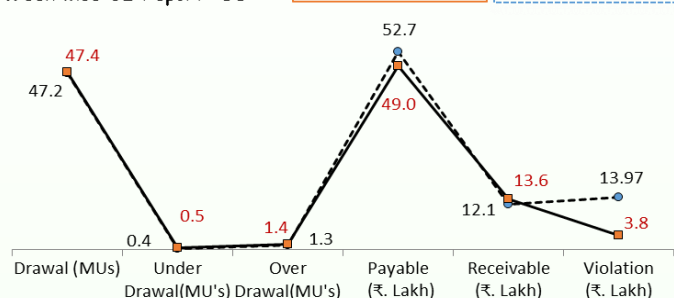
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DEVIATION CHARGES

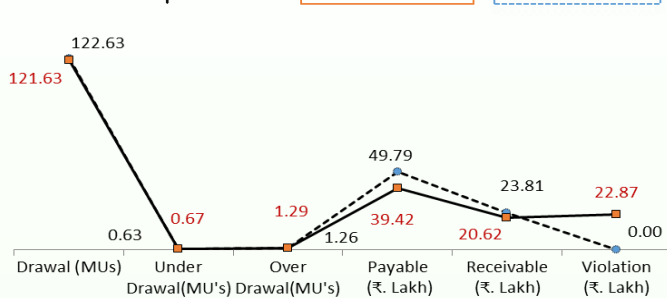
[DD User Click to get UI Report](#)
[DNH User Click to get UI Report](#)

DD-Deviation Charges								DNH-Deviation Charges							
FY 2018-19	Drawl (MUs)	Schedule (MUs)	UI Drawl (MUs)		UI Charges(₹. Lakh)			FY 2018-19	Drawl (MUs)	Schedule (MUs)	UI Drawl (MUs)		UI Charges (₹. Lakh)		
			Under Drawl	Over Drawl	Payable	Receivable	Violation				Under Drawl	Over Drawl	Payable	Receivable	Violation
Cumulative Total up to Dec-18	1951.13	1719.51	2.71	234.34	6386.55	56.61	--	Cumulative Total up to Dec-18	4734.98	4522.85	9.80	221.96	5744.17	179.18	--
14-01-2019 to 20-01-2019	47.39	46.46	0.50	1.43	48.95	13.55	3.81	14-01-2019 to 20-01-2019	121.63	121.01	0.67	1.29	39.42	20.62	22.87
14-01-2018 to 20-01-2018	56.49	53.07	0.21	3.63	91.41	4.70	--	14-01-2018 to 20-01-2018	121.97	115.76	0.07	6.29	139.79	1.59	--
07-01-2019 to 13-01-2019	47.15	46.27	0.40	1.29	52.74	12.08	13.97	07-01-2019 to 13-01-2019	122.63	121.99	0.63	1.26	49.79	23.81	37.41
07-01-2018 to 13-01-2018	45.61	41.12	0.08	4.57	111.68	1.91	--	07-01-2018 to 13-01-2018	122.18	115.72	0.04	6.50	150.04	0.69	--

Week wise UI Report: DD



Week wise UI Report: DNH



DD							DNH						
Month	FY 2017-18 (All Freq Hz)			FY 2018-19 (All Freq Hz)			Month	FY 2017-18 (All Freq Hz)			FY 2018-19 (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		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	1.29	(11.30)	(2.48)	0.30	(19.56)	(2.79)	April	1.91	(21.52)	(2.31)	0.39	(22.51)	(2.70)
May	0.87	(15.28)	(2.19)	0.57	(27.91)	(3.43)	May	13.54	(2.97)	(1.49)	2.03	(16.76)	(3.40)
June	1.09	(17.98)	(2.16)	0.23	(24.82)	(2.61)	June	9.26	(3.65)	(1.98)	1.43	(15.89)	(2.57)
July	0.97	(15.89)	(2.26)	0.16	(31.37)	(2.54)	July	6.71	(6.66)	(0.96)	0.43	(25.32)	(2.37)
Aug	0.19	(24.00)	(2.3)	0.10	(28.24)	(2.52)	Aug	3.50	(14.68)	(2.15)	0.33	(35.64)	(2.35)
Sep	0.39	(24.70)	(2.64)	0.14	(33.75)	(2.92)	Sep	2.06	(22.87)	(2.74)	0.50	(33.89)	(2.73)
Oct	0.13	(29.42)	(2.79)	0.37	(25.13)	(2.58)	Oct	1.53	(28.73)	(2.67)	1.76	(26.70)	(2.64)
Nov	0.22	(22.01)	(2.71)	0.65	(19.69)	(2.48)	Nov	2.23	(17.81)	(2.87)	2.36	(18.13)	(2.67)
Dec	0.66	(16.60)	(2.50)	0.20	(23.87)	(2.57)	Dec	1.09	(21.60)	(2.53)	0.57	(27.12)	(2.56)
Jan	1.04	(18.20)	(2.63)	-	-	-	Jan	0.47	(26.01)	(2.45)	-	-	-
Feb	1.33	(12.58)	(2.58)	-	-	-	Feb	0.28	(22.83)	(2.46)	-	-	-
Mar	0.99	(19.63)	(2.99)	-	-	-	Mar	1.03	(26.07)	(2.73)	-	-	-
Total	9.18	(227.6)	(2.55)	2.71	(234.34)	(2.73)	Total	43.61	(215.4)	(2.65)	9.80	(221.96)	(2.62)

REACTIVE ENERGY CHARGES FOR DD & DNH

FY 2018-19	DD-High Voltage				DD-Low Voltage				DNH-High Voltage			DNH-Low Voltage		
	GUJARAT		ISTS		GUJARAT		ISTS		ISTS		Total	ISTS		Total
	Dok-diu	Una-diu	Mgr-Vap HV	Total	Dok-diu	Una-diu	Mgr-Vap LV	Total	Kpd-Vap HV	Kdl-Vap HV		Kpd-Vap LV	Kdl-Vap LV	
Cumulative Total MVARh till Dec-2018	-2097.8	-1323.2	175572.6	172151.6	58.7	5.0	-5.5	58.2	190256.2	80795.6	271051.8	6443.5	3582.9	10026.4
Cumulative Total Charges in (₹) till Dec-18	144184.5	7361.5	-17007953.0	-16856407.0	8218.0	700.0	-770.0	8148.0	-23873937.0	-8917773.5	-32791710.5	902090.0	501606.0	1403696.0
14-01-2019 to 20-01-2019	104.2	-7.3	0.0	96.9	0.0	0.0	0.0	0.0	8978.9	2458.5	11437.4	0.0	0.0	0.0
Charges in (₹)	-14588.0	1022.0	0.0	-13566.0	0.0	0.0	0.0	0.0	-1257046.0	-344190.0	-1601236.0	0.0	0.0	0.0
21-01-2019 to 27-01-2019	96.1	-8.0	4766.1	4854.2	0.0	0.0	0.0	0.0	8654.1	2703.6	11357.7	0.0	0.2	0.2
Charges in (₹)	-13454.0	1120.0	-667254.0	-679588.0	0.0	0.0	0.0	0.0	-1211574.0	-378504.0	-1590078.0	0.0	28.0	28.0

Note: The REC chargers has been revised to 14 paisa/KVARh from Apr-2018 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

- MNRE launched a document of “Payment Security Mechanism Guidelines for Viability Gap Funding Schemes Under JNNSM.
- MNRE launched a document of “ Scheme of setting up of 14 MW Solar PV Project with aggregate battery storage capacity of 42 MWh under Prime Minister Development Package-2015 for Jammu & Kashmir.
- MNRE requested to comment to stakeholders on BIS standards for Solar Photovoltaic Water Pumping Systems.

* MOP

- MOP launched a notice for Revised Model Bidding Documents (MBDs) for procurement of electricity for medium term from power stations set up on Finance, Own and Operate (FOO) basis.

* SECI

- SECI launched a Tender for DESIGN, ENGINEERING, PROCUREMENT, SUPPLY, CONSTRUCTION, ERECTION, TESTING, COMMISSIONING and O&M of 50 MW (AC) Solar PV Power Plant at Kasargod Solar Park, Kerala
- Pre-Bid meeting was conducted selection of solar power developers for setting up of 3GW ISTS connected Solar PV power plant linked with setting up of 1.5GW (p.a) solar manufacturing plant under global competitive bidding (Phase-II)

* CERC

- CERC finally uploaded a discussion paper for considering a Transmission Majoration Factor in Transmission tariff of Power links (JV of TATA POWER LIMITED and PGCIL) with the stakeholders' comments.

* MISCELLANEOUS

- India to add 11.4 GW of solar capacity every year
- Tamil Nadu proposed Feed in Tariff for Solar Projects.
⇒ The Tamil Nadu Electricity Regulatory Commission has proposed a FIT (Feed in Tariff) for solar PV projects. Plant capacity should be minimum 1 MW.
- SECI's 1.2GW tender oversubscribed by 1125MW
⇒ In the state of Gujarat, SECI launched tender for installation of 1.2GW wind based power plants. Nine developers had submitted their bids with the amount given SB Energy (Soft Bank) 600MW, Renew Power, EDF & Enel 300MW, Engine & Adani 250MW, Continuum 150MW, Ecoren 125MW, Powerica 50MW.
- Public Sector Units to Develop 12 GW of Solar Projects in 4 Years Using Domestic Modules
⇒ The Cabinet Committee on Economic Affairs (CCEA) has approved the proposal for the implementation of setting up 12,000 MW of grid-connected solar PV power projects under the Central Public Sector Undertaking (CPSU) Phase-II program by government producers.
- Jharkhand Lunched a Canal top Solar PV Project
⇒ The JRDA is looking for an engineering procurement construction (EPC) firm to set up a canal top solar project in Ranchi. The state agency has issued a tender to set up 2 MW of grid-connected canal top solar project at Sikidiri.

- NTPC issues electricity regulation notice to Jammu & Kashmir DISCOMs.
- ADB invested \$29 Million in AC Energy First Climatic Bond
⇒ The Asian Development Bank vested \$20 million in the first climate bond issuance of AC Energy, wholly-owned subsidiary of Ayala Corporation in the Philippines. This will be the first Climate Bond Initiative (CBI) certified US dollar climate bond in Southeast Asia listed on the Singapore Stock Exchange.
- 31 Companies Join Climate Action Initiative, Adopt EVs to fight Toxic Air
⇒ The Climate Group is targeting the electrification of more than 2 million vehicles by 2030 under its EV100 initiative. EV100 is a global initiative by The Climate Group (a non-profit organization that works with business and government leaders around the world to address climate change) bringing together forward-looking companies committed to accelerating the transition to electric vehicles (EVs), to make electric transport 'the new normal' by 2030.
- Rajasthan sets Rs. 2.67/kWh as price of Energy Supplied to DISCOMs under REC Mechanism.
⇒ Purchase of electricity from renewable sources after having been issued REC would not be counted for the fulfillment of RPO. The projects may use electricity for self-consumption or sell electricity at mutually agreed price to other entities.
- MNRE seeks stakeholders comments on BIS Standards for Solar Pumps.
⇒ The comments are invited on the following documents – Specifications of solar PV water pumping systems (centrifugal pumps) Draft specification of solar PV water pumping systems for positive displacement pumps Draft testing procedure guidelines for solar PV water pumping systems.
- Tamil Nadu's New Solar Policy Targets 9 GW of Installed Capacity by 2023
⇒ State has present installed capacity of 2200 MW and it aims to achieve 9000 MW target till the year 2023. TN has been adding an average of 400 MW/yr but to reach out till this target TN has to install 6800 MW in just 4 years' time period.
- DISCOMs Owe ₹18.84 Billion to NTPC in Outstanding Bills for Solar Projects
⇒ DISCOMs in Karnataka, Andhra Pradesh, and Telangana have not paid the dues Power distribution companies (DISCOMs) in Andhra Pradesh, Telangana, and Karnataka are staring at acute power shortages as the National Thermal Power Corporation (NTPC) has warned that it will stop supply due to non-payment of dues.
- Small Solar Prosumers in Goa will now get 50% subsidy
⇒ The Goa government has approved the amendments in the Goa State Solar Policy - 2017. The policy aims to provide subsidy of up to 50 percent for small prosumers in residential, institutional, and social sector category with solar plants up to 100 kW capacity.

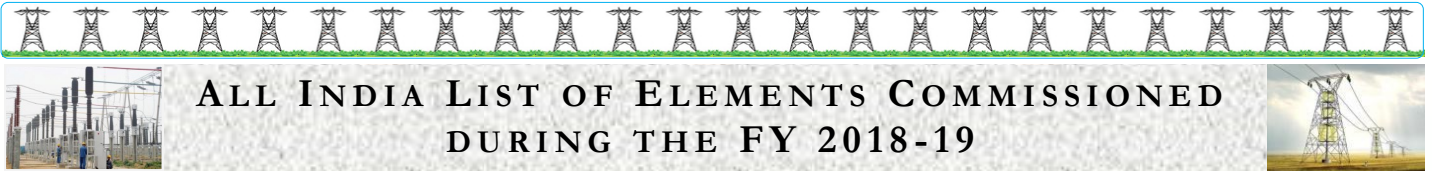
Note: Click on Head lines for More Info



- **Ministry of Power Sets Committee to Recommend Solutions for Payment Delays by DISCOMs**
 - ⇒ Study the working capital cycles of DISCOMs and GENCOs with respect to power procurement for all competitively bid and regulated PPAs, and identify gaps that may be contributing to the GENCOs' stress.
- **Karnataka Mulls Revision of Generic Tariff for Large-Scale and Rooftop Solar Projects**
 - ⇒ The Karnataka Electricity Regulatory Commission has issued a discussion paper to set tariff for solar power projects, including solar rooftop projects for the financial year 2020.
- **2019 Begins with a Sharp Decline in Solar Auction Activity**
 - ⇒ Auction activity was extremely anemic in January with only 135 MW of solar capacity auctioned, a steep decline compared to over 2 GW of capacity that was auctioned in the previous month.
- **NATIS Issues Tender for EV Testing Infrastructure at Manesar, Chennai, and Indore**
 - ⇒ NATRIP Implementation Society (NATIS) has issued a tender for setting up testing infrastructure for electric vehicles at three locations. NATIS is an autonomous body constituted by the Ministry of Heavy Industries and Public Enterprises to implement National Automotive Testing and R&D Infrastructure Project.
- **Only 28,000 households across country left to be electrified: Government data**
 - ⇒ Just about 28,500 or 0.1 per cent of households in a clutch of five districts across the country remain un-electrified amid expectation that full electrification will be completed by the month-end, bringing to conclusion an ambitious project to take electricity to all villages.
- **Vikram Solar bags order for floating solar power plant by Hindustan Zinc**
 - ⇒ Vikram Solar, solar module manufacturer and EPC provider, today announced it has bagged an order for setting up a 1 megawatt (MW) floating solar power project by Hindustan Zinc.
- **Industries up in arms against MSEDCL over power tariff**
 - ⇒ As one of the major industrial hubs in the country, Aurangabad is among the areas in the state that have been witnessing huge unrest over the tariff policies of the state government.
- **Small Rooftop Solar Companies in India Struggle to Find Viable Financing Options**
 - ⇒ After winning the general elections in 2014, the Modi administration set a target of installing 100 GW of solar capacity by 2022, out of which rooftop solar capacity was slated to account for 40 GW. According to data, so far, India has installed over 26 GW of solar capacity out of which rooftop solar installations make up only 11 per cent.
- **NHPC's New Tender Calls for 1,082 kW of Rooftop Solar Projects in Himachal Pradesh**
 - ⇒ The National Hydro Power Corporation has issued a tender for 1,082.16 kW of rooftop and small solar power projects at various power stations of NHPC in Himachal Pradesh. These projects will be located in Chamera-I (155 kW), Chamera-II, (230 kW), Parbati-II (125 kW), and Parbati-III (500 kW and 72.16 kW).
- **Coimbatore Smart City Issues Tender to Procure Energy Efficient LED Street Lights**
- **India Gets Serious on Optimizing Inter-State Generating Stations, Reducing Power Cost**
 - ⇒ In a recent order, the Central Electricity Regulatory Commission has asked the Power System Operation Corporation to implement a pilot for the security constrained economic dispatch (SCED) of electricity for Inter-State Generating Stations (ISGS) across India.
- **CERC Provides Relief to Solar Developers in Matter of GST Compensation**
 - ⇒ In a positive development for the domestic renewable industry, the Central Electricity Regulatory Commission has provided relief to solar project developers with regards to the effect of goods and service tax (GST) on solar projects which are still in the development phase.
- **India Sanctioned Energy Storage Projects Worth ₹115 Million in Last 4 Years**
 - ⇒ India is now working toward a National Energy Storage Mission (NESM) to keep pace with the changing dynamics of the energy market. As energy storage projects are almost negligible in India, efforts have been made to tender and auction solar and wind capacity along with battery energy storage in the country.
- **Delhi Commission Directs DISCOM to Sign PPA for Waste to Energy Project**
 - ⇒ The DERC has ordered the DISCOMs in the national capital to enter into PPAs for procuring power from Tehkhand Waste to Electricity Project. The commission was examining a petition filed by all the DISCOMS and NDMC were the respondents in the petition.
- **Deadline for Self-certification of Solar Modules Extended by Another 3 Months**
 - ⇒ The new deadline is March 31, 2019.
- **CERC Encourages POWERGRID to Monetize Transmission Lines Through Telecom Providers**
 - ⇒ The petition also suggests reduction of carbon footprint by deploying solar power in place of running of diesel generator sets.
- **Central Power Research Institute to Soon Get a New Test Lab in Maharashtra's Nashik District**
 - ⇒ The lab will benefit the manufacturers of electrical equipment in the western region.

List of Abbreviations

• ADB :Asian Development Bank	• MOP :Ministry of Power
• BIS :Bureau of Indian Standards	• MNRE :Ministry of New & Renewable Energy
• BHEL :Bharat Heavy Electricals Limited	• MBD :Model Bidding Procurement
• CBI :Climate Bond Initiative	• MSEDCL :Maharashtra State Electricity Distribution Company Limited
• CEA :Central Electricity Authority	• NATIS :NATRIP International Society
• CDM :Clean Development Mechanism	• NDMC :New Delhi Municipal Council
• CERC :Central Electricity Regulatory Commission	• NHPC :National Hydro Power Corporation
• CCEA :Cabinet Committee of Economic	• NSEM :National Energy Storage Mission
• CPSU :Central Public Sector Undertaking	• NTPC :National Thermal Power Corporation
• EPC :Engineering Procurement Construction	• PGCIL :Power Grid Corporation India Limited
• EV :Electric Vehicle	• PV :Photovoltaic
• FOO :Finance Own Operate	• PPA :Power Purchase Agreement
• FIT :Feed in Tariff	• REC :Renewable Energy Certificate
• GST :Goods & Service Tax	• SCED :Security Constrained Economic Dispatch
• ISGS :Inter State Generation Stations	• SECI :Solar Energy Corporation of India
• JV :Joint Venture	• TPDD :Tata Power Delhi Distribution
• JNNSM :Jawaharlal Nehru National Solar Mission	• UNFCCC :United Nations Framework Convention on Climate Change
• POA :Programme of Activities	
• LED :Light Emitting Diode	



All India List of Substations, Transmission Lines & Generators Commissioned during Dec-2018

◆ Substations

- * 765/400 KV Banaskantha (ICT No. II) (1500 MVA)
- * 400/220 KV Jagalur (Hiremallanahole) S/S (1000 MVA)
- * 400/220 KV 315 MVA ICT-3 at Fatehabad(PG) (ICT No. III) (315 MVA)
- * 400/220 KV Talaricheruvu (ICT No. I & II) (315 MVA)
- * 400/132 KV Imphal S/S (upgradation from 132/33kV to 400/132kV) (ICT-I) (315 MVA)
- * 220/132 KV Kethireddypalli (2 nos of 220/132MVA PTRs) (200 MVA)
- * 220/132 KV Jhusi Prayagraj (Aug.) (200-160) (40 MVA)
- * 220/132 KV Rampur s/s (Aug. (160-100) (60 MVA)
- * 220/132 KV Sendhwa (New) s/s (160 MVA)
- * 220/132 KV Shamli S/S (Aug) Additional T/F (100 MVA)
- * 220/132 KV New Sagardighi S/S (320 MVA)
- * 220/132 KV New Town AA-III (Aug.) (160 MVA)
- * 220/132 KV Sarh Dehat (Aug.) (160-100) (60 MVA)
- * 220/132 KV Bargarh S/S (ICT-II) (160 MVA)

◆ Transmission Lines

- * 765 KV Vindhyaachal PS - Jabalpur PS (PJTL -TBCB)
- * 765 KV Jharsuguda (Sundargarh) - Raipur (OGP-IITL - TBCB)
- * 400 KV Neemrana (PG) - Dhanonda (HVPNL) (GPTL - TBCB)
- * 400 KV Jind-Kirori-1 and 400kV Jind-Kirori-2 along with associated bay (Ckt No. I &II)
- * 400 KV Akal-Kankani(Jodhpur New) line-1 along with 50 MVAR non-switchable LR at both ends (Ckt No. I)
- * 400 KV Akal-Kankani(Jodhpur New) line-2 along with 50 MVAR non-switchable LR at Kankani end (Ckt No. II)
- * 400 KV Banaskantha-Sankhari (Ckt No. I &II)
- * 400 KV Vindhyaachal(PS)-Jabalpur(PS) (Ckt No. I &II)
- * 400 KV Uarvakonda - Talaricheruvu (Ckt No. I &II)
- * 230 KV Neyveli-Karikal
- * 230 KV Bahoor-Karikal
- * 230 KV Arasur-Gobi
- * 220 KV Julwaniya - Sendhwa (GEC-I)
- * 220 KV Kheralu - Dharewada (DFCC) line

- * 220 KV LILO of 220 kV Maath (400) - Meetau (Hathras) line at Maath (220)
- * 220 KV LILO of both Ckt. of Indore-II (Jaitpura) - Ujjain line at Indore (PGCIL)765kV S/S
- * 220 KV LILO of Gokarna-Sagardighi line at Sagardighi 220kV GIS (ACSR Zebra)
- * 220 KV LILO of one circuit of 220 kV D/C Kadana - Godhara line at 220 kV Zalod S/S
- * 220 KV LILO of one ckt. Daultabad-IMT Manesar line at Gurgaon Sec.- 85
- * 220 KV Ludhiana-Doraha
- * 220 KV New_Purnea-Begusarai-I (Ckt No. I)
- * 220 kV Keonjhar(PG)Keonjhar(OPTCL)-I (Ckt No. I)

◆ Generators

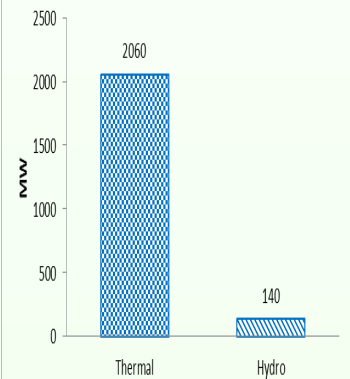
◆ Thermal

- * Kothagudem TPS Unit-12 of capacity 800 MW was commissioned on 26.12.2018 in Telangana by TSGENCO.
- * Shri Singaji TPS Unit No. 4 of Capacity 660 MW was commissioned on 27.12.2018 in Madhya Pradesh by MPPGCL

All India No. of Generators Commissioned during FY 2018-19 (till Dec-2018)

Month	Thermal					Hydro					Nuclear				
	WR	NR	NER	ER	S R	WR	NR	NER	ER	SR	WR	NR	NER	ER	SR
Apr-18	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-18	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Jun-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-18	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-18	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Oct-18	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-18	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-18	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Total	5	0	0	0	1	0	0	1	0	1	0	0	0	0	0

Additional Generation Capacity During FY 2018-19(Till Dec-2018)



All India No. of Line Reactors (LR), Transmission Lines (T/L), Substations (S/S) and Bus Reactors (BR) Commissioned for FY 2018-19 (till Dec-2018)

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-18	0	0	0	4	4	0	0	14	10	0	0	0	0	0	8	5	0	0	0	26	19	0
May-18	0	0	0	0	2	0	0	19	12	0	0	3	0	0	10	8	0	0	0	32	22	0
Jun-18	0	0	0	4	1	0	0	8	9	0	0	0	0	0	15	8	0	0	0	27	18	0
Jul-18	0	0	0	2	0	0	0	10	9	0	0	3	0	0	16	17	0	0	0	28	29	0
Aug-18	0	0	0	4	3	0	0	15	8	0	0	0	0	0	16	17	0	0	0	35	28	0
Sep-18	0	0	0	0	0	0	0	14	8	0	0	0	2	0	17	12	0	0	0	31	22	0
Oct-18	0	0	0	3	0	0	0	11	9	0	0	2	0	0	22	11	0	0	0	36	22	0
Nov-18	0	0	0	3	0	0	0	10	10	0	0	1	0	0	7	10	0	0	0	21	20	0
Dec-18	0	0	0	2	1	0	0	7	4	0	0	3	0	0	10	9	0	0	0	22	14	0
Total	0	0	0	22	11	0	0	108	79	0	0	7	7	0	121	97	0	0	258	194	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 Dec-2018.

* 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 you in planning and operations of your 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.

Panacean Energy Solution



PanaCean®
(An ISO 9001:2015 Company)
More Power to You



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 Darda 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

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Silvassa

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Daman

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

Surat

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



PANACEAN AT WORK FOR YOU

CONNECTING YOUR POWER NEEDS TO THE PANACEAN RESOURCES

IT SUPPORT TO YOUR POWER SOLUTIONS

- INFRASTRUCTURE 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.

SECURITY



FLEXIBLE SOLUTIONS FOR YOUR POWER NEEDS

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:

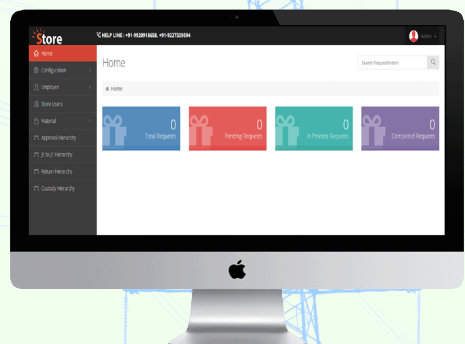
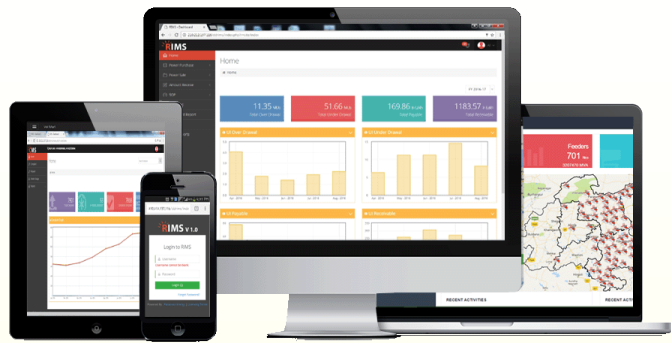
The data of all enterprise applications is of utmost importance. Power UI comes with Auto Backup facility where an authorized person can schedule auto backup of full / partial data of the software. In case of data lost or hardware failure, no or minimal data is lost.

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.



LAPTOP, TABLET & MOBILE FRIENDLY



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.

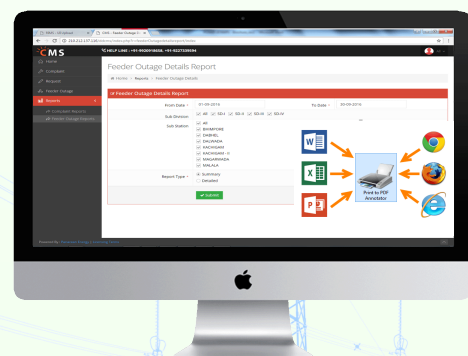
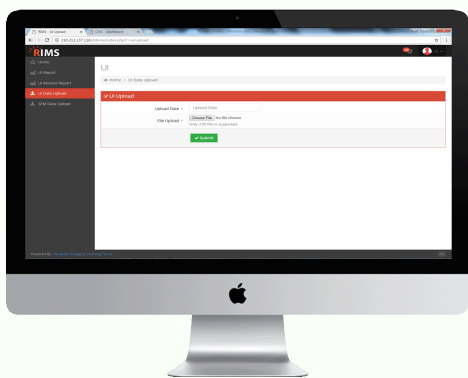
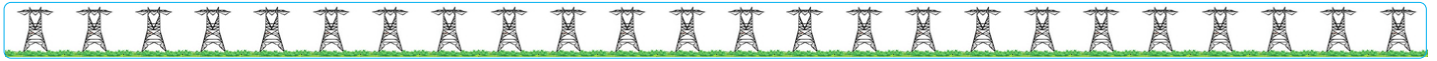


Transmission

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:

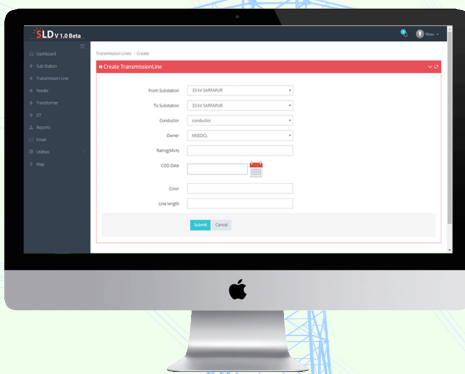
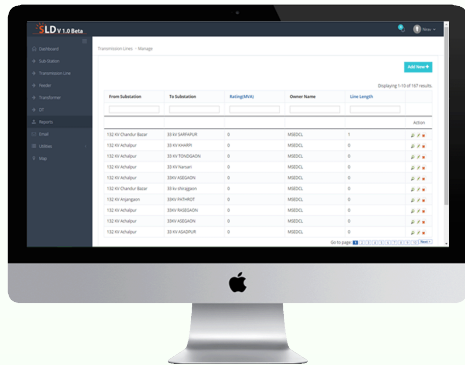
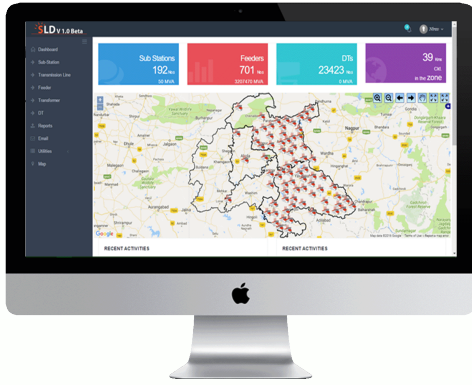
The software shall have a provision to handle huge volumes of data. Features such as import of excel files and import of data from databases shall be provided to facilitate bulk data entry and its corresponding map location display. Given below is a sample bulk data entry feature in POWERUI.

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

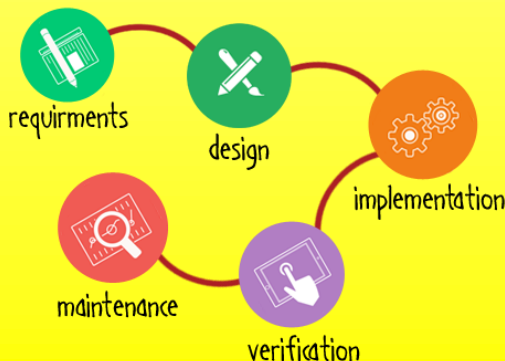
POWERUI MAPS is a map based application where all important assets and infrastructure of a Distribution company and transmission company are displayed on maps using their exact geographic coordinates. Display of all mapped distribution equipment on google maps, along with establishment of comprehensive 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.

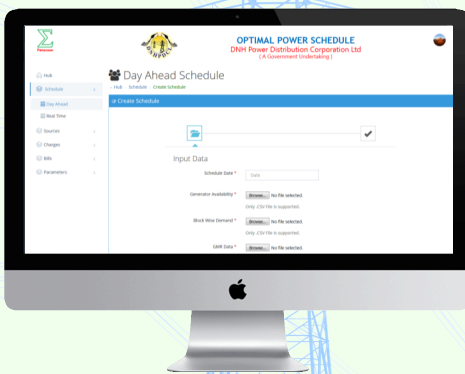
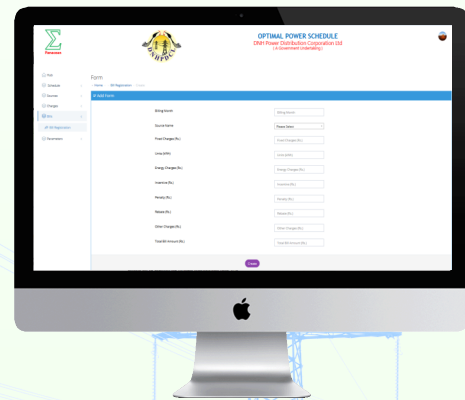
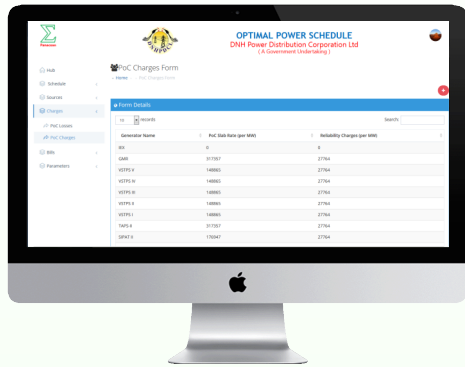
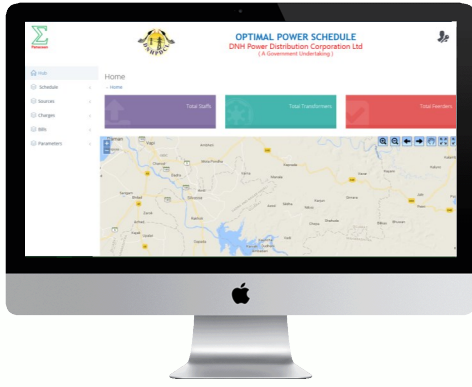
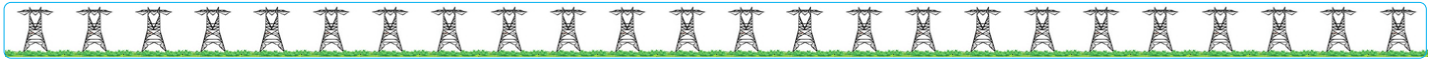
LAYER FACILITY:

Given a large and a highly dense network as that of MSDCL, 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.

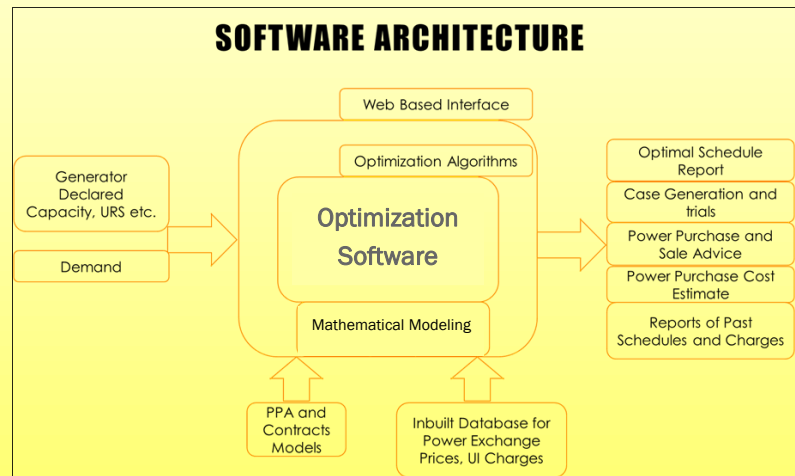




OPTIMAL POWER SCHEDULING SOFTWARE

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.



F **Feasibility Study for Renewable Power Generation** : Feasibility studies involve studying the technical and financial implications of commissioning of a project. Feasibility studies are almost always conducted where large sums are at stake. Various renewable energy options such as solar, wind, biomass etc., are evaluated for commercial availability, economic feasibility, siting potential, and climatic resource. It is an assessment of the practicality of a proposed Renewable Power Generation plan or method.



O **&M of Renewable Power Plant Operation** : Panacean undertakes Operation and maintenance of several solar plants for its clients. With increasing emphasis on solar power by the Govt. of India our experience in O & M of solar plants is very valuable.



D **etailed Project Report Preparation (DPR)**: is a part of the total business plan submitted to venture capitalists or financial institutions. It is the culmination of all analyses related to the project. The analyses of market demand as well as technical and financial are presented in a systematic format, in the DPR. The Estimate for the proposal of any scheme majorly is based on various factors such as

- ◆ Estimate of scheme is prepared on budgetary offer received for similar work of scheme by venture capitalists.
- ◆ The estimate also considers expenses towards the cost of civil structure works, transportation, installation, testing, commissioning charges & contingencies.
- ◆ Land cost
- ◆ Packing, forwarding, inland transportation & insurance at the rate of 2.5% for all equipment have been considered.
- ◆ Erection, testing & commissioning charges are considered as 8% of supply cost for mechanical & electrical equipment.
- ◆ 3% of the equipment cost has been considered towards cost of spares.
- ◆ Goods & Service tax at the rate of 18%.



We have the experience of DPR preparation for various schemes.