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POWER BULLETIN

DEC 2019

Volume 6, Issue 9

14th December National Energy Conservation Day

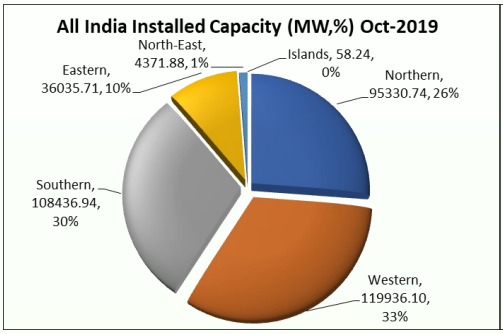
Inside

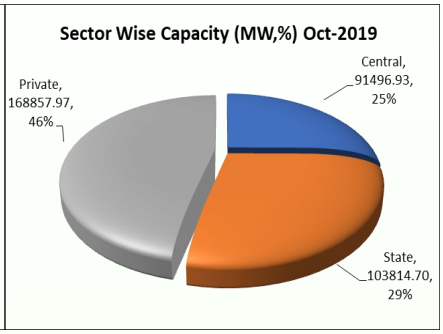
OVERVIEW OF INDIAN POWER SYSTEM FOR OCT-2019

All India Installed Capacity (MW) as on 31-10-2019					
Region	Thermal	Nuclear	Hydro	RES	Total
Northern	58173.23	1620.00	19707.77	15829.74	**95330.74**
Western	85900.11	1840.00	7547.50	24648.49	**119936.10**
Southern	53089.34	3320.00	11774.83	40252.77	**108436.94**
Eastern	29616.87	0.00	4942.12	1476.72	**36035.71**
North-Eastern	2581.83	0.00	1427.00	363.05	**4371.88**
Islands	40.05	0.00	0.00	18.19	**58.24**
ALL	**229401.43**	**6780.00**	**45399.22**	**82588.96**	**364169.61**

All India Installed Capacity (MW) as on 31-10-2019	
Sector	Generation (MW)
Central	91496.93
State	103814.70
Private	168857.97
Total	**364169.60**

Peak Demand of DD & DNH				
Utility	Oct-19			
	Peak Demand (MW)	Peak Met (MW)	Surplus/Deficit (-)	
			(MW)	(%)
DD	347	347	0	0
DNH	805	805	0	0





All India Plant Load Factor (PLF) in (%)		
Sector	Oct-18	Oct-19
Central	71.01	55.52
State	60.40	40.92
Private IPP	60.80	51.01
Private UTL	68.36	64.91
ALL India	63.75	49.18

Highlights of WR Grid for Oct-2019

- **Maximum Peak Demand Met:** 50631 MW
- **Energy Consumption:** Total Energy Consumption in the month of Oct-2019 was 30817 MUs at an average of 994 MUs/day & Maxi-mum was 1140 MUs on 17.10.2019.
- **Unrestricted Demand:** Maximum Unrestricted demand was 50596 MW and Average Peak Unrestricted demand was 41421 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, 49.67 Hz & 50.01 Hz were respectively observed in the month of Oct -2019.
- **Voltage Profile:** All 765KV nodes except Wardha, Seoni Vadodara, Durg and Gwalior (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, Bhilai, Dhule, Dehgaon, Parli, Kalwa, Karad, Boisar, Kasor, Amreli, Vapi, Asoj, Jetpur, Mapusa, Kala, Magarwada, Hazira and Raigarh. Highest of 100% of time above 420KV observed at Raigarh.
- **Hydro Generation:** Total hydro generation of Western Region was 1631.17 MUs at an average of 52.62 MUs/day in the month of Oct-2019.
- **Wind Generation:** Total wind generation was 1037 MUs at an average of 33.5 MUs/day in the month of Oct-2019.
- **Solar Generation:** Total Solar generation was 731 MUs at an average of 24 MUs/day in the month of Oct-2019.
- **Open Access Transaction Details for Oct -2019:**

  ⇒ No. of approvals & Energy Approved in Intra-regional: 218 & 867.71 MUs.

  ⇒ No. of approvals & Energy Approved in Inter-regional: 122 & 512.90 MUs.

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List of Transmission Lines Commissioned/Ready for Commissioning During Oct-2019												
Sector	Central				Pvt.			State				Total
Voltage Level (KV)	800	765	400	220	765	400	220	765	400	230	220	
No. of Lines	0	0	1	0	0	0	0	0	1	0	11	**13**

List of Substations Commissioned/Ready for Commissioning During Oct-2019												
Sector	Central				Pvt.			State				Total
Voltage Level (KV)	765	400	230	220	765	400	220	765	400	230	220	
No. of Sub-stations	1	1	0	1	0	0	0	0	1	1	9	**14**

Region-wise Power Supply Position (Demand & Availability) in Oct-2018 & Oct-2019						
Region	Energy (MUs)				Deficit /Surplus (%)	
	Demand		Energy Met			
	Oct-18	Oct-19	Oct-18	Oct-19	Oct-18	Oct-19
Northern	31664	29964	31194	29512	(1.5)	(1.5)
Western	37739	29974	37608	29974	(0.3)	0.0
Southern	29116	24970	29066	24969	(0.2)	0.0
Eastern	13026	11748	12904	11748	(0.9)	0.0
North Eastern	1438	1436	1402	1384	(2.5)	(3.6)
All India	**112983**	**98092**	**112174**	**97587**	**(0.7)**	**(0.5)**

Region-wise Peak Demand / Peak Met in Oct-2018 & Oct-2019						
Region	Power (MW)				Deficit /Surplus (%)	
	Peak Demand		Peak Met			
	Oct-18	Oct-19	Oct-18	Oct-19	Oct-18	Oct-19
Northern	50659	50121	49635	49616	(2.0)	(1.0)
Western	56675	50631	55821	50631	(1.5)	0.0
Southern	45242	41492	45226	41492	(0.0)	0.0
Eastern	23141	22043	22733	22043	(1.8)	0.0
North Eastern	2790	2998	2700	2878	(3.2)	(4.0)
All India	**173489**	**164875**	**170604**	**164259**	**(1.7)**	**(0.4)**

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POWER TRADING

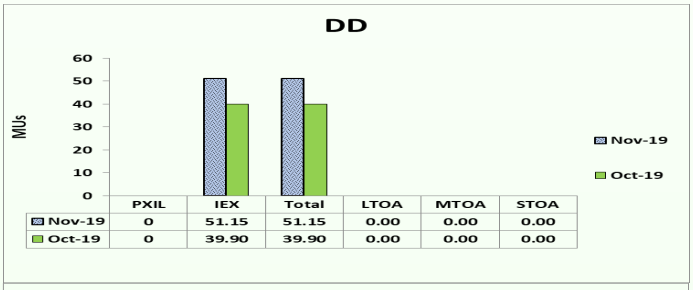
⇒ Emergence of IT has helped to create massive E-Commerce platforms in every walk of life. One such E-Commerce platform for transiting electricity for physical delivery, fine tuning daily requirements, sale of residual generation, optimal utilization of generating resources at marginal cost of production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

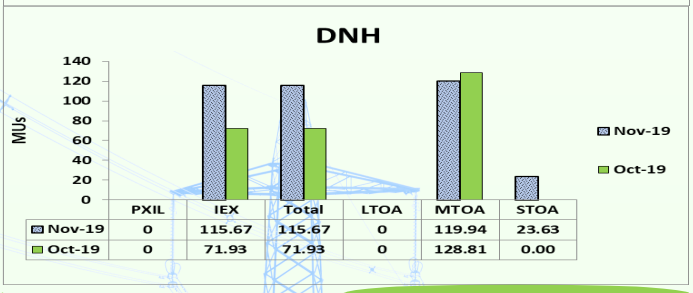
⇒ For more information about IEX visit (www.iexindia.com); For more information about PXIL visit (www.powerexindia.com)

⇒ PXIL & IEX Trading summary

NOV-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	**1662.0**	**92812.0**	-	**1662.0**	**1662.0**	**4108078.2**	**8579159.6**	**0.0**	**3388838.4**	**3402584.5**
Min	0.0	0.0	0.0	0.0	0.0	2850.1	6769.6	1899.2	2570.8	2570.8
Max	5.4	275.0	3150.0	5.4	5.4	11875.1	20765.9	5363.0	8105.9	8399.6
Avg	1.2	64.5	1062.0	1.2	1.2	5705.7	11915.5	2855.0	4706.7	4725.8
OCT-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	**39223.0**	**143523.0**	-	**39223.0**	**39223.0**	**3923322.4**	**9771375.2**	**0.0**	**3391490.1**	**3391490.1**
Min	0.0	0.0	0.0	0.0	0.0	2190.7	6862.6	941.8	2156.4	2156.4
Max	200.0	350.0	2950.0	200.0	200.0	13980.0	22575.1	6633.5	9175.0	9175.0
Avg	16.3	59.8	2186.9	16.3	16.3	5273.3	13133.6	2713.3	4558.5	4558.5

DD & DNH: OPEN ACCESS DETAILS

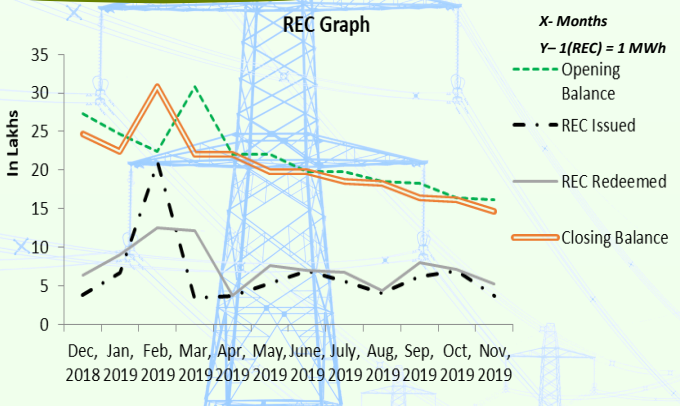




REC Trading Session November-2019

Trader Company	PXIL		IEX	
Particular	Non-Solar	Solar	Non-Solar	Solar
Total Sell Bid (REC's)	162,570	17,652	321,789	36,801
Total Buy Bid (REC's)	572,363	206,678	698,160	472,255
Clearing Price (₹/Certificate)	1,850	2,400	1,800	2,400
Cleared Volume (REC's)	159,288	17,652	291,932	36,801

RENEWABLE ENERGY CERTIFICATE MECHANISM (REC) FROM DEC-18 TO NOV-19



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POWER MARKET UPDATE: November 2019

Day Ahead Market Trades 3825 MU with Nov. MCP at Rs. 2.85 per unit

- The day-ahead market traded 3,389 MU with average market clearing price at only Rs.2.85 per unit vs price of Rs. 3.58 in November 2018, a 20% decline in price.
- The electricity market at IEX recorded a total trade of 3825 MU in November 2019. The market observed a 7% Y-on-Y increase in traded volumes, which was a result of increased procurement by the eastern and southern states.
- All India peak demand at 156 GW in November-19 declined 4% over demand of 162 GW in November-18 and the energy met at 3.3 BU declined 5% YoY according to the NLDC data.
- In the DAM market, total monthly sell bids at 8,579 MU while total buy bids were at 4,108 MU.
- One Nation One Price prevailed for 26days during the month.
- In the term-ahead market (TAM), volumes rose 157% Y-on-Y rise on the back of a growing number of distribution utilities turning to TAM contracts especially intra-day, daily, weekly for meeting their short-term power demand.

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DEVIATION CHARGES

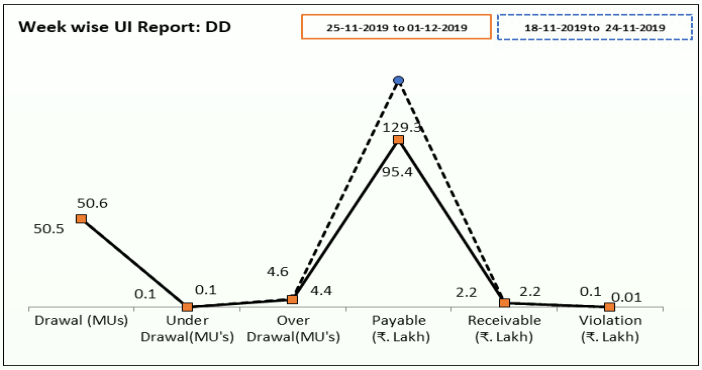
DD User Click to get UI Report
DNH User Click to get UI Report

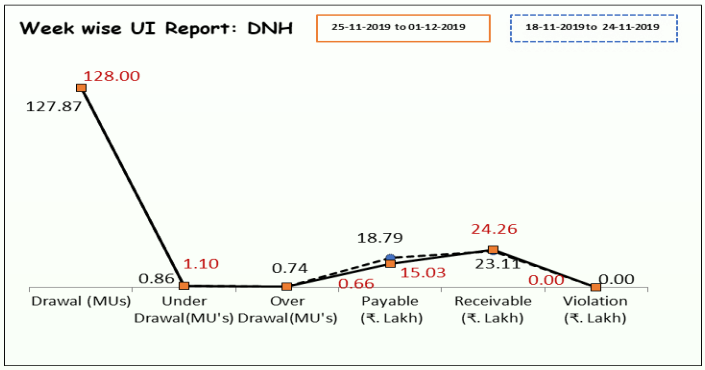
DD-Deviation Charges

FY 2019-20	Drawl (MUs)	Schedule (MUs)	UI Drawl (MUs)		UI Charges(₹. Lakh)		
			Under Drawl	Over Drawl	Payable	Receivable	Violation
Cumulative Total up to Nov-19	1723.82	1636.91	17.77	104.70	3109.73	483.59	115.56
25-11-2019 to 01-12-2019	50.54	46.24	0.09	4.38	95.35	2.20	0.01
25-11-2018 to 01-12-2018	47.47	44.18	0.26	3.54	89.16	6.13	--
18-11-2019 to 24-11-2019	50.55	46.00	0.08	4.64	129.29	2.24	0.11
18-11-2018 to 24-11-2018	48.55	42.74	0.00	5.82	138.90	0.05	--

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 Nov-19	4408.75	4411.19	44.39	41.94	1442.96	1114.11	95.07
25-11-2019 to 01-12-2019	128.00	128.44	1.10	0.66	15.03	24.26	0.00
25-11-2018 to 01-12-2018	111.72	107.07	0.15	4.80	121.96	2.38	--
18-11-2019 to 24-11-2019	127.87	127.99	0.86	0.74	18.79	23.11	0.00
18-11-2018 to 24-11-2018	105.74	101.02	0.46	5.19	127.96	4.62	--





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)	(3.28)
May	0.57	(27.91)	(3.43)	2.73	(11.4)	(3.65)
June	0.23	(24.82)	(2.61)	2.91	(7.78)	(3.71)
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)	3.45	(8.9)	(2.67)
Oct	0.37	(25.13)	(2.58)	1.07	(17.66)	(2.56)
Nov	0.65	(19.69)	(2.48)	0.85	(17.1)	(2.54)
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)**	**17.77**	**(104.7)**	**(3.02)**

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)	(0.90)
Sep	0.50	(33.89)	(2.73)	4.20	(3.47)	(0.47)
Oct	1.76	(26.70)	(2.64)	7.46	(2.84)	(2.02)
Nov	2.36	(18.13)	(2.67)	4.73	(2.61)	(2.37)
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)**	**44.39**	**(41.94)**	**(13.42)**

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 Nov-2019	271.1	1090.9	160730.8	**162092.8**	0.0	-5.1	0.0	**-5.1**	186698.2	98798.7	**285496.9**	1.4	710.9	**712.3**
Cumulative Total Charges in (₹) till Nov-19	1116.5	-92089.5	-17729585.0	**-17820558.0**	0.0	-739.5	0.0	**-739.5**	-27071239.0	-14325811.5	**-41397050.5**	203.0	103080.5	**103283.5**
18-11-2019 to 24-11-2019	-6.2	-2.2	5389.4	**5381.0**	0.0	0.0	0.0	**0.0**	7816.1	1943.9	**9760.0**	0.0	0.0	**0.0**
Charges in (₹)	899.0	319.0	-781463.0	**-780245.0**	0.0	0.0	0.0	**0.0**	-1133334.5	-281865.5	**-1415200.0**	0.0	0.0	**0.0**
25-11-2019 to 01-12-2019	-14.5	-2.0	4856.8	**4840.3**	0.0	0.0	0.0	**0.0**	6242.9	2349.1	**8592.0**	0.0	0.0	**0.0**
Charges in (₹)	2102.5	290.0	-704236.0	**-701843.5**	0.0	0.0	0.0	**0.0**	-905220.5	-340619.5	**-1245840.0**	0.0	0.0	**0.0**

Note: 1. The REC chargers has been revised to 14.5 paisa/KVARh from Apr-2019 as per clause of 6.6 of revised IEGC.
2. Cumulative total of REC is except 1st week of Sep-19 as data not available.

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

POWER SECTOR ACTIVITIES

CERC

- Engagement of Consultants to provide assistance in framing the "Terms and Conditions for Tariff determination from Renewable Energy Sources Regulations commencing from 1.4.2020" by Central Electricity Regulatory Commission. (Last date extended till 27.12.2019).
- Vacancies on deputation/short-term contract on foreign service terms from the officials of Central/State Governments, Public Sector Undertakings, Autonomous Bodies etc. Last date: 20th January, 2020.

JERC

- Suo-Moto Petition No. 15/2019: Compliance of Joint Electricity Regulatory Commission (for the State of Goa and Union Territories) (Procurement of Renewable Energy) Regulations, 2016 (Third Amendment) regarding Renewable Purchase Obligation (RPO).

CEA

- Market Monitoring Report-November,2019.
- Draft Revised Guidelines for Renovation and Modernization/Life Extention Works of Coal/Lignite Based Thermal Power Stations, 2019.
- Sharing details of commissioning of Renewable Energy Project

MOP

- Filling up the post of Director (Technical), North Eastern Electric Power Corporation (NEEPCO) Limited, a schedule 'A' CPSE .
- Selection for the post of Director (Projects), NHPC Limited in Schedule "A" of CPSE.

MNRE

- Guidelines for development of Decentralised Solar Power Plants.
- Advertisement for appointment to the post of Director General in Sardar Swaran Singh- National Institute of Bio Energy (NIBE).
- OM regarding cancellation of proposals seeking CFA from MNRE.
- Order regarding Members of Dispute Resolution Committee.
- Amendment dated 09.12.2019 to Order for Dispute Resolution Committee.

WRPC

- Agenda of 39th WRPC meeting to be held on 16 and 17.12.19 at silvasa.

BEE

- Retailer Training Program under S&L in Nizamabad on 28th December 2019.

MISCELLANEOUS

- Govt introduces bill to merge Daman and Diu, Dadra and Nagar Haveli in Lok Sabha.
- U.T. of Daman and Diu celebrated National Energy Conservation Day, 14th December 2019 by Prize Distribution Ceremony in Energy Club schools under SDA Daman and Diu.
- Andhra makes energy conservation code mandatory for commercial buildings.

  ⇒ The state government took the decision as part of implementation of energy efficiency methods to save power.
- **PowerGrid board approves Rs 180 cr investment proposal.**

  ⇒ The board of directors in their meeting held on December 19, 2019 have accorded investment approval of about Rs 180 Crore with respect to schemes to control fault level at Kanpur, Bhiwani and Wardha Substations.
- **CCI approves under green channel Qatar Holding LLC's stake buy in Adani Electricity Mumbai.**

  ⇒ The Qatar Investment Authority (QIA) earlier in December agreed to buy a 25.1 per cent stake in Adani Electricity Mumbai Ltd -- the firm that distributes power to three million consumers in Mumbai -- for Rs 3,200 crore.
- **In first, Switzerland shuts down ageing nuclear power station.**

  ⇒ The shutdown of the plant officially began at 12:30 pm (1130 GMT), with the decisive button-push transmitted live on Swiss television.
- **BMW now boasts of having 500,000 electric vehicles on the road.**

  ⇒ In an official tweet, BMW wrote that statistically, one EV was sold every four minutes and the company is aiming to sell one million EVs by 2021.
- **EESL, Baghirathi Sustainability in MoU to deploy 250 EVs.**

  ⇒ Baghirathi Sustainability India Pvt Ltd is currently operating a fleet of around 131 electric vehicles in India.
- **UN targets electrifying all of world's refugee camps by 2030.**

  ⇒ The target is enormously ambitious given that more than 90 percent of refugees living in camps currently have little or no access to electricity.
- **Rajasthan: Solar policy high on charging stations, making equipment.**

  ⇒ For the first time in the country, Rajasthan government has made adoption of electric vehicles part of policy priority.
- **Hyderabad firm may emerge as lowest bidder for e-bus project.**

  ⇒ Under phase II of Faster Adoption and Manufacturing of Electric Vehicles (FAME), 400 electric buses are to be inducted across the state.
- **India has installed 96 waste-to-energy projects so far: Power minister R K Singh.**

  ⇒ In the current year, funds to the tune of Rs 75 crore have been allocated under waste-to-energy and biomass programmes.
- **Offshore wind developer Orsted secures money for renewable hydrogen project.**

  ⇒ Hydrogen gas has long been seen as a potential alternative to fossil fuels in hard-to-abate sectors such as heavy road transportation and aviation, as it emits water when burnt, not CO2.

Note: Click on Head lines for More Info

- **Rajasthan CM Gehlot launches new industrial, solar power policies.**
- **Planned wind farms win most support in Poland's 2019 auctions.**

  ⇒ Poland, which generates most of its electricity from coal, has struggled to meet an EU target of 15% of energy from renewables in gross final energy consumption by 2020. It has hoped the green energy auctions will help.
- **Shimla: Delay in 100 MW hydro project led to cost over run of Rs 643 cr, says CAG.**

  ⇒ The project was scheduled to be completed by March 2015 with an estimated cost of Rs 676.29 crore, but the same was commissioned in September 2017 at a cost of Rs 1,319.33 crore.
- **Ladakh has wind power potential of 1 lakh MW: NIWE DG Balaraman.**

  ⇒ During the presentation, it was highlighted that Ladakh has a good wind resource due its valley terrain and temporal variation and has the potential for generation of over 1 lakh MW of wind energy.
- **Southern Railway wins energy conservation awards.**

  ⇒ The electrical department of Southern Railway had bagged three national energy conservation awards from Bureau of Energy Efficiency.
- **Societies under Pradhanmatri Aawas Yojna all set to go green.**

  ⇒ One such solar-wind hybrid windmills can generate power up to 1.2 KW, which will be utilized for common utilities of the housing society. This hybrid system can generate both wind and solar power.
- **Adani Green may buy rest of Essel's 480-MW solar assets.**

  ⇒ Adani Green is big on renewable power and has over 5.5 GW of portfolio with almost half of it already operational. After acquiring Essel Group's solar assets in Punjab, Karnataka and Uttar Pradesh, they have agreed to buy the remaining assets too.
- **India among top 10 nations on climate change performance index: Power minister.**

  ⇒ This assumes significance in view of India's resolve to reach 175 GW of clean energy capacity by 2022.
- **Karnataka: Install solar unit on your rooftop, earn rent.**

  ⇒ According to KERC, only 205 MW capacity of SRTPV units has been installed in Karnataka as of July; the target set by the state in its 2014-21 solar policy was 2,400 MW.
- **Renewables top 90 per cent of Kenyan power with new 50 MW solar plant.**

  ⇒ The government is increasing electricity generation and investing in Kenya's power grid to keep up with growing demand and reduce frequent blackouts in the east African country.
- **Azure Power secures 2,000 MW solar power project.**

  ⇒ The project also comes with a 500 megawatt cell and module manufacturing capacity requirement
- **World losing climate race, warns UN chief Guterres, calls for shift to low carbon economy.**

  ⇒ Speaking at the annual UN climate meeting in Madrid, Guterres cautioned the 197 nations attending the event that by the end of the century, temperature may rise by 3 to 4 degrees celsius.
- **47.86 GW of renewable energy capacity installed in India over six years: Govt.**

  ⇒ The government has set a target of installing 175 GW of renewable energy capacity by 2022, which includes 100 GW from solar, 60 GW from wind, 10 GW from biomass and 5 GW from small hydropower projects.
- **India cuts 2019-20 fuel demand estimates, growth seen at six-year low**

  ⇒ Fuel consumption in India is seen at 216 million tonnes in the fiscal year to March 2020, about 3.3 million tonnes lower than initial estimates, the data posted on the Petroleum Planning and Analysis Cell showed.
- **India, Bangladesh give impetus to cross-border energy corridor.**

  ⇒ The Rs. 346 crore, 130-kilometre India-Bangladesh Friendship Pipeline Project is a landmark project being undertaken under the grant assistance from India to Bangladesh.
- **Reliance Industries biggest wealth creator during 2014-19: Study.**

  ⇒ The top-100 wealth creators generated Rs 49 lakh crore during 2014-19, the highest-ever quantum of wealth added, according to Motilal Oswal's Annual Wealth Creation Study 2019.
- **Commercial coal mining for pvt sector to cut import dependency: Anil Agarwal.**

  ⇒ In a major reform in the coal sector since its nationalisation in 1973, the government last year in February had allowed private companies to mine the fossil fuel for commercial use, ending the monopoly of state-owned Coal India Ltd (CIL).
- **Climate Change: Birds shrinking in size due to global warming.**

  ⇒ Increasing temperatures associated with climate change are predicted to cause reduction in the body size of migratory birds.
- **Global coal demand to remain stable up to 2024 - IEA.**

  ⇒ "Despite the growth in low-carbon fuels in recent decades, the reality is coal remains a major fuel in global energy markets ... the world consumes 65% more coal today than in the year 2000," the report by the Paris-based agency said.
- **Solar PV and wind energy costs dropped 13 per cent in 2018, slump to continue.**
- **Visakhapatnam Steel Plant wins National Conservation Award 2019.**

List of Abbreviations

- **BEE** :Bureau of Energy Efficiency
- **BMW** :Beyerische Motoren Werke
- **CAG** :Comptroller and Auditor General
- **CCI** :Competition Commission of India
- **CEA** :Central Electricity Authority
- **CERC** :Central Electricity Regulatory Commission
- **CFA** :Central Finance Assistance
- **CM** :Chief Minister
- **CPSE** :Central Public Sector Enterprise
- **Cr.** :Crore
- **DG** :Director General
- **EESL** :Energy Efficiency Services Limited
- **EV** :Electric Vehicle
- **Govt.** :Government
- **GW** :Giga Watt
- **IEA** :International Energy Agency
- **JERC** :Joint Electricity Regulatory Commission
- **KERC** :Karnataka electricity Regulatory Commission
- **LLC** :Limited Liability Company
- **MW** :Megawatt
- **MNRE** :Ministry of New & Renewable energy
- **MOU** :Memorandum of Understanding
- **NIWE** :National Institute of Wind Energy
- **OM** :Office Memorandum
- **RINL** :Rashtriya Ishpat Nigam Limited
- **S & L** :Standard and Labelling
- **SRTPV** :Solar Rooftop Photo Voltaic
- **UN** :United Nation
- **UT** :Union Territory
- **WRPC** :Western Region Power Corporation

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

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

♦ Substations

* 765/400 KV Aligarh (PG) (1500 MVA)
* 400/33 KV Bikaner(Renew) (Ckt. I & II) (125 MVA) (each)
* 400/220 KV Augmentation at Bhuj S/S (1000 MVA)
* 400/220 KV Wangtoo (GIS) S/S (630 MVA)
* 400/220 KV Prithal (Ckt. I) (500 MVA)
* 400/220 KV Bhuj (Ckt. IV) (500 MVA)
* 400/220 KV Bhuj (Ckt. V) (500 MVA)
* 400/132 KV Balia (200 MVA)
* 400/11 KV Krishnapatnam (SDSTPS) (Ckt. III) (135 MVA)
* 400/11 KV Chndlapur (Ckt. II & III) (150 MVA)
* 230/110 KV Othakkalmandapam s/s (Enhancement) (100 MVA)
* 220/66 KV ITI S/S (300 MVA)
* 220/33 KV Sector-85 Gurugram (100 MVA)
* 220/33 KV Dahi Chowki Unnao (New) T/F-II (60 MVA)
* 220/33 KV Pratap Vihar Ghaziabad (New) T/F-I (60 MVA)
* 220/33 KV Bhadla(ACME) (Ckt. I & II) (150 MVA) (each)
* 220/132 KV Repl. at Malda (50-160) (110 MVA)
* 220/132 KV Rejinagar S/S (320 MVA)
* 220/132 KV Narayanpur s/s (160 MVA)
* 220/132 KV Maihar (Addl T/F) (160 MVA)
* 220/132 KV Dherdehi (Bilaspur) s/s (320 MVA)
* 220/132 KV C. B. Ganj Bareilly (Aug) T/F -II (200-160) (40 MVA)
* 132/33 KV Nalbari (Ckt. I) (50 MVA)

♦ Transmission Lines

* 400 KV Singrauli - Allahabad line
* 400 KV LILO of Wanakbori -Soja line at Dehgam (PG) S/S
* 400 KV Bikaner(PG)-Bikaner(Renew) (Ckt. No.I)
* 400 KV Parithala(GPTL)-Aligarh(PG) D/C (Ckt. No.I & II)
* 220 KV Charor –Banala
* 220 KV Govindpur - Dumka
* 220 KV LILO of Gokarna - Krishnanagar at Rejinagar
* 220 KV LILO of Gurur - Barsoor at Narayanpur
* 220 KV LILO of Hebbal - Hoody Sc line to proposed ITI S/s
* 220 KV LILO of Mopka - Bharatpur and Mopka - Siltara at Dherdehi S/S (Bilaspur)
* 220 KV LILO of one ckt. of KTPS- Manuguru - proposed Pump House-1 at B.G. Kottur line
* 220 KV LILO of Sultanpur - Sangipur First Ckt. at Amethi
* 220 KV Patna (PG) - Khagaul (BSPTCL)
* 220 KV Soja - Joumang (DFCC) line
* 220 KV Unnao - Phoolbagh (Kanpur) line

♦ Generators

♦ Thermal

* Wanakbori TPS Unit-8, M/s GSECL, Gujarat, State Sector, Thermal Coal – 800 MW
* LARA / Chattisgarh Unit-1 NTPC, 800 MW was commissioned on 01.10.2019

♦ Hydro

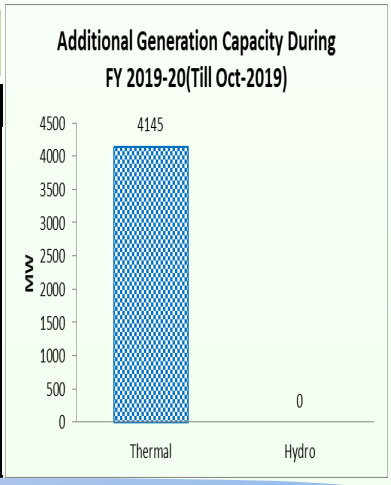
* Nil

♦ Nuclear

* Nil

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

Month	Thermal					Hydro					Nuclear				
	WR	NR	NER	ER	S R	WR	NR	NER	ER	SR	WR	NR	NER	ER	SR
Apr-19	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
Aug-19	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0
Sep-19	1	1	0	0	1	0	1	1	1	0	0	0	0	0	0
Oct-19	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**5**	**1**	**0**	**3**	**1**	**0**	**1**	**1**	**2**	**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 Oct-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
Aug-19	0	0	0	1	3	0	0	0	5	0	0	2	1	0	0	10	10	0	0	13	19	0
Sep-19	1	0	0	1	1	0	0	5	2	0	0	0	1	0	0	10	16	0	0	17	20	0
Oct-19	0	0	0	0	1	0	0	4	9	0	0	0	1	0	0	11	11	0	0	15	22	0
Total	**1**	**0**	**0**	**3**	**7**	**0**	**0**	**26**	**39**	**0**	**0**	**3**	**6**	**0**	**0**	**57**	**78**	**0**	**0**	**90**	**130**	**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 Oct-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 Enterprise 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 Enterprise Pvt. Ltd.

PanaCean®

(An ISO 9001:2015 Company)

More Power to You

Area of Services

Power Services

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

Renewable Energy

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

Energy Efficiency

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

IT Services

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

Area of Clients

Distribution Sector

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

Transmission Sector

- Maharashtra State Electricity Transmission Company Ltd.
- Reliance Infrastructure Ltd.
- Electricity Department of 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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Daman

A2-603, Fortune DP Nanp-1, Somnath Kachigam Road, Nr. Vidyut Bhavan, Daman – 396210.

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.

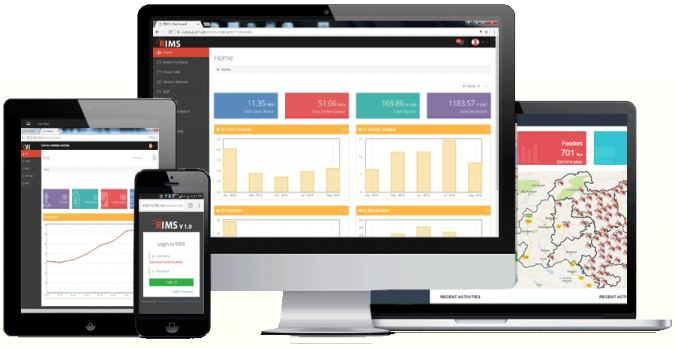
Auto Backup:

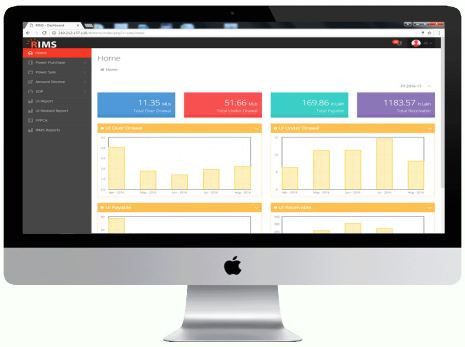
The data of all enterprise applications is of utmost importance. Power UI comes with Auto Backup facility where an authorized person can schedule auto backup of full / partial data of the software. In case of data lost or hardware failure, no or minimal data is lost.

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



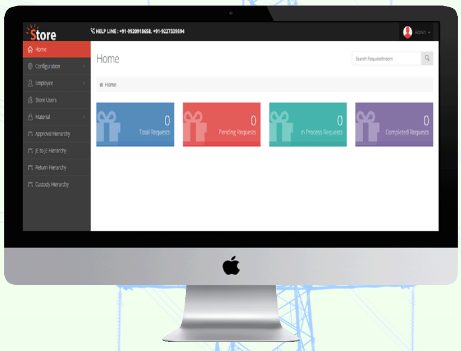


Regulatory Information Management System
RIMS

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.



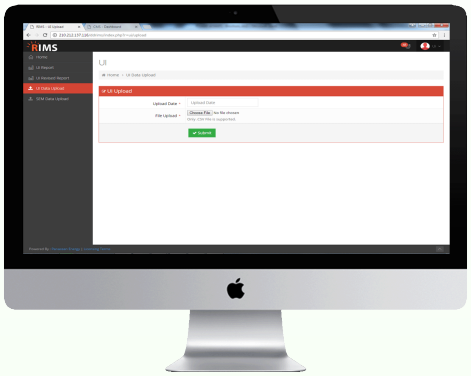
Inventory Management System (Store):

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)

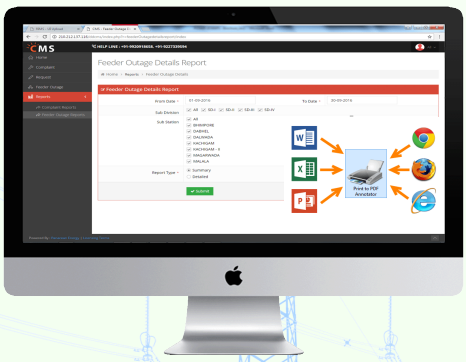
MMS it designed to improve inbuilt maintenance management facilities and hence reduce the failure rates of equipment. With equipment being part of MMS, the concerned person is reminded for inspection and taking corrective actions. The module supports maintenance routines in various categories such as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



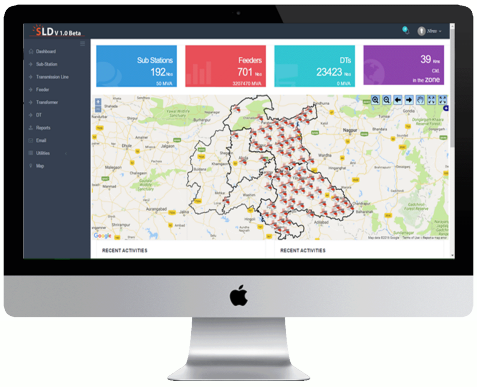
The software shall have a provision to handle huge volumes of data. Features such as import of excel files and import of data from databases shall be provided to facilitate bulk data entry and its corresponding map location display. Given below is a sample bulk data entry feature in POWERUI.

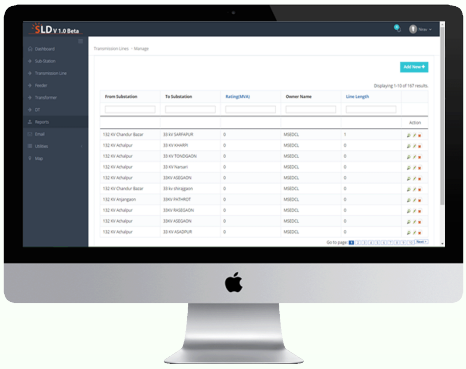
Data / Report Export and Printing Facilities:

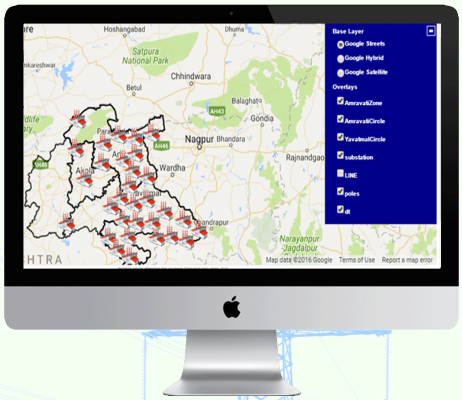


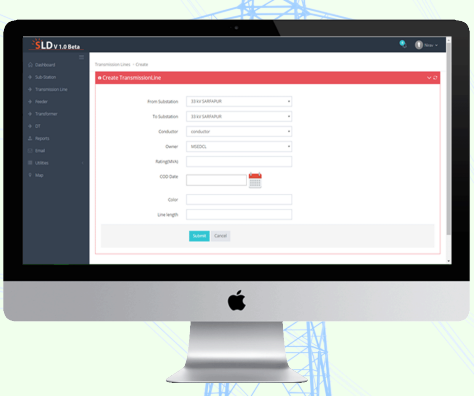
Online Complaint and Feedback Reporting

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

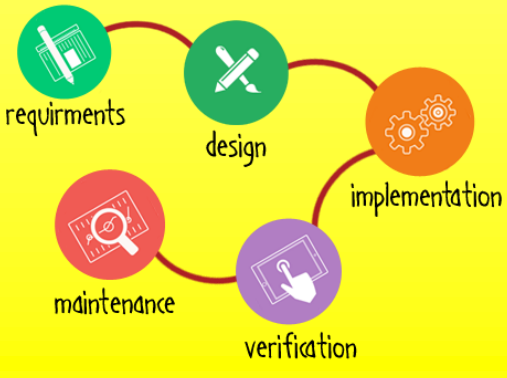
POWERUI MAPS is a map based application where all important assets and infrastructure of a Distribution company and transmission company are displayed on maps using their exact geographic coordinates. Display of all mapped distribution equipment on google maps, along with establishment of comprehensive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

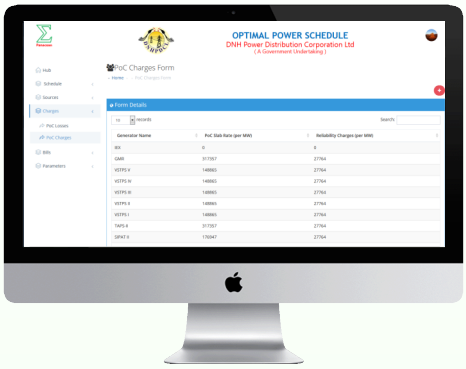
LAYER FACILITY:

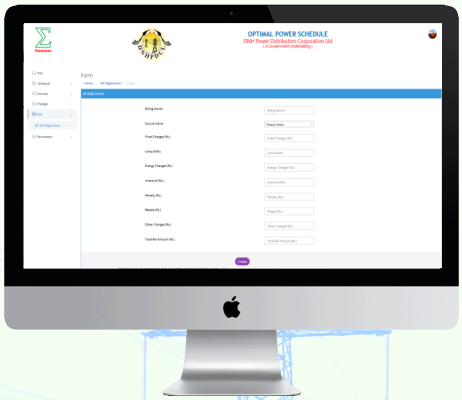
Given a large and a highly dense network as that of MSEDCL, selective viewing of different components of maps is required. The Layer facility enables the user to turn ON/OFF display of certain elements on the map. This feature provides greater clarity of viewing and ease of operation of the software.

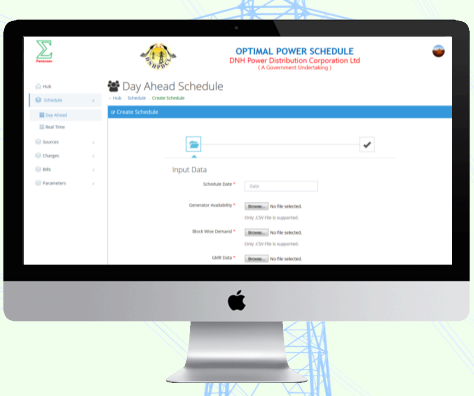
DATABASE – MAP COMMUNICATION:

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.





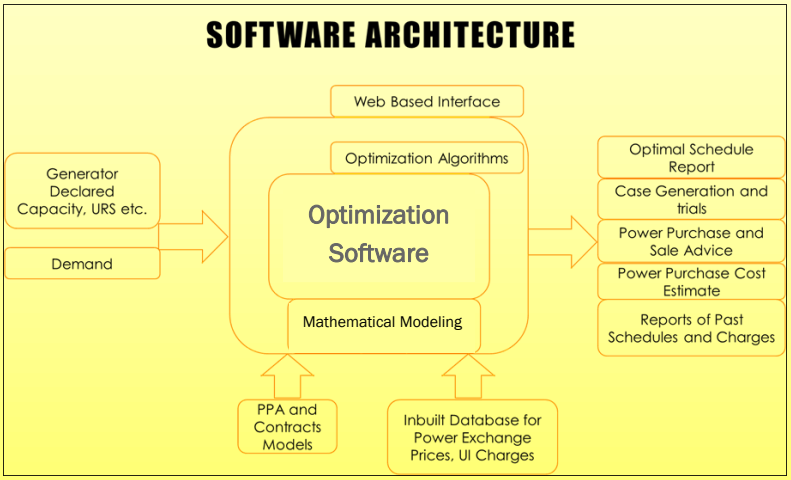




OPTIMAL POWER SCHEDULING SOFTWARE

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.