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Before to go through the write up, following facts I would like to mention here :-

1. Generation from BTPS is stopped w.e.f. 11-03-2002. When only available unit was ready for synchronization with the grid after prolong consumption of fuel, suddenly the management has decided to stop generation from BTPS for indefinite period on the plea of high generation cost but without any analysis.
2. So it become impossible for me to submit the data for the year 2003-04 as sought for.
3. Analysis submitted for the last Generation year i.e. 2001-02
4. Previous year's data (2000-01) also enclosed for reference.

(i) **Pop up explanation for change in consumption and costs.**

(a) *Increased specific consumption or cost list :*

#	Reason of increased <u>energy consumption</u> KWh / unit output	Reason for increased <u>energy cost</u> Rs. / unit output
1	Increase in forced outage	Fuel cost increased
2	Increase in scheduled outage	Specific consumption increased
3	Labour unrest	Revenue from diverted energy flow decreased
4	Reduction in output due to lack of fuel	Output mix changed to more energy intensive products
5	Reduction in output due to lack of resource material	Demurrages charge for delay of unloading of coal rack
6	Reduction in output due to high inventory	Unsettled cases of short delivery by Railways
7	Consumption recorded on assumption	Contaminant in incoming fuel
8	No proper metering is done	Coal transportation security cost
9	Low load operation	Wastage in handling, processing , unloading ,storing etc.
10	Consumption in non-productive ideal time	High Railways freight charge for coal
11	Losses and shortage are treated as consumption	Cost of Railways staffs, siding and track maintenance
12	Inferior quality of fuel	
13	Inadequate combustion monitoring system	
14	Lack of managerial sincerity on energy consumption	
15	Lack of employees dedication in absence of motivation	

N.B. Black print contents are original in the given subject.
 Red print contents are added points for expansion

(b) Decreased specific consumption or cost list :

#	Reason of decreased <u>energy consumption</u> KWh / unit output	Reason for decreased <u>energy cost</u> Rs. / unit output
1	Energy mix changed	Timely unloading of fuel
2	Employees' dedication	Fuel quality improved
3	Less outage of running unit	Less wastage
4	Improved Fuel quality	Lesser cost and transportation expence
5	Improved grid condition	Realistic assumption of consumption

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(ii) Real case for data analysis of Bongaigaon Thermal Power Station (BTPS)

Data taken for analysis is of the year 2001-02 because the plant was out of operation during the year 2003-04.

Bongaigaon Thermal Power Station Cost of fuel						
Month	2001-02			2000-01		
	LDO Rs. / KL	HFO Rs. / KL	Coal Rs. / MT	LDO Rs. / KL	HFO Rs. / KL	coal Rs. / MT
April	16670.5	12709.58	2163.39	13754.3	15861.79	1993.13
May	16670.5	13975.09	2165.59	13891	15588.25	1993.13
June	16670.5	14604.01	2219.28	13819.4	16005.93	2001
July	16670.5	13419.14	2176.73	13819.42	16116.74	2001.95
August	16670.5	13677.87	2176.73	13819.44	15478.27	2001.95
Sep	16670.5	14253.46	2147.14	13833.33	15456.96	2001.95
Oct	16670.5	14734.66	1903.19	16694.51	15584.59	2113
Nov	16670.5	14421.01	1913.16	16670.5	16719.6	2052.12
Dec	16670.5	14421.01	1931.16	16670.5	16028	2116.1
Jan	16670.5	12965.66	1931.16	16670.5	14693.71	2116.1
Feb	16670.5	12965.66	1751.93	16670.5	12709.58	2103.82
March	16670.5	12965.66	1751.93	16670.5	12709.58	2163.39
Yearly Average	16670.5	13759.4	2019.28	15248.65	15246.08	2054.8

Bongaigaon Thermal Power Station
Month wise Energy Consumption and Cost Analysis
For the year 2001-02

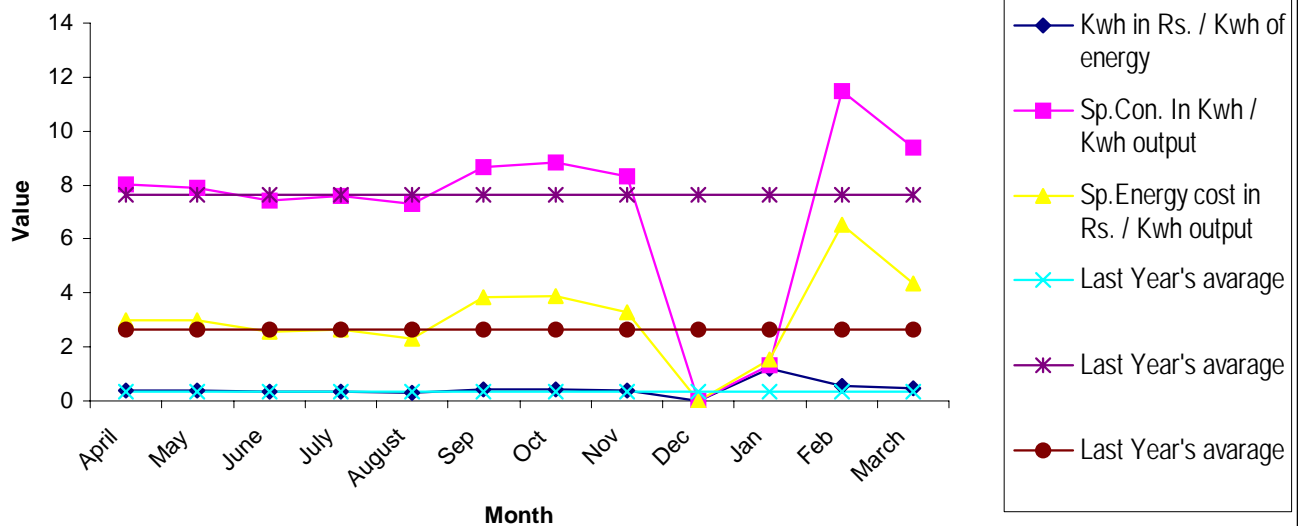
Month	Fuel Type	Energy Consumption (Oil in KL, Coal in MT)	Energy in KWh (LDO – Lt x 12.9, HFO - Lt x 13.3 , Coal – Kg x 8.05)	Total monthly energy consumption in KWh	Input energy in Rs.	Total monthly energy input in Rs.
April, 01	LDO	48.00	6,19,200	4,03,38,373	8,00,184	1,50,82,914
	HFO	395.00	52,53,500		50,20,284	
	Coal	4,281.45	3,44,65,673		92,62,446	
May, 01	LDO	106.00	13,67,400	4,59,65,835	17,67,073	1,74,76,123
	HFO	358.00	47,61,500		50,03,082	
	Coal	4,948.70	3,98,37,035		1,07,05,968	
June, 01	LDO	165.00	21,28,500	9,82,32,778	27,50,632	3,38,71,837
	HFO	423.00	56,25,900		61,77,496	
	Coal	11,239.55	9,04,78,378		2,49,43,709	
July, 01	LDO	13.00	1,67,700	3,25,92,785	2,16,716	1,12,92,859
	HFO	235.00	31,25,500		31,53,498	
	Coal	3639.70	2,92,99,585		79,22,644	
August, 01	LDO	48.00	6,19,200	8,99,86,188	8,00,184	2,86,24,725
	HFO	363.00	48,27,900		49,65,067	
	Coal	10,501.75	8,45,39,088		2,28,59,474	
Sept., 01	LDO	19.00	2,45,100	71,26,293	3,16,739	2,45,30,292
	HFO	95.00	12,63,500		13,54,079	
	Coal	697.85	56,17,693		14,98,382	
Oct., 01	LDO	48.00	6,19,200	1,20,40,470	8,00,184	53,20,084
	HFO	157.00	20,88,100		23,13,342	
	Coal	1,159.40	93,33,170		22,06,558	
Nov, 01	LDO	49.00	6,32,100	1,90,54,910	8,16,854	75,14,800
	HFO	206.00	27,39,800		29,70,728	
	Coal	1,948.20	1,56,83,010		37,27,218	
Dec, 01	LDO	0	0	0	0	0
	HFO	0	0		0	
	Coal	0	0		0	
Jan,02	LDO	26.00	3,35,400	5,08,300	4,33,433	60,19,987
	HFO	13.00	1,72,900		1,68,554	
	Coal	0	0		0	
Feb,02	LDO	43.00	5,54,700	36,82,143	7,16,831	21,02,441
	HFO	70.00	9,31,000		9,07,595	
	Coal	272.85	21,96,443		4,78,014	
March, 02 (Upto 11-3-2002)	LDO	69.00	8,90,100	67,94,828	11,50,264	31,60,441
	HFO	72.00	9,57,600		9,33,528	
	Coal	614.55	49,47,128		10,76,649	
Yearly total			35,63,22,900		12,82,17,412	

N.B. Generation in December, 01 was nil due to forced outage

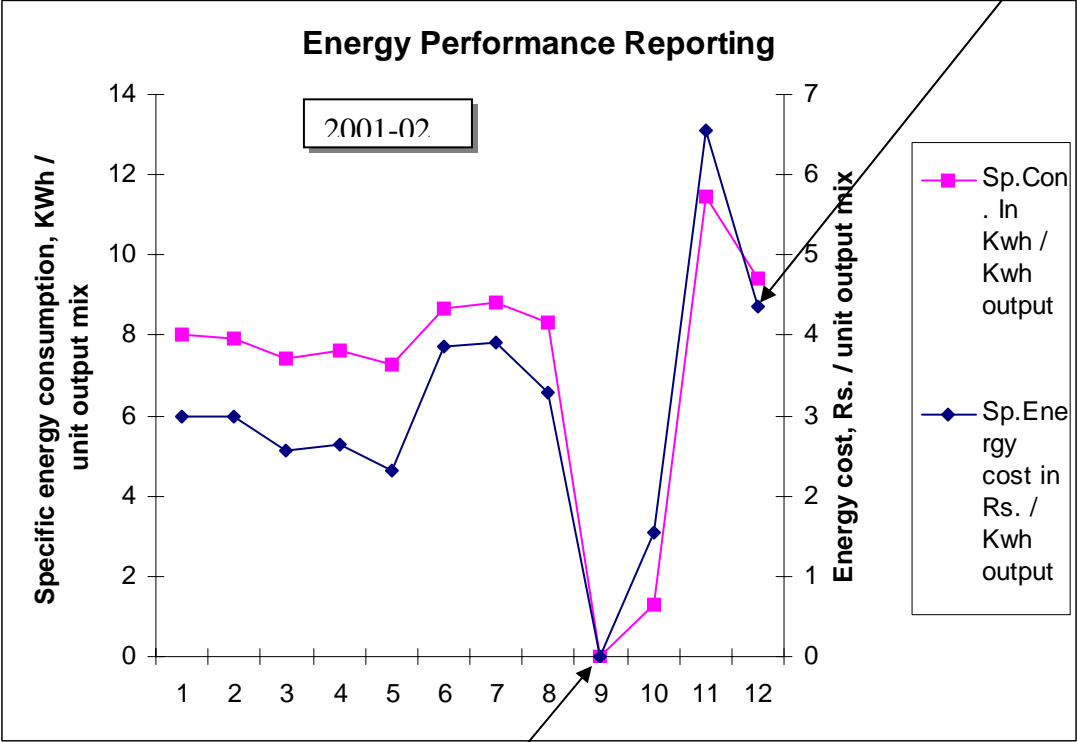
Bongaigaon Thermal Power Station
Energy cost analysis with product output
For the year 2001-02

M O N T H	Output In KWh	Energy Input In KWh	Energy Cost in Rs.	Cost of Energy mix. in Rs. / KWh of Energy input	Sp. Consu mption in KWh / KWh output	Sp. Ener- gy Cost in Rs. / KWh outpu t	Reason For Increase / Decrease Of energy Consumption or cost
April	5037000	40338372	15082914	0.37	8.01	2.99	
May	5822000	45965835	17487019	0.38	7.90	3.00	HFO cost increased
June	13223000	98232777	33871837	0.34	7.43	2.56	Output increased
July	4282000	32592785	11292559	0.35	7.61	2.64	HFO cost decreased
Aug.	12355000	89986187	28624725	0.32	7.28	2.32	Coal cost decreased
Sep	821000	7126292	3169221	0.44	8.68	3.86	Forced outage and HFO cost increased
Oct	1364000	12040470	5320084	0.44	8.63	3.90	Coal consumption decreased
Nov	2292000	19054910	7549868	0.40	8.31	3.29	Output increased
Dec	0	0	0	0	0	0	Output and consumption nil
Jan	388000	508300	601987	1.18	1.31	1.55	Output and use of coal decreased
Feb	321000	3682142	2102442	0.57	11.47	6.55	Ideal energy consumption
Mar.	723000	6794827	3160441	0.47	9.40	4.37	Ideal energy consumption

Indicator for 2001-02 with previous year's average



Generation from BTPS was stopped on 11-3-2002 on the plea of high generation cost



Generation and consumption in the month of Dec,01 was nil

Previous year reference :

<p style="text-align: center;">Bongaigaon Thermal Power Station Month wise energy consumption and cost analysis For the year 2000-01</p>						
Month	Fuel type	Energy Consumption (Oil in KL, Coal in MT)	Energy in KWh (LDO – Lt x 12.9, HFO - Lt x 13.3 , Coal – Kg x 8.05)	Total monthly energy consumption in KWh	Input energy in Rs.	Total monthly energy cost in Rs.
April, 00	LDO	60.00	7,74,000	8,52,32,553	82,52,58	2,74,93,178
	HFO	458.00	60,91,400		72,64,700	
	Coal	9,735.05	7,83,67,153		1,94,03,220	
May, 00	LDO	135.00	17,41,500	8,25,86,233	18,75,285	2,71,17,421
	HFO	425.00	56,52,500		66,25,006	
	Coal	9,340.00	7,51,92,233		1,86,17,130	
June, 00	LDO	137.00	17,67,300	6,88,91,000	18,93,258	2,46,99,658
	HFO	482.00	64,10,600		77,14,858	
	Coal	7,542.00	6,07,13,100		1,50,91,542	
July, 00	LDO	64.00	8,25,600	6,30,54,743	8,84,443	2,33,02,744
	HFO	542.00	72,08,600		87,35,273	
	Coal	6,834.85	5,50,20,543		1,36,83,028	
August, 00	LDO	82.00	10,57,800	3,89,03,545	11,33,194	1,46,58,728
	HFO	338.00	44,95,400		52,31,655	
	Coal	4,142.90	3,33,50,345		82,93,879	
Sept., 00	LDO	42.00	5,41,800	3,48,81,193	5,81,000	1,31,05,844
	HFO	328.00	43,62,400		50,69,883	
	Coal	3,723.85	2,99,76,993		74,54,962	
Oct., 00	LDO	38.00	4,90,200	8,90,26,025	6,34,391	2,96,54,386
	HFO	478.00	63,57,400		74,49,434	
	Coal	10,208.50	8,21,78,425		2,15,70,560	
Nov, 00	LDO	76.00	9,80,400	4,01,69,848	12,66,958	1,49,62,701
	HFO	278.00	36,97,400		46,48,049	
	Coal	4,408.95	3,54,92,048		90,47,694	
Dec, 00	LDO	45.00	5,80,500	8,32,16,305	7,50,172	2,71,84,580
	HFO	376.00	50,00,800		60,26,528	
	Coal	9,644.10	7,76,35,005		2,04,07,880	
Jan,01	LDO	48.00	6,19,200	3,20,73,560	8,00,184	1,06,47,589
	HFO	126.00	16,75,800		20,19,528	
	Coal	3,699.20	2,97,78,560		78,27,877	
Feb,01	LDO	139.00	17,93,100	4,99,71,283	23,17,199	1,75,30,655
	HFO	284.00	37,77,200		36,09,521	
	Coal	5,515.65	4,44,00,983		1,16,03,935	
March, 01	LDO	26.00	3,35,400	6,69,48,170	4,33,433	2,16,05,653
	HFO	358.00	47,61,400		45,50,030	
	Coal	7,683.40	6,18,51,370		1,66,22,191	
		Yearly total	73,49,54,455		25,19,63,138	

Bongaigaon Thermal Power Station
Performance indicator for the year 2000-01

Month	Output in KWh	Energy cons. In KWh	Energy mix In Rs.	KWh in Rs./ KWh of energy	Sp. Cons. In Kwh / KWh of output	Sp. Energy Cost in Rs. / KWh output
April	11453000	85252552	27493178	0.32	7.44	2.40
May	10989000	82586232	27117421	0.33	7.52	2.47
June	8874000	68891000	24699658	0.36	7.76	2.78
July	8041000	63054742	23302744	0.37	7.84	2.90
Aug.	4874000	38903545	14658728	0.38	7.98	3.01
Sep	4361000	34881192	13105844	0.38	8.00	3.01
Oct	12010000	89026025	29654386	0.38	7.41	2.47
Nov	5187000	40169847	14962701	0.37	7.74	2.88
Dec	11346000	83216305	27184580	0.33	7.33	2.40
Jan	4352000	32073560	10647589	0.33	7.37	2.45
Feb	6489000	49971282	17530655	0.35	7.70	2.70
Mar.	8725000	66948170	21605653	0.32	7.67	2.48

