

BRIEF NOTE ON LIVE STORAGE STATUS OF 91 RESERVOIRS IN THE COUNTRY (WITH REFERENCE TO RESERVOIR STORAGE BULLETIN OF 29.12.2016)

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 61% 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 **29.12.2016**, live storage available in these reservoirs is **92.586 BCM**, which is **59%** of total live storage capacity of these reservoirs. However, last year the live storage available in these reservoirs for the corresponding period was **73.319 BCM** and the average of last 10 years live storage was **94.581 BCM**. Thus, the live storage available in 91 reservoirs **as per 29.12.2016 Bulletin** is **126%** of the live storage of corresponding period of last year and **98%** 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 **29.12.2016**, the total live storage available in these reservoirs is **8.64 BCM** which is **48%** of total live storage capacity of these reservoirs. The storage during corresponding period of last year was **55%** and average storage of last ten years during corresponding period was **57%** 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 **29.12.2016**, the total live storage available in these reservoirs is **14.94 BCM** which is **79%** 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 **29.12.2016**, the total live storage available in these reservoirs is **18.99 BCM** which is **70%** of total live storage capacity of these reservoirs. The storage during corresponding period of last year was **42%** and average storage of last ten years during corresponding period was **66%** 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 **29.12.2016**, the total live storage available in these reservoirs is **31.60 BCM** which is **75%** 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 **55%** 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 **29.12.2016**, the total live storage available in these reservoirs is **18.42 BCM** which is **36%** 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 **59%** 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 Ganga, Narmada, Tapi, Mahi, Sabarmati, Godavari, and Mahanadi & neighbouring East Flowing Rivers. Close to Normal storage is NIL. Deficient storage is in Indus, Rivers of Kutch, Krishna and West Flowing Rivers of South. Highly Deficient storage is in Cauvery & neighbouring EFRs Basin.
- Table on page 9-11 of the bulletin. The numbers of reservoirs having storage more than last year are **59** 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 **5** 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 **18**.

States having better storage (in %) than last year for corresponding period: Punjab, Rajasthan, Jharkhand, Odisha, West Bengal, Gujarat, Maharashtra, Uttar Pradesh, Madhya Pradesh, Chhattisgarh, AP&TG (Two combined projects in both states), Telangana and Karnataka.

States having equal storage (in %) to last year for corresponding period: NIL

States having lesser storage (in %) than last year for corresponding period: Himachal Pradesh, Tripura, Uttarakhand, Andhra Pradesh, Kerala and Tamil Nadu.

GOVERNMENT OF INDIA

WEEK ENDING :- 29.12.2016

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STORAGE STATUS OF IMPORTANT RESERVOIRS IN THE COUNTRY

AS ON 29.12.2016

- 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 **29.12.2016** is **92.586** BCM (**59** percent of the live storage capacity at FRL).The current year's storage is nearly **126** percent of last year's storage and **98** 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.)	-	-	1	1	-	-	3	1	H.P. PUNJAB RAJASTHAN	-23 % -18 % 15 %
EAST (Jharkhand,Odisha, Tripura & W.Bengal (15 Resv.))	2	3	2	4	-	2	1	1	JHARKHAND ODISHA W. BENGAL TRIPURA	22 % 12 % 32 % 97 %
WEST (Guj.& Mah.), (27 Resv.)	-	1	6	8	2	4	2	4	GUJARAT MAH.	5 % 7 %
CENTRAL (MP,UP,Uttarakhand & Chh.), (12 Resv)	-	1	2	3	4	-	2	-	U.P. UTTARAKHAND M.P. CHHATISGARH	58 % -10 % 45 % 14 %
SOUTH (Karnataka,TN,AP&TG,AP, TG, & Kerala), (31 Resv.)	-	1	1	1	1	5	3	19	AP&TG A,P TG KARNATAKA KERALA T.N.	-50 % -26 % 76 % -39 % -38 % -81 %
Status of 91 reservoirs	2	6	12	17	7	11	11	25		

4 Basin wise storage position:

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

Close to normal: NIL

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

Highly deficient: Cauvery & neighbouring EFRS.

- Out of 91 reservoirs, **58** reservoirs reported more than 80% of normal storage & **33** reservoirs reported 80% or below of normal storage. Out of these **33** reservoirs **18** having storage upto 50% of normal storage.

Name of reservoir	%	Name of reservoir	%
SHOLAYAR	0	HEMAVATHY	33
VAIGAI	6	BHADRA	39
ALIYAR	8	DANTIWADA	42
TUNGBABHADRA	14	MALAPRABHA(RENUKA)	45
BHADAR	15	MALAMPUZHA	47
NAGARJUNA SAGAR	18	KALLADA(PARAPPAR)	48
PERIYAR	18		
METTUR(STANLEY)	19		
LOWER BHAWANI	20		
VANIVILAS SAGAR	21		
KRISHNARAJA SAGRA	21		
PARAMBIKULAM	24		

15 reservoirs having storage 51% to 80% of normal storage.		
51% to 60%	61% to 70%	71% to 80%
1	6	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

GOVERNMENT OF INDIA
WEEKLY REPORT OF 91 IMPORTANT RESERVOIRS OF INDIA
CENTRAL WATER COMMISSION

WEEK ENDING :- 29.12.2016											
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	489.17	6.229	2.815	12/28/2016	45	70	66	676	1200
*2	PONG DAM	423.67	408.58	6.157	2.761	12/28/2016	45	54	51	-	360
<u>PUNJAB</u>											
*3	THEIN	527.91	505.24	2.344	0.866	12/29/2016	37	25	45	348	600
<u>RAJASTHAN</u>											
*4	MAHI BAJAJ SAGAR	280.75	278.85	1.711	1.460	12/29/2016	85	68	63	63	140
5	JHAKAM	359.50	355.60	0.132	0.095	12/29/2016	72	52	55	28	-
*6	RANA PRATAP SAGAR	352.81	348.42	1.436	0.645	12/21/2016	45	31	53	229	172
<u>EASTERN REGION</u>											
<u>JHARKHAND</u>											
7	TENUGHAT	269.14	260.19	0.821	0.424	12/29/2016	52	43	42	-	-
8	MAITHON	146.3	148.69	0.471	0.471	12/29/2016	100	32	85	342	-
*9	PANCHET HILL	124.97	127.03	0.184	0.184	12/29/2016	100	23	84	\$	80
10	KONAR	425.81	425.11	0.176	0.163	12/29/2016	93	67	75	\$	-
11	TILAIYA	368.81	368.82	0.142	0.141	12/29/2016	99	62	68	\$	4
<u>ODISHA</u>											
*12	HIRAKUD	192.02	191.55	5.378	4.518	12/28/2016	84	71	82	153	307
*13	BALIMELA	462.08	458.87	2.676	2.095	12/23/2016	78	68	66	-	360
14	SALANADI	82.30	68.89	0.558	0.194	12/22/2016	35	6	41	42	-
*15	RENGALI	123.50	122.67	3.432	3.160	12/23/2016	92	52	71	3	200
*16	MACHKUND(JALPUT)	838.16	835.70	0.893	0.688	12/23/2016	77	82	84	-	115
*17	UPPER KOLAB	858.00	856.42	0.935	0.785	12/23/2016	84	81	66	89	320
*18	UPPER INDRAVATI	642.00	639.00	1.456	1.136	12/29/2016	78	51	70	128	600
<u>WEST BENGAL</u>											
19	MAYURAKSHI	121.31	115.29	0.480	0.218	12/29/2016	45	21	44	227	-
20	KANGSABATI	134.14	129.39	0.914	0.534	12/29/2016	58	25	39	341	-
<u>TRIPURA</u>											
21	GUMTI	93.55	91.70	0.312	0.228	12/21/2016	73	78	37	-	15
<u>WESTERN REGION</u>											
<u>GUJARAT</u>											
*22	UKAI	105.16	102.41	6.615	5.192	12/28/2016	78	53	68	348	300
23	SABARMATI(DHAROI)	189.59	187.36	0.735	0.528	12/29/2016	72	63	54	95	1
*24	KADANA	127.7	126.39	1.472	1.058	12/29/2016	72	45	64	200	120
25	SHETRUNJI	55.53	53.47	0.300	0.163	12/29/2016	54	80	69	36	-
26	BHADAR	107.89	100.95	0.188	0.015	12/29/2016	8	37	52	27	-
27	DAMANAGANGA	79.86	77.90	0.502	0.389	12/28/2016	77	76	84	51	1
28	DANTIWADA	184.1	170.00	0.399	0.048	12/29/2016	12	55	29	45	-
29	PANAM	127.41	125.35	0.697	0.421	12/29/2016	60	36	64	36	2
*30	SARDAR SAROVAR	121.92	119.01	1.566	1.076	12/28/2016	69	41	76	2120	1450
31	KARJAN	115.25	107.48	0.523	0.312	12/28/2016	60	50	82	51	3

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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>MAHARASHTRA</u>											
32	JAYAKWADI(PAITHON)	463.91	462.10	2.171	1.521	12/29/2016	70	9	44	227	-
*33	KOYANA	657.90	653.06	2.652	2.011	12/21/2016	76	57	84	-	1920
34	BHIMA(UJJANI)	496.83	496.31	1.517	1.346	12/28/2016	89	0	70	125	12
35	ISAPUR	441.00	433.99	0.965	0.396	12/28/2016	41	22	58	104	-
36	MULA	552.30	550.31	0.609	0.506	12/28/2016	83	22	66	139	-
37	YELDARI	461.77	454.15	0.809	0.222	12/29/2016	27	7	44	78	-
38	GIRNA	398.07	395.40	0.524	0.387	12/28/2016	74	4	41	79	-
39	KHADAKVASLA	582.47	480.03	0.056	0.031	12/28/2016	55	41	55	78	8
*40	UPPER VAITARNA	603.50	602.47	0.331	0.298	12/28/2016	90	54	85	-	61
41	UPPER TAPI	214.00	213.47	0.255	0.223	12/28/2016	87	76	88	45	-
*42	PENCH (TOTALADOH)	490.00	480.03	1.091	0.413	12/28/2016	38	45	56	127	160
43	UPPER WARDHA	342.50	340.80	0.564	0.421	12/29/2016	75	60	70	70	-
44	BHATSA	142.07	134.68	0.942	0.752	12/29/2016	80	66	76	29.378	15
45	DHOM	747.70	742.61	0.331	0.275	12/29/2016	83	43	66	36.2	2
46	DUDHGANGA	646.00	642.24	0.664	0.556	12/29/2016	84	52	82	2.441	24
47	MANIKDOH (KUKADI)	711.25	701.29	0.288	0.136	12/29/2016	47	12	42	2.2	6
48	BHANDARDARA	744.91	744.39	0.304	0.296	12/29/2016	97	29	75	63.74	46
<u>CENTRAL REGION</u>											
<u>UTTAR PRADESH</u>											
49	MATATILA	308.46	305.62	0.707	0.354	12/28/2016	50	63	54	-	30
*50	RIHAND	268.22	263.56	5.649	3.654	12/26/2016	65	32	38	-	300
<u>UTTRAKHAND</u>											
*51	RAMGANGA	365.30	348.10	2.196	1.078	12/29/2016	49	60	66	1897	198
*52	TEHRI	830.00	809.40	2.615	1.808	12/29/2016	69	61	67	2351	1000
<u>MADHYA PRADESH</u>											
*53	GANDHI SAGAR	399.90	398.74	6.827	5.917	12/22/2016	87	77	50	220	115
54	TAWA	355.40	351.19	1.944	1.325	12/29/2016	68	61	66	247	-
*55	BARGI	422.76	419.40	3.180	2.282	12/29/2016	72	77	68	157	90
*56	BANSAGAR	341.64	340.16	5.166	4.506	12/22/2016	87	51	56	488	425
*57	INDIRA SAGAR	262.13	259.51	9.745	7.476	12/29/2016	77	61	52	2380	1000
58	BARNA	348.55	346.72	0.456	0.337	12/22/2016	74	50	52	546	-
<u>CHHATTIS GARH</u>											
*59	MINIMATA BANGOI	359.66	354.78	3.046	2.100	12/27/2016	69	44	63	-	120
60	MAHANADI	348.70	348.63	0.767	0.760	12/21/2016	99	48	77	319	10
<u>SOUTHERN REGION</u>											
<u>A.P & TG</u>											
*61	SRISAILAM	269.75	263.77	8.288	3.412	12/29/2016	41	17	60	0	770
*62	NAGARJUNA SAGAR	179.83	158.80	6.841	0.551	12/29/2016	8	0	45	895	810
<u>ANDHRA PRADESH</u>											
63	SOMASILA	100.58	93.49	1.994	1.054	12/29/2016	53	86	71	168	0
<u>TELANGANA</u>											
64	SRIRAMSAGAR	332.54	331.56	2.300	2.146	12/29/2016	93	8	49	411	27
65	LOWER MANAIR	280.42	278.63	0.621	0.545	12/29/2016	88	16	65	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	738.68	1.163	0.174	12/29/2016	15	58	71	79	-
*67	TUNGABHADRA	497.74	484.01	3.276	0.238	12/29/2016	7	21	52	529	72
68	GHATAPRABHA	662.95	654.22	1.391	0.811	12/28/2016	58	26	51	317	-
69	BHADRA	657.76	645.04	1.785	0.606	12/28/2016	34	58	88	106	39
70	LINGANAMAKKI	554.43	545.74	4.294	2.103	12/29/2016	49	51	71	-	55
71	NARAYANPUR	492.25	490.64	0.863	0.545	12/29/2016	63	41	83	425	-
72	MALAPRABHA(RENUKA)	633.83	624.89	0.972	0.185	12/28/2016	19	14	42	215	-
73	KABINI(Sancherla Tank)	696.16	689.14	0.444	0.109	12/29/2016	25	35	32	85	-
74	HEMAVATHY	890.63	873.28	0.927	0.105	12/29/2016	11	15	34	265	-
75	HARANGI	871.42	859.17	0.220	0.060	12/29/2016	27	3	10	53	-
76	SUPA	564.00	545.03	4.120	2.149	12/29/2016	52	43	61	-	-
77	VANIVILAS SAGAR	652.28	633.42	0.802	0.032	12/29/2016	4	13	19	123	-
*78	ALMATTI	519.60	514.50	3.105	1.316	12/29/2016	42	14	54	@	290
*79	GERUSOPPA	55.00	50.48	0.130	0.104	12/29/2016	80	75	81	83	240
<u>KERALA</u>											
80	KALLADA(PARAPPAR)	115.82	100.87	0.507	0.202	12/29/2016	40	89	83	62	-
*81	IDAMALAYAR	169.00	153.08	1.018	0.587	12/29/2016	58	56	70	33	75
*82	IDUKKI	732.43	713.73	1.460	0.567	12/29/2016	39	59	67	-	780
*83	KAKKI	981.46	966.75	0.447	0.243	12/29/2016	54	75	80	23	300
*84	PERIYAR	867.41	859.59	0.173	0.019	12/29/2016	11	100	61	84	140
85	MALAPMUZHA	115.06	106.06	0.224	0.065	12/29/2016	29	44	62	21	3
<u>TAMIL NADU</u>											
86	LOWER BHAWANI	278.89	262.43	0.792	0.100	12/29/2016	13	51	62	105	8
*87	METTUR(STANLEY)	240.79	215.61	2.647	0.305	12/29/2016	12	62	60	122	360
88	VAIGAI	279.20	265.20	0.172	0.006	12/29/2016	3	74	56	61	6
89	PARAMBIKULAM	556.26	539.47	0.380	0.071	12/29/2016	19	68	79	101	-
90	ALIYAR	320.04	302.99	0.095	0.006	12/29/2016	6	92	81	#	60
*91	SHOLAYAR	1002.79	956.17	0.143	0.000	12/29/2016	0	24	51	-	95
TOTAL FOR 91 RESERVOIRS				157.799	92.586						
PERCENTAGE							59	46	60		

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