Panacean®
(An ISO 9001: 2015 Company)

SEP
2019

POWER BULLETIN

Volume 6, Issue 6

INDIA expanded its solar-generation capacity 8 times from 2,650 MW on 26 May 2014 to over 20 GW as on 31 January 2018.

As of 31 March 2019 the total installed wind power capacity was 36.625 GW, the fourth largest installed wind power capacity in the world.

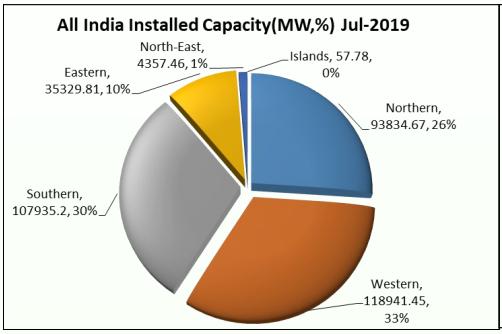
Inside

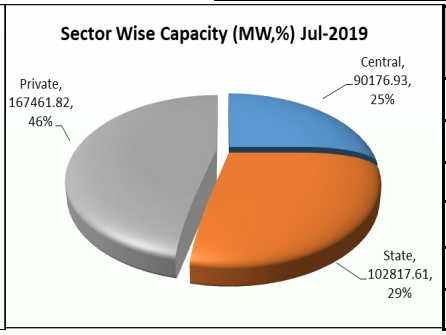
OVERVIEW OF INDIAN POWER SYSTEM FOR JUL-2019

All India Installed Capacity (MW) as on 31-07-2019					
Region	Thermal	Nuclear	Hydro	RES	Total
Northern	57648.23	1620	19707.77	14858.67	**93834.67**
Western	85200.11	1840	7547.5	24353.84	**118941.45**
Southern	53217.26	3320	11774.83	39623.11	**107935.2**
Eastern	28956.87	0	4942.12	1430.82	**35329.81**
North-Eastern	2581.83	0	1427	348.64	**4357.46**
Islands	40.05	0	0	17.73	**57.78**
ALL	**227644.34**	**6780**	**45399.22**	**80632.8**	**360456.37**

All India Installed Capacity (MW) as on 31-07-2019	
Sector	Generation (MW)
Central	90176.93
State	102817.61
Private	167461.82
Total	**360456.37**

Peak Demand of DD & DNH				
Utility	Jul-19			
	Peak Demand (MW)	Peak Met (MW)	Surplus/Deficit (-)	
			(MW)	(%)
DD	350	350	0	0
DNH	826	826	0	0





All India Plant Load Factor (PLF) in (%)		
Sector	Jul-18	Jul-19
Central	66.78	63.24
State	49.13	51.55
Private IPP	49.56	52.54
Private UTL	60.94	62.39
ALL India	54.53	55.50

Highlights of WR Grid for July-2019

- **Maximum Peak Demand Met:** 52509 MW
- **Energy Consumption:** Total Energy Consumption in the month of July-2019 was 33190 MUs at an average of 1071 MUs/day & Maxi-mum was 1203 MUs on 18.07.2019.
- **Unrestricted Demand:** Maximum Unrestricted demand was 52619 MW and Average Peak Unre-stricted demand was 44613 MW.
- **Frequency Profile:** System frequency as per IEGC band is 49.90 Hz to 50.05 Hz. Maximum, Minimum & Average Frequencies 50.32 Hz, 49.64 Hz & 50.01 Hz were respectively observed in the month of July-2019.
- **Voltage Profile:** All 765 KV nodes of WR were within the IEGC limit except, Wardha, Tamnar,Durg and Kotra which are high voltage node. High Voltage (greater than 420 KV) at 400KV substations were observed at Khandwa,Damoh, Rai-pur,Raigarh, Wardha,Bhilai, Dehgaon, Parli, Kalwa,Karad,Boisar, Kasor,Amreli,Vapi, Mapusa,Kala, Magarwada, Hazira & Dhule. highest of 99.89% of time voltage re-mained above 420KV at Dhule.
- **Hydro Generation:** Total hydro generation of Western Region was 574.14 MUs at an average of 18.52 MUs/day in the month of July-2019.
- **Wind Generation:** Total wind generation was 4114 MUs at an average of 132.7 MUs/day in the month of July-2019.
- **Solar Generation:** Total Solar generation was 618 MUs at an average of 20 MUs/day in the month of July-2019.
- **Open Access Transaction Details for July-2019:**
  - ⇒ No of approvals & Energy Approved in Intra-regional: 179 & 830.38 Mus
  - ⇒ No of approvals & Energy Approved in Inter-regional: 101 & 186.70 Mus

Read More...

List of Transmission Lines Commissioned/Ready for Commissioning During Jul-2019												Total
Sector	Central				Pvt.			State				
Voltage Level (KV)	800	765	400	220	765	400	220	765	400	230	220	
No. of Lines	0	1	3	1	0	1	0	0	2	0	5	**13**

List of Substations Commissioned/Ready for Commissioning During Jul-2019												Total
Sector	Central				Pvt.			State				
Voltage Level (KV)	765	400	230	220	765	400	220	765	400	230	220	
No. of Sub-stations	1	0	0	0	0	1	0	0	0	2	10	**14**

Region-wise Power Supply Position (Demand & Availability) in Jul-2018 & Jul-2019						
Region	Energy (MUs)				Deficit /Surplus (%)	
	Demand		Energy Met			
	Jul-18	Jul-19	Jul-18	Jul-19	Jul-18	Jul-19
Northern	38,331	40,461	37,827	39,934	**(1.3)**	**(1.3)**
Western	29,166	31,538	29,163	31,537	**0.0**	**0.0**
Southern	27,657	28,213	27,616	28,205	**(0.1)**	**0.0**
Eastern	13,097	13,189	13,065	13,189	**(0.2)**	**0.0**
North Eastern	1,587	1,540	1,536	1,482	**(3.2)**	**(3.8)**
All India	**109838**	**114942**	**109207**	**114347**	**(0.6)**	**(0.5)**

Region-wise Peak Demand / Peak Met in Jul-2018 & Jul-2019						
Region	Power (MW)				Deficit /Surplus (%)	
	Peak Demand		Peak Met			
	Jul-18	Jul-19	Jul-18	Jul-19	Jul-18	Jul-19
Northern	63,166	65,866	61,726	65,172	**(2.3)**	**(1.1)**
Western	44,879	52,619	44,574	52,509	**(0.7)**	**(0.2)**
Southern	44,991	45,487	44,719	45,250	**(0.6)**	**(0.5)**
Eastern	22,457	23,539	21,790	23,539	**(3.0)**	**0.0**
North Eastern	2,899	2,958	2,798	2,880	**(3.5)**	**(2.6)**
All India	**1,70,076**	**1,76,159**	**1,67,798**	**1,75,124**	**(1.3)**	**(0.6)**

Read More...

POWER TRADING

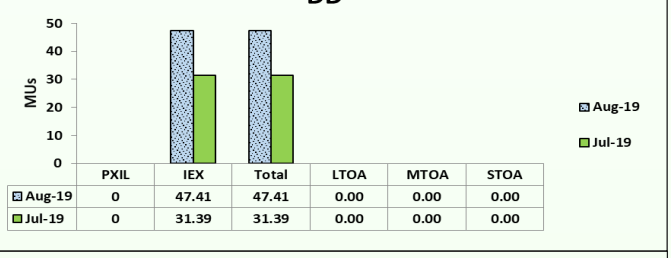
⇒ Emergence of IT has helped to create massive E-Commerce platforms in every walk of life. One such E-Commerce platform for transiting electricity for physical delivery, fine tuning daily requirements, sale of residual generation, optimal utilization of generating resources at marginal cost of production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

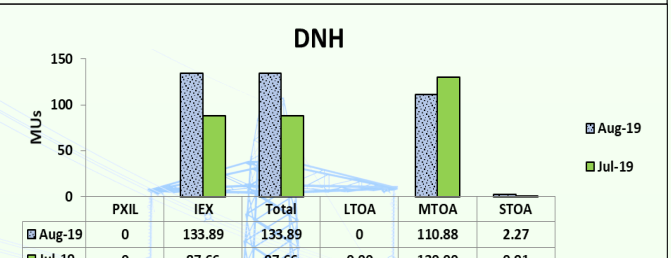
⇒ PXIL & IEX Trading summary

AUG-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	**1397.6**	**48672.6**	**-**	**1397.6**	**1397.6**	**5622422.2**	**8485342.4**	**0.0**	**4679309.6**	**4679309.6**
Min	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**3240.9**	**6181.6**	**999.8**	**3218.1**	**3218.1**
Max	**5.3**	**125.0**	**3100.0**	**5.3**	**5.3**	**13084.4**	**18676.9**	**8320.5**	**10044.6**	**10044.6**
Avg	**1.3**	**46.1**	**775.0**	**1.3**	**1.3**	**7557.0**	**11405.0**	**3316.2**	**6289.4**	**6289.4**
JUL-2019	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**

DD & DNH: OPEN ACCESS DETAILS



	PXIL	IEX	Total	LTOA	MTOA	STOA
Aug-19	0	47.41	47.41	0.00	0.00	0.00
Jul-19	0	31.39	31.39	0.00	0.00	0.00

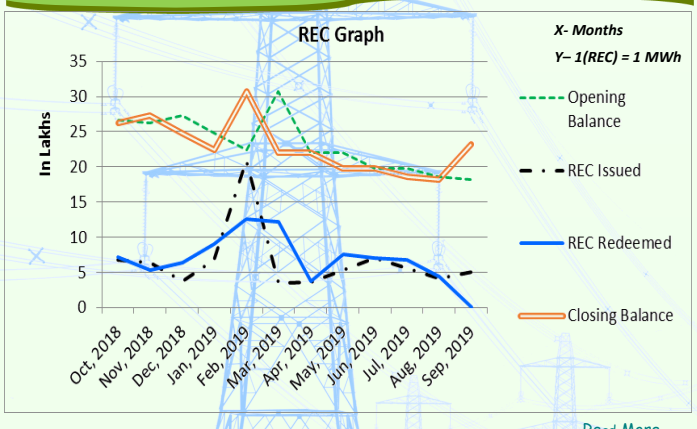


	PXIL	IEX	Total	LTOA	MTOA	STOA
Aug-19	0	133.89	133.89	0	110.88	2.27
Jul-19	0	87.66	87.66	0.00	130.00	0.91

REC Trading Session August-2019

Trader Company	PXIL		IEX	
Particular	Non-Solar	Solar	Non-Solar	Solar
Total Sell Bid (REC's)	132,001	34,640	271,491	74,731
Total Buy Bid (REC's)	209,663	122,200	731,139	452,334
Clearing Price (₹/Certificate)	1,500	2,000	1,750	2,100
Cleared Volume (REC's)	124,865	12,038	236,671	56,809

RENEWABLE ENERGY CERTIFICATE MECHANISM (REC) FROM OCT-18 TO SEP-19



Read More ...

POWER MARKET UPDATE: August 2019

Day Ahead Market Trades 4675MU with Avg. MCP at Rs. 3.32 per unit

- IEX electricity market trades 5,401 MUs in August-19 registering 33% YoY growth on back of 4% YoY growth in peak demand
- In August-19 electricity market at IEX recorded 33% increase on YoY basis on back of 4% YoY growth in peak demand on all India basis. The increase in volume on exchange was mainly due to increase in demand for electricity largely from the eastern and southern states. The southern state of Telengana witnessed increase in demand for electricity from the agricultural consumers along-with part commissioning of Kaleshwaram lift irrigation project.
- The market participants – both distribution companies and industrial consumers continued to access the exchange platform both the day-ahead and the term ahead electricity market to secure 24x7 power supply at the most competitive price and in the reliable way.
- The day-ahead market traded 4,675 MU in Aug-19, registering 18% increase from 3,975 MU traded in Aug-18. The average Market Clearing Price in the day-ahead market at Rs. 3.32 per unit was at par with Rs.3.34 per unit price in August-18. One Nation, One price prevailed on all 31 days of the month.

Read More..

DEVIATION CHARGES

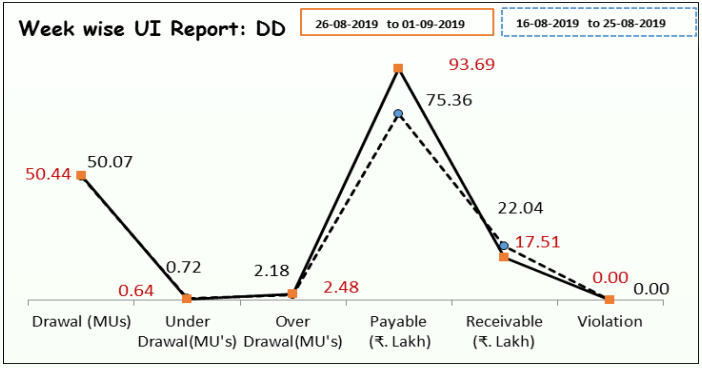
DD User Click to get UI Report
DNH User Click to get UI Report

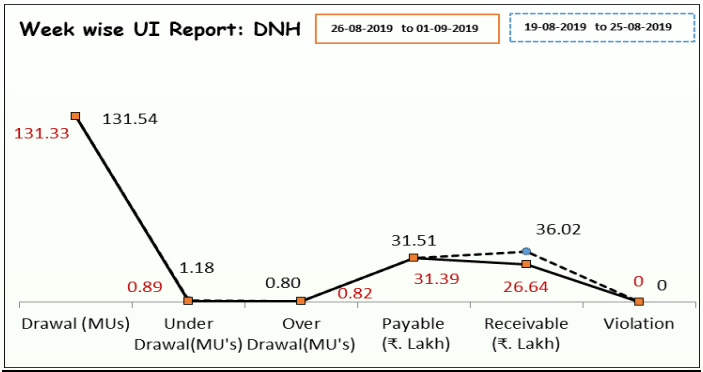
DD-Deviation Charges

FY 2019-20	Drawl (MUs)	Schedule (MUs)	UI Drawl (MUs)		UI Charges(₹. Lakh)		
			Under Drawl	Over Drawl	Payable	Receivable	Violation
Cumulative Total up to Aug-19	1092.52	1043.89	12.42	61.06	2002.14	358.98	115.33
26-08-2019 to 01-09-2019	50.44	48.59	0.64	2.48	93.69	17.51	0.00
26-08-2018 to 01-09-2018	49.17	43.82	0.07	5.42	141.92	0.88	--
19-08-2019 to 25-08-2019	50.07	48.61	0.72	2.18	75.36	22.04	0.00
19-08-2018 to 25-08-2018	52.42	45.94	0.00	6.48	149.28	0.06	--

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 Jul-19	2784.18	2779.15	28.01	33.04	1208.98	733.04	95.07
26-08-2019 to 01-09-2019	131.33	131.40	0.89	0.82	31.39	26.64	0.00
26-08-2018 to 01-09-2018	125.84	117.68	0.19	8.35	200.68	2.78	--
19-08-2019 to 25-08-2019	131.54	131.92	1.18	0.80	31.51	36.02	0.00
19-08-2018 to 25-08-2018	128.15	120.20	0.03	7.98	169.22	0.58	--





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)	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)	2.38	(13.25)	(3.17)
Aug	0.10	(28.24)	(2.52)	2.76	(12.06)	(3.35)
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)**	**12.42**	**(61.06)**	**(3.37)**

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)	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)	6.86	(3.91)	(1.25)
Aug	0.33	(35.64)	(2.35)	5.28	(3.62)	(0.9)
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)**	**28.01**	**(33.04)**	**(9.45)**

REACTIVE ENERGY CHARGES FOR DD & DNH

FY 2019-20	DD-High Voltage				DD-Low Voltage				DNH-High Voltage			DNH-Low Voltage		
	GUJARAT		ISTS	Total	GUJARAT		ISTS	Total	ISTS		Total	ISTS		Total
	Dok-diu	Una-diu	Mgr-Vap HV		Dok-diu	Una-diu	Mgr-Vap LV		Kpd-Vap HV	Kdl-Vap HV		Kpd-Vap LV	Kdl-Vap LV	
Cumulative Total MVARh till Aug-2019	324.8	402.5	72582.4	73309.7	0.0	-5.1	0.0	-5.1	72078.6	46566.4	118645.0	1.4	711.3	712.7
Cumulative Total Charges in (₹) till Aug 19	-6670.0	7728.5	-4948067	-4947008.5	0.0	-739.5	0.0	-739.5	-10451397	-6752128	-17203525	203	103138.5	103341.5
12-08-2019 to 18-08-2019	59.6	154.9	4526.5	4741.0	0.0	0.0	0.0	0.0	5790.2	18697.3	24487.5	0.0	0.0	0.0
Charges in (₹)	-8642.0	-22460.5	-656342.5	-687445.0	0.0	0.0	0.0	0.0	-839579	-2711108.5	-3550687.5	0.0	0.0	0.0
19-08-2019 to 25-08-2019	58.6	83.9	5548.3	5690.8	0.0	0.0	0.0	0.0	4432.3	3495.3	7927.6	0.0	0.0	0.0
Charges in (₹)	-8497.0	-12165.5	-804503.5	-825166.0	0.0	0.0	0.0	0.0	-642683.5	-506818.5	-1149502.0	0.0	0.0	0.0

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

- Approved Models and Manufacturers of Solar Photovoltaic Modules (Requirements for Compulsory Registration), Order 2019 – reg.
- Filling up of two (02) posts of Scientists 'G' in the Ministry of New and Renewable Energy on deputation basis
- Recruitment of Ten (10) anticipated vacancies in the post of Scientist 'B' (Group 'A' Gazette) in the Ministry of New & Renewable Energy (MNRE)
- Clarification on applicability of subsidy for individual residential households for installation of rooftop solar system under Phase-II of Grid Connected Rooftop solar Programme
- Performance Bank Guarantee (PBG) for solar/ wind power projects

CERC

- Engagement of Staff Consultant at the level of Research Associate in SAFIR. Last date: 7th October, 2019
- Suo-Motu order:- Extension of Pilot on Security Constrained Economic Dispatch (SCED) of Inter-State Generating Stations (ISGS) Pan India.

JERC

- JERC (CONSUMER GRIEVANCES REDRESSAL FORUM AND OMBUDSMAN) REGULATIONS, 2019
- JERC (Conduct of Business) (5th Amendment) Regulations, 2019

CEA

- Allotment of coal mines to Central/State PSUs for specified end use "generation of Power" under the coal Mines) Special Provision) Act' 2015- requirement of coal by Central/State PSUs for generation of Power

MISCELLANEOUS

- **Adani Commissions 200 MW of Solar Projects in Rajasthan**
  - ⇒ The projects were won by Adani in the auction held by MSEDCL last year.
- **Himachal Pradesh to Develop 250 MW of Solar Projects**
  - ⇒ The projects will be developed by ReNew Power and CSE Development.
- **Himachal Pradesh Launches Program to Deploy 28 MW of Solar Projects**
  - ⇒ The program intends to facilitate the development of solar projects in Himachal Pradesh by making use of barren lands.
- **Researchers Develop Tool to Identify Rooftop's Potential for Solar Systems**
  - ⇒ 'DeepRoof' approach uses satellite imagery to accurately determine roof geometry, nearby structures, and trees that affect the solar potential of a roof.
- **Rooftop Solar Subsidies Should be Transferred to Beneficiaries, Not System Integrators**
  - ⇒ UPSEDA has requested the government to facilitate amendments in the second phase of the rooftop solar program which currently allows subsidy transfer to only empaneled agencies.
- **Uttar Pradesh Floats Tender for 16 MW of Rooftop Solar on Government Buildings**
  - ⇒ The last date for bid submission is September 23, 2019.
- **Online Grocery Retailer Big Basket to Install 1.4 MW of Rooftop Solar Systems**
  - ⇒ Project to be executed across four states by Amplus Solar.
- **Visvesvaraya Technological University Issues 360 kW Rooftop Solar Tender**
  - ⇒ The projects are expected to be developed on roofs of various buildings of the campus to meet up to 90% of its annual energy demand. The last date of submission of bids is September 30, 2019.
- **India's E-Commerce Industry: Untapped Market for Rooftop Solar**
  - ⇒ The e-commerce market in India is expected to surpass the U.S. to become the second largest globally.
- **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
- **Karnataka Tops Government's Rooftop Solar Attractiveness Index**
  - ⇒ Telangana, Gujarat, and Andhra Pradesh ranked second, third, and fourth respectively.
- **MNRE Issues New Rooftop Solar Guidelines, Incentivizes DISCOMs to Install 18 GW**
  - ⇒ CFA of up to 40% will be given for rooftop solar PV systems of up to 3 kW capacity.
- **Bosch to Install a 1 MW Solar System at its Factory in Thailand**
  - ⇒ This project is expected to avoid 13,300 tons of carbon dioxide emissions during its lifetime.
- **China Adds 11 GW of Solar in First Half of 2019**
  - ⇒ While grid-connected solar projects account for nearly 130.5 GW, distributed solar PV capacity has reached 55 GW.
- **North East Tea Planters Demand 90% Subsidy for Solar Projects in Tea Gardens**
  - ⇒ The tea planter's body has written to the central government highlighting the power woes of tea garden workers.
- **Gujarat Commission Allows DISCOMs to Procure Power from Small Solar Projects to Meet RPO**
  - ⇒ The procurement of power by the DISCOM from small distributed generators is an optional program.
- **MNRE Exempts BIS Certification for Replacement of Solar Modules**
  - ⇒ The notification allows an exemption for the replacement of up to two modules per MW only.
- **Mono PERC Solar Modules are Coming to India; It is Just a Matter of When**
  - ⇒ Increase in price of polycrystalline modules may nudge Indian developers to consider using the more efficient monocrystalline technology.
- **MNRE Approves 'Series' Guidelines for Quality Testing of Solar Inverters**
  - ⇒ The draft guidelines were introduced in April 2019.

Note: Click on Head lines for More Info

- **JERC Sets Generic Tariffs for Solar and Other Renewable Projects for 2019-20 in Goa**
  - ⇒ The rates discovered by the competitive bidding process are considerably lower than the generic tariffs, the commission has observed.
- **Uttar Pradesh Proposes 6% Banking Charges for Solar and Wind Energy**
- **Is Unconditional Letter of Credit the Answer to Solar, Wind Payment Issues?**
  - ⇒ Can mandatory letters of credit solve the persistent issue of payment delays by DISCOMs?
- **MNRE Alerts Stakeholders to Comply with the ALMM Order for Government Solar Projects**
  - ⇒ The order has two lists, one for solar modules and the other for solar cells which will come into effect from March 31, 2020.
- **Harnessing Singlet Fission to Increase Solar Cell Efficiency**
  - ⇒ The process generates two excitons per molecule that last longer increasing solar cell efficiency.
- **Maharashtra DISCOM to Procure 300 MW of Solar Power from EESL to Meet its RPO**
  - ⇒ MSECDL will procure the power generated through these solar projects at a tariff of ₹3/kWh for 25 years.
- **Kerala Set to Develop 200 MW of Rooftop Solar Projects under Soura Program**
  - ⇒ The projects will be developed under RESCO and EPC modes.
- **1.5 GW of Solar Capacity Installed in India During Q2 2019**
  - ⇒ Solar accounted for 41% of the newly added power capacity in the first half of 2019.
- **MNRE Clarifies Residential Rooftop Solar Subsidy Applicability**
  - ⇒ The benchmark cost for the rooftop solar system, up to 10 kW is ₹54/W for 2019-20.
- **Release Bank Guarantees within 45 Days of Solar and Wind Project Completion: MNRE**
  - ⇒ MNRE's letter to NTPC and SECI will help developers with the timely release of performance bank guarantees for projects.
- **BIS Certification for Solar Modules: Increasing Cost and Restricting New Technologies**
  - ⇒ Standards, costs, and technical requirements for solar modules to be approved under BIS certification is turning out to be a sore point for suppliers.
- **Policy Developments in India's Solar and Other Renewables in August 2019**
  - ⇒ The MNRE has continued its spree of policy amendments in a bid to promote renewables in the country.
- **Solar Cell Manufacturers Rally in Support of Domestic Cell Usage in KUSUM Program**
  - ⇒ The association has argued the case made by Solar Energy Equipment Manufacturers Association of Telangana that called for a rollback of the mandatory use of solar cells in the KUSUM program.
- **Assam Retenders 70 MW of Solar Projects Due to Low Tariff Cap**
- **India-US Solar DCR Case: New Delhi Appeals Against Parts of WTO Ruling**
  - ⇒ India has appealed to the WTO concerning its interpretation of cases presented against the made-in-Washington bonus and Minnesota solar thermal rebate.
- **MNRE Begins Allocation of Renewable Capacities to States Under KUSUM Program for India's Farmers**
- **Top 5 Chinese Solar Inverter Companies Account for 36% of Total Exports**
  - ⇒ Huawei, Sungrow, and Solis occupy the top three positions.
- **Off-Grid Solar Solutions Provider BBOXX Raises $50 Million Funding Led by Mitsubishi**
  - ⇒ The funding will help BBOXX expand its operations in Africa and Asia.
- **Only Manufacturers of Solar Pumps and Modules Allowed to Bid Under KUSUM Program**
  - ⇒ The empanelment criteria have been expanded to ensure participation of more vendors.
- **Researchers Develop an Algorithm that Can Improve the Efficiency of Solar Panels**
  - ⇒ The algorithm decreases the amount of energy that is dissipated because of an inadequate ability of the panels to harness most of the incident radiation.
- **Maharashtra Invites Bids for 12.2 MW of Solar Projects for 9 Municipal Councils**
  - ⇒ The last date for the submission of bids is September 25, 2019.
- **Maharashtra DISCOM Issues Tender for 80 MW of Wind-Solar Hybrid Power Projects**
  - ⇒ MSEDCL has set a ceiling tariff of ₹2.80 ($0.039)/kWh for these projects.
- **IIT Kharagpur to Install 1,100 kW of Solar Systems at its Campus**
  - ⇒ The projects are expected to be installed on car parks, cycle tracks, and parks at the campus.
- **Tender Floated For 50 MW of Rooftop Solar on Government Buildings in Rajasthan**

List of Abbreviations

- **ALMM** :Approval List of Model & Manufacture
- **BIS** :Bureau of Indian Standards
- **BHEL** :Barat Heavy Electricals Ltd
- **CEA** :Central Electricity Authority
- **CAPEX** :Capital Expenditure
- **CFA** :Central Financial Assistance
- **CPSU** :Central Public Sector utility
- **CSE** :Computer Science Engineering
- **CERC** :Central Electricity Regulatory Commission
- **DCR** :Domestic Content Requirement
- **DISCOM** :Distribution Companies
- **EESL** :Energy Efficiency Services Limited
- **EPC** :Engineering Procurement & Construction
- **FY** : Financial Year
- **GW** :Giga Watt
- **ISTS** :Inter State Transmission System
- **IIT** :Indian Institute of Tech.
- **JERC** : Joint Electricity Regulatory Commission
- **KUSUM** :Kishan Urja Suraksha evam Utthan Mahaabhiyan
- **kW** :Kilo Watt
- **kWH** :kilo Watt Hour
- **MW** :Megawatt .
- **MNRE** :Ministry of New & Renewable energy
- **MSEDCL** :Maharashtra Stare Electricity Distribution Corporation Ltd.
- **NTPC** :National Thermal Power Corp.
- **PERC** :Passivated Emitter Rear Cell
- **PV** :Photovoltaic .
- **RPO** : Renewable Purchase Obligation
- **RFS** : Request for Standards
- **RESCO** :Renewable Energy Service Company
- **SAFIR** :South Asia Forum for Infra structure Regulation
- **SECI** :Solar Energy Corporation of India Limited
- **UPSEDA** : Uttar Pradesh State Energy Development Agency
- **WTO** :World Trade Organization

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

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

♦ Substations

* 765/400 Bikaner S/S (2x1500 MVA)
* 400/220 Prithala (Palwal) (GIS) (GPTL - TBCB)
* 230/110 Arani Addl T/F (TANTRANSCO)
* 230/33 Porur Addl T/F
* 220/132 Jansath Muzaffarnagar (Aug.) T/F-I (160-100)
* 220/132 Raja ka Talab S/S (Varanasi)
* 220/132 Gazol GIS
* 220/33 Kashipur S/S
* 220/132 Jaypatna S/S
* 220/66 Koramangala
* 220/66 Shivanasamudra (Hebbani Village limits)
* 220/66 Motigop T/F-I
* 220/132 Dohna Bareilly (Aug.) T/F-II (160-100)
* 220/132 Faridnagar Ghaziabad (Aug.) Addl T/F

♦ Transmission Lines

* 765 Ajmer (new) - Bikaner line
* 400 Chilkaluraipeta - Narasaraopeta (QM) (PSITL - TBCB)
* 400 LILO of One ckt. of Bhadla (RVPN) - Bikaner (RVPN) line at Bikaner (New)
* 400 Nabinagar-II - Patna line (Q)
* 400 Aligarh - Prithala (GPTL - TBCB)
* 400 LILO of Arambag - Durgapur at N. Chanditala
* 400 Rampura - Jagalur (Hiremallanahole)
* 220 Kishanganga - Wagoora line
* 220 Jagalur (Hiremallanahole) - Thallak
* 220 LILO of Mainpuri- Sikandrarao at Jawarharpur TPS
* 220 LILO of Malda (PG) - Dalkhola (PG) at Gozol
* 220 LILO of one ckt of Indravati - Thervali line at Jaypatna
* 220 Sahupuri -Raja ka Talab

♦ Generators

♦ Thermal

* Nabinagar STPP Unit 1, M/s NPGCL, Bihar, Central Sector, Thermal Coal - 660MW
* IB Valley TPP Unit-3, M/s OPGCL, Odisha, State Sector, Thermal Coal – 660 MW

♦ Hydro

* Nil

♦ Nuclear

* Nil

All India No. of Generators Commissioned during FY 2019-20 (till Jul-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
Jul-19	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
Total	**2**	**0**	**0**	**2**	**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 Jul-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
Jul-19	0	0	0	1	1	0	0	6	1	0	0	0	2	0	0	6	10	0	0	13	14	0
Total	**0**	**0**	**0**	**1**	**2**	**0**	**0**	**17**	**23**	**0**	**0**	**1**	**3**	**0**	**0**	**26**	**41**	**0**	**0**	**30**	**67**	**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 Jul-2019.

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®
(An ISO 9001:2015 Company)

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 Terminal Limited

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 Vegitable Market, Nani Daman, Daman – 396210.

Gujarat

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

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

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.

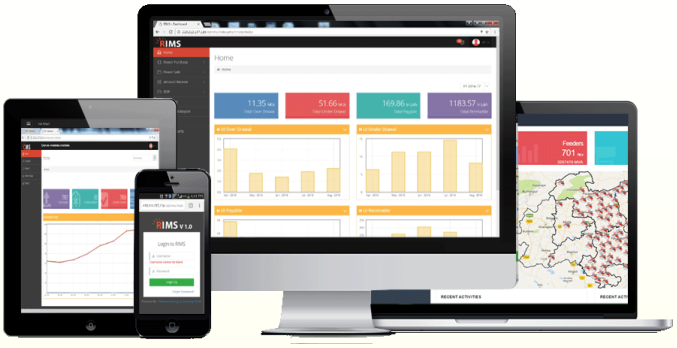
Auto Backup:

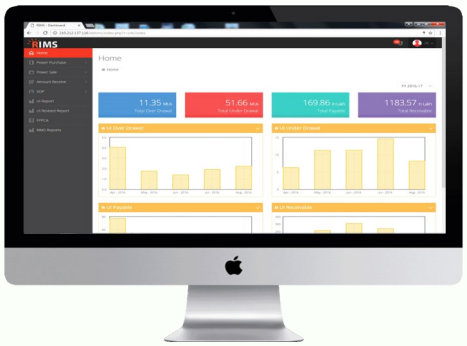
The data of all enterprise applications is of utmost importance. Power UI comes with Auto Backup facility where an authorized person can schedule auto backup of full / partial data of the software. In case of data lost or hardware failure, no or minimal data is lost.

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.

LAPTOP, Tablet & Mobile friendly



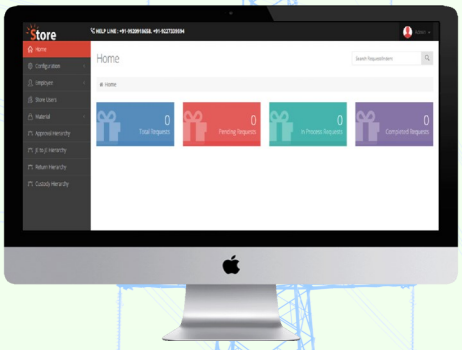


REGULATORY INFORMATION MANAGEMENT SYSTEM
RIMS

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
CMS

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.

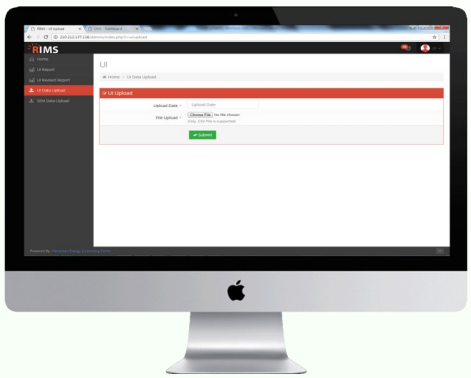


INVENTORY MANAGEMENT SYSTEM (STORE):

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.

Maintenance Management System (MMS)

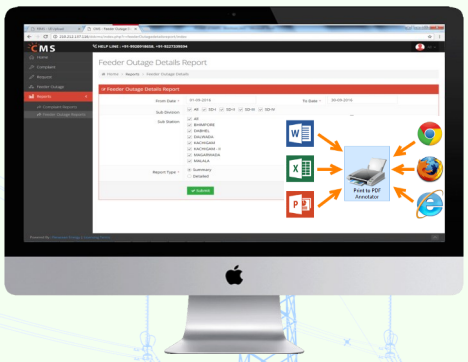
MMS it designed to improve inbuilt maintenance management facilities and hence reduce the failure rates of equipment. With equipment being part of MMS, the concerned person is reminded for inspection and taking corrective actions. The module supports maintenance routines in various categories such as 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

Data Handling:



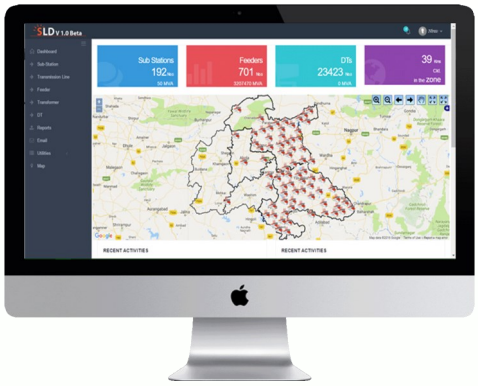
The software shall have a provision to handle huge volumes of data. Features such as import of excel files and import of data from databases shall be provided to facilitate bulk data entry and its corresponding map location display. Given below is a sample bulk data entry feature in POWERUI.

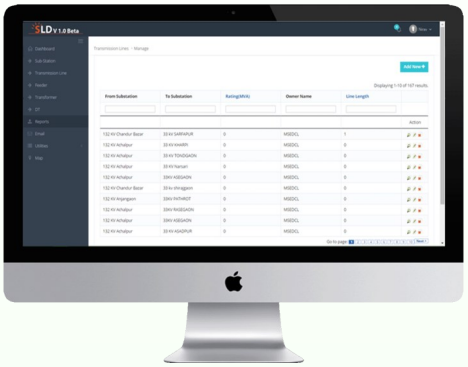
Data / Report export and printing facilities:

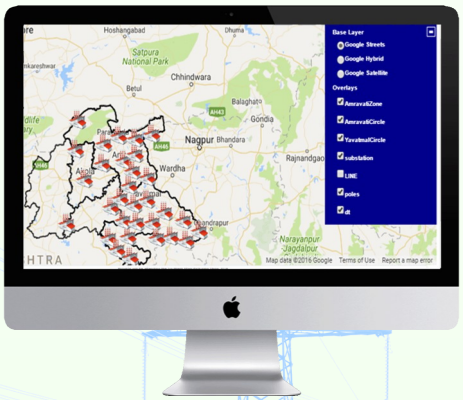


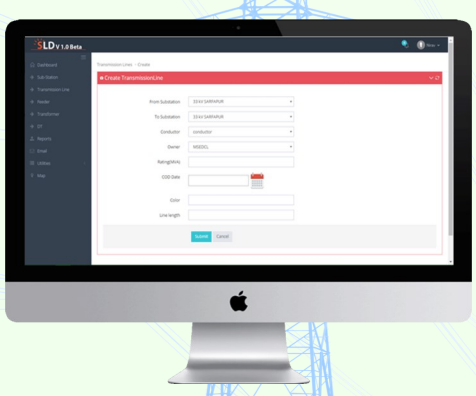
Online Complaint and Feedback Reporting

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

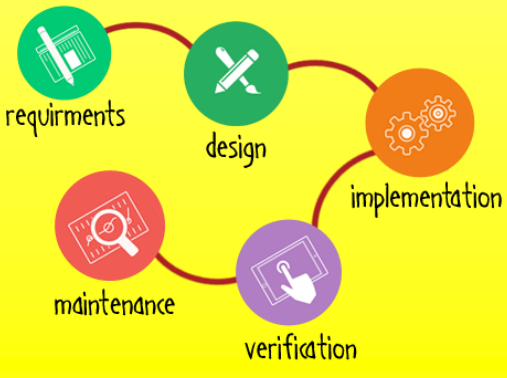
POWERUI MAPS is a map based application where all important assets and infrastructure of a Distribution company and transmission company are displayed on maps using their exact geographic coordinates. Display of all mapped distribution equipment on google maps, along with establishment of comprehensive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

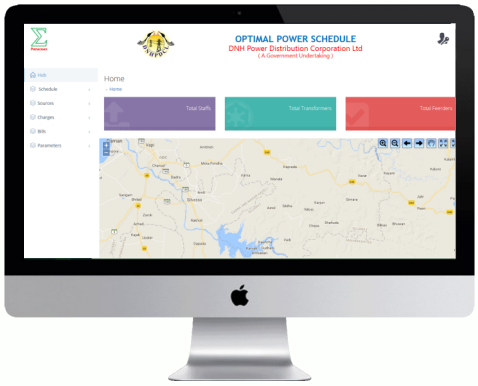
LAYER FACILITY:

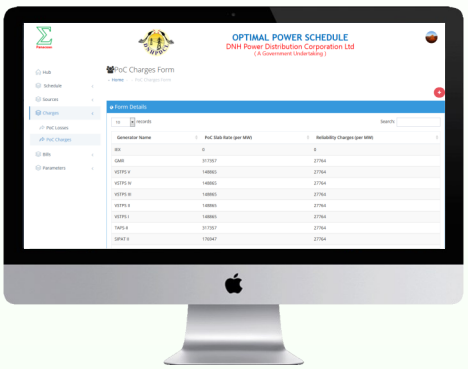
Given a large and a highly dense network as that of MSEDCL, selective viewing of different components of maps is required. The Layer facility enables the user to turn ON/OFF display of certain elements on the map. This feature provides greater clarity of viewing and ease of operation of the software.

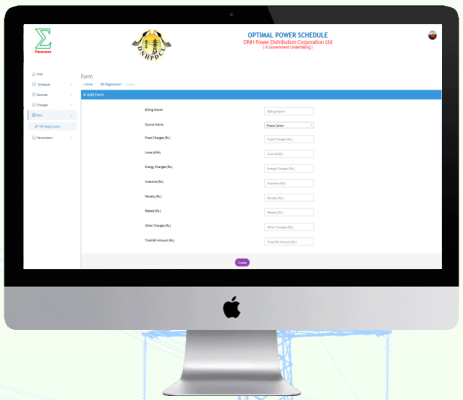
DATABASE – MAP COMMUNICATION:

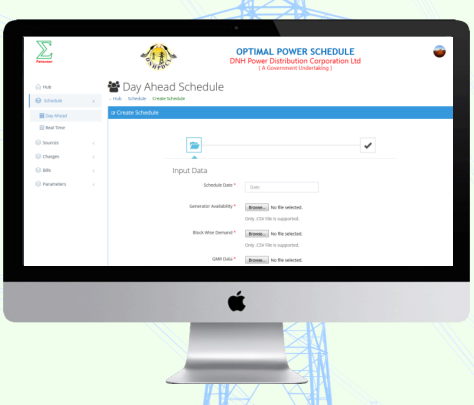
Provision for any element to be inserted into the database or updation of any element in the database can be done through both map means and database means.







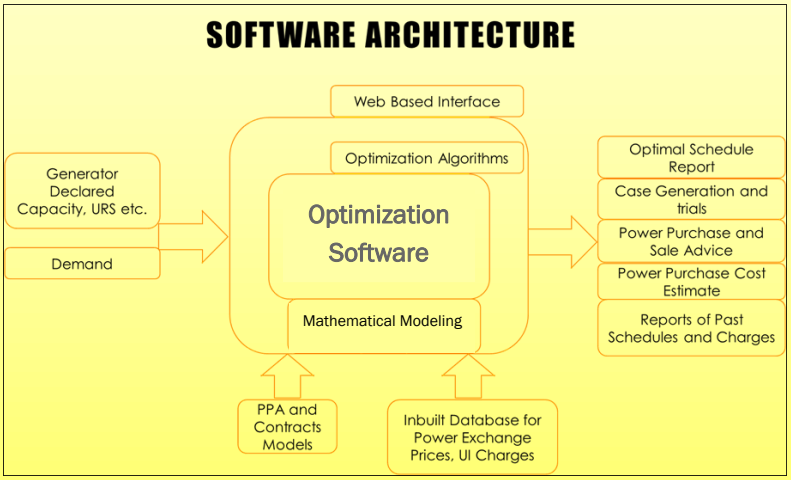




OPTIMAL POWER SCHEDULING SOFTWARE

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, 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.