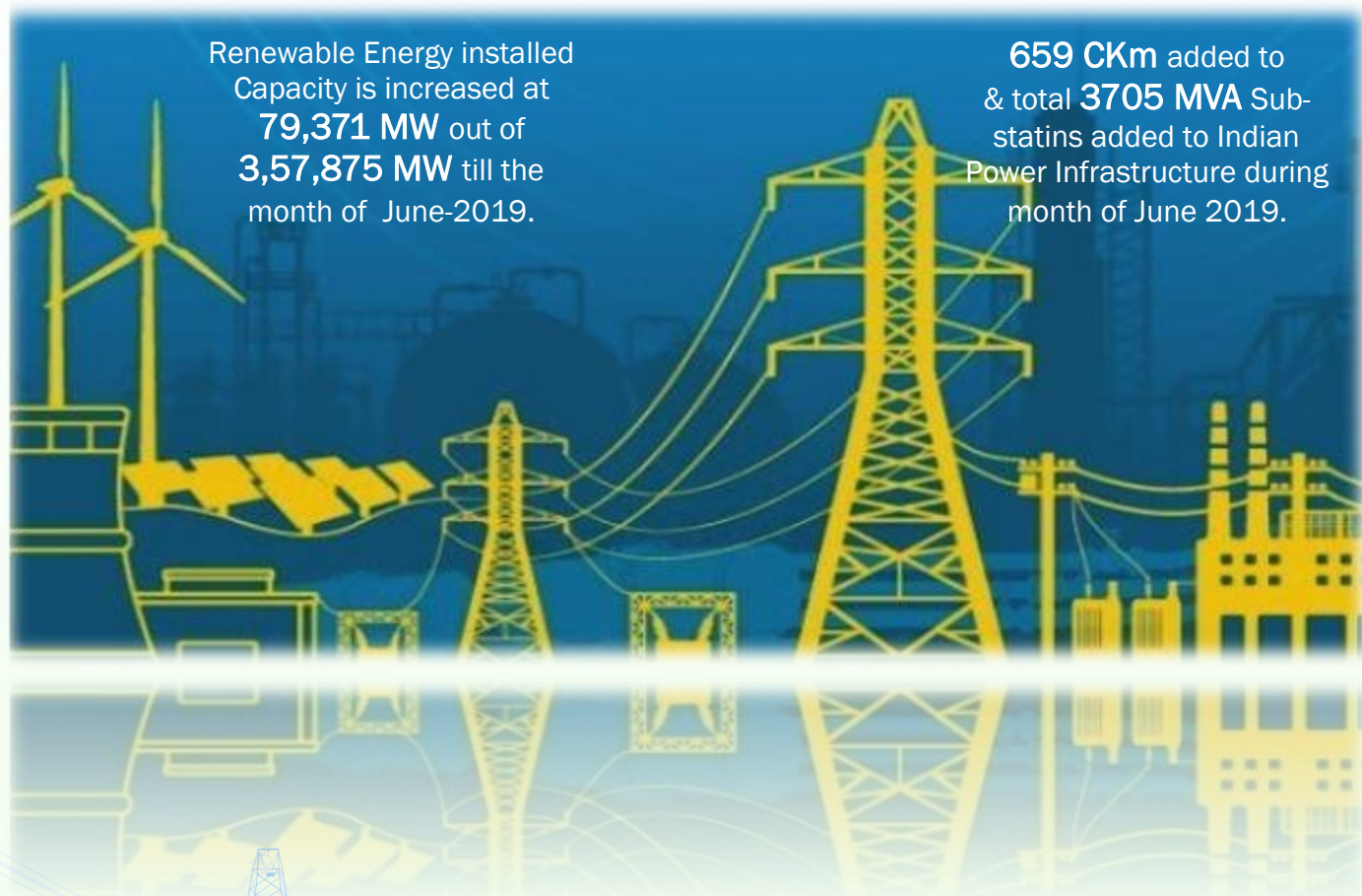




POWER BULLETIN



Renewable Energy installed Capacity is increased at **79,371 MW** out of **3,57,875 MW** till the month of June-2019.

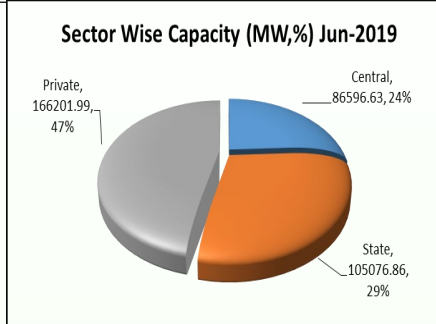
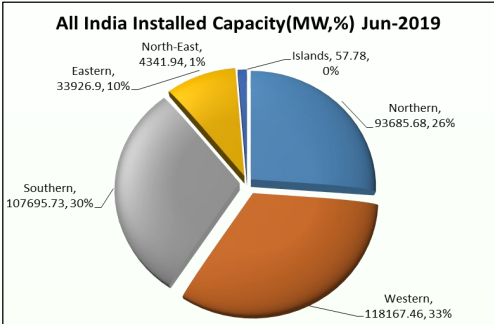
659 CKm added to & total **3705 MVA** Sub-stations added to Indian Power Infrastructure during month of June 2019.

Inside

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- ◆ PXIL & IEX Trading summary ----- 3
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OVERVIEW OF INDIAN POWER SYSTEM FOR JUN-2019

All India Installed Capacity (MW) as on 30-06-2019						All India Installed Capacity (MW) as on 30-06-2019		Peak Demand of DD & DNH				
Region	Thermal	Nuclear	Hydro	RES	Total	Sector	Generation (MW)	Utility	Jun-19			
Northern	57721.46	1620	19707.77	14636.45	93685.68				Central	86596.63	Peak Demand (MW)	Peak Met (MW)
Western	85200.11	1840	7547.5	23579.85	118167.46	State	105076.86	DD		351		
Southern	53217.26	3320	11774.83	39383.64	107695.73		Private		166201.99	DNH	824	824
Eastern	27563.64	0	4942.12	1421.14	33926.9	Total		357875.48				
North-Eastern	2581.83	0	1427	333.12	4341.94							
Islands	40.05	0	0	17.73	57.78							
ALL	226324.34	6780	45399.22	79371.92	357875.48							



All India Plant Load Factor (PLF) in (%)

Sector	Jun-18	Jun-19
Central	69.89	66.85
State	56.90	60.67
Private IPP	53.14	59.70
Private UTL	66.71	63.45
ALL India	59.39	62.17

- Highlights of WR Grid for June-2019**
- Maximum Peak Demand Met:** 56768 MW
 - Energy Consumption:** Total Energy Consumption in the month of June-2019 was 34606 MUs at an average of 1154 MUs/day & Maxi-mum was 1249 MUs on 06.06.2019.
 - Unrestricted Demand:** Maximum Unrestricted demand was 56887 MW and Average Peak Unrestricted demand was 48064 MW.
 - Frequency Profile:** System frequency as per IEGC band is 49.90 Hz to 50.05 Hz. Maxi-mum, Minimum & Average Frequencies 50.31 Hz, 49.63 Hz & 50.00 Hz were respectively observed in the month of June-2019.
 - Voltage Profile:** All 765 KV nodes of WR were within the IEGC limit except, Wardha, Tamnar, Gwalior, Durg, Wardha 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, Boisar Parli, Kalwa, Karad, Amreli, Kasor, Mapusa, Magarwada, Hazira & Dhule. Highest of 93.43% of time voltage remained above 420KV at Dhule.
 - Hydro Generation:** Total hydro generation of Western Region was 372.55 MUs at an average of 12.42 MUs/day in the month of June-2019.
 - Wind Generation:** Total wind generation was 3002 MUs at an average of 100.1 MUs/day in the month of June-2019.
 - Solar Generation:** Total Solar generation was 748 MUs at an average of 25 MUs/day in the month of June-2019.
 - Open Access Transaction Details for June-2019:**
 - ⇒ No of approvals & Energy Approved in Intra-regional: 103 & 733.89 Mus
 - ⇒ No of approvals & Energy Approved in Inter-regional: 37 & 69.4 Mus
- [Read More...](#)

List of Transmission Lines Commissioned/Ready for Commissioning During Jun-2019

Sector	Central				Pvt.			State				Total
	800	765	400	220	765	400	220	765	400	230	220	
Voltage Level (KV)	0	0	1	0	0	0	0	0	1	1	7	10
No. of Lines	0	0	1	0	0	0	0	0	1	1	7	10

List of Substations Commissioned/Ready for Commissioning During Jun-2019

Sector	Central				Pvt.			State				Total
	765	400	230	220	765	400	220	765	400	230	220	
Voltage Level (KV)	0	3	0	0	0	0	0	0	2	1	13	19
No. of Substations	0	3	0	0	0	0	0	0	2	1	13	19

Region-wise Power Supply Position (Demand & Availability) in Jun-2018 & Jun-2019

Region	Energy (MUs)				Deficit /Surplus (%)	
	Demand		Energy Met		Jun-18	Jun-19
	Jun-18	Jun-19	Jun-18	Jun-19		
Northern	37,624	40,978	37,154	40,586	(1.2)	(1.0)
Western	31,297	33,248	31,295	33,248	0.0	0.0
Southern	25,965	28,502	25,937	28,485	(0.1)	(0.1)
Eastern	13,047	13,127	12,997	13,127	(0.4)	0.0
North Eastern	1439	1560	1386	1500	(3.7)	(3.8)
All India	109372	117415	108769	116946	(0.6)	(0.4)

Region-wise Peak Demand / Peak Met in May-2018 & May-2019

Region	Power (MW)				Deficit /Surplus (%)	
	Peak Demand		Peak Met		May-18	May-19
	May-18	May-19	May-18	May-19		
Northern	61,235	65,950	60,715	64,838	(0.8)	(1.7)
Western	51,089	56,887	50,922	54,768	(0.3)	(0.2)
Southern	43,329	44,844	42,658	44,844	(1.5)	0.0
Eastern	21,516	24,113	21,487	24,113	(0.1)	0.0
North Eastern	2640	2922	2564	2861	(2.9)	(2.1)
All India	172381	183673	169942	182454	(1.4)	(0.7)

[Read More...](#)

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)

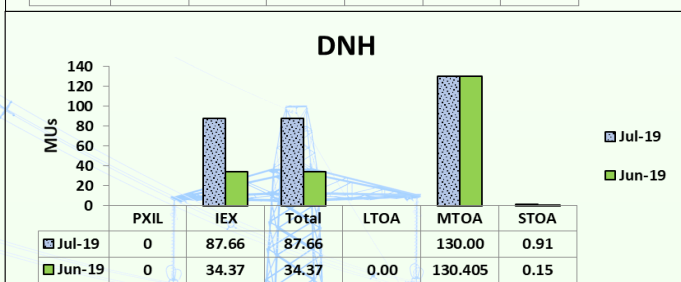
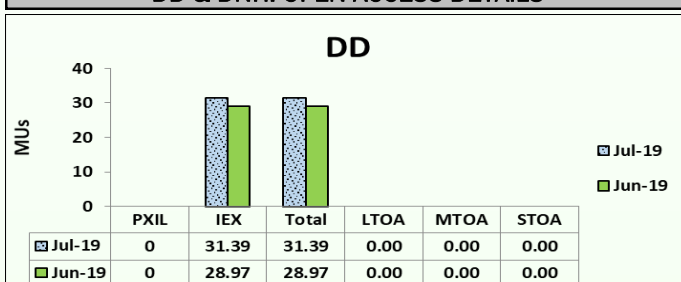


⇒ PXIL & IEX Trading summary

JUL-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	15793.6	39733.6	-	1393.6	1393.6	5846183.2	8391022.2	0.0	4800409.9	4800410.0
Min	0.0	0.0	0.0	0.0	0.0	3410.3	6683.3	1102.5	3386.0	3386.0
Max	150.0	100.0	3250.0	5.3	5.3	14934.7	19115.2	8850.2	10460.6	10460.6
Avg	13.7	34.5	868.1	1.2	1.2	7857.8	11278.3	3378.6	6452.2	6452.2

JUN-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	1695.2	30595.2	-	1695.2	1695.2	5257809.8	7982650.5	-	4211586.9	4213541.9
Min	0.0	0.0	0.0	0.0	0.0	2962.7	7300.1	1051.6	2939.7	2939.7
Max	3.7	125.0	3500.0	3.7	3.7	14262.8	18050.3	8886.2	10006.2	10006.2
Avg	1.6	29.0	1555.5	1.6	1.6	7302.5	11087.0	3317.2	5849.4	5852.1

DD & DNH: OPEN ACCESS DETAILS



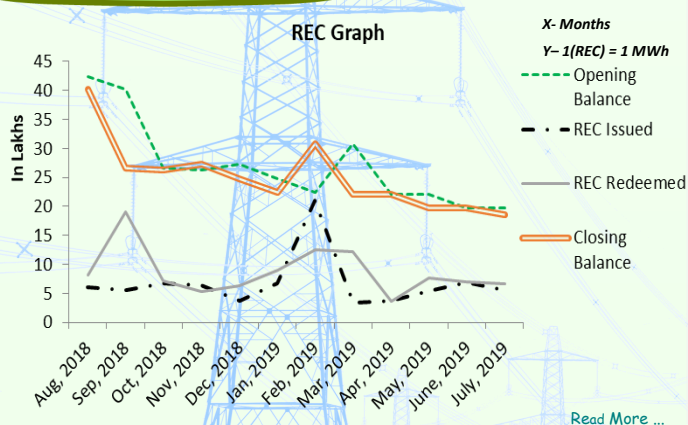
REC Trading Session July-2019

Trader Company	PXIL		IEX	
	Non-Solar	Solar	Non-Solar	Solar
Total Sell Bid (REC's)	105,823	47,875	405,761	135,029
Total Buy Bid (REC's)	198,527	132,789	787,418	424,546
Clearing Price (₹/Certificate)	1,705	2,000	1,650	2,000
Cleared Volume (REC's)	102,076	24,296	387,679	104,760

POWER MARKET UPDATE: July 2019
Day Ahead Market Trades 4800MU with Avg. MCP at Rs. 3.38 per unit

- The electricity market at IEX recorded 27% increase on YoY basis and 15% increase on MoM basis in July 2019. The increase in volume corroborated well with increase in demand for electricity in the select eastern, western and southern states. The discoms across these states preferred the day-ahead and the term ahead electricity market on exchange to leverage the competitive price discovery, coupled with the benefit of flexible and predictable procurement since 'One Nation and One Price' prevailed on all 31 days during the month.
- The day-ahead market alone saw increase in volumes by 19% YoY while the term-ahead market (TAM) which is leveraged by the discoms to manage demand-supply variability close especially in the scenario of high renewable energy concentration in the grid, increased 290% on YoY basis.
- The average MCP in the DAM was Rs. 3.38 per unit - it recorded decrease of 2% on Y-o-Y basis from Rs.3.46 per unit in July'18. The low price coupled with greater certainty and predictability in procurement continue to make compelling proposition for the distribution companies as well as open access consumers to step up their procurement through Exchange.

RENEWABLE ENERGY CERTIFICATE MECHANISM (REC) FROM AUG-18 TO JULY-19



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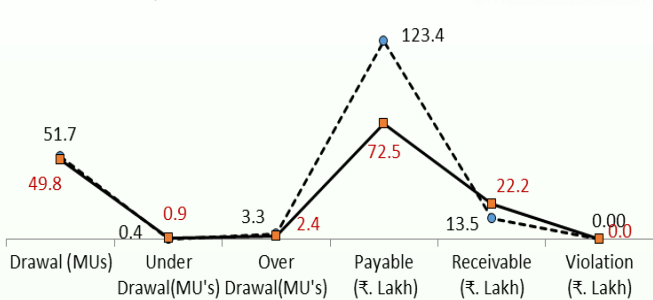
DEVIATION CHARGES

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

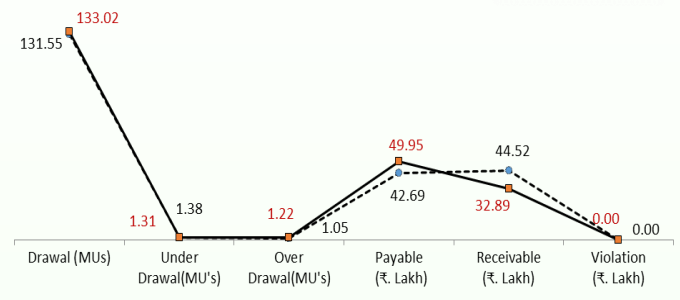
FY 2019-20	DD-Deviation Charges						
	Drawl (MUs)	Schedule (MUs)	UI Drawl (MUs)		UI Charges(₹. Lakh)		
			Under Drawl	Over Drawl	Payable	Receivable	Violation
Cumulative Total up to Jun-19	650.35	621.88	7.27	35.74	1202.92	216.44	115.16
22-07-2019 to 28-07-2019	49.77	48.35	0.92	2.35	72.50	22.21	0.00
22-07-2018 to 28-07-2018	48.92	42.84	0.09	6.16	141.54	1.04	--
15-07-2019 to 21-07-2019	51.68	48.72	0.38	3.34	123.44	13.45	0.00
15-07-2018 to 21-07-2018	50.72	43.59	0.04	7.16	180.81	0.34	--

FY 2019-20	DNH-Deviation Charges						
	Drawl (MUs)	Schedule (MUs)	UI Drawl (MUs)		UI Charges (₹. Lakh)		
			Under Drawl	Over Drawl	Payable	Receivable	Violation
Cumulative Total up to Jun-19	1638.97	1629.35	15.87	25.49	936.05	408.31	94.92
22-07-2019 to 28-07-2019	133.02	133.11	1.31	1.22	49.95	32.99	0.00
22-07-2018 to 28-07-2018	118.88	114.64	0.15	4.38	90.44	2.64	--
15-07-2019 to 21-07-2019	131.55	131.88	1.38	1.05	42.69	44.52	0.00
15-07-2018 to 21-07-2018	123.29	116.09	0.03	6.33	153.10	0.78	--

Week wise UI Report: DD



Week wise UI Report: DNH



Month	DD			DNH		
	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)	2.73	(11.40)	(3.64)
June	0.23	(24.82)	(2.61)	2.91	(7.78)	(3.70)
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)	7.26	(35.73)	(10.61)

Month	DD			DNH		
	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)	5.29	(9.45)	(5.39)
June	1.43	(15.89)	(2.57)	7.51	(5.14)	0.81
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)	15.86	(25.49)	(8.2)

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		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 Jul-2019	240	240	42326	42806	0.0	-5	0.0	-5.1	44774	27933	72707	1	711	713
Cumulative Total Charges in (₹) till Jul 19	5684.0	31233.0	-560831.0	-523914	0.0	-739.5	0.0	-739.5	-6492216	-4050329	-10542544	203	103110	103313
15-07-2019 to 21-07-2019	57.00	25.20	5488.50	5571	0.0	0.00	0.0	0.00	4155.40	3863.40	8018.80	0.00	0.00	0.00
Charges in (₹)	-8265	-3654	-795833	-807752	0.0	0	0.0	0.00	-602533.00	-560193.00	-1162726	0.00	0.00	0.00
22-07-2019 to 28-07-2019	59.20	80.80	6326.60	6466.60	0.0	0.00	0.0	0.00	4915.20	3585.40	8500.60	0.00	0.20	0.2
Charges in (₹)	-8584	-11716	-917357	-937657	0.0	0	0.0	0.00	-712704.00	-519883.00	-1232587	0.00	29.00	29.00

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



* CEA

- Letter of request for furnishing information regarding formulation of Annual Generation Programme for the FY 2020-21
- Comprehensive Award Scheme(s) for the Distribution Companies(Govt & Private) and Rural Distribution Franchisees (RDFs) for the year the consideration year 2018-19.

* SECI

- RfS for 1500 MW Solar PV Projects under CPSU Scheme Phase-II (Tranche-II) has been issued by SECI. The RfS document can be downloaded from the ETS website, as per details contained in the RfS document.

* CERC

- Proposed framework for Real-Time Market for Electricity

• MISCELLANEOUS

- Central Electronics Calls for Empanelment of Solar Pump Manufacturers Under KUSUM Program
 - ⇒ The last date to submit the EoI is August 31, 2019 .
- Adani's Subsidiaries Petition Tamil Nadu Commission Against Solar Power Curtailment
 - ⇒ Asked to submit a fresh petition with all the necessary details.
- Demand for Solar and Non-Solar RECs Increased in July 2019
 - ⇒ The non-solar RECs witnessed a spike in price in July.
- Power Grid to Build Transmission Network in Gujarat & Rajasthan to Evacuate Renewables
 - ⇒ Lack of transmission infrastructure has been a widespread issue in the face of renewable capacity additions
- After June's Dip, Spot Power Price Rises Slightly to ₹3.38/kWh in July 2019
 - ⇒ Peak demand met was recorded to be 175 GW in July
- Bihar Floats Tender for Empanelment of Bidders for 10 MW of CAPEX Rooftop Solar Projects
 - ⇒ The solar photovoltaic modules should be domestically manufactured
- CEA to Maintain Database of Outstanding Dues by DISCOMs to Solar, Wind Developers
 - ⇒ The authority has asked the renewable generators to provide the details of dues every month
- Stop Curtailing Solar and Wind Power: High Court to Andhra Pradesh
 - ⇒ The state has begun curtailing wind power and is set to cancel 21 wind PPAs
- Tata Motors and Tata Power Come Together to Install 300 EV Charging Stations
 - ⇒ Charging stations to be installed in major cities of Mumbai, Delhi, Pune, Bangalore, and Hyderabad
- Karnataka Sets New Generic Tariff for Solar Projects
 - ⇒ The capacity utilization factor of solar projects has been set at 19%
- NTPC Retenders 20 MW of Floating Solar Projects for its Gas Plant in Uttar Pradesh

⇒ The bid submission deadline is September 5, 2019

- **Adani To Build Transmission Lines in Gujarat and Rajasthan To Facilitate Renewables**

⇒ The company intends to establish 20,000 circuit kilometers of transmission lines by 2022

- **Uttar Pradesh Gives One-Time Exemption to Rooftop Solar Consumers to Avail Net Metering**

⇒ Allows the option of a net or gross metering to over 10 MW of rooftop solar PV projects

- **CERC Proposes New Regulations for Granting Electricity Trading License**

⇒ Under the new regulations, the minimum net worth requirement has been increased for companies which are applying for licenses

- **Vijayawada Airport Becomes Solar-Powered with the Installation of a 1 MW Project**

⇒ The solar power project likely to help save nearly ₹9.2 million per annum in the airport's power bill

- **DISCOM Asked to Settle Accumulated Interest Payments to Two Wind Developers**

⇒ VRL Logistics and Maris Power Supply Company had filed the petitions

- **CERC Overlooks Procedural Delays, Grants RECs to Captive Generator in Uttar Pradesh**

⇒ The petitioner has a 7.4 MW biofuel project in Uttar Pradesh

- **Adani Commissions 200 MW of Solar Projects in Rajasthan**

⇒ The projects were won by Adani in the auction held by MSEDCL last year

- **India Likely to Hike Import Duty on Solar Equipment in the Coming Years**

⇒ R.K. Singh also announced that a storage policy would be unveiled soon which would provide tax incentives for solar equipment manufacturing in the country

- **Corporate Social Responsibility Funds Can be an Effective Tool for Solar Expansion**

⇒ Initiatives undertaken by companies under CSR have increased

- **Andhra Allocates ₹5.57 Billion Towards Payment Security Mechanism for Power Purchase**

- **South Korea to Build World's Largest Floating Solar Power Project**

⇒ The 2.1 GW project will supply electricity to nearly 1 million households

- **Maharashtra Commission Allows Deviation in Bidding Guidelines for Solar Projects**

⇒ MAHAGENCO to procure 184 MW of solar power under Mukhyamantri Saur Krishi Vahini Yojana

- **Hindustan Shipyard to Install 1 MW of Rooftop Solar Projects in Andhra Pradesh**

⇒ The company's cumulative rooftop solar capacity set to rise to 3 MW

Note: Click on Head lines for More Info



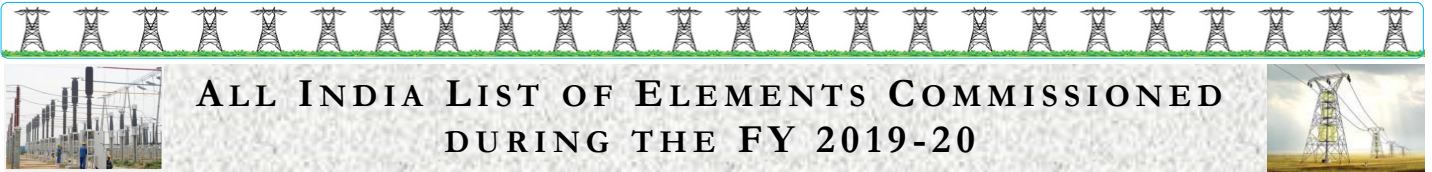
- **NTPC Announces Tender for 1,200 MW of Solar Projects to be Set Up Across India**
⇒ The bid submission deadline is September 2, 2019
- **SOLA Group Secures 400 Million Rand for 40 MW of Solar Projects in Southern Africa**
⇒ The initiative is likely to create an additional 880 jobs in the coming years
- **Portugal Solar Auction Results in Record Low Bid of €14.8/MWh**
⇒ The capacity auctioned is more than twice the current solar capacity of Portugal
- **NOTS Solar Lamps to Invest \$70 Million in Solar Home Systems Manufacturing in Rwanda**
⇒ The investment will help set up a manufacturing facility to produce affordable solar home systems
- **KUSUM Program to Get ₹344 Billion to Add Solar Capacity of 26 GW by 2022**
⇒ The government has made indigenous solar panels mandatory for this program
- **IFC Extends Financing Package for 60 MW of Solar Projects in Senegal**
⇒ Solar projects are being developed by Scaling Solar, a World Bank program
- **First Half of 2019 Sees \$6 Billion Corporate Funding Raised by the Solar Sector Globally**
⇒ Sector witnesses 11% growth YoY
- **Coal's days numbered as world turns to renewables**
⇒ Just 20 years ago, wind and solar power were considered economically unviable, but today, Germany and the UK get about a quarter of their electricity from renewables.
- **UK govt to invest £2.5 million for EV charging points**
⇒ According to reports, charging points will be installed on residential roads to support the on-street residential charge points scheme which was introduced in 2017
- **UK energy regulator asks National Grid for urgent report into power cut**
⇒ Regulator Ofgem said National Grid, which operates the electricity transmission system in England and Wales, must report initial findings by Aug. 16, with a final, technical report due by Sept. 6
- **Kerala state electricity board to ensure power to homes of the poor**
⇒ Field-level officers of the board have been asked to ensure that at least one electrical bulb would gleam at the flood-hit homes of the economically weak consumers once they start flocking back home
- **Texas power demand sets record high as heat wave bakes U.S. Southeast**
⇒ High temperatures in Houston, the state's biggest city by population, hit 100 degrees Fahrenheit (38° Celsius) on Monday and could go higher on Tuesday, according to AccuWeather forecasts. The normal high in Houston is 96 F at this time of year.
- **SJVN net up 44 per cent at Rs 423 crore in June quarter**
⇒ Total income rose to Rs 815.06 crore during the latest June quarter from Rs 650.50 crore a year ago
- **AP govt to save Rs 215 crore in power sector during monsoon**
⇒ About 715 million units of hydel power is expected to be generated from Srisaillam powerhouses at a cost of Rs

1,14.4 crore or Rs 1.6 per unit

- **ABB board approves Björn Rosengren's name as CEO**
⇒ Rosengren will join ABB on February 1, 2020 and succeed CEO Peter Voser from March 1, 2020, as per a statement by ABB.
- **China new-energy vehicle sales drop for 1st time in over two years**
⇒ Overall auto sales in the world's biggest vehicle market fell 4.3% in July, down for a 13th consecutive month, the China Association of Automobile Manufacturers (CAAM) said on Monday
- **Madhya Pradesh government asks Essar to pay Rs 50 lakh for crop loss**
⇒ District collector in Singrauli has asked Essar Energy's thermal power plant to deposit a sum of Rs 50 lakhs against crop loss farmers have suffered following collapse fly-ash dyke mud wall collapse
- **Gujarat Invites Bidders to Install 1 MW of Rooftop Solar Across its Tourist Sites**
⇒ The tender also includes solar parking and solar benches
- **Maharashtra Seeks Consultants to Study Potential of Solar Along Nagpur-Mumbai Highway**
⇒ The bid submission deadline is September 2, 2019
- **Singapore's Shado Group Launches Electric Three-Wheeler in India**
⇒ To manufacture up to 1,000 units per month for the Indian market
- **EESL Signs MoU with Apollo to Install EV Charging Stations in its Hospitals Across India**
⇒ Apollo will provide the space and power connections for the charging infrastructure
- **Madhya Pradesh Seeks Consultants for Environmental Assessment of Three Solar Parks**
⇒ The three solar parks will have a cumulative capacity of 1,500 MW
- **UK power operator says 'no malicious intent' behind mass blackout**
- **Tesla electric car catches fire after hitting tow truck in Moscow**

List of Abbreviations

• AAI	:Airport Authority India	• ISTS	:Inter State Transmission Corporation
• AC	:Air Conditioner	• IPO	:Initial Public Offer
• BIS	:Bureau of Indian Standards	• IIT	:Indian Institute of Tech.
• BoS	:Breakup Operating System	• KW	:Killo Watt
• BHEL	:Bharat Heavy Electricals Ltd	• KWH	:Killo Watt Hour
• CEA	:Central Electricity Authority	• MW	:Megawatt.
• CPSU	:Central Public Sector utility	• MNRE	:Ministry of New & Renewable energy
• CM	:Chief Minister	• NSCFI	:Navy Supply Corps Foundation,
• CERC	:Central Electricity Regulatory Commission	• NTPC	:National Thermal Power Corp.
• DISCOM	:Distribution Companies	• PV	:Photovoltaic
• EDF	:Export Declaration Form	• PVSOL	:Public Charging Infra.
• EESL	:Energy Efficiency Services Limited	• PPA	:Power Purchase Agreement
• EV	: Electric Vehicle	• RESCO	:Renewable Energy Service Company
• EESL	: Energy Efficiency Services Limited	• REC	:Rural Electrification Corp.
• EPC	:Engineering Procurement & Construction	• SEBI	:Securities & Exchange Board of India
• GAIL	: Gas Authority of India Ltd	• SECI	:Solar Energy Corporation of India Limited
• GW	:Giga Watt		
• IFC	: International Finance		



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

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

◆ Substations

- * 400/220 KV Extn at Durgapur S/s (3rd ICT) PGCIL
- * 400/220KV Extn at Tumkur (Vasantnarsapur) S/S PGCIL
- * 400/220 KV Navi Mumbai GIS
- * 400/220 KV Noida Sector 148 G.B Nagar (New)T/F-II (UPPTCL)
- * 230/110 KV Uddanapally S/S TANTRANSCO
- * 220/132 KV Rampur (Aug.) Addl T/F UPPTCL
- * 220/132 KV Shatabdinagar Merrut (Aug) Addl T/F
- * 220/66 KV Alwalpur PSTCL (100 MVA)
- * 220/33 KV Sector-95 Gurgaon HVPNL (1000 MVA)
- * 220/132 KV New Haldia NIZ/GIS WBSETCL
- * 220/132 GETCO Rajkot (Nyara)

- * 220/33 KV Dahi Choki Unnao (New) T/F-I UPPTCL
- * 220/66 KV Sawakundla GETCO
- * 220/66 KV Waghodia GETCO
- * 220/33 KV Botanical Garden Sec-38a Noida
- * 220/132 KV S/S Aska OPTCL
- * 220/132 KV Baraut Baghpat (Aug.) T/F (UPPTCL)
- * 220/132 KV C.B Ganj Bareilly (Aug.) T/F-1 (200-160)
- * 220/132 KV Etah (Aug.) T/F-II UPPTCL
- * 220/132 Neebkarori Farukhabad (Aug.) TF-I

◆ Transmission Lines

- * 400 KV Barmer – Bhinmal (RVPNL)
- * 400 KV Chandalpur-Thippapur (TSTRANSCO)
- * 400 KV Jangaon - Tippapur (TSTRANSCO)
- * 400 kv Bhupalapalli - Chandalpur (TSTRANSCO)

- * 400 KV Gajwel to Chandalpur (TSTRANSCO)
- * 400 kv Kayathar to Thenampatti (TNTRANSCO)
- * 400 KV Rajvest to Jodhpur LILO (RRVNL)
- * 220 KV Barielly - Pilibhit Ckt - II (UPPTCL)
- * 220 KV Bhanjanagar - Aska (OPTCL)
- * 220 KV Mobha - Mangrol (LILO) (GETCO)
- * 220 KV Gr.Noida - Noida Sec-148 (UPPTCL)
- * 220 KV Hathras - Gokul (UPPTCL)
- * 220 KV Sohawal - Tanda (UPPTCL)

◆ Generators

- ◆ Thermal
 - * Unit-2 of Niwari (45 MW)
- ◆ Hydro
 - * Nil
- ◆ Nuclear
 - * Nil

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

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-19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-19	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	2	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 Jun-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
May-19	0	0	0	0	0	0	0	7	8	0	0	0	0	0	0	6	6	0	0	8	12	0
Jun-19	0	0	0	0	0	0	0	2	5	0	0	1	1	0	0	7	12	0	0	10	18	0
Total	0	0	0	0	1	0	0	11	22	0	0	1	1	0	0	20	31	0	0	27	53	0

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

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

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

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

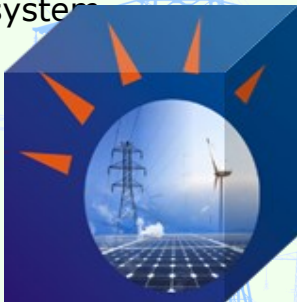


POWER SYSTEM SOLUTIONS THAT WORK FOR

**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.



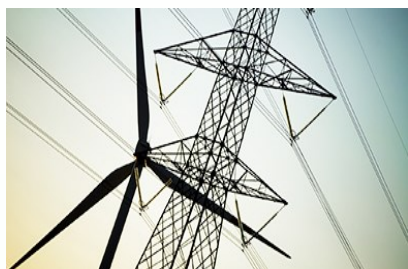
More Power to You

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.
- ◆ Power Grid Company of Bangladesh Limited (PGCB)

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
- ◆ Essar Bulk Power Terminal Limited

Reach us at

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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.

Gujarat

10, Sayeed Complex, Besides Microsof, Vapi Char Rasta, Vapi, Gujarat. Vapi – 396195.



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

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.

ONLINE ACCESS BROWSER COMPATIBILITY



INDEPENDENT OF DATABASE



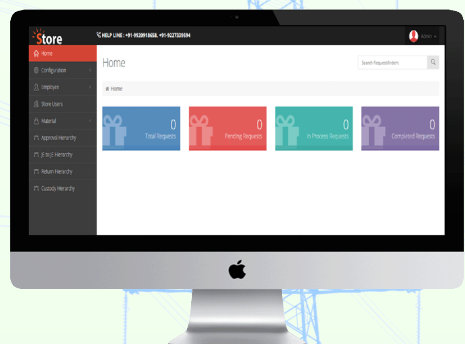
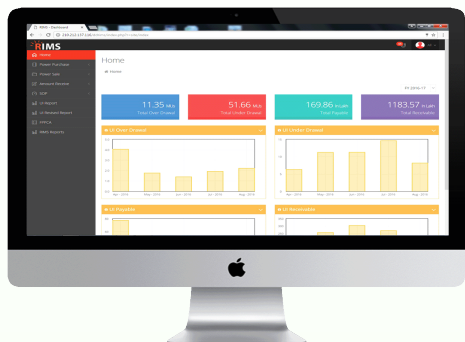
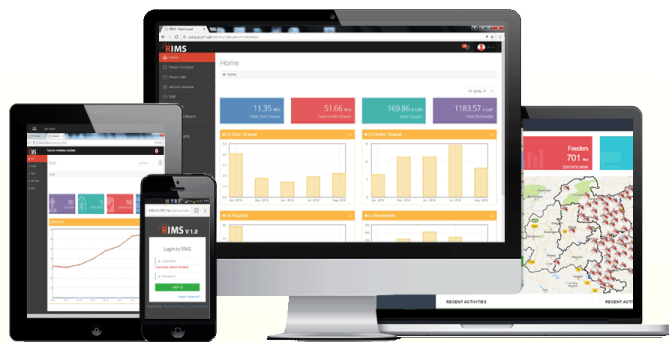
The software is compatible with Oracle, Microsoft SQL, and MySQL database.



FLEXIBLE SOLUTIONS FOR YOUR POWER NEEDS



LAPTOP, TABLET & MOBILE 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

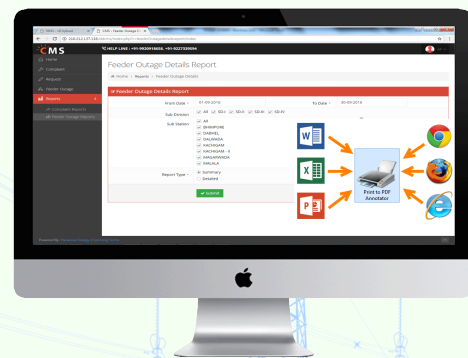
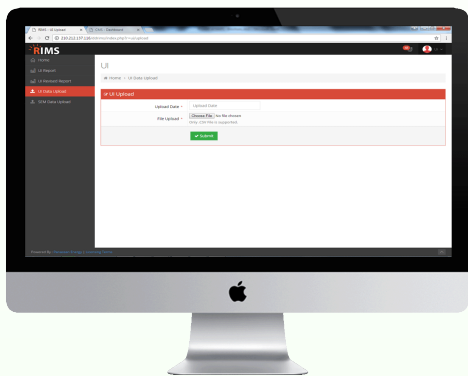


Transmission

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:

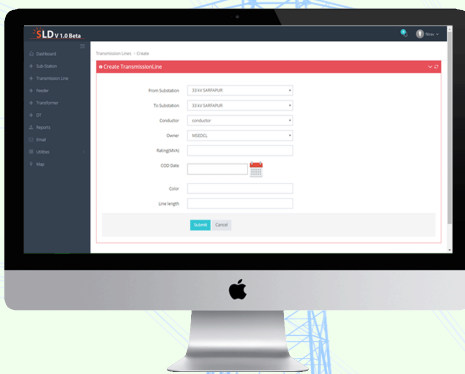
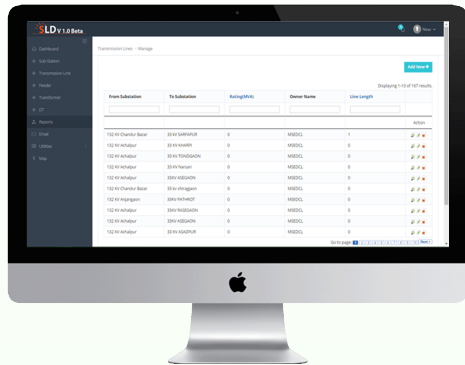
The software shall have a provision to handle huge volumes of data. Features such as import of excel files and import of data from databases shall be provided to facilitate bulk data entry and its corresponding map location display. Given below is a sample bulk data entry feature in POWERUI.

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

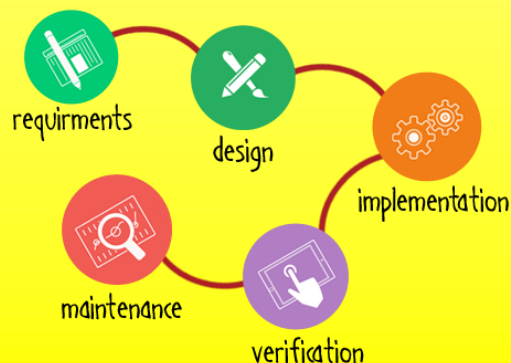
POWERUI MAPS is a map based application where all important assets and infrastructure of a Distribution company and transmission company are displayed on maps using their exact geographic coordinates. Display of all mapped distribution equipment on google maps, along with establishment of comprehensive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

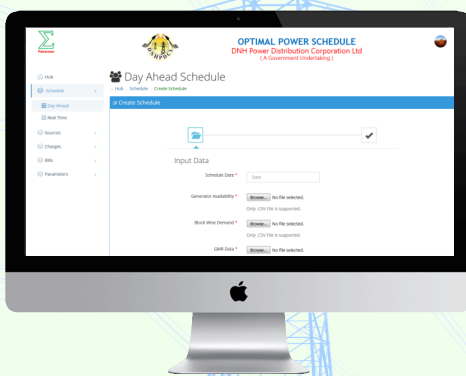
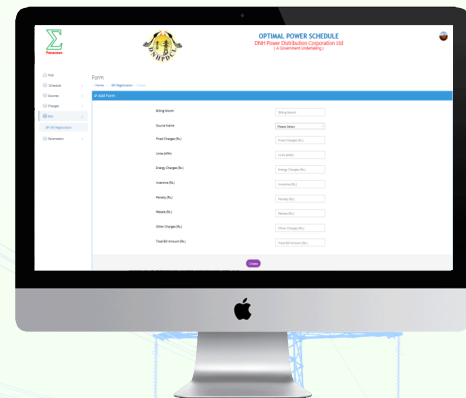
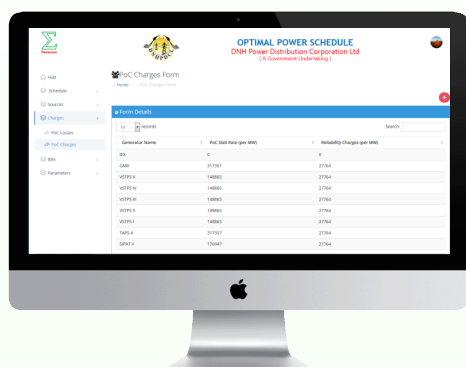
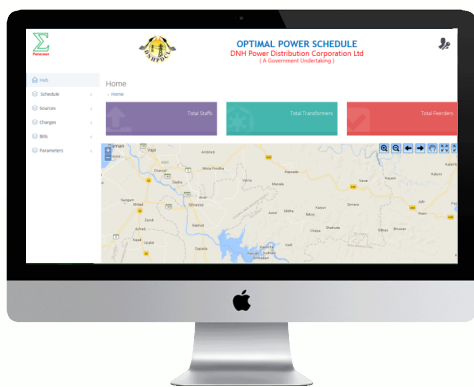
LAYER FACILITY:

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.

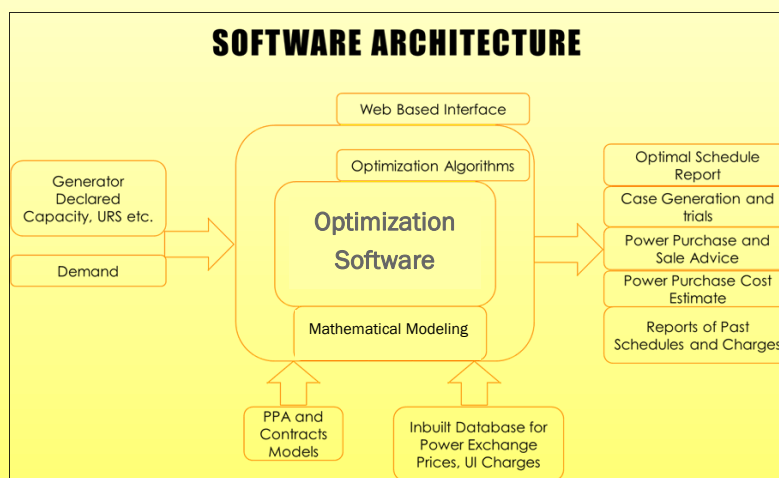




OPTIMAL POWER SCHEDULING SOFTWARE

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, Unscheduled 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.