

Energy consumption per tonne of crude steel in SAIL & RINL vis-à-vis norms during the last six years ending 2009-10

(As referred in paragraph 4.6 (i))

Plant	G.cal/tcs	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
BSP	Normal	6.85	6.84	6.82	6.75	6.45	6.45
	Actual	6.84	6.79	6.82	6.72	6.50	6.56
BSL	Normal	7.30	7.10	7.00	6.88	6.65	6.74
	Actual	7.23	7.08	7.09	6.89	6.83	6.74
DSP	Normal	6.88	6.80	6.86	6.80	6.40	6.45
	Actual	7.29	7.37	7.07	6.85	6.51	6.55
RSP	Normal	8.54	8.59	8.40	7.74	7.10	7.05
	Actual	8.69	8.47	7.98	7.39	7.09	6.97
ISP	Normal	8.66	8.55	8.00	7.99	8.10	8.00
	Actual	8.69	8.46	8.19	8.14	8.18	8.18
RINL	Normal	6.55	6.48	6.37	6.37	6.53	6.79
	Actual	6.52	6.45	6.53	6.59	6.86	6.84

Excess consumption of Coke

(As referred in paragraph 4.6 (ii))

Plant	Year	Norm (Kg/Tonne)	Actual coke rate (kg/tonne)	RINL Actual coke Rate in 2005-06 (kg/tonne)	Hot metal Production (tonne)	Diff in coke rate (kg/tonne)	Excess consumption of coke at Plants in comparison to RINL (tonne)	Total in lakh tonne
(a)	(b)	(c)	(d)	(e)	(f)	(g) = (d-e)	(h)=(f x g)/1000	(i)
ISP	2009-10	770	778	486	502133	292	146623	
	2008-09	760	783	486	597729	297	177526	
	2007-08	725	816	486	639800	330	211134	
	2006-07	745	807	486	775266	321	248860	
	2005-06	760	786	486	779560	300	233868	
	2004-05	780	784	486	683553	298	203699	
Total							1221710	12.22
BSL	2009-10	494	506	486	4065568	20	81311	
	2008-09	496	518	486	4021000	32	128672	
	2007-08	505	512	486	4658000	26	121108	
	2006-07	515	520	486	4588000	34	155992	
	2005-06	520	523	486	4706000	37	174122	
	2004-05	530	531	486	4132000	45	185940	
Total							847145	8.47
RSP	2009-10	540	534	486	2267765	48	108853	
	2008-09	550	548	486	2200015	62	136401	
	2007-08	580	566	486	2229410	80	178353	
	2006-07	585	577	486	2123936	91	193278	
	2005-06	580	607	486	1778063	121	215146	
	2004-05	580	633	486	1690744	147	248539	
Total							1080570	10.80
DSP	2009-10	475	506	486	2173953	20	43479	
	2008-09	490	500	486	2111127	14	29556	
	2007-08	512	522	486	2186507	36	78714	
	2006-07	530	525	486	2063801	39	80488	
	2005-06	520	559	486	1953003	73	142569	
	2004-05	535	544	486	2016920	58	116981	
Total							491788	4.92
BSP	2009-10	487	498	486	5370002	12	64440	
	2008-09	490	491	486	5387180	05	26936	
	2007-08	484	509	486	5267670	23	121156	
	2006-07	485	509	486	4816773	23	110786	
	2005-06	480	497	486	5178269	11	56961	
	2004-05	500	499	486	4511179	13	58645	
Total							438924	4.39
Grand Total							4080137	40.80

Annexure - II

Plant	Year	Norm (Kg/Tonne)	Actual coke rate (kg/tonne)	RINL Actual coke Rate in 2005-06 (kg/tonne)	Hot metal Production (tonne)	Diff in coke rate (kg/tonne)	Excess consumption of coke at Plants in comparison to RINL (tonne)	Total in lakh tonne
(a)	(b)	(c)	(d)	(e)	(f)	(g) = (d-e)	(h)=f x g)/100	(i)
RINL	2004-05		488	486	3920339	2	7840.68	
	2005-06		486	486	4152621	0	0.00	
	2006-07		493.2	486	4045697	7.2	29129.02	
	2007-08		496.4	486	3912750	10.4	40692.60	
	2008-09		519	486	3545501	33	117001.53	
	2009-10		494.6	486	3900060	8.6	33540.52	
Total							228204.35	2.28

S.No.	Parameters	Compliance by SAIL	Compliance by RINL
1.	<p>Coke Oven Plants</p> <p>(i) To meet the parameters PLD⁹, PLL¹¹ and PLO¹² of the notified standards under EPA within three years (by December 2005).</p> <p>(ii) To rebuild at least 40% of the coke oven batteries in next 10 years (by December 2012).</p>	<p>PLL, PLO & PLD were within the norms in BSL, BSP, DSP. PLD and PLO level in RSP was within norm. PLL level in battery No. 2, 3 and 4 was beyond the norm during 2004-05 to 2007-08. Although PLD, PLL in ISP were within the norms during the year 2004-05 to 2009-10 there was an excess emission of PLO during 2004-05, 2005-06 and 2007-08 which ranged between 4.2 per cent and 15.3 per cent against a norm of 4 per cent.</p> <p>Ministry stated (December 2010) that PLL, PLO & PLD were within the norms in all SAIL plants since 2008-09.</p> <p>Out of the 30 batteries SAIL has already rebuilt 3 batteries and 7 batteries are under rebuilding. It has a plan to install a new battery by 2011 in place of 2 batteries.</p> <p>Ministry stated (December 2010) that out of the 25 batteries in operation, 5 batteries have been rebuilt since March 2003 and 4 batteries are under rebuilding which is expected to be completed by Dec. 2012. One battery is under cold repair and SAIL has planned to install a new battery by 2011 in place of 2 old batteries.</p>	<p>PLL, PLO & PLD were within the norms.</p> <p>Out of 3 batteries RINL has a plan to rebuild one battery in 2013 i.e. beyond the CREP schedule.</p> <p>Ministry stated (December 2010) that Batteries are in good health, hence, rebuilding of batteries will be taken up from the year 2014 onwards after commissioning of Battery – 5.</p>
2.	<p>Steel Melting Shop</p> <p>Fugitive emissions - To reduce 30% by March 2004 and 100% by March 2008 (including installation of secondary dedusting facilities).</p>	<p>100 per cent reduction could not be achieved in any of the SAIL plant.</p> <p>Secondary dedusting facilities are yet to be installed at SAIL plants.</p> <p>Ministry stated (December 2010) that effective actions have been taken at the steel plants to install secondary de-dusting facilities so as to minimise fugitive emission.</p>	<p>100 per cent reduction could not be achieved.</p> <p>Secondary de-dusting facilities are yet to be installed.</p> <p>Ministry stated (December 2010) that Secondary dedusting facilities are envisaged in SMS-2 (Expansion) and target date is Dec' 2011. In existing SMS-1 facilities will be taken up during revamping and target date is Dec'2013.</p>
3.	<p>Blast Furnace</p> <p>Direct inject of reducing agents by June 2013.</p>	<p>Out of 24 blast furnaces Coal Dust Injection facility has been installed in six blast furnaces and Coal Tar Injection facilities have been installed in four blast furnaces. But the intended benefits of these facilities were yet to be achieved.</p> <p>Ministry stated (December 2010) that out of 19 operating blast furnaces, Coal Dust Injection facility has been installed in 10 blast furnaces and Coal Tar Injection facilities have been installed in 5 blast furnaces but the reply did not address the issue of not achieving the intended benefits from these facilities.</p>	<p>RINL had proposal to install CDI facility in both the blast furnaces by December 2009 but the same was yet to be completed (November 2010).</p> <p>Ministry stated (December 2010) that provision of CDI facilities are in progress in BF 1 & 2 with target date of March 2011 and the facility is envisaged in BF-3 (Expansion) and target date is last quarter of 2010-11.</p>

⁹ Percent leaking doors

¹⁰ Percent leaking lids

¹¹ Percent leaking off take

Annexure - III

S.No.	Parameters	Compliance by SAIL	Compliance by RINL
4.	<p>Solid Waste /Hazardous Waste Management</p> <p>Utilization of Steel/ Melting shop (SMS)/ Blast Furnace (BF) Slag as per the following schedule:</p> <p>* By 2004 - 70%</p> <p>* By 2006 – 80% and</p> <p>* By 2007 – 100 %.</p> <p>Hazardous Wastes</p> <ul style="list-style-type: none"> - Charge of tar sludge/ ETP sludge to Coke Oven by June 2003. - Inventorization of the Hazardous waste as per Hazardous Waste (M& H), Rules, 1989 as amended in 2000 and implementation of the Rules by Dec. 2003). 	<p>Status has been detailed in para 4.7.1.</p> <p>Being charged in coke oven</p> <p>Status has been detailed in para 4.7.2</p>	<p>Status has been detailed in para 4.7.1</p> <p>Being charged in coke oven.</p> <p>Status has been detailed in para 4.7.2</p>
5.	<p>Water Conservation/ Water Pollution</p> <p>(i) To reduce specific water consumption to 5 m³/t for long products and 8 m³/t for flat products by December 2005.</p> <p>(ii) To operate the Co-BP effluent treatment plant efficiently to achieve the notified effluent discharge standards by June 2003.</p>	<p>Status has been detailed in para 4.6.3</p> <p>Status has been detailed in para 4.8</p>	<p>Status has been detailed in para 4.6.3</p> <p>Status has been detailed in para 4.8</p>
6.	<p>Installation of Continuous stack monitoring system (CSMS) & its calibration in major stacks and setting up of the online ambient air quality (AAQ) monitoring stations by June 2005.</p>	<p>CSMS has been installed in SAIL plants except ISP.</p> <p>AAQ has been installed in RSP, BSP and ISP. In DSP and BSL AAQ is yet to be installed.</p> <p>Ministry stated (December 2010) that the two numbers of CSMS installed recently in ISP were presently under calibration/ stabilization and installation of Continuous AAQ monitoring station at DSP and BSL was in progress.</p>	<p>CSMS and AAQ have been installed in RINL.</p>
7.	<p>To operate the existing pollution control equipment efficiently and to keep proper record of run hours, failure time and efficiency with immediate effect.</p> <p>Compliance report in this regard be submitted to CPCB/SPCB every three months.</p>	<p>Proper records were being maintained and compliance reports were being submitted to the respective SPCB and CPCB.</p> <p>Ministry stated (December 2010) that plants are maintaining records and compliance reports are sent to CPCB/SPCB on regular basis</p>	<p>Proper records are being maintained and compliance reports are being submitted to the respective SPCB and CPCB.</p>

Annexure - III

S.No.	Parameters	Compliance by SAIL	Compliance by RINL
8.	To implement the recommendations of Life Cycle Assessment (LCA) study sponsored by MoEF by December 2003.	<p>Major recommendations have already been implemented. Technically feasible recommendations have been envisaged in Technology Plan for expansion/ modernization of SAIL plants.</p> <p>Ministry stated (December 2010) that recommendations of CREP/ Audit observations have been complied with at BSP, DSP, RSP and BSL. At ISP all the recommendations are being implemented in the on-going modernisation/ expansion project.</p>	Major recommendations have already been implemented.
9.	To implement clean technologies measures to improve the performance of industry towards production, energy, land and environment.	<p>Many of the mentioned clean technologies are already in practice. Others like Rain Water Harvesting, Ozone Depleting Substance replacement, reduction in GHGs were under implementation.</p> <p>Ministry stated (December 2010) that many clean technologies measures have been adopted and some are under implementation</p>	Many of the mentioned clean technologies are already in practice.

SAIL

Year	FATAL						REPORTABLE						NON-REPORTABLE						Total
	BSP	DSP	RSP	BSL	ISP	Total	BSP	DSP	RSP	BSL	ISP	Total	BSP	DSP	RSP	BSL	ISP	Total	
2004 (R+C)	1	3	3	3	1	11	3	13	37	25	2	80	56	27	40	177	0	300	391
2005 (R+C)	3	3	3	9	2	20	2	88	38	18	112	258	51	23	36	115	0	225	503
2006 (R+C)	4	3	3	5	2	17	2	24	33	14	120	193	45	168	38	64	1	316	526
2007 (R+C)	4	0	1	4	4	13	2	9	31	16	17	75	48	33	31	73	0	185	273
2008 (R+C)	6	1	4	4	4	19	2	2	14	21	20	59	44	13	25	19	0	101	179
2009	2	1	4	10	3	20	11	2	16	12	10	51	34	25	18	16	0	93	164

(R = Regular, C=Contractual)

RINL

YEAR	FATAL	REPORTABLE	NON-REPORTABLE	TOTAL
2004-05 (R+C)	NIL	75	15	90
2005-06 (R+C)	5	62	14	81
2006-07 (R+C)	4	60	16	80
2007-08 (R+C)	2	56	02	60
2008-09 (R+C)	5	44	03	52
2009-10 (R+C)	3	42	02	47

(R = Regular, C=Contractual)