



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	3.88	162	
	Guru Nanak Dev TPS(Bhatinda) (2*110+2*120)	460	0	0	-0.04	-2	
	Guru Har Gobind Singh TPS(L.mbt) (2*210+2*250)	920	0	0	-0.10	-4	
	Goindwal(GVK)	0	0	0	0.00	0	
	Rajpura (2*700)	1400	1188	700	24.51	1021	
	Talwandi Saboo (2*660)	1320	461	340	11.13	464	
	<b>Thermal (Total)</b>	<b>5360</b>	<b>1809</b>	<b>1200</b>	<b>39.37</b>	<b>1641</b>	
	Total Hydro	1000	294	298	7.73	322	
	<b>Total Punjab</b>	<b>6360</b>	<b>2103</b>	<b>1498</b>	<b>47.10</b>	<b>1963</b>	
	Haryana	Panipat TPS (4*110+2*210+2*250)	1367	620	584	13.57	565
DCRTPP (Yamuna nagar) (2*300)		600	555	458	11.78	491	
Faridabad GPS (NTPC)		432	0	0	0.00	0	
RGTPP (Khedar) (IPP) (2*600)		1200	588	787	18.49	770	
Magnum Diesel (IPP)		25	0	0	0.00	0	
Jhajjar(CLP) (2*660)		1320	544	0	4.55	190	
<b>Thermal (Total)</b>		<b>4944</b>	<b>2307</b>	<b>1829</b>	<b>48.39</b>	<b>2016</b>	
Total Hydro		62	9	10	0.41	17	
<b>Total Haryana</b>		<b>5006</b>	<b>2316</b>	<b>1839</b>	<b>48.80</b>	<b>2033</b>	
Rajasthan		kota TPS (2*110+2*195+3*210)	1240	859	874	21.23	885
	suratgarh TPS (6*250)	1500	759	760	18.46	769	
	Chabra TPS (4*250)	1000	644	621	14.54	606	
	Dholpur GPS (3*110)	330	98	108	2.23	93	
	Ramgarh GPS (1*37.5 + 1*35.5 +2*37.5 +1*110 +1*50)	271	200	193	4.87	203	
	RAPS A (NPC) (1*100+1*200)	300	0	0	0.00	0	
	Barsingsar (NLC) (2*125)	250	176	179	4.10	171	
	Giral LTPS (2*125)	250	0	0	0.00	0	
	Rajwast LTPS (IPP) (8*135)	1080	719	842	20.18	841	
	VS LIGNITE LTPS (IPP) (1*135)	135	0	0	0.00	0	
	Kalisindh Thermal(2*600)	1200	852	890	22.53	939	
	Kawai(Adani) (2*660)	1320	881	864	25.02	1043	
	<b>Thermal (Total)</b>	<b>8876</b>	<b>5188</b>	<b>5331</b>	<b>133</b>	<b>5548</b>	
	Total Hydro	550	161	206	4.93	205	
	Wind power	3214	21	289	4.20	175	
	Biomass	99	20	20	0.47	20	
	Solar	730	0	0	0.41	17	
	Renewable/Others (Total)	4043	41	309	5.08	212	
	<b>Total Rajasthan</b>	<b>13469</b>	<b>5390</b>	<b>5846</b>	<b>143.17</b>	<b>5965</b>	
	UP	Anpara TPS (3*210+2*500)	1630	1220	1241	29.50	1229
		Obra TPS (2*50+2*94+5*200)	1194	430	436	10.50	438
		Paricha TPS (2*110+2*220+2*250)	1140	696	670	16.30	679
		Panki TPS (2*105)	210	0	0	0.00	0
Harduaaganj TPS (1*60+1*105+2*250)		665	320	319	7.60	317	
Tanda TPS (NTPC) (4*110)		440	395	380	9.15	381	
Roza TPS (IPP) (4*300)		1200	378	549	11.90	496	
Anpara-C (IPP) (2*600)		1200	1085	995	24.40	1017	
Bajaj Energy Pvt.Ltd(IPP) TPS (10*45)		450	0	0	0.00	0	
Anpara-D(1*500)		500	0	0	0.00	0	
Lalitpur TPS(2*660)		1320	0	0	0.00	0	
Bara(2*660)		1320	0	0	0.00	0	
<b>Thermal (Total)</b>		<b>11269</b>	<b>4524</b>	<b>4590</b>	<b>109</b>	<b>4556</b>	
Vishnuparyag HPS (IPP)(4*110)		440	65	64	1.50	63	
Alakanada(4*82.5)		330	78	0	1.00	42	
Other Hydro		527	0	0	0.00	0	
Cogeneration		981	800	800	19.20	800	
<b>Total UP</b>	<b>13547</b>	<b>5467</b>	<b>5454</b>	<b>131</b>	<b>5461</b>		
Uttarakhand	Total Hydro	1398	618	358	10.49	437	
	<b>Total Uttarakhand</b>	<b>1398</b>	<b>618</b>	<b>358</b>	<b>10.49</b>	<b>437</b>	
Delhi	Rajghat TPS (2*67.5)	135	0	0	-0.01	0	
	Delhi Gas Turbine (6x30 + 3x34)	282	34	33	0.92	38	
	Praagati Gas Turbine (2x104+ 1x122)	330	141	140	3.22	134	
	Rithala GPS (3*36)	95	0	0	0.00	0	
	Bawana GPS (4*216+2*253)	1370	252	250	6.03	251	
	Badarpur TPS (NTPC) (3*95+2*210)	705	162	165	4.55	190	
	<b>Thermal (Total)</b>	<b>2917</b>	<b>589</b>	<b>588</b>	<b>14.71</b>	<b>613</b>	
	<b>Total Delhi</b>	<b>2917</b>	<b>589</b>	<b>588</b>	<b>14.71</b>	<b>613</b>	
HP	Baspa HPS (IPP) (3*100)	300	29	0	0.89	37	
	Malana HPS (IPP) (2*43)	86	0	0	0.17	7	
	Other Hydro	878	124	59	2.30	96	
	<b>Total HP</b>	<b>1264</b>	<b>153</b>	<b>59</b>	<b>3.35</b>	<b>140</b>	
J & K	Baglihar HPS (IPP) (3*150)	450	112	112	3.47	144	
	Other Hydro/IPP	560	95	72	1.83	76	
	Gas/Diesel/Others	190	0	0	0.00	0	
	<b>Total J &amp; K</b>	<b>1200</b>	<b>207</b>	<b>184</b>	<b>5.29</b>	<b>221</b>	
<b>Total State Control Area Generation</b>		<b>45161</b>	<b>16843</b>	<b>15826</b>	<b>403.96</b>	<b>16832</b>	
<b>J. Net Inter Regional Exchange</b> (Import (+ve)/Export (-ve))			<b>7289</b>	<b>5703</b>	<b>182.09</b>	<b>7587</b>	
<b>Total Regional Availability(Gross)</b>		<b>70398</b>	<b>42987</b>	<b>31074</b>	<b>871.45</b>	<b>36310</b>	

#### IV. Total Hydro Generation:

Regional Entities Hydro	12234	8732	1003	71.01	2959
State Control Area Hydro	6581	1585	1179	35	1446
<b>Total Regional Hydro</b>	<b>18815</b>	<b>10317</b>	<b>2182</b>	<b>105.71</b>	<b>4405</b>

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

Element	Peak(19:00 Hrs)		Off Peak(03:00 Hrs)		Maximum Interchange (MW)		Energy (MU)		Net Energy MU
	MW	MW	MW	MW	Import	Export	Import	Export	
Vindhychal(HVDC B/B)	250	-100	-100	450	400	400	5.38	1.42	3.96
765 KV Gwalior-Agra (D/C)	2406	2359	2359	3188	0	0	67.13	0.00	67.13
400 KV Zerda-Kankroli	-4	-211	-211	65	218	0	0.00	1.17	-1.17
400 KV Zerda-Bhinmal	80	-121	-121	203	144	0	1.52	0.00	1.52
220 KV Auraiya-Malanpur	-89	-75	-75	0	121	0	0.00	1.85	-1.85
220 KV Badod-Kota/Morak	17	-4	-4	40	14	0	0.82	0.00	0.82
Mundra-Mohindergarh(HVDC Bipole)	2500	2500	2500	2519	0	0	60.45	0.00	60.45
400 KV Vindhychal - Rihand	0	799	799	0	0	0	0.00	0.00	0.00
765 KV Phagi-Gwalior (D/C)	1031	5147	5147	1254	0	0	23.69	0.00	23.69
<b>Sub Total WR</b>	<b>6191</b>	<b>5147</b>	<b>5147</b>				<b>159.00</b>	<b>4.45</b>	<b>154.55</b>
Pusauli Bypass/HVDC	400	400	400	400	495	0	7.19	1.26	5.93
400 KV MZP- GKP (D/C)	280	188	188	0	464	0	0.00	6.80	-6.80
400 KV Patna-Balia(D/C) X 2	-337	-527	-527	622	0	0	11.63	0.00	11.63
400 KV B' Sharif-Balia (D/C)	167	50	50	0	183	0	0.00	1.70	-1.70
765 KV Gaya-Balia	-122	-166	-166	268	0	0	2.10	0.00	2.10
765 KV Gaya-Fatehpur	-56	-108	-108	313	0	0	4.23	0.00	4.23
220 KV Pusauli-Sahupuri	132	150	150	1161	0	0	3.28	0.00	3.28
132 KV K'nasa-Sahupuri	0	0	0	0	0	0	0.00	0.00	0.00
132 KV Son Ngr-Rihand	-26	-23	-23	0	30	0	0.00	0.58	-0.58
132 KV Garhwa-Rihand	0	0	0	0	0	0	0.00	0.00	0.00
765 KV Sasaram - Fatehpur	244	138	138	125	244	0	0.00	1.29	-1.29
400 KV Barh -GKP (D/C)	416	454	454	512	0	0	10.74	0.00	10.74
<b>Sub Total ER</b>	<b>1098</b>	<b>556</b>	<b>556</b>				<b>39.17</b>	<b>11.63</b>	<b>27.54</b>
+/- 800 KV BiswanathCharialli-Agra	0	0	0	0	0	0	0.00	0.00	0.00
<b>Sub Total NER</b>	<b>0</b>	<b>0</b>	<b>0</b>				<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Total IR Exch</b>	<b>7289</b>	<b>5703</b>	<b>5703</b>				<b>198.16</b>	<b>16.08</b>	<b>182.09</b>

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

ISGS/LT Schedule (MU)			Bilateral Schedule (MU)			Power Exchange Shdli (MU)		Wheeling (MU)	
ER	Bhutan	Total	Through ER	Through WR	Through ER	Through WR	Through ER	Through WR	
31.14	0.17	31.31	3.29	-1.99	0.00	22.99	0.00	0.00	
<b>Total IR Schedule (MU)</b>			<b>Total IR Actual (MU)</b>			<b>Net IR UI (MU)</b>			
Through ER	Through WR Inclds Mndra	Total	Through ER(including NER)	Through WR	Total	Through ER(including NER)	Through WR	Total	
34.60	141.36	175.96	27.54	154.55	182.09	-7.07	13.19	6.12	

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

Element	Peak(19:00 Hrs)		Off Peak(03:00 Hrs)		Maximum Interchange (MW)		Energy (MU)		Net Energy MU
	MW	MW	MW	MW	Import	Export	Import	Export	
132 KV Tanakpur - Mahendarnagar	28	31	31	0	32	0	0	1	-0.71

**VI. 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	1.93	33.33	66.92	22.78	8.09	0.36	0.00

<----- Frequency (Hz) ----->				Average Frequency	Frequency Variation Index	Std. Dev.	Frequency in 15 Min Block		Freq Dev Index (% of Time)
Maximum	Minimum		MIN						
Freq	Time	Freq	Time	Hz	Index		(Hz)	(Hz)	
50.24	18.02	49.83	22.07	50.02	0.040	0.059	50.23	49.99	33.08

**VII. Voltage profile 400 kV**

Station	Voltage Level (kV)	Maximum		Minimum		Voltage (in % of Time)				Voltage Deviation Index (% of Time)
		Voltage(KV)	Time	Voltage (KV)	Time	<380 kV	<390 kV	>420 kV	>430 kV	
Rihand	400	407	03:01	398	14:36	0.0	0.0	0.0	0.0	0.0
Gorakhpur	400	421	05:03	403	18:42	0.0	0.0	0.1	0.0	0.1
Bareilly(PG)400kV	400	422	04:01	400	07:47	0.0	0.0	2.6	0.0	2.6
Kanpur	400	420	02:58	404	09:36	0.0	0.0	0.0	0.0	0.0
Dadr	400	427	02:58	408	09:16	0.0	0.0	22.0	0.0	22.0
Ballabgarh	400	432	02:58	408	09:16	0.0	0.0	33.5	1.7	33.5
Bawana	400	431	02:56	410	09:16	0.0	0.0	32.2	0.5	32.2
Bassi	400	424	21:49	397	09:15	0.0	0.0	3.0	0.0	3.0
Hissar	400	423	21:54	396	07:47	0.0	0.0	7.2	0.0	7.2
Moga	400	424	01:43	406	09:16	0.0	0.0	16.9	0.0	16.9
Abdullapur	400	426	21:49	409	17:52	0.0	0.0	34.4	0.0	34.4
Nalagarh	400	436	21:52	413	09:15	0.0	0.0	54.9	11.8	54.9
Kishenpur	400	423	01:58	398	18:40	0.0	0.0	13.1	0.0	13.1
Wagoora	400	401	13:01	369	18:48	21.7	75.1	0.0	0.0	21.7
Amritsar	400	430	01:58	174	22:02	0.0	0.0	35.7	0.0	35.8
Kashipur	400	422	02:57	414	07:41	0.0	0.0	16.9	0.0	16.9
Hamirpur	400	420	04:55	410	07:51	0.0	0.0	0.0	0.0	0.0
Rishkesh	400	416	21:47	398	09:15	0.0	0.0	0.0	0.0	0.0

**VIII. Voltage profile 765 kV**

Station	Voltage Level (kV)	Maximum		Minimum		Voltage (in % of Time)				Voltage Deviation Index (% of Time)
		Voltage(KV)	Time	Voltage (KV)	Time	<728 kV	<742 kV	>800 kV	>820 kV	
Fatehpur	765	777	01:06	746	10:07	0.0	0.0	0.0	0.0	0.0
Balia	765	774	05:03	470	09:34	3.5	3.5	0.0	0.0	3.5
Moga	765	801	02:55	769	09:18	0.0	0.0	0.5	0.0	0.5
Agra	765	790	01:05	751	09:17	0.0	0.0	0.0	0.0	0.0
Bhiwani	765	804	01:41	769	09:10	0.0	0.0	11.2	0.0	11.2
Unnao	765	772	04:01	740	10:13	0.0	2.4	0.0	0.0	0.0
Lucknow	765	790	04:02	761	16:47	0.0	0.0	0.0	0.0	0.0
Meerut	765	811	21:50	772	09:11	0.0	0.0	17.7	0.0	17.7
Jhatikara	765					48.7	48.7	9.0	0.0	57.7
Bareilly 765 kV	765	793	04:01	759	14:36	0.0	0.0	0.0	0.0	0.0
Anta	765	781	18:17	756	09:17	0.0	0.0	0.0	0.0	0.0
Phagi	765	791	21:56	751	09:08	0.0	0.0	0.0	0.0	0.0

**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	493.30	838.00	489.13	709.72	193.60	516.27
Pong	426.72	384.05	403.32	296.79	400.27	223.85	84.95	464.14
Tehri	829.79	740.04	783.50	365.45	793.50	509.80	78.34	214.00
Koteshwar	612.50	598.50	610.86	4.95	610.55	4.95	214.00	203.43
Chamera-I	760.00	748.75	758.23	0.00	0.00	0.00	49.34	54.61
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	495.50	0.53	502.29	1.91	45.98	35.20

\* 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	-95	213	0	-376	108	0	-3.40	3.48	0.09
Delhi	-943	-394	-3	-707	296	-3	-17.24	0.40	-16.84
Haryana	-352	301	0	-377	296	0	-9.74	5.50	-4.24
HP	194	172	0	511	2	0	10.56	-0.76	9.80
J&K	724	0	0	791	14	0	16.32	0.07	16.39
CHD	-31	0	0	0	-10	0	-0.24	-0.05	-0.30
Rajasthan	-3	672	2	-3	450	2	8.54	12.10	20.64
UP	125	0	0	-505	0	0	-8.04	0.00	-8.04
Uttarakhand	192	127	0	192	395	0	4.72	6.18	10.91
<b>Total</b>	<b>-188</b>	<b>1092</b>	<b>0</b>	<b>-474</b>	<b>1550</b>	<b>0</b>	<b>1.49</b>	<b>26.93</b>	<b>28.42</b>

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

State	Bilateral (MW)		IEX (MW)		PXIL (MW)	
	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum
Punjab	-67	-376	215	-120	0	0
Delhi	-505	-973	453	-440	-3	-3
Haryana	-352	-581	311	73	0	0
HP	585	194	172	-630	0	0
J&K	791	590	98	-164	0	0
CHD	0	-31	0	-31	0	0
Rajasthan	843	-3	680	66	2	2
UP	170	-637	0	0	0	0
Uttarakhand	220	192	452	93	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

WR	0.00%
ER	0.00%
Simultaneous	0.00%

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

WR	6.94%
ER	0.00%
Simultaneous	13.89%

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

Rihand - Dadri	0.00%
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**XII. System Constraints:**

**XIII. Grid Disturbance / Any Other Significant Event:**

**XIV. Weather Conditions For 09.02.2016 :**

Normal

**XV. Synchronisation of new generating units :**

**XVI. Synchronisation of new 220 / 400 / 765 KV lines and energising of bus / substation :**

- 1) The 50MVAR Line Reactor of the 400kV Balia-Patna line -1 commissioned at 18:16 Hrs on dt.09.02.2016.
- 2) The 50 MVAR Line Reactor of the 400kV Balia-Patna line -2 commissioned at 19:12 Hrs on dt.09.02.2016.

**XVII. Tripping of lines in pooling stations :**

**XVIII. Complete generation loss in a generating station :**