

BRIEF NOTE ON LIVE STORAGE STATUS OF 91 RESERVOIRS IN THE COUNTRY (WITH REFERENCE TO RESERVOIR STORAGE BULLETIN OF 08.09.2016)

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 **08.09.2016**, live storage available in these reservoirs is **108.104 BCM**, which is **69%** of total live storage capacity of these reservoirs. However, last year the live storage available in these reservoirs for the corresponding period was **92.324 BCM** and the average of last 10 years live storage was **111.837 BCM**. Thus, the live storage available in 91 reservoirs **as per 08.09.2016 Bulletin** is **117%** of the live storage of corresponding period of last year and **97%** of storage of average of last ten years.

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 **08.09.2016**, the total live storage available in these reservoirs is **14.24 BCM** which is **79%** of total live storage capacity of these reservoirs. The storage during corresponding period of last year was **90%** and average storage of last ten years during corresponding period was **81%** 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 **08.09.2016**, the total live storage available in these reservoirs is **14.27 BCM** which is **76%** of total live storage capacity of these reservoirs. The storage during corresponding period of last year was **58%** and average storage of last ten years during corresponding period was **69%** 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 **08.09.2016**, the total live storage available in these reservoirs is **20.38 BCM** which is **75%** of total live storage capacity of these reservoirs. The storage during corresponding period of last year was **59%** 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 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

08.09.2016, the total live storage available in these reservoirs is **36.70 BCM** which is **87%** of total live storage capacity of these reservoirs. The storage during corresponding period of last year was **77%** and average storage of last ten years during corresponding period was **65%** 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 **08.09.2016**, the total live storage available in these reservoirs is **22.52 BCM** which is **44%** of total live storage capacity of these reservoirs. The storage during corresponding period of last year was **32%** and average storage of last ten years during corresponding period was **72%** 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 8, better than normal storage is available in Narmada, Mahi, Godavari, Ganga, Sabarmati and Tapi. Close to Normal in Mahanadi & neighbouring East Flowing Rivers and Indus and Deficient in West Flowing Rivers of South, Krishna and Cauvery & neighbouring EFRs and Highly Deficient in Rivers of Kutch Basin.
- Table on page 5-7 of the bulletin. The numbers of reservoirs having storage more than last year are **53** and reservoirs having storage more than average of last ten years are **42**. The numbers of reservoirs having storage less than 20% with respect to last year is **2** and having storage less than 20% with reference to average of last ten years is **4**. The number of reservoirs having storage less than or equal to 50% with respect to last year are **6** and having storage less than or equal to 50% with reference to average of last ten years are **16**.

STORAGE STATUS OF IMPORTANT RESERVOIRS IN THE COUNTRY

AS ON 08.09.2016

- 1 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.
- 2 The total live storage in 91 important reservoirs in different parts of the country, monitored by CWC as on **08.09.2016** is **108.104** BCM (**69** percent of the live storage capacity at FRL).The current year's storage is nearly **117** 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.)	2	1	-	3	-	-	-	-	H.P.	-12 %
									PUNJAB	16 %
									RAJASTHAN	23 %
EAST (Jharkhand, Odisha, Tripura & W. Bengal (15 Resv.)	3	1	3	3	3	-	2	-	JHARKHAND	13 %
									ODISHA	6 %
									W. BENGAL	49 %
									TRIPURA	56 %
WEST (Guj.& Mah.), (27 Resv.)	4	7	1	4	3	2	-	6	GUJARAT	2 %
									MAH.	3 %
CENTRAL (MP, UP, Uttarakhand & Chh.), (12 Resv)	3	3	2	2	1	-	1	-	U.P.	68 %
									UTTARAKHAND	2 %
									M.P.	41 %
									CHHATISGARH	-13 %
SOUTH (Karnataka, TN, AP&TG, AP, TG, & Kerala), (31 Resv.)	1	-	2	1	3	4	7	13	AP&TG	-59 %
									A,P	-44 %
									TG	-15 %
									KARNATAKA	-30 %
									KERALA	-28 %
									T.N.	-49 %
Status of 91 reservoirs	13	12	8	13	10	6	10	19		

4 Basin wise storage position:

- Better than normal:** Ganga, Sabarmati, Godavari, Mahi, Narmada and Tapi.
- Close to normal:** Mahanadi & Neighbouring EFRS and Indus.
- Deficient:** West Flowing Rivers of South, Krishna and Cauvery & neighbouring EFRS.
- Highly deficient:** Rivers of Kutch

- 5 Out of 91 reservoirs, **61** reservoirs reported more than 80% of normal storage & **30** reservoirs reported 80% or below of normal storage. Out of these **30** reservoirs **16** having storage upto 50% of normal storage.

Name of reservoir	%	Name of reservoir	%
NAGARJUNA SAGAR	3	HEMAVATHY	47
BHADAR	8	MALAMPUZHA	48
ALIYAR	11	PARAMBIKULAM	49
VAIGAI	13	KARJAN	50
YELDARI	26		
SHETRUNJI	29		
LOWER BHAWANI	30		
KRISHNARAJA SAGRA	36		
PERIYAR	39		
LOWER MANAIR	42		
VANIVILAS SAGAR	45		
TUNGABHADRA	46		

14 reservoirs having storage 51% to 80% of normal storage.		
51% to 60%	61% to 70%	71% to 80%
6	3	5

- 6 Out of **37** reservoirs with significant(*) hydropower generation, the storage build up is less than or equal to normal in **18** 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 :- 08.09.2016

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	24.149	85.95%	20.286	72.20%	16.271	57.91%	48.42
INDUS	14.730	10.975	74.51%	12.973	88.07%	11.927	80.97%	-7.98
NARMADA	17.414	16.003	91.90%	15.258	87.62%	13.495	77.50%	18.58
TAPI	7.394	5.631	76.16%	4.926	66.62%	5.207	70.42%	8.14
MAHI	4.012	3.487	86.91%	3.248	80.96%	3.028	75.47%	15.16
SABARMATI	0.735	0.700	95.24%	0.668	90.88%	0.453	61.63%	54.53
RIVERS OF KUTCH	0.887	0.195	21.98%	0.765	86.25%	0.494	55.69%	-60.53
GODAVARI	15.394	9.410	61.13%	5.194	33.74%	8.913	57.90%	5.58
KRISHNA	32.831	16.565	50.46%	9.453	28.79%	25.315	77.11%	-34.56
MAHANADI & NEIGHBOURING EFRS	13.181	9.859	74.80%	8.680	65.85%	10.121	76.78%	-2.59
CAUVERY & NEIGHBOURING EFRS	8.359	2.855	34.15%	3.636	43.50%	5.343	63.92%	-46.57
WEST FLOWING RIVERS OF SOUTH	14.766	8.275	56.04%	7.237	49.01%	11.270	76.32%	-26.57
TOTAL	157.799	108.104		92.324		111.837		
PERCENTAGE								-3.34

WEEKLY REPORT OF 91 IMPORTANT RESERVOIRS OF INDIA

GOVERNMENT OF INDIA

CENTRAL WATER COMMISSION

WEEK ENDING :- 08.09.2016

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
<u>NORTHERN REGION</u>											
<u>HIMACHAL PRADESH</u>											
*1	GOBIND SAGAR(BHAKRA)	512.06	502.74	6.229	4.542	08-09-2016	73	94	87	676	1200
*2	PONG DAM	423.67	417.93	6.157	4.592	08-09-2016	75	91	80	-	360
<u>PUNJAB</u>											
*3	THEIN	527.91	521.63	2.344	1.841	08-09-2016	79	63	68	348	600
<u>RAJASTHAN</u>											
*4	MAHI BAJAJ SAGAR	280.75	281.50	1.711	1.711	08-09-2016	100	100	83	63	140
5	JHAKAM	359.50	359.30	0.132	0.132	08-09-2016	100	98	81	28	-
*6	RANA PRATAP SAGAR	352.81	352.68	1.436	1.419	08-09-2016	99	94	78	229	172
<u>EASTERN REGION</u>											
<u>JHARKHAND</u>											
7	TENUGHAT	269.14	259.19	0.821	0.385	08-09-2016	47	51	44	-	-
8	MAITHON	146.3	147.77	0.471	0.471	08-09-2016	100	76	86	342	-
*9	PANCHET HILL	124.97	127.86	0.184	0.184	08-09-2016	100	47	83	\$	80
10	KONAR	425.81	424.86	0.176	0.159	08-09-2016	90	85	86	\$	-
11	TILAIYA	368.81	370.26	0.142	0.142	08-09-2016	100	100	82	\$	4
<u>ODISHA</u>											
*12	HIRAKUD	192.02	190.79	5.378	4.036	08-09-2016	75	72	79	153	307
*13	BALIMELA	462.08	457.11	2.676	1.842	08-09-2016	69	48	51	-	360
14	SALANADI	82.30	72.02	0.558	0.261	08-09-2016	47	50	53	42	-
*15	RENGALI	123.50	122.25	3.432	3.019	08-09-2016	88	62	78	3	200
*16	MACHKUND(JALPUT)	838.16	834.97	0.893	0.635	08-09-2016	71	49	72	-	115
*17	UPPER KOLAB	858.00	854.98	0.935	0.649	08-09-2016	69	39	56	89	320
*18	UPPER INDRAVATI	642.00	637.84	1.456	1.022	08-09-2016	70	29	71	128	600
<u>WEST BENGAL</u>											
19	MAYURAKSHI	121.31	118.83	0.480	0.373	08-09-2016	78	72	57	227	-
20	KANGSABATI	134.14	132.85	0.914	0.837	08-09-2016	92	47	59	341	-
<u>TRIPURA</u>											
21	GUMTI	93.55	92.30	0.312	0.254	07-09-2016	81	93	52	-	15
<u>WESTERN REGION</u>											
<u>GUJARAT</u>											
*22	UKAI	105.16	102.23	6.615	5.097	07-09-2016	77	71	74	348	300
23	SABARMATI(DHAROI)	189.59	189.15	0.735	0.700	08-09-2016	95	91	62	95	1
*24	KADANA	127.7	127.48	1.472	1.226	08-09-2016	83	71	67	200	120
25	SHETRUNJI	55.53	50.57	0.300	0.063	08-09-2016	21	92	71	36	-
26	BHADAR	107.89	100.19	0.188	0.010	08-09-2016	5	76	68	27	-
27	DAMANAGANGA	79.86	77.50	0.502	0.372	07-09-2016	74	75	75	51	1
28	DANTIWADA	184.1	174.74	0.399	0.122	08-09-2016	31	87	38	45	-
29	PANAM	127.41	125.30	0.697	0.418	08-09-2016	60	52	72	36	2
*30	SARDAR SAROVAR	121.92	122.07	1.566	1.566	07-09-2016	100	96	94	2120	1450
31	KARJAN	115.25	102.19	0.523	0.207	07-09-2016	40	67	80	51	3

WEEKLY REPORT OF 91 IMPORTANT RESERVOIRS OF INDIA

GOVERNMENT OF INDIA

CENTRAL WATER COMMISSION

WEEK ENDING :- 08.09.2016

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	461.76	2.171	1.406	08-09-2016	65	4	43	227	-
*33	KOYANA	657.90	659.28	2.652	2.652	07-09-2016	100	74	97	-	1920
34	BHIMA(UJJANI)	496.83	494.80	1.517	0.891	07-09-2016	59	0	75	125	12
35	ISAPUR	441.00	432.86	0.965	0.331	08-09-2016	34	26	61	104	-
36	MULA	552.30	551.82	0.609	0.583	07-09-2016	96	42	73	139	-
37	YELDARI	461.77	450.93	0.809	0.090	08-09-2016	11	4	43	78	-
38	GIRNA	398.07	394.59	0.524	0.353	07-09-2016	67	3	38	79	-
39	KHADAKVASLA	582.47	582.47	0.056	0.056	07-09-2016	100	25	75	78	8
*40	UPPER VAITARNA	603.50	603.18	0.331	0.322	07-09-2016	97	66	89	-	61
41	UPPER TAPI	214.00	212.71	0.255	0.181	07-09-2016	71	80	57	45	-
*42	PENCH (TOTALADOH)	490.00	487.31	1.091	0.819	07-09-2016	75	87	77	127	160
43	UPPER WARDHA	342.50	342.41	0.564	0.556	08-09-2016	99	99	88	70	-
44	BHATSA	142.07	140.36	0.942	0.895	07-09-2016	95	74	91	29.378	15
45	DHOM	747.70	747.17	0.331	0.331	07-09-2016	100	42	84	36.2	2
46	DUDHGANGA	646.00	645.12	0.664	0.649	07-09-2016	98	76	95	2.441	24
47	MANIKDOH (KUKADI)	711.25	705.68	0.288	0.196	08-09-2016	68	16	55	2.2	6
48	BHANDARDARA	342.50	342.41	0.304	0.290	08-09-2016	99	99	88	70	-
CENTRAL REGION											
UTTAR PRADESH											
49	MATATILA	308.46	308.15	0.707	0.609	07-09-2016	86	90	84	-	30
*50	RIHAND	268.22	265.67	5.649	4.544	08-09-2016	80	38	44	-	300
UTTRAKHAND											
*51	RAMGANGA	365.30	348.36	2.196	1.092	08-09-2016	50	82	62	1897	198
*52	TEHRI	830.00	822.15	2.615	2.291	08-09-2016	88	84	75	2351	1000
MADHYA PRADESH											
*53	GANDHI SAGAR	399.90	399.25	6.827	6.223	07-09-2016	91	92	49	220	115
54	TAWA	355.40	355.34	1.944	1.944	08-09-2016	100	100	97	247	-
*55	BARGI	422.76	421.90	3.180	2.982	08-09-2016	94	88	86	157	90
*56	BANSAGAR	341.64	341.45	5.166	5.166	07-09-2016	100	71	64	488	425
*57	INDIRA SAGAR	262.13	261.02	9.745	8.848	07-09-2016	91	85	68	2380	1000
58	BARNA	348.55	348.55	0.456	0.456	07-09-2016	100	87	80	546	-
CHHATTIS GARH											
*59	MINIMATA BANGOI	359.66	354.05	3.046	1.992	07-09-2016	65	70	76	-	120
60	MAHANADI	348.70	346.23	0.767	0.551	07-09-2016	72	37	78	319	10
SOUTHERN REGION											
A.P & TG											
*61	SRISAILAM	269.75	265.69	8.288	4.114	08-09-2016	50	8	74	0	770
*62	NAGARJUNA SAGAR	179.83	156.27	6.841	0.131	08-09-2016	2	0	63	895	810
ANDHRA PRADESH											
63	SOMASILA	100.58	85.61	1.994	0.386	08-09-2016	19	12	35	168	0
TELANGANA											
64	SRIRAMSAGAR	332.54	327.33	2.300	1.052	08-09-2016	46	10	47	411	27
65	LOWER MANAIR	280.42	270.18	0.621	0.135	08-09-2016	22	18	52	199	60

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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
<u>KARNATAKA</u>											
66	KRISHNARAJA SAGRA	752.50	742.47	1.163	0.359	08-09-2016	31	55	86	79	-
*67	TUNGABHADRA	497.74	492.30	3.276	1.305	08-09-2016	40	64	86	529	72
68	GHATAPRABHA	662.95	660.46	1.391	1.207	08-09-2016	87	39	91	317	-
69	BHADRA	657.76	649.32	1.785	0.931	08-09-2016	52	68	93	106	39
70	LINGANAMAKKI	554.43	546.93	4.294	2.342	08-09-2016	55	45	85	-	55
71	NARAYANPUR	492.25	491.12	0.863	0.599	08-09-2016	69	73	86	425	-
72	MALAPRABHA(RENUKA)	633.83	627.66	0.972	0.356	08-09-2016	37	28	68	215	-
73	KABINI(Sancherla Tank)	696.16	693.52	0.444	0.300	08-09-2016	68	68	58	85	-
74	HEMAVATHY	890.63	881.55	0.927	0.395	08-09-2016	43	60	90	265	-
75	HARANGI	871.42	869.75	0.220	0.171	08-09-2016	78	75	95	53	-
76	SUPA	564.00	544.80	4.120	2.130	08-09-2016	52	41	69	-	-
77	VANIVILAS SAGAR	652.28	634.10	0.802	0.042	07-09-2016	5	5	12	123	-
*78	ALMATTI	519.60	519.60	3.105	3.105	08-09-2016	100	43	91	@	290
*79	GERUSOPPA	55.00	51.34	0.130	0.109	08-09-2016	84	67	85	83	240
<u>KERALA</u>											
80	KALLADA(PARAPPAR)	115.82	100.68	0.507	0.200	08-09-2016	39	24	68	62	-
*81	IDAMALAYAR	169.00	152.36	1.018	0.570	08-09-2016	56	50	73	33	75
*82	IDUKKI	732.43	716.85	1.460	0.692	08-09-2016	47	54	63	-	780
*83	KAKKI	981.46	970.66	0.447	0.288	08-09-2016	64	47	72	23	300
*84	PERIYAR	867.41	860.65	0.173	0.035	08-09-2016	20	36	52	84	140
85	MALAPMUZHA	867.41	860.65	0.224	0.087	08-09-2016	20	36	52	84	140
<u>TAMIL NADU</u>											
86	LOWER BHAWANI	278.89	264.76	0.792	0.152	08-09-2016	19	49	64	105	8
*87	METTUR(STANLEY)	240.79	227.43	2.647	1.083	08-09-2016	41	49	67	122	360
88	VAIGAI	279.20	266.38	0.172	0.009	08-09-2016	5	21	40	61	6
89	PARAMBIKULAM	556.26	544.57	0.380	0.154	08-09-2016	41	62	83	101	-
90	ALIYAR	320.04	303.63	0.095	0.009	08-09-2016	9	94	88	#	60
*91	SHOLAYAR	1002.79	989.76	0.143	0.070	08-09-2016	49	64	93	-	95
TOTAL FOR 91 RESERVOIRS				157.799	108.104						
PERCENTAGE							69	59	71		

Sd/-

Director

W. M. , CWC

* HYDEL POWER CAPACITY HAVING CAPACITY MORE THAN 60MW

\$ TOTAL CCA 342 TH. HA OF DVC SYSTEM

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