

BRIEF NOTE ON LIVE STORAGE STATUS OF 91 RESERVOIRS IN THE COUNTRY (WITH REFERENCE TO RESERVOIR STORAGE BULLETIN OF 24.11.2016)

1. ALL INDIA STATUS

Central Water Commission is monitoring live storage status of 91 reservoirs of the country on weekly basis and is issuing weekly bulletin on every Thursday. Out of these reservoirs, 37 reservoirs have hydropower benefit with installed capacity of more than 60 MW. The total live storage capacity of these 91 reservoirs is 157.799 BCM which is about 62% of the live storage capacity of 253.388 BCM which is estimated to have been created in the country. As per reservoir storage bulletin dated **24.11.2016**, live storage available in these reservoirs is **105.209 BCM**, which is **67%** of total live storage capacity of these reservoirs. However, last year the live storage available in these reservoirs for the corresponding period was **83.857 BCM** and the average of last 10 years live storage was **107.980 BCM**. Thus, the live storage available in 91 reservoirs **as per 24.11.2016 Bulletin** is **125%** of the live storage of corresponding period of last year and **97%** of storage of average of last ten years.

As per Table-01, the overall storage position is **better than the** corresponding period of last year in the country as a whole but is **less than the** average storage of last ten years during the corresponding period.

2. REGION WISE STORAGE STATUS:

a) NORTHERN REGION

The northern region includes States of Himachal Pradesh, Punjab and Rajasthan. There are 6 reservoirs under CWC monitoring having total live storage capacity of 18.01 BCM. As per Reservoir Storage Bulletin dated **24.11.2016**, the total live storage available in these reservoirs is **10.84 BCM** which is **60%** of total live storage capacity of these reservoirs. The storage during corresponding period of last year was **69%** and average storage of last ten years during corresponding period was **70%** of live storage capacity of these reservoirs. Thus, storage during current year is less than the corresponding period of last year and is also less than the average storage of last ten years during the corresponding period.

b) EASTERN REGION

The Eastern region includes States of Jharkhand, Odisha, West Bengal and Tripura. There are 15 reservoirs under CWC monitoring having total live storage capacity of 18.83 BCM. As per Reservoir Storage Bulletin dated **24.11.2016**, the total live storage available in these reservoirs is **15.45 BCM** which is **82%** of total live storage capacity of these reservoirs. The storage during corresponding period of last year was **61%** and average storage of last ten years during corresponding period was **73%** of live storage capacity of these reservoirs. Thus, storage during current year is better than the corresponding period of last year and is also better than the average storage of last ten years during the corresponding period.

c) WESTERN REGION

The Western region includes States of Gujarat and Maharashtra. There are 27 reservoirs under CWC monitoring having total live storage capacity of 27.07 BCM. As per Reservoir Storage Bulletin dated **24.11.2016**, the total live storage available in these reservoirs is **21.66 BCM** which is **80%** of total live storage capacity of these reservoirs. The storage during corresponding period of last year was **51%** and average storage of last ten years during corresponding period was **74%** of live storage capacity of these reservoirs. Thus, storage during current year is better than the storage of last year and is also better than the average storage of last ten years during the corresponding period.

d) CENTRAL REGION

The Central region includes States of Uttar Pradesh, Uttarakhand, Madhya Pradesh and Chhattisgarh. There are 12 reservoirs under CWC monitoring having

total live storage capacity of 42.30 BCM. As per Reservoir Storage Bulletin dated **24.11.2016**, the total live storage available in these reservoirs is **35.75 BCM** which is **85%** of total live storage capacity of these reservoirs. The storage during corresponding period of last year was **66%** and average storage of last ten years during corresponding period was **63%** of live storage capacity of these reservoirs. Thus, storage during current year is better than the storage of last year and is also better than the average storage of last ten years during the corresponding period.

e) SOUTHERN REGION

The Southern region includes States of Andhra Pradesh, Telangana, AP&TG (2 combined projects in both states) Karnataka, Kerala and Tamil Nadu. There are 31 reservoirs under CWC monitoring having total live storage capacity of 51.59 BCM. As per Reservoir Storage Bulletin dated **24.11.2016**, the total live storage available in these reservoirs is **21.51 BCM** which is **42%** of total live storage capacity of these reservoirs. The storage during corresponding period of last year was **35%** and average storage of last ten years during corresponding period was **68%** of live storage capacity of these reservoirs. Thus, storage during current year is better than the corresponding period of last year but is less than the average storage of last ten years during the corresponding period.

The region wise and reservoir wise details are given in the following pages of the Bulletin.

BROAD ANALYSIS OF OTHER TABLES IN THE BULLETIN

- Normal storage means average storage of last ten years, Close to normal storage means where shortfall is upto 20% of normal, deficient storage is where shortfall is more than 20% of the normal and upto 60% of the normal, highly deficient means where shortfall is more than 60% of normal.
- In the table on page 4, better than normal storage is available in Narmada, Mahi, , Ganga, Sabarmati, Godavari, Tapi and Mahanadi & neighbouring East Flowing Rivers. Close to Normal in Indus and Deficient in Rivers of Kutch, West Flowing Rivers of South and Krishna and Highly Deficient in Cauvery & neighbouring EFRs Basin.
- Table on page 5-7 of the bulletin. The numbers of reservoirs having storage more than last year are **60** and reservoirs having storage more than average of last ten years are **43**. The numbers of reservoirs having storage less than 20% with respect to last year is **6** and having storage less than 20% with reference to average of last ten years is **9**. The number of reservoirs having storage less than or equal to 50% with respect to last year are **13** and having storage less than or equal to 50% with reference to average of last ten years are **17**.

STORAGE STATUS OF IMPORTANT RESERVOIRS IN THE COUNTRY

AS ON 24.11.2016

- Central Water Commission is monitoring storage status of 91 important reservoirs spread all over the country, in which 37 reservoirs have hydropower benefit each with installed capacity of more than 60 MW. These reservoirs are identified thus(*) in the enclosed weekly report.
- The total live storage in 91 important reservoirs in different parts of the country, monitored by CWC as on 24.11.2016 is 105.209 BCM (67 percent of the live storage capacity at FRL).The current year's storage is nearly 125 percent of last year's storage and 97 percent of the average of last ten years.

3 Region wise storage status:-

REGION (States), (Monitoring No. of Reservoirs)	Filling position of 91 reservoirs w.r.t. FRL								Departure from Normal storage		
	100%	91%-99%	81%-90%	71%-80%	61%-70%	51%-60%	41%-50%	40% & below			
NORTH (HP,Punjab & Rajasthan), (6 Resv.)	1	1	-	-	-	3	1	-	H.P.	-20 %	
									PUNJAB	-13 %	
									RAJASTHAN	10 %	
EAST (Jharkhand,Odisha, Tripura & W.Bengal (15 Resv.)	3	2	3	3	1	1	1	1	JHARKHAND	17 %	
									ODISHA	10 %	
									W. BENGAL	30 %	
									TRIPURA	78 %	
WEST (Guj.& Mah.), (27 Resv.)	3	5	8	3	2	1	2	3	GUJARAT	7 %	
									MAH.	10 %	
CENTRAL (MP,UP,Uttarakhand & Chh.), (12 Resv)	1	3	4	1	1	1	-	1	U.P.	51 %	
									UTTARAKHAND	-6 %	
									M.P.	42 %	
									CHHATISGARH	14 %	
SOUTH (Karnataka,TN,AP&TG,AP, TG, & Kerala), (31 Resv.)	2	-	1	-	3	6	2	17	AP&TG	-44 %	
									A,P	-22 %	
									TG	73 %	
									KARNATAKA	-41 %	
									KERALA	-40 %	
									T.N.	-80 %	
Status of 91 reservoirs	10	11	16	7	7	12	6	22			

4 Basin wise storage position:

Better than normal: Ganga,Sabarmati,Godavari,Mahi, Narmada ,Tapi and Mahanadi & Neighbouring EFRS.

Close to normal: Indus

Deficient: Rivers of Kutch,West Flowing Rivers of South and Krishna.

Highly deficient: Cauvery & neighbouring EFRS.

- Out of 91 reservoirs, 57 reservoirs reported more than 80% of normal storage & 34 reservoirs reported 80% or below of normal storage. Out of these 34 reservoirs 17 having storage upto 50% of normal storage.

Name of reservoir	%	Name of reservoir	%
SHOLAYAR	0	PARAMBIKULAM	32
VAIGAI	4	BHADRA	39
TUNGABHADRA	11	KALLADA(PARAPPAR)	45
PERIYAR	12	MALAPRABHA(RENUKA)	50
ALIYAR	14	MALAMPUZHA	50
KRISHNARAJA SAGRA	16		
BHADAR	17		
HEMAVATHY	18		
LOWER BHAWANI	18		
METTUR(STANLEY)	22		
NAGARJUNA SAGAR	22		
VANIVILAS SAGAR	24		

17 reservoirs having storage 51% to 80% of normal storage.		
51% to 60%	61% to 70%	71% to 80%
4	5	8

- Out of 37 reservoirs with significant(*) hydropower generation, the storage build up is less than or equal to normal in

20 reservoirs.

NOTE : **Normal:** Average of previous ten years, **Close to normal:** Where shortfall is up to 20% of the normal, **Deficient:** Where shortfall is more than 20% of the normal and up to 60% of the normal, **Highly deficient** : Where shortfall is more than 60% of the normal

WEEKLY REPORT - BASINWISE

GOVERNMENT OF INDIA

CENTRAL WATER COMMISSION

WEEK ENDING :- 24.11.2016

NAME OF BASIN	LIVE CAP. AT FRL	THIS YEAR'S STORAGE		LAST YEAR'S STORAGE		LAST 10 YEARS' AVG. STORAGE		% DEPARTURE W.R.T. AVE. OF 10 YEARS'
GANGA	28.096	22.307	79.40%	16.381	58.30%	16.009	56.98%	39.34
INDUS	14.730	8.223	55.82%	10.409	70.67%	10.191	69.19%	-19.31
NARMADA	17.414	15.487	88.93%	13.151	75.52%	12.655	72.67%	22.38
TAPI	7.394	6.363	86.06%	4.384	59.29%	5.498	74.36%	15.73
MAHI	4.012	3.456	86.14%	2.676	66.70%	3.027	75.45%	14.17
SABARMATI	0.735	0.657	89.39%	0.566	77.01%	0.485	65.99%	35.46
RIVERS OF KUTCH	0.887	0.302	34.05%	0.666	75.08%	0.510	57.50%	-40.78
GODAVARI	15.394	12.044	78.24%	6.570	42.68%	9.900	64.31%	21.66
KRISHNA	32.831	15.087	45.95%	8.071	24.58%	22.510	68.56%	-32.98
MAHANADI & NEIGHBOURING EFRS	13.181	11.092	84.15%	7.621	57.82%	10.165	77.12%	9.12
CAUVERY & NEIGHBOURING EFRS	8.359	2.041	24.42%	4.934	59.03%	5.571	66.65%	-63.36
WEST FLOWING RIVERS OF SOUTH	14.766	8.150	55.19%	8.428	57.08%	11.459	77.60%	-28.88
TOTAL	157.799	105.209		83.857		107.980		
PERCENTAGE								-2.57

WEEKLY REPORT OF 91 IMPORTANT RESERVOIRS OF INDIA

GOVERNMENT OF INDIA

CENTRAL WATER COMMISSION

WEEK ENDING :- 24.11.2016

S. NO	NAME OF RESERVOIR	FRL (m)	CURRENT RESERVOIR LEVEL (m)	LIVE CAPACITY AT FRL (BCM)	CURRENT LIVE STORAGE (BCM)	DATE	STORAGE AS % OF LIVE CAPACITY AT FRL			BENEFITS	
							CURRENT YEAR	LAST YEAR	LAST 10 YEARS AVERAGE	IRR. (CCA) IN TH. HA	HYDEL IN MW
1	2	4	6	5	7	8	9	10	11	3A	3B
NORTHERN REGION											
<u>HIMACHAL PRADESH</u>											
*1	GOBIND SAGAR(BHAKRA)	512.06	496.11	6.229	3.643	24-11-2016	58	83	78	676	1200
*2	PONG DAM	423.67	412.30	6.157	3.439	24-11-2016	56	69	65	-	360
<u>PUNJAB</u>											
*3	THEIN	527.91	510.35	2.344	1.141	24-11-2016	49	40	56	348	600
<u>RAJASTHAN</u>											
*4	MAHI BAJAJ SAGAR	280.75	281.15	1.711	1.711	17-11-2016	100	89	83	63	140
5	JHAKAM	359.50	358.90	0.132	0.126	22-11-2016	95	75	73	28	-
*6	RANA PRATAP SAGAR	352.81	349.18	1.436	0.777	22-11-2016	54	30	60	229	172
<u>EASTERN REGION</u>											
<u>JHARKHAND</u>											
7	TENUGHAT	269.14	260.28	0.821	0.428	24-11-2016	52	46	44	-	-
8	MAITHON	146.3	148.59	0.471	0.471	24-11-2016	100	39	87	342	-
*9	PANCHET HILL	124.97	127.29	0.184	0.184	24-11-2016	100	23	84	\$	80
10	KONAR	425.81	425.62	0.176	0.173	24-11-2016	98	75	84	\$	-
11	TILAIYA	368.81	370.05	0.142	0.142	24-11-2016	100	82	85	\$	4
<u>ODISHA</u>											
*12	HIRAKUD	192.02	191.84	5.378	4.708	23-11-2016	88	73	88	153	307
*13	BALIMELA	462.08	459.30	2.676	2.164	23-11-2016	81	71	65	-	360
14	SALANADI	82.30	69.91	0.558	0.215	24-11-2016	39	6	42	42	-
*15	RENGALI	123.50	123.03	3.432	3.285	23-11-2016	96	56	78	3	200
*16	MACHKUND(JALPUT)	838.16	836.84	0.893	0.765	23-11-2016	86	90	86	-	115
*17	UPPER KOLAB	858.00	855.95	0.935	0.741	23-11-2016	79	84	65	89	320
*18	UPPER INDRAVATI	642.00	638.90	1.456	1.126	24-11-2016	77	51	73	128	600
<u>WEST BENGAL</u>											
19	MAYURAKSHI	121.31	115.34	0.480	0.220	24-11-2016	46	21	44	227	-
20	KANGSABATI	134.14	129.95	0.914	0.577	24-11-2016	63	25	44	341	-
<u>TRIPURA</u>											
21	GUMTI	93.55	92.25	0.312	0.251	23-11-2016	80	86	45	-	15
<u>WESTERN REGION</u>											
<u>GUJARAT</u>											
*22	UKAI	105.16	103.26	6.615	5.644	24-11-2016	85	62	75	348	300
23	SABARMATI(DHAROI)	189.59	188.73	0.735	0.657	22-11-2016	89	77	66	95	1
*24	KADANA	127.7	127.51	1.472	1.171	22-11-2016	80	51	69	200	120
25	SHETRUNJI	55.53	53.67	0.300	0.176	22-11-2016	59	90	75	36	-
26	BHADAR	107.89	101.41	0.188	0.020	22-11-2016	11	60	64	27	-
27	DAMANAGANGA	79.86	79.30	0.502	0.452	24-11-2016	90	89	94	51	1
28	DANTIWADA	184.1	173.93	0.399	0.106	22-11-2016	27	71	41	45	-
29	PANAM	127.41	125.80	0.697	0.448	22-11-2016	64	43	71	36	2
*30	SARDAR SAROVAR	121.92	120.69	1.566	1.356	24-11-2016	87	65	80	2120	1450
31	KARJAN	115.25	109.08	0.523	0.349	24-11-2016	67	56	88	51	3

WEEKLY REPORT OF 91 IMPORTANT RESERVOIRS OF INDIA

GOVERNMENT OF INDIA

CENTRAL WATER COMMISSION

WEEK ENDING :- 24.11.2016

S. NO	NAME OF RESERVOIR	FRL (m)	CURRENT RESERVOIR LEVEL (m)	LIVE CAPACITY AT FRL (BCM)	CURRENT LIVE STORAGE (BCM)	DATE	STORAGE AS % OF LIVE CAPACITY AT FRL			BENEFITS	
							CURRENT YEAR	LAST YEAR	LAST 10 YEARS AVERAGE	IRR. (CCA) IN TH. HA	HYDEL IN MW
1	2	4	6	5	7	8	9	10	11	3A	3B
MAHARASHTRA											
32	JAYAKWADI(PAITHON)	463.91	462.70	2.171	1.730	24-11-2016	80	11	48	227	-
*33	KOYANA	657.90	656.49	2.652	2.338	23-11-2016	88	63	90	-	1920
34	BHIMA(UJJANI)	496.83	497.12	1.517	1.517	23-11-2016	100	0	77	125	12
35	ISAPUR	441.00	435.17	0.965	0.473	23-11-2016	49	32	67	104	-
36	MULA	552.30	551.94	0.609	0.590	24-11-2016	97	43	80	139	-
37	YELDARI	461.77	454.50	0.809	0.240	24-11-2016	30	11	51	78	-
38	GIRNA	398.07	397.02	0.524	0.464	23-11-2016	89	9	49	79	-
39	KHADAKVASLA	582.47	581.89	0.056	0.048	23-11-2016	86	52	57	78	8
*40	UPPER VAITARNA	603.50	603.32	0.331	0.326	23-11-2016	98	63	89	-	61
41	UPPER TAPI	214.00	214.00	0.255	0.255	23-11-2016	100	93	98	45	-
*42	PENCH (TOTALADOH)	490.00	481.39	1.091	0.476	23-11-2016	44	50	63	127	160
43	UPPER WARDHA	342.50	341.97	0.564	0.517	24-11-2016	92	79	86	70	-
44	BHATSA	142.07	138.39	0.942	0.844	23-11-2016	90	74	86	29.378	15
45	DHOM	747.70	745.76	0.331	0.331	23-11-2016	100	58	79	36.2	2
46	DUDHGANGA	646.00	644.52	0.664	0.629	23-11-2016	95	63	92	2.441	24
47	MANIKDOH (KUKADI)	711.25	706.37	0.288	0.206	23-11-2016	72	25	55	2.2	6
48	BHANDARDARA	342.50	341.97	0.304	0.301	24-11-2016	92	79	86	70	-
CENTRAL REGION											
UTTAR PRADESH											
49	MATATILA	308.46	304.22	0.707	0.241	23-11-2016	34	53	64	-	30
*50	RIHAND	268.22	264.66	5.649	4.113	22-11-2016	73	34	43	-	300
UTTRAKHAND											
*51	RAMGANGA	365.30	350.82	2.196	1.222	23-11-2016	56	64	72	1897	198
*52	TEHRI	830.00	818.80	2.615	2.158	24-11-2016	83	74	77	2351	1000
MADHYA PRADESH											
*53	GANDHI SAGAR	399.90	399.69	6.827	6.488	24-11-2016	95	87	53	220	115
54	TAWA	355.40	353.75	1.944	1.732	23-11-2016	89	84	86	247	-
*55	BARGI	422.76	421.00	3.180	2.730	23-11-2016	86	85	82	157	90
*56	BANSAGAR	341.64	340.95	5.166	4.862	24-11-2016	94	56	61	488	425
*57	INDIRA SAGAR	262.13	261.11	9.745	8.922	21-11-2016	92	74	65	2380	1000
58	BARNA	348.55	347.70	0.456	0.398	24-11-2016	87	65	67	546	-
CHHATTIS GARH											
*59	MINIMATA BANGOI	359.66	354.91	3.046	2.119	21-11-2016	70	46	64	-	120
60	MAHANADI	348.70	348.68	0.767	0.765	23-11-2016	100	46	74	319	10
SOUTHERN REGION											
A.P. & TG											
*61	SRISAILAM	269.75	266.27	8.288	4.353	24-11-2016	53	18	64	0	770
*62	NAGARJUNA SAGAR	179.83	160.66	6.841	0.874	24-11-2016	13	0	58	895	810
ANDHRA PRADESH											
63	SOMASILA	100.58	94.12	1.994	1.127	24-11-2016	57	88	72	168	0
TELANGANA											
64	SRIRAMSAGAR	332.54	332.08	2.300	2.300	24-11-2016	100	9	56	411	27
65	LOWER MANAIR	280.42	279.78	0.621	0.621	24-11-2016	100	17	64	199	60

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GOVERNMENT OF INDIA

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WEEK ENDING :- 24.11.2016

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							CURRENT YEAR	LAST YEAR	LAST 10 YEARS AVERAGE	IRR. (CCA) IN TH. HA	HYDEL IN MW
1	2	4	6	5	7	8	9	10	11	3A	3B
KARNATAKA											
66	KRISHNARAJA SAGRA	752.50	738.19	1.163	0.155	23-11-2016	13	68	82	79	-
*67	TUNGABHADRA	497.74	484.34	3.276	0.259	24-11-2016	8	37	69	529	72
68	GHATAPRABHA	662.95	656.04	1.391	0.917	24-11-2016	66	32	72	317	-
69	BHADRA	657.76	644.96	1.785	0.601	24-11-2016	34	57	87	106	39
70	LINGANAMAKKI	554.43	546.67	4.294	2.290	24-11-2016	53	53	81	-	55
71	NARAYANPUR	492.25	490.35	0.863	0.514	24-11-2016	60	58	85	425	-
72	MALAPRABHA(RENUKA)	633.83	626.76	0.972	0.293	24-11-2016	30	17	61	215	-
73	KABINI(Sancherla Tank)	696.16	690.01	0.444	0.142	23-11-2016	32	48	37	85	-
74	HEMAVATHY	890.63	873.22	0.927	0.104	23-11-2016	11	21	63	265	-
75	HARANGI	871.42	857.74	0.220	0.048	23-11-2016	22	5	39	53	-
76	SUPA	564.00	545.81	4.120	2.214	24-11-2016	54	44	68	-	-
77	VANIVILAS SAGAR	652.28	633.66	0.802	0.036	23-11-2016	4	13	19	123	-
*78	ALMATTI	519.60	517.35	3.105	2.171	24-11-2016	70	24	74	@	290
*79	GERUSOPPA	55.00	50.56	0.130	0.105	24-11-2016	81	75	83	83	240
KERALA											
80	KALLADA(PARAPPAR)	115.82	100.84	0.507	0.201	24-11-2016	40	84	87	62	-
*81	IDAMALAYAR	169.00	154.30	1.018	0.616	24-11-2016	61	56	78	33	75
*82	IDUKKI	732.43	714.90	1.460	0.614	24-11-2016	42	58	72	-	780
*83	KAKKI	981.46	968.29	0.447	0.259	24-11-2016	58	67	84	23	300
*84	PERIYAR	867.41	859.40	0.173	0.016	24-11-2016	9	100	75	84	140
85	MALAPMUZHA	115.06	108.52	0.224	0.097	23-11-2016	43	68	87	21	3
TAMIL NADU											
86	LOWER BHAWANI	278.89	262.25	0.792	0.097	24-11-2016	12	46	68	105	8
*87	METTUR(STANLEY)	240.79	216.85	2.647	0.364	24-11-2016	14	56	64	122	360
88	VAIGAI	279.20	264.33	0.172	0.004	24-11-2016	2	80	66	61	6
89	PARAMBIKULAM	556.26	541.56	0.380	0.104	24-11-2016	27	72	85	101	-
90	ALIYAR	320.04	304.53	0.095	0.012	24-11-2016	13	93	93	#	60
*91	SHOLAYAR	1002.79	964.68	0.143	0.000	24-11-2016	0	40	84	-	95
TOTAL FOR 91 RESERVOIRS				157.799	105.209						
PERCENTAGE							67	53	68		

Sd/-

* HYDEL POWER CAPACITY HAVING CAPACITY MORE THAN 60MW

Director

\$ TOTAL CCA 342 TH. HA OF DVC SYSTEM

W. M. , CWC

TOTAL CCA 101 TH. HA OF PARAMBIKULAM & ALIYAR

@ TOTAL CCA 425 TH. HA. OF NARAYANPUR AND ALMATTI

† SABARMATI RESERVOIR IS SUPPLEMENTED WITH NARMADA WATER THROUGH PIPELINE.

Sl. No. 30th The FRL of S.S.P. 138.38 M and Live capacity at FRL will be 5.760 BCM. However at present the lowest block of the dam is at the level of 121.92 M. and the live capacity at this level is 1.566 BCM