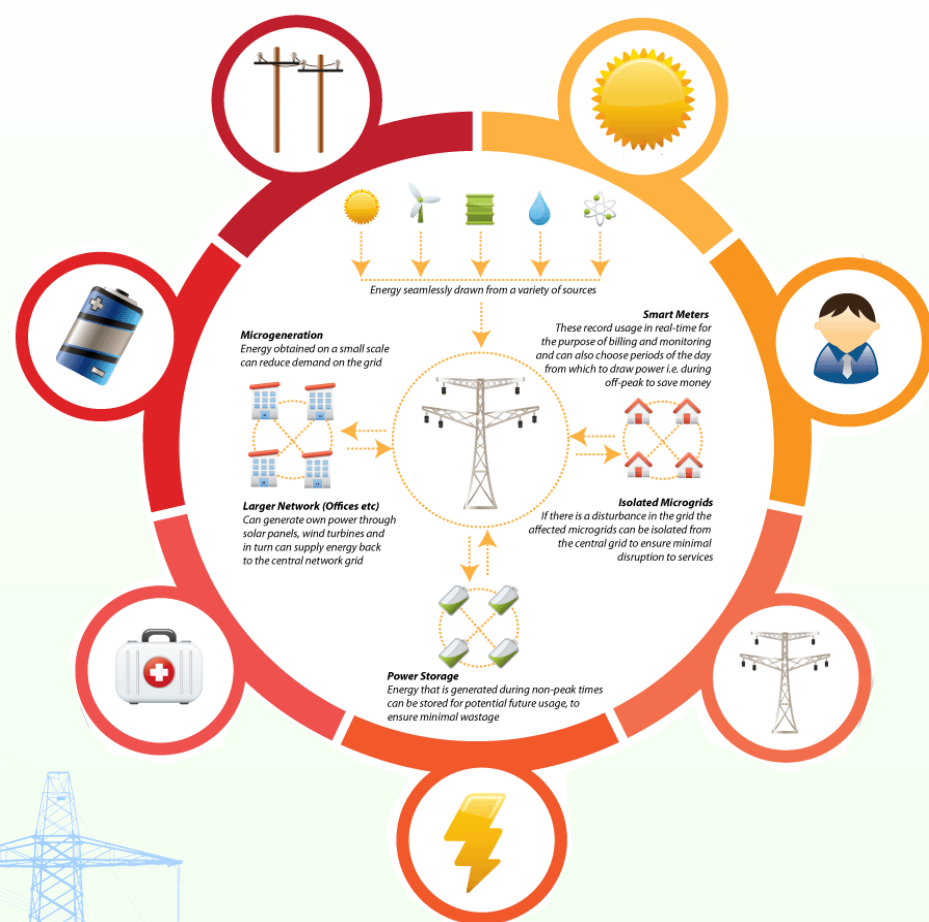




Smart Grid

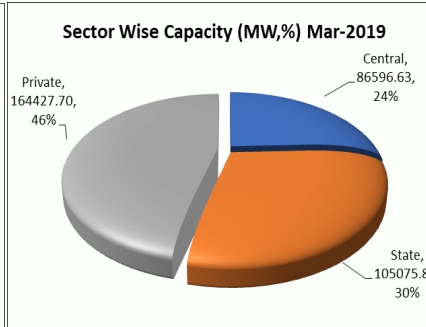
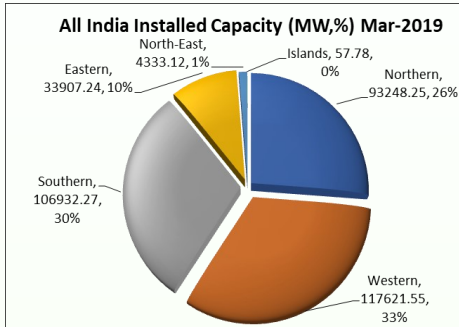


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OVERVIEW OF INDIAN POWER SYSTEM FOR MAR-2019

All India Installed Capacity (MW) as on 31-03-2019					All India Installed Capacity (MW) as on 31-03-2019		Peak Demand of DD & DNH					
Region	Thermal	Nuclear	Hydro	RES	Total	Sector	Generation (MW)	Utility	Mar-19			
Northern	57721.46	1620.00	19707.77	14199.02	93248.25				Peak Demand (MW)	Peak Met (MW)	Surplus/Deficit (-)	
Western	85155.11	1840.00	7547.50	23078.94	117621.55	Central	86596.63	DD			336	336
Southern	53217.26	3320.00	11774.83	38620.18	106932.27				State	105075.87		
Eastern	27563.64	0.00	4942.12	1401.48	33907.24	Private	164427.70	Total <td rowspan="2">356100.20</td> <td colspan="2"></td>			356100.20	
North-Eastern	2581.83	0.00	1427.00	324.29	4333.12							
Islands	40.05	0.00	0.00	17.73	57.78							
ALL	226279.35	6780.00	45399.22	77641.64	356100.21							



All India Plant Load Factor (PLF) in (%)		
Sector	Mar-18	Mar-19
Central	77.17	77.66
State	66.91	59.16
Private IPP	52.28	56.35
Private UTL	66.73	59.66
ALL India	64.52	63.40

Highlights of WR Grid for Mar-2019

- **Maximum Peak Demand Met:** 52965 MW
- **Energy Consumption:** Total Energy Consumption in the month of Mar-2019 was 35105 MUs at an average of 1132 MUs/day & Maxi-mum was 1212 MUs on 30.03.2019.
- **Unrestricted Demand:** Maximum Unrestricted demand was 53132 MW and Average Peak Unrestricted demand was 47192 MW.
- **Frequency Profile:** System frequency as per IEGC band is 49.90 Hz to 50.05 Hz. Maxi-mum, Minimum & Average Frequencies 50.30 Hz, 49.99 Hz & 49.64 Hz were respectively observed in the month of Mar-2019.
- **Voltage Profile:** All 765KV nodes except Wardha, 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 Bhopal, Khandwa, Damoh, Nagda, Raipur, Raigarh, Bhilai, Wardha, Dhule, Parli, Boisar, Kalwa, Karad, Kasor, Amreli, Vapi, Mapusa, Kala, Magarwada, Hazira and Dehgaon. Highest of 93.06% of time above 420KV observed at Dehgaon.
- **Hydro Generation:** Total hydro generation of Western Region was 829.53 MUs at an average of 26.76 MUs/day in the month of Mar-2019.
- **Wind Generation:** Total wind generation was 1517 MUs at an average of 48.90 MUs/day in the month of Mar-2019.
- **Solar Generation:** Total Solar generation was 858 MUs at an average of 25 MUs/day in the month of Mar-2019.
- **Open Access Transaction Details for Mar-2019:**
 - ⇒ No. of approvals & Energy Approved in Intra-regional: 100 & 684.66 MUs.
 - ⇒ No. of approvals & Energy Approved in Inter-regional: 46 & 308.03 MUs.

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List of Transmission Lines Commissioned/Ready for Commissioning During Mar-2019												Total
Sector	Central				Pvt.			State				
Voltage Level (KV)	800	765	400	220	765	400	220	765	400	230	220	25
No. of Lines	0	0	3	0	3	1	0	0	4	0	14	

List of Substations Commissioned/Ready for Commissioning During Mar-2019												Total
Sector	Central				Pvt.			State				
Voltage Level (KV)	765	400	230	220	765	400	220	765	400	230	220	67
No. of Sub-stations	1	3	0	0	0	0	0	0	11	3	49	

Region-wise Power Supply Position (Demand & Availability) in Mar-2018 & Mar-2019						
Region	Energy (MUs)				Deficit/Surplus (%)	
	Demand		Energy Met		Mar-18	Mar-19
	Mar-18	Mar-19	Mar-18	Mar-19		
Northern	28625	28464	28135	28041	(1.7)	(1.5)
Western	32921	33357	32921	33349	0.0	(0.0)
Southern	31827	33605	31551	33597	(0.9)	(0.0)
Eastern	12024	11999	11947	11995	(0.6)	(0.0)
North Eastern	1023	1240	982	1214	(4.0)	(2.1)
All India	106420	108665	105536	108196	(0.8)	(0.4)

Region-wise Peak Demand / Peak Met in Mar-2018 & Mar-2019						
Region	Power (MW)				Deficit/Surplus (%)	
	Peak Demand		Peak Met		Mar-18	Mar-19
	Mar-18	Mar-19	Mar-18	Mar-19		
Northern	44348	47925	43777	47356	(1.3)	(1.2)
Western	49031	53132	48924	52965	(0.2)	(0.3)
Southern	47385	49464	47210	49464	(0.4)	0.0
Eastern	20794	21658	20485	21658	(1.5)	0.0
North Eastern	2283	2540	2250	2535	(1.4)	(0.2)
All India	162263	169464	160364	168745	(1.2)	(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)

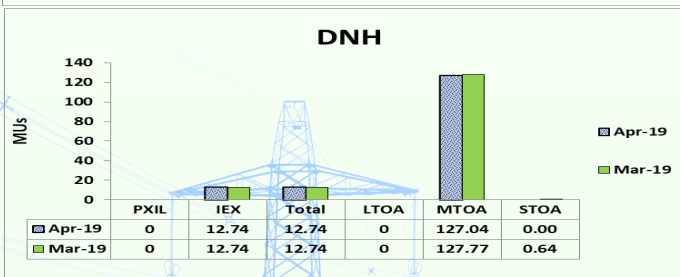
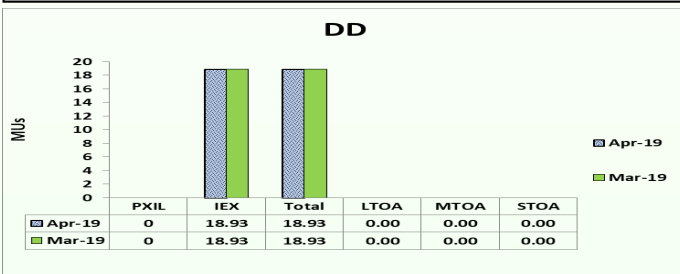


⇒ PXIL & IEX Trading summary

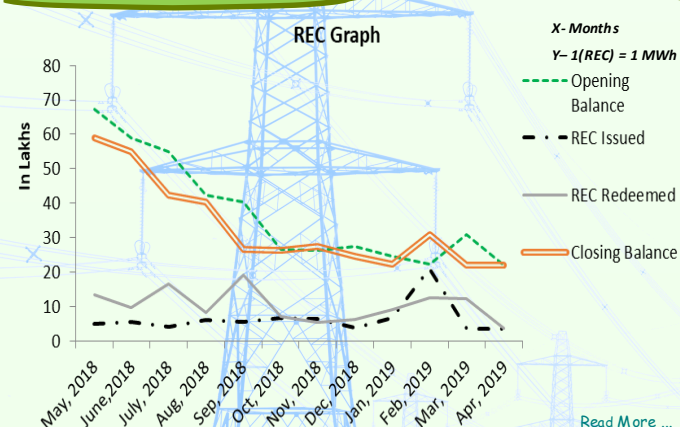
APR-2019	PXIL					IEX				
	Buy Bid (MWh)	Sell Bid (MWh)	MCP (₹/MWh)	Cleared Volume (MWh)	Marginal Clear Volume (MWh)	Buy Bid (MWh)	Sell Bid (MWh)	MCP (₹/MWh)	Cleared Volume (MWh)	Marginal Clear Volume (MWh)
Total	136963.2	269135.2	-	135635.2	125714.7	5208152.2	8042625.1	-	4008499.7	4073247.1
Min	0.0	0.0	0.0	0.0	0.0	3061.7	6520.5	1924.6	2514.9	2484.5
Max	262.0	500.0	4240.0	262.0	200.0	12444.2	17881.8	5163.0	8901.3	9387.7
Avg	49.2	96.7	3002.3	48.7	45.2	7233.6	11170.3	3221.1	5567.4	5657.3

MAR-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	48003.2	386003.2	-	40803.2	40611.2	4444286.0	7765381.0	-	3356076.7	3475710.7
Min	0.0	0.0	0.0	0.0	0	2537.3	6483.6	1999.7	2259.9	2310.8
Max	240.0	380.0	4500	240.0	240.0	12589.5	17859.4	5898.8	8257.5	8669.1
Avg	16.1	129.7	1450.9	13.7	0.0	5973.5	10437.3	3118.6	4510.9	4671.7

DD & DNH: OPEN ACCESS DETAILS



RENEWABLE ENERGY CERTIFICATE MECHANISM (REC) FROM MAY-18 TO APR-19



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REC Trading Session Apr-2019

Trader Company	PXIL		IEX	
	Particular	Non-Solar	Solar	Non-Solar
Total Sell Bid (REC's)	132,223	78,637	351,915	142,148
Total Buy Bid (REC's)	340,999	197,645	697,502	361,606
Clearing Price (₹/Certificate)	1,500	1,800	1,300	2,000
Cleared Volume (REC's)	123,975	20,125	161,949	62,853

POWER MARKET UPDATE: April 2019
Day Ahead Market Trades 4005 MU with Avg. MCP at Rs. 3.22 per unit

The average Market Clearing Price (MCP) discovered in the day-ahead market was at Rs. 3.22 per unit, registered 19% decreases over Rs. 3.98 per unit in Mar-2018.

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

- * Morning (07:00 to 10:00 Hrs): Rs. 2.94 per unit
- * Day (11:00 to 17:00 Hrs): Rs. 2.98 per unit
- * Evening peak (18:00 to 23:00 Hrs): Rs. 3.62 per unit
- * Night (01-06 Hrs and 24 Hrs): Rs. 3.28 per unit

The day-ahead market witnessed trade of 4005 MU in April-19 over 3,356 traded in March-19 registering 19% increase on MoM basis and almost at par with 4055 MU traded in April-18.

On a daily average basis about 134 MU were traded.

- The One Nation, One Price was realized for 16 days in the month of April-2019.
- On daily average basis 762 participants traded in the day-ahead power market in April-19.

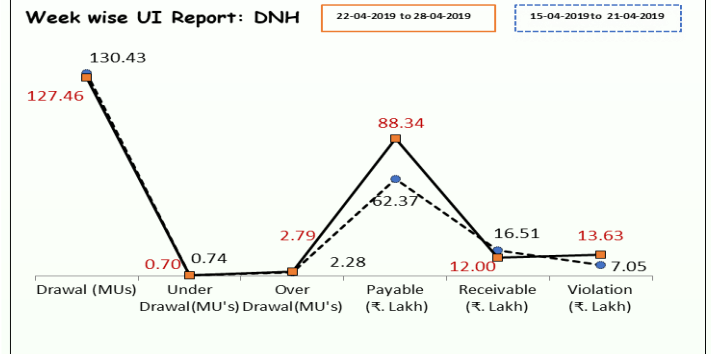
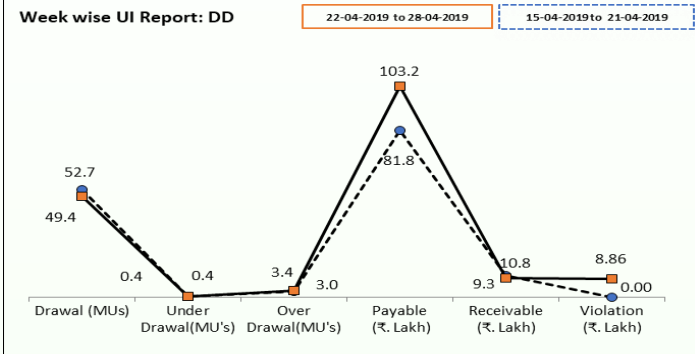
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DEVIATION CHARGES

[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	Violation
Cumulative Total up to Mar-19	2575.43	2322.94	9.63	262.14	7355.90	223.58	85.36
22-04-2019 to 28-04-2019	49.40	46.39	0.41	3.42	103.18	9.28	8.86
22-04-2018 to 28-04-2018	51.41	45.43	0.06	6.04	185.12	1.20	--
15-04-2019 to 21-04-2019	52.73	50.17	0.40	2.96	81.83	10.79	0.00
15-04-2018 to 21-04-2018	50.68	46.86	0.04	3.86	108.70	1.07	--

DNH-Deviation Charges							
FY 2018-19	Drawl (MUs)	Schedule (MUs)	UI Drawl (MUs)		UI Charges (₹. Lakh)		
			Under Drawl	Over Drawl	Payable	Receivable	Violation
Cumulative Total up to Mar-19	6337.59	6112.15	20.84	246.31	6577.73	455.76	303.72
22-04-2019 to 28-04-2019	127.46	125.37	0.70	2.79	88.34	12.00	13.63
22-04-2018 to 28-04-2018	123.14	118.27	0.05	4.92	134.74	0.85	--
15-04-2019 to 21-04-2019	130.43	128.89	0.74	2.28	62.37	16.51	7.05
15-04-2018 to 21-04-2018	122.36	117.53	0.11	4.94	136.53	2.80	--



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)	0.20	(23.87)	(2.57)
Jan	1.04	(18.20)	(2.63)	2.25	(6.69)	(4.20)
Feb	1.33	(12.58)	(2.58)	2.46	(7.70)	(3.85)
Mar	0.99	(19.63)	(2.99)	2.21	(13.41)	(3.69)
Total	9.18	(227.6)	(2.55)	9.63	(262.14)	(2.82)

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)	0.57	(27.12)	(2.56)
Jan	0.47	(26.01)	(2.45)	2.68	(7.65)	(3.84)
Feb	0.28	(22.83)	(2.46)	2.99	(8.68)	(3.68)
Mar	1.03	(26.07)	(2.73)	5.37	(8.02)	(5.90)
Total	43.61	(215.4)	(2.65)	20.84	(246.31)	(2.72)

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	Mgr-Vap LV		Kpd-Vap HV	Kdl-Vap HV	Kpd-Vap LV	Kdl-Vap LV							
Cumulative Total MVARh till Mar-2019	-1203.8	-1412.0	242993.4	240377.6	58.7	5.0	-5.5	58.2	296279.9	114156.6	410436.5	6443.5	3584.9	10028.4		
Cumulative Total Charges in (₹) till Mar-19	19024.5	19793.5	-26446865.0	-26408047.0	8218.0	700.0	-770.0	8148.0	-38717255.0	-13588313.5	-52305568.5	902090.0	501886.0	1403976.0		
15-04-2019 to 21-04-2019	4.6	-6.0	3149.0	3147.6	0.0	0.0	0.0	0.0	2693.4	3115.7	5809.1	0.0	0.0	0.0		
Charges in (₹)	-667.0	870.0	-456605.0	-456402.0	0.0	0.0	0.0	0.0	-390543.0	-451776.5	-842319.5	0.0	0.0	0.0		
22-04-2019 to 28-04-2019	-26.2	-4.9	1500.5	1469.4	0.0	0.0	0.0	0.0	1812.3	1772.6	3584.9	1.4	271.8	273.2		
Charges in (₹)	3799.0	710.5	-217572.5	-213063.0	0.0	0.0	0.0	0.0	-262783.5	-257027.0	-519810.5	203.0	39411.0	39614.0		

Note: The REC chargers has been revised to 14.5 paisa/KVARh from Apr -2019 as per clause of 6.6 of revised IEGC.

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



POWER SECTOR ACTIVITIES



* MNRE

- Wind Turbine Models included in the RLMM after declaration of new procedure (i.e. 01 November 2018)(RLMM).
- OM regarding clarification on import of Lead Acid Battery for SPV Applications and other applications.
- Application Format to apply for inclusion of Solar Photovoltaic (PV) Module Model(s) in the List of "Approved Models and Manufacturers of Solar Photovoltaic Modules (ALMM).

* CEA

- Annual Generation Programme 2019-20.

* JERC

- Draft JERC (Solar PV Grid Interactive Net Metering) Regulations, 2019 and Explanatory Memorandum.
- Draft JERC (Renewable Energy Tariff Regulations, 2019) and Explanatory Memorandum.

* SECI

- NIT for Setting Up Of 14 MW Solar Power Plant With 42MWh BESS (7MW/21MWh Each At Leh And Kargil).

* MISCELLANEOUS

- E.ON sold German nuclear power forward at below-market levels.
 - ⇒ The bulk of its nuclear generation volumes for 2019, nearly two thirds of those for 2020, and just under half of 2021 at prices below the current wholesale market.
- In support of Uday scheme: Power Secretary backs discoms, blames regulators for debt.
 - ⇒ Bhalla's comment is at odds with the near-unanimous view that state distribution companies are responsible for their financial mess.
- Average spot power price to be less than Rs 3.5 per unit in May.
 - ⇒ Despite higher peak demand of 178 GW, average spot power prices at exchanges would not be more than Rs 3.5 per unit during May because of better supplies particularly from clean energy sources like wind, solar and hydro. Besides, there is no shortage of coal this month for thermal power generation.
- Sweden is building an electric road that will charge car as you drive.
 - ⇒ According to Fast Company, the kilometre-long stretch, to be built by Elonroad, will make it possible to charge electric vehicles while driving.
- Maharashtra to distribute 77 million LED lamps by end 2019.
 - ⇒ The centre had launched the ambitious Unnat Jyoti by Affordable LEDs for All (UJALA) scheme in 2015 as the world's largest domestic lighting programme.
- Elon Musk works 90 hrs a week to keep Tesla alive, hopes to reduce it to 80 hrs next year.
- Siemens spins off struggling gas and power in smart digital shift.
 - ⇒ The new firm would be a "major player" in energy with revenues of 27 billion euros (\$30 billion) and more than 80,000 employees.
- Ratan Tata invests in Ola Electric Mobility.

⇒ His investment in Ola Electric will bring his deep experience and mentorship to the company's ambitions to make electric mobility viable at scale.

- India likely to add 80 GW of renewable energy capacity in next 5 yrs: Survey.

⇒ About 47 GW will be from utility scale solar, 21 GW from wind, 8 from rooftop solar and 3 GW from floating solar projects, the survey by consultancy Bridge To India, in which 41 companies from different countries participated.

- Modi govt has propelled green growth: Renewable energy CEOs survey.

⇒ The Indian renewable industry has given a pass certificate to the five years of Modi government rule with 78 per cent of the respondents in a survey of CEOs of the industry feeling that this government has propelled industry growth by increasing the renewable target to 175 Gigawatt (GW).

- MNRE steps in to help green energy developers

⇒ This follows a recent announcement by the ministry that it will ensure that land and transmission facilities are in place for developers who win wind and solar projects in auctions conducted by the Solar Energy Corporation of India (SECI), its nodal agency.

- Piramal Group plans to buy operational renewable power projects of Mytrah.

- Government buildings dampen Bengaluru's solar power hopes.

⇒ Major urban centres around the world are embracing renewable energy sources to power homes and businesses, but Bengaluru is unlikely to feature in that hallowed list anytime soon.

- India will not be able to achieve its renewable energy targets anytime soon.

⇒ India is the third largest CO2 emitter among countries but per capita, its emissions are only 40% of the global average.

- Tariffs fall in Gujarat solar auction.

⇒ French utility Engie got 200 MW in Thursday's auction by bidding Rs 2.65 per unit. State-owned Gujarat State Electricity Corporation Ltd.

- Innovation: Salt battery could help renewable energy use.

⇒ Its silver pipes and vats contain a substance that Vattenfall, the plant's operator, says could become a key ingredient for a fossil fuel-free future.

- Indore airport eyes solar power, energy efficiency to cut CO2 emission

⇒ They have already implemented most of the necessary measures like installation of energy saving LED lights and a solar power plant for energy efficiency.

- Power generation from Narmada dam hits a 15-year low.

⇒ Narmada dam reached its full height of 138.68 metre in 2017, yet hydro power generation from the project was at its lowest in 2018-19 at 595 million units; officials ascribe it to scanty rainfall and lower number of overflowing days.

Note: Click on Head lines for More Info



- **Octopus Energy Investments completes refinancing of British onshore wind.**
 - ⇒ Clean energy investor Octopus Energy Investments has completed a 344 million pound (\$449 million) refinancing of its British onshore wind portfolio.
- **All three tenders for Gujarat's 2,700 MW renewable energy undersubscribed.**
 - ⇒ The tender for 1,000MW solar power capacity to be built at Dholera Solar Park is under-subscribed by 700MW as only two companies have placed bids for just 300MW.
- **Ministry held session for stakeholders in renewable energy industry.**
 - ⇒ Presentations were made by CEOs on topics such as regulatory hurdles, energy storage, transmission constraints and low cost and long term funding among others.
- **Centre to invite bids for 40GW battery plants.**
 - ⇒ It will ask states to compete for the opportunity to set up internationally competitive facilities that will also service global markets. Domestic and global battery makers will be asked to bid for setting up plants in the selected states.
- **Piramal, Canadian pension fund set up \$600 million renewable energy trust.**
 - ⇒ The Canada Pension Plan Investment Board will initially contribute \$360 million to the fund with Piramal adding \$90 million, the Indian conglomerate said.
- **Solar lighting kit: Extremely useful as emergency lights or portable lights.**
 - ⇒ A solar lighting kit is versatile as it can be used in several applications that cover indoor and outdoor use, domestic and commercial use, emergency use and standby use.
- **Bad news for renewable energy: Capacity addition becomes flat for the first time in 17 years**
 - ⇒ 2018 was the first time since 2001 that growth in renewable power capacity failed to increase year on year.
- **Signify Innovations expecting good growth in solar lights segment ahead.**
 - ⇒ Besides, the company, which is shifting towards smart lights solutions globally, aims that by 2022, all LED lighting products sold by it would be connectable to smart devices.
- **Egypt expects giant solar park to be fully operational in 2019.**
 - ⇒ The \$2 billion project, set to be the world's largest solar installation, has been partly funded by the World Bank, which invested \$653 million through the International Finance Corporation.
- **Oil prices up as Middle East tanker attacks heighten supply concerns.**
- **Mysuru professor starts work to transform used cooking oil to biofuel.**
- **Petrol pump owner duped of Rs 7 lakh in Pune.**
- **Chennai lab to build desal plant that works on waste water.**
 - ⇒ The project will have the capacity to generate two million litres of freshwater a day using waste water produced while generating electricity.
- **Simple, inexpensive frame to boost solar cell efficiency.**
 - ⇒ The simple, inexpensive and ingenious method could increase solar energy captured for people in developing countries, as well as remote regions that are off the grid, researchers said.
- **IIT-Roorkee testing floating device to produce electricity from river surface.**
 - ⇒ Traditional hydropower plants require the construction of large-scale dams, which have significant ecological and environmental consequences.
- **Coal here to stay despite India's ambitious goals for renewable energy.**
 - ⇒ India wants to move towards cleaner energy sources, but cost and other factors make it a tall task.
- **Flexible, solar-powered supercapacitor for wearable electronics developed.**
 - ⇒ The technology developed by researchers from the University of Glasgow in the UK could pave the way for a new generation of flexible electronic devices, including solar-powered prosthetics for amputees.
- **Environmentalists file complaint over Kosovo's coal project.**
 - ⇒ Kosovo and London-listed power firm Contour Global picked on May 3 a consortium of General Electric subsidiaries to build the 500-megawatt plant, which is designed to meet nearly half of Kosovo's power demand.
- **Britain's national grid confirms first-ever week of coal-free power generation.**
 - ⇒ UK Business and Energy Secretary Greg Clark said that going a week without coal for the first time since the Industrial Revolution is a huge leap forward in the country's world-leading efforts to reduce emissions but it is not stopping here.
- **Third-biggest US coal company files for bankruptcy.**
- **Fitch cuts India GDP growth forecast for FY-20 to 6.8%.**
 - ⇒ According to Fitch, the RBI, has adopted a more dovish monetary policy stance and cut interest rates by 0.25 percentage at its February 2019 meeting, a move supported by steadily decelerating headline inflation.
- **Russian nuclear powered icebreaker could facilitate India's round year entry to Arctic.**
- **Powergrid helps restore power supply in cyclone-hit Odisha.**
 - ⇒ Powergrid has helped restore power with the use of state-of-the-art techniques like emergency restoration system (ERS), swift operation management and by pooling its about 1,000 specialized manpower from the neighbouring states like West Bengal and Andhra Pradesh to assist the state entities like OPTCL (Odisha Power Transmission Corporation Limited) and CESU (Central Electricity Supply Utility).

List of Abbreviations

• ALMM :Approved List of Models and Manufacturers	• MW :Megawatt	able energy
• BESS :Battery Energy Storage System	• MWh :Megawatt Hours	
• CEA :Central Electricity Authority	• NCR :National Capital Region	
• CEO :Chief Executive Officer	• NIT :Notice Inviting Tender	
• DISCOM :Distribution Companies	• OM :Office Memorandum	
• EON :Energy ON	• PV :Photovoltaic	
• GDP :Gross Domestic Product	• RBI :Reserve Bank of India	
• Govt. :Government	• RLMM :Revised List of Models and Manufacturers	
• GW :Giga Watt	• SECI :Solar Energy Corporation of India Limited	
• Hrs :Hours	• SPV :Solar PV	
• IIT :Indian Institute of Technology	• UJALA :Unnat Jyoti by Affordable LEDs for All	
• JERC :Joint Electricity Regulatory Commission	• UK :United Kingdom	
• LED :Light Emitting Device	• US :United States	
• MNRE :Ministry of New & Renewable Energy	• Yrs :Years	



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



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

◆ Substations

- * 765/400 KV Bhuj Pooling Station (3000 MVA)
- * 765/400 KV Chilakaluripeta ICT No. 1 (1500 MVA)
- * 765/400 KV Chilakaluripeta ICT No. 2 (1500 MVA)
- * 400/230 KV NNTTPP ICT No. 2 (500 MVA)
- * 400/220 KV Lucknow (ICT) (500 MVA)
- * 400/220 KV Dismantling/Removal of 4x105 MVA ICT at 400/220KV Misa s/s and addition of 2x500MVA ICT. (ICT-I com) (500 MVA)
- * 400/220 KV Hamirpur (ICT) (315 MVA)
- * 400/220 KV Daultabad S/s (Aug.) (315 MVA)
- * 400/220 KV Panki Kanpur (Aug) T/F- II (315-240) (75 MVA)
- * 400/220 KV Sambhal (Aug) T/F- II (160-100) (60 MVA)
- * 400/220 KV Sarojininagar Lucknow (Aug) T/F- I (500-315) (185 MVA)
- * 400/220 KV Keshod s/s Aug. (160 MVA)
- * 400/220 KV Badnawar (New) s/s (315 MVA)
- * 400/220 KV Chandrapur II S/s (Aug.) (500 MVA)
- * 400/220 KV Kalwa s/s (Aug.) (500 MVA)
- * 400/220 KV Badaun (Aug) T/F- II (200-160) (40 MVA)
- * 400/220 KV Bhuj PS ICT No. 2 (500 MVA)
- * 400/220 KV Bhuj PS ICT No. 1 (500 MVA)
- * 400/220 KV Charai ICT No. 2 (500 MVA)
- * 400/220 KV Vav ICT No. 2 (500 MVA)
- * 400/220 KV Pavagada ICT No. 4 (500 MVA)
- * 400/220 KV Bongaigaon ICT No. 2 (315 MVA)
- * 400/132 KV Kimapur (Balaghat) (200 MVA)
- * 400/132 KV Masauli Prayagraj (New) T/F-II (200 MVA)
- * 400/132 KV Kurukshetra ICT No. 1 & 2 (500 (Each) MVA)
- * 400/132 KV Bhadla(PG) ICT No. 2 (500 MVA)
- * 400/132 KV Kameng ICT No. 1 (120 MVA)
- * 230/110 KV Thiruvannamalai (Enhancement from 100 MVA to 160 MVA) (60 MVA)
- * 230/110 KV Thiruchuli (III Auto trafo.) (100 MVA)
- * 230/110 KV Thiruchuli (II Auto trfo.) (100 MVA)
- * 220/66 KV Bhachunda s/s (160 MVA)
- * 220/66 KV Deodar S/s Aug. (160 MVA)
- * 220/66 KV Dhasa S/s Aug. (60 MVA)
- * 220/66 KV Jambuva s/s (Aug.) (160 MVA)
- * 220/66 KV Kangsiyali S/s Aug. (60 MVA)
- * 220/66 KV Kosamba S/s Aug. (60 MVA)
- * 220/66 KV Mehsana S/s Aug. (160 MVA)
- * 220/66 KV Mota S/s Aug. (60 MVA)
- * 220/66 KV Nakhatrana S/s Aug. (160 MVA)
- * 220/66 KV Popada S/s Aug. (60 MVA)
- * 220/66 KV Thavar S/s Aug. (110 MVA)
- * 220/66 KV Vartej S/s Aug. (60 MVA)
- * 220/66 KV Zagadia S/s Aug. (110 MVA)
- * 220/66 KV Mitterari S/S (200 MVA)
- * 220/66 KV Morbi S/s Aug. (160 MVA)
- * 220/33 KV Jeur S/s (Aug.) (50 MVA)
- * 220/33 KV Karanja s/s (25 MVA)

- * 220/33 KV Kekatnimbhora s/s (Aug.) (100 MVA)
- * 220/33 KV Ner s/s (25 MVA)
- * 220/33 KV Oni S/s (Aug.) (25 MVA)
- * 220/33 KV Parbhani S/s (Aug.) (50 MVA)
- * 220/33 KV Purti S/S (25 MVA)
- * 220/33 KV Sayane S/s (Aug. by Trafo Replacement (50-25)) (25 MVA)
- * 220/22 KV Vasai s/s (Aug.) (50 MVA)
- * 220/132 KV Yavatmal s/s (Aug.) (50 MVA)
- * 220/132 KV Bah Agra (Aug) T/F- II (160-100) (60 MVA)
- * 220/132 KV Bansi Siddharth nagar (Aug) T/F- II (160-100) (60 MVA)
- * 220/132 KV Hardoi (Aug) T/F- II (160-100) (60 MVA)
- * 220/132 KV Mirzapur (Aug) T/F- II (160-100) (60 MVA)
- * 220/132 KV Orai (400) Jalaun (Extension) T/F- I (160 MVA)
- * 220/132 KV Unnao (Aug) T/F- II (160-100) (60 MVA)
- * 220/132 KV Agiyol S/s Aug. (100 MVA)
- * 220/132 KV Asoj S/s Aug. (50 MVA)
- * 220/132 KV Godhara S/s Aug. (100 MVA)
- * 220/132 KV Cheeka S/s (60 MVA)
- * 220/132 KV Sirsa S/s (100 MVA)
- * 220/132 KV Kanwan New (GEC-I) (160 MVA)
- * 220/132 KV Bhenda s/s (Aug.) (100 MVA)
- * 220/132 KV Chinchwad-II s/s (Aug.) (200 MVA)
- * 220/132 KV Georai s/s (150 MVA)
- * 220/132 KV Jalna s/s (Aug.) (100 MVA)
- * 220/132 KV Jeur S/s (Aug. by Trafo Replacement(200-100)) (100 MVA)
- * 220/132 KV Kaulewada S/s (Aug. by Trafo Replacement(200100)) (100 MVA)
- * 220/132 KV Kekatnimbhora s/s (200 MVA)
- * 220/132 KV Malkapur s/s (100 MVA)
- * 220/132 KV Narangwadi s/s (100 MVA)
- * 220/132 KV SICOM Chandrapur s/s (100 MVA)
- * 220/132 KV Uppalwadi S/S (200 MVA)
- * 220/132 KV Viroda s/s (200 MVA)

◆ Transmission Lines

- * 765 KV Bilaspur - Rajnandgaon (hexa) (STL-TBCB)
- * 765 KV Raipur Pool - Rajnandgaon (hexa) (RRWTL-TBCB)
- * 765 KV Rajnandgaon - New Pooling Station Warora (RRWTL - TBCB)
- * 400 KV Dharmapuri (Salem New) - Somanahalli
- * 400 KV Kota - Jaipur (South)
- * 400 KV Mundra UMPP - Bhuj Pool line
- * 400 KV Gr. Noida (765) - Noida Sec-148 line
- * 400 KV LILO of Azamgarh - Sultanpur at Tanda TPS Extn.
- * 400 KV LILO of Bhilai - Seoni at Balaghat / Kimapur
- * 400 KV LILO of both Ckts. of Mundra-Zerda at Charanka S/S (ACSR Twin Moose Conductor)
- * 400 KV Kishanganj(PG) - Darbhanga (DMTCL) (ATL - TBCB)
- * 400 KV Bhadla(PG)-Bhadla(RRVPNL) Ckt No. I & II

- * 400 KV Wanakbori GIS-Soja Ckt No. I & II
- * 400 KV Pitampur-Badnawar Ckt No. II
- * 400 KV Somanahalli-Dharmapuri Ckt No. II
- * 400 KV Somanahalli-Dharmapuri Ckt No. I
- * 400 KV Chilakaluripeta-Sattenapalli Ckt No. I & II
- * 400 KV LILO of Varsana-Kansari
- * 400 KV LILO of APL Mundra-Kansari
- * 400 KV LILO of Ukai-Kosamba-1
- * 400 KV LILO of Ukai-Navsari
- * 220 KV Badnawar - Kanwan line (GEC-I)
- * 220 KV Gowribidnur - Mitterari Line
- * 220 KV Hata - Deoria line
- * 220 KV LILO of 2nd ckt. Nagda - Neemuch line at Daloda s/s
- * 220 KV LILO of Both ckt of Tebhda - Nyara line at Moti Gop S/S (M/C line AL-59)
- * 220 KV LILO of Dautabad -Mau line at Hub Gurgaon S/s
- * 220 KV LILO of one ckt. Gandhinagar TPS - Chhatral line at Vadavi (AL-59)
- * 220 KV LILO of one Ckt. Muradnagar - Sahibabad line at Pratap Vihar
- * 220 KV LILO of Pehowa - Kaul at Bhadson
- * 220 KV LILO of Single ckt. of Mobha - Mangrol at Amod
- * 220 KV LILO on Ambazari - Amravati at Karanja s/s
- * 220 KV LILO on Khadka-Amalner at Kekatnimbhora
- * 220 KV Mokha-Chromeni line
- * 220 KV Nerul-Seawood TSS (U/G Cable Ckt -I)
- * 220 KV Badwar-Rewa PS Ckt No. I
- * 220 KV Bongaigaon-Salakati Ckt No. I & II
- * 220 KV LILO of Moga-Himmatpura

◆ Generators

◆ Thermal

- * Uchpinda TPP Unit 4, Private, RKP Power Generation Ltd., Chhatishgarh Capacity 360 MW
- * Bongaigon TPP Unit 3, Central, NTPC, Assam, Capacity 250 MW
- * Shri Singhaji TPP Stage -II Unit 4, State, MPPGCL, MP Capacity 660 MW
- * Dishergarh TPP, Private, IPCL, WB Capacity 12 MW
- * Gadarwara TPP Unit 1, Central, NTPC, MP Capacity 800 MW
- * Chhabra TPP Extn. Unit 6, State, RRUVNL, Rajasthan Capacity 660 MW
- * Solapur TPP Unit 2, Central, NTPC, Maharashtra Capacity 660 MW
- * Wanakbori TPS / Gujarat Capacity 800MW
- * NSTPP / Bihar Capacity 660MW
- * IBTPS / Orissa 660MW

◆ Hydro

- * Nil

◆ Nuclear

- * Nil

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

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

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



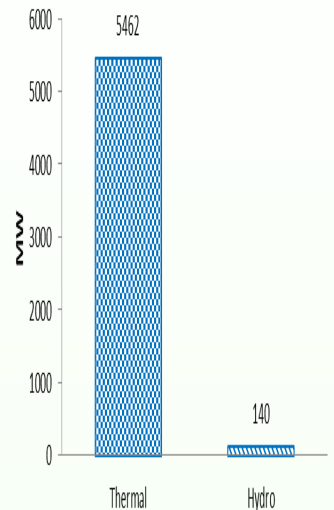
ALL INDIA LIST OF ELEMENTS COMMISSIONED DURING THE FY 2018-19



All India No. of Generators Commissioned during FY 2018-19 (till Mar-2019)

Month	Thermal					Hydro					Nuclear				
	WR	NR	NER	ER	S R	WR	NR	NER	ER	SR	WR	NR	NER	ER	SR
Apr-18	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-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
Dec-18	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Jan-19	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
Feb-19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-19	5	1	1	3	0	0	0	0	0	0	0	0	0	0	0
Total	10	1	1	6	1	0	0	1	0	1	0	0	0	0	0

Additional Generation Capacity During FY 2018-19 (Till Mar-2019)



All India No. of Line Reactors (LR), Transmission Lines (T/L), Substations (S/S) and Bus Reactors (BR) Commissioned for FY 2018-19 (till Mar-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
Apr-18	0	0	0	4	4	0	0	14	10	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	10	8	0	0	32	22	0
Jun-18	0	0	0	4	1	0	0	8	9	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	16	17	0	0	28	29	0
Aug-18	0	0	0	4	3	0	0	15	8	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	17	12	0	0	31	22	0
Oct-18	0	0	0	3	0	0	0	11	9	0	0	0	2	0	22	11	0	0	36	22	0
Nov-18	0	0	0	3	0	0	0	10	10	0	0	1	0	0	7	10	0	0	21	20	0
Dec-18	0	0	0	2	1	0	0	7	4	0	0	3	0	0	10	9	0	0	22	14	0
Jan-19	0	0	0	2	2	0	0	7	5	0	0	0	3	0	4	10	0	0	13	20	0
Feb-19	0	0	0	2	1	0	0	11	10	0	0	1	1	0	15	12	0	0	29	24	0
Mar-19	0	0	0	3	3	0	0	18	24	0	0	0	3	0	17	49	0	0	38	79	0
Total	0	0	0	29	17	0	0	144	118	0	0	8	14	0	157	168	0	0	338	317	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 Mar-2019.

* 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 Energy Solution

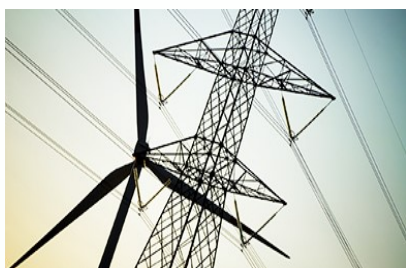


PanaCean[®]
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More Power to You





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.

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, Antarctica – D, Lodha Aqua CHS Ltd., Opp. to Thakur Mall, Mahajanwadi, Mira Road (E) Thane – 401107, Maharashtra.

Corporate Office

Mumbai

Gala No. 209, 2nd Floor, Nikisha Ind. Estate, Premises No 2, Pandurang Wadi, Mira Road (East), Thane- 401107.

Silvassa

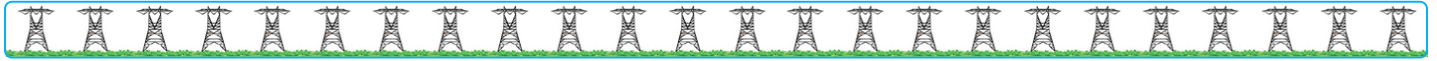
Flat No:A1/8, 2nd Floor, above Om Sai medical store, Opp Jalaram Temple, Kilvani naka, Silvassa - 396230.

Daman

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

Surat

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



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.



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

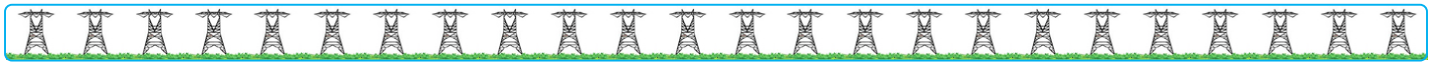


The software is compatible with Oracle, Microsoft SQL, and MySQL database.

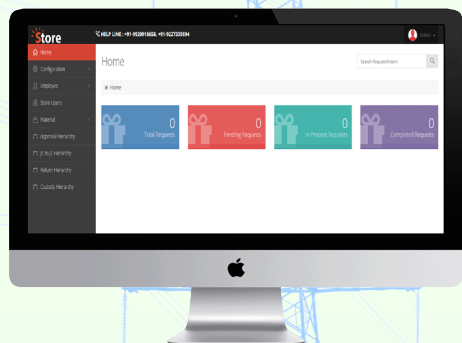
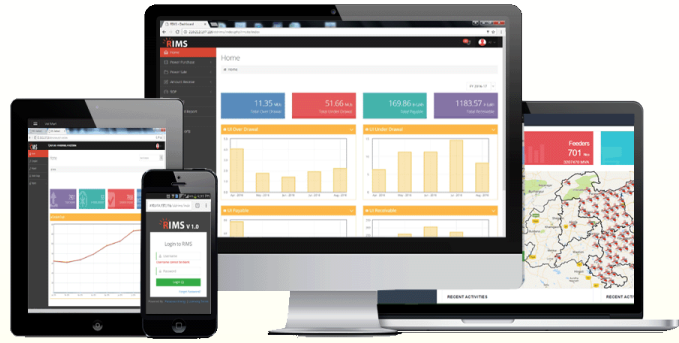
SECURITY



FLEXIBLE SOLUTIONS FOR YOUR POWER NEEDS



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.

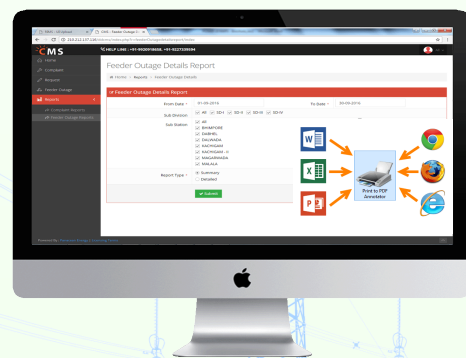
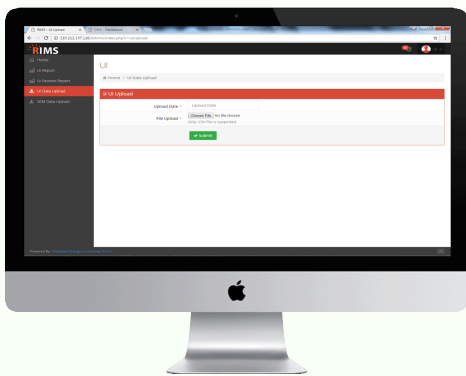
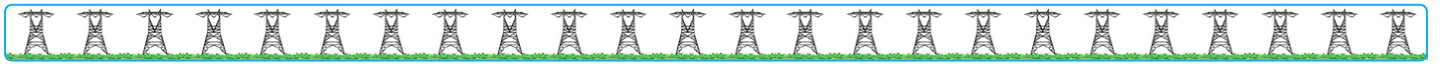


Transmission

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:

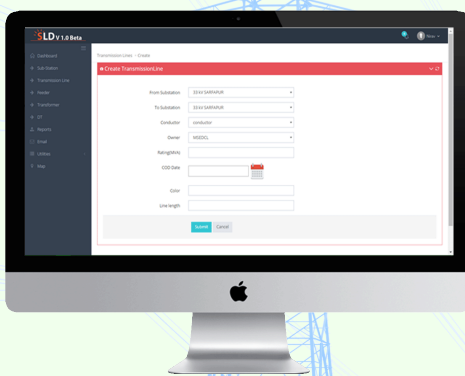
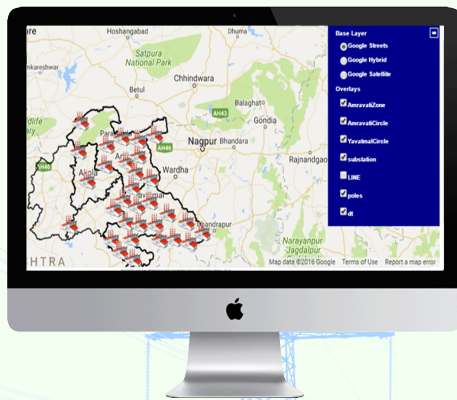
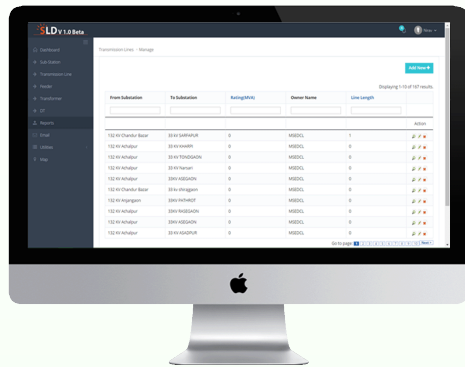
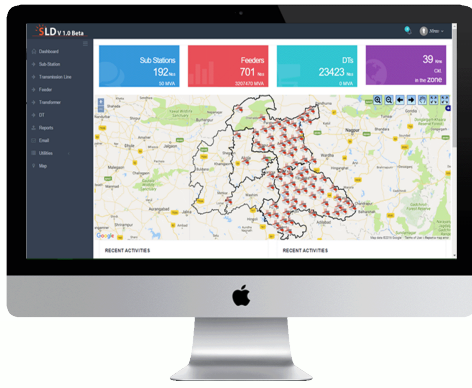
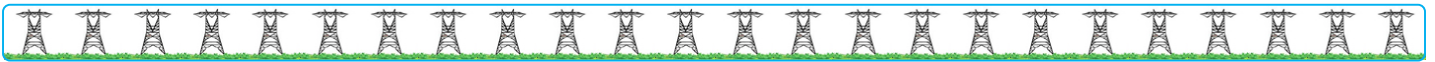
The software shall have a provision to handle huge volumes of data. Features such as import of excel files and import of data from databases shall be provided to facilitate bulk data entry and its corresponding map location display. Given below is a sample bulk data entry feature in POWERUI.

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.



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

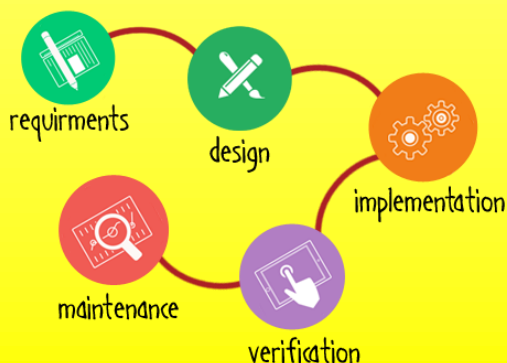
POWERUI MAPS is a map based application where all important assets and infrastructure of a Distribution company and transmission company are displayed on maps using their exact geographic coordinates. Display of all mapped distribution equipment on google maps, along with establishment of comprehensive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

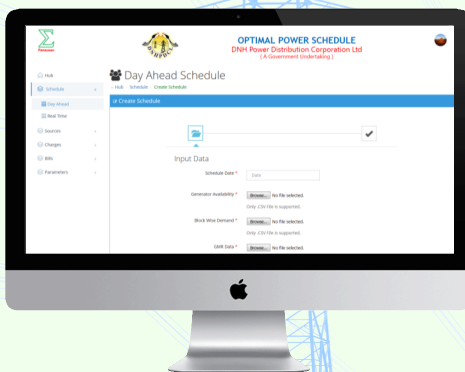
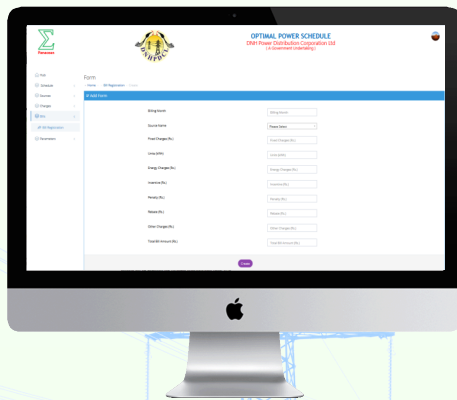
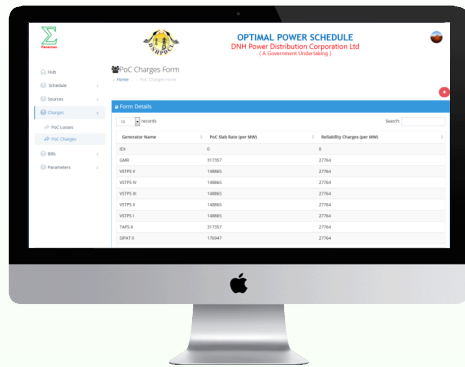
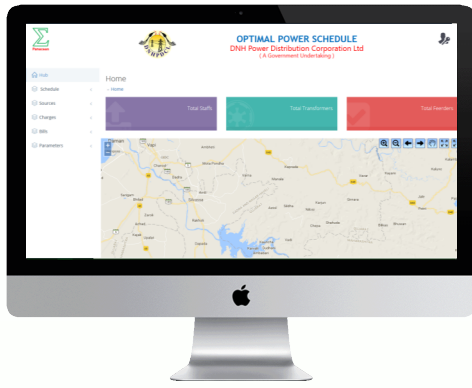
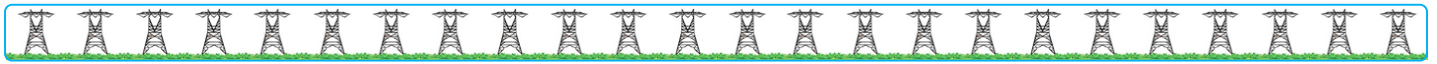
LAYER FACILITY:

LGiven 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:

DProvision 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.

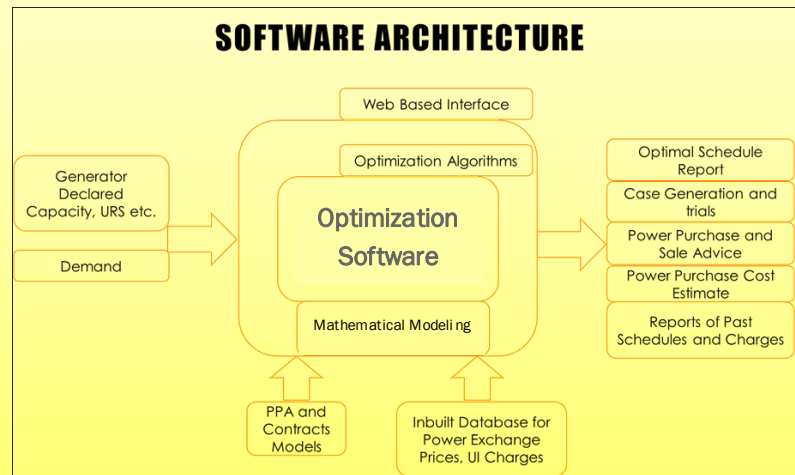




OPTIMAL POWER SCHEDULING SOFTWARE

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.