



**GREEN DIWALI**  
**HAPPY DIWALI**

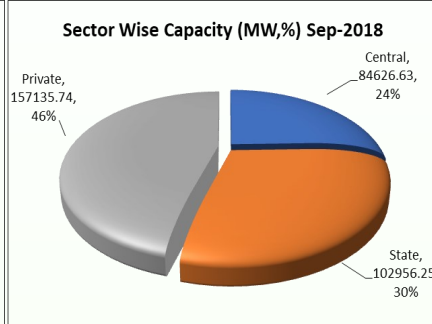
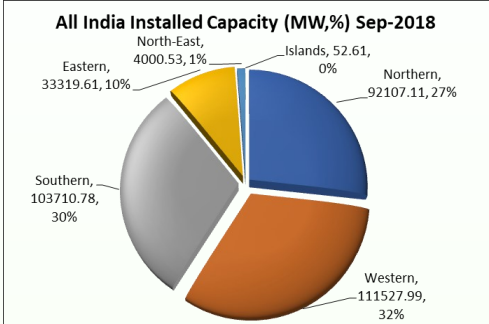


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# OVERVIEW OF INDIAN POWER SYSTEM FOR SEP-2018

All India Installed Capacity (MW) as on 30-09-2018						All India Installed Capacity (MW) as on 30-09-2018		Peak Demand of DD & DNH				
Region	Thermal	Nuclear	Hydro	RES	Total	Sector	Generation (MW)	Utility	Sep-18			
Northern	57766.46	1620.00	19707.77	13012.88	92107.11				Central	84626.63	Peak Demand (MW)	Peak Met (MW)
Western	81415.11	1840.00	7547.50	20725.38	111527.99	State	102956.25	DD		356		
Southern	53017.26	3320.00	11838.03	35535.49	103710.78		Private		157135.74	DNH	815	815
Eastern	27301.64	0.00	4942.12	1075.85	33319.61	Total		344718.62				
North-Eastern	2262.07	0.00	1452.00	286.46	4000.53							
Islands	40.05	0.00	0.00	12.56	52.61							
ALL	221802.59	6780.00	45487.42	70648.62	344718.63							



All India Plant Load Factor (PLF) in (%)		
Sector	Sep-17	Sep-18
Central	70.40	71.04
State	52.41	55.74
Private	66.19	68.65
ALL India	59.89	61.09

## Highlights of WR Grid for Sep-2018

- Maximum Peak Demand Met:** 54610 MW
- Energy Consumption:** Total Energy Consumption in the month of Sep-2018 was 34135 MUs at an average of 1138 MUs/day & Maxi-mum was 1239 MUs on 19.09.2018.
- Unrestricted Demand:** Maximum Unrestricted demand was 54648 MW and Average Peak Unrestricted demand was 47432 MW.
- Frequency Profile:** System frequency as per IEGC band is 49.90 Hz to 50.05 Hz. Maxi-mum, Minimum & Average Frequencies 50.20 Hz, 49.57 Hz & 49.97 Hz were respectively observed in the month of Sep-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, Boisar, Amreli, Karad, Kalwa, Dehgaon, Kasor, Jetpur, Kala Vapi, Mapusa and Magarwada. Highest of 54.25% of time above 420KV observed at Dhule.
- Hydro Generation:** Total hydro generation of Western Region was 1373 MUs at an average of 45.78 MUs/day in the month of Sep-2018.
- Wind Generation:** Total wind generation was 1741 MUs at an average of 58 MUs/day in the month of Sep-2018.
- Solar Generation:** Total Solar generation was 504 MUs at an average of 17 MUs/day in the month of Sep-2018.
- Open Access Transaction Details for Sep-2018:**
  - ⇒ No. of approvals & Energy Approved in Intra-regional: 212 & 713.60 MUs.
  - ⇒ No. of approvals & Energy Approved in Inter-regional: 104 & 206.83 MUs.

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List of Transmission Lines Commissioned/Ready for Commissioning During Sep-2018												Total
Sector	Central				Pvt.			State				
Voltage Level (KV)	800	765	400	220	765	400	220	765	400	230	220	
No. of Lines	0	0	1	1	0	1	0	0	3	0	16	22

List of Substations Commissioned/Ready for Commissioning During Sep-2018												Total
Sector	Central				Pvt.			State				
Voltage Level (KV)	765	400	230	220	765	400	220	765	400	230	220	
No. of Substations	0	3	0	0	0	0	0	0	0	2	11	16

Region-wise Power Supply Position (Demand & Availability) in Sep-2017 & Sep-2018						
Region	Energy (MUs)				Deficit /Surplus (%)	
	Demand		Energy Met		Sep-17	Sep-18
	Sep-17	Sep-18	Sep-17	Sep-18		
Northern	34454	33357	33824	32957	(1.8)	(1.2)
Western	29344	32764	29232	32745	(0.4)	(0.1)
Southern	24727	28691	24685	28631	(0.2)	(0.2)
Eastern	12414	13291	12345	13278	(0.6)	(0.1)
North Eastern	1526	1536	1475	1489	(3.3)	(3.1)
All India	102465	109639	101561	109100	(0.9)	(0.5)

Region-wise Peak Demand / Peak Met in Sep-2017 & Sep-2018						
Region	Power (MW)				Deficit /Surplus (%)	
	Peak Demand		Peak Met		Sep-17	Sep-18
	Sep-17	Sep-18	Sep-17	Sep-18		
Northern	57203	56409	54649	55650	(4.5)	(1.3)
Western	46382	52933	45710	52895	(1.4)	(0.1)
Southern	41071	45587	40852	45428	(0.5)	(0.3)
Eastern	20274	21781	20208	21781	(0.3)	0.0
North Eastern	2629	2921	2520	2850	(4.1)	(2.4)
All India	162452	176538	158550	175528	(2.4)	(0.6)

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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](http://www.iexindia.com)); For more information about PXIL visit ([www.powerexindia.com](http://www.powerexindia.com))



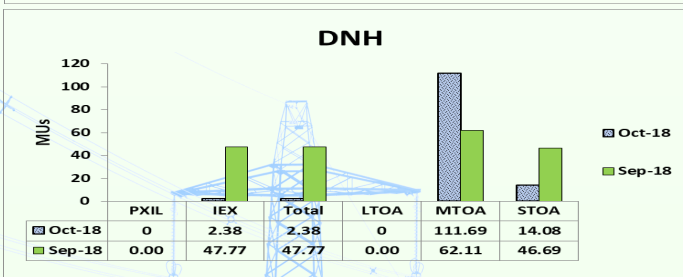
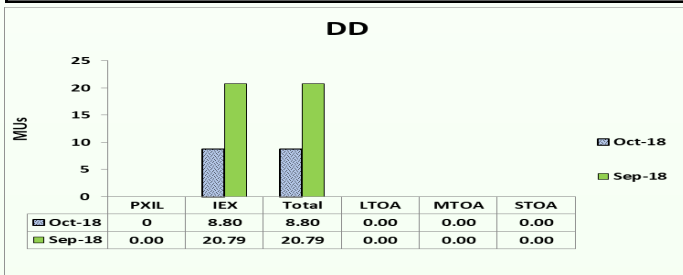
## ⇒ PXIL & IEX Trading summary

OCT-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)
<b>Total</b>	<b>29432.0</b>	<b>161940.0</b>	-	<b>19200.0</b>	<b>19200.0</b>	<b>8543295.4</b>	<b>8141123.6</b>	-	<b>6505171.0</b>	<b>6674862.7</b>
<b>Min</b>	0.0	0.0	0.0	0.0	0.0	5598.6	7371.1	2749.0	4463.4	4454.6
<b>Max</b>	201.5	300.0	6500.0	200.0	200.0	16999.1	15553.2	16907.6	12394.9	12394.9
<b>Avg</b>	10.2	56.2	216.7	6.7	6.7	11482.9	10942.4	5938.0	8743.5	8971.6

SEP-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)
<b>Total</b>	<b>163963.0</b>	<b>190790.0</b>	-	<b>63020.0</b>	<b>63020.0</b>	<b>7408027.5</b>	<b>7688270.3</b>	-	<b>5725489.3</b>	<b>5730225.6</b>
<b>Min</b>	1.5	0.0	0.0	0.0	0.0	3873.6	5808.7	1749.8	3726.6	3726.6
<b>Max</b>	226.5	325.0	6210.0	200.0	200.0	17807.3	17500.1	15764.8	13905.0	13905.0
<b>Avg</b>	56.9	66.2	2753.9	21.9	21.9	10288.9	10678.2	4694.1	7952.1	7958.7

### DD & DNH: OPEN ACCESS DETAILS



### REC Trading Session Oct-2018

Trader Company	PXIL		IEX		
	Particular	Non-Solar	Solar	Non-Solar	Solar
<b>Total Sell Bid (REC's)</b>		203,868	239,904	434,675	335,003
<b>Total Buy Bid (REC's)</b>		171,295	451,791	724,461	576,535
<b>Clearing Price (₹/Certificate)</b>		1,201	1,000	1,251	1,001
<b>Cleared Volume (REC's)</b>		132,295	145,672	130,279	130,279

**POWER MARKET UPDATE: October 2018**  
Day-Ahead Market sees highest ever monthly trade of 6,505 MU at Rs. 5.94 per unit

- The average Market Clearing Price (MCP) discovered in the day-ahead market was at Rs. 5.94 per unit, was increase with the price of September-18 which was Rs. 4.69 per unit and 46% above with the price of Oct-17.

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

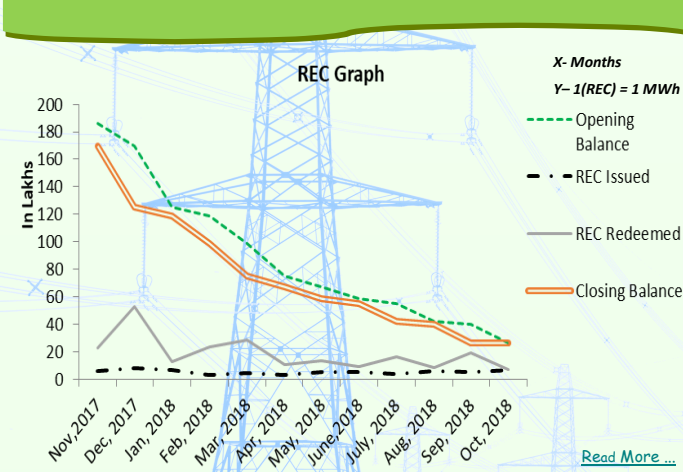
- \* Morning (07:00 to 10:00 Hrs): Rs. 5.61 per unit
- \* Day (11:00 to 17:00 Hrs): Rs. 5.79 per unit
- \* Evening peak (18:00 to 23:00 Hrs): Rs. 7.30 per unit
- \* Night (01-06 Hrs and 24 Hrs): Rs. 5.10 per unit

- The Day-Ahead Market traded 6,505 MU in October'18 – the highest ever achieved so far in any month, registering an increase of 14% month-on-month (MoM) basis and increase of 59% year-on-year (YoY) basis.

- The One Nation, One Price was realized for 17 days in the month of Oct-18.

- On daily average basis 605 participants traded in the day-ahead power market in October-18.

### RENEWABLE ENERGY CERTIFICATE MECHANISM (REC) FROM NOV-17 TO OCT-18



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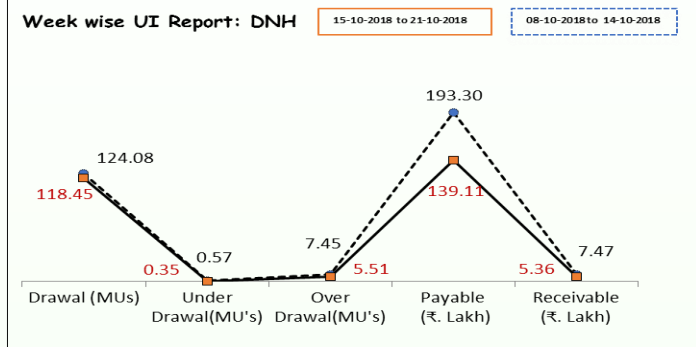
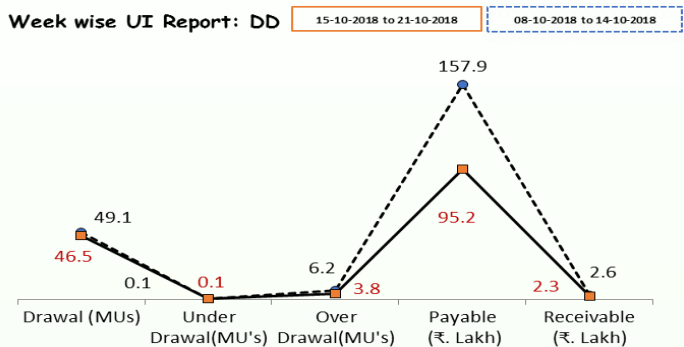
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# DEVIATION CHARGES

[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 Sep-18	1332.05	1167.89	1.49	98.15	4637.70	30.66
15-10-2018 to 21-10-2018	46.53	42.80	0.09	3.82	95.17	2.25
15-10-2017 to 21-10-2017	41.24	35.69	0.00	5.54	100.68	0.00
08-10-2018 to 14-10-2018	49.11	43.05	0.11	6.17	157.90	2.58
08-10-2017 to 14-10-2017	52.74	46.41	0.01	6.33	0.00	0.00

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 Sep-18	3239.23	3094.33	5.11	150.01	3904.06	99.62
15-10-2018 to 21-10-2018	118.45	113.29	0.35	5.51	139.11	5.36
15-10-2017 to 21-10-2017	105.85	101.28	0.54	5.11	108.85	10.44
08-10-2018 to 14-10-2018	124.08	117.20	0.57	7.45	193.30	7.47
08-10-2017 to 14-10-2017	118.88	112.64	0.42	6.66	168.52	8.19



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)	-	-	-
Nov	0.22	(22.01)	(2.71)	-	-	-
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)	-	-	-
<b>Total</b>	<b>9.18</b>	<b>(227.6)</b>	<b>(2.55)</b>	<b>1.49</b>	<b>(165.65)</b>	<b>(2.81)</b>

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)	-	-	-
Nov	2.23	(17.81)	(2.87)	-	-	-
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)	-	-	-
<b>Total</b>	<b>43.61</b>	<b>(215.4)</b>	<b>(2.65)</b>	<b>5.11</b>	<b>(150.01)</b>	<b>(2.63)</b>

## 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 Sep-2018	-2517.6	-1241.3	115582.2	111823.3	50.0	5.3	-5.5	49.8	103847.0	66690.4	170537.4	6409.8	3646.9	10056.7
Cumulative Total Charges in (₹) till Sep-18	202956.5	-4104.5	-8609297.0	-8410445.0	7000.0	743.0	-770.0	6973.0	-11776649.0	-6943045.5	-18719694.5	897372.0	510566.0	1407938.0
15-10-2018 to 21-10-2018	17.9	-12.8	3418.7	3423.8	0.0	0.0	0.0	0.0	3774.7	1827.7	5602.4	0.0	-1.2	-1.2
Charges in (₹)	-2506.0	1792.0	-478618.0	-479332.0	0.0	0.0	0.0	0.0	-528458.0	-255878.0	-784336.0	0.0	-168.0	-168.0
22-10-2018 to 28-10-2018	-15.7	-16.8	4407.6	4375.1	0.0	0.0	0.0	0.0	5078.2	3419.3	8497.5	0.0	0.0	0.0
Charges in (₹)	2198.0	2352.0	-617064.0	-612514.0	0.0	0.0	0.0	0.0	-710948.0	-478702.0	-1189650.0	0.0	0.0	0.0

Note: The REC chargers has been revised to 14 paisa/KVARh from Apr-2017 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

- Five days Skill Development Program on Solar Analytics.
- Office Memorandum - Extension of time for scheduled Commissioning Date (SCD) for Solar Projects delayed due to non-readiness of Internal Evacuation / Transmission system by the Solar Power Park Developer (SPPD) / Solar Park Implementation Agency (SPIA).
- Office Memorandum - Adoption of guidelines for settlement of claims for ex-gratia on accidents applicable to Ministry of New & Renewable Energy and Public Sector Undertakings under its control.
- Adherence to terms and conditions of NOC issued by Ministry of Defence to WTG Operators.

### \* MOP

- Filling up the post of Chairman and Managing Director, North Eastern Electric Power Corporation (NEEPCO) Limited, a schedule 'A' CPSE.
- Filling up the post of Director (Technical), THDC India Limited (THDCIL), a schedule 'A' CPSE.

### \* CEA

- Amendment to Standard Technical Specification for Retrofit of Wet Limestone Based Flue Gas Desulphurisation (FGD) System in a typical 2\*500 MW Thermal Power Plant.

### \* MERC

- Inviting comments on Draft MERC (Deviation Settlement Mechanism and related matters) Regulations, 2018.

### \* SECI

- Results of e-bidding and e-RA for 1200 MW ISTS-connected Wind Power Projects (Tranche-V)
- Extension 04 of bid submission of setting up of 2 MW Solar Power Project with 01 MWh Bess at Kaza, Himachal Pradesh.
- Contour map and SLD for 2 MW solar PV power plant with 01 MWh BESS at KAZA.

### \* MISCELLANEOUS

- Rs 1.9 lakh crore benefit to power companies post Gujarat bailout.
  - ⇒ The financial distress of power plants can be resolved through the Insolvency and Bankruptcy Code mechanism in the best interest of all stakeholders.
- Smart electricity meters in rural India a win-win: Asian Development Bank.
- Nepal's first electric bus service launched in Kathmandu.
- Uber aims to go all-electric in London in 2025.
  - ⇒ After reports that Uber was looking into acquiring British food courier Deliveroo, Khosrowshahi said the firm was very happy with its Uber Eats equivalent but is talking to many players around the world.
- INFOGRAPHIC: States leading EV transition in India.
- Greek power utility PPC to make savings after government scraps charge.
  - ⇒ The utility is struggling to collect about 2.4 billion euros in unpaid bills and is selling part of its coal-fired capacity to open the market up to competition.
- Power companies offer CIL 28% premium for Coal.

⇒ CIL subsidiary Central Coalfields plans to offer the highest quantity at 2.79 million tonne at the auction, followed by Mahanadi Coalfields at 1.41million tonne.

- **REC to tap US investors with \$1-billion bond offering.**
  - ⇒ REC has a loan book of Rs 2 lakh crore and provides loans to power generation companies, transmission companies, state electricity boards and renewable energy providers.
- **Charge your electric car in 15 Minutes, Australian firm promises.**
  - ⇒ It will take just 15 minutes for Australians to fire up their electric cars for long-distance road trips at a proposed national network of charging stations.
- **Electrification of railway lines will save 13,500 Cr every year: Railway Board.**
- **Waaree Energies bags contract for 60 MW solar power project in Vietnam.**
- **China-backed hydro dam threatens world's rarest orangutan.**
- **UP govt plans uninterrupted power supply to districts with below 15% line losses.**
- **NTPC to use biomass to co-fire coal-based power plants, cut emissions.**
- **Mission 2025: L&T helps build largest nuclear fusion reactor.**
  - ⇒ The ITER (International Thermonuclear Experimental Reactor) project, for which 35 nations including India, China and the US are collaborating to demonstrate that nuclear fusion can be used as a safe, alternate energy source, will see significant contribution from L&T which says that work on the facility has ensured its entry into a select group of global companies.
- **Himachal to float tender for 55 electric buses within fortnight.**
- **PTC India to ink PPAs with 7 firms, 5 states for 1,900MW by Oct end.**
- **Aker Solutions eyes winning lease for offshore wind power in California.**
  - ⇒ The project is aimed to help the State of California to reach its ambition to become carbon neutral and use 100 percent clean electricity by 2045.
- **Himachal Pradesh Cabinet decides to allot 780 MW Kinnaur hydro project to SJVN.**
- **Invest India wins top UN award for promoting renewable energy investment.**
- **Ajmera Group to invest \$10 million in solar, e-commerce startups.**
- **EU Commission clears 200 million euros in French renewable energy state aid.**
  - ⇒ The European Commission said the French government's support programme would contribute to add 490 MW of new capacity and was available for small installations.
- **ReNew Power bags 3 MW floating solar PV project at Visakhapatnam.**
  - ⇒ This would be among the largest floating solar PV projects in India and is estimated to generate around 4.2 million units of power annually, offsetting over 3,960 tonne of

Note: Click on Head lines for More Info



carbon emissions every year.

- **Green climate fund approves \$1 billion for projects in poor countries.**
- **Australia backs hydrogen project to store renewable energy.**
  - ⇒ The A\$15 million (\$11 million) project is being run by gas pipeline company Jemena, which plans to build a 500 kilowatt electrolyser in western Sydney that will use solar and wind power to split water into hydrogen and oxygen.
- **New material harvests Sun's heat for cheaper electricity generation.**
  - ⇒ Scientists have developed a material that can be used to harvest electricity from the Sun's heat, paving the way for generating cheaper solar power on cloudy days and at nighttime.
- **Former Kerala CM Oommen Chandy, Venugopal to face solar scam heat again.**
- **Solar pumps will be installed in farms across country in near future: PM Modi.**
- **Solar power projects worth Rs 28,000 crore facing viability risks.**
  - ⇒ The projects facing the risk have a combined capacity of 5,500 Megawatt (MW) and were bid out in the past 9 months at a very low tariff of Rs 2.75 per unit of less.
- **SECI postpones hybrid auction for fifth time; justifies low ceiling tariff.**
  - ⇒ The main reason was poor response from developers, who claimed to have stayed away mainly because SECI had set a tariff ceiling for the auction at Rs 2.60 per unit, which they felt was too low.
- **Temples to go green, recycle waste and tap solar power for needs.**
- **Renewable energy firm Leap Green to raise \$250 million to fund expansion.**
  - ⇒ Leap Green Energy is targeting to have an installed capacity of above 3,000 MW by 2019-20.
- **Himalayas facing severe global warming disruption, say foresters.**
- **CIL aims aspirational production of 652 million tonne for FY19.**
  - ⇒ Supply to the power sector is estimated at 525 million tonne for the fiscal, as against 454 million tonne in 2017-18, Marketing Director S N Prasad said.
- **Coal India offers 5 MT coal to NTPC on credit.**
  - ⇒ Coal India offered domestic coal to central and state power utilities as well as independent power plants, with the condition that they reduce import by proportionate quantities.
- **Small Canadian LNG project set to go ahead in early 2019.**
- **No sale of BS-IV vehicles across the country from April 1, 2020: SC.**
  - ⇒ India currently uses Euro IV compliant fuels, called Bharat Stage IV in the country, and has decided to change to the Euro VI level from April 2020, leapfrogging over Euro V norms.
- **Vietnam crude oil output to fall 10% a year through 2025: PetroVietnam.**
- **India, Iran, Afghanistan hold first trilateral on Chabahar port project.**
- **Odisha urges Centre for free LPG cylinders in 3 cyclone-hit districts.**

- **BPRL begins supply of crude to BPCL Kochi Refinery.**
  - ⇒ During July 2018, approximately 1 million barrels of BPRL's share of equity crude oil from the Lower Zakum Concession was lifted by Bharat Oman Refineries Ltd.
- **China, France launch satellite to study climate change.**
- **Clean coal supply for 2018-2020 winters to be ensured by Hebei.**
  - ⇒ Several regions of China encountered fuel shortages last winter as Beijing pushed to switch millions of households to natural gas from coal as part of its anti-pollution campaign, leaving many thousands of households without heat.
- **Bengaluru to get 24-hr power supply, government to import 5 lakh MT of coal.**
  - ⇒ The Karnataka Power Corporation board has decided to float a global tender for supply of coal from January to April to meet the summer demand.
- **India's natural gas production fell 1.43% in September.**
- **India's solar power capacity addition down 44% in first half of current fiscal.**
- **Karnataka accounts for 25% of all investment plans in India.**
  - ⇒ Analysis of data from the Ministry of Commerce and Industry show that with Rs 83,236 crore worth of investment proposals, the state accounts for 25% of the total value of such proposals in India. The total for the country is Rs 3.38 lakh crore.
- **India to hike tariff for local pipelines by 25-30 % Industry source**
- **Maharashtra to give solar agri pumps at subsidised rates: Bawankule.**
  - ⇒ Speaking at the Agro Vision 2018 here, the state government had set a target of distributing one lakh solar pumps of which 10,000 had already been given out.
- **Eiffel Energy Fund bridges short-term finance gap for renewables projects.**
- **India offers renewable energy expertise to island nations.**
- **India's wind energy capacity addition to grow 76% to 3,000 MW in current fiscal.**

### List of Abbreviations

• <b>BPCL</b> :Bharat Petroleum Corporation Limited	• <b>MOP</b> :Ministry of Power
• <b>BPRL</b> :Bharat Petro Resources Limited	• <b>MT</b> :Million Tonne
• <b>BS</b> :Bharat Stage	• <b>MW</b> :Megawatt
• <b>CEA</b> :Central Electricity Authority	• <b>NIC</b> :National Informatics Centre
• <b>CERC</b> :Central Electricity Regulatory	• <b>NOC</b> :No Objection Certificate
• <b>CIL</b> :Coal India Limited	• <b>NTPC</b> :National Thermal Power Corporation
• <b>CM</b> :Chief Minister	• <b>PM</b> :Prime Minister
• <b>CPSE</b> :Central Public Sector Enterprises	• <b>PPA</b> :Power Purchase Agreement
• <b>EU</b> :European	• <b>PPC</b> :Public Power Corporation
• <b>EV</b> :Electric Vehicle	• <b>PTC</b> :Power Trading Corporation
• <b>FY</b> :Financial Year	• <b>REC</b> :Rural Electrification Corporation
• <b>ISTS</b> :Inter-State Transmission System	• <b>SC</b> :Supreme Court
• <b>JERC</b> :Joint Electricity Regulatory Commission	• <b>SECI</b> :Solar Energy Corporation of India Limited
• <b>L &amp; T</b> :Larsen and Turbo	• <b>SJVN</b> :Satluj Jal Vidyut Nigam
• <b>LNG</b> :Liquefied natural gas	• <b>SLD</b> :Single Line Diagram
• <b>LPG</b> :Liquefied Petroleum Gas	• <b>THDCIL</b> :Tehri Hydro Development Corporation India Limited
• <b>MERC</b> :Maharashtra Electricity Regulatory Commission	• <b>UN</b> :United Nation
• <b>MNRE</b> :Ministry of New & Renewable energy	• <b>UP</b> :Uttarpradesh
	• <b>US</b> :United State
	• <b>WTG</b> :Wind Turbine Generator



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

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

### ◆ Substations

- \* 400/220 KV Charal (Sanand) (ICT No.III) (500 MVA)
- \* 400/220 KV Indore(PG) (ICT No.I) (315 MVA)
- \* 400/220 KV Jagdalpur (ICT No.II) (315 MVA)
- \* 400/220 KV Bongaigaon (ICT No.II) (50 MVA)
- \* 400/220 KV Extn. at Cuddapah S/S (500 MVA)
- \* 400/220 KV Extn. at Indore S/S (1000 MVA)
- \* 400/220 KV Extn. at NP Kunta S/S (500 MVA)
- \* 400/11 KV Ramadugu (ICT No.I) ( MVA)
- \* 230/110 KV Kancheepuram (100 MVA)
- \* 230/110 KV Mondipatty (Addl Auto T/F ) (80 MVA)
- \* 220/33 KV Wardha Addl. T/F (50 MVA)
- \* 220/33 KV Keonjhar GIS (40 MVA)
- \* 220/33 KV Gadchandur Addl T/F (50 MVA)
- \* 220/132 KV Samaguri (315 MVA)
- \* 220/132 KV Neebkarori Farrukhabad (New) T/F-II (100 MVA)
- \* 220/132 KV Sarh (Kanpur Dehat New) T/F-II (160 MVA)
- \* 220/132 KV Simbhaoli Ghaziabad (Aug) T/F-II (40 MVA)
- \* 220/132 KV Chhanera (320 MVA)
- \* 220/132 KV Suwasara (2nd Unit) (160 MVA)
- \* 220/132 KV Shahada Addl ICT (100 MVA)
- \* 220/132 KV Cuttack (One Auto T/F ) (100 MVA)

- \* 220/132 KV Pirankaliyar (Imlikhera) (100 MVA)
- \* 132/33 KV Dullavchera (25 MVA)

### ◆ Transmission Lines

- \* 400 KV Kosamba-Charal (LILO of 400kv Kosamba-Chorania at Charal) (Ckt No. I)
- \* 400 KV Charal-Chorania (LILO of 400kv Kosamba-Chorania at Charal) (Ckt No. I)
- \* 400 KV Essar Mahan-Bilaspur (Ckt No. II)
- \* 400 KV Essar Mahan-Bilaspur (Ckt No. I)
- \* 400 KV Pavagada-Hiriyur (Ckt No. I)
- \* 400 KV Pavagada-Hiriyur (Ckt No. II)
- \* 400 KV Singareni-Sundilla (Ckt No. II)
- \* 400 KV Farakka-Behampur (Ckt No. I)
- \* 400 KV Farakka-Behampur (Ckt No. II)
- \* 400 KV Tumkur (Pavagada) Pool - Hiriyur
- \* 400 KV IB - Lapanga
- \* 400 KV Manali - Korattur
- \* 400 KV STPP (Jaipur) - Sundilla LI S/S
- \* 400 KV Mahan -Sipat
- \* 220 KV (JandK) Drass - Kargil (Part of Alusteng-Drass-Kargil-KhalstiLeh)
- \* 220 KV Construction of 220/220kv MC line for shifting of existing 220kv B1 B2 and B3 B4 lines at proposed HAL premises near Bidarehalldakaval village limits
- \* 220 KV Domjur - N. Chanditala

- \* 220 KV Goindwal Sahib - Bottianwala
- \* 220 KV Jayanagar (OPTCL) - Jayanagar (PGCIL)
- \* 220 KV Karukadom - Kothamangalam
- \* 220 KV Keunjhar - Keunjhar PG
- \* 220 KV LILO of Existing 220 kv Ajmer - KSG at at 400 kv GSS Ajmer
- \* 220 KV LILO of one ckt. of STPS - Ratangarh at Halasar
- \* 220 KV LILO of Shivalakha - Nanikhakhar at Kukma
- \* 220 KV LILO of SIDCUL Puhana at Pirankaliya (Imlikhera)
- \* 220 KV Moga - Mehal Kalan
- \* 220 KV Morena - Sabalgarh with LILO of one ckt. of line at Morena
- \* 220 KV Rajpura - Devigarh
- \* 220 KV Sikandarabad - Rookhi (Siyana)
- \* 220 KV Singanayakanahalli - DG Plant Yelanhanka Station (UG Cable)
- \* 220 KV Teesta LDP-III - Teesta LDP-IV
- \* 132 KV Imphal (PG) - Imphal (MSPCL) (after reconductoring with HTLS) (Ckt No. I)

### ◆ Generators

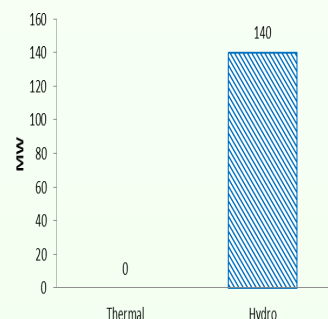
#### ◆ Hydro

- \* Pulichintala HEP Unit 4 in Telangana state of capacity 30 MW Commissioned on 08.09.2018

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

Month	Thermal					Hydro					Nuclear				
	WR	NR	NER	ER	SR	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
<b>Total</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

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



### All India No. of Line Reactors (LR), Transmission Lines (T/L), Substations (S/S) and Bus Reactors (BR) Commissioned for FY 2018-19 (till Sep-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				
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
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>80</b>	<b>56</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>82</b>	<b>67</b>	<b>0</b>	<b>0</b>	<b>179</b>	<b>138</b>	<b>0</b>

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 Sep-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**

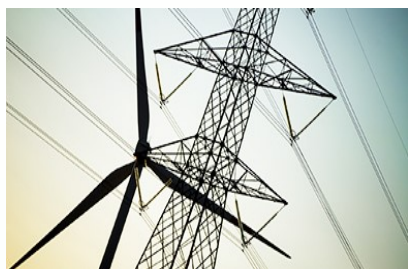
### Panacean Energy Solution







## 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 Darda and Nagar Haveli
- ◆ Uganda Electricity Transmission Company Ltd.

#### Generation Sector

- ◆ Essar M.P. Power Ltd.
- ◆ Ind-Barath Power

#### Others

- ◆ Indian Institute of Technology, Bombay
- ◆ Alok Industries
- ◆ Abhijeet Ferrotech Ltd.
- ◆ Reliance Industries Ltd.
- ◆ Macquarie Infrastructure
- ◆ IXORA Construction
- ◆ ICRA Management and Consultancy Services
- ◆ CLP India Pvt. Ltd., Mumbai

### Reach us at

#### 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, 2<sup>nd</sup> Floor, Nikisha Ind. Estate, Premises No 2, Pandurang Wadi, Mira Road (East), Thane- 401107.

##### Silvassa

Flat No:A1/8, 2<sup>nd</sup> Floor, above Om Sai medical store, Opp Jalaram Temple, Kilvani naka, Silvassa - 396230.

##### Daman

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

##### Surat

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



## PANACEAN AT WORK FOR YOU

CONNECTING YOUR POWER NEEDS TO THE PANACEAN RESOURCES

### IT SUPPORT TO YOUR POWER SOLUTIONS

- INFRASTRUCTURE MANAGEMENT (MAPS)
- COMPLAINT MANAGEMENT SYSTEM (CMS)
- REGULATORY INFORMATION MANAGEMENT SYSTEM (RIMS)
- MAINTENANCE MANAGEMENT SYSTEM (MMS)
- INVENTORY MANAGEMENT (STORE)
- OPTIMAL POWER SCHEDULE

### ONLINE ACCESS BROWSER COMPATIBILITY



### INDEPENDENT OF DATABASE



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



### FLEXIBLE SOLUTIONS FOR YOUR POWER NEEDS

### Introduction

Power UI (Power System User Interface) is a cloud-based application specifically designed for power sectors organizations mainly, Transmission Utilities and Distribution Utilities. Presently, Power UI integrates various power system utilities such as Infrastructure management (MAPS), Complaint Management (CMS), Maintenance Management System (MMS), Regulatory Information Management system (RIMS), Inventory Management (Store).

### Simple and Intuitive UI

We have kept in mind simplest ever user interface while designing the software. The user interface is so intuitive that, anyone having basic knowledge of operating computer will be able to handle various applications with ease. The technical modules only require basic training for successful operation. The software will have inbuilt guiding system for assuring hassle free completion of almost all activities.

### Cloud Based:

The software run from cloud and is accessible over internet / intranet. This avoids installation of copies of software in each system. Management and upgradation of this cloud based application can become easier than ever.

### Auto Backup:

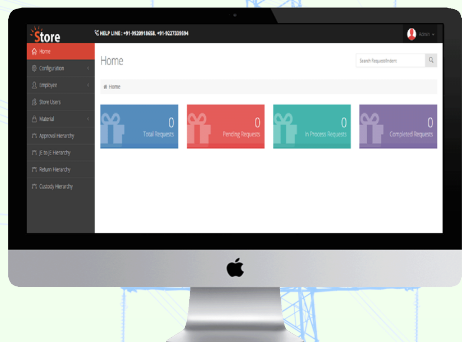
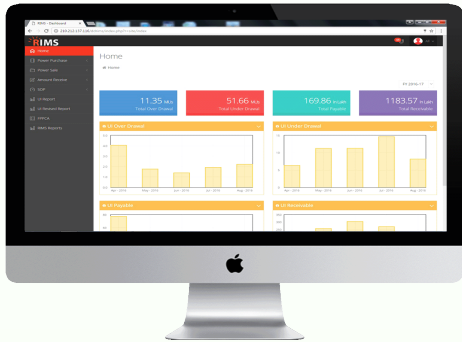
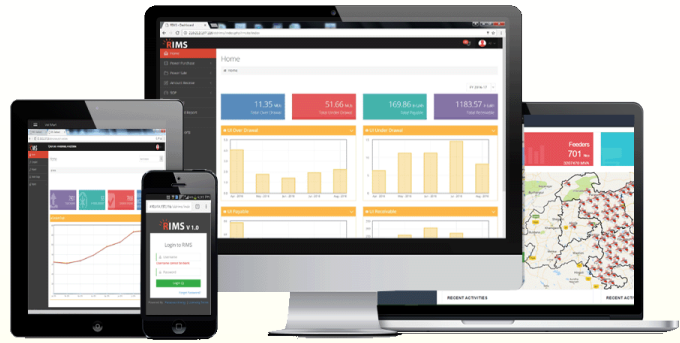
The data of all enterprise applications is of utmost importance. Power UI comes with Auto Backup facility where an authorized person can schedule auto backup of full / partial data of the software. In case of data lost or hardware failure, no or minimal data is lost.

### Event Notification:

The user and/or administrator will not be unaware of activities and events being carried out by the members. All activity updates will be delivered to the concerned person via appropriate notification. Apart from inbuilt notification system, such alerts can also be combined with Email and SMS notification.



# LAPTOP, Tablet & Mobile



## RIMS REGULATORY INFORMATION MANAGEMENT SYSTEM

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.

## CMS COMPLAINT MANAGEMENT SYSTEM

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.

## STORE INVENTORY MANAGEMENT SYSTEM (STORE):

Full proof inventory management is ensured by Store. With self-auditing feature of the software, it is ensured that no material is lost unknowingly. It ensures accountability at every step right from receipt of the material to usage of the material. It also provides handful information for material usage pattern, consumption of various material and its category, material expenses many more at micro level as well as macro level. This helps in improving our planning procedures and material management. Readily available audit reports enhances applicability of the module for financial compliances.

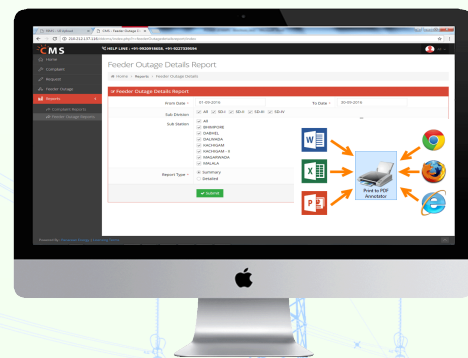
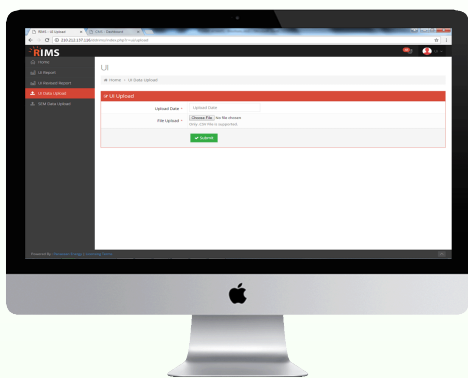
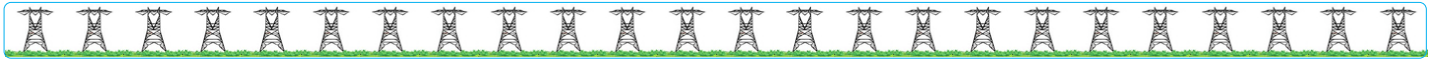


Transmission

Best Suitable Utilities

Distribution





## M AINTENANCE MANAGEMENT SYSTEM (MMS)

MMS is designed to improve inbuilt maintenance management facilities and hence reduce the failure rates of equipment. With equipment being part of MMS, the concerned person is reminded for inspection and taking corrective actions. The module supports maintenance routines in various categories such as preventive maintenance, breakdown maintenance, event based maintenance, and routine maintenance. The software will ensure accountability of maintenance team and improves reliability of equipment in service.

This module contains all functionalities involved in maintenance management of a utility. Specific provisions for this objective are provided in this module as given below;

- ◆ Preventive & Routine Maintenance Operations
- ◆ Breakdown and Event based Operations

## D ATA HANDLING:

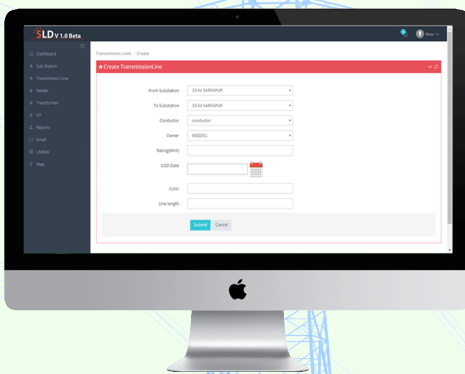
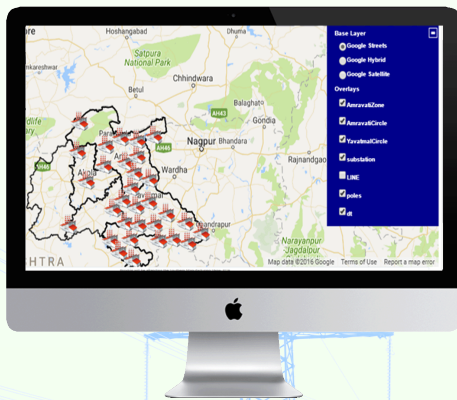
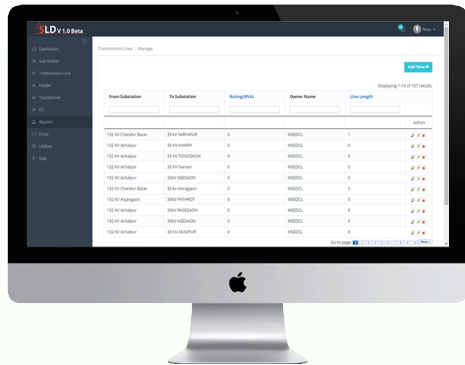
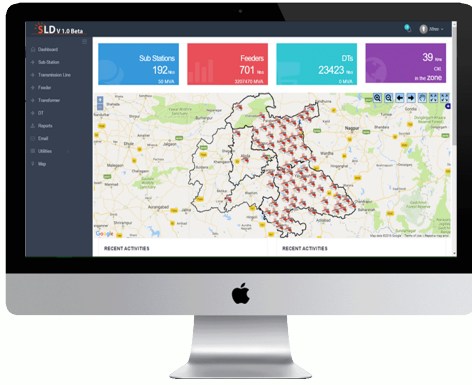
The software shall have a provision to handle huge volumes of data. Features such as import of excel files and import of data from databases shall be provided to facilitate bulk data entry and its corresponding map location display. Given below is a sample bulk data entry feature in POWERUI.

## D ATA / REPORT EXPORT AND PRINTING FACILITIES:



## O NLINE COMPLAINT AND FEEDBACK REPORTING

We are always listening to your feedback in terms of feature request, bug reporting, complaint, suggestion or any such thing for improving our service for your satisfaction. All such activities are only click away. User can report feedback online or by calling us on our helpline numbers.



**M**APS 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

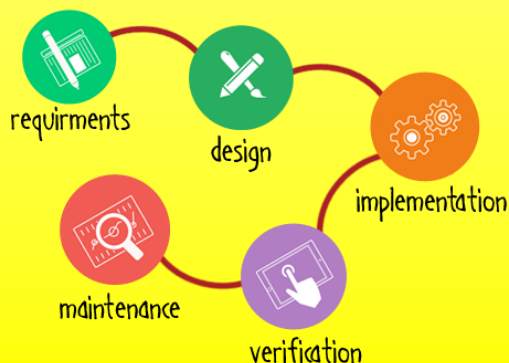
**P**OWERUI MAPS is a map based application where all important assets and infrastructure of a Distribution company and transmission company are displayed on maps using their exact geographic coordinates. Display of all mapped distribution equipment on google maps, along with establishment of comprehensive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

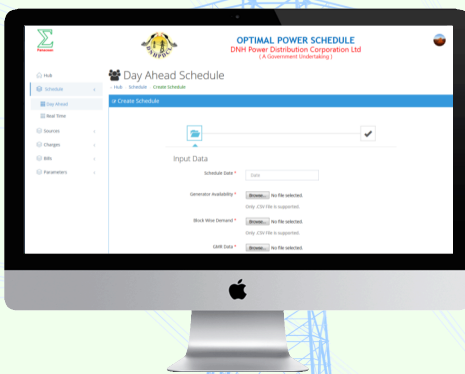
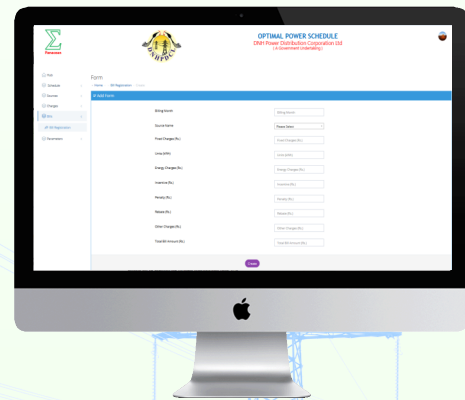
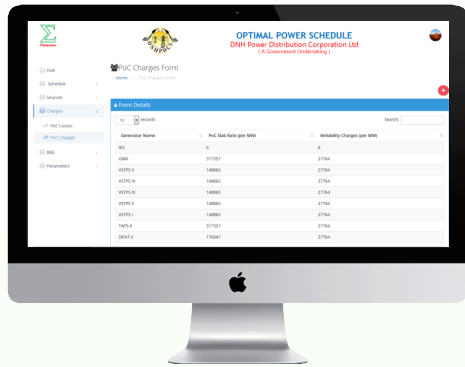
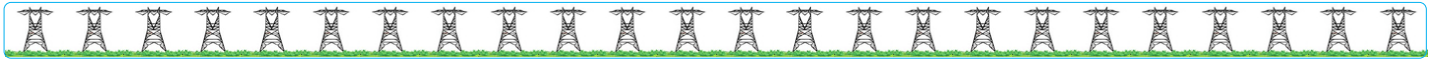
### LAYER FACILITY:

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

### DATABASE - MAP COMMUNICATION:

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

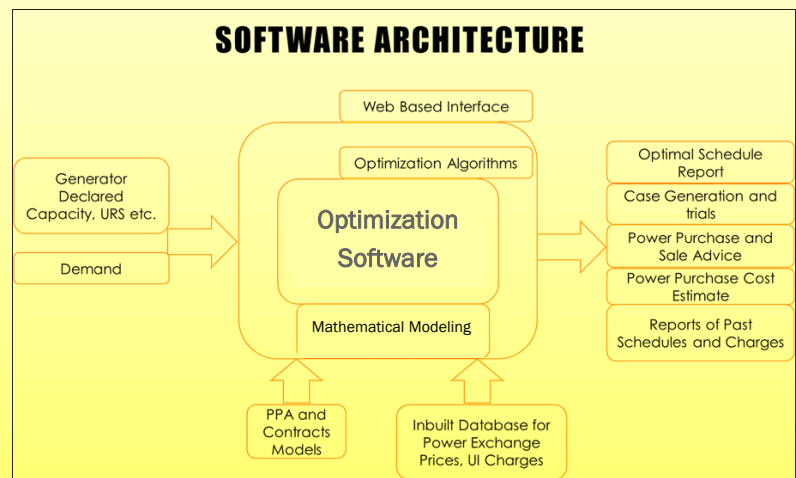




## OPTIMAL POWER SCHEDULING SOFTWARE

The primary objective of this software shall be to provide Cost optimal generator wise day ahead schedule (MW) based on block wise demand of the utility and declared capacity of the generator; subject to all major constraints, with an account of all possible factors in determining the merit order of generators for each block.

**Introduction:** Optimal Power Scheduling is a custom made software for Power Distribution companies and load dispatch centres. Based on the principles of optimization, this software models complex issues of power purchase such as Power purchase agreements (PPA), Power Exchange, Un-scheduled Interchange (UI), and Un-requisitioned Surplus (URS) etc. into a single integrated platform using a industrial popular software to get an optimal power purchase solution. The schematic diagram of Optimal Power Scheduling Software is shown below,



## FEATURES

- ◆ Day ahead and Intra-day optimal solutions for bidding.
- ◆ PPA Modelling concept, governing all PPA terms and Conditions.
- ◆ Analysis of Power Exchange and DSM prices based on Historical data.
- ◆ Indicative Power Purchase and Sale Solutions to bid optimally at the Power Market.
- ◆ Block wise Power Purchase cost estimation to explore all possible options to limit power purchase expenditure.
- ◆ Reports to analyse and summarize power scheduling over a period of time.