

SSP: Status of Power and Irrigation Benefits

Month wise and Year wise Power Generation at Sardar Sarovar Project and Indira Sagar Project on Narmada River

MU (MW)

Month/ year	Sardar Sarovar Project			Indira Sagar (IC)
	RBPH (IC)	CHPH (IC)	Total SSP (IC)	
0104	0	0	0	55 (250)
0204	0	0	0	71 (375)
0304	0	0	0	66 (375)
2003-2004	0	0	0	192
0404	0	0 (450)	0 (450)	29 (500)
0504	0	0 (450)	0 (450)	23 (500)
0604	0	0 (450)	0 (450)	76 (500)
0704	0	0 (450)	0 (450)	95 (625)
0804	0	4 (150)	4 (150)	326 (625)
0904	0	33 (200)	33 (200)	280 (625)
1004	0	38 (200)	38 (200)	100 (750)
1104	0	26.62 (200)	26.62 (200)	114.46 (750)
1204	0	26.14 (200)	26.14 (200)	90.01 (875)
0105	20.97 (200)	0 (200)	20.97 (400)	89.35 (875)
0205	53.87 (200)	12.55 (200)	66.42 (400)	74.17 (875)
0305	35.88 (200)	10.01 (200)	45.89 (400)	46.93 (875)
2004-05	110.72	149.98	260.70	1348.76
0405	17.92 (400)	1.69 (250)	19.61 (650)	25.58 (1000)
0505	17.02 (400)	2.73	19.75 (650)	23.34
0605	103.82 (400)	10.05	113.87 (650)	112.92
0705	217.69 (400)	18.95	236.64 (650)	489.95
0805	200.20 (600)	22.30	222.50 (850)	483.90
0905	245.40 (600)	29.93	275.33 (850)	379.62
1005	304.57 (600)	16.35	320.92 (850)	267.72
1105	209.91 (800)	17.52	227.43 (1050)	190.19
1205	143.49 (800)	20.51	164.00 (1050)	190.84
0106	147.94 (800)	19.54	167.48 (1050)	167.66
0206	114.5 (1000)	16.92	131.42 (1250)	133.37
0306	30.40 (1000)	32.26	62.66 (1250)	98.88
2005-06	1752.86	208.65	1961.51	2575.97
0406	0	12.05	12.05	115.12
0506	75.3	6.94	82.24	103.29
0606	200.43 (1200)	8.85	209.28 (1450)	137.81
0706	278.22	22.31	300.53	127.54
0806	563.13	15.00	578.13	467.63
0906	602.03	22.12	624.15	227.59
1006	505.20	19.31	524.51	260.78
1106	459.64	22.16	481.80	393.66
1206	365.81	21.28	387.09	324.90
0107	193.39	28.86	222.25	261.37
0207	79.15	25.53	104.68	94.33
0307	49.74	24.68	74.42	91.67
2006-07	3372.04	229.09	3601.13	2605.69
0407	126.74	24.50	151.24	91.67
0507	72.65	12.93	85.58	101.87
0607	214098	9.77	224.75	135.34
0707	796.60	34.95	831.55	529.42
0807	788.86	50.83	839.69	441.52
0907	587.00	15.85	602.85	178.12
1007	321.95	19.72	347.67	253.31

SSP: Sardar Sarovar Project; RBPH: River Bed Power House; CHPH: Canal Head Power House; IC: Installed Capacity mentioned till the station reaches full design capacity; NHDC: Narmada Hydroelectric Development Corporation; ISP: Indira Sagar Project; MU: Million Units; MW: Mega Watts: Power generation figures for Oct '07 are tentative
Source: Central Electricity Authority www.cea.nic.in Monthly Generation Reports

Some Comments

1. Power generation at CHPH has been lower in Sept to Dec 2005 compared to corresponding months in 2004, because there was more water available to pass through CHPH in these months as RBPH was not yet commissioned.
2. Power generation at CHPH has been lower in June, August and Sept 2006 and March 2007 compared to corresponding months in previous year. What this means is that less water was allowed to go through canals in 2006-07 compared to corresponding months previous year, which is strange, since with increased irrigated area in 2006-07, in fact more water should have been allowed to go through the canals. This shows that a lot of the water that flowed into canals in 2005-06 was not used for irrigation or water supply but possibly for unplanned use (e.g. allowing water into rivers or filling lakes).
3. Power generation at CHPH has been lower in Sept 2007 compared to corresponding month in 2006. This is indeed strange as irrigation water demand should be high in September and in 2007 more area should have been under irrigation. Similarly, power generation at RBPH has been lower in Sept and Oct 2007 compared to corresponding months in the previous year. This seems to be due to reduced power generation also at ISP in the upstream in these two months.
4. Power generation at RBPH and also ISP peaked in July 2007. Power generation at CHPH peaked in August 2007. Power generation at RBPH was 3372.04 MU in 2006-07 and is likely to go up further in 2007-08. Power generation at ISP in 2006-07 is marginally (about 1%) higher than that in the previous year, but is likely to go up in 2007-08, going by the trends so far.
5. Power generation at CHPH in 2006-07 was marginally (<10%) higher than that in the previous year, which indicates that the irrigation in 2006-07 has not gone up significantly compared to that in the previous year.
6. One can see from above that since August 2004, the CHPH at SSP has produced power in every single month, except January 2005. In January 2005, CHPH could not generate power due to breach in SSP main canal and attended repairs, The RBPH did produce 20.97 MU power. This means that every month since August 2004, the level of water in SSP reservoir has been above 110.2 m and there has been sufficient water in the river.
7. This is further substantiated by the figures in the last column in the above table, where the power generation at the upstream Indira Sagar Project on Narmada in MP is tabulated. Here again we can see that ISP has been producing power every single month since January 2004 when power generation at ISP was commissioned. It should be noted here that ISP has a greater storage capacity and releases water into the river after power generation, most of which is available at the downstream SSP. Thus regulated, predictable water has been available at SSP every month (actually every day), for release into the canals and to be used for irrigation or water supply in Gujarat since August 2004 at least, when the first unit of CHPH was commissioned.
8. Moreover, there is a huge water storage of 3665 million cubic meter at 110.64 m and 2600 million cubic meter at 100 m. SSP has been using that water since 2000-01, first by pumping water from existing reservoir into the canal, then since August 2002 through

Irrigation By Pass Tunnel (IBPT) and since August 2004 through CHPH and this water has been used for water supply and irrigation, besides allowing the water to flow into rivers like Sabarmati and into lakes in Gujarat.

9. If we look at the power generation figures at CHPH of SSP for 2005-6, we see that SSP produced 208.65 MU power. This means that if on average the reservoir level remained around 11.64 m (it could have gone up slightly some times in Monsoon and could have gone down lightly in summer) and if power generation efficiency is assumed as 90% (that is 90% of the potential energy is converted into power) than we see that at least 3.8 MAF water had flowed into SSP canal during 2005-06 even if no water had flown through IBPT. In fact the efficiency is more likely to be about 80%, in which case, at least 4.28 MAF water had flown into canals during the year. This is even more than the 3.5 MAF water claimed by Gujarat when the clearance was given to increase the height of the dam to 110.64 m. And this water was available almost on daily basis. However, Gujarat has been unable to put even 10% of this water to use as is clear from the area irrigated in 2005-6 (57 000 ha) and water supply provided during 2005-6 (2044 villages and 57 towns).

10. Dam height reached 110.64 m in June 2004 and 119 m in June 2006, 121.62 m in Oct 2006.

Irrigation Benefits According to the quarterly reports published by Sardar Sarovar Narmada Nigam Limited, as required under the law, the Command Area Development (CAD) work completed at SSP, which gives one indication of the irrigation achieved at command areas has been as follows.

Sr No	Date	CAD completed, ha
1	31.12.2005	97000
2	31.03.2007	140 740
3	30.06.2007	276 562
4	30.09.2007	279 308

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