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POWER BULLETIN

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GRIHA

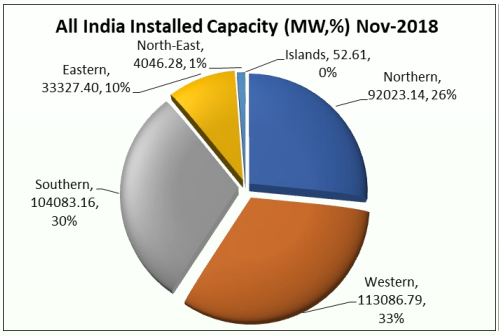
Inside

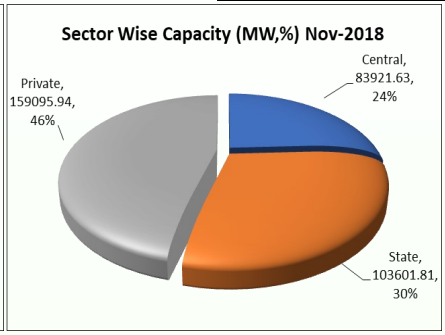
OVERVIEW OF INDIAN POWER SYSTEM FOR NOV-2018

All India Installed Capacity (MW) as on 30-11-2018					
Region	Thermal	Nuclear	Hydro	RES	Total
Northern	57061.46	1620.00	19707.77	13633.91	**92023.14**
Western	82675.11	1840.00	7547.50	21024.18	**113086.79**
Southern	53017.26	3320.00	11774.83	35971.07	**104083.16**
Eastern	27301.64	0.00	4942.12	1083.64	**33327.40**
North-Eastern	2331.83	0.00	1427.00	287.45	**4046.28**
Islands	40.05	0.00	0.00	12.56	**52.61**
ALL	**222427.35**	**6780.00**	**45399.22**	**72012.81**	**346619.38**

All India Installed Capacity (MW) as on 30-11-2018	
Sector	Generation (MW)
Central	83921.63
State	103601.81
Private	159095.94
Total	**346619.38**

Peak Demand of DD & DNH				
Utility	Nov-18			
	Peak Demand (MW)	Peak Met (MW)	Surplus/Deficit (-)	
			(MW)	(%)
DD	329	329	0	0
DNH	704	704	0	0





All India Plant Load Factor (PLF) in (%)		
Sector	Nov-17	Nov-18
Central	71.55	74.44
State	52.85	59.03
Private	54.97	54.29
ALL India	58.96	61.58

Highlights of WR Grid for Nov-2018

- **Maximum Peak Demand Met:** 55818 MW
- **Energy Consumption:** Total Energy Consumption in the month of Nov-2018 was 34375 MUs at an average of 1146 MUs/day & Maxi-mum was 1226 MUs on 02.11.2018.
- **Unrestricted Demand:** Maximum Unrestricted demand was 55974 MW and Average Peak Unrestricted demand was 47745 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, 49.70 Hz & 49.97 Hz were respectively observed in the month of Nov-2018.
- **Voltage Profile:** All 765KV nodes except 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, Wardha, Dhule, Parli, Boisar, Kalwa, Karad, Kasor, Amreli, Vapi, Mapusa, Kala, Magarwada, Hazira and Dehgam. Highest of 86.94% of time above 420KV observed at Dehgam.
- **Hydro Generation:** Total hydro generation of Western Region was 571.91 MUs at an average of 19.06 MUs/day in the month of Nov-2018.
- **Wind Generation:** Total wind generation was 759 MUs at an average of 25.3 MUs/day in the month of Nov-2018.
- **Solar Generation:** Total Solar generation was 504 MUs at an average of 17 MUs/day in the month of Nov-2018.
- **Open Access Transaction Details for Nov-2018:**

⇒ No. of approvals & Energy Approved in Intra-regional: 165 & 1709.47 MUs.

⇒ No. of approvals & Energy Approved in Inter-regional: 155 & 771.33 MUs.

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List of Transmission Lines Commissioned/Ready for Commissioning During Nov-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	1	0	0	0	0	0	2	0	2	**06**

List of Substations Commissioned/Ready for Commissioning During Nov-2018												Total
Sector	Central				Pvt.			State				
Voltage Level (KV)	765	400	230	220	765	400	220	765	400	230	220	
No. of Sub-stations	0	3	0	0	0	0	0	0	2	0	10	**15**

Region-wise Power Supply Position (Demand & Availability) in Nov-2017 & Nov-2018						
Region	Energy (MUs)				Deficit /Surplus (%)	
	Demand		Energy Met			
	Nov-17	Nov-18	Nov-17	Nov-18	Nov-17	Nov-18
Northern	26093	27239	25637	26883	**(1.7)**	**(1.3)**
Western	32444	33171	32435	33167	**(0.0)**	**(0.0)**
Southern	25469	27175	25376	27137	**(0.4)**	**(0.1)**
Eastern	9895	11054	9790	11026	**(1.1)**	**(0.3)**
North Eastern	1290	1243	1269	1214	**(1.6)**	**(2.3)**
All India	**95191**	**99882**	**94507**	**99427**	**(0.7)**	**(0.5)**

Region-wise Peak Demand / Peak Met in Nov-2017 & Nov-2018						
Region	Power (MW)				Deficit /Surplus (%)	
	Peak Demand		Peak Met			
	Nov-17	Nov-18	Nov-17	Nov-18	Nov-17	Nov-18
Northern	43240	45567	42390	45082	(2.0)	(1.1)
Western	49737	54339	49569	54182	(0.3)	(0.3)
Southern	40884	43911	40720	43837	(0.4)	(0.2)
Eastern	18163	21004	18161	21004	0.0	0.0
North Eastern	2443	2672	2380	2620	(2.6)	(1.9)
All India	**151406**	**162422**	**149036**	**161678**	**(1.6)**	**(0.5)**

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POWER TRADING

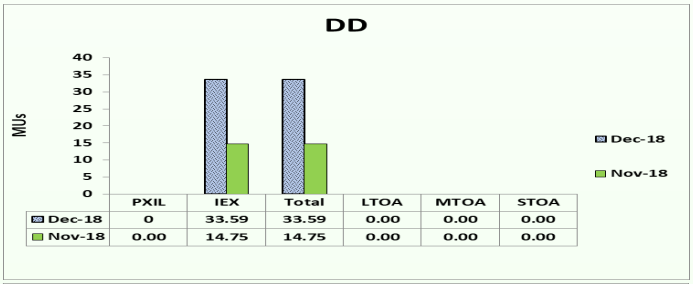
⇒ Emergence of IT has helped to create massive E-Commerce platforms in every walk of life. One such E-Commerce platform for transiting electricity for physical delivery, fine tuning daily requirements, sale of residual generation, optimal utilization of generating resources at marginal cost of production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

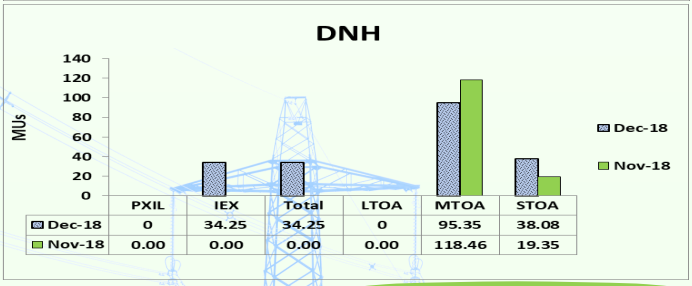
⇒ PXIL & IEX Trading summary

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
NOV-2018	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	**28128.0**	**48686.0**	--	**10328.0**	**10328.0**	**4610510.2**	**6937063.8**	-	**3403889.3**	**3410866.3**
Min	0.0	0.0	0.0	0.0	0.0	3075.8	5493.7	1794.1	2263.8	2263.8
Max	300.0	200.0	4500.0	100.0	100.0	12462.0	15316.1	10131.7	9511.4	9511.4
Avg	20.9	36.2	624.1	7.7	7.7	6403.5	9634.8	3589.8	4727.6	4737.3

DD & DNH: OPEN ACCESS DETAILS



	PXIL	IEX	Total	LTOA	MTOA	STOA
Dec-18	0	33.59	33.59	0.00	0.00	0.00
Nov-18	0.00	14.75	14.75	0.00	0.00	0.00

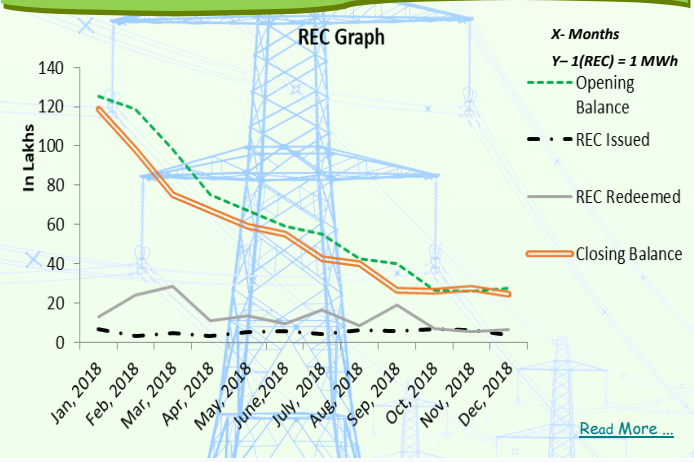


	PXIL	IEX	Total	LTOA	MTOA	STOA
Dec-18	0	34.25	34.25	0	95.35	38.08
Nov-18	0.00	0.00	0.00	0.00	118.46	19.35

REC Trading Session Dec-2018

Trader Company	PXIL		IEX	
Particular	Non-Solar	Solar	Non-Solar	Solar
Total Sell Bid (REC's)	178,701	156,862	366,092	254,012
Total Buy Bid (REC's)	632,153	606,529	1,091,466	865,574
Clearing Price (₹/Certificate)	1,255	1,500	1,320	1,450
Cleared Volume (REC's)	86,799	88,975	295,601	88,272

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



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POWER MARKET UPDATE: December 2018
Spot Market Trades 3,059 MU with Avg. MCP at Rs. 3.30 per unit

- The average Market Clearing Price (MCP) discovered in the day-ahead market was at Rs. 3.30 per unit, registered 10% increase on YOY basis and 8% decline on MOM basis mainly on account of winter season leading to subdued demand for power particularly in the Northern and Western States.

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

* Morning (07:00 to 10:00 Hrs): Rs. 4.41 per unit
* Day (11:00 to 17:00 Hrs): Rs. 3.47 per unit
* Evening peak (18:00 to 23:00 Hrs): Rs. 3.85 per unit
* Night (01-06 Hrs and 24 Hrs): Rs. 2.19 per unit

- The Day-Ahead Market traded 3,059 MU in December-18 almost at par with the volume traded in December-17. While on date basis, the DAM traded 40,632 MU over 34,185 MU traded in same period last fiscal registering growth of 19 %.
- The One Nation, One Price was realized for 23 days in the month of Dec-18.
- On daily average basis 682 participants traded in the day-ahead power market in December-18.

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DEVIATION CHARGES

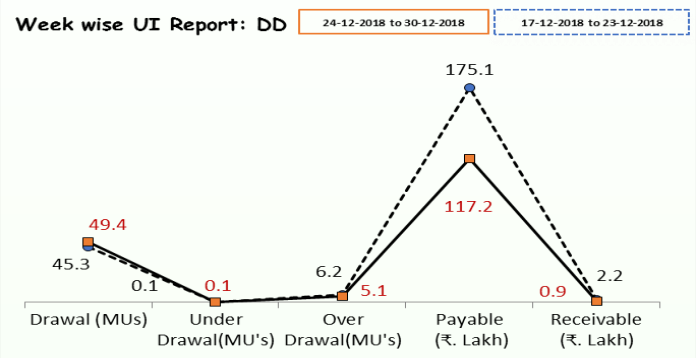
DD User Click to get UI Report
DNH User Click to get UI Report

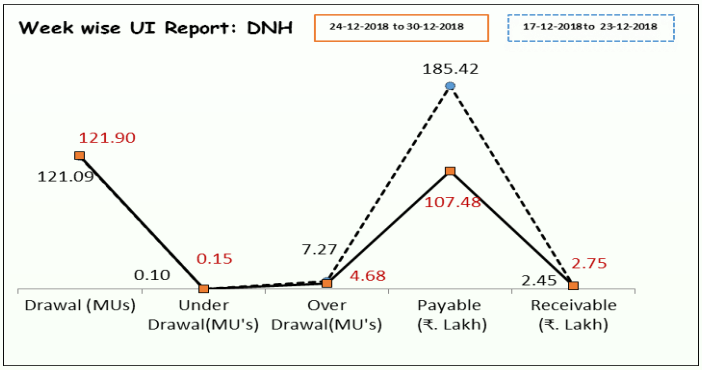
DD-Deviation Charges

FY 2018-19	Drawl (MUs)	Schedule (MUs)	UI Drawl (MUs)		UI Charges(₹. Lakh)	
			Under Drawl	Over Drawl	Payable	Receivable
Cumulative Total up to Nov-18	**1740.59**	**1532.64**	**2.51**	**210.47**	**5771.78**	**52.37**
24-12-2018 to 30-12-2018	49.40	44.31	0.05	5.14	117.20	0.92
24-12-2017 to 30-12-2017	56.49	53.07	0.21	3.63	91.41	4.70
17-12-2018 to 23-12-2018	45.34	39.20	0.07	6.20	175.10	2.18
17-12-2017 to 23-12-2017	45.61	41.12	0.08	4.57	111.68	1.91

DNH-Deviation Charges

FY 2018-19	Drawl (MUs)	Schedule (MUs)	UI Drawl (MUs)		UI Charges (₹. Lakh)	
			Under Drawl	Over Drawl	Payable	Receivable
Cumulative Total up to Nov-18	**4205.42**	**4019.83**	**9.23**	**194.84**	**5052.14**	**167.71**
24-12-2018 to 30-12-2018	121.90	117.37	0.15	4.68	107.48	2.75
24-12-2017 to 30-12-2017	122.02	115.99	0.16	6.19	151.16	3.32
17-12-2018 to 23-12-2018	121.09	113.93	0.10	7.27	185.42	2.45
17-12-2017 to 23-12-2017	120.72	116.24	0.24	4.72	114.96	5.22





DD

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
April	1.29	(11.30)	(2.48)	0.30	(19.56)	(2.79)
May	0.87	(15.28)	(2.19)	0.57	(27.91)	(3.43)
June	1.09	(17.98)	(2.16)	0.23	(24.82)	(2.61)
July	0.97	(15.89)	(2.26)	0.16	(31.37)	(2.54)
Aug	0.19	(24.00)	(2.3)	0.10	(28.24)	(2.52)
Sep	0.39	(24.70)	(2.64)	0.14	(33.75)	(2.92)
Oct	0.13	(29.42)	(2.79)	0.37	(25.13)	(2.58)
Nov	0.22	(22.01)	(2.71)	0.65	(19.69)	(2.48)
Dec	0.66	(16.60)	(2.50)	-	-	-
Jan	1.04	(18.20)	(2.63)	-	-	-
Feb	1.33	(12.58)	(2.58)	-	-	-
Mar	0.99	(19.63)	(2.99)	-	-	-
Total	**9.18**	**(227.6)**	**(2.55)**	**2.51**	**(210.47)**	**(2.75)**

DNH

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
April	1.91	(21.52)	(2.31)	0.39	(22.51)	(2.70)
May	13.54	(2.97)	(1.49)	2.03	(16.76)	(3.40)
June	9.26	(3.65)	(1.98)	1.43	(15.89)	(2.57)
July	6.71	(6.66)	(0.96)	0.43	(25.32)	(2.37)
Aug	3.50	(14.68)	(2.15)	0.33	(35.64)	(2.35)
Sep	2.06	(22.87)	(2.74)	0.50	(33.89)	(2.73)
Oct	1.53	(28.73)	(2.67)	1.76	(26.70)	(2.64)
Nov	2.23	(17.81)	(2.87)	2.36	(18.13)	(2.67)
Dec	1.09	(21.60)	(2.53)	-	-	-
Jan	0.47	(26.01)	(2.45)	-	-	-
Feb	0.28	(22.83)	(2.46)	-	-	-
Mar	1.03	(26.07)	(2.73)	-	-	-
Total	**43.61**	**(215.4)**	**(2.65)**	**9.23**	**(194.84)**	**(2.63)**

REACTIVE ENERGY CHARGES FOR DD & DNH

FY 2018-19	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 Nov-2018	-2497.8	-1295.0	150596.3	**146803.5**	58.7	5.0	-5.5	**58.2**	160130.5	74655.8	**234786.3**	6443.5	3583.1	**10026.6**
Cumulative Total Charges in (₹) till Nov-18	200184.5	3413.5	-13511271.0	**-13307673.0**	8218.0	700.0	-770.0	**8148.0**	-19656339.0	-8058201.5	**-27714540.5**	902090.0	501634.0	**1403724.0**
17-12-2018 to 23-12-2018	95.9	-7.1	5860.4	**5949.2**	0.0	0.0	0.0	**0.0**	9111.5	2987.7	**12099.2**	0.0	0.0	**0.0**
Charges in (₹)	-13426.0	994.0	-820456.0	**-832888.0**	0.0	0.0	0.0	**0.0**	-1275610.0	-418278.0	**-1693888.0**	0.0	0.0	**0.0**
24-12-2018 to 30-12-2018	102.0	-7.1	6331.9	**6426.8**	0.0	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**
Charges in (₹)	-14280.0	994.0	-886466.0	**-899752.0**	0.0	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**

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

- Testing of Solar pumps from accredited test centers.
- Tender for Design, Development, Supply, installation and commissioning of Ignitability tests facilities for Solar PV Module as per IEC 61730-2:2016 (MST 24) at National Institute of Solar Energy, Gurugram
- Nomination Form for best performance of state nodal agencies-SNA.
- IREDA-NIWE Annual Awards.
- Nomination Form for best research work in wind energy-RW1.
- Registration open for 3 day training Programme on "Bioenergy: Technology, Demonstration and its Implementation" at Sardar Swaran Singh National Institute of Bio-Energy, Kapurthala, from 27 Feb - 1 March, 2019.
- Technical Specification for 12 W White-LED Based solar street lightning system.
- Extension of Self Certification for Inverters under MNRE Quality Control Order on SPV 2017.
- Instructions for Implementation of: Approved Models and Manufacturers of Solar Photovoltaic Modules (Requirements for Compulsory Registration) Order, 2019.

* MOP

- Public Procurement (Preference to Make in India) to provide for Purchase Preference (linked with local content) in respect of Transmission Power Sector.
- Public Procurment (Preference to make in India) to provide for Purchase Preference(Linked with Local content) in respect of Hydro Power Sector.
- Amendments to the Guidelines for Tariff Based Competitive Bidding Process for Procurement of Power from Grid Connected Solar PV Power Projects.

* CEA

- Agenda for 107th CLPTCC Meeting to be held on 14.12.2018 at Hyderabad.
- 4th Draft Amendment to Central Electricity Authority (Measures relating to Safety and Electric Supply) Regulations, 2010 - Invitation of Public comments.

* GERC

- MUPL – 1772/2018 – Petition for Truing up of FY 2017-18, Mid – term Review of FY 2019-20 & FY 2020-21 & Determination of Tariff for FY 2019-20.

* SECI

- NIT For The Deployment Of RE Projects Along With BESS Including 10 Years Plant O&M Under International Competitive Bidding.
- RfS For 7500 MW Solar Power Projects In Leh & Kargil Districts, Jammu & Kashmir
- NIT For Setting Up Of 1200 MW ISTS Connected Solar PV Power Projects (ISTS-III)

* MISCELLANEOUS

- Government may impose 5-year duty on Malaysian glass used in solar industry.
- Chandigarh: No extension of new deadline for installing solar power plants.

POWER NEWS

- **Brazil miner Vale gets approval to buy 3 wind farms in northeast.**
  - ⇒ The operation is in line with Vale's objective of meeting its demand for energy through generation from renewable sources.
- **EUROPE POWER-Spot lifted by drop in wind generation, French nuclear output.**
  - ⇒ German wind power generation is expected to fall by 3.1 gigawatts (GW) on 16.11.19 to around 28 GW, according to Refinitiv Eikon data.
- **Abu Dhabi's Masdar to buy wind farm stakes from John Laing Group.**
- **China approves large new upstream hydropower dam project on the Yangtze river.**
  - ⇒ Hydropower is a clean and renewable source of energy but large-scale construction in southwest China has sparked accusations of damage to fragile ecosystems and inadequate compensation to thousands who have lost their homes.
- **Rs 4.5K crore Mangdechhu hydroelectric project to start producing by end of Feb month.**
  - ⇒ After few episodes of minor delay, 720 Megawatt Mangdechhu Hydroelectric Project in Bhutan is likely to come alive by the end of February.
- **NavAlt bags Kerala government order for solar ferry boats.**
  - ⇒ The private sector firm said it has received orders for supplying two solar ferries of 75-passenger capacity each and one that can carry 100 passengers.
- **Saudi Arabia plans $2-billion solar and carbon black complex.**
  - ⇒ A feasibility study for the solar and carbon project will be completed by mid-2019, said Tariq Baksh, vice-president, chemicals and renewables programme, at Saudi Arabia's National Industrial Clusters Program.
- **BHEL bags Rs 565 crore order for solar power plants in Telangana.**
  - ⇒ The plants are to be set up at four locations in Telangana - Ramagundam (50 MW), Yellandu (39 MW), Manuguru (30 MW) and Pegadapally (10 MW), on engineering, procurement and construction (EPC) basis.
- **Court gives go ahead for Kashang hydropower project in Himachal.**
  - ⇒ Sangharsh Samiti had filed an appeal for stay on the lease of forest land to the state government-owned Himachal Pradesh Power Corporation for the 130 MW Integrated Kashang Stage II and III hydropower project.
- **Gujarat unhappy with high tariffs at recent solar auction.**
  - ⇒ The 700 MW auction held in December was won entirely by foreign developers.
- **Ladakh will soon be home to world's largest solar plant.**
  - ⇒ Two major solar plants are coming up in Ladakh and Kargil. The Ladakh project will be located at Hanle-Khaldo in Nyoma, a strategically important area 254km from Leh.
- **Rise of renewable energy sources creating 'new world': IRENA report.**
- **Tunisia says aims to produce quarter of energy from renewables in 2020.**

Note: Click on Head lines for More Info

- **Govt approves India-France pact on technical cooperation in renewable energy.**
  - ⇒ India and France aim to establish the basis for a cooperative institutional relationship to encourage and promote technical bilateral cooperation on new and renewable energy issues
- **RTI activist files plaint seeking FIR in solar subsidy scam.**
  - ⇒ A central government team had in 2017 conducted a surprise inspection in 10 plants and found 70 % of the subsidy was given to ineligible projects.
- **World's 1st fully green data centre to be solar-powered.**
  - ⇒ The company has already acquired 100 acres at Kapuluppada in Vizag and will be investing about 10,000 crore in the first phase in setting up their maiden data centre and will scale this up to about 50,000 crore in the next 10 years.
- **Commissioning time brought down for solar power projects.**
  - ⇒ The timeline for commissioning of solar projects in a solar park and outside of it will be 15 and 18 months, respectively, against the previous timeline of 21 and 24 months.
- **China launches subsidy-free solar, wind power after project costs fall.**
- **Fire breaks out at Croatian hydro power plant, at least 3 people injured.**
- **EESL appoints Venkatesh Dwivedi as director.**
- **South Africa aims to finalise long-term energy plan next month: Minister.**
- **Indian shares edge higher powered by energy, financials**
- **Leh, Kargil finally plug in to national power grid.**
- **Brazil grid operator wants 662 GE transformers removed after explosions.**
  - ⇒ Brazil's powersystem operator has requested that 662 transformers made by General Electric Co be removed from the country's grid after a number of explosions involving the devices, according to document seen by Reuters.
- **Vibrant Gujarat Global Summit 2019: Rs 22,300 crore to flow into environment sector.**
  - ⇒ For the conventional power sector, 48 investment intentions aggregating to investments of more than Rs 12,000 crore are going to be signed at the ninth edition of the summit.
- **German consumers paying record prices for power - portal.**
  - ⇒ "Consumers are paying a new record price for power. The main reason was the higher costs for carbon emission rights prices," said Oliver Bohr, managing director of the portal's energy section.
- **Government's 'power for all' plan through the budgets.**
- **Prime Minister Narendra Modi to inaugurate PETROTECH 2019 in February.**
- **India's crude oil production falls 3.47% in November.**
  - ⇒ The fall was primarily due to lower crude oil production from fields operated by government-owned ONGC and Oil India.
- **Cabinet approves Rs 22,594-crore Numaligarh refinery expansion project.**
  - ⇒ The project is to be completed within a period of 48 months after the approval and receipt of statutory clearances, Union minister Piyush Goyal told reporters while briefing reporters here .
- **Indian Oil to raise $900 million through overseas bonds issue.**
- **Bangladesh's second LNG terminal to start in March; supply faces hiccups.**
- **EU allows Greece to postpone deadline for coal plant bids.**
  - ⇒ Public Power Corp. (PPC) is selling the plants in northern Greece and on the southern Peloponnese under the terms of Athens' latest international bailout after an EU court ruled that PPC had abused its dominant position in the coal market.
- **Meghalaya govt orders implementation of SC order banning coal transportation.**
  - ⇒ The apex court banned transportation of coal in the state forthwith until the next hearing on February 19, refusing a plea by the miners to send extracted coal left to transport since the 2014 National Green Tribunal ban on mining.
- **Talcher coalfields shutdown affecting Odisha investment climate: Goyal.**
- **China's 2018 coal imports at four-year high despite government curbs.**
- **Japan to restart importing Iranian oil: Nikkei.**
  - ⇒ The resumption ofoil imports comes after Tokyo was granted a waiver from US sanctions that came into effect in November.
- **Fuel prices continue upward march, petrol at Rs 70.41 per litre in Delhi.**
- **Egypt launches regional gas forum, including Israel in fold.**
- **China firms funding coal plants offshore as domestic curbs bite - study.**
- **World's top 10 fastest-growing cities to be from India in coming decades: Study.**
  - ⇒ Aggregated gross domestic product of all Asian cities will exceed that of all North American and European urban centers combined in 2027.

List of Abbreviations

- **BESS** :Battery Energy Storage System
- **BHEL** :Bharat Heavy Electricals Limited
- **CEA** :Central Electricity Authority
- **CLPTCC** :Central Power & Telecommunication Co-ordination Committee
- **EESL** :Energy Efficiency Services Limited
- **EU** :European Union
- **FIR** :First Information Report
- **GE** :general electric
- **GERC** :Gujarat Electricity Regulatory Commission
- **Govt.** :Government
- **GR** :Grade
- **GW** :Giga Watt
- **IEC** :International Electrotechnical Commission
- **IREDA** :INDIAN RENEWABLE ENERGY DEVELOPMENT AGENCY
- **IRENA** :International Renewable Energy Agency (IRENA).
- **ISTS** :Inter-State Transmission System
- **JERC** :Joint Electricity Regulatory Commission
- **LNG** :liquefied natural gas
- **MNRE** :Ministry of New & Renewable energy
- **MOP** :Ministry of Power
- **MPSEZ** :Mundra Port and Special Economic Zone Limited
- **MST** :Module Safety test
- **MUPL** :MPSEZ Utilities Private Ltd.
- **MW** :Megawatt
- **NIT** :Notice Inviting Tender
- **NIWE** :National Institute of Wind Energy
- **O&M** :Operation and Maintenance
- **ONGC** :Oil and Natural Gas Corporation
- **PSU** :Public Sector Unit
- **PV** :Photovoltaic
- **PVSOL** :PV Solution
- **PVSYST** :PV System
- **RE** :Renewable Energy
- **RFS** :Request for Selection
- **RTI** :Right to Information
- **RW** :Research Work
- **SC** :Supreme Court
- **SECI** :Solar Energy Corporation of India Limited
- **SPV** :Solar PV
- **US** :United States

ALL INDIA LIST OF ELEMENTS COMMISSIONED DURING THE FY 2018-19

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

♦ Substations

* 400/220/132 KV Kethireddypally (630 MVA)
* 400/220 KV Daltonganj s/s (2nd -ICT) (315 MVA)
* 400/220 KV Kala s/s Extn. (3rd ICT) (500 MVA)
* 400/220 KV Tughlakabad GIS (4th-ICT) (500 MVA)
* 400/220 KV Malkaram (4th -ICT) (315 MVA)
* 400/220 KV Hadala (ICT No. IV) (500 MVA)
* 400/220 KV Tughlakabad (ICT No. III) (500 MVA)
* 400/220 KV 315 MVA ICT-1 at Jodhpur(new)/Kakani (500 MVA)
* 400/220 KV 315 MVA ICT-2 at Jodhpur(new)/Kakani (500 MVA)
* 400/220 KV 315 MVA ICT 4 at Jodhpur(new)/Kakani (500 MVA)
* 220/66 KV Pavagada S/S (200 MVA)
* 220/66 KV Badhni Kalan (New) s/s (100 MVA)
* 220/66 KV Panchgaon s/s (Aug.) (160 MVA)
* 220/33 KV Rookhi Bulandshahar (New) T/F-I (60 MVA)
* 220/22 KV Vasai (Addl T/F) (50 MVA)
* 220/132 KV Borjhara s/s (160 MVA)
* 220/132 KV Dharsiwa s/s (320 MVA)
* 220/132 KV Kawardha s/s (2nd T/F) (160 MVA)
* 220/132 KV Jind s/s (Aug.) (60 MVA)
* 220/132 KV Bherunda S/S (160 MVA)

♦ Transmission Lines

* 765 KV Angul - Jharsauguda
* 765 KV Dharamjaigarh-Jharsuguda (CKT No. IV)
* 765 KV Jharsuguda-Dharamjaigarh- (CKT No. IV)
* 400 KV Silchar - Melriat (New)
* 400 KV LILO of Jodhpur -Merta at Pooling station Badla
* 400 KV LILO of Uravakonda-Jammalamadugu to the proposed at Talaricheruvu
* 400 KV Lapanga- Meramundali (CKT No. I)
* 400 KV 400kV Bus I and Bus II at Lapanga
* 400 KV Lapanga - Meramundali (CKT No. II)
* 400 KV Lapanga-Vedanta-I & II
* 400 KV Lapanga-IB St II (OPGC) Ckt- II
* 400 KV IB St-II (OPGC) - Lapanga-I
* 400 KV JAMMMALAMADUGU-TALARICHERUVU (CKT No. I & II)
* 230 KV Mythra- TTPS (CKT No. I & II)
* 220 KV Dhod-Danta Ramgarh
* 220 KV Madhugiri - Pavagada
* 220 KV Raigarh PG-Buddipadar S/c(LILO of 220kV Raigarh CGBuddipadar at Raigarh PG)
* 220 KV 220kV Jalandhar-Nehria-1 {LILO of 220kV DC Jalandhar-Hamirpur at Nehrian} (CKT No. I)
* 220 KV 220kV Jalandhar-Nehria-1 {LILO of 220kV DC Jalandhar-Hamirpur at Nehrian} (CKT No. II)
* 220 KV 220kV Hamipur-Nehria-1 {LILO of 220kV DC Jalandhar-Hamirpur at Nehrian} (CKT No. I)
* 220 KV 220kV Hamipur-Nehria-1 {LILO of 220kV DC Jalandhar-Hamirpur at Nehrian} (CKT No. II)

♦ Generators

♦ Thermal

* Shree Singaji TPP (Phase-II) Unit-3 Thermal power plant of capacity 660 MW was commisioned on 18.11.2018 in Madhya Pradesh by MPPGCL.

♦ Hydro

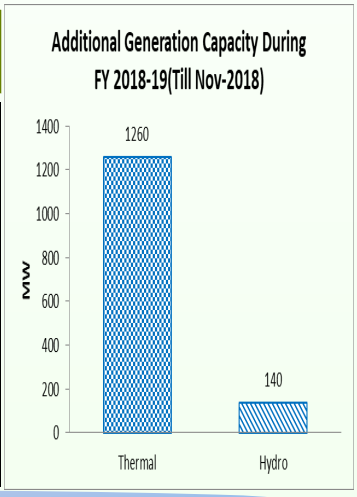
* Nil

♦ Nuclear

* Nil

All India No. of Generators Commissioned during FY 2018-19 (till Nov-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
Total	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**



All India No. of Line Reactors (LR), Transmission Lines (T/L), Substations (S/S) and Bus Reactors (BR) Commissioned for FY 2018-19 (till Nov-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	0	8	5	0	0	26	19	0
May-18	0	0	0	0	2	0	0	19	12	0	0	3	0	0	0	10	8	0	0	32	22	0
Jun-18	0	0	0	4	1	0	0	8	9	0	0	0	0	0	0	15	8	0	0	27	18	0
Jul-18	0	0	0	2	0	0	0	10	9	0	0	0	3	0	0	16	17	0	0	28	29	0
Aug-18	0	0	0	4	3	0	0	15	8	0	0	0	0	0	0	16	17	0	0	35	28	0
Sep-18	0	0	0	0	0	0	0	14	8	0	0	0	2	0	0	17	12	0	0	31	22	0
Oct-18	0	0	0	3	0	0	0	11	9	0	0	0	2	0	0	22	11	0	0	36	22	0
Nov-18	0	0	0	3	0	0	0	10	10	0	0	1	0	0	0	7	10	0	0	21	20	0
Total	**0**	**0**	**0**	**20**	**10**	**0**	**0**	**101**	**75**	**0**	**0**	**4**	**7**	**0**	**0**	**111**	**88**	**0**	**0**	**236**	**180**	**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 Nov-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®
(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.

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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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.

Surat

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

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.

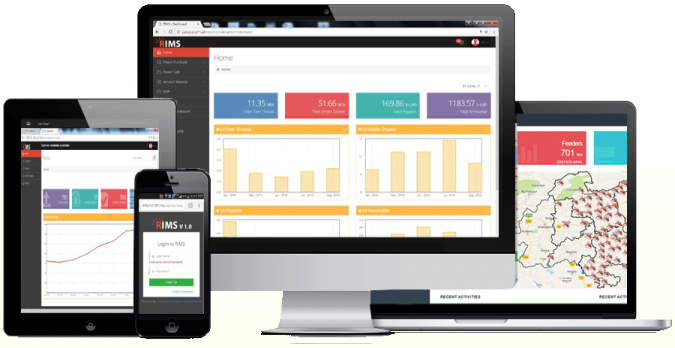
Auto Backup:

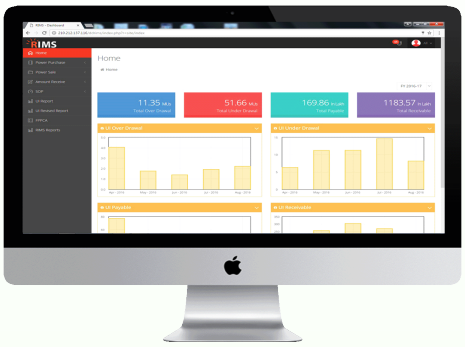
The data of all enterprise applications is of utmost importance. Power UI comes with Auto Backup facility where an authorized person can schedule auto backup of full / partial data of the software. In case of data lost or hardware failure, no or minimal data is lost.

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



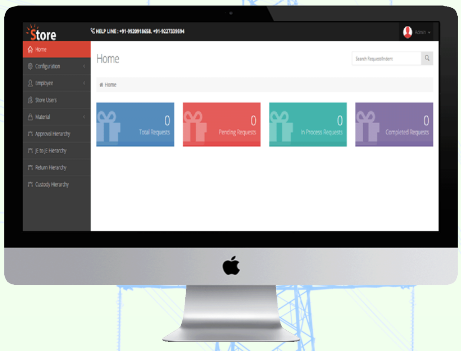


Regulatory Information Management System
RIMS

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.



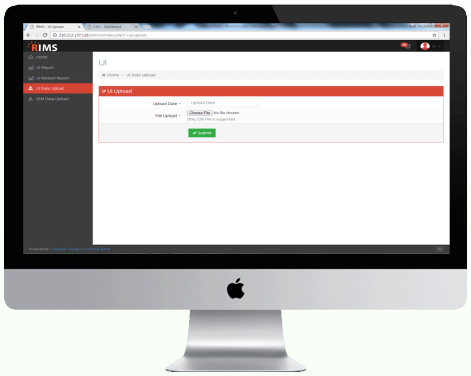
Inventory Management System (Store):

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.

Transmission — Best Suitable Utilities — Distribution

Maintenance Management System (MMS)

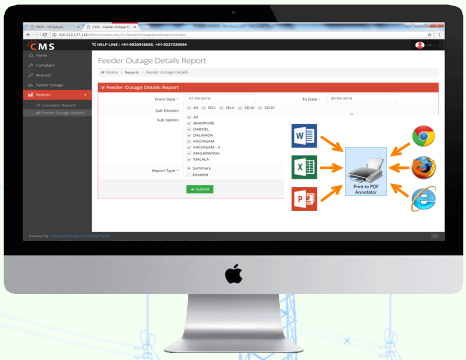
MMS it designed to improve inbuilt maintenance management facilities and hence reduce the failure rates of equipment. With equipment being part of MMS, the concerned person is reminded for inspection and taking corrective actions. The module supports maintenance routines in various categories such as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



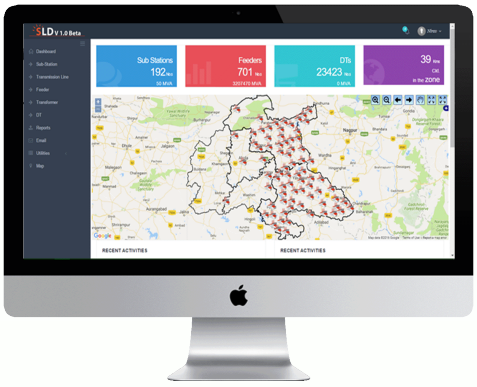
The software shall have a provision to handle huge volumes of data. Features such as import of excel files and import of data from databases shall be provided to facilitate bulk data entry and its corresponding map location display. Given below is a sample bulk data entry feature in POWERUI.

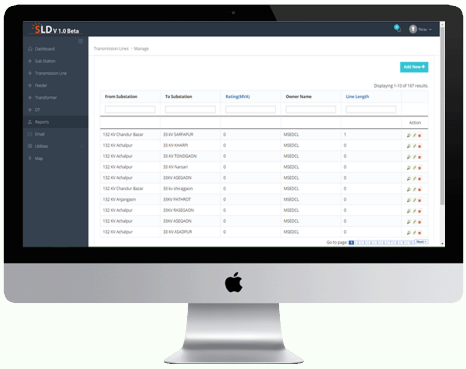
Data / Report Export and Printing Facilities:

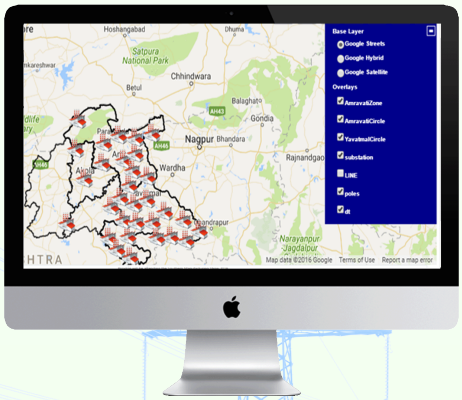


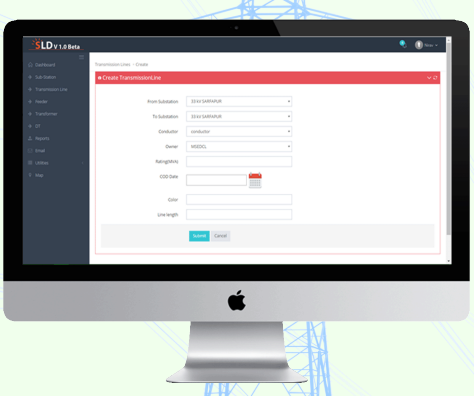
Online Complaint and Feedback Reporting

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

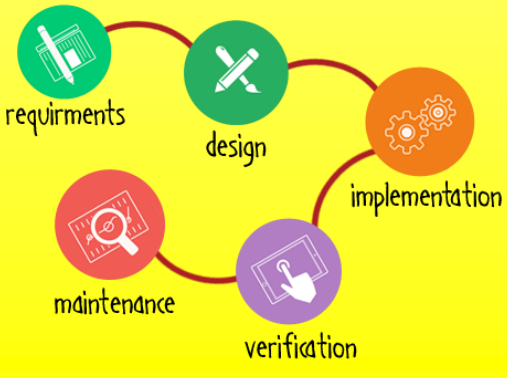
POWERUI MAPS is a map based application where all important assets and infrastructure of a Distribution company and transmission company are displayed on maps using their exact geographic coordinates. Display of all mapped distribution equipment on google maps, along with establishment of comprehensive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

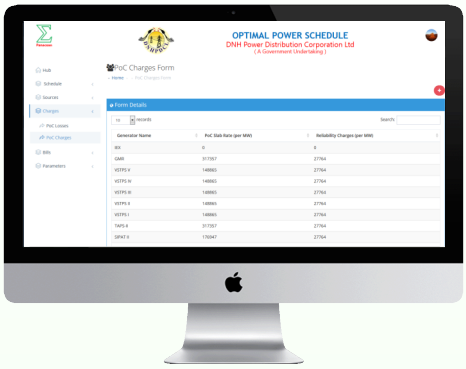
LAYER FACILITY:

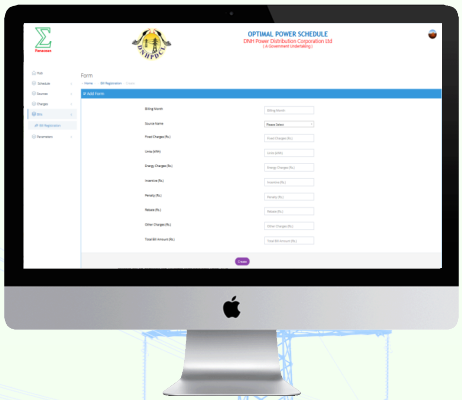
Given a large and a highly dense network as that of MSEDCL, selective viewing of different components of maps is required. The Layer facility enables the user to turn ON/OFF display of certain elements on the map. This feature provides greater clarity of viewing and ease of operation of the software.

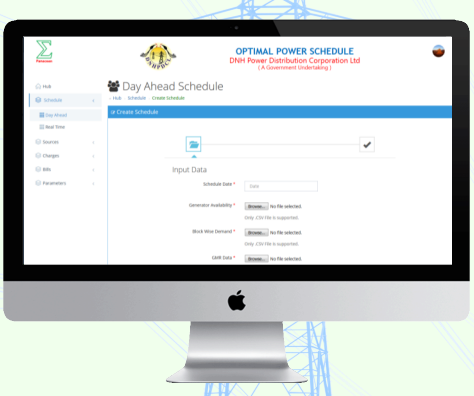
DATABASE – MAP COMMUNICATION:

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.





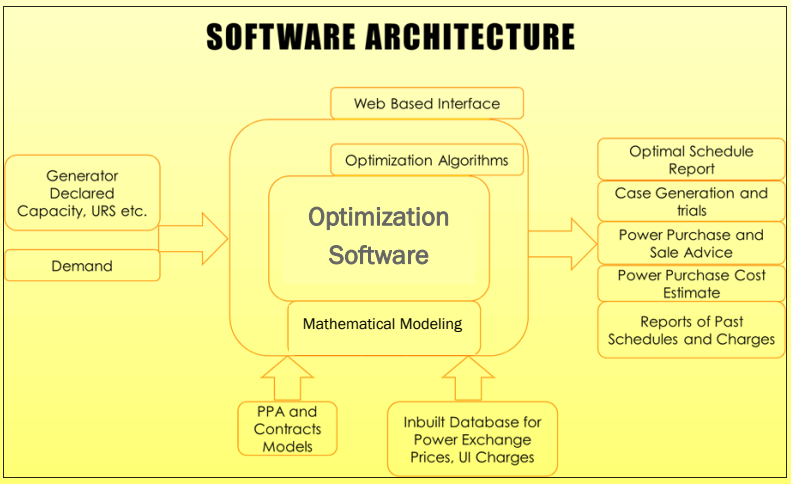




OPTIMAL POWER SCHEDULING SOFTWARE

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.