BRIEF NOTE ON LIVE STORAGE STATUS OF 91 RESERVOIRS IN THE COUNTRY (WITH REFERENCE TO RESERVOIR STORAGE BULLETIN OF 13.10.2016)

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 13.10.2016, live storage available in these reservoirs is 119.174 BCM, which is 76% of total live storage capacity of these reservoirs. However, last year the live storage available in these reservoirs for the corresponding period was 94.036 BCM and the average of last 10 years live storage was 120.273 BCM. Thus, the live storage available in 91 reservoirs as per 13.10.2016 Bulletin is 127% 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 13.10.2016, the total live storage available in these reservoirs is 13.37 BCM which is 74% of total live storage capacity of these reservoirs. The storage during corresponding period of last year was 83% 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 reservoirsunder CWC monitoring having total live storage capacity of 18.83 BCM. As per Reservoir Storage Bulletin dated 13.10.2016, the total live storage available in these reservoirs is 16.09 BCM which is 85% of total live storage capacity of these reservoirs. The storage during corresponding period of last year was 70% and average storage of last ten years during corresponding period was 80% 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 13.10.2016, the total live storage available in these reservoirs is 23.61 BCM which is 87% of total live storage capacity of these reservoirs. The storage during corresponding period of last year was 60% and average storage of last ten years during corresponding period was 80% 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 13.10.2016, the total live storage available in these reservoirs is 38.98 BCM which is 92% of total live storage capacity of these reservoirs. The storage during corresponding period of last year was 74% and average storage of last ten years during corresponding period was 71% 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(2combined 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 13.10.2016, the total live storage available in these reservoirs is 27.13 BCM which is 53% 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 75% 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, , 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, Krishna and Cauvery & neighbouring EFRs Basin.
- Table on page 5-7 of the bulletin. The numbers of reservoirs having storage more than last year are 62 and reservoirs having storage more than average of last ten years are 48. The numbers of reservoirs having storage less than 20% with respect to last year is 4and having storage less than 20% with reference to average of last ten years is 5. The number of reservoirs having storage less than or equal to 50% with respect to last year are 10 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 13.10.2016

- 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 119.174 BCM (76 percent of the live storage capacity at FRL). The current year's storage 13.10.2016 is nearly percent of last year's storage and **99** percent of the average of last ten years.

3 Region wise storage status:-

Region wise storage status:									•			
REGION (States), Filling position of 91 reservoirs w.r.t. FRL												
(States), (Monitoring No. of Reservoirs)	100%	91%- 99%	81%- 90%	71%- 80%	61%- 70%	51%- 60%	41%- 50%	40% & below	Departure fr stor			
NORTH (HP,Punjab & Rajasthan), (6 Resv.)	3	-	1	1	2	-	-	-	H.P. PUNJAB RAJASTHAN	-18 % 3 % 21 %		
EAST (Jharkhand,Odisha, Tripura & W.Bengal (15 Resv.)	4	2	6	1	-	1	1	-	JHARKHAND ODISHA W. BENGAL TRIPURA	11 % 4 % 41 % 47 %		
WEST (Guj.& Mah.), (27 Resv.)	9	7	2	1	3	1	1	3	GUJARAT MAH.	10 % 7 %		
CENTRAL (MP,UP,Uttarakhand & Chh.), (12 Resv)	5	3	1	2	-	1	-	-	U.P. UTTARAKHAND M.P. CHHATISGARH	54 % -3 % 34 % 9 %		
SOUTH (Karnataka,TN,AP&TG,AP, TG, & Kerala), (31 Resv.)	3	-	1	2	2	3	5	15	AP&TG A,P TG KARNATAKA KERALA T.N.	-36 % -17 % 58 % -32 % -37 % -48 %		
Status of 91 reservoirs	24	12	10	7	7	6	7	18		,.		

4 Basin wise storage position:

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

Close to normal:

Deficient: Rivers of Kutch, West Flowing Rivers of South, Krishna and Cauvery & neighbouring EFRS.

Highly deficient: NIL

5 Out of 91 reservoirs, 61 reservoirs reported more than 80% of normal storage & 30 reservoirs reported 15 having storage upto 50% of normal 80% or below of normal storage. Out of these 30 reservoirs

TUNGABHADRA

torage.						1	5
ame of reservoir	%	Name of reservoir	%	Ì		having	g
'AIGAI	8	KALLADA(PARAPPAR)	41			to 80%	6
ALIYAR	10	MALAMPUZHA	48			storag	(
ERIYAR	16	MALAPRABHA(RENUKA	49	_		51%	
HADAR	18			_		to	
EMAVATHY	20					60%	
RISHNARAJA SAGRA	21					2	Ī
SHOLAYAR	28						
NAGARJUNA SAGAR	31						
VANIVILAS SAGAR	32						
OWER BHAWANI	35						
PARAMBIKULAM	39						

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

41

reservoirs.

15 reservors

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: 13 10 2016

	WEEK EN	NDING :-	13.10.201	6				
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	24.959	88.83%	18.501	65.85%	17.943	63.86%	39.10
INDUS	14.730	10.090	68.50%	12.126	82.32%	11.870	80.58%	-15.00
NARMADA	17.414	17.065	98.00%	15.050	86.42%	14.581	83.73%	17.04
TAPI	7.394	7.030	95.08%	5.185	70.12%	6.141	83.05%	14.48
MAHI	4.012	3.766	93.87%	2.980	74.28%	3.204	79.86%	17.54
SABARMATI	0.735	0.722	98.23%	0.658	89.52%	0.551	74.97%	31.03
RIVERS OF KUTCH	0.887	0.351	39.57%	0.790	89.06%	0.590	66.52%	-40.51
GODAVARI	15.394	12.530	81.40%	7.233	46.99%	10.672	69.33%	17.41
KRISHNA	32.831	20.007	60.94%	11.289	34.39%	26.417	80.46%	-24.26
MAHANADI & NEIGHBOURING EFRS	13.181	11.274	85.53%	9.136	69.31%	11.207	85.02%	0.60
CAUVERY& NEIGHBOURING EFRS	8.359	2.682	32.09%	2.963	35.45%	5.118	61.23%	-47.60
WEST FLOWING RIVERS OF SOUTH	14.766	8.698	58.91%	8.125	55.03%	11.979	81.13%	-27.39
TOTAL	157.799	119.174		94.036		120.273		
PERCENTAGE								-0.91

GOVERNMENT OF INDIA

CENTRAL WATER COMMISSION

	GOVERNMENT OF INDIA			WEE	K ENDING :-	13.10.2016		CENTRAL V	VATER COM	/IIVII55IO	IN
					-		STORAGE A	S % OF LIVE C FRL	APACITY AT	BENE	FITS
S. NO	NAME OF RESERVOIR	FRL (m)	CURRENT RESERVOIR LEVEL (m)	LIVE CAPACITY AT FRL (BCM)	CURRENT LIVE STORAGE (BCM)	DATE	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										
	HIMACHAL PRADESH	•									
*1	GOBIND SAGAR(BHAKRA)	512.06	501.98	6.229	4.433	10-10-2016	71	92	87	676	1200
*2	PONG DAM	423.67	415.86	6.157	4.150	13-10-2016	67	82	81	-	360
	<u>PUNJAB</u>										
*3	THEIN	527.91	516.29	2.344	1.507	13-10-2016	64	56	62	348	600
	RAJASTHAN										
*4	MAHI BAJAJ SAGAR	280.75	281.50	1.711	1.711	13-10-2016	100	99	87	63	140
5	JHAKAM	359.50	359.65	0.132	0.132	13-10-2016	100	92	85	28	-
*6	RANA PRATAP SAGAR	352.81	352.79	1.436	1.436	13-10-2016	100	73	77	229	172
	EASTERN REGION	•									
_	JHARKHAND										
	TENUGHAT	269.14	259.90	0.821	0.413	13-10-2016	50	52	44		-
8	MAITHON	146.3	148.93		0.471	13-10-2016	100	43	93	342	-
*9	PANCHET HILL	124.97	128.24	0.184	0.184	13-10-2016	100	40	93	\$	80
	KONAR	425.81	425.93		0.176	13-10-2016	100	82	91	\$	-
11	TILAIYA ODISHA	368.81	371.19	0.142	0.142	13-10-2016	100	98	87	\$	4
*12	HIRAKUD	192.02	192.06	5.378	4.841	09-10-2016	90	89	96	153	307
	BALIMELA	462.08	459.30			09-10-2016	81	72	66	-	360
	SALANADI	82.30	74.17		0.314	06-10-2016	56	36	62		
	RENGALI	123.50	122.55			09-10-2016	91	60	86	3	200
	MACHKUND(JALPUT)	838.16	837.70		0.847	09-10-2016	95	95	88	-	115
	UPPER KOLAB	858.00	856.70		0.812	09-10-2016	87	84	69	89	320
	UPPER INDRAVATI	642.00	639.75			13-10-2016	83	58	78		600
	WEST BENGAL										
19	MAYURAKSHI	121.31	119.59	0.480	0.411	13-10-2016	86	36	63	227	_
20	KANGSABATI	134.14	131.80	0.914	0.733	13-10-2016	80	29	56	341	-
	TRIPURA										
21	GUMTI	93.55	92.35	0.312	0.256	13-10-2016	82	97	56	-	15
	WESTERN REGION										
	<u>GUJARAT</u>										
*22	UKAI	105.16	104.46	6.615	6.322	13-10-2016	96	74	85	348	300
23	SABARMATI(DHAROI)	189.59	189.36	0.735	0.722	13-10-2016	98	90	75	95	1
*24	KADANA	127.7	127.71	1.472	1.472	13-10-2016	100	55	72	200	120
25	SHETRUNJI	55.53	53.87	0.300	0.187	13-10-2016	62	98	80	36	-
26	BHADAR	107.89	101.83	0.188	0.026	13-10-2016	14	84	78	27	-
27	DAMANAGANGA	79.86	80.05	0.502	0.486	13-10-2016	97	100	98	51	1
28	DANTIWADA	184.1	175.47	0.399	0.138	13-10-2016	35	85	51	45	-
29	PANAM	127.41	125.85	0.697	0.451	13-10-2016	65	50	77	36	2
*30	SARDAR SAROVAR	121.92	121.50	1.566	1.490	13-10-2016	95	77	79	2120	1450
31	KARJAN	115.25	108.31	0.523	0.331	13-10-2016	63	68	96	51	3

GOVERNMENT OF INDIA

CENTRAL WATER COMMISSION

	GOVERNMENT OF INDIA			WEE	K ENDING :-	13.10.2016		CENTRAL V	ENTRAL WATER COMMISSIO		
			CUDDENT			10.10.2010	STORAGE A	S % OF LIVE C FRL	APACITY AT	BENE	FITS
S. NO	NAME OF RESERVOIR	FRL (m)	CURRENT RESERVOIR LEVEL (m)	LIVE CAPACITY AT FRL (BCM)	CURRENT LIVE STORAGE (BCM)	DATE	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	ЗА	3B
	MAHARASHTRA										
32	JAYAKWADI(PAITHON)	463.91	462.88	2.171	1.790	13-10-2016	82	6	53	227	-
*33	KOYANA	657.90	659.36	2.652	2.652	13-10-2016	100	74	96	-	1920
34	BHIMA(UJJANI)	496.83	497.33	1.517	1.517	13-10-2016	100	14	83	125	12
35	ISAPUR	441.00	435.23	0.965	0.477	13-10-2016	49	36	71	104	-
36	MULA	552.30	552.28	0.609	0.608	13-10-2016	100	52	84	139	-
37	YELDARI	461.77	454.36	0.809	0.233	13-10-2016	29	15	56	78	-
38	GIRNA	398.07	397.15	0.524	0.470	13-10-2016	90	11	51	79	-
39	KHADAKVASLA	582.47	582.08	0.056	0.051	13-10-2016	91	27	73	78	8
*40	UPPER VAITARNA	603.50	603.50	0.331	0.331	13-10-2016	100	72	93	-	61
41	UPPER TAPI	214.00	213.72	0.255	0.238	13-10-2016	93	100	97	45	-
*42	PENCH (TOTALADOH)	490.00	483.80	1.091	0.601	13-10-2016	55	74	80	127	160
43	UPPER WARDHA	342.50	342.50	0.564	0.564	13-10-2016	100	99	94	70	-
44	BHATSA	142.07	141.97	0.942	0.941	13-10-2016	100	81	95	29.378	15
45	DHOM	747.70	747.60	0.331	0.329	13-10-2016	99	54	89	36.2	2
46	DUDHGANGA	646.00	646.04	0.664	0.664	13-10-2016	100	76	97	2.441	24
	MANIKDOH (KUKADI)	711.25	706.67		0.211	13-10-2016	73	27	61	2.2	6
48	BHANDARDARA CENTRAL REGION	342.50	342.50	0.304	0.304	13-10-2016	100	99	94	70	-
		-									
40	MATATILA	200.46	200.46	0.707	0.644	12 10 2016	01	60	00		20
	RIHAND	308.46 268.22	308.46 265.57		0.641 4.505	13-10-2016 13-10-2016	91 80	68 37	88 48	-	30 300
30	UTTRAKHAND	200.22	205.57	5.049	4.505	13-10-2010	80	31	40	-	300
*51	RAMGANGA	365.30	350.58	2.196	1.208	13-10-2016	55	68	71	1897	198
	TEHRI		824.50		2.390	13-10-2016	91	85	82	2351	1000
32	MADHYA PRADESH	830.00	624.50	2.615	2.390	13-10-2010	91	65	02	2331	1000
*52	GANDHI SAGAR	399.90	399.85	6.827	6 927	13-10-2016	100	91	60	220	115
	TAWA	355.40	355.46			13-10-2016	100	100	60 98	247	113
	BARGI	422.76	422.76			13-10-2016	100	89	91	157	90
	BANSAGAR	341.64	341.61	5.166		13-10-2016	100	62		488	425
	INDIRA SAGAR	262.13	262.07			13-10-2016	100	86	79	2380	1000
	BARNA	348.55	347.92			13-10-2016	90	72		546	-
00	CHHATTIS GARH	0.0.00	011102	000	0	.0 .0 20.0				0.0	
*59	MINIMATA BANGOI	359.66	355.72	3.046	2.242	10-10-2016	74	56	72		120
	MAHANADI	348.70	348.51				99	49	73	319	
	SOUTHERN REGION										
	A.P & TG	•									
*61	SRISAILAM	269.75	268.96	8.288	5.598	13-10-2016	68	25	74	0	770
	NAGARJUNA SAGAR	179.83	164.74		1.634		24	0	76	895	810
	ANDHRA PRADESH							Ū	. •		2.0
63	SOMASILA	100.58	92.87	1.994	0.984	13-10-2016	49	20	59	168	0
- =	TELANGANA		,					_0			,
64	SRIRAMSAGAR	332.54	332.54	2.300	2.300	13-10-2016	100	10	64	411	27
	LOWER MANAIR	280.42	280.42		0.621	13-10-2016	100	18		199	

WEEKLY REPORT OF 91 IMPORTANT RESERVOIRS OF INDIA

GOVERNMENT OF INDIA

CENTRAL WATER COMMISSION

				WEE	K ENDING :-	13.10.2016					
			CHDDENT	LIVE			STORAGE A	ORAGE AS % OF LIVE CAPACITY AT FRL		BENEFITS	
S. NO	NAME OF RESERVOIR	FRL (m)	CURRENT RESERVOIR LEVEL (m)	LIVE CAPACITY AT FRL (BCM)	CURRENT LIVE STORAGE (BCM)	DATE	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	739.38	1.163	0.203	13-10-2016	17	63	85	79	
*67	TUNGABHADRA	497.74	491.39	3.276	1.121	13-10-2016	34	63	84	529	72
68	GHATAPRABHA	662.95	660.32	1.391	1.197	13-10-2016	86	38	90	317	
69	BHADRA	657.76	648.61	1.785	0.872	13-10-2016	49	66	92	106	39
70	LINGANAMAKKI	554.43	547.70	4.294	2.507	13-10-2016	58	53	88	-	55
71	NARAYANPUR	492.25	491.62	0.863	0.659	13-10-2016	76	56	88	425	
72	MALAPRABHA(RENUKA)	633.83	627.68	0.972	0.358	13-10-2016	37	28	76	215	
73	KABINI(Sancherla Tank)	696.16	691.04	0.444	0.184	13-10-2016	41	58	48	85	
74	HEMAVATHY	890.63	875.25	0.927	0.152	13-10-2016	16	35	83	265	
75	HARANGI	871.42	865.99	0.220	0.109	13-10-2016	50	39	76	53	
76	SUPA	564.00	547.58	4.120	2.369	13-10-2016	58	44	73	-	
77	VANIVILAS SAGAR	652.28	633.97	0.802	0.039	13-10-2016	5	11	15	123	
*78	ALMATTI	519.60	519.60	3.105	3.105	13-10-2016	100	53	92	@	290
*79	GERUSOPPA	55.00	48.65	0.130	0.095	13-10-2016	73	66	78	83	240
	KERALA										
80	KALLADA(PARAPPAR)	115.82	98.01	0.507	0.163	07-10-2016	32	39	79	62	
*81	IDAMALAYAR	169.00	153.43	1.018	0.595	13-10-2016	58	53	80	33	75
*82	IDUKKI	732.43	716.07	1.460	0.662	13-10-2016	45	57	69	-	780
*83	KAKKI	981.46	969.33	0.447	0.272	13-10-2016	61	52	79	23	300
*84	PERIYAR	867.41	859.10	0.173	0.012	13-10-2016	7	36	45	84	140
85	MALAPMUZHA	867.41	859.10	0.224	0.093	13-10-2016	7	36	45	84	140
	TAMIL NADU										
86	LOWER BHAWANI	278.89	264.62	0.792	0.148	13-10-2016	19	29	53	105	8
*87	METTUR(STANLEY)	240.79	225.19	2.647	0.897	13-10-2016	34	34	50	122	360
88	VAIGAI	279.20	264.65	0.172	0.005	13-10-2016	3	29	35	61	6
89	PARAMBIKULAM	556.26	543.00	0.380	0.127	13-10-2016	33	72	87	101	
90	ALIYAR	320.04	303.41	0.095	0.008	13-10-2016	8	89	86	#	60
*91	SHOLAYAR	1002.79	980.27	0.143	0.037	13-10-2016	26	65	93	-	95
	TOTAL FOR 91 RESERVOIRS			157.799	119.174						

Sd/-

60

76

76

\$ TOTAL CCA 342 TH. HA OF DVC SYSTEM

PERCENTAGE

Director W. M. , CWC

^{*} HYDEL POWER CAPACITY HAVING CAPACITY MORE THAN 60MW

[#] TOTAL CCA 101 TH. HA OF PARAMBIKULAM & ALIYAR

 $^{@^{\}scriptscriptstyle |}$ TOTAL CCA 425 TH. HA. OF NARAYANPUR AND ALMATTI

 $[\]dagger$ SABARMATI RESERVOIR IS SUPPLEMENTED WITH NARMADA WATER THROUGH PIPELINE.

SI. 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