RESOLUTION

No.14(1)/2017-TD. Ministry of Steel, Government of India, hereby constitutes a 'Panel of Judges' to evaluate the performance of the Integrated Steel Plants in India for awarding the Prime Minister's Trophy, the Steel Minister's Trophy and Certificate of Appreciation for excellence in performance of the integrated steel plants for the year 2016-17. The Panel of Judges for 2016-17 will consist of the following:

1. Dr. Aruna Sharma  
   Secretary, Ministry of Steel  
   Government of India  
   Udyog Bhavan, New Delhi-110107  
   Email: secy-steel@nic.in  
   Tel. No: 011- 23063489

   Chairman

2. Shri V S Jain  
   Former Chairman, SAIL / Member, PESB /  
   Director Finance (IOCL),  
   B-12, Saket, New Delhi – 110 017  
   E-mail: vsjain53@gmail.com  
   Mob: 9818398940

   Member

3. Shri A P Choudhary,  
   Former Chairman-cum-Managing Director,  
   Rashtriya Ispat Nigam Limited,  
   T-2/401, Sunworld Vanalika,  
   Sector – 107, NOIDA  
   PIN – 201301, U.P.  
   Email: amrendra.apc@gmail.com  
   Mob: 8130327899

   Member

4. Shri Justice Pritam Pal (Retd),  
   High Court of Punjab and Haryana,  
   HN-665, Sector – 11B,  
   Chandigarh – 160011  
   Mob: 9463122333

   Member

5. Shri K A P Singh,  
   Former Managing Director,  
   Bokaro Steel Plant, SAIL,  
   166, Cooperative Colony,  
   Bokaro Steel City - 827 001  
   District Bokaro, Jharkhand  
   Email: kapsingh1945@gmail.com  
   Mob: 9931067223

   Member
6. Shri V Shyamsundar,
  Former Managing Director,
  Durgapur Steel Plant,
  D1, Apple Block, Orchard Apartments,
  85-87, Arcot Road,
  Vadapalani, Chennai – 600 026
  Email: vshyamsundar49@gmail.com
  Mob: 9900003790

7. Shri H M Nerurkar,
  Former Managing Director,
  Tata Steel Limited
  1201, Lodha Grandeur,
  Sayani Road, Prabhadevi,
  Mumbai – 400 025
  Email: nerurkarhemant@gmail.com
  Mob: 9831062203

8. Ms. Neeru Abrol,
  Former CMD & Director Finance,
  National Fertilizers Limited & GM Finance, SAIL
  K-3, Lajpat Nagar – III,
  New Delhi – 110 024
  Email: neeru.abrol.rfl@gmail.com
  Mob: 9810887207

9. Prof Ranjan Das,
  Former Prof of Strategy, Innovation, Entrepreneurship and
  Leadership of IIM, Kolkata
  16, Lake East 3rd Road,
  3rd Floor, Santoshpur,
  Kolkata – 700 075
  Email: rdas@iimcal.ac.in,
  ranjandas@thestrategyacademy.org
  Mob: 9830052722

10. Shri Gopal Subramanyam,
    Former CEO, L&T – Komatsu Limited,
    Flat No.001, Datta Niwas,
    KT-36 Apartments, 10th A Main,
    15th Cross, Malleswaram,
    Bangalore - 560055
    Email: sub.gopal@gmail.com
    Mob: 9886300131

11. Shri I V Rao,
    Former Managing Executive Officer,
    Maruti Suzuki (I) Limited,
    C-3/3004, Vasant Kunj,
    New Delhi – 110 070
    Email: iv.rao@maruti.co.in & ivraao27@gmail.com
    Mob: 9811710959
12. Shri C K Saji Narayanan,  
   National President, BMS,  
   Gayathri Link Road,  
   Ayyanthole, Thrissur,  
   Kerala – 680 003  
   Email: trc.saji1ck@gmail.com  
   Mob: 9447992805

13. Shri Sunil Barthwal,  
   Joint Secretary  
   Ministry of Steel  
   Udyog Bhavan, New Delhi  
   Email: s.barthwal@nic.in

2.0 The terms of reference of Panel of Judges are as follows:-

2.1 To evaluate overall performance of all participating integrated steel plants in India, for the year 2016-17 in terms of a predetermined Scheme annexed (Annex-I) with this Resolution.

2.2 The Panel of Judges will select and recommend two steel plants, one for award of the Prime Minister’s Trophy with cash award of Rs.2 crore and one for Runners up PM’s Trophy as Steel Minister’s Trophy with cash award of Rs.1 crore for excellence in performance for the year 2016-17. The Panel of Judges, will also select a participating steel plant (other than the PM and SM Trophy winner) for award of a Certificate of Appreciation with a cash award of Rs. 25 lakh for maximum incremental improvement in overall performance.

2.3 In addition, the Panel of Judges may also recommend special / theme based awards to encourage and recognise the efforts of the integrated steel plants in select areas. Selection of themes / areas will be entirely at the discretion of the Panel of Judges. The awards will be in the form of “Certificate of Appreciation” with description of area noticed by POJs.

ORDER

Ordered that a copy of the resolution be communicated to all concerned. Ordered also that the resolution be uploaded in the website of Ministry of Steel for general information.

(Sunil Barthwal)  
Joint Secretary to the Govt of India  
Tel No. 23063170

To,

Sr. Technical Director,  
National Informatics Centre (NIC),  
Ministry of Steel, Udyog Bhavan:  
With a request to upload this Resolution on the website of Ministry of Steel seeking applications from all eligible integrated steel plants as defined in para 3 of the scheme.

Copy with a copy of the Scheme to:-

1. All Members of the Panel of Judges (POJs)
Copy with a copy of the Scheme to eligible integrated steel plants with a request to submit applications immediately to the Nodal Officer:

1. Chief Executive Officer,
   Bhilai Steel Plant,
   Steel Authority of India Limited,
   Bhilai 490001 (Chhattisgarh).
   Email: ceo_bsp@sail-bhilai steel.com

2. Chief Executive Officer
   Bokaro Steel Ltd.,
   Steel Authority of India Limited,
   Bokaro-827001, Jharkhand.
   Email: ceo_bsl@sailbsl.in
   mdofficce.ceo@gmail.com

3. Chief Executive Officer
   Rourkela Steel Plant,
   Steel Authority of India Limited,
   Rourkela-769011 (Orissa)
   Email: ceo_rsp@sailrsp.co.in

4. Chief Executive Officer,
   Durgapur Steel Plant,
   Steel Authority of India Limited,
   Durgapur (WB) – 713202.
   Email: ceo@saildsp.co.in
   dsc_mddsp@gmail.com

5. Chairman-cum-Managing Director,
   Visakhapatnam Steel Plant,
   Rashtriya Ispat Nigam Limited,
   D Block, Admin Building,
   Visakhapatnam (AP) – 530031.
   Email: cmd@vrlassteel.com

6. Managing Director,
   Tata Steel Ltd.,
   Corporate Center, General Office,
   Bistupur, East Singh Bhum,
   Jamshedpur – 8310031 (Jharkhand)
   Email: mdofficce@tatasteel.com
   narendran@tatasteel.com

7. Managing Director & CEO
   Essar Steel India Ltd.
   27km Surat Hajira Road,
   Hazira, Surat – 394270 (Gujarat)
   Email: dilip@essar.com
   dilip.commen@essar.com & prashant.ruia@essar.com

8. President
   JSW Steel Limited
   Vijayanagar Steel Works,
   P.O. Vidyanagar, Torangallu-583275
   Distt. Bellary, Karnataka.
   Email: rajashekhar.pattanasetty@jsw.in
9. President
JSW Steel Ltd, Dolvi Works,
New Admin Building, Geetapuram, Dolvi,
Taluka: PEN, Dist: Raigad (Maharashtra)-402107
E-mail: partha.sengupta@jsw.in

10. Executive Director (Projects & Operations),
Jindal Steel & Power Limited (Raigarh Works)
Kharsia Road, Raigarh -496001,
Chhattisgarh, INDIA
Tel: +91 7762 227001-05
Email: pankaj.gautam@jspl.com
ravi.uppal@jindalsteel.com
naveen.jindal@jindalsteel.com

11. Chairman & Managing Director
Bhushan Power & Steel Ltd (Orissa works).
4th Floor, Tolstoy House
15-17, Tolstoy Marg, Connaught Place
New Delhi - 110001, India
E-mail: oktata@bpsl.net, delhi@bpsl.net

12. Vice Chairman & Managing Director
Bhushan Steel Ltd (Angul, Orissa Works)
Bhushan Centre
Bhikaji Cama Place (Behind Hyatt Hotel)
New Delhi -110066
E-mail: ns@bhushansteel.com
anilahuja@bhushansteel.com

Copy for information to:

1. The Secretary,
Ministry of Steel & Chairman, POJs

2. Joint Secretary, Ministry of Steel & Member Secretary, POJs

3. The Chairman, Joint Plant Committee &
Secretary, SDF Managing Committee,
O/o Joint Plant Committee,
Isat Niketan,
52/1A Ballygunge Circular Road,
Kolkata-700019.

4. Dr A S Firoz, Chief Economist
Economic Research Unit, Joint Plant Committee,
305, Aurobindo Place, Hauz Khas, New Delhi 110016: Wrt nominate the Nodal Officer for the year 2016-17.

(Sunil Barthwal)
Joint Secretary to the Government of India
Tel No.23063170
SCHEME FOR AWARD OF PRIME
MINISTER’S TROPHY
FOR EXCELLENCE IN PERFORMANCE OF
INTEGRATED STEEL PLANTS IN INDIA (As
amended upto September, 2017)

1.0 GENESIS
Consequent upon the announcement made by former Prime Minister, Late Shri P.V. Narsimha Rao, while dedicating Visakhapatnam Steel Plant of Rashtriya Ispat Nigam Ltd. to the Nation on 1.8.1992, Government have decided to present an award known as Prime Minister’s (PM’s) Trophy with a cash award of Rs. 1 crore and a citation each year to the best performing integrated steel plant to generate a sense of competition and to improve upon performance of the integrated steel plants in the country.

1.1 The Government of India has enhanced the cash award from Rs. 1 crore to Rs. 2 crore for the best performing integrated steel plant with effect from the performance year 2006-07.

1.2 Runners up Prime Minister’s Trophy in the name of Steel Minister’s (SM’s) Trophy with a cash award of Rs. 1 crore have been incorporated from the performance year 2006-07 in the Prime Minister’s Trophy Scheme. The Steel Minister’s Trophy and cash award of Rs.1 crore would be given to the steel plant that ranks second in the overall performance.

1.3 Besides the PM’s Trophy and Steel Minister’s Trophy, a Certificate of Appreciation for maximum incremental improvement in overall performance with a cash award of Rs. 25 lakh may be given to any participating plant, which had also participated in the previous year and has recorded maximum improvement in total marks during the assessment year compared to the previous year. However, any plant eligible for PM’s Trophy/SM’s Trophy will not be eligible for the certificate. The certificate may be handed over by Secretary (Steel).

1.4 To encourage and recognise the efforts of the integrated steel plants in select areas, special / theme based awards can be recommended by Panel of Judges. Selection of themes / areas will be entirely at the discretion of the Panel of Judges, i.e. wherever the Panel feels that the plant/s has done extra-ordinary work. The awards will be in the form of “Certificate of Appreciation” with description of area noticed by POJs. The certificate/s may be handed over to the plant/s by the Chairperson, POJs / Secretary (Steel) at an Award ceremony.

2.0 OBJECTIVES

2.1 The objectives of instituting these awards for the integrated steel plants is to give recognition to outstanding performance in the vital sector of the national economy which draws heavily on national resources of capital and skilled manpower. The awards are intended to spur these major iron & steel producers to achieve international standards of efficiency, quality and economy in their operations.

3.0 ELIGIBILITY

3.1 All integrated steel plants in India starting operation from iron ore, virgin or processed, in
one location, producing finished steel to national or international specifications; irrespective of any route and having minimum annual production of one million tonne of crude/cast steel in 2015-16 and 2016-17 are eligible to participate.

4.0 SCHEME

4.1 The details of the scheme and the set of criteria for evaluating the performance of the integrated steel plants had initially been worked out by an Expert Committee constituted by Government of India, Ministry of Steel in 1992. The criteria and the benchmarking of the same have been further elaborated/improved by the Panel of Judges (POJs) for Prime Minister’s Trophy for different years and other Expert Committee(s)/Sub-committee(s) constituted by POJ from time to time. The criteria for evaluation of the performance of integrated steel plants now take care of the present day business environment.

4.2 Based on recommendations of a Sub-Committee, which submitted its report in June 2017, 11 main parameters have been evolved for evaluating the performance of the integrated steel plants. These include both Objective Parameters and Subjective Parameters as per details given below:-

**Objective Parameters:**
- Growth in Crude Steel production.
- Efficiency of operations (Productivity, Fuel Rate, Energy Consumption etc).
- Training
- Financial performance.
- Efforts towards Value Addition/Product Development
- Gender diversity
- Environment management (Pollution, CO₂ Emission, Waste Utilisation, Water consumption)
- Safety (Frequency/Severity Rate, Fatalities)
- Thrust on Research & Development (R&D)

**Subjective Parameters:**
- Enabling parameters by an Independent Agency
- Qualitative Parameters assessed by POJs based on actual plant visits.

4.3 The evaluation will be carried out by a Panel of Judges comprising of the following:-

- Secretary to the Govt. of India, Ministry of Steel
- Chairman
- Expert(s) on Iron & Steel Industry
- Member
- Representative(s) of the customers
- Member
- Management Expert(s)
- Member
- Economist(s)
- Member
- Expert on Energy/Environment
- Member
- Joint Secretary to the Govt. of India, Ministry of Steel
- Member-Secretary

4.3.1 More members of the Panel of Judges from outside can be drawn from among heads/CEOs/COOs of Public & Private sector companies, Engineering units, Indian Institute of Management and other reputed Management Institutes, Indian Institute of Technology, and
other reputed Engineering Institutes, School of Economics etc.

4.3.2 A nominee of recognized trade union not related to the steel plants directly or indirectly during the performance / assessment year shall also be inducted as a Member of Panel of Judges, who will be appointed by Steel Minister (In-charge) to Prime Minister’s Trophy, as per Government Guidelines in vogue.

4.3.3 Members of the Panel of Judges should comprise only such individuals whose antecedents are known, and enjoy good reputation and there is nothing adverse against them. Nomination/Appointment of such persons, whose nomination will be prejudicial to the prestige of PM’s Trophy, should be avoided. Further, members of Panel of Judges should not be related to the steel plants directly or indirectly during the performance year as well as the assessment year under consideration.

4.3.4 Panel of Judges will submit the assessment sheets to the Secretariat after the visit to the participating plant. The POJs may review the scoring after completion of visit to all plants. To achieve the larger objectives of the Scheme, the Panel of Judges will also submit their observations and recommendations, in detail, for improvement of each plant. The recommendations of Panel of Judges may cover areas like technology, strategy, HR/behavioural science, management, economics, marketing, etc. It is expected that each Member of the visiting Panel will identify a minimum of 5 opportunities for improvement for each of the participating plant.

4.3.5 Necessary arrangements for POJs & officials for travel up to nearest airport/railway station will be made by the Secretariat or alternatively, a consolidated fee will be paid to Members, POJs, to compensate members for their time and for incurring necessary expenditure to make travel arrangements up to nearest airport/railway station. Rest of the arrangements like local transport, lodging & boarding etc. will be made by the participating plant/s for the plant visits and by the PM’s Trophy Secretariat for attending Meetings in the Ministry of Steel, as per the past practice/s.

4.4 Assessment of Enabling Parameters will be based on EFQM (European Foundation for Quality Management) Excellence Model and will be carried out by an independent expert agency having licence/rights to use EFQM Excellence Model in India. The independent agency will give scores on both Enablers as well as Results. However, for the purpose of overall evaluation and final ranking, the scores on Enablers only will be used. The independent agency will also provide a feedback report for each of the Plant along with a summary report on performance of all the Plants on various Enabling Parameters.

4.5 Economic Research Unit (ERU) of Joint Plant Committee, New Delhi will function as PM’s Trophy Secretariat and provide the secretarial services and general assistance to the Panel of Judges. The PM’ Trophy Secretariat will appoint a Nodal Officer for this purpose who will be authorized to incur necessary expenditure and deploy required manpower. The participating plants may provide necessary manpower and administrative support to the Secretariat, as and when requested by Nodal Officer.

4.6 The participating steel plants will share all the cost incurred by the Secretariat towards the
process of evaluation including cost of visits to the plants by POJs, honorarium/consolidated fees to the POJs and cost of visits to Delhi in the ratio of their crude steel production during the performance year. However, all expenditures incurred by the Secretariat will be subject to audit as per standard procedure prevalent in the ERU, JPC.

4.7 The Secretariat will coordinate with the Panel of Judges, independent agency and participating plants under the general guidance of Member Secretary, POJs. It will give wide publicity and evolve a format for collection of information from the competing plants. The Secretariat will prepare and summarize the total background information in the required format for submission to the Panel of Judges. It will also provide general assistance to the Panel of Judges and Member Secretary, Ministry of Steel. The participating plants will compile the general observations and recommendations of the POJs made during plant visits. The Secretariat will prepare a draft feedback report based on inputs received from the plants, specific recommendations received from Members, POJs in writing, and also based on record notes compiled by the Secretariat officials during plant visits.

4.8.0 Participating plants, besides including necessary information on Objective Parameters in the Application Document, will provide an excel sheet showing detailed calculations for each of the Objective Parameters.

4.8.1 Preliminary evaluation of objective parameters will be carried out by technical officer(s) of PM's Trophy Secretariat and the same will be vetted by an Expert Team to be constituted by the Secretariat with the approval of the Member Secretary. The Expert Team may invite the representatives of the participating plants, if required, at PM's Trophy Secretariat, New Delhi to provide necessary clarifications related to evaluation of objective parameters. Final evaluation will be carried out by the Secretariat based on the inputs from the Expert Team.

4.8.2 All essential facilities required for integrated operations of the plant such as Coke ovens, Sinter Plant, Iron Making, Steel Making, Rolling, etc., located at the same location will be considered for evaluation of Objective Parameters other than financial parameters. This rule will apply even if these facilities are owned by a separate company. However, facilities situated at other locations even by the same company and facilities specifically mentioned for exclusion for some of the Objective Parameters will not be considered. In case of any disagreement between Plants and the Secretariat over finer details on system boundaries, the decision of the Expert Team will be binding.

4.8.3 The participating plants will be fully responsible for the authenticity of the information provided to the Secretariat/Expert Team. Though there will be no technical audit of the information, the Secretariat may have a random scrutiny of the information provided by the plants. The Participating plants will submit the application document/s along with other necessary documents within two months of release of format of filling the application/additional information by the Secretariat. Late submission, if any, will be subject to the approval of Member Secretary.

4.9 The venue of the Award function will be the location of the plants winning the awards for the particular year falling which Vigyan Bhavan, New Delhi. The award function(s) will be organized by the winner plant(s) under the supervision of Ministry of Steel and all
expenditures towards the function will be borne by the winner plant(s).

4.10 The award is an annual feature, but a minimum cut off limit is 60%. If no plant scores more than the minimum cut off limit in any particular year, the award may be skipped for that year.

5.0 PARAMETERS FOR EVALUATION

5.1 Growth in Crude Steel production

5.1.1 Compounded Annual Growth Rate (CAGR) of Crude Steel Output: (SUB-TOTAL: 2)

This factor recognizes the efforts to increase the economies of scale by aggressive growth of a steel plant. This shall be measured through CAGR of crude steel production between the current year and that achieved three years ago.

Illustration: The CAGR in actual crude steel production between 2013-14 and 2016-17 shall be taken for calculation for the assessment year 2016-17.

Target / Cut off

10% / 2%

5.2 EFFICIENCY OF OPERATIONS

5.2.1 Total Carbon rate/CDI in Blast Furnaces or Carbon rate

COREX Furnaces (Kg/t of Hot Metal),

Fuel Rate in DRI/ HBI Plant (GCal/T DRI)

(a) (i) Carbon rate in Blast Furnaces:

Total carbon of Charged Coke (viz. skip coke & nut coke), coal tar, CDI and any other auxiliary fuels (based on ultimate analysis of coal & onsite carbon analysis of coke/ tar/ auxiliary fuel) injected in the blast furnace including carbon of natural gas. Wherever the information/data is not available as per the ultimate analysis of coal for actual total carbon, WSA Proximate analysis/methodology for estimating total carbon shall be adopted. However, for Tar/PCM for which WSA methodology is not available, the following norm will be used:

1 Kg of Tar/PCM=0.92 Kg of Carbon

Illustration: If a plant uses 400 kgs of skip coke with 12% ash and injects 150 kgs of coal dust with 10% ash and 30% VM and also injects 30 Kgs of Tar in its blast furnace, total carbon rate will be as per following WSA methodology:

Carbon of coke = Charged/skip coke in Kgs *(97.75-ash)/100=400*85.75/100=343 kgs
Carbon of CDI coal = CDI *(100-ash-0.47*VM)=150*(100-10-0.47*30) = 113.85 Kgs Carbon of Tar=30*0.92=27.6 Kgs
Total Carbon Rate in blast furnaces = 343+113.85+27.6=484.45 Kgs/THM

Target / Cut off for carbon rate in Blast Furnaces: 430 / 500 kg/tonne
(ii) Improvement in Carbon rate in Blast Furnaces over previous year

The parameter will be evaluated on the basis of percentage improvement in carbon rate over the previous year but calculated based on uniform methodology.

Target / Cut off

5% / 0%

(iii) Injection of Auxiliary Fuel in Blast Furnace

Kgs of auxiliary fuels injected in Blast Furnace per tonne of hot metal produced. All auxiliary fuels such as coal tar, CDI, oil, etc. including natural gas (but excluding Nut Coke) will be considered as per the replacement ratio observed by the participating plant(s). Supporting document/calculation will be provided by the plants to this effect. In case supporting documents are not made available, default replacement values of 1:1 and 1:1.2 will be taken for CDI and coal tar respectively.

Illustration: If a plant uses 100 kgs of CDI with a replacement ratio of 0.95 and uses 20 Kgs of Coal Tar with an observed replacement ratio of 1.2, the equivalent injection rate will be calculated as follows:

Injection of Auxiliary fuels = 100 * 0.95 + 20 * 1.2 = 119 Kgs.

Target / Cut off for injection of auxiliary fuel in Blast Furnaces: 175/ 50 kg/tonne of hot metal.

(b) (i) Total carbon rate in COREX Furnaces

Carbon rate in COREX Furnace will be calculated in the same way as defined for total carbon rate in blast furnaces.

Target / Cut off for carbon rate in COREX Furnaces: 700/ 800 kg/tonne.

(ii) Improvement in carbon rate in Corex Furnaces over previous year

The parameter will be evaluated on the basis of percentage improvement in carbon rate over the previous year but calculated based on uniform methodology.

Target / Cut off

5% / 0%

(c) (i) Fuel Rate for HBI / DRI Plants

Fuel rate in gas based DRI plants would be worked out taking the average calorific value of natural gas consumed per tonne of product. In case of coal based DRI plants, the average calorific value of coal consumed per tonne of DRI would be considered.

Target/ Cut off :
Fuel Rate for Gas Based HBI / DRI plants: 2.5/3.0 G. Cal/tonne
Fuel Rate for Coal Based HBI/ DRI plants: 5.2 / 6.2 G. Cal/tonne

(ii) Improvement in Fuel rate over previous year

The parameter will be evaluated on the basis of percentage improvement in fuel rate over the previous year but calculated based on uniform methodology.

Target / Cut off 5% / 0%

5.2.2 Blast Furnace Productivity (t/m³/day), COREX Furnace (t/hr), HBI or DRI Furnace productivity (t/m³/day)

(a) (i) Blast Furnace / Shaft Furnace / Rotary Kiln Productivity

BF, HBI or DRI furnace productivity is evaluated as Hot metal, HBI or DRI production per cubic metre of working volume of furnace per available day. Working volume for blast furnace is defined as the volume of the furnace contained between centre line of the tuyers and normal stock line/Big bell in open position. Available days are calculated as the difference of available calendar days and duration of capital repairs. Available calendar days will be taken at 360 days so as to account for planned/ scheduled monthly shutdowns in a year. In case capital repairs were carried out during the year, a note on type of repairs/activities, duration, year and month of last repairs and expenditure incurred for repairs may be provided. Shutdown for any reason other than Capital Repairs (viz. Shutdown due to technical problems, market conditions or raw material constraints) will not be considered for calculation of available days. However, if a furnace has been phased out, only available days of operation will be considered for calculation of productivity.

Target / Cut off for blast furnace productivity: 2.8 / 1.5 t/m³/available day
Target / Cut off for HBI / DRI shaft furnace productivity: 9.0 / 8.0 t/m³/available day
Target / Cut off for Rotary Kiln productivity: 0.4/0.32 t/m³/ available day

(ii) Improvement in Blast Furnace / Shaft Furnace / Rotary Kiln Productivity over previous year

The parameter will be evaluated on the basis of percentage improvement in productivity over the previous year but calculated based on uniform methodology.

Target / Cut off 5% / 0%

(b) (i) COREX Furnace Productivity

COREX Furnace productivity is evaluated as tonnes of hot metal produced per hour on yearly average basis. That is, COREX Furnace productivity is = annual production in tonne / annual operating hours. Annual operating hours are estimated as the difference of calendar hours and the duration of capital repair and actual planned shutdown days of the
COREX – Furnace units, not exceeding 12 days per furnace per year.

**Target / Cut off for COREX furnace productivity**: 100 / 85 t/hour.

**(ii) Improvement in COREX Furnace Productivity over previous year**

The parameter will be evaluated on the basis of percentage improvement in productivity over the previous year but calculated based on uniform methodology.

**Target / Cut off**

5% / 0%

### 5.2.3 Steel Furnace (BOF/EAF) Productivity

Number of heats made / available converter / year = total number of heats in a year / (number of installed converters x Average converter availability).

Average Converter availability will be taken at 85%. In case there are more than one SMS shop, availability will be calculated separately for each shop as per above guidelines and thereafter weighted average converter availability will be arrived at.

Number of heats = number of heats tapped from BOF/ EAF in the given financial year.

**Target / Cut off for BOF**: 12,000 / 6,000 heats per converter per year

**Target / Cut off for EAF**: 10000 / 5000 heats per EAF per year

**Target / Cut off for Conarc**: 7000 / 3500 heats per Con Arc Furnace per year

**(ii) Improvement in Steel Furnace Productivity over previous year**

The parameter will be evaluated on the basis of percentage improvement in productivity over the previous year but calculated based on uniform methodology.

**Target / Cut off**

5% / 0%

### 5.2.4 Overall Specific Energy Consumption

### 5.2.4.1 SEC as per WSA methodology with the concept of Balanced Production Ratios

The calculation of overall specific energy consumption (G.cal/t of crude steel) would be based on World Steel Association (WSA), formerly IISI, methodology using the concept of balanced production ratios with the modification that:

i) **Credit for granulated slag will not be allowed in calculation of SEC.**

ii) Energy inputs to captive power plant and oxygen plant shall not be considered. Instead power and oxygen utilized from these plants shall be treated as ‘purchased’ and the calorific value as given in WSA for the oxygen shall be considered. In case of electricity, a calorific value of 2400 Kcal/KWH will be considered.

iii) Energy inputs upto hot working/rolling stage will only be considered. In other
words, energy inputs in cold rolling mills and in other downward processing units will not be considered.

iv) In case a plant procures a part of its major inputs like coke, sponge iron, pellet etc. for calculation of specific energy, WSA norm will not be used and it will be assumed that these inputs have been produced within the plant and necessary correction will be through balanced production ratios.

The scale of evaluation for steel plants based on different routes i.e. HBI or DRI & EAF route, COREX-BOF route, BF-BOF route will be different from each other with different Targets & Cut offs as under:-

**Target / Cut off** for specific energy consumption per tonne of crude steel (cast steel) for

a) BF-BOF route and COREX-BOF route based plants: 5.2 / 6.7 G.Cal/tcs
b) Gas based HBI / DRI-EAF/CONARC plants: 5.0 / 6.5 G.Cal/tcs
c) Coal based DRI/HBI-EAF/CONARC plants: 6.8 / 8.3 G.Cal/tcs

**Note:** The plant will furnish information on specific energy calculation along with calculation of production ratios in an excel sheet (with relevant Formulas) to the Secretariat.

5.2.4.2 **Improvement in Specific Energy Consumption (SEC) over previous year**

The parameter will be evaluated on the basis of percentage improvement in SEC value over the previous year but calculated based on uniform methodology.

**Target / Cut off**

5% / 0%

5.2.4.3 **Calculation of Target /cut-off for mixed route**

Targeting of specific energy consumption for mixed route comprising iron making in BF and DRI plant to be used in EAF will be as per the proportion of charge mix (percentage of DRI and percentage of hot metal) in the EAF. The proportion of hot metal will be multiplied by the target value of specific energy consumption of BF-BOF route and proportion of DRI will be multiplied by the target value of specific energy consumption of DR-EAF route and the two values will be added to get the best value of DR+BF-EAF route. The worst value will be calculated accordingly.

5.2.5 **Manpower productivity**

This factor shall be calculated in terms of crude steel production per man year. Pig iron, HBI or DRI produced for sale will be given credit with an equivalent factor of 50% and Manpower will be reckoned in terms of works strength. Works manpower to be calculated after excluding non works departments like administration, marketing, finance, township, construction units, mines etc, but including production services like production planning and control etc. Besides, the manpower of centralized units of steel plants like centralized maintenance department, captive engineering shops, refractory plants etc which are not directly linked to production may be excluded for calculating
labour productivity. However, Entire manpower of Works including own associates and contract manpower will be considered. However, though inside the Works, project manpower will be excluded.

The scale of evaluation for steel plants based on three different routes i.e. Coal/Gas HBI/DRI - EAF route, COREX-BOF route, BF-BOF route will be different from each other. Target value for coal DRI/HBI plant (i.e without sinter plant/coke oven) may be taken at par with Gas DRI/HBI plant.

If in any steel plant, normal operation and maintenance is got done by outside contractors, the Panel of Judges will get input of such manpower evaluated and add it to the regular man power reported by the plant.

Target / Cut Off for BF-BOF plants: 500/200 tonnes per man per year
Target / Cut off for COREX-BOF plant: 800/400 tonnes per man per year
Target / Cut off for Coal/Gas DRI/HBI-EAF plant: 1,800/800 tonnes per man per year

**Calculations of Target for Manpower Productivity for mixed (DR + BF – EAF) route:**

In the case of companies having mixed route, the Target for manpower productivity will be calculated in the similar manner as applicable in the case of specific energy consumption shown in para 5.2.4.3 above.

5.2.6 Improvement in Manpower Productivity over previous year: The parameter will be evaluated on the basis of percentage improvement in Manpower Productivity value over the previous year but calculated based on uniform methodology.

Target / cut off: 5%/0%

**Note:** For comparison, previous year’s manpower productivity will be reported as per the methodology being followed for the current assessment year.

5.3 TRAINING

The parameter will be evaluated on the basis of average training man-days per employee. All types of formal training programmes, internal or external will be considered. The calculation will be based on the regular employees.

Target / cut off: (Best value among participating plants/Lowest value among competing plants)

5.4 FINANCIAL PERFORMANCE (SUB-TOTAL: 7)

The figures are to be audited and certified by a practising Chartered accountant, not being an employee of the company, and consistent with the published accounts. The Chartered accountant will specifically certify that information on financial parameters is
strictly as per the system boundaries defined in the PM Trophy Scheme.

5.4.1 **EBIDTA / Turnover Ratio**

EBIDTA is earnings before interest, depreciation, taxes and amortization. Turnover (excluding excise duty) should be given for Iron & Steel products, including by-products arising out of the process of manufacture of Iron & Steel products. However, sale of products like CAN, Ferro Alloys, Raw materials*, bearings, Agrico products etc. will not be included. It should also exclude sales income derived from trading of products not manufactured by the plant.

EBIDTA relates to Iron & Steel products only as described above. Interest / Dividend income on investments is not to be considered. Inter plant transfers within the company and internal consumption is not to be considered. No policy profit / loss are to be considered.

*Raw materials and other arising from normal manufacture of Iron & Steel, however, will be included.

**Target / cut off**

30% / 10%

5.4.2 **Improvement in EBIDTA / Turnover Ratio over previous year**

The parameter will be evaluated on the basis of percentage improvement in EBIDTA/Turnover Ratio over the previous year but calculated based on uniform methodology.

**Target / cut off**

(Best value among participating plants/ Lowest value among competing plants)

5.4.3 **EBIDTA / Average Capital employed**

EBIDTA is the same as defined in item 5.4.1 above. Average Capital employed to include net fixed assets and working capital.

**Target / cut off**

90% / 20%

5.4.4 **Improvement in EBIDTA /Average Capital employed**

The parameter will be evaluated on the basis of percentage improvement in EBIDTA/Average Capital Employed Ratio over the previous year but calculated based on uniform methodology.

**Target / cut off**

(Best value among participating plants/ Lowest value among competing plants)

5.4.5 **Turnover / Inventory ratio**

1
Turnover is the same as defined in item 5.3.1) above. Inventory to include average finished and semi finished stock and should also include inventories of other materials like raw materials, stores and spares etc. The amount of sundry debtors should also be added to the inventories.

**Target / cut off**

12 / 5

5.4.6 **Expenditure capitalized over Gross Block**

**Target / cut off**

10% / 5%

5.5. **Efforts towards Value Addition / Product Development**

5.5.1 Percentage increase in average net sales realization per tonne of saleable steel.

**Target / cut off**

Best/ Worst among participating plants

Note: In case of plants having common marketing infrastructure, like SAIL net working capital will include sundry debtor and claims in marketing organization & stocks of imported inputs/coal in the books of the said organization. Financial parameters such as Gross Margin/Capital Employed, Turnover Inventory etc. may therefore be calculated as per this guideline.

5.6 **GENDER DIVERSITY**

(Sub-total: 2)

5.6.1 Percentage of Women Employees

This parameter will be evaluated as percentage share of women employees in total employees of the Plant. Only regular employees will be considered for calculation of this parameter.

**Target / cut off**

(Best value among participating plants/ Lowest value among competing plants)

5.6.2 Improvement in %age of Women Employees

This parameter will be evaluated on the basis of %age change in share of women employees in the current year compared to the previous year.

**Target / cut off**

(Best value among participating plants/ Lowest value among competing plants)

5.7 **ENVIRONMENT MANAGEMENT**

(Sub-TOTAL: 8)

5.7.1 **CO₂ Emission**

The methodology of calculation shall be as per WSA methodology and norms. Plants will submit CO₂ Emission excel sheet with all data fields duly filled along with formulas and also including general information and information on energy consumption column to
the Secretariat.

**Target / cut off** for different routes are as under:

a) BF-BOF route and COREX-BOF route based plants: 2.3/3.0 tonnes/TCS
b) Gas based HBI / DRI-EAF/CONARC plants: 1.4/2.1 tonnes/TCS
c) Coal based DRI/HBI-EAF/CONARC plants 3.0/3.7 tonnes/TCS

**Note:** To align the data from different plants to the extent possible, CO₂ emissions due to captive production of Power and Oxygen plants will not be considered and instead Power and Oxygen utilized in the plant will be treated as “Purchased” and WSA norm/s will be applied uniformly for calculation of CO₂ emissions. Further gases going to power plants will be treated as exported from plant. This adjustment will be done by the participating plants.

### 5.7.2 Improvement in CO₂ Emission

Will be evaluated on the basis of percentage improvement in CO₂ emissions over last year (taking constant baseline norm/assumption adopted in previous year).

**Target / Cut off**

5%/ 0%

The plants will furnish information on CO₂ emission calculation as per WSA methodology in an excel sheet.

### 5.7.3 Particulate Matter (PM) Emissions from Chimneys

To be evaluated on the basis of annual average emission of particulate matter from chimneys/stacks. However, emissions from stacks for capturing secondary/ fugitive emission are not to be considered for calculation of PM emissions. Plants will specifically mention Chimney wise emission indicating whether it is for capturing primary emission or secondary/ fugitive emission.

**Target / cut off**

0.1 / 1.0 kg / TCS

### 5.7.4 Specific Effluent Discharge

To be evaluated on the basis of annual average effluent discharge from the plant.

**Target / cut off**

0 / 2 M³ / Tonne of saleable steel

### 5.7.5 Solid Waste Utilization:

Solid waste utilized in the process or profitably sold after necessary processing for its value addition such as BF Granulated slag to cement plants as a percentage of total solid waste generated. Only BF slag and SMS slags will be considered for estimating the utilization rate. SMS slags disposed/ sold/ stored after necessary processing for application like road making, rail ballast etc. will be considered for calculation of utilization rate. However, SMS slag produced during the year and not used in production process will be considered as waste unless the same is processed and used as per Indian/International standards/procedure. In case of other uses, the Secretariat will require the
approval of Expert Team/POJs, to declare use of SMS slag as By-product who may take a final view based on as to whether the efforts towards processing/R&D etc. for use of SMS slag are sincere enough to consider the use of SMS slag as By-Product.

Target / cut off
Best value among participating plants / Lowest value among competing plants

5.7.6 (i) Water Consumption
Water entering into plant’s system boundaries from all sources per tonne of crude steel but excluding consumption for township, power plant, oxygen plant, cold rolling mills will be considered. Water used for drinking purpose inside the plant will also be considered. Rain fall water used through harvesting will not be considered for the purpose of calculation.

Target / Cut off
2/6m³/tcs

(ii) Improvement in water consumption over previous year
Will be evaluated on the basis of percentage improvement in water consumption over last year (taking constant baseline norm/assumption adopted in previous year).

Target / Cut off
5%/ 0%

5.8 SAFETY PARAMETERS
(SUB-TOTAL: 5)

5.8.1 Frequency rate—number of reportable accidents per million man hours. 1

Target / cut off
0.0 / 1.0

5.8.2 Severity rate – man days lost per million man hours.

An equivalent loss of 6000 man days for each fatality will be adopted.

Target / cut off
0 / 1000

5.8.3 Fatalities (Numbers)

<table>
<thead>
<tr>
<th>Zero fatality</th>
<th>3 Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 fatality</td>
<td>(-) 1 Marks</td>
</tr>
<tr>
<td>2 fatalities</td>
<td>(-) 2 Marks</td>
</tr>
<tr>
<td>3 fatalities or more</td>
<td>(-) 3 Marks</td>
</tr>
</tbody>
</table>

Note: For calculation of safety parameters (under para 5.8) accidents and fatalities in the operational area (including road accidents in operational works boundary but excluding accidents/fatalities in project area) will be considered.
5.9 THRUST ON RESEARCH & DEVELOPMENT (R&D) (SUB-TOTAL: 3)

5.9.1 Investment on R&D as percentage of Turnover

Target / cut off (%) 1.0 / 0.1

5.9.2 No. of publications in the referred journals during the assessment year.

In case a centralized R&D agency for a group of plants is involved in the publication of research work in referred journals, such publications of the centralized agency will be equally apportioned to each plant belonging to that group and will be added to number of direct publications by the plant. Final decision on eligibility of publication to be considered as referred journals will be taken by the Expert Team.

Target / cut off 8 / 2

5.9.3 No. of IPRs

The number of IPRs being sum of number of actual patents received during the year and 50% of the number of patents filed during the year. This is aimed to recognize the efforts of the plant during the year as actual receipt of a patent may be in later years. In case a centralized R&D agency files/receives IPRs for a group of plants, such IPRs of the centralized agency will be equally apportioned to each plant belonging to that group and will be added to number of direct IPRs of the plant.

A list of IPR giving details such as date of filing/date of grant of patents, title, inventor etc. during the year will be provided by the participating plant to the Secretariat.

Target / cut off 5 / 1

5.10 ENABLING PARAMETERS BY AN INDEPENDENT AGENCY (SUB-TOTAL: 20)

5.10.1 Leadership 4
5.10.2 Strategy 4
5.10.3 People 4
5.10.4 Partnership & Resources 4
5.10.5 Process, Products & Services 4

Assessment to be done by an independent agency based on EFQM Excellence Model. Detailed criteria / guidelines will be circulated by the independent agency.
The Panel of Judges will undertake plant visit to each plant for a minimum period of two days for evaluation of the specified parameters and such other parameters which the Panel of Judges may deem fit. The specified parameters and their weightage are as under:

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Weightage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership</td>
<td></td>
</tr>
<tr>
<td>1. Efforts/initiatives in framing, implementing &amp; revisiting strategies, policies and systems</td>
<td>3</td>
</tr>
<tr>
<td>2. Engagements with stakeholders to realize strategic goals and objectives</td>
<td>2</td>
</tr>
<tr>
<td>3. Fiscal prudence and profitability management</td>
<td>2</td>
</tr>
<tr>
<td>4. Speed of decision making &amp; Execution</td>
<td>2</td>
</tr>
<tr>
<td>5. Risk Management</td>
<td>2</td>
</tr>
<tr>
<td>People Management</td>
<td></td>
</tr>
<tr>
<td>6. Succession Planning</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Asset Management</td>
<td></td>
</tr>
<tr>
<td>7. Competency building through training and development</td>
<td>1</td>
</tr>
<tr>
<td>8. Efforts to promote culture of innovation amongst employees and external stakeholders and process of engagement with stakeholders for innovation</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Sustainable development</td>
<td></td>
</tr>
<tr>
<td>9. Employees Engagement</td>
<td>2</td>
</tr>
<tr>
<td>10. Industrial Relations</td>
<td>2</td>
</tr>
<tr>
<td>11. Housekeeping</td>
<td>2</td>
</tr>
<tr>
<td>12. Equipment Health</td>
<td>2</td>
</tr>
<tr>
<td>13. Environment management and afforestation</td>
<td>1</td>
</tr>
<tr>
<td>14. Corporate social responsibility</td>
<td>3</td>
</tr>
<tr>
<td>15. Process Responsible for Marketing and customer satisfaction</td>
<td>2</td>
</tr>
<tr>
<td>16. Research and Development</td>
<td>2</td>
</tr>
<tr>
<td>17. Any Unique technology commercialized and any strategic/new products developed for import substitution and long term profitability</td>
<td>2</td>
</tr>
<tr>
<td>18. Benchmarking for attaining international competitiveness</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>35</td>
</tr>
</tbody>
</table>
Evaluation of the process responsible for marketing and customer satisfaction to be evaluated by the Panel of Judges on the basis of answers to the following questions:

- How does the plant determine the customer groups and/or market segments?
- How does the plant determine the requirements of the customer groups or market segments?
- How are the information from existing/potential customers and complaints used in determining the customer requirements?
- How does the plant translate the customer requirements into new product and/or service design?
- How does the plant evaluate and improve its process of listening to and learning from different customer groups?
- How does the plant provide access to the customers to seek assistance and voice complaints?
- How does the plant seek prompt and actionable feedback from customers?
- How does the plant build relationships, loyalty and positive referral with its customers?

The Panel of Judges will particularly look into the following aspects:

The efforts done by the steel plants towards corporate social responsibility in terms of direct action (i.e. amount spent directly vs. Profits) or indirect action (promotion through NGOs) etc.

The efforts done by the steel plants for development of surrounding population particularly tribal population (if there is any)

The efforts done by the steel plants to reduce the cost of conversion as to lead to reduced cost of steel for the consumers.

### 6.0 SCALE OF EVALUATION

#### 6.1

The earlier practice of using "Best Value/Benchmark" and "Worst Value/Cut off" for awarding scores on various parameters is substituted by "Target" and "Cut off" values in most parameters. The "Target" value signifies the benchmark achievable in Indian conditions and any performance exceeding the target value will qualify for full mark(s). The "Cut off" value signifies that the plant must achieve this level as the minimum acceptable value and any performance not meeting the "cut off" will result in zero marks. The proposed scale of evaluation will be as follows:

<table>
<thead>
<tr>
<th>Value</th>
<th>Score on 1-5 Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>i) Value below cut off</td>
<td>zero</td>
</tr>
<tr>
<td>ii) Cut-Off value</td>
<td>1</td>
</tr>
<tr>
<td>iii) Target or better</td>
<td>5</td>
</tr>
<tr>
<td>iv) Between Cut-Off and Target</td>
<td>Under Scale from 1 to 5</td>
</tr>
</tbody>
</table>
The “Target” and “cut off” for each of the parameters for objective evaluation are given at Annexure-I. The scale of evaluation will be valid for all parameters except “No. of fatalities” for which a separate marking scheme has been outlined at para 5.8.3.

7.0 UTILIZATION OF AWARD MONEY

7.1 The plant management of the award winning plants will spend the money to enhance the quality of life of the work force in the following areas, depending upon the need of the plant concerned:

a) Improvement in the area of occupational health of the employees including hospital facilities,

b) A small portion (say up to 10%) may be allotted to the best department for organization of welfare programmes for the employees.

c) A substantial portion of the money can be kept in Fixed Deposit, the returns of which may be utilized for awarding merit-cum-means scholarships to the children of the employees for pursuit of education and training.

d) Up-gradation of community centres in the Township.

e) Up-gradation of facilities for sports and cultural activities in the township.

f) Financial help for rehabilitation of employees disabled due to accidents in work place.

g) Setting up / extension / addition / modification of educational / practical training centres for the dependents of the employees.

h) Educational / practical training programmes for women / scheduled caste / scheduled tribe or other weaker sections of the employees; and

i) Assistance to educational / training centres / health and sanitation programmes, water supply programmes etc for people living in the periphery of the plant.

7.2 The fund will be administered by a Joint Committee consisting of representatives of the Management of steel plant, the recognized unions and the officers’ Association.

7.3 The audit cover / report would also cover the utilization of the aforesaid fund.

8.0 SCHEDULES

The agreed time frame of the assessment and award process is given below. In case of delays, if any, in initiating any of the activities, efforts would be taken to make up / minimize the delay by expediting processes as far as possible :

<table>
<thead>
<tr>
<th>Activities Related to current Assessment Cycle</th>
<th>Time Frame</th>
</tr>
</thead>
<tbody>
<tr>
<td>i) Inviting applications for assessors</td>
<td>by 1st April</td>
</tr>
<tr>
<td>ii) Appointment of Assessors:</td>
<td>by 30th April</td>
</tr>
<tr>
<td>iii) Inviting names for panels for POJs from Plants:</td>
<td>by 1st May</td>
</tr>
<tr>
<td>iv) Appointment of POJs:</td>
<td>by 31st May</td>
</tr>
<tr>
<td>v) 1st Meeting of the POJs:</td>
<td>by 30th June</td>
</tr>
<tr>
<td>vi) Inviting applications:</td>
<td>by 15th July</td>
</tr>
<tr>
<td>vii) Receipt of applications</td>
<td>by 30th September</td>
</tr>
</tbody>
</table>
viii) Report of the assessors (in stages):
ix) Plant visits by POJs:
x) Meeting of the Expert Team
xi) Preparation of Draft Report by the Sectt:
xii) Last Meeting of POJ/Final Report of POJ /
Declaration of Results

by 31st December
Sept-December
by 31st January
by 28th February
by 31st March

Additional Activities related to previous Assessment cycle

xiii) Workshop on recommendations of POJs
/action taken-for select plants

by 31st October

xiv) Award Ceremony

by 30th November

The POJs may visit the plants to assess qualitative parameters & information on objective parameters will not be a precondition. Receipt of application document will not be a necessary condition for undertaking plant visit by the POJs. However, any necessary information on objective parameters, as required by POJs will be provided by the plants during their visit.
## CUT OFF VALUES FOR OBJECTIVE PARAMETERS

<table>
<thead>
<tr>
<th>Objective Parameters</th>
<th>Weightage</th>
<th>Unit of measurement</th>
<th>Target</th>
<th>Cut off</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>5.1 GROWTH IN CRUDE STEEL PRODUCTION</strong></td>
<td>2</td>
<td>3 yrs CAGR</td>
<td>10%</td>
<td>2%</td>
</tr>
<tr>
<td>Efforts to increase the economies of scale - growth in crude steel production (CAGR)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>5.2 EFFICIENCY OF OPERATIONS</strong></td>
<td>15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.2.1 Carbon Rate/CDI in BF / Carbon Rate in Corex Furnace / Fuel Rate in HBI-DRI Klin</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) (i) Carbon rate in Blast Furnaces</td>
<td>1</td>
<td>Kg/thm</td>
<td>430</td>
<td>500</td>
</tr>
<tr>
<td>(a) (ii) Improvement in carbon rate over previous year</td>
<td>1</td>
<td>%age</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>(a)(iii) Injection of Auxiliary fuels in Blast Furnace</td>
<td>1</td>
<td>Kg/tonne</td>
<td>175</td>
<td>50</td>
</tr>
<tr>
<td>(b)(i) Carbon rate in Corex Furnaces</td>
<td>2</td>
<td>Kg/thm</td>
<td>700</td>
<td>800</td>
</tr>
<tr>
<td>(b) (ii) Improvement in Carbon rate in Corex Furnaces over previous year</td>
<td>1</td>
<td>%age</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>(c) (i) Fuel rate in HBI Furnace / DRI Klin</td>
<td>2</td>
<td>G. Cal/t</td>
<td>2.5 (Gas based)</td>
<td>3 (Gas based)</td>
</tr>
<tr>
<td>(c) (ii) Improvement in fuel rate over previous year</td>
<td>1</td>
<td>%age</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td><strong>5.2.2 Blast Furnace, Corex Furnace, HBI Shaft or DRI Klin Productivity</strong></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) (i) BF / Shaft Furnace / Rotary Klin Productivity</td>
<td>2</td>
<td>t/m³/day</td>
<td>2.8</td>
<td>1.5</td>
</tr>
<tr>
<td>(a)(ii) HBI/DRI shaft furnace productivity</td>
<td>2</td>
<td>t/m³/day</td>
<td>9.0</td>
<td>8.0</td>
</tr>
<tr>
<td>(a)(iii) Rotary Klin Productivity</td>
<td>2</td>
<td>t/m³/day</td>
<td>0.4</td>
<td>0.32</td>
</tr>
<tr>
<td>(a)(iv) Improvement in BF/Shaft Furnace/Rotary Klin productivity over previous year</td>
<td>1</td>
<td>%age</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>(b) (i) COREX Furnace Productivity</td>
<td>2</td>
<td>t/hour</td>
<td>100</td>
<td>85</td>
</tr>
<tr>
<td>(b)(ii) Improvement in Corex Furnace Productivity over previous year</td>
<td>1</td>
<td>%age</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td><strong>5.2.3 (i) Steel Furnace Productivity</strong></td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steel Furnace Productivity - BOF</td>
<td></td>
<td>hts/ converter/yr</td>
<td>12000</td>
<td>6000</td>
</tr>
<tr>
<td>Steel Furnace Productivity - EAF</td>
<td></td>
<td>hts/ converter/yr</td>
<td>10000</td>
<td>5000</td>
</tr>
<tr>
<td>Steel Furnace Productivity - CONARC</td>
<td></td>
<td>hts/ converter/yr</td>
<td>7000</td>
<td>3500</td>
</tr>
<tr>
<td><strong>5.2.4 Overall Specific Energy Consumption</strong></td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>5.2.4.1 SEC as per WSA methodology with the concept of Balanced Production Ratios</strong></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy Consumption (BF / Corex - BOF Plants)</td>
<td></td>
<td>G. Cal / tcs</td>
<td>5.2</td>
<td>6.7</td>
</tr>
<tr>
<td>Energy Consumption (Coal based HBI / DRI + EAF Plants)</td>
<td>G. Cal / tcs</td>
<td>6.8</td>
<td>8.3</td>
<td></td>
</tr>
<tr>
<td>------------------------------------------------------</td>
<td>-------------</td>
<td>-----</td>
<td>-----</td>
<td></td>
</tr>
<tr>
<td>Energy Consumption (Gas based HBI/ DRI+ EAF Plants)</td>
<td>G. Cal / tcs</td>
<td>5.0</td>
<td>6.5</td>
<td></td>
</tr>
<tr>
<td>5.2.4.2 Improvement in Specific Energy Consumption (SEC) over previous year</td>
<td>%/age</td>
<td>5</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>5.2.5 Manpower productivity</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manpower Productivity (BF+BOF Plants)</td>
<td>t/man/year</td>
<td>500</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>Manpower Productivity (Corex + BOF Plants)</td>
<td>t/man/year</td>
<td>800</td>
<td>400</td>
<td></td>
</tr>
<tr>
<td>Manpower Productivity (DRI/HBI + EAF/CONARC Plants)</td>
<td>t/man/year</td>
<td>1800</td>
<td>800</td>
<td></td>
</tr>
<tr>
<td>5.2.6 Improvement in Manpower productivity:</td>
<td>%</td>
<td>5</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>5.3 TRAINING</td>
<td>Ave. training man days/employee</td>
<td>Best value among participating plants</td>
<td>lowest value among competing plants</td>
<td></td>
</tr>
<tr>
<td>5.4 FINANCIAL PERFORMANCE</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.4.1 EBITDA / Turnover Ratio</td>
<td>Ratio</td>
<td>30%</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>5.4.2 Improvement in EBITDA /Turnover Ratio over previous year</td>
<td>%</td>
<td>Best value among participating plants</td>
<td>lowest value among competing plants</td>
<td></td>
</tr>
<tr>
<td>5.4.3 EBITDA / Average capital employed</td>
<td>Ratio</td>
<td>90%</td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td>5.4.4 Improvement in EBITDA /Average Capital employed</td>
<td>%</td>
<td>Best value among participating plants</td>
<td>lowest value among competing plants</td>
<td></td>
</tr>
<tr>
<td>5.4.5 Turnover / Inventory</td>
<td>Ratio</td>
<td>12</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>5.4.6 Expenditure capitalized over gross block</td>
<td>Ratio</td>
<td>10%</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>5.5 EFFORTS TOWARDS VALUE ADDITION AND PRODUCT DEVELOPMENT:</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage increase in average net sales realization per tonne</td>
<td>%</td>
<td>Best value among participating plants</td>
<td>lowest value among competing plants</td>
<td></td>
</tr>
<tr>
<td>5.6 GENDER DIVERSITY</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) % of Women Employees</td>
<td>%/age</td>
<td>Best value among participating plants</td>
<td>lowest value among competing plants</td>
<td></td>
</tr>
<tr>
<td>b) Improvement in % of Women Employees</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.7 ENVIRONMENT MANAGEMENT</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.7.1 Emission of CO₂ Gases</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BF / Corex + BOF Plants</td>
<td>tonne / TCS</td>
<td>2.3</td>
<td>3.0</td>
<td></td>
</tr>
<tr>
<td>Coal based HBI / DRI +EAF/CONARC Plants</td>
<td>tonne / TCS</td>
<td>3.0</td>
<td>3.7</td>
<td></td>
</tr>
<tr>
<td>Gas based HBI/ DRI+ EAF/CONARC Plants</td>
<td>tonne / TCS</td>
<td>1.4</td>
<td>2.1</td>
<td></td>
</tr>
<tr>
<td>5.7.2 Improvement in CO₂ Emission over last year</td>
<td>%</td>
<td>5</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Section</td>
<td>Unit</td>
<td>Objective</td>
<td>Lower Limit</td>
<td>Upper Limit</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>------------</td>
<td>-----------</td>
<td>-------------</td>
<td>-------------</td>
</tr>
<tr>
<td>5.7.3 Particulate Matter (PM) emissions from chimneys</td>
<td>Kg/tcs</td>
<td>0.1</td>
<td></td>
<td>1.0</td>
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<tr>
<td>5.7.4 Specific Effluent Discharge</td>
<td>m³/tss</td>
<td>0</td>
<td></td>
<td>2</td>
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<tr>
<td>5.7.5 Solid Waste Utilization</td>
<td></td>
<td></td>
<td>Best value among participating plants</td>
<td>lowest value among competing plants</td>
</tr>
<tr>
<td>5.7.6 (i) Water Consumption</td>
<td>m³/tcs</td>
<td>2</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>5.7.6 (ii) Improvement in water Consumption</td>
<td>%age</td>
<td>5</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>5.8 SAFETY</td>
<td></td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.8.1 Frequency Rate</td>
<td>Number</td>
<td>0.0</td>
<td></td>
<td>1.0</td>
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<tr>
<td>5.8.2 Severity Rate</td>
<td>Man days/million man hrs</td>
<td>0</td>
<td></td>
<td>1000</td>
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<tr>
<td>5.8.3 Fatalities</td>
<td>Numbers</td>
<td>Zero Fatality: 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 fatality: (-) 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 fatality: (-) 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 Fatalities or more: (-) 3</td>
<td></td>
<td></td>
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<tr>
<td>5.9 THRUST ON RESEARCH &amp; DEVELOPMENT</td>
<td></td>
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<tr>
<td>5.9.1 Investment on R&amp;D as percentage of</td>
<td>%</td>
<td>1</td>
<td></td>
<td>0.1</td>
</tr>
<tr>
<td>5.9.2 No. of publications</td>
<td>Numbers</td>
<td>8</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>5.9.3 No. of IPRs</td>
<td>Numbers</td>
<td>5</td>
<td></td>
<td>1</td>
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<tr>
<td><strong>Total of objective parameters</strong></td>
<td></td>
<td>45</td>
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