



I. State Entities	Station	Effective Installed Capacity (MW)	Peak MW	Off Peak MW	Energy(MU)	Average(Sent out MW)	
Punjab	Guru Gobind Singh TPS (Ropar) (6*210)	1260	160	160	3.46	144	
	Guru Nanak Dev TPS(Bhatinda) (2*110+2*120)	460	0	0	-0.06	-2	
	Guru Hargobind Singh TPS(L.mbt) (2*210+2*250)	920	204	207	4.50	188	
	Goindwal(GVK) (2*270)	540	0	0	-0.03	-1	
	Rajpura (2*700)	1400	1320	660	26.36	1099	
	Talwandi Saboo (3*660)	1980	1324	924	25.71	1071	
	<b>Thermal (Total)</b>	<b>6560</b>	<b>3008</b>	<b>1951</b>	<b>59.96</b>	<b>2498</b>	
	Total Hydro	1000	650	498	13.62	567	
	Wind Power	0	0	0	0.00	0	
	Biomass	288	6	7	0.13	6	
	Solar	560	3	3	0.07	3	
	<b>Renewable(Total)</b>	<b>848</b>	<b>8</b>	<b>9</b>	<b>0.20</b>	<b>8</b>	
	<b>Total Punjab</b>	<b>8408</b>	<b>3666</b>	<b>2458</b>	<b>73.77</b>	<b>3074</b>	
	Haryana	Panipat TPS (2*210+2*250)	920	761	745	17.55	731
		DCRTPP (Yamuna nagar) (2*300)	600	556	463	11.27	470
Faridabad GPS (NTPC)(2*137.75+1*156)		432	0	0	0.00	0	
RGTPP (khedar) (IPP) (2*600)		1200	877	751	19.96	832	
Magnum Diesel (IPP)		25	0	0	0.00	0	
Jhajjar(CLP) (2*660)		1320	0	0	0.00	0	
<b>Thermal (Total)</b>		<b>4497</b>	<b>2194</b>	<b>1959</b>	<b>48.78</b>	<b>2033</b>	
Total Hydro		62	28	26	0.79	33	
Wind Power		0	0	0	0.00	0	
Biomass		40	0	0	0.00	0	
Solar		0	0	0	0.00	0	
<b>Renewable(Total)</b>		<b>40</b>	<b>0</b>	<b>0</b>	<b>0.00</b>	<b>0</b>	
<b>Total Haryana</b>		<b>4599</b>	<b>2222</b>	<b>1985</b>	<b>49.57</b>	<b>2065</b>	
Rajasthan		kota TPS (2*110+2*195+3*210)	1240	339	330	8.46	353
		suratgarh TPS (6*250)	1500	0	0	0.00	0
	Chabra TPS (4*250)	1000	885	741	19.88	828	
	Dholpur GPS (3*110)	330	0	0	0.00	0	
	Ramgarh GPS(1*37.5 + 1*35.5 +2*37.5 +1*110 +1*50)	271	126	124	3.03	126	
	RAPS A (NPC) (1*100+1*200)	300	167	167	4.18	174	
	Barsingsar (NLC) (2*125)	250	227	227	5.35	223	
	Giral LTPS (2*125)	250	0	0	0.00	0	
	Rajwest LTPS (IPP) (8*135)	1080	795	490	16.11	671	
	VS LIGNITE LTPS (IPP) (1*135)	135	0	0	0.00	0	
	Kalisindh Thermal(2*600)	1200	495	417	11.50	479	
	Kawai(Adani) (2*660)	1320	1115	974	26.62	1109	
	<b>Thermal (Total)</b>	<b>8876</b>	<b>4149</b>	<b>3470</b>	<b>95.12</b>	<b>3963</b>	
	Total Hydro	550	115	161	3.28	137	
	Wind power	4017	355	910	17.12	713	
	Biomass	99	23	23	0.56	23	
	Solar	1295	0	0	2.55	106	
	Renewable/Others (Total)	5411	378	933	20.23	843	
<b>Total Rajasthan</b>	<b>14837</b>	<b>4642</b>	<b>4564</b>	<b>118.62</b>	<b>4943</b>		
UP	Anpara TPS (3*210+2*500)	1630	1170	1075	26.90	1121	
	Obra TPS (2*50+2*94+5*200)	1194	273	234	4.60	192	
	Paricha TPS (2*110+2*220+2*250)	1160	882	880	18.80	783	
	Panki TPS (2*105)	210	153	135	3.40	142	
	Harduaganj TPS (1*60+1*105+2*250)	665	433	434	9.60	400	
	Tanda TPS (NTPC) (4*110)	440	384	375	8.80	367	
	Roza TPS (IPP) (4*300)	1200	1200	1112	24.80	1033	
	Anpara-C (IPP) (2*600)	1200	990	995	23.20	967	
	Bajaj Energy Pvt.Ltd(IPP) TPS (10*45)	450	404	404	8.40	350	
	Anpara-D(2*500)	1000	0	864	12.70	529	
	Lalitpur TPS(3*660)	1980	590	0	10.40	433	
	Bara(2*660)	1320	0	0	0.00	0	
	<b>Thermal (Total)</b>	<b>12449</b>	<b>6479</b>	<b>6508</b>	<b>151.60</b>	<b>6317</b>	
	Vishnuparyag HPS (IPP)(4*110)	440	221	216	8.40	350	
	Alaknada(4*82.5)	330	84	84	3.40	142	
	Other Hydro	527	279	251	6.10	254	
	Cogeneration	981	50	50	1.20	50	
	Wind Power	0	0	0	0.00	0	
	Biomass	26	0	0	0.00	0	
	Solar	102	0	0	0.00	0	
<b>Renewable(Total)</b>	<b>128</b>	<b>0</b>	<b>0</b>	<b>0.00</b>	<b>0</b>		
<b>Total UP</b>	<b>14855</b>	<b>7113</b>	<b>7109</b>	<b>170.70</b>	<b>7113</b>		
Uttarakhand	Other Hydro	1250	547	407	11.48	478	
	Total Gas	225	158	174	3.74	156	
	Wind Power	0	0	0	0.00	0	
	Biomass	127	0	0	0.00	0	
	Solar	20	0	0	0.06	3	
	Small Hydro (< 25 MW)	180	0	0	0.00	0	
	<b>Renewable(Total)</b>	<b>327</b>	<b>0</b>	<b>0</b>	<b>0.06</b>	<b>3</b>	
	<b>Total Uttarakhand</b>	<b>1802</b>	<b>705</b>	<b>581</b>	<b>15.28</b>	<b>637</b>	
Delhi	Rajghat TPS (2*67.5)	135	0	0	-0.02	-1	
	Delhi Gas Turbine (6x30 + 3x34)	282	74	76	1.82	76	
	Pragati Gas Turbine (2x104+ 1x122)	330	146	152	3.68	153	
	Rithala GPS (3*36)	95	0	0	0.00	0	
	Bawana GPS (4*216+2*253)	1370	251	251	6.05	252	
	Badarpur TPS (NTPC) (3*95+2*210)	705	330	327	7.15	298	
	<b>Thermal (Total)</b>	<b>2917</b>	<b>801</b>	<b>806</b>	<b>18.67</b>	<b>778</b>	
	Wind Power	0	0	0	0.00	0	
	Biomass	16	0	0	0.00	0	
	Solar	2	0	0	0.00	0	
<b>Renewable(Total)</b>	<b>18</b>	<b>0</b>	<b>0</b>	<b>0.00</b>	<b>0</b>		
<b>Total Delhi</b>	<b>2935</b>	<b>801</b>	<b>806</b>	<b>18.67</b>	<b>778</b>		

HP	Baspa HPS (IPP) (3*100)	300	63	104	2.48	103
	Malana HPS (IPP) (2*43)	86	41	0	0.50	21
	Other Hydro	372	173	152	3.55	148
	Wind Power	0	0	0	0.00	0
	Biomass	0	0	0	0.00	0
	Solar	0	0	0	0.00	0
	Small Hydro (< 25 MW)	486	136	129	3.15	131
	<b>Renewable(Total)</b>	<b>486</b>	<b>136</b>	<b>129</b>	<b>3.15</b>	<b>131</b>
	<b>Total HP</b>	<b>1244</b>	<b>414</b>	<b>385</b>	<b>9.68</b>	<b>404</b>
	J & K	Baglihar HPS (IPP) (3*150+3*150)	900	291	291	6.98
Other Hydro/IPP(including 98 MW Small Hydro)		308	138	93	2.77	115
Gas/Diesel/Others		190	0	0	0.00	0
Wind Power		0	0	0	0.00	0
Biomass		0	0	0	0.00	0
Solar		0	0	0	0.00	0
Small Hydro (< 25 MW)Included in Other Hydro Above		98	0	0	0.00	0
<b>Renewable(Total)</b>		<b>98</b>	<b>0</b>	<b>0</b>	<b>0.00</b>	<b>0</b>
<b>Total J &amp; K</b>		<b>1398</b>	<b>429</b>	<b>384</b>	<b>10</b>	<b>406</b>
<b>Total State Control Area Generation</b>		<b>50078</b>	<b>19992</b>	<b>18272</b>	<b>466.05</b>	<b>19419</b>
<b>J. Net Inter Regional Exchange [Import (+ve)/Export (-ve)]</b>		<b>8185</b>	<b>8841</b>	<b>209.19</b>	<b>8716</b>	
<b>Total Regional Availability(Gross)</b>	<b>75315</b>	<b>45825</b>	<b>36376</b>	<b>940.10</b>	<b>39171</b>	

IV. Total Hydro Generation:

Regional Entities Hydro	12234	10305	2232	104.59	4358
State Control Area Hydro	7163	2925	2586	66.50	2929
<b>Total Regional Hydro</b>	<b>19397</b>	<b>13230</b>	<b>4818</b>	<b>171.10</b>	<b>7287</b>

V. Total Renewable Generation:

Regional Entities Renewable	30	0	0	0.13	5
State Control Area Renewable	7356	523	1071	23.64	985
<b>Total Regional Renewable</b>	<b>7386</b>	<b>523</b>	<b>1071</b>	<b>23.77</b>	<b>990</b>

VI(A). Inter Regional Exchange [Import (+ve)/Export (-ve)] [Linkwise]

Element	Peak(19:00 Hrs) MW	Off Peak(03:00 Hrs) MW	Maximum Interchange (MW)		Energy (MU)		Net Energy MU
			Import	Export	Import	Export	
Vindhychall(HVDC B/B)	50	-500	50	500	0.40	6.47	-6.07
765 KV Gwalior-Agra (D/C)	2110	2440	2591	0	53.35	0.00	53.35
400 KV Zerda-Kankroli	235	118	235	0	3.58	0.00	3.58
400 KV Zerda-Bhinmal	132	115	248	11	3.41	0.00	3.41
220 KV Auraiya-Malanpur	-62	-60	0	79	0.00	1.44	-1.44
220 KV Badod-Kota/Morak	177	187	121	0	4.03	0.00	4.03
Mundra-Mohindergerh(HVDC Bipole)	1200	1502	1505	0.00	32.76	0.00	32.76
400 KV Vindhychal - Rihand	0	0	0	0	0.00	0.00	0.00
765 kV Phagi-Gwalior (D/C)	799	1135	668	0	25.41	0.00	25.41
<b>Sub Total WR</b>	<b>4641</b>	<b>4937</b>			<b>122.93</b>	<b>7.90</b>	<b>115.03</b>
Pusauli Bypass/HVDC	90	70	150	0	2.28	0.00	2.28
400 KV MZP- GKP (D/C)	395	752	795	0	16.40	0.00	16.40
400 KV Patna-Balia(D/C) X 2	571	650	776	0	15.61	0.00	15.61
400 KV B Sharif-Balia (D/C)	157	246	298	0	5.62	0.00	5.62
765 KV Gaya-Balia	250	309	314	0	6.38	0.00	6.38
765 KV Gaya-Varanasi (D/C)	669	702	0	0	16.25	0.00	16.25
220 KV Pusauli-Sahupuri	0	0	0	0	0.00	0.00	0.00
132 KV K'nasa-Sahupuri	-24	-28	0	31	0.00	0.56	-0.56
132 KV Son Ngr-Rihand	0	-20	0	20	0.00	0.21	-0.21
132 KV Garhwa-Rihand	0	0	0	0	0.00	0.00	0.00
765 KV Sasaram - Fatehpur	122	78	275	0	3.45	0.00	3.45
400 KV Barh -GKP (D/C)	408	414	436	0	9.26	0.00	9.26
400 kV B Sharif - Varanasi (D/C)	206	231	353	0	5.77	0.00	5.77
<b>Sub Total ER</b>	<b>2844</b>	<b>3404</b>			<b>81.02</b>	<b>0.77</b>	<b>80.25</b>
+/- 800 KV BiswanathChariali-Agra	700	500	700	0.00	13.92	0.00	13.92
<b>Sub Total NER</b>	<b>700</b>	<b>500</b>			<b>13.92</b>	<b>0.00</b>	<b>13.92</b>
<b>Total IR Exch</b>	<b>8185</b>	<b>8841</b>			<b>217.86</b>	<b>8.67</b>	<b>209.19</b>

VI(B). Inter Regional Schedule & Actual Exchanges [Import (+ve)/Export (-ve)] [Corridor wise]

ISGS/LT Schedule (MU)			Bilateral Schedule (MU)		Power Exchange Shdl (MU)		Wheeling (MU)	
ER	Bhutan	Total	Through ER	Through WR	Through ER	Through WR	Through ER	Through WR
44.47	3.62	48.09	14.97	12.16	14.27	19.35	0.00	0.00

Total IR Schedule (MU)			Total IR Actual (MU)			Net IR UI (MU)		
Through ER	Through WR Inclds Mndra	Total	Through ER(including NER)	Through WR	Total	Through ER (including NER)	Through WR	Total
77.34	126.67	204.01	94.17	115.03	209.19	16.83	-11.64	5.18

VI(C). Inter National Exchange with Nepal [Import (+ve)/Export (-ve)] [Linkwise]

Element	Peak(19:00 Hrs) MW	Off Peak(03:00 Hrs) MW	Maximum Interchange (MW)		Energy (MU)		Net Energy MU
			Import	Export	Import	Export	
132 KV Tanakpur - Mahendarnagar	-27	0	0	29	0	0	-0.13

VII. Frequency Profile <----- % of Time Frequency ----->

<49.2	<49.7	<49.8	<49.9	<50.0	49.9-50.05	50.05-50.10	50.10-50.20	>50.20	>50.50
0.00	0.00	0.00	4.19	51.97	79.04	13.17	3.47	0.17	0.00

<----- Frequency (Hz) ----->				Average Frequency	Frequency Variation	Std. Dev.	Frequency in 15 Min Block		Freq Dev Index (% of Time)
Maximum		Minimum					MAX	MIN	
Freq	Time	Freq	Time	Hz	Index	(Hz)	(Hz)		
50.23	18.01	49.82	10.21	50.00	0.033	0.057	50.16	49.97	20.96

## VIII(A). Voltage profile 400 kV

Station	Voltage Level (kV)	Maximum		Minimum		Voltage (in % of Time)				Voltage Deviat
		Voltage(KV)	Time	Voltage (KV)	Time	<380 kV	<390 kV	>420 kV	>430 kV	
Rihand	400	411	17:06	404	2:54	0.0	0.0	0.0	0.0	0.0
Gorakhpur	400	422	18:03	403	0:16	0.0	0.0	0.6	0.0	0.6
Bareilly(PG)400kV	400	404	0:00	404	0:00	0.0	0.0	0.0	0.0	0.0
Kanpur	400	417	3:59	402	11:15	0.0	0.0	0.0	0.0	0.0
Dadri	400	421	3:53	398	18:47	0.0	0.0	0.8	0.0	0.8
Ballabgarh	400	430	4:00	399	18:47	0.0	0.0	26.8	0.0	26.8
Bawana	400	424	3:59	398	18:47	0.0	0.0	12.8	0.0	12.8
Bassi	400	426	3:59	391	18:47	0.0	0.0	5.7	0.0	5.7
Hissar	400	421	4:00	394	18:47	0.0	0.0	0.4	0.0	0.4
Moga	400	422	2:36	398	18:47	0.0	0.0	1.4	0.0	1.4
Abdullapur	400	429	1:51	403	18:45	0.0	0.0	36.4	0.0	36.4
Nalagarh	400	437	4:03	405	18:56	0.0	0.0	44.6	20.3	44.6
Kishenpur	400	427	3:54	396	18:25	0.0	0.0	21.5	0.0	21.5
Wagoora	400	416	2:53	368	18:26	5.2	38.6	0.0	0.0	5.2
Amritsar	400	422	23:29	402	10:33	0.0	0.0	2.7	0.0	2.7
Kashipur	400	0	0:00	0	0:00	0.0	0.0	0.0	0.0	0.0
Hamirpur	400	423	0:00	401	11:39	0.0	0.0	35.9	0.0	35.9
Rishikesh	400	414	5:03	391	10:18	0.0	0.0	0.0	0.0	0.0

## VIII(B). Voltage profile 765 kV

Station	Voltage Level (kV)	Maximum		Minimum		Voltage (in % of Time)				Voltage Deviat
		Voltage(KV)	Time	Voltage (KV)	Time	<728 kV	<742 kV	>800 kV	>820 kV	
Fatehpur	765	778	17:32	738	18:46	0.0	0.7	0.0	0.0	0.0
Balia	765	772	2:42	764	0:17	0.0	0.0	0.0	0.0	0.0
Moga	765	802	1:59	758	11:15	0.0	0.0	0.8	0.0	0.8
Agra	765	791	3:59	750	18:46	0.0	0.0	0.0	0.0	0.0
Bhiwani	765	805	3:41	761	18:46	0.0	0.0	12.3	0.0	12.3
Unnao	765	769	17:31	738	10:19	0.0	5.9	0.0	0.0	0.0
Lucknow	765	791	17:31	757	10:21	0.0	0.0	0.0	0.0	0.0
Meerut	765	781	5:20	773	0:00	0.0	0.0	0.0	0.0	0.0
Jhatikara	765	795	17:31	758	18:46	0.0	0.0	0.0	0.0	0.0
Bareilly 765 kV	765	784	17:30	749	11:14	0.0	0.0	0.0	0.0	0.0
Anta	765	794	3:55	758	18:44	0.0	0.0	0.0	0.0	0.0
Phagi	765	805	4:02	758	18:46	0.0	0.0	0.5	0.0	0.5

Note : '0' in Max / Min Col -&gt; Telemetry Outage

## IX. Reservoir Parameters:

Name of Reservoir	Parameters		Present Parameters		Last Year		Last day	
	FRL (m)	MDDL (m)	Level (m)	Energy (MU)	Level (m)	Energy (MU)	Inflow (m <sup>3</sup> /s)	Usage (m <sup>3</sup> /s)
Bhakra	513.59	445.62	501.46	1153.36	510.51	1575.10	324.96	618.50
Pong	426.72	384.05	415.87	705.67	420.05	889.22	93.22	256.89
Tehri	829.79	740.04	824.60	1099.39	820.40	1014.90	132.20	141.00
Koteswar	612.50	598.50	608.91	3.98	610.98	4.95	141.00	141.36
Chamera-I	760.00	748.75	757.90	0.00	0.00	0.00	82.34	85.86
Rihand	268.22	252.98	0.00	0.00	0.00	0.00	0.00	0.00
RPS	352.80	343.81	0.00	0.00	0.00	0.00	0.00	0.00
Jawahar Sagar	298.70	295.78	0.00	0.00	0.00	0.00	0.00	0.00
RSD	527.91	487.91	516.34	5.20	513.46	3.31	104.23	171.04

\* NA: Not Available

## X(A). Short-Term Open Access Details:

State	Off- Peak Hours (03:00 Hrs)			Peak Hours (19:00 Hrs)			Day Energy (MU)		
	Bilateral (MW)	IEX (MW)	PXIL (MW)	Bilateral (MW)	IEX (MW)	PXIL (MW)	Bilateral (MU)	IEX / PXIL (MU)	Total (MU)
Punjab	225	0	0	286	2	0	7.28	0.01	7.29
Delhi	51	16	0	112	97	0	3.41	1.25	4.66
Haryana	569	-52	0	571	309	0	13.54	6.02	19.56
HP	-54	-38	0	-133	-283	0	-1.78	-2.79	-4.57
J&K	-37	69	0	62	214	0	1.31	3.78	5.09
CHD	0	0	0	0	0	-10	0.00	0.30	0.30
Rajasthan	-5	603	0	-7	638	0	-0.13	14.74	14.61
UP	135	1464	0	233	83	0	3.24	7.22	10.46
Uttarakhand	27	255	0	27	254	0	0.66	7.97	8.63
Total	913	2317	0	1151	1312	-10	27.53	38.51	66.03

## X(B). Short-Term Open Access Details:

State	Bilateral (MW)		IEX (MW)		PXIL (MW)	
	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum
Punjab	386	167	2	0	0	0
Delhi	212	51	221	-88	0	0
Haryana	717	368	338	-126	0	0
HP	-54	-133	104	-509	0	0
J&K	124	-37	298	0	0	0
CHD	0	0	0	0	39	-20
Rajasthan	-5	-7	638	504	0	0
UP	238	28	1470	-100	0	0
Uttarakhand	27	27	576	152	0	0

**XI. System Reliability Indices(Violation of TTC and ATC):**

(i)%age of times N-1 Criteria was violated in the inter - regional corridors

<b>WR</b>	<b>0.00%</b>
<b>ER</b>	<b>0.00%</b>
<b>Simultaneous</b>	<b>0.00%</b>

(ii)%age of times ATC violated on the inter-regional corridors

<b>WR</b>	<b>0.00%</b>
<b>ER</b>	<b>0.00%</b>
<b>Simultaneous</b>	<b>0.00%</b>

(iii)%age of times Angular Difference on Important Buses was beyond permissible limits(40 deg.)

<b>Rihand - Dadri</b>	<b>0.00%</b>
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**XII. Zero Crossing Violations**

State	No. of violations(Maximum 8 in a day)	Maximum number of continuous blocks without sign change
Punjab	1	16
Haryana	1	16
Rajasthan	2	21
Delhi	3	29
UP	2	19
Uttarakhand	2	16
HP	3	43
J & K	4	31
Chandigarh	4	28

**XIII. System Constraints:****XIV. Grid Disturbance / Any Other Significant Event:****XV. Weather Conditions For 12.10.2016 :**  
Normal**XVI. Synchronisation of new generating units :****XVII. Synchronisation of new 220 / 400 / 765 KV lines and energising of bus / /substation :****XVIII. Tripping of lines in pooling stations :****XIX. Complete generation loss in a generating station :**

Note: Data(regarding drawal,generation, shortage , inter-regional flows and reservoir levels)of the constituents filled in the report are as per last furnished data by the respective state/constituent to NRLDC.