



2013 Annual Project Review (APR)

Project Implementation Review (PIR) OF UNDP Supported GEF Financed Projects

PIMS 1515 - Project Title: Removal of Barriers to Energy Efficiency Improvement in the Steel Rolling Mill Sector in India

Focal Area	Climate Change – Mitigation
Lead RTA	Butchaiah Gadde
Lead Country(ies)	(IND) India
Revised Planned Closing Date	31 Dec-2013

Name of Project Manager / Coordinator:

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Project Review & Evaluation:

- 1) Has the project mid-term review been finalized? Yes/No
Yes
If no, when will it be finalized? Month/Year
- 2) Has the project terminal evaluation report been finalized?
Yes/No No
If no, when will it be finalized? Month/Year **September 2013**

Project Website: www.undpgefsteel.gov.in,
http://www.in.undp.org/content/india/en/home/operations/projects/environment_and_energy/energy_efficiencyinsteelre-rollingmills.html

Explanation for change to Overall DO Rating or Overall IP Rating:

Based on the criteria for DO rating, the project is expected to achieve or exceed all its major global environmental objectives, and yield substantial global environmental benefits, without major shortcomings. Therefore, the DO rating of the project is High Satisfactory (HS).

Following are some of the recommendations from RTA perspective where the project can improve further in its next phase:

- (a) It was learnt that, with the success of this project, it has received funding from UNDP TRAC 2 as well as AusAID (bilateral donor) to continue the developments of this UNDP-GEF project to its next phase. It is important that the project shall look at scale up interventions such as (a) direct rolling, (b) improvements in material management for rolls in milling, such as introduction of carbide rolls which will influence longer campaign life and improve surface quality of the products, (c) development of efficient cooling systems and heat exchangers for quenching process which will help to also reduce water usage.
- (b) Providing continued subsidies is not a good practice at all and may lead to market distortion. SRRM units are very much capable to put 100% equity to implement energy efficiency interventions. It is important that they need continued handholding in terms of technical back stopping, which was lacking in this sector. Therefore, from the past three to four years, it was recommended to focus on establishment of TIRFAC software centre, but there was no clarity as on date. Considering the additional support that was received to continue the project, taking this as an opportunity, the project shall implement exit strategy that is being prepared and ensure TIRFAC software centre will be functioning within a year from now. Perhaps it is a good opportunity to even leverage Gols remaining committed co-financing (approx. US\$ 5.4 million) as corpus for the TIRFAC software centre to self-sustain business and establish itself in the market.
- (c) The project design was quite ambitious considering its nature. Working with SMEs (which are normally unorganised), market penetration efforts will last longer which was the case that happened under the project. Once successful demonstrations were seen by the rest of SRRMs, it indeed had a catalytic impact that results in market transformation. But in summary, projects of this nature should be granted at least 5 to 7 years for project implementation period.
- (d) It is important to fully operationalize the developed/established MRV system which should also capture the investments by the SRRMs towards energy efficiency interventions.
- (e) ESCOs modality may not work well and recommended not to focus on such activities.

Is this the terminal PIR that will serve as the final project report?

Yes

If the mid-term review (MTR) OR the terminal evaluation (TE) was started but not completed this reporting period, please explain how these are progressing and note if any delays are expected:

Yes, the terminal evaluation mission of the project was completed in June 2013, but report is still being finalized. When the draft terminal evaluation report was circulated, the implementing partner and PMU are not in agreement with the ratings that were provided. The implementing partner and PMU are providing additional information to the terminal evaluation team so as to revisit the ratings that were provided.

Therefore, terminal evaluators may take time until September 2013 to finalize the evaluation report.

If the mid-term review (MTR) OR the terminal evaluation (TE) was completed this reporting period, or if this is the final APR/PIR, please address the following points here:

Not yet.

UNDP Country Office's Comments

If the mid-term review (MTR) OR the terminal evaluation (TE) was started but not completed this reporting period, please explain how these are progressing and note if any delays are expected:

Terminal Evaluation (TE) started in June 2013. Field visits were undertaken by evaluators from 14th June to 25th June'2013. Report awaited.

If the mid-term review (MTR) OR the terminal evaluation (TE) was completed this reporting period, or if this is the final APR/PIR, please address the following points here:

NA. The terminal evaluation report is still being finalized.

Dates of site visits to project this reporting period:

Pipeline Units Visits, Chennai – 7th August '2012

M/s T.K. Steel Rolling Mill, Ludhiana – 12th / 13th Feb'2013

M/s Bajrang Ispat & Power Ltd., Raipur : 21st Feb '2013

M/s Someshwar Ispat, Mehsana, 18th March 2013

M/s Bajrang Ispat & Power Ltd., Raipur : 4th June 2013

Dates of Project Steering Committee / Board meetings during reporting period (30 June 2012 to 1 July 2013):

18th Project Steering Committee meeting: 15th Oct'2012

19th Project Steering Committee meeting: 27th Feb'2013 To improve energy efficiency in the SRRM Sector by expanding private sector investments in 'win- win' nature of low GHG emitting technologies (EcoTechs)

14th Project Advisory Committee meeting: 18th Feb, 2013

PROGRESS TOWARD DEVELOPMENT OBJECTIVES

	Description	Description of Indicator	Baseline Level	Target Level at end of project	Level at 30 June 2011	Level at 30 June 2012	Level at 30 June 2013
Objective	To improve energy efficiency in the SRRM Sector by expanding private sector investments in 'win-win' nature of low GHG emitting technologies (EcoTechs)	Increase in share of Eco-Tech used in steel rerolling sector	0 (beginning of the project)	Share increased to 25% (3 million tons) 9 PJ (Peta Joules) cumulative energy savings 0.88 million tons of CO2 emissions reductions	The CO2 emission reduction for the stated PIR period is 35,207 tCO2 and cumulative reduction over the project period is 73,962 tCO2. 47 units have been selected as model units till 30 June 2011 against the revised plan of 50. An account of CO2 reduction by different units over years is given below: 2008: Bhambri 4,754 tCO2 2009: Bhambri 4,754 tCO2; Prithvi 6,824 tCO2 2010: Bhambri 4,754 tCO2; Prithvi 6,824 tCO2; Vivek 622 tCO2; MPK 1,491 tCO2; AC Strips 132 tCO2; Pulkit 8,600 tCO2; 2011: Bhambri 4,754 tCO2; Prithvi 6,824 tCO2; Vivek 622 tCO2; MPK 1,491 tCO2; AC Strips 132	Out of 29 commissioned model units till date, the evaluation in 16 units post implementation was completed. The balance 13 units are under stabilization [3 month post commissioning of intervention is left for stabilisation] and the evaluation shall be done in the coming six months. 16 units have recorded saving of 10,077 Kilo liters of furnace oil, 6,345 tonnes of coal and 13,706,205 KWh (Units) of power, amounting to savings of 87,819,968 MJ (0.088 PJ) of energy. Cumulative total emission reductions as on 30 June 2012 works out to 1,31,738 tCO2e. 2008 Bhambri, Benagl	38 model units commissioned by 30 June 2013. In addition 4 units are under consideration. With this, the total of 42 out of targeted 50 nos. of model units are expected to be commissioned by September'2013. Post implementation study reports have been finalized for 31 units. These 31 units have recorded annual saving of 11,550 Kilo litres of furnace oil, 12,956 tonnes of coal, 20,357 MWh (Units) of power, amounting to cumulative savings of 2,407,170,075 MJ (2.40 PJ) of energy. Cumulative total emission reductions from the model / sample units, as on 30 June 2013, works out to 192,891 tCO2e. From these inventions,

				<p>tCO₂; Pulkit 8,600 tCO₂; Ludhiana Steels 1,359 tCO₂; Orion Steels 2,322 tCO₂; Adarsh 271 tCO₂; ARS 5,733 tCO₂; Mahalaxmi 3,099 tCO₂</p> <p>It was reported that 26 commissioned units have mobilized a private sector investment of approximately US\$ 8.84 million.</p>	<p>Hammer - 3895 tCO₂ 2009 Bhambri, Bengal Hammer - 3895 tCO₂,Suryadeo-6953 tCO₂,Arora- 1705 tCO₂,Prithvy - 636tCO₂</p> <p>2010 Bhambri, Bengal Hammer - 3895 tCO₂,Suryadeo-6953 tCO₂,Arora- 1705 tCO₂,Prithvy - 636tCO₂, AC Strips - 4242 tCO₂, Pilkitt - 8675 tCO₂, M.P.K Steels - 3854 tCO₂, Vivek -706 tCO₂</p> <p>2011 Bhambri, Bengal Hammer - 3895 tCO₂,Ludhiana Suryadeo-6953 tCO₂,Arora- 1705 tCO₂,Prithvy - 636 tCO₂, AC Strips -4242 tCO₂, Pilkitt - 8675 tCO₂, M.P.K Steels - 3854 tCO₂, Vivek -706 tCO₂, ARS metals - 2504 tCO₂, Dhiman Industries -1198 tCO₂, Orient Steels - 1018 tCO₂, Adarsh -1401 tCO₂, Mahalaxmi - 3036tCO₂</p>	<p>the lifetime energy savings works out to be 7.78 PJ and the lifetime CO₂ emission avoided is 642,630 tCO₂ (considering life of 10 years)</p> <p>Details of the CO₂ emission reduction has been provided below:</p> <p>PIR 2008:</p> <p>Benagl Hammer – 671 tCO₂; Bhambri Steel – 778 t CO₂ ; Shree Prithvi Steel 57t CO₂</p> <p>PIR 2009:</p> <p>Bengal Hammer – 1343 tCO₂; Bhambri – 1037 t CO₂; ARS Metals – 1490 tCO₂; Suryadev-7872 tCO₂; A C Strips – 1551 t CO₂; Arora- 335 tCO₂; Dhiman – 1275 tCO₂; ; Pulkit – 467 t CO₂; Shree Prithvy – 681 tCO₂; Vivek Re-Rolling – 66 t CO₂</p> <p>PIR 2010:</p>
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						<p>2012 Bhambri, Bengal Hammer - 3895 tCO₂,Suryadeo-6953 tCO₂,Arora- 1705 tCO₂,Prithvy - 636tCO₂, AC Strips - 4242 tCO₂, Pilkitt - 8675 tCO₂, M.P.K Steels - 3854 tCO₂, Vivek -706tCO₂, ARS metals -2504 tCO₂, Dhiman Industries - 1198 tCO₂, Orient Steels - 1018 tCO₂, Adarsh -1401 tCO₂, Mahalaxmi - 3036tCO₂ , T.K.Steels - 609 tCO₂.</p>	<p>Bengal Hammer – 1343 t CO₂; Ludhiana –704 tCO₂; ARS Metals – 2554 tCO₂; Bhambri – 1037 t CO₂; Suryadev-7872 tCO₂; A C Strips – 2326 t CO₂; Arora- 2012 tCO₂; Dhiman – 2185 tCO₂; ; Pulkit – 5599 t CO₂; MPK Steel – 1227 tCO₂; Shree Prithvy – 681 tCO₂; Vivek Re-Rolling – 798 t CO₂; Sujana Metal – 2301 tCO₂; K L Rathi Steel – 897 tCO₂</p> <p>PIR 2011:</p> <p>Bengal Hammer – 1343 t CO₂; Ludhiana –1207 tCO₂; ARS Metals – 2554 tCO₂; Bhambri – 1037 t CO₂; Suryadev-7872 tCO₂; A C Strips – 2326 t CO₂; Arora- 2012 tCO₂; Dhiman – 2185 tCO₂; Orient Steel – 1621 tCO₂; Pulkit – 5599 t CO₂; Adarsh– 1581 t CO₂ ; Mahalaxmi – 1675 tCO₂; MPK Steel – 2945 tCO₂; Shree Prithvy – 681 tCO₂;</p>
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							<p>Vivek Re-Rolling – 798 t CO₂; T K Steel – 820 tCO₂; Sujana Metal – 6904 tCO₂; K L Rathi Steel – 1794 tCO₂</p> <p>PIR 2012:</p> <p>Bengal Hammer – 1343 t CO₂; Ludhiana –1207 tCO₂; ARS Metals – 2554 tCO₂; Bhambri – 1037 t CO₂; Suryadev-7872 tCO₂; A C Strips – 2326 t CO₂; Arora- 2012 tCO₂; Dhiman – 2185 tCO₂; Orient Steel – 1621 tCO₂; Pulkit – 5599 t CO₂; Adarsh- 1724 tCO₂ ; Mahalaxmi – 2872 tCO₂; MPK Steel – 2945 tCO₂; Shree Prithvy – 681 tCO₂; Vivek Re-Rolling – 798 t CO₂; T K Steel – 1406 tCO₂; Mongia Steel – 1284 t CO₂; Sujana Metal – 6904 tCO₂; Premier Bars – 2811 tCO₂; K L Rathi Steel – 1794 tCO₂.</p> <p>PIR 2013:</p> <p>Bengal Hammer –</p>
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							1343 t CO ₂ ; Ludhiana –1207 tCO ₂ ; ARS Metals – 2554 tCO ₂ ; Bhambri – 1037 t CO ₂ ; Suryadev-7872 tCO ₂ ; A C Strips – 2326 t CO ₂ ; Arora- 2012 tCO ₂ ; Dhiman – 2185 tCO ₂ ; Orient Steel – 1621 tCO ₂ ; Pulkit – 5599 t CO ₂ ; Adarsh- 1724 tCO ₂ ; Mahalaxmi – 2872 tCO ₂ ; MPK Steel – 2945 tCO ₂ ; Shree Prithvy – 681 tCO ₂ ; Vivek Re-Rolling – 798 t CO ₂ ; T K Steel – 1406 tCO ₂ ; Mongia Steel – 2569 t CO ₂ ; First Steel – 789 tCO ₂ ; Sujana Metal – 6904 tCO ₂ ; Advait Steel – 2637 tCO ₂ ; Premier Bars – 5621 tCO ₂ ; Real Ispat – 2936 tCO ₂ ; Indus Smelters – 1508 t CO ₂ ; Premier Ferro Alloys – 1509 t CO ₂ ; Ramson TMT – 3104 t CO ₂ ; K L Rathi Steel – 1794 tCO ₂ ; Somehwar ISpat – 1270 t CO ₂ ; Sharu Steel – 552 t CO ₂ ; Ashok Steel – 287 t CO ₂ ; Laxmi Steel
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						<p>– 596 t CO₂; Bajrang Metallic – 4575 t CO₂</p> <p>In addition to the CO₂ emission and energy savings achieved through direct intervention in model units, significant GHG reduction has been achieved in units that have replicated EE measures through project influence.</p> <p>An independent assessment commissioned to SAILCON, studied 300 non-model units on stratified random basis. The key results are given below:</p> <ol style="list-style-type: none"> 1. 55% [i.e. 166 nos.] of the surveyed 300 units replicated the EE measures. 2. It has been estimated that 42,330 kL of furnace oil, 74,529 MWh of electricity saved due to interventions on
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							<p>annual basis. [i.e. a savings of 1,706 TJ of thermal energy and 74,529 MWh equivalent to 268 TJ of electrical energy totaling to 1,974 TJ per year].</p> <p>3. The total GHG emissions avoided were 213,424 tCO₂ per year. Considering a life time of 10 years, 2,134,240 tCO₂ will be avoided.</p>
Outcome 1	Outcome 1: Benchmarks for Eco-Tech Options & Packages Established	Indicator 1 Industry complies with energy- cum- environment performance benchmarks set in respect of model units	No benchmarks	<p>50 model units established to</p> <p>a) Set performance benchmarks</p> <p>b) techno economic viability</p> <p>c) develop MEPs</p> <p>d) design manuals and best practice norms</p> <p>Note: The target has been revised from 30 to 50 model units as the activity on the hardware center was dropped following the mid-term review recommendations.</p>	<p>26 model units have been commissioned including 7 model units during the current reporting period. Discussions were held with Bureau Of Energy Efficiency (BEE) for finalization of methodology regarding benchmarking studies to be taken up in 8 model units, standards & labeling for major equipment and life cycle analysis (LCA).The Terms of References for</p>	<p>29 of the 50 planned model units have been commissioned.</p> <p>a) Terms of reference was prepared and floated to Public Sector Units in order to establish benchmarks for Eco-Tech Options for critical equipment. Only one response was received and the same was rejected on technical grounds. The same has been planned to pursue this year.</p> <p>b) Life Cycle analysis has been taken up for</p>	<p>38 out of 50 planned model / sample units have been commissioned as on 30 June 2013.</p> <p>a) The assignment for “Development of Benchmarks and MEPs for Steel Re-Rolling Mill Sector” was awarded to PWC and is under progress.</p> <p>b) Life Cycle analysis has been completed by SAIL CON for two units viz. M/s Ludhiana Steel Rolling Mill and M/s ARS Metal</p>

					Standards & Labeling and LCA have been finalised and regression analysis for benchmarking based on the available data is in progress. Labeling of furnaces is being discussed and if adopted this would be the very first example of labeling industrial appliances in India.	two model units during the reporting period - M/s Ludhiana Steel Rolling Mill, Ludhiana and M/s ARS Metals Pvt Ltd, Chennai. Draft reports have been received. c) No activity taken up on MEPS. d) design of manuals - completed. Best practice norms - Case studies are being prepared which will serve to provide best practices and best practice norms.	Pvt. Ltd.
		Indicator 2 Techno-economic viability including cost recovery (CCE, IRR, paybacks, BEP, etc.) is established	Viability not established	Techno-economic viability including cost recovery (CCE, IRR, Payback, BEP, etc.) is established.	Post implementation measurements have been completed after commissioning and stabilization in 6 model units. Detailed techno-economic viability including cost recovery will be established in the next reporting period.	The study for establishing Cost Benefit Analysis for 10 commissioned units assigned to NISST (National Institute of Secondary Steel Technology) for determination of CCE,IRR Paybacks etc for the following 10 commissioned units which is under progress M/s Bhambri Steels Mandigobindgarh M/s Bengal Hammers (P) Ltd., Kolkata	a) A report on the 'techno-economic viability of the EE technology packages and Eco-tech options' was completed by SAIL RDCIS. Cost Benefit Analysis (CBA) done for 10 model / sample units, based on the actual investment and savings figures. CCE, IRR, NPV, Paybacks etc has been established for all the units. CBA has

					<p>M/s Adarsh Ispat Udhyog, Durg M/s Vivek Rolling Mills, Mandgobindgarh Shree Prithvy Steel Rolling Mills, Jaipur M/s Ludhiana steel rolling mill, Ludhiana M/s M.P.K Steels (I) , Jaipur M/s Pulkitt Steel Rolling Mills, Puducherry M/s Mahalaxmi Dhatu Udhyog, Nagpur M/s Arora Iron & Steel, Ludhiana</p> <p>The published document on "Data Gathering and Analysis of Eco-Tech Options" is being upgradad by RDCIS (Reserch and Development Center for Iron and Steel) including the latest identified technologies of Hot Charging, Oxy-fuel Burners, Biomass Gasifiers.</p>	<p>been done for following units: M/s Bhambri Steels Mandigobindgarh M/s Bengal Hammers (P) Ltd., Kolkata M/s Adarsh Ispat Udhyog, Durg M/s Vivek Rolling Mills, Mandgobindgarh Shree Prithvy Steel Rolling Mills, Jaipur M/s T.K. Steel Rolling Mill, Ludhiana M/s M.P.K Steels (I) , Jaipur M/s Pulkitt Steel Rolling Mills, Puducherry M/s Mahalaxmi Dhatu Udhyog, Nagpur M/s Mongia Steel Limited, Giridih.</p>
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		<p>Indicator 3 Energy Labels & Standards.</p> <p>Minimum energy performance standards (MEPs), designs and manuals after successful implementation of model units and monitoring & evaluation of the EE performance of 10 model units.</p> <p>Design standard and manual of EE equipment.</p> <p>Best practice EE norms based on 15 model units implemented by the 3rd year of the project.</p>	<p>No MEPS</p> <p>No standards or manual of EE equipment</p> <p>No best practice EE norms</p>	<p>Standard design and implementation manuals prepared and distributed</p>	<p>No progress during the reporting period.</p>	<p>Terms of reference was prepared and floated to Public Sector Units to establish standards and labeling for critical equipment. Only one response was received and the same was rejected on technical grounds. This will be pursued in the subsequent reporting period.</p>	<p>a) MEPS is being prepared for different product grades by PWC as explained as answer to Outcome 1, Indicator 1.</p> <p>b) Procurement guidelines for Critical Equipment under the SRRM sector being prepared.</p> <p>c) Draft RFP prepared for 'Design of standard drawings and specifications for the energy efficient furnace'.</p>
		<p>Indicator 4 Information module developed and disseminated</p>	<p>Information module is not available</p>	<p>Information modules (1c) developed and disseminated by the end of 18 months of the start of the project.</p>	<p>No progress during the reporting period.</p>	<p>No progress during the reporting period.</p>	<p>Information module on outcome of the Benchmarking study will be developed for dissemination, on completion of the activity.</p>

<p>Outcome 2</p>	<p>Outcome 2: Strengthened Institutional Arrangements</p>	<p>Indicator 1 Development of Business support network</p>	<p>No existing network</p>	<p>Established business network</p>	<p>6 resident missions were in operation and were involved in liaising and facilitating the awareness of eco-tech options in SRRM clusters, selection of SRRM units to become model units, and providing implementation support. However, 2 resident missions South (covering the states of Andhra Pradesh, Karnataka, Tamil Nadu & Kerala) and North-2 (covering Uttrakhand, Uttar Pradesh, Rajasthan & Delhi) were discontinued due to unsatisfactory performance. Efforts to establish new resident missions are underway.</p>	<p>One resident mission in Southern cluster has been re-appointed. Total 6 resident missions are active and operational.</p>	<p>A total of 6 Resident Missions [RM] were active till 31st December'2012. Resident Mission (North 2) was handled by PMC in New Delhi, directly. The respective RMs were as follows:</p> <ol style="list-style-type: none"> 1. RM (North 1): NISST covering states of Punjab, J&K, and Himachal Pradesh 2. RM (Centre): M/s NISST covering states of Madhya Pradesh, Chattisgarh, Maharashtra (only Nagpur) 3. RM (South): M/s NISST covering states of Andhra Pradesh, Tamil Nadu, Kerala & Karnataka 4. RM (East): M/s NISST covering states of West Bengal, Bihar & Jharkhand 5. RM (West): M/s MITCON covering states of
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							<p>Maharashtra (except Nagpur), Gujarat, Daman & Diu, Goa</p> <p>6. RM (North 2): PMC covering states of Rajasthan, Haryana, Uttar Pradesh, Delhi and Uttarakhand.</p> <p>However, the RMs were scaled down to 2 Nos., i.e. RM (North 1) & RM (Centre) with effect from 1st January'2013 preparing for project exit as 2013 is terminal year.</p>
		Indicator 2 Internationally linked institutional capacity	No institutional capacity	Institutional capacity strengthened and technology transfer	No progress during the reporting period	No progress during the reporting period	<p>No progress during the reporting period. However, in the past institutional capacity has been developed with M/s Morgardshammer AB, Sweden towards support of computerized Roll Pass Design Software. Also, efforts were made towards collaboration with Chinese technology suppliers & R&D institutes.</p>

		Indicator 3 TIRFAC Hardware and S/W Centers at MGG and Delhi respectively	No such centers	TIRFAC hardware center activity has been cancelled based on the mid-term evaluation recommendation and decision taken in the 10th PSC meeting held on 4 October 2008 Software centre at Delhi established at 39 Institutional Area, New Delhi	As per the Mid Term review the TIRFAC Hardware Center was dropped. No progress made on the TIRFAC Software Centre during the reporting period	Hardware Center of TIRFAC dropped. No progress made for the TIRFAC Software center during the reporting period.	a) TIRFAC Hardware Centre was dropped based on mid-term evaluation recommendation and decision taken in the 10 th PSC meeting. b) A technical cell has been established which has been providing technical assistance to model units to establish EE measures, Training & Capacity building of Stakeholders & Roll Pass Design evaluations etc.
		Indicator 4 Design, standards and implementation manuals put in practice	No manuals	68 training manuals (17 manuals x 2 levels x 2 languages) 13 SOP & SMP manuals (3 base manuals + 10 customized manuals)	Target achieved in the previous reporting period	Developed Standard Operating Practices (SoPs) and Standard Maintenance Practices (SMPs) to SRRM units. Distributed 1250 copies of CDs on the same to SRRM units.	Target achieved in the previous reporting periods. These are also uploaded on website www.undpgefsteel.gov.in

<p>Outcome 3</p>	<p>Outcome 3: Effective Information Dissemination Program (Including setting up of knowledge centre)</p>	<p>Indicator 1 Building with infrastructure setting up the knowledge center</p>	<p>No knowledge centre</p>	<p>Knowledge center set up</p>	<p>A new website has been designed which will be one of the inputs for the proposed knowledge center. Security audit for the website has been cleared by STQC (Standardization, Testing and Quality Certification), Government of India and the National Informatics Centre, Government of India, will host this website for 10 years post project completion.</p>	<p>Website (www:undpgefsteel.gov.in) is updated periodically. Following activities have been taken up during the reporting period Case studies Documentation of interventions in five model units is in progress. Those five units are M/s M.P.K Steels (P) Ltd.,Jaipur, M/s Vaishanavi Ispat (P) Ltd.,Durgapur, M/s Pulkitt Steel Rolling Mill,Puducherry, M/s Ludhiana Steel Rolling Mills, Ludhiana, M/s Vivek Re –Rolling Mill (P) Ltd., Mandigobindgarh).</p> <p>Audio/Video documenting Filming the improvements completed for 2 units at M/s Ludhiana Steel Rolling Mills, Ludhiana & M/s Vivek Re – Rolling Mill (P) Ltd., Mandigobindgarh</p> <p>Telecasting</p>	<p>a) The project website i.e. www.undpgefsteel.gov.in is maintained and updated periodically. Action has been initiated to create a static website containing knowledge products to benefit stakeholders and this will be maintained even after the project is closed.</p> <p>b) A documentation presenting EE measures in five model units in the form of Case studies is in progress. These five units are M/s Bengal Hammer Pvt. Ltd., Kolkata, M/s ARS Metals Ltd., Chennai, M/s Pulkit Steel Rolling Mill, Pondicherry, M/s Shree Prithvi Steel Rolling Mill, Jaipur, & M/s M.P.K. Steel rolling mill, Jaipur.</p>
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					<p>(Audio/Video) clippings 30 sec audio video completed and aired on TV in almost 25 channels for a month in January 2012.</p> <p>2000 nos. of diaries for 2012 highlighting the major achievements was and distributed to the SRRM Units, and other stakeholders.</p> <p>1250 CDs (Soft Copies) For Standard Operating Practices and Standard Maintenance Practices prepared and distributed in SRRM units.</p> <p>Video conferencing at all the five resident missions North, South and Center operative.</p> <p>Project Broucher with fact sheet updated and published.</p>	<p>c) A/V documentaries of the success stories of 5 model units have been developed. The units include M/s Vivek Rolling Mill, Punjab, M/s Vaishnavi Ispat Pvt. Ltd., Durgapur, M/s Ludhiana Steel Rolling Mill, Ludhiana, M/s Pulkit Steel Rolling Mill, Pondicherry & M/s M.P.K. Steel Rolling Mills, Jaipur. The A/V includes 10 minutes capsules and also 30 seconds versions for these five model units for wider dissemination. 1,000 copies of these in CDs have been produced and the copies are being distributed to various stakeholders.</p> <p>d) In addition to the unit-wise A/V documentaries, a comprehensive</p>
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							<p>project overview documentary has also been developed in 10 mins and 30 sec capsules. 1,000 copies of the same has been developed and being distributed.</p> <p>e) A “Process Document” comprising of significant project stories, outcomes and lesson learnt is under progress.</p> <p>f) Direct Rolling is a new innovation that completely avoids use of re-heating furnace was introduced recently and the commissioning completed. A decision was taken in a steering committee meeting to capture this through a A/V for awareness generation. This documentary is</p>
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							under progress.
		Indicator 2 Preparation of Detailed Project Plan (DPP)	No DPP	DPP for the Project	Completed and reported. The Detailed Project Plan was an interim report assessing/reviewing the progress of the project till 2005 and provided ecommendations for the roadmap ahead.	Achieved.	Achieved
		Indicator 3 System design, network alliances and mechanism	Not available	Establishment of TIRFAC software center	No progress during the reporting period.	No progress during the reporting period.	PMC is providing technical assistance to sector as and when needed through resident missions, knowledge products and by technical managers to serve as TIRFAC software center. Exit strategy being developed presently which will

							identify a network alliance and mechanisms to serve sector even after the project gets over.
		Indicator 4 Information dissemination and knowledge center operationalized	No center	Establish Website	The website, www.undpgefsteel.org is updated periodically providing updates and programme schedule. Following products have been uploaded on the website - proceedings of National Awareness Workshop, Hyderabad; proceedings of National Technical Workshop, Cochin; Cochin Workshop Gallery; proceedings of National Awareness Workshop, Ahmedabad	a) Website is updated regularly. B) Newsletters were not published during the reporting period as the person in-charge moved out of PMC. C) Steel Resolve consisting of eco-tech options was prepared and distributed during the last reporting period.	a) Website is being updated periodically and key knowledge products are already uploaded and available to those seeking information. b) A static project website is being developed as already explained in an earlier section.
Outcome 4	Outcome 4: Enhanced stakeholders capacity	Indicator 1 Mapping of each cluster and assessment of technology resource and capacity building needs.	No activity to enhance stakeholders capacity	Cluster mapping complete Regional and national workshops held	3 technical awareness workshops held during the reporting period - (i) National awareness workshop at Hyderabad with 41	Two national workshops. One Technical workshop on "Cost Effective Concepts in SRRM sector" at Srinagar on	Target achieved in previous reporting periods.

		Inception Workshop / Awareness Workshops			<p>participants on 20th November 2010; (ii) Workshop on "Emerging Trends in Energy Efficiency in Steel Re-Rolling Mill Sector" with 76 participants at Kochi - the purpose of this workshop was to create awareness about Eco-Tech packages and their benefits, financial and technical assistance provided by the project for participating SRRM units. The impact of reduction of CO2 emissions from such projects were also described. The participants were introduced to the patented technology of Five Stein India Products Private Limited known "Digit @ Furnace" for improvements in furnaces. The concept of setting up of a Service Center for rebars also was shared; (iii) National</p>	<p>28-29 September 2011. Second one on "Latest trends and technologies for Energy Efficiency Improvement in the Steel Re-Rolling Mill Sector" at Kolkata on 3rd December'2011 conducted during the reporting period.</p> <p>Four Interactive meetings held with the SRRM units at Ahemdabad on 10th April 2012 , Chennai in Feb 2011, Mumbai in March 2012, and Nasik in Feb 2012 in the reporting period.</p>	
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					<p>awareness workshop at Ahmedabad with 92 participants on 18th June, 2011 - SRRM units in this cluster have a capacity of less than 5 tons of steel production per hour and use shipbreaking scrap as input material. The units in the cluster use pulverized coal as heating medium for the reheating furnaces. Eminent technocrats with extensive experience in the field presented papers and discussed the units problems during the interactive sessions. In addition to the above, a brain storming workshop on Role of Energy Service Company (ESCO), Third Party Financing and Financial Linkages was held at Chennai on 21st Dec 2010. Speakers from BEE listed ESCOs (Under Grad 1 & 2) were invited to share their expertise and</p>	
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					experience with the top management of SRRMs. The workshop concluded that the areas of lighting, alternate renewable fuels, fuel switching, motor replacement, cogeneration, bio mass gasification, thermal optimisation - furnaces, variable frequency drives and compressors may be explored for energy savings under ESCO model.		
		Indicator 2 Master Plan for capacity building activities finalized	None available	Completed	Target achieved	Target achieved.	Target achieved.
		Indicator 3 5 Cluster workshops for units/DEMs/consultants on 'New' technologies and technology management	No activity to enhance stakeholders capacity	Completed	While the target of 5 cluster workshops for technology information exchange has been achieved, an additional workshop was held during the reporting period in Bangalore	No progress during the reporting period.	Target achieved. In addition, a) During reporting period, 2 nos. of workshops for SRRM units, Domestic Equipment Manufactures and Consultants on 'New' technologies and technology management were conducted. The first workshop was held

							<p>at Gangtok, Sikkim on 21st September'2012 with 60 participants. Topics such as Energy Efficient furnace design, high efficiency recuperator, pulverized coal firing systems, EE measures in rolling mill, Automation & Control systems, biomass gasification etc. were discussed.</p> <p>b) The second workshop was held at Mysore, Karnataka on 7th December'2012 with 55 nos. of participants. Technology Management & relevance to SRRM Sector, "Design aspect of Housing less & Cantilever stands and their applicability in SRRM Sector, Green Energy for Heat &</p>
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							Power for Re-rolling Mills from Biomass Gasifier Plant, Case Study GHG emission reduction potential by the Direct Comcast Hot re rolling and limitation thereof, etc. were presented by the experts in the field.
		Indicator 4 10 workshops for unit owner/managers on cooperative management practices and procurement processes in 5 clusters	No activity to enhance stakeholders capacity	10 workshops	Target achieved	Target completed	Target achieved.

		Indicator 5 Standard Operating Practices (SOP) and Standard Maintenance Practices (SMP)	No activity to enhance stakeholders capacity	Completed To be implemented in 5 units one in each cluster	Target achieved	Implementation of SOP/SMP In following 10 model units taken up during the reporting period <ul style="list-style-type: none"> • T.K.STEEL ROLLING MILLS, LUDHIANA, PUNJAB • LAKSMI STEEL ROLLING MILLS, KHANNA, PUNJAB • MPK STEEL (I) PVT. LTD., JAIPUR, RAJASTHAN • RAMSONS TMT (P) LTD., NAGPUR, MAHARASHTRA • MAHALAXMI DHATU UDYOG, NAGPUR, MAHARASHTRA • MONGIA ISPAT PVT. LTD., GIRIDIH, JHARKHAND • PREMIUM FERRO ALLOYS LIMITED, KOCHI, KERALA • SUJANA METAL PRODUCTS LTD., VISHAKAPATNAM, A.P. • BAJRANG POWER & ALLOYS LTD., RAIPUR, CHATTISGARH • ARS METALS LTD., CHENNAI, TAMIL NADU 	During Reporting period, Standard Operating and Maintenance Practices were implemented in following 10 model / sample units: <ul style="list-style-type: none"> • T.K.Steel Rolling Mills, Ludhiana, Punjab • Laksmi Steel Rolling Mills, Khanna, Punjab • Mpk Steel (I) Pvt. Ltd., Jaipur, Rajasthan • Ramsons Tmt (P) Ltd., Nagpur, Maharashtra • Mahalaxmi Dhatu Udyog, Nagpur, Maharashtra • Mongia Ispat Pvt. Ltd., Giridih, Jharkhand • Premium Ferro Alloys Limited, Kochi, Kerala • Sujana Metal Products Ltd., Vishakapatnam, A.P. • Bajrang Power & Alloys Ltd., Raipur, Chattisgarh • Ars Metals Ltd., Chennai, Tamil Nadu
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						Draft documents on SOP Rolling Mill, SMP Rolling Mill, SOP Re-Heating Furnace & SMP Re-Heating Furnace submitted for 8 Units.	
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		Indicator 6 'Best Practices' program developed and implemented	No activity to enhance stakeholders capacity	To be implemented in two units	No progress during the reporting period	Implementation of ISO9000 /ISO 14001 taken up in 16 Model units during the reporting period.The implementation of ISO 9000 taken up in the following units • T.K.STEEL ROLLING MILLS, LUDHIANA, PUNJAB • LAKSMI STEEL ROLLING MILLS, KHANNA, PUNJAB • RAMSONS TMT (P) LTD., NAGPUR, MAHARASHTRA • MONGIA STEEL LTD., GIRIDIH, JHARKHAND • PREMIUM FERRO ALLOYS LIMITED, KOCHI, KERALA • ARORA IRON & STEEL, LUDHIANA, PUNJAB • ARS METALS LTD., CHENNAI, TAMIL NADU • FIRST STEEL CO. (PVT) LTD., HUBLI, KARNATAKA and implementation of ISO 14001 taken up in the following units T.K. STEEL ROLLING MILLS, LUDHIANA,	a) Implementation of ISO 9001 / ISO 14001 completed in following 16 Model Units: <u>ISO 9001:</u> 1. T. K. Steel Rolling Mills, Ludhiana, 2. Laksmi Steel Rolling Mills, Khanna, 3. Ramsons Tmt (P) Ltd., Nagpur 4. Mongia Steel Ltd., Giridih, 5. Premium Ferro Alloys Limited, Kochi, 6. Sujana Metal Products Pvt. Ltd. 7. ARS Metals Ltd., Chennai, Tamil Nadu 8. First Steel Co. (Pvt) Ltd., Hubli, . . <u>ISO 14001:</u> 1. T.K. Steel Rolling Mills, Ludhiana, 2. Ludhina Steel Rolling Mills, Ludhiana, 3. Mongia Steel Ltd., Giridih, Jharkhand 4. Sujana Metal Products Ltd., Vishakapatnam, 5. ARS Metals Ltd., Chennai, Tamil Nadu
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					<p>PUNJAB</p> <ul style="list-style-type: none"> • LUDHINA STEEL ROLLING MILLS, LUDHIANA, PUNJAB • MONGIA STEEL LTD., GIRIDIH, JHARKHAND • SUJANA METAL PRODUCTS LTD., VISHAKAPATNAM, A.P. • ARS METALS LTD., CHENNAI, TAMIL NADU • PREMIUM FERRO ALLOYS LIMITED, KOCHI, KERALA • M.P.K. STEEL (I) PVT. LTD., JAIPUR, RAJASTHAN • RAMSONS TMT (P) LTD., NAGPUR, MAHARASHTRA <p>Implementation of Initial Quality & Environment Review Completed in all units, workmen training completed in all units, draft quality / environmental policy prepared, internal audit under finalization.</p> <p>Electrical audits in 9 model units for</p>	<p>6. Premium Ferro Alloys Limited, Kochi,</p> <p>7. M.P.K. Steel (I) Pvt. Ltd., Jaipur,</p> <p>8. Ramsons Tmt (P) Ltd., Nagpur,</p> <p>Salient feature of the assignment included training of Internal Audit, Pre Certification Audits, Development of Energy / Environmental policies and procedures and guidance provided for documentations.</p> <p>b) Implementation of 5S has been successfully completed in the following units:</p> <ol style="list-style-type: none"> 1. T.K.Steel Rolling Mills, Ludhiana, 2. Laksmi Steel Rolling Mills, Khanna, 3. Dhiman Industries Pvt. Ltd., Mandi Gobindgarh, 4. Ramsons Tmt (P) Ltd., Nagpur, 5. Mahalaxmi Dhatu Udyog, Nagpur, 6. Mongia Ispat Pvt. Ltd., Giridih, 7. Premium Ferro Alloys Limited,
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						<p>assessing the measures for energy savings completed during the reporting period.</p> <ul style="list-style-type: none"> • RAMSONS TMT (P) LTD., NAGPUR, MAHARASHTRA • MAHALAXMI DHATU UDYOG, NAGPUR, MAHARASHTRA • SUJANA METAL PRODUCTS LTD., VISHAKAPATNAM, A.P. • ADARSH ISPAT PVT. LTD., DURG, CHATTISGARH • MONGIA STEEL LTD., GIRIDIH, JHARKHAND • M.P.K. STEEL (I) PVT. LTD., JAIPUR, RAJASTHAN • LAKSMI STEEL ROLLING MILLS, KHANNA, PUNJAB • T.K. STEEL ROLLING MILLS, LUDHIANA, PUNJAB • DHIMAN INDUSTRIES PVT. LTD., MANDI GOBINDGARH, PUNJAB 	<p>Kochi, 8. Sujana Metal Products Ltd., Vishakapatnam 9. ARS Metals Ltd., Chennai, 10. Bengal Hammers Pvt. Ltd., Kolkata</p> <p>c) "Performance Improvement Training (PITs)" programmes has been conducted in the following 6 nos. of units, during reporting period:</p> <ol style="list-style-type: none"> 1. M/s Sharu Steel, Ludhiana 2. M/s Ashok Stee Industries, Mandi Gobindgarh 3. M/s Real Ispat & Power Ltd., Raipur 4. M/s Bajrang Power & Ispat Ltd., Raipur 5. M/s Someshwar Ispat Pvt. Ltd., Gujarat 6. M/s Premier Bars Ltd., Jaipur
		Indicator 7 Three study tours for	No activity to enhance	Three study tours	Four workshops on Roll Pass design (RPD)	Not planned.	a) 2 nos. of international study

		DEMs/local consultants organized to developed countries for providing exposure to similar industrial set up	stakeholders capacity		held during the reporting period at Nagpur (Central Cluster), Jaipur (North-2 cluster), Kolkata (East Cluster) and Pune (West Cluster), with a total of 22 participants. During these workshops the existing RPDs of the participating units were evaluated through the RPD software procured from M/s Morgards Hammer Sweden and remedial measures suggested to the units.		<p>tours has been conducted in the past to China.</p> <p>b) International collaboration established with M/s Morgardshammer, Sweden on roll pass design in the past.</p> <p>c) A delegation comprising of the PMC technical staffs and RMs participated in the 9th International Rolling Conference held at Venice, Italy. The conference highlighted some of the new technology related to Induction heating, high speed rolling mills, cast in carbide roll which are relevant to Indian context.</p>
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<p>Outcome 5</p>	<p>Outcome 5: Feasibility of ET Options and Technology Packages Established</p>	<p>Indicator 1 EcoTech Packages implemented and operationalized in 30 units</p>	<p>No packages</p>	<p>To be implemented in 50 model units. Note: The target has been revised from 30 to 50 model units as the activity on the hardware center was dropped following the mid-term review recommendations.</p>	<p>Commissioning of eco-tech options and customised eco-tech options in 7 SRRM units using pulverised coal during the reporting period. The names of these units are - I98M/s Sharda Ispat Limited - Nagpur (July 2010), M/s Orient Steel Re-Rolling Mill - Bhilai (July 2010), M/s Adarsh Ispat Udyog (P) Limited - Bhilai (August 2010), M/s Vaishnavi Ispat (P) Limited - Durgapur (October 2010), M/s Ramsons TMT (P) Limited - Nagpur (December 2010), M/s Mahalaxmi Dhatu Udyog (P) Ltd - Nagpur (December 2010), M/s T.K.Steel Rolling Mills (P) Limited - Ludhiana (December 2010)</p>	<p>Commissioned 4 model units during the reporting period . 29 units have been commissioned till date.</p>	<p>9 Nos. of SRRM units were commissioned, thus cumulating to 38. 4 Nos. of units, who were about to be dropped, have been revived now and it is expected that the commissioning will be completed by September'2013. With this, the project will be able to achieve a cumulative number of 42 model units against the target of 30 (initial) and 50 (modified). Out of the 11 nos. of EE technology packages (for re-heating furnace) identified under the project, 9 nos. of packages have been successfully demonstrated in model units. Out of the 19 nos. of Eco-tech options (for re-rolling), identified under the project, 13 nos of eco-tech</p>
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							options have been successfully demonstrated through the model units.
		Indicator 2 Documentation of lessons learned in implementation of technology packages	None available	Completed	Bids received to prepare multimedia documentary films; case studies and process documentation are under evaluation. These films will serve as a tool for the dissemination of knowledge and help in replicating energy efficient technologies across the sector.	Contract has been released to Academic and Development Services (ADCS) for developing 5 documentaries (Audio Visuals) in the following units: 1. M/s Pulkit Steel Rolling Mills 2. M/s M.P.K. Steels (I) Pvt. Ltd. 3. M/s Vivek Re-Rolling Mills 4. M/s Ludhiana Steel Rolling Mills 5. M/s Vaishanavi Ispat Private Limited	a) Reported under outcome 3 Indicator 1. 5 Nos. of multimedia documentaries prepared on the implementation of technologies in the model units. b) Case studies prepared. Reported under outcome 3 Indicator 1.
		Indicator 3 Multiplications strategy i. Cluster wise mapping of energy efficiency issues concerns and targets ii. Financial linkages and techno-economic** modeling of EE options ii. Energy and environment study of selected non-sample	0	Completed	Bids were received and are in the process of evaluation for 10 'pipeline projects' to prepare investment proposals for 10 SRRM units.	Contract Signed with M/s SAILCON for study of impacts of project. 300 units are planned to be surveyed and data collection is in progress. M/s National Productivity Council has been awarded the assignment to carry	a) The assignment aimed at assessing the extent of replication of EE technologies. A survey was conducted in 300 SRRM units on stratified random sampling basis. The study revealed 55% [155 no. of units] of surveyed units

		units. v. Development of investment pipeline project				<p>out Feasibility study in 10 pipe line units [pipeline units are those where Project supports a study that provides interventions and investment plan to the SRRM Unit, whereas in a model unit, project continues to provide technical assistance till the interventions are commissioned and post commissioning measurements are measured and the workers are trained on new interventions management]. The study is completed in the following 10 units;</p> <ol style="list-style-type: none"> 1. Indore Steel, Indore 2. Nadan Steel & Power Ltd. 3. Bhavani Rolling Mills 4. Mahendra Strips Pvt Ltd. 5. Divyansh Steel Mills Ltd. 6. Ujjwal Ispat Pvt. Ltd. 7. Venous Rolling Mills 8. Madyachal Steel Rolling Mills 	<p>adopted EE measures influenced either directly or indirectly by the project.</p> <p>b) The project has completed Feasibility study and development of reports for 40 Pipeline units. During reporting period, feasibility reports were finalized for the following 16 pipeline units:</p> <ol style="list-style-type: none"> 1. SRMB Srijan Pvt. Ltd. 2. BD Casting Pvt. Ltd. 3. BDG Metal & Power Ltd. 4. SUL Steel Pvt. Ltd. 5. Hoogli Ispat Ltd. 6. Skipper Ltd. 7. Mahadeva Steel Mills Pvt. Ltd. 8. Salasar Rolling Mills Pvt. Ltd. 9. Hebe Ispat Pvt. Ltd. 10. NGA Steels Pvt. Ltd., 11. United Metals
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						<p>9. Merolls Pvt Ltd. 10. Navkar Iron & Steel Pvt. Ltd. and the study is in progress in the following new 16 units in progress: 1. SRMB Srijan Pvt. Ltd. 2. BD Casting Pvt. Ltd. 3. BDG Metal & Power Ltd. 4. SUL Steel Pvt. Ltd. 5. Hoogli Ispat Ltd. 6. Skipper Ltd. 7. Mahadeva Steel Mills Pvt. Ltd. 8. Salasar Rolling Mills Pvt. Ltd. 9. Hebe Ispat Pvt. Ltd. 10. NGA Steels Pvt. Ltd., 11. United Metals Industries, 12. Viki Industries (P) Ltd., 13. RKKR Steel Ltd., 14. Thangam Steels Ltd. 15. Arun Vyapar Udyog. 16. Arjandass & Sons Pvt. Ltd.J97</p>	<p>Industries, 12. Viki Industries (P) Ltd., 13. RKKR Steel Ltd., 14. Thangam Steels Ltd. 15. Arun Vyapar Udyog. 16. Arjandass & Sons Pvt. Ltd.</p>
Outcome 6	Outcome 6: Innovative Institutional	Indicator 1 a) Development of 'performance	No ESCOs active in Steel SME Sector	Completed	One Brain storming workshop on 'Role of energy Service	A workshop was held in New Delhi in Sept 2011 on "Interactive	Project made continuous effort during the reporting

	Mechanism Established [ESCO and Third Party Financing (TFP)]	contracting' mechanism			Company (ESCO), Third Party Financing (TPF) and Financial Linkages' was held at Chennai on 21st Dec 2010. Speakers from BEE listed ESCOs (Under Grade 1 & 2) were invited to share their experience with PMC Steel and the top management of SRRM who participated in the workshop. It was felt that the scope in the areas of lighting, alternate renewable fuels, fuel switching, motor replacement, cogeneration, bio mass gasification, Thermal Optimisation - furnaces, Variable Frequency drives and compressors may be explored for energy savings under ESCO model. Four ESCOs showed interest to further pursue business with SRRMs.	programme for Energy Service Company (ESCO)". Three case studies were presented by different agencies to the participating units which included implementation modalities, proposal to SRRM units on what would be the anticipated interventions. However, no convergence has taken place to implement interventions on ESCO model yet.	period to involve ESCOs in the SRRM sector. However, response received from Units / ESCOs was not encouraging and has not converged in concrete action. However, PMC is still making an attempt trial this option.
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Outcome 7	Outcome 7: TIRFAC Established	Indicator 1 Monitoring and Evaluation Plan along with reporting procedures finalized	None available	Completed	No major progress in the reporting period	Target acheived.	Target achieved.
		Indicator 2 Software Center of TIRFAC Hardware Center of TIRFAC	0	Completed	Roll pass design workshops conducted already reported in indicator 7 of outcome 4.	No progress during the reporting period.	<p>The PMC set up to manage project also has capable Technical Manager. This has been serving the purpose of TIRFAC software centre. Support on roll pass design evaluation was provided to 6 SRRM units, during reporting period. The units included: M/s Dilip Rolling Mill, M/s K.I. Rathi Steel, M/s Sdvait Steel Rolling Mill, M/s Raj Rolling Mill & M/s Vivek Steel Rolling Mill.</p> <p>TIRFAC hardware center dropped as per previous PSC recommendation.</p>

RATINGS OF PROGRESS TOWARD MEETING DEVELOPMENT OBJECTIVES

<p>DO Rating: Please review the Development Objective Progress page of this APR/PIR and then answer the questions below. A DO rating will be generated based on your answers.</p>	
1	<p>Please rate the cumulative progress being made toward achieving the end-of-project targets as reported in the project results framework in the DO page of this APR/PIR</p>
2	<p>Please rate the likelihood that the project will deliver environmental and social benefits for an extended period after project completion?</p>
3	<p>Please rate the likelihood that social or political risks may threaten the sustainability of project outcomes</p>
<p>Project Manager/Coordinator: Is the person managing the day to day operations of the project.</p>	
<p>MANDATORY RATING MUST BE PROVIDED for projects under implementation in one country or regional projects where appropriate.</p>	
<p>Please justify your rating and address the following points in your comments. Please keep word count between 500 words minimum and 1200 words maximum.</p>	
1.	<p>Explain why you gave a specific rating.</p>
2.	<p>Note trends, both positive and negative, in achievement of outcomes as per the updated indicators provided in the DO sheet.</p>
3.	<p>Fully explain the critical risks that have affected progress.</p>
4.	<p>Outline action plan to address projects with DO rating of HU, U or MU.</p>
Overall 2009 Rating	S
Overall 2010 Rating	S
Overall 2011 Rating	S
Overall 2012 Rating	HS
2013 Rating	HS
Comments	<p>The project has achieved significant results towards its overall developmental objective.</p> <p>A total number of 9 SRRM model/ sample units were commissioned during the reporting period taking the total nos. to 38 commissioned units, till date. With the initiatives taken during the reporting period, a total no. of 42 units will be commissioned by the end of the project. The project provided technical assistance in the form of technological breakthrough for the SRRM sector by introducing the technology of "Direct Rolling". This technology is estimated to bring in a total transformational change in the SRRM sector.</p>

	<p>Against the target of reducing 9 PJ of energy and 0.88 million tonnes of CO2 through project interventions, the 31 evaluated units (out of 38 commissioned units) has yielded a lifetime energy saving of 7.78 PJ and avoided GHG emission by 642,630 tCO2, considering a lifetime of 10 years.</p> <p>Project interventions in 31 model units has been able to save fossil fuels, annually, in the form of 11,550 kilo litres of furnace oil and 12,956 tonnes of coal and electrical energy to the tune of 20,357 MWh / year .</p> <p>Financial targets achieved were the highest so far USD 1,445,345 which is over 100% of the budgeted amount of USD 1,445,000 for the year (January 2012 to December 2012).</p> <p>During the reporting period, the replication study of 300 non-model units was completed, which established 55% market interventions for the EE technologies in All-India basis, through project efforts, which has led to a saving of 1,706 TJ of thermal energy and 74,529 MWh of electrical energy. The total CO2 emission avoided, through replication in these 300 units, works out to be 213,424 t of CO2 per year and 2,134,240 tCO2 considering a lifetime of 10 years.</p> <p>The project has also achieved significantly in enhancing capacity for over 3,200 stakeholders, strengthening institutional arrangements in the form of Resident Missions, information dissemination in the form of documentaries, project website and development of significant knowledge products for the sector.</p>
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UNDP Country Office Programme Officer: Is the UNDP programme officer in the UNDP country office who provides oversight and supervision support to the project.

MANDATORY RATING MUST BE PROVIDED for projects under implementation in one country. Not necessary for regional or global projects.

Please justify your rating and address the following points in your comments. Please keep word count between 500 words minimum and 1200 words maximum.

1.	Explain why you gave a specific rating, for example, if your rating differs from the rating provided by the project manager please explain why.
2.	Note trends, both positive and negative, in achievement of outcomes as per the updated indicators provided in the DO sheet.
3.	Fully explain the critical risks that have affected progress.
4.	Outline action plan to address projects with DO rating of HU, U or MU.
Overall 2009 Rating	S
Overall 2010 Rating	MS

Overall 2011 Rating	MU
Overall 2012 Rating	S
2013 Rating	HS
Comments	<p>The project has quickly progressed in the last three to four years and managed to achieve most of the results it set forth. It has met the commitment on almost all the outcomes except the involvement of Energy Service Companies. An independent study conducted to assess impact 55% of the 300 surveyed SRRM units has replicated the Energy Efficiency measures.</p> <p>In the outcome of establishing benchmarks for Eco-Tech Options & Packages, Nine of eleven technology packages in re-heating furnaces demonstrated in model units and of the 19 measures in the rolling side, 13 have been demonstrated. Further, a new innovation of 'Direct Rolling' has been nurtured and demonstrated in three composite steel mills. Composite steel mill includes both induction and SRRM in the same premises. Three major energy consuming sections in composite mill includes, induction furnace making use of electricity in an induction mill where scrap material is melted and the molten material is formed into billets and cooled to room temperature. In SRRM, the billets are re-heated in re-heating furnace where furnace oil or coal is used as fuel and in the re-rolling mill electricity is used to roll the billet to rebars, flats or angles. Direct rolling completely avoids the requirement of re-heating furnace. The estimated investment for the machinery is about 700,000 USD while the cost of fuel saved is more than 1 million USD every year. Thus this innovation perhaps is a game changer and one of the greatest contribution of the project.</p> <p>In the outcome on Strengthening Institutional Arrangements, a number of institutions were engaged by the project and in the process strengthened their capacities. Some of these institutions are, National Institute of Secondary Steel, National Productivity Council, and a number of consultants etc. who have continued interest and perhaps will continue their engagement.</p> <p>In the outcome on Effective Information Dissemination Program (Including setting up of knowledge centre), the project has produced AV films capturing different typology of EE interventions. Many viewers have provided feedback that they are very useful. A process story titled "Steel Re-rolling: How a pioneering project is transforming the Indian Secondary Steel Sector" capturing the process, results, lessons and the spin offs,</p>

	<p>process document etc.</p> <p>In the outcome on Enhanced stakeholders' capacity, almost all the SRRM unit has been reached out by the project and has created awareness on EE measures. Project has built the capacity of manages, foremen in the units, strengthened the capacities of furnace designers and builders to build energy efficient furnaces.</p> <p>In the outcome on Feasibility of ET Options and Technology Packages Established, project has successfully commissioned 38 model units and gathered data from 31 of them. It plans to add a few more units by the end of the unit. Against the target of reducing 9 PJ of energy and 0.88 million tonnes of CO2 through project interventions, the 31 evaluated units have yielded a lifetime energy saving of 7.78 PJ and avoided GHG emission by 642,630 tCO2, considering a lifetime of 10 years. Thus exceeding the targets set forth.</p> <p>In the outcome on Innovative Institutional Mechanism Established, though efforts have been made to engage ESCOs, it has not yet yielded results. However, the efforts made by the project have managed to influence replications.</p> <p>About five model SRRMs have got awards, appreciation from state government or central governments. Moreover, an atmosphere has been created in the sector to look into energy efficiency as an intervention to look at as business upgradation. Hence, the project deserves a rating of 'Highly Satisfactory'.</p>
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Project Implementing Partner: Is the representative of the executing agency (in GEF terminology). This would be Government (for NEX/NIM execution) or NGO (for CSO Execution) or an official from the Executing Agency (for example UNOPS).

RECOMMENDED but NOT MANDATORY for projects under implementation in one country and regional projects.

Please justify your rating and address the following points in your comments. Please keep word count between 200 words minimum and 500 words maximum.

1.	Explain why you gave a specific rating.
2.	Note trends, both positive and negative, in achievement of outcomes as per the updated indicators provided in the DO sheet.
3.	Provide recommendations for next steps.

Project Implementing Partner

Overall 2009 Rating

Overall 2010 Rating	
Overall 2011 Rating	
Overall 2012 Rating	
2013 Rating	
Comments	
GEF Operational Focal point: Is the government representative in the country designed as the GEF operation focal point.	
HIGHLY RECOMMENDED but NOT mandatory for projects under implementation in one country. Not necessary for regional or global projects.	
Please justify your rating and address the following points in your comments. Please keep word count between 200 words minimum and 500 words maximum.	
1.	Explain why you gave a specific rating.
2.	Note trends, both positive and negative, in achievement of outcomes as per the updated indicators provided in the DO sheet.
3.	Provide recommendations for next steps.
GEF Operational Focal point	
Overall 2009 Rating	
Overall 2010 Rating	
Overall 2011 Rating	
Overall 2012 Rating	
2013 Rating	(S) Satisfactory
Comments	<ul style="list-style-type: none"> • The project has successfully demonstrated the viability and scope of energy efficiency measures promoted in the steel re-rolling mills across the country with the active support of the Ministry of Steel. • The project has the potential of achieving the national as well as global environmental benefits if it undertakes the following: <ol style="list-style-type: none"> 1) The benchmarking study which is in progress, once completed is adopted by Ministry of Steel in promoting energy efficiency measures in the steel re-rolling mills across the country. The benchmarking study could also be shared with MSME for wider usage and application. 2) This project has proven that these units require technical handholding to adopt these measures. This task needs to be completed. 3) The knowledge generated and institutions empowered (resident missions) during this project should be used for

	promoting energy efficiency measures amongst the steel re-rolling units across the country even after the winding of the GEF project.
Other Partners: For jointly implemented projects, a representative of the other Agency working with UNDP on project implementation (for example UNEP or the World Bank).	
RECOMMENDED but NOT MANDATORY for jointly implemented projects.	
Please justify your rating and address the following points in your comments. Please keep word count between 200 words minimum and 500 words maximum.	
1.	Explain why you gave a specific rating.
2.	Note trends, both positive and negative, in achievement of outcomes as per the updated indicators provided in the DO sheet.
3.	Provide recommendations for next steps.
Other Partners	
Overall 2009 Rating	
Overall 2010 Rating	(N/A) Not Applicable
Overall 2011 Rating	
Overall 2012 Rating	
2013 Rating	
Comments	
UNDP Technical Adviser: Is the UNDP-GEF Technical Adviser.	
MANDATORY RATING MUST BE PROVIDED for all projects.	
Please justify your rating and address the following points in your comments. Please keep word count between 500 words minimum and 1200 words maximum.	
1.	Explain why you gave a specific rating (do not repeat the project objective).
2.	Note trends, both positive and negative, in achievement of outcomes as per the updated indicators provided in the DO sheet.
3.	Fully explain the critical risks that have affected progress.
4.	Outline action plan to address projects with DO rating of HU, U or MU.
UNDP-GEF Technical Adviser	

Overall 2009 Rating	(MS) Moderately Satisfactory
Overall 2010 Rating	(MS) Moderately Satisfactory
Overall 2011 Rating	(MU) Moderately Unsatisfactory
Overall 2012 Rating	(S) Satisfactory
2013 Rating	(HS) Highly Satisfactory
Comments	<p>This will be the final PIR for this project as project will be ending by December 2013. From the past two years (this reporting period as well as previous one), the project made conscious and sincere efforts in completing most of the indicators and achieving the project targets. The project initially targeted 30 model units, but this number has been increased eventually to 50 units in one of the PSCs. As on June 2013, 38 model units were commissioned and 4 more units are under consideration. With this, it is expected to commission a total of 42 model units by the end of the project (December 2013). Overall, the project completed feasibility studies in 40 pipeline units and prepared reports. The project made every effort to involve ESCOs in the SRRM sector, but without any success so far. As of December 2012, the co-financing realised from Government of India (GoI) commitment was at US\$ 1,876,000 against US\$ 7,280,000 (as per ProDoc). Whereas from industries (model units), the realised co-financing was US\$ 6,872,371 against US\$ 5,540,000, which is a notable outcome. This number is expected to be increased further with the inclusion of data for the year 2013. So far, there was no realised co-financing from financial institutions and the reasons are very evident.</p> <p>As mentioned last year, this project has introduced a culture of monitoring and recording of data in SRRMs. Out of the 11 EE technology packages identified for re-heating furnace, 9 technologies have been successfully demonstrated in model units. Out of the 19 Eco-tech options identified for re-rolling, 13 eco-tech options have been successfully demonstrated in these model units. The project also established international collaboration with M/s Morgardshammer, Sweden on roll pass design in the past. Also direct rolling is a new innovation that was introduced and commissioned successfully in one of the SRRMs. The direct rolling technology avoids the use of re-heating furnace. PMU personnel spent significant amount of time in fine tuning this technology to suite local practices and Indian conditions. An impact survey was conducted in 300 SRRM units on stratified random sampling approach among 1,890 SRRMs in India. This study revealed that 55% (155 no. of units) of surveyed units adopted EE measures influenced either directly or indirectly by the project. The project also conducted roll pass design evaluation in 6 SRRM units to see its effectiveness.</p> <p>The project had developed a number of "Best Practices" and successfully implemented in many SRRMs. ISO 9001/ISO 14001 trainings were completed successfully in 16 model units. Salient features of these ISO trainings are internal audit, pre certification audits, development of energy/environmental policies and procedures and guidance provided for documentation. Further, it had successfully implemented 5S in 10 model units as well as "Performance Improvement Training (PITs)" programmes that were conducted in 6 model units. Standard Operating Practices (SOP) and Standard Maintenance Practices (SMP) were implemented in 10 model units. These are specific interventions targeted for SMEs, considering</p>

	<p>SRRMs of this category, such interventions were introduced for the first time.</p> <p>The project trained cumulatively over 3,200 persons of various cadres in SRRM sector such as consultants, domestic equipment manufacturer, unit owners and association members, etc. In addition, over 2,500 unit representatives have been reached through the awareness workshops and cluster meetings. These are identified as one of the stimulus for promoting market transformation of SRRM sector.</p> <p>The project delivered a number of effective information products and programmes. A number of audio-visual (A/V) documentaries of success stories were produced and circulated widely. Recently, with the success of direct rolling, an A/V is under preparation.</p> <p>The project considered midterm review recommendations and very much demonstrated adaptive management. The project has managed risks quite well from the past 3 to 4 years though historically it has faced many issues within PMU as well as in establishing dialogue with SRRM sector. The overall financial delivery of the project from the past two reporting periods was good.</p> <p>Based on the criteria for DO rating, the project is expected to achieve or exceed all its major global environmental objectives, and yield substantial global environmental benefits, without major shortcomings. Therefore, the DO rating of the project is High Satisfactory (HS).</p> <p>Following are some of the recommendations from RTA perspective where the project can improve further in its next phase:</p> <ul style="list-style-type: none"> (f) It was learnt that, with the success of this project, it has received funding from UNDP TRAC 2 as well as AusAID (bilateral donor) to continue the developments of this UNDP-GEF project to its next phase. It is important that the project shall look at scale up interventions such as (a) direct rolling, (b) improvements in material management for rolls in milling, such as introduction of carbide rolls which will influence longer campaign life and improve surface quality of the products, (c) development of efficient cooling systems and heat exchangers for quenching process which will help to also reduce water usage. (g) Providing continued subsidies is not a good practice at all and may lead to market distortion. SRRM units are very much capable to put 100% equity to implement energy efficiency interventions. It is important that they need continued handholding in terms of technical back stopping, which was lacking in this sector. Therefore, from the past three to four years, it was recommended to focus on establishment of TIRFAC software centre, but there was no clarity as on date. Considering the additional support that was received to continue the project, taking this as an opportunity, the project shall implement exit strategy that is being prepared and ensure TIRFAC software centre will be functioning within a year from now. Perhaps it is a good opportunity to even leverage Gols remaining committed co-financing (approx. US\$ 5.4 million) as corpus for the TIRFAC software centre to self-sustain business and establish itself in the market. (h) The project design was quite ambitious considering its nature. Working with SMEs (which are normally unorganised), market penetration efforts will last longer which was the case that
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	<p>happened under the project. Once successful demonstrations were seen by the rest of SRRMs, it indeed had a catalytic impact that results in market transformation. But in summary, projects of this nature should be granted at least 5 to 7 years for project implementation period.</p> <ul style="list-style-type: none"> (i) It is important to fully operationalize the developed/established MRV system which should also capture the investments by the SRRMs towards energy efficiency interventions. (j) ESCOs modality may not work well and recommended not to focus on such activities.
Highly Satisfactory (HS)	Project is expected to achieve or exceed all its major global environmental objectives, and yield substantial global environmental benefits, without major shortcomings. The project can be presented as 'good practice'.
Satisfactory (S)	Project is expected to achieve most of its major global environmental objectives, and yield satisfactory global environmental benefits, with only minor shortcomings.
Marginally Satisfactory (MS)	Project is expected to achieve most of its major relevant objectives but with either significant shortcomings or modest overall relevance. Project is expected not to achieve some of its major global environmental objectives or yield some of the expected global environment benefits.
Marginally Unsatisfactory (MU)	Project is expected to achieve its major global environmental objectives with major shortcomings or is expected to achieve only some of its major global environmental objectives.
Unsatisfactory (U)	Project is expected not to achieve most of its major global environment objectives or to yield any satisfactory global environmental benefits.
Highly Unsatisfactory (HU)	The project has failed to achieve, and is not expected to achieve, any of its major global environment objectives with no worthwhile benefits.

PROGRESS IN PROJECT IMPLEMENTATION

Outcome 1- Key Outputs this Reporting Period: Outcome 1: Benchmarks for EcoTech Options & Packages Established

- Awarded an assignment to PWC to develop benchmarks and MEPs for Steel Re-rolling mill (SRRM) sector.
- Conducted Life Cycle Assessment (LCA) study in 2 nos. of model units.
- Completed Cost Benefit Analysis consisting of NPV, IRR, and Payback etc. for 10 nos. of model / sample units.
- Established and updated Techno-economic viability of the EE technology packages and options.

Outcome 2- Key Outputs this Reporting Period: Outcome 2: Strengthened Institutional Arrangements

- 6 Resident Missions in operation till 31st December'2012 and 2 RMs w.e.f. 1st January have provided technical assistance to SRRM on EE measures.

Outcome 3- Key Outputs this Reporting Period: Outcome 3: Effective Information Dissemination Program (Including setting up of knowledge centre)

- Project Website is being updated periodically.
- Developed A/V capsules titled "Power of energy efficiency" on 5 model units and are being distributed to stakeholders.
- Draft Case studies on 5 model units completed and is expected to be finalized by Sept'2013.
- Commissioned 'process document titled "Steel Re-rolling: How a pioneering project is transforming the Indian Secondary Steel Sector" preparation and is expected to be completed by August 2013.
- Commissioned documentary to capture "Direct Rolling Technology" and is expected to be completed by Sept'2013.

Outcome 4- Key Outputs this Reporting Period: Outcome 4: Enhanced stakeholders capacity

- Workshops on technology options for SRRM were held at Gangtok and Mysore with 115 participants consisting of DEMs, Consultants and other stakeholders.
- SOPs/ SMPs implemented in 10 units.
- ISO 9001/14001 implemented in 16 units
- 5 S implemented in 10 units
- Performance Improvement Training (PIT) conducted in 6 nos. of SRRM units
- Two members of Project team and two from Resident Mission participated in International Rolling Conference at Venice, Italy from 10- 12th June'2013, (four officials from PMC/ RMs).

Outcome 5- Key Outputs this Reporting Period: Outcome 5: Feasibility of ET Options and Technology Packages Established

- Commissioned 9 nos. of model / sample units during reporting period.
- Developed 5 nos. of documentaries on model units.
- Conducted feasibility studies and developed reports for 20 pipeline units
- Conducted study in 300 non model units, to explore extent of replication. Established 55% replication of EE technologies on All-India basis.

Outcome 6- Key Outputs this Reporting Period: Outcome 6: Innovative Institutional Mechanism

Established [ESCO and Third Party Financing (TFP)]

- | |
|---|
| <ul style="list-style-type: none">• Invited offers for ESCO implementation and the assignment is expected to be completed before December'2013. |
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Outcome 7- Key Outputs this Reporting Period: Outcome 7: TIRFAC Established
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| <ul style="list-style-type: none">• Project Management Unit provided technical assistance, which partially serves the purpose of TIRFAC software centre. They provided assistance on roll pass design evaluation to 6 units. |
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IMPLEMENTATION PROGRESS RATING

<p>IP rating: Please review the Implementation Progress page of this APR/PIR and then answer the questions below. An overall IP rating will be generated based on your answers.</p>	
1	<p>Please rate the progress in delivery of outputs. For example, do the annual outputs represent sufficient progress in order to achieve the project outcomes (see DO page of this APR/PIR)?</p>
2	<p>Please rate the efficiency in delivery of outputs. For example, in this reporting period are budget resources being spent as planned? (i.e. is project delivery on target?)</p>
3	<p>Please rate the quality of risk management. For example, in this reporting period were project risks managed effectively?</p>
4	<p>Please rate the quality of adaptive management. For example, in this reporting period were actions taken to address implementation issue identified in the APR/PIR last year?</p>
5	<p>Please rate the quality of monitoring and evaluation. For example, in this reporting period were sufficient financial resources allocated to project monitoring and evaluation</p>
<p>Project Manager/Coordinator: Is the person managing the day to day operations of the project.</p>	
<p>MANDATORY RATING MUST BE PROVIDED for projects under implementation in one country or regional projects where appropriate.</p>	
<p>Please justify your rating and address the following points in your comments. Please keep word count between 500 words minimum and 1200 words maximum.</p>	
1.	<p>Explain why you gave a specific rating.</p>
2.	<p>Summarize annual progress and address timelines of project output/activity completion in relation to annual workplans.</p>
3.	<p>Outline the general status of project expenditures in relation to annual budgets, the effectiveness of project management units in guiding project implementation, and the responsiveness of the project board in overseeing project implementation.</p>
Overall 2009 Rating	(S) Satisfactory
Overall 2010 Rating	(S) Satisfactory
Overall 2011 Rating	(S) Satisfactory
Overall 2012 Rating	(HS) Highly Satisfactory
2013 Rating	(HS) Highly Satisfactory
Comments	<p>All project activities, taken up during the reporting period has been mostly accomplished or nearing completion. The total financial deliverables during January to December'2012 was highest till date, wherein an expenditure of USD 1,445,345 was made against a budget of USD 1,445,000 leading to a financial delivery of over 100%. During</p>

	<p>2013, out of the total budget of 563,145 USD, expenditure of 199,630 USD has been made till date, leading to financial delivery of 35%. With this, the total expenditure made during July'2012 to June'2013, is USD 1,269,039, which is highest, till date. Some of the significant activities, accomplished during the reporting period includes replication study in 300 units; feasibility studies for the 20 pipeline units and capacity building activities such PIT, 5S , ISO 9001/ 14001 , SOP/SMP etc. In addition to the above, major accomplishments' was achieved through commissioning of 9 model / sample units, taking the total to 38, till date. Some of the significant activities which have been taken up during reporting period and are nearing completion are activities such as development of benchmarks and MEPs and development of project process document. In addition to the same, the project exit strategy and identification of a succeeding agency is under process.</p>
<p>UNDP Country Office Programme Officer: Is the UNDP programme officer in the UNDP country office who provides oversight and supervision support to the project.</p>	
<p>MANDATORY RATING MUST BE PROVIDED for projects under implementation in one country. Not necessary for regional or global projects.</p>	
<p>Please justify your rating and address the following points in your comments. The QORs and delivery data in the ERBM portfolio project monitoring report should inform your rating. Please keep word count between 500 words minimum and 1200 words maximum.</p>	
1.	<p>Explain why you gave a specific rating. If your rating differs from the rating provided by the project manager please explain why.</p>
2.	<p>Summarize annual progress and address timeliness of project output/activity completion in relation to annual workplans.</p>
3.	<p>Outline the general status of project expenditures in relation to annual budgets, the effectiveness of project management units in guiding project implementation, and the responsiveness of the project board in overseeing project implementation.</p>
Overall 2009 Rating	(S) Satisfactory
Overall 2010 Rating	(S) Satisfactory
Overall 2011 Rating	(MS) Moderately Satisfactory
Overall 2012 Rating	(S) Satisfactory
2013 Rating	(HS) Highly Satisfactory
Comments	<p>The budget during the reporting period was approximately 990,000 USD [considering Q2, Q3 of 2012 and Q1, Q2 of 2013] and the expenditure during the reporting period was about 93% indicating a healthy progress.</p> <p>Key and urgent actions were taken in awarding the key assignments of benchmarking. Price Waterhouse Coopers (PWC) has been contracted to carry out benchmarking for energy in SRRM Unit, Minimum Energy Performance for equipments. Key tasks like life cycle assessments, cost</p>

	<p>benefit analysis and techno-economic viability of the EE technology packages and options were completed.</p> <p>Both project website and the UNDP project pages have been periodically updated. National Informatics Centre, Government of India has concurred to provide server space for project website for a period of 10 years which will be linked to Ministry of Steel. Developed A/V capsules titled "Power of energy efficiency" on 5 model units representing set of technology packages and these were distributed to stakeholders to further encourage their adoption in units which have not yet adopted EE measures. An assignment to capture the process of the project was commissioned and draft book titled "Steel Re-rolling: How a pioneering project is transforming the Indian Secondary Steel Sector" is being reviewed and it is expected to be completed by August 2013.</p> <p>Exit strategy was commissioned to PWC to (i) identify activities to proliferate energy efficiency in steel rerolling mills, (ii) identifying a succeeding agency, and (iii) developing a business plan for the agency. One consultation workshop was held to brainstorm exit strategy.</p> <p>10 Cluster level meetings have been planned to enhance the awareness further in locations where potential for EE in SRRM still exists. One such workshop was held at Bhiwadi helped the units in this cluster to understand energy efficiency measures.</p> <p>A team of four members from project management unit and resident missions participated in 9th International Rolling Conference at Venice, Italy. The conference highlighted some of the new technology related to Induction heating, high speed rolling mills, cast in carbide roll which are relevant to Indian context.</p> <p>Terminal evaluation of the project was commissioned and field mission was completed.</p> <p>Impact assessment study was conducted by third party, SAILCON. They surveyed 300 non-model units out of a total population of 1,890 units. 166 units, i.e. 55% of the surveyed units have implemented energy efficient technologies.54 could be traced to 'Direct Project Effort' which meant, project experts visited, beneficiaries participated in interactive workshops/meetings/awareness workshops and due to studies and training conducted. 112 could be traced due to 'Indirect Project Effort' attributed to dissemination through consultant/domestic equipment manufacturers, information by model units and direct replication through model units. Low end technologies typical investment of less than 1 crore Rs per unit were most popular which included technologies such as high efficient recuperator with improved furnace design.</p> <p>The project has made sincere attempts to converge all outcomes during the reporting period, completed or commissioned comprehensive documentation, doing a smooth exit by leaving behind knowledge products, exit strategy aiming to provide clear roadmap for further proliferation. Hence, 'Highly Satisfactory' rating has been provided.</p>
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Project Implementing Partner: Is the representative of the executing agency (in GEF terminology). This would be Government (for NEX/NIM execution) or NGO (for CSO Execution) or an official from the Executing Agency (for example UNOPS).

RECOMMENDED but NOT mandatory for projects under implementation in one country or regional projects.

Please justify your rating and address the following points in your comments. Please keep word count between 200 words minimum and 500 words maximum.

1.	Explain why you gave a specific rating.
2.	Note trends, both positive and negative.
3.	Provide recommendations for next steps.
Overall 2009 Rating	
Overall 2010 Rating	
Overall 2011 Rating	
Overall 2012 Rating	
2013 Rating	
Comments	

GEF Operational Focal point: Is the government representative in the country designed as the GEF operation focal point.

MANDATORY RATING MUST BE PROVIDED for projects under implementation in one country. Not necessary for regional or global projects.

Please justify your rating and address the following points in your comments. Please keep word count between 200 words minimum and 500 words maximum.

1.	Explain why you gave a specific rating.
2.	Note trends, both positive and negative.
3.	Provide recommendations for next steps.
Overall 2009 Rating	
Overall 2010 Rating	
Overall 2011 Rating	
Overall 2012 Rating	
2013 Rating	(S) Satisfactory

Comments	<ul style="list-style-type: none"> • The project has successfully demonstrated the viability and scope of energy efficiency measures promoted in the steel re-rolling mills across the country with the active support of the Ministry of Steel. • The project has the potential of achieving the national as well as global environmental benefits if it undertakes the following: <ol style="list-style-type: none"> 1) The benchmarking study which is in progress, once completed is adopted by Ministry of Steel in promoting energy efficiency measures in the steel re-rolling mills across the country. The benchmarking study could also be shared with MSME for wider usage and application. 2) This project has proven that these units require technical handholding to adopt these measures. This task needs to be completed. 3) The knowledge generated and institutions empowered (resident missions) during this project should be used for promoting energy efficiency measures amongst the steel re-rolling units across the country even after the winding of the GEF project.
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Other Partners: For jointly implemented projects, a representative of the other Agency working with UNDP on project implementation (for example UNEP or the World Bank).

RECOMMENDED but NOT mandatory for jointly implemented projects.

Please justify your rating and address the following points in your comments. Please keep word count between 200 words minimum and 500 words maximum.

1.	Explain why you gave a specific rating.
2.	Note trends, both positive and negative.
3.	Provide recommendations for next steps.
Overall 2009 Rating	
Overall 2010 Rating	
Overall 2011 Rating	
Overall 2012 Rating	
2013 Rating	
Comments	

UNDP Technical Adviser: Is the UNDP-GEF Technical Adviser.

MANDATORY RATING MUST BE PROVIDED for ALL projects.

Please justify your rating and address the following points in your comments. The QORs and delivery data in the ERBM portfolio project monitoring report should inform your rating. Please keep word count between 500 words minimum and 1200 words maximum.

1.	Explain why you gave a specific rating. If your rating differs from the rating provided by the UNDP Country Office Programme Officer and/or the Project Manager please explain why.
2.	Summarize annual progress and address timelines of project output/activity completion in relation to annual workplans.
3.	Outline the general status of project expenditures in relation to annual budgets, the effectiveness of project management units in guiding project implementation, and the responsiveness of the project board in overseeing project implementation.
UNDP Technical Adviser	
Overall 2009 Rating	(MS) Moderately Satisfactory
Overall 2010 Rating	(S) Satisfactory
Overall 2011 Rating	(MS) Moderately Satisfactory
Overall 2012 Rating	(S) Satisfactory
2013 Rating	(HS) Highly Satisfactory
Comments	<p>The annual targets were entered in ATLAS and the status of progress towards these annual targets is being monitored on quarterly basis. The risk log in ATLAS is being updated regularly at least until Q2 of 2012. However, the mentioned critical risks in the PIR/APR 2013 shall be reflected in the ATLAS risk log. The project financial delivery is on track. For the contracts issued in Q1 and Q2 of 2013, payments will be made in Q3 of 2013. Therefore it can be said that the project financial delivery is on track.</p> <p>The project has made sincere efforts to congregate all the outputs during this reporting period through completing the commissioned reports/assessments/studies so as to ensure a smooth exit by leaving behind knowledge products, and providing clear roadmap for further proliferation. It was learnt that the project is preparing an exit strategy which will be put into implementation soon. The project has done very well in terms of communication and knowledge products and produced a number of short films which are quite informative and influential.</p> <p>During this reporting period, 9 model units were commissioned that is leading the total number of model units to 38. The project awarded an assignment to PWC to develop benchmarks and MEPs for SRRM units and it is an important activity which shall be concluded before project closure. The findings of this report shall be widely distributed. Number of Resident Missions was condensed from 6 to 2 nos. during 2013 in order to sustain PMU operation. During this reporting period, workshops on technology options for SRRMs were held at Gangtok and Mysore with a total of 115 participants. A number of "Best Practices" trainings were conducted and also few (A/V) documentaries of success stories were commissioned.</p> <p>The project supervision and monitoring is quite good and regularly conducted PSC meetings during last reporting period. The project financial delivery is good during last reporting period. The project demonstrated adaptive management on many fronts – technology</p>

	development, responding to the needs of SRRMs and within its operation by reducing the number of Resident Missions from 6 to 2. Therefore, based on the criteria for IP rating, the project implementation progress can be rated Highly Satisfactory (HS). The project shall take action towards retaining the knowledge developed under the project to benefit more number of SRRM units in the country.
Highly Satisfactory (HS)	Project is expected to achieve or exceed all its major global environmental objectives, and yield substantial global environmental benefits, without major shortcomings. The project can be presented as 'good practice'.
Satisfactory (S)	Project is expected to achieve most of its major global environmental objectives, and yield satisfactory global environmental benefits, with only minor shortcomings.
Marginally Satisfactory (MS)	Project is expected to achieve most of its major relevant objectives but with either significant shortcomings or modest overall relevance. Project is expected not to achieve some of its major global environmental objectives or yield some of the expected global environment benefits.
Marginally Unsatisfactory (MU)	Project is expected to achieve its major global environmental objectives with major shortcomings or is expected to achieve only some of its major global environmental objectives.
Unsatisfactory (U)	Project is expected not to achieve most of its major global environment objectives or to yield any satisfactory global environmental benefits.
Highly Unsatisfactory (HU)	The project has failed to achieve, and is not expected to achieve, any of its major global environment objectives with no worthwhile benefits.

ADJUSTMENTS

Adjustments to Project Milestones, Project Strategy and Risk Management

Key Project Milestones

Have significant delays occurred in the project start, inception workshop, Mid-term Review, Terminal Evaluation or project duration?

Yes

If yes, were these changes reported in a previous APR/PIR?

Yes

Key project milestone	Scope of delay (in months)	Briefly describe change or reason for change	Briefly describe the implications or consequences this has had on project implementation
Project Start (i.e. project document signature date)	NA		
Inception Workshop	NA		
Mid-term Review	NA		
Terminal Evaluation	On –Time (NA)		
Project Duration (i.e. project extension)	12 months	Project Extended till 31 st December'2013, to complete the project pending activities and also to disburse the Capital Subsidy to the implemented units from the NEX fund.	Project implementation by model / sample units has been almost complete. Project extension till 31 st December'2013 will be completed with its stated objective, with this extension.

Adjustments to Project Strategy

Has the project made any changes to its strategy (i.e. logframe/results framework) since the Project Document was signed?

No

If yes, were these changes reported in a previous APR/PIR?

Change Made to	Yes/No	Briefly describe the change and the reason for that change
Project Objective	No	NA

Project Outcomes	No	NA
Project Outputs/Activities	No	NA

Risk Management

List number of critical risks as noted in the ATLAS risk log and briefly describes actions undertaken this reporting period to address each critical risk.

# of Critical Risks (type/description)	Risk management measures undertaken this reporting period
The subsidy release to Model Units is delayed (Financial)	The project has been extended by 12 months for closure of all pending activities including release of Capital Subsidies to Model units. Though it is the government co-financing, the process of release has been fast tracked by the project with the appointment of an individual consultant, primarily looking only at Capital Subsidy release. The process has been streamlined and regularly monitored for scheduled completion, latest by October'2013.
TIRFAC Software Centre has not yet been operational (Operational).	PMU is providing this service and functioning as TIRFAC Software Centre. However, PMU has not yet become self-financing institution. Exit Strategy has been commissioned is exploring [i] activities that required to proliferate EE measures in the SRRM sector, [ii] identify possible succeeding agency which will champion EE measures post project scenario, and [iii] develop business plan for succeeding agency.

Adjustments general comments:

Finance: cumulative from project start to June 30 2013

DISBURSEMENT OF GEF GRANT FUNDS

How much of the total GEF grant as noted in Project Document plus any project preparation grant has been spent so far? (e.g. PPG + MSP or FSP amount. Do not break down by PPG or project budget.)

Estimated cumulative total disbursement as of 30 June 2013. (i.e.CDR information up to 20 June 2013)	USD 6,386,830
Add any comments on GEF Grant Funds	The project will exhaust the entire grant financing (US\$ 6,751,041) by December 2013.

DISBURSEMENT OF CO-FINANCING

How much of the total Co-financing as noted in Project Document has been spent so far? Co-financing is the amount committed in the project document for which co-financing letters are available

Estimated cumulative total co-financing disbursed as of 30 June this year. Please breakdown by donor.	Ministry of Steel, Government of India (GoI): US\$1,942,809 Industries (model units): US\$ 6,872,371 FIs and others: US\$ 0
Add any comments on co-financing including other types and amounts of additional co-financing such as in-kind, private sector, grants, credits and loans.	The actual committed co-financing amounts are: GOI: US\$ 7,280,000 Industries (model units): US\$ 5,540,000 FIs and others: US\$ 12,290,000

ADDITIONAL LEVERAGED RESOURCES

These additional resources can be from the same donors or new donors.

Estimated cumulative leveraged resources as of 30 June 2013	Industries (model units): US\$: 1,287,371
Add any comments on Leveraged Resources.	As on December 2013, the model units incurred more than actual committed co-financing. This number will increase considering the investments made by model units in the year 2013.

Other Financial Instruments

Does the project provide funds to other Financial Instruments?	No
If yes, please discuss developments that occurred this reporting period only.	NA

Communications and KM

Tell the Story of Your Project and what has been Achieved this Reporting Period

With the growing demand for Steel in India, primarily ignited through the nation-wide drive for infrastructure development, the secondary Steel Re-rolling Mill (SRRM) sector attained a new dimension of significance. The fluctuations of market dynamics specially focused around the fuel prices led to concerns towards sustainability of SRRM units. The project supported energy efficiency which significantly resulted in reducing fuel consumption and enhanced productivity. This has also resulted in significant savings on fuel cost and increased income due to increased productivity. The measures also reduced pollution load. All these together contributed to the survival and sustenance of the SRRM units under this transition period. There is a perception that EE interventions have brought into significant reduction pollution load thus leading to better and healthier work environment for the shop floor personnel and surroundings.

The extensive technical and financial support extended by the project supported commissioning of 9 model units during the reporting period taking the cumulative number to 38 model SRRM units against the overall target of 50. Post implementation evaluation in 31 model units revealed a cumulative emission reduction (project duration) of 192,891 tCO₂. The estimated lifetime direct GHG emissions avoided, considering a lifetime of 10 years, was 642,630 tCO₂. In energy terms, these 31 model units are estimated to save 7.78 PJ of energy.

The project also has triggered significant replications. An independent study conducted by SAILCON revealed that 55 % of the 300 surveyed units have incorporated EE technologies, exceeding the target 25% set during the project inception.

During the reporting period, following key activities were completed/initiated:

- (1) "Development of Benchmarks and MEPS for the steel re-rolling mill sector" by PWC. This is perhaps the first time in the country when such an effort is being taken for the SMEs and in specific SRRM sector;
- (2) Performance Improvement Training (PIT), 5S Lean Management, ISO 9001 & 14001, Roll Pass Design workshops, SOPs/SMPs implementation etc. were conducted to benefit the model units,
- (3) Cumulatively trained over 3,200 persons of various cadres in SRRM sector such as consultants, domestic equipment manufacturer, unit owners and association members, etc. In addition, over 2,500 unit representatives has been reached through the awareness workshops and cluster meetings.
- (4) Development of exit strategy has been initiated

Adaptive Management this Reporting Period

1. Since, the project is in its terminal year (to be closed by December'2013), the Project Management Cell (PMC) was truncated w.e.f. 1st January'2013 wherein the staff members were reduced from 25 to 8. Also, looking at the relatively lesser work left in the field, the numbers of Resident Missions were also reduced from 6 to 2. These adaptive management measures are under implementation during this reporting period to smoothly close the project.

2. Efforts were also taken, during the reporting period, to develop an Exit Strategy for the project and also for identification of a succeeding agency in order to continue the efforts and services to the target industries.
3. Inclusion of the technology of “Direct Rolling” under the EE technology intervention was done, during the reporting period. This technology is estimated to bring about a transformational change in the Indian SRRM sector.

Lessons Learned

The project has provided significant lessons, and real case studies towards transforming a low responsive, unorganized sector to highly successful and a sustainably transforming small and micro enterprises sector.

The significant lessons learnt during the reporting period, includes:

1. Need of cluster-based approach for successful project implementation.
2. Identification of proper information dissemination tool to widespread knowledge.
3. Knowledge support is key to win trust of stakeholders and amalgamate new interventions
4. Maintaining proper monitoring and verifications systems to quantify project benefits

PARTNERSHIPS

Civil Society Organisations/NGOs

NA

Indigenous Peoples

NA

Private Sector

The project targets energy efficiency improvement in the private sector steel re-rolling mills in India. During the reporting period, additional 9 numbers of units were commissioned, taking the total figure to 38. The cumulative private investment made towards meeting the project objective is \$ 7,619,054.

GEF Small Grants Programme

NA

Other Partners

NA

PROGRESS IN ADDRESSING GENDER EQUALITY

Has a gender or social needs assessment been carried out?

No

If a gender or social assessment has been carried out what are the findings?

NA

Does this project specifically target women or girls as direct beneficiaries?

No

Have there been any changes in specifically targeting women or girls as direct beneficiaries this reporting period?

NA

If yes, please explain:

NA

Please discuss any of the points above further or provide any other information on the project's work on gender equality undertaken this reporting period

Some points to consider: impact of project on daily workload of women, # of jobs created for women, impact of project on time spent by women in household activities, impact of project on primary school enrolment for girls/boys, increase in women's income etc. Be as specific as possible and provide real numbers (e.g. 100 women farmers participating in sustainable livelihoods programme).

NA

ENVIRONMENTAL OR SOCIAL GRIEVANCE

NA. No grievance addressed during reporting period.

What environmental or social issue was the grievance related to?

NA

What is the current status of the grievance?

NA

How would you rate the significance of the grievance?

NA

Please describe the on-going or resolved grievance noting who was involved, what action was taken to resolve the grievance, how much time it took, and what you learned from managing the grievance process (maximum 500 words). If more than one grievance was addressed this reporting period, please explain the other grievance (s) here:

NA