

BRIEF NOTE ON LIVE STORAGE STATUS OF 91 RESERVOIRS IN THE COUNTRY (WITH REFERENCE TO RESERVOIR STORAGE BULLETIN OF 01.09.2016)

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 **01.09.2016**, live storage available in these reservoirs is **105.248 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 **92.674 BCM** and the average of last 10 years live storage was **106.538 BCM**. Thus, the live storage available in 91 reservoirs **as per 01.09.2016 Bulletin** is **114%** of the live storage of corresponding period of last year and **99%** 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 **01.09.2016**, the total live storage available in these reservoirs is **13.91 BCM** which is **77%** of total live storage capacity of these reservoirs. The storage during corresponding period of last year was **92%** and average storage of last ten years during corresponding period was **79%** 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 **01.09.2016**, the total live storage available in these reservoirs is **12.49 BCM** which is **66%** of total live storage capacity of these reservoirs. The storage during corresponding period of last year was **57%** and average storage of last ten years during corresponding period was **61%** 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 **01.09.2016**, the total live storage available in these reservoirs is **20.03 BCM** which is **74%** 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 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

01.09.2016, the total live storage available in these reservoirs is **35.94 BCM** which is **85%** of total live storage capacity of these reservoirs. The storage during corresponding period of last year was **76%** and average storage of last ten years during corresponding period was **62%** 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 **01.09.2016**, the total live storage available in these reservoirs is **22.88 BCM** which is **44%** of total live storage capacity of these reservoirs. The storage during corresponding period of last year was **34%** 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 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 **52** and reservoirs having storage more than average of last ten years are **47**. 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 **15**.

STORAGE STATUS OF IMPORTANT RESERVOIRS IN THE COUNTRY

AS ON 01.09.2016

- 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 **01.09.2016** is **105.248** BCM (**67** percent of the live storage capacity at FRL).The current year's storage is nearly **114** percent of last year's storage and **99** percent of the average of last ten years.

3 Region wise storage status:-

REGION (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.)	3	-	-	2	1	-	-	-	H.P.	-12 %	
									PUNJAB	18 %	
									RAJASTHAN	27 %	
EAST (Jharkhand,Odisha, Tripura & W.Bengal (15 Resv.)	3	-	2	3	4	1	2	-	JHARKHAND	15 %	
									ODISHA	5 %	
									W. BENGAL	32 %	
									TRIPURA	51 %	
WEST (Guj.& Mah.), (27 Resv.)	4	7	-	3	5	2	-	6	GUJARAT	6 %	
									MAH.	8 %	
CENTRAL (MP,UP,Uttarakhand & Chh.), (12 Resv)	2	3	4	1	1	-	1	-	U.P.	78 %	
									UTTARAKHAND	2 %	
									M.P.	43 %	
									CHHATISGARH	-10 %	
SOUTH (Karnataka,TN,AP&TG,AP, TG, & Kerala), (31 Resv.)	1	-	4	-	3	5	7	11	AP&TG	-57 %	
									A,P	-57 %	
									TG	-12 %	
									KARNATAKA	-25 %	
									KERALA	-23 %	
									T.N.	-50 %	
Status of 91 reservoirs	13	10	10	9	14	8	10	17			

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 **15** having storage upto 50% of normal storage.

Name of reservoir	%	Name of reservoir	%
NAGARJUNA SAGAR	4	MALAMPUZHA	49
BHADAR	7	KARJAN	50
VAIGAI	13	TUNGABHADRA	50
ALIYAR	16		
YELDARI	24		
SHETRUNJI	30		
LOWER BHAWANI	34		
KRISHNARAJA SAGRA	38		
SOMASILA	43		
LOWER MANAIR	45		
VANIVILAS SAGAR	46		
PERIYAR	48		

15 reservoirs having storage 51% to 80% of normal storage.		
51% to 60%	61% to 70%	71% to 80%
5	4	6

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

16 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 :- 01.09.2016

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	23.778	84.63%	20.254	72.09%	15.775	56.15%	50.73
INDUS	14.730	10.628	72.15%	13.243	89.90%	11.566	78.52%	-8.11
NARMADA	17.414	15.434	88.63%	14.927	85.72%	12.816	73.60%	20.43
TAPI	7.394	5.526	74.74%	4.978	67.32%	4.863	65.77%	13.63
MAHI	4.012	3.345	83.37%	3.211	80.03%	2.846	70.94%	17.53
SABARMATI	0.735	0.676	91.97%	0.662	90.07%	0.415	56.46%	62.89
RIVERS OF KUTCH	0.887	0.173	19.50%	0.773	87.15%	0.473	53.33%	-63.42
GODAVARI	15.394	9.042	58.74%	5.116	33.23%	8.018	52.09%	12.77
KRISHNA	32.831	17.146	52.23%	9.792	29.83%	24.807	75.56%	-30.88
MAHANADI & NEIGHBOURING EFRS	13.181	8.587	65.15%	8.458	64.17%	9.186	69.69%	-6.52
CAUVERY & NEIGHBOURING EFRS	8.359	2.817	33.70%	3.996	47.80%	5.211	62.34%	-45.94
WEST FLOWING RIVERS OF SOUTH	14.766	8.096	54.83%	7.264	49.19%	10.562	71.53%	-23.35
TOTAL	157.799	105.248		92.674		106.538		
PERCENTAGE								-1.21

WEEKLY REPORT OF 91 IMPORTANT RESERVOIRS OF INDIA

GOVERNMENT OF INDIA

CENTRAL WATER COMMISSION

WEEK ENDING :- 01.09.2016

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
NORTHERN REGION											
<u>HIMACHAL PRADESH</u>											
*1	GOBIND SAGAR(BHAKRA)	512.06	501.40	6.229	4.349	01-09-2016	70	93	85	676	1200
*2	PONG DAM	423.67	417.22	6.157	4.438	01-09-2016	72	93	77	-	360
<u>PUNJAB</u>											
*3	THEIN	527.91	521.33	2.344	1.841	01-09-2016	79	73	66	348	600
<u>RAJASTHAN</u>											
*4	MAHI BAJAJ SAGAR	280.75	281.40	1.711	1.711	01-09-2016	100	100	79	63	140
5	JHAKAM	359.50	359.90	0.132	0.132	01-09-2016	100	100	77	28	-
*6	RANA PRATAP SAGAR	352.81	352.72	1.436	1.436	01-09-2016	100	98	78	229	172
<u>EASTERN REGION</u>											
<u>JHARKHAND</u>											
7	TENUGHAT	269.14	258.97	0.821	0.377	01-09-2016	46	52	42	-	-
8	MAITHON	146.3	146.87	0.471	0.471	01-09-2016	100	80	83	342	-
*9	PANCHET HILL	124.97	125.14	0.184	0.184	01-09-2016	100	63	88	\$	80
10	KONAR	425.81	424.01	0.176	0.144	01-09-2016	82	86	80	\$	-
11	TILAIYA	368.81	369.14	0.142	0.142	01-09-2016	100	100	73	\$	4
<u>ODISHA</u>											
*12	HIRAKUD	192.02	188.95	5.378	2.997	31-08-2016	56	70	70	153	307
*13	BALIMELA	462.08	456.16	2.676	1.715	31-08-2016	64	46	40	-	360
14	SALANADI	82.30	71.36	0.558	0.246	31-08-2016	44	47	48	42	-
*15	RENGALI	123.50	121.00	3.432	2.814	31-08-2016	82	58	69	3	200
*16	MACHKUND(JALPUT)	838.16	834.48	0.893	0.599	31-08-2016	67	48	65	-	115
*17	UPPER KOLAB	858.00	854.07	0.935	0.582	31-08-2016	62	38	47	89	320
*18	UPPER INDRAVATI	642.00	636.91	1.456	0.932	01-09-2016	64	28	66	128	600
<u>WEST BENGAL</u>											
19	MAYURAKSHI	121.31	118.55	0.480	0.357	01-09-2016	74	76	59	227	-
20	KANGSABATI	134.14	131.40	0.914	0.694	01-09-2016	76	45	57	341	-
<u>TRIPURA</u>											
21	GUMTI	93.55	91.90	0.312	0.236	31-08-2016	76	93	50	-	15
<u>WESTERN REGION</u>											
<u>GUJARAT</u>											
*22	UKAI	105.16	102.09	6.615	5.022	01-09-2016	76	73	68	348	300
23	SABARMATI(DHAROI)	189.59	188.92	0.735	0.676	01-09-2016	92	90	56	95	1
*24	KADANA	127.7	127.05	1.472	1.112	01-09-2016	76	67	61	200	120
25	SHETRUNJI	55.53	50.57	0.300	0.063	01-09-2016	21	93	69	36	-
26	BHADAR	107.89	99.94	0.188	0.009	01-09-2016	5	77	65	27	-
27	DAMANAGANGA	79.86	76.80	0.502	0.344	01-09-2016	69	72	66	51	1
28	DANTIWADA	184.1	173.67	0.399	0.101	01-09-2016	25	87	36	45	-
29	PANAM	127.41	124.80	0.697	0.390	01-09-2016	56	56	70	36	2
*30	SARDAR SAROVAR	121.92	123.10	1.566	1.566	01-09-2016	100	89	89	2120	1450
31	KARJAN	115.25	101.52	0.523	0.196	01-09-2016	37	68	74	51	3

WEEKLY REPORT OF 91 IMPORTANT RESERVOIRS OF INDIA

GOVERNMENT OF INDIA

CENTRAL WATER COMMISSION

WEEK ENDING :- 01.09.2016

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	461.82	2.171	1.425	01-09-2016	66	4	38	227	-
*33	KOYANA	657.90	658.90	2.652	2.652	31-08-2016	100	75	96	-	1920
34	BHIMA(UJJANI)	496.83	494.95	1.517	0.935	31-08-2016	62	0	69	125	12
35	ISAPUR	441.00	432.81	0.965	0.328	31-08-2016	34	25	60	104	-
36	MULA	552.30	552.06	0.609	0.596	31-08-2016	98	42	70	139	-
37	YELDARI	461.77	450.51	0.809	0.078	01-09-2016	10	3	40	78	-
38	GIRNA	398.07	394.59	0.524	0.353	01-09-2016	67	3	35	79	-
39	KHADAKVASLA	582.47	582.47	0.056	0.056	31-08-2016	100	32	71	78	8
*40	UPPER VAITARNA	603.50	603.09	0.331	0.319	31-08-2016	96	65	85	-	61
41	UPPER TAPI	214.00	212.08	0.255	0.151	01-09-2016	59	61	59	45	-
*42	PENCH (TOTALADOH)	490.00	487.26	1.091	0.815	31-08-2016	75	89	71	127	160
43	UPPER WARDHA	342.50	342.32	0.564	0.548	01-09-2016	97	97	83	70	-
44	BHATSA	142.07	139.38	0.942	0.869	31-08-2016	92	70	87	29.378	15
45	DHOM	747.70	747.18	0.331	0.331	31-08-2016	100	46	81	36.2	2
46	DUDHGANGA	646.00	643.95	0.664	0.611	23-08-2016	92	73	91	2.441	24
47	MANIKDOH (KUKADI)	711.25	705.56	0.288	0.194	31-08-2016	67	22	51	2.2	6
48	BHANDARDARA	342.50	342.32	0.304	0.290	01-09-2016	97	97	83	70	-
CENTRAL REGION											
UTTAR PRADESH											
49	MATATILA	308.46	308.15	0.707	0.609	31-08-2016	86	86	80	-	30
*50	RIHAND	268.22	265.76	5.649	4.584	01-09-2016	81	40	42	-	300
UTTRAKHAND											
*51	RAMGANGA	365.30	347.83	2.196	1.065	01-09-2016	48	81	58	1897	198
*52	TEHRI	830.00	819.05	2.615	2.170	01-09-2016	83	81	72	2351	1000
MADHYA PRADESH											
*53	GANDHI SAGAR	399.90	399.31	6.827	6.260	31-08-2016	92	91	49	220	115
54	TAWA	355.40	355.31	1.944	1.944	01-09-2016	100	100	94	247	-
*55	BARGI	422.76	422.15	3.180	3.045	01-09-2016	96	85	80	157	90
*56	BANSAGAR	341.64	341.19	5.166	5.049	31-08-2016	98	70	61	488	425
*57	INDIRA SAGAR	262.13	260.30	9.745	8.227	01-09-2016	84	84	65	2380	1000
58	BARNA	348.55	348.55	0.456	0.456	31-08-2016	100	86	75	546	-
CHHATTIS GARH											
*59	MINIMATA BANGOI	359.66	353.60	3.046	1.928	29-08-2016	63	71	74	-	120
60	MAHANADI	348.70	346.87	0.767	0.602	31-08-2016	78	34	73	319	10
SOUTHERN REGION											
A.P. & TG											
*61	SRISAILAM	269.75	265.85	8.288	4.174	01-09-2016	50	9	76	0	770
*62	NAGARJUNA SAGAR	179.83	156.48	6.841	0.166	01-09-2016	2	0	57	895	810
ANDHRA PRADESH											
63	SOMASILA	100.58	83.56	1.994	0.274	01-09-2016	14	12	32	168	0
TELANGANA											
64	SRIRAMSAGAR	332.54	327.05	2.300	0.998	01-09-2016	43	10	43	411	27
65	LOWER MANAIR	280.42	270.21	0.621	0.136	01-09-2016	22	18	48	199	60

WEEKLY REPORT OF 91 IMPORTANT RESERVOIRS OF INDIA

GOVERNMENT OF INDIA

CENTRAL WATER COMMISSION

WEEK ENDING :- 01.09.2016

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>KARNATAKA</u>											
66	KRISHNARAJA SAGRA	752.50	742.65	1.163	0.370	30-08-2016	32	54	84	79	-
*67	TUNGABHADRA	497.74	492.88	3.276	1.434	01-09-2016	44	66	87	529	72
68	GHATAPRABHA	662.95	660.26	1.391	1.192	31-08-2016	86	41	88	317	-
69	BHADRA	657.76	649.07	1.785	0.910	31-08-2016	51	69	91	106	39
70	LINGANAMAKKI	554.43	546.55	4.294	2.265	31-08-2016	53	45	79	-	55
71	NARAYANPUR	492.25	492.00	0.863	0.707	01-09-2016	82	68	85	425	-
72	MALAPRABHA(RENUKA)	633.83	630.83	0.972	0.637	31-08-2016	66	28	65	215	-
73	KABINI(Sancherla Tank)	696.16	693.61	0.444	0.305	30-08-2016	69	73	56	85	-
74	HEMAVATHY	890.63	883.52	0.927	0.498	30-08-2016	54	66	88	265	-
75	HARANGI	871.42	870.43	0.220	0.197	30-08-2016	90	82	96	53	-
76	SUPA	564.00	544.20	4.120	2.081	31-08-2016	51	42	66	-	-
77	VANIVILAS SAGAR	652.28	634.14	0.802	0.042	31-08-2016	5	5	11	123	-
*78	ALMATTI	519.60	519.60	3.105	3.105	01-09-2016	100	48	92	@	290
*79	GERUSOPPA	55.00	50.94	0.130	0.107	01-09-2016	82	68	84	83	240
<u>KERALA</u>											
80	KALLADA(PARAPPAR)	115.82	102.30	0.507	0.222	30-08-2016	44	23	64	62	-
*81	IDAMALAYAR	169.00	151.38	1.018	0.547	30-08-2016	54	51	67	33	75
*82	IDUKKI	732.43	716.73	1.460	0.687	31-08-2016	47	56	59	-	780
*83	KAKKI	981.46	970.54	0.447	0.286	30-08-2016	64	48	67	23	300
*84	PERIYAR	867.41	861.05	0.173	0.042	31-08-2016	24	39	50	84	140
85	MALAPMUZHA	867.41	861.05	0.224	0.085	31-08-2016	24	39	50	84	140
<u>TAMIL NADU</u>											
86	LOWER BHAWANI	278.89	265.41	0.792	0.169	31-08-2016	21	54	63	105	8
*87	METTUR(STANLEY)	240.79	226.42	2.647	0.996	31-08-2016	38	58	67	122	360
88	VAIGAI	279.20	266.08	0.172	0.008	31-08-2016	5	20	37	61	6
89	PARAMBIKULAM	556.26	544.75	0.380	0.157	31-08-2016	41	56	81	101	-
90	ALIYAR	320.04	304.89	0.095	0.013	31-08-2016	14	94	86	#	60
*91	SHOLAYAR	1002.79	990.30	0.143	0.072	31-08-2016	50	71	89	-	95
TOTAL FOR 91 RESERVOIRS				157.799	105.248						
PERCENTAGE							67	59	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