

DEPARTMENT OF METALLURGICAL & MATERIALS ENGINEERING  
INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR 721 302

DEAN (SRIC)  
IIT Kharagpur

6<sup>th</sup> Jan, 2011

SUB: PROJECT ON "ESSAR STEEL RESEARCH WING", through STC, IIT, Kharagpur

The Director accompanied by Prof. P. K. Sen, Chairman STC, has signed an agreement with ESSAR STEEL LIMITED at Mumbai on 5.1.2011 for initiation of a project on "Essar Steel Research Wing" to be made operative at IIT Kharagpur. A copy of the agreement is enclosed.

Project initiation money of Rs 25.0 lakhs has been paid by ESSAR STEEL. (Cheque no. 435859 dated 3/1/2011 is enclosed).

The Director has agreed to the request of providing them an office space for use of their personnel during their visit to IIT Kharagpur Campus. The funds provided will be principally used in providing infrastructural facilities to ESSAR STEEL OFFICE, and a few other miscellaneous activities. We are providing an Office Room in our Department for their use as office space.

Necessary project opening form is enclosed for allocation of project code.



(PROF S K ROY)  
HEAD, MME

Cc: THE DIRECTOR  
DEAN (AA&IR)

Original Agreement enclosed, as desired

ENCL AS ABOVE

1. File
2. Registrar for reporting to Senate/Board.

  
10/1/11

6/1/2011

## Agreement

This Agreement made on this 5<sup>th</sup> Day of the month of January of the year 2011.

BETWEEN

ESSAR STEEL LIMITED

AND

**INDIAN INSTITUTE OF TECHNOLOGY, Kharagpur** located at Kharagpur, an autonomous statutory organisation functioning within the purview of The Institutes of Technology (amendment) Act, 1961 and being administered centrally by the IIT Council, an apex body established by the Govt. of India, herein after referred to as "**IIT-KGP**", (which terms of expression shall, unless excluded by or repugnant to the context or the meaning thereof be deemed to include its successors and permitted assigns) on the **OTHER PART**.

**WHEREAS**, Essar Steel limited is a noted steel producer in India and abroad.

**WHEREAS**, IIT-KGP is a premier Academic Institute providing Graduate, Post Graduate and Ph. D degrees in the Technical Discipline/ Sciences and having a cluster of highly qualified scientists, academicians engaged in teaching and Research and Development activities and having regular interaction with International scientific community and ultimately contributes to the industrial development and economic growth of the country by preparing a cadre of engineers and scientists, who provide technical support in R&D work for industries.

**WHEREAS**, IIT-KGP have set up a Steel Technology Centre (STC) with the support from Ministry of Steel, Government of India. The Centre is primarily to promote education in the area of iron and steels having emphasis on development of trained manpower and Research and Development teaching/ training of students through B. Tech, PG Diploma, M. Tech, Ph. D dissertations by providing a stimulating research environment.

**WHEREAS**, it is proposed to set up Essar Steel Research Wing through STC, IIT-KGP.

**WHEREAS**, it is considered desirable to promote co-operation between Essar Steel Limited and IIT-KGP for mutual benefit, both parties have reached an agreement with regard to the following:-

*Dr. Chandra*





## **1.0 Objective:**

- 1.1 To pursue joint Research and Development projects, as defined and detailed from time to time as per the requirement of Essar Steel Limited by mutual consent.
- 1.1.1 Essar Steel Limited would like to seek technical support/ services of IIT-KGP to pursue various projects of their interest. A list of, generic projects but not necessarily limited to, where the two parties can interact for perceived mutual benefit is provided in Annexure 1.
- 1.2 To ensure exchange of scientific/ technological knowledge, information and literature.
- 1.3 To enable participation of faculty members from IIT-KGP on technical review of the activities of Essar Steel Limited and also to enable the experts of Essar Steel Limited to participate in technical activity at IIT-KGP, by mutual consent.
- 1.4 To hold discussion and consultations on various Research and Developmental issues at Essar Steel Limited premises and/or at IIT-KGP, as the case may be, as per convenience of both the parties.
- 1.5 To utilise facilities and expertise as per requirements of respective parties on mutually agreed terms and conditions on case-to-case basis.
- 1.6 To pursue all other matters of mutual interest in the area of Human Resource Development and Technology Development such as Distance Education Programmes.

## **2.0 Approach:**

- 2.1 To accomplish the purpose outlined above, it is envisaged that the authorised representatives of both the organisations shall interact with each other and shall hold discussions so that specific proposals on projects including the projects identified in para 1.1.1 are discussed. During discussions, all matters of mutual interest shall be formulated and documented for future references and applications in the course of the research activities.
- 2.2 Further, it is also agreed to hold such discussions and consultations as and when deemed necessary at a mutually agreed venue.
- 2.3 The expenses towards travel, boarding and lodging for the visits envisaged during pre-project visit and/or preparing the foundations and subsequently taking up joint projects of mutual interests shall be borne by the respective organisations. However, it is agreed to provide local travelling facilities to the visiting faculty/experts by the host organisation wherever possible.

*Dr Charyo*

- 2.4 During their visits and stays, Essar Steel Limited and IIT-KGP shall provide access to their respective Libraries and other infrastructure to the faculty/experts of both the organisations as per prevailing norms of both the organizations.
- 2.5 It is also agreed that a Joint Steering Committee (JSC) will be formed within two weeks from the date of signing of this Agreement, for providing overall guidance and monitor the activities under this Agreement.
- 2.6 The ownership of the assets created under any specific joint project, undertaken under this Agreement, shall be decided on case to case basis on mutually agreeable terms and conditions.

### 3.0 Methodology:

- 3.1 IIT-KGP shall undertake Research and Development projects as mutually agreed and render necessary consultancy services or as and when requested and funded by Essar Steel Limited, subject to the condition that the relevant expertise is available with IIT-KGP and the terms and conditions are agreeable to both the parties on case-to-case basis.
- 3.2 It is mutually agreed that for any sponsored project including third party sponsored projects, either fully or partially, if jointly undertaken under this Agreement, the modality of functioning shall be as follows.
- 3.2.1 Depending upon the scope of responsibilities and administrative convenience either Essar Steel Limited or IIT-KGP shall function as the project leader. The project leader shall organise and administer the project and shall be the direct recipient of the entire project funding, including sponsored fund. Audited statement of accounts shall be submitted as per requirement of sponsoring agency.  
The project leader will be interacting with nominated project co-ordinators from both the parties who would be directly responsible to carry out the project activities as detailed in the project proposal. The project leader shall distribute the project fund as per the detailed project proposal to the project co-ordinators as per mutually agreed terms and conditions and maintain accounts.
- 3.2.2 The manpower deployment process of the project would include provisions of deployment of qualified engineers/scientists of Essar Steel Limited to acquire PhD or other degrees by fulfilling all the requirements for the award of the degree at IIT KGP while working in the project or to take up the project assignment as post-doctoral work. Research Associates/equivalent may be employed by IIT-KGP in addition to the above depending on the mutually agreed manpower needs of each project. Manpower employed at IIT KGP as research associates/equivalent will be fully sponsored from the project.
- 3.2.3 All the liaison work with the sponsoring agency shall be done by the project leader.

Dr Acharya





- 3.2.4 The project leader shall prepare and submit project completion report in consultation with the project co-ordinators from either side and submit the same to the sponsoring agency. Each project will be identified with goals, work plan, manpower, equipment and other requirements with complete budgetary details. The projects shall be conducted in project mode as per norms of IIT Kharagpur\*.
- 3.3 Each party agrees to provide necessary consultancy services or undertake assignments for the Research and Development work or depute their experts for delivering limited numbers of technical lectures to the other party subject to the availability of expertise for the same and in accordance with the terms and conditions as agreeable to both the sides in each of the specified cases. Copyright for any educational material provided to the other party will belong to the party providing the same.
- 3.4 IIT-KGP shall provide short term training to the engineers/scientists of Essar Steel Limited on specific subjects as part of the Steel Technology Centre's plan to organise short-term courses in specific areas. The subjects to be covered for such courses may be taken up by the relevant faculty of IIT-KGP or external faculty, when relevant expertise is not available at IIT-KGP. Steel Technology Centre will organise and administer such short courses.
- 3.5 Employees of Essar Steel can apply for existing higher degree programmes, namely, M.Tech., MS (by Research) and PhD, in sponsored category as per prevailing norms of IIT-KGP. These students can go back and resume their regular duties after the completion of their coursework and continue to do their project work in an area of mutual interest of IIT-KGP and Essar Steel.
- 3.6 The laboratory facilities available with either side can be utilised by the other side on case to case basis and on finalisation of terms and conditions.

#### **4.0 Financial Arrangement:**

- 4.1 Essar Steel will initiate activities at STC (Steel Technology Centre) through payment of Rs 25 lakhs as seed money towards mobilization efforts for initiation of the collaboration. About 5 lakhs would be set aside to create infrastructure related to the agreement such as infrastructure including computing facility for the proposed Essar Steel Research Wing and the balance would be held with IIT as reserve and will be used up in preparing for foundations, taking up projects or training as mutually decided.

\* Website of Sponsored Research and Industrial Consultancy (SRIC), IIT Kharagpur  
<http://www.iitkgp.ac.in/sric/>

*DA Chatterjee*

*[Signature]*



- 4.2 Regarding individual projects (vide list of projects in Annexure 1), Essar Steel Limited and IIT-KGP shall finalise financial arrangement on case-to-case basis.
- 4.3 Settlement of account in case of premature termination of a project will be done by the project leader after due consultation with all concerned.

**5.0 General:**

- 5.1 All the data, information and results emerging out of the joint activities under this Agreement shall be the joint property of Essar Steel Limited and IIT-KGP and they shall not divulge the same to any third party without the written consent of the other.
- 5.2 Both the parties may publish the results obtained under such joint activities except those which the other party wishes to keep secret as decided by its co-ordinator, in open technical publications after obtaining prior consent of the other party. Such consent or intimation of refusal should be given within 30 days of the receipt of such request, with adequate reason and explanation in case of latter. However, the names of the investigators and students involved in the activity from both the sides shall be mentioned in such publications.
- 5.3 Any IP arising out of the projects undertaken under this Agreement shall be owned jointly by Essar Steel Limited and IIT-KGP during the period of validity of patent. IIT and Essar Steel will shall together apply, secure and maintain the rights. The modalities would be worked out for individual research projects separately.
- Essar Steel reserves the first right for commercial exploitation of the patent. In case Essar Steel does not commercially exploit the intellectual property right, the licensing fee accrued by allowing a third party to exploit the IPR will be equally shared between Essar Steel and IIT-KGP.
- 5.4 Each party shall utilise any technology or findings emerging out of the joint projects for in-house use without payment of any fee to the other party. However, each party will have the right to enhance the technology and use it in house. Such derivative IP will be owned solely by the inventing party.
- 5.5 All disputes and differences whatsoever arising between the parties out of or relating to the interpretation, meaning and operation or effect of this Agreement or the breach thereof, shall be settled after mutual discussions between the parties. In case such mutual discussion fails to resolve the issues, the matter will be referred to a mutually acceptable arbitrator.
- 5.6 Any modifications or amendments to this Agreement shall be valid only if they are made in writing and duly signed by authorised representatives of both the parties of this Agreement.

*D Acharya*

*[Signature]*

- 5.7 Essar Steel Limited and IIT-KGP shall be free to offer technical, academic and/or professional services to other parties without referring to the terms and conditions of this Agreement.
- 5.8 During the tenure of the Agreement, either party can terminate the Agreement for breach of any of the terms of the Agreement or otherwise giving three months notice in writing to the other party. In the event of termination of Agreement, the rights and obligations of the parties thereto shall be settled by mutual discussion. This Agreement shall also be terminated by mutual agreement amongst the Parties, if it becomes apparent that the proposed concept is not feasible.
- 5.9 This Agreement shall come into effect when it has been duly signed by both parties and shall initially remain valid for a period of three years. It shall be extendable for a further period by mutual consent.

#### 6.0 Confidentiality:

- 6.1 The Parties shall treat this Agreement confidential. In the course of negotiations non-public, proprietary and confidential information will be exchanged amongst the Parties. The Parties agree to treat such information confidential and to use their best efforts to protect such information from disclosure to any non-party.

*Atcharya*

*[Signature]*

**7.0 Contact Persons:**

7.1

<b>Essar Steel Limited</b>	<b>IIT-KGP</b>
Senior Vice-President, Research and Development, Essar Steel Limited, Hazira, 27 <sup>th</sup> KM, Surat Hazira Road Hazira - 394270 Gujarat Tel. : +91 9879100025 Fax : +91 0261 6683143 E-mail : Achintya.Das@essar.com	Chairman, Steel Technology Centre Indian Institute of Technology Kharagpur, Kharagpur – 721 302 Tel. : 3222-281760 Fax : 3222-282280/255303 E-mail : pksen@metal.iitkgp.ernet.in

In witness whereof, the parties hereto have put their hands and seal to this Agreement on the date, month and the year first hereinabove mentioned.

For and on behalf  
**Essar Steel Limited**  
India

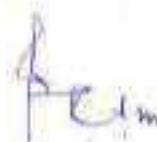


**Dilip Oommen**  
CEO, India Region

For and on behalf  
**Indian Institute of technology**  
Kharagpur-721302



**Prof. D. Acharya**  
Director, IIT Kharagpur





**ANNEXURE 1**  
**List of Generic Projects**

**1. Simulation and Modelling**

- Iron and Steel making Processes
  - Fluid Flow Modelling
  - Heat and Mass Transfer Modelling
- Least energy-cost model for Blast Furnace, Corex.
- Overall energy-optimised operation model involving raw material saving and other variables.

**2. Product Characterization and Cost-optimisation**

- Automobile Grades
- High Strength Microalloy Grades

**3. Exploratory Project on Nano-Particle application in Iron and Steel processes/ products**

**4. Development of new grades in laboratory scale**

- Alloy Grades for special applications

**5. Characterization of Imperfections of cast/rolled products**

*Dr. Chandra*

*[Signature]*

DEPARTMENT OF METALLURGICAL & MATERIALS ENGINEERING  
INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR 721 302

DEAN (SRIC)  
IIT Kharagpur

6<sup>th</sup> Jan, 2011

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Necessary project opening form is enclosed for allocation of project code.



(PROF S K ROY)  
HEAD, MME

Cc: THE DIRECTOR  
DEAN (AA&IR)

ENCL AS ABOVE

(N/O ENCL)



**Animesh**

*MOU Document*  
*10/29/10*

**From:** "Prof.P.K.Sen" <pkssen@metal.iitkgp.ernet.in>  
**To:** <secdnhaa@adm.iitkgp.ernet.in>  
**Cc:** <patra\_amit@yahoo.com>  
**Sent:** Friday, October 29, 2010 3:43 PM  
**Attach:** DRAFT AGREEMENT\_REVISED1.docx  
**Subject:** FW: MOU DRAFT RECEIVED FROM ESSAR STEEL  
Prof Patra, your current mail id is not working properly, I have used alternatives. Regards.

---

**From:** Prof.P.K.Sen [mailto:pkssen@metal.iitkgp.ernet.in]  
**Sent:** Friday, October 29, 2010 3:38 PM  
**To:** 'Amit Patra'  
**Subject:** MOU DRAFT RECEIVED FROM ESSAR STEEL  
**Importance:** High

Dear Prof Patra:

I am closing the Agreement draft received from Essar steel; requesting you to have this examined through appropriate channel. Once the process is over, we will resend the examined draft to Essar Steel.

You will note that I have added the seed money clause based on the inputs received from Dr A.K. Das, Essar Steel. This is marked in red. I have also talked to Prof P P Chakraborty on the subject.

Hopefully we will sustain the good beginning made...

Prof P K Sen

10/29/2010

DRAFT Agreement

This AGREEMENT made on this ..... Day of the month ..... of the year 2010.

**BETWEEN**

**Essar Steel Limited**

**AND**

**Steel Technology Centre, INDIAN INSTITUTE OF TECHNOLOGY, Kharagpur** located at Kharagpur, an autonomous statutory organisation functioning within the purview of The Institutes of Technology (amendment) Act, 1963 and being administered centrally by the IIT Council, an apex body established by the Govt. of India, herein after referred to as "IIT-KGP", (which terms of expression shall, unless excluded by or repugnant to the context or the meaning thereof be deemed to include its successors and permitted assigns) on the **OTHER PART.**

**WHEREAS,** Essar Steel Limited is a noted steel producer in India and abroad

**WHEREAS,** IIT-KGP is a premier Academic Institute providing Graduate, Post Graduate and Ph. D degrees in the Technical Discipline/ Sciences and having a cluster of highly qualified scientists, academicians engaged in teaching and Research and Development activities and having regular interaction with International scientific community and ultimately contributes the industrial development and economic growth of the country by preparing a cadre of engineers and scientists, who provide technical support in R&D work for industries.

**WHEREAS,** IIT-KGP have set up a Steel Technology Centre (STC) with the support from Ministry of Steel, Government of India. The Centre is primarily to promote education in the area of iron and steels having emphasis on development of trained manpower and Research and Development teaching/ training of students through B. Tech, PG Diploma, M. Tech, Ph. D dissertations by providing a stimulating research environment.



**WHEREAS**, it is considered desirable to promote co-operation between Essar Steel Limited and IIT-KGP for mutual benefit, both parties have reached an agreement with regard to the following:-

**1.0 Objective:**

- 1.1 To pursue joint Research and Development projects, as defined and detailed from time to time as per the requirement of Essar Steel Limited by mutual consent.
  - 1.1.1 Essar Steel Limited would like to seek technical support/ services of IIT-KGP to pursue various projects of their interest. A list of, generic projects but not necessarily limited to, where the two parties can interact for perceived mutual benefit is provided in Annexure 1.
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- 1.4 To hold discussion and consultations on various Research and Developmental issues at Essar Steel Limited premises and/or at IIT-KGP, as the case may be, as per convenience of both the parties.
- 1.5 To utilise facilities and expertise as per requirements of respective parties on mutually agreed terms and conditions on case-to-case basis.
- 1.6 To pursue all other matters of mutual interest in the area of Human Resource Development and Technology Development such as Distance Education Programmes.

**2.0 Approach:**

- 2.1 To accomplish the purpose outlined above, it is envisaged that the authorised representatives of both the organisations shall interact with each other and shall hold discussions so that specific proposals on projects including the projects identified in para 1.1.1 are discussed. During discussions, all matters of mutual interest shall be formulated and documented for future references and applications in the course of the research activities.
- 2.2 Further, it is also agreed to hold such discussions and consultations as and when deemed necessary at a mutually agreed venue.
- 2.3 The expenses towards travel, boarding and lodging for the visits envisaged and/or preparing the foundations and subsequently taking up joint projects of mutual interests shall be borne by the respective organisations. However, it is agreed to



provide local travelling facilities to the visiting faculty/experts by the host organisation wherever possible.

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- 2.5 It is also agreed that a Joint Steering Committee (JSC) will be formed within two weeks from the date of signing of this Agreement, for providing overall guidance and monitor the activities under this Agreement.
- 2.6 The ownership of the assets created under any specific joint project, undertaken under this Agreement, shall be decided on case to case basis on mutually agreeable terms and conditions.

### **3.0 Methodology:**

- 3.1 IIT-KGP shall undertake Research and Development projects as mutually agreed and render necessary consultancy services or as and when requested by Essar Steel Limited, subject to the condition that the relevant expertise is available with IIT-KGP and the terms and conditions are agreeable to both the parties on case-to-case basis.
- 3.2 It is mutually agreed that for any sponsored project including third party sponsored projects, either fully or partially, if jointly undertaken under this Agreement, the modality of functioning shall be as follows .
  - 3.2.1 Depending upon the scope of responsibilities and administrative convenience either Essar Steel Limited or IIT-KGP shall function as the project leader. The project leader shall organise and administer the project and shall be the direct recipient of the entire project funding, including sponsored fund. Audited statement of accounts shall be submitted as per requirement of sponsoring agency.  
The project leader will be interacting with nominated project co-ordinators from both the parties who would be directly responsible to carry out the project activities as detailed in the project proposal. The project leader shall distribute the project fund as per the detailed project proposal to the project co-ordinators as per mutually agreed terms and conditions and maintain accounts.
  - 3.2.2 The manpower deployment process of the project would include provisions of deployment of qualified engineers/scientists of Essar Steel Limited to acquire PhD or other degrees by fulfilling all the requirements for the award of the degree at IIT KGP while working in the project or to take up the project assignment as post-doctoral work. Research Associates/equivalent may be employed by IIT-KGP in addition to the above depending on the mutually agreed manpower needs of each project. Manpower employed at IIT KGP as research associates/equivalent will be fully sponsored from the project.
  - 3.2.3 All the liaison work with the sponsoring agency shall be done by the project leader.



- 3.2.4 The project leader shall prepare and submit project completion report in consultation with the project co-ordinators from either side and submit the same to the sponsoring agency.
- 3.3 Each party agrees to provide necessary consultancy services or undertake assignments for the Research and Development work or depute their experts for delivering limited numbers of technical lectures to the other party subject to the availability of expertise for the same and in accordance with the terms and conditions as agreeable to both the sides in each of the specified cases. Copyright for any educational material provided to the other party will belong to the party providing the same.
- 3.4 IIT-KGP shall provide short term training to the engineers/scientists of Essar Steel Limited on specific subjects as part of the Steel Technology Centre's plan to organise short-term courses in specific areas. The subjects to be covered for such courses may be taken up by the relevant faculty of IIT-KGP or external faculty, when relevant expertise is not available at IIT-KGP. Steel Technology Centre will organise and administer such short courses.
- 3.5 IIT-KGP shall offer academic programmes for the engineers/scientists of Essar Steel Limited leading to M. Tech degrees, with the thesis topic suited to the short-duration project themes. On completion of their course work, IIT-KGP shall permit the students to carry out their project work at Essar Steel Limited.
- 3.6 The laboratory facilities available with either side can be utilised by the other side on case to case basis and on finalisation of terms and conditions.

#### **4.0 Financial Arrangement:**

- 4.1 Essar Steel will initiate activities at STC (Steel Technology Centre) through payment of Rs 25 lakhs as seed money towards mobilization efforts for initiation of the collaboration. About 5 lakhs would be set aside to create infrastructure related to the agreement and the balance would be held with IIT as reserve and will be used up in projects or training as mutually decided.
- 4.2 Regarding individual projects ( vide list of projects in Annexure 1), Essar Steel Limited and IIT-KGP shall finalise financial arrangement on case-to-case basis.
- 4.3 Settlement of account in case of premature termination of a project will be done by the project leader after due consultation with all concerned.

#### **5.0 General:**

- 5.1 All the data, information and results emerging out of the joint activities under this Agreement shall be the joint property of Essar Steel Limited and IIT-KGP and they shall not divulge the same to any third party without the written consent of the other.
- 5.2 Both the parties may publish the results obtained under such joint activities except those which the other party wishes to keep secret as decided by its co-ordinator, in



open technical publications after obtaining prior consent of the other party. Such consent or intimation of refusal should be given within 30 days of the receipt of such request, with adequate reason and explanation in case of latter. However, the names of the investigators and students involved in the activity from both the sides shall be mentioned in such publications.

- 5.3 Any IP arising out of the projects undertaken under this Agreement shall be owned jointly by Essar Steel Limited and IIT-KGP during the period of validity of patent. All expenses on filing and maintenance of such patents/ copyrights by Essar Steel Limited and IIT-KGP shall be shared equally.
- 5.4 Each party shall utilise any technology or findings emerging out of the joint projects for in-house use without payment of any fee to the other party. However, each party will have the right to enhance the technology and use it in house. Such derivative IP will be owned solely by the inventing party.
- 5.5 All disputes and differences whatsoever arising between the parties out of or relating to the interpretation, meaning and operation or effect of this Agreement or the breach thereof, shall be settled after mutual discussions between the parties. In case such mutual discussion fails to resolve the issues, the matter will be referred to a mutually acceptable arbitrator.
- 5.6 Any modifications or amendments to this Agreement shall be valid only if they are made in writing and duly signed by authorised representatives of both the parties of this Agreement.
- 5.7 Essar Steel Limited and IIT-KGP shall be free to offer technical, academic and/or professional services to other parties without referring to the terms and conditions of this Agreement.
- 5.8 During the tenure of the Agreement, either party can terminate the Agreement for breach of any of the terms of the Agreement or otherwise giving three months notice in writing to the other party. In the event of termination of Agreement, the rights and obligations of the parties thereto shall be settled by mutual discussion. This Agreement shall also be terminated by mutual agreement amongst the Parties, if it becomes apparent that the proposed concept is not feasible.
- 5.9 This Agreement shall come into effect when it has been duly signed by both parties and shall initially remain valid for a period of three years. It shall be extendable for a further period by mutual consent.
- 6.0 Confidentiality:**
- 6.1 The Parties shall treat this Agreement confidential. In the course of negotiations non-public, proprietary and confidential information will be exchanged amongst the Parties. The Parties agree to treat such information confidential and to use their best efforts to protect such information from disclosure to any non-party.



**7.0 Contact Persons:**

7.1

<b>Essar Steel Limited</b>	<b>IIT-KGP</b>
Senior Vice-President, Research and Development, Essar Steel Limited, Hazira, 27 <sup>th</sup> KM, Surat Hazira Road Hazira- 394270 Gujarat Tel. : +91 9879100025 Fax : +91 0261 8683143 E-mail : Achintya.Das@essar.com	Chairman, Steel Technology Centre Indian Institute of Technology Kharagpur, Kharagpur – 721 302 Tel. : 3222-281760 Fax : 3222-282280/255303 E-mail : pksen@metal.iitkgp.ernet.in

In witness whereof, the parties hereto have put their hands and seal to this Agreement on the date, month and the year first hereinabove mentioned.

**For and on behalf of**

**For and on behalf of**

**Indian Institute of Technology,  
Kharagpur –721 302**

( )

( )

## **ANNEXURE 1**

### **List of Generic Projects**

#### **1. Simulation and Modelling**

- Iron and Steelmaking Processes
  - Fluid Flow Modelling
  - Heat and Mass Transfer Modelling
- Least energy-cost model for Blast Furnace, corex
- Overall energy-optimised operation model involving raw material saving and other variables.

#### **2. Product Characterization and Cost-optimisation**

- Automobile Grades
- High Strength Microalloy Grades

#### **3. Exploratory Project on Nano-Particle application in Iron and Steel processes/ products**

#### **4. Development of new grades in laboratory scale**

- Alloy Grades for special applications

#### **5. Characterization of Imperfections of cast/rolled products**



DRAFT Agreement

Pls see my comments.  
May show once to PIC (IPR&IR)  
should be easily workable  
after the required modifies  
and placed in MOU comm

2/11/10

Prof. A. Patra, Dean (IPR&IR)

1. MOU committee
2. Prof. S. Tripathy, PIC (IPR&IR)  
for his comments

This AGREEMENT made on this ..... Day of the month .....  
of the year 2010.

BETWEEN

Essar Steel Limited

AND

Steel Technology Centre, INDIAN INSTITUTE OF TECHNOLOGY, Kharagpur located at Kharagpur, an autonomous statutory organisation functioning within the purview of The Institutes of Technology (amendment) Act, 1963 and being administered centrally by the IIT Council, an apex body established by the Govt. of India, herein after referred to as "IIT-KGP", (which terms of expression shall, unless excluded by or repugnant to the context or the meaning thereof be deemed to include its successors and permitted assigns) on the OTHER PART.

①  
To be  
changed  
to our  
format

WHEREAS, Essar Steel Limited is a noted steel producer in India and abroad

WHEREAS, IIT-KGP is a premier Academic Institute providing Graduate, Post Graduate and Ph. D degrees in the Technical Discipline/ Sciences and having a cluster of highly qualified scientists, academicians engaged in teaching and Research and Development activities and having regular interaction with International scientific community and ultimately contributes the industrial development and economic growth of the country by preparing a cadre of engineers and scientists, who provide technical support in R&D work for industries.

WHEREAS, IIT-KGP have set up a Steel Technology Centre (STC) with the support from Ministry of Steel, Government of India. The Centre is primarily to promote education in the area of iron and steels having emphasis on development of trained manpower and Research and Development teaching/ training of students through B. Tech, PG Diploma, M. Tech, Ph. D dissertations by providing a stimulating research environment.

**WHEREAS**, it is considered desirable to promote co-operation between Essar Steel Limited and IIT-KGP for mutual benefit, both parties have reached an agreement with regard to the following:-

**1.0 Objective:**

- 1.1 To pursue joint Research and Development projects, as defined and detailed from time to time as per the requirement of Essar Steel Limited by mutual consent.
- 1.1.1 Essar Steel Limited would like to seek technical support/ services of IIT-KGP to pursue various projects of their interest. A list of, generic projects but not necessarily limited to, where the two parties can interact for perceived mutual benefit is provided in Annexure 1.
- 1.2 To ensure exchange of scientific/ technological knowledge, information and literature.
- 1.3 To enable participation of faculty members from IIT-KGP on technical review of the activities of Essar Steel Limited and also to enable the experts of Essar Steel Limited to participate in technical activity at IIT-KGP, by mutual consent.
- 1.4 To hold discussion and consultations on various Research and Developmental issues at Essar Steel Limited premises and/or at IIT-KGP, as the case may be, as per convenience of both the parties.
- 1.5 To utilise facilities and expertise as per requirements of respective parties on mutually agreed terms and conditions on case-to-case basis.
- 1.6 To pursue all other matters of mutual interest in the area of Human Resource Development and Technology Development such as Distance Education Programmes.

**2.0 Approach:**

- 2.1 To accomplish the purpose outlined above, it is envisaged that the authorised representatives of both the organisations shall interact with each other and shall hold discussions so that specific proposals on projects including the projects identified in para 1.1.1 are discussed. During discussions, all matters of mutual interest shall be formulated and documented for future references and applications in the course of the research activities.
- 2.2 Further, it is also agreed to hold such discussions and consultations as and when deemed necessary at a mutually agreed venue.
- 2.3 The expenses towards travel, boarding and lodging for the visits envisaged and/or preparing the foundations and subsequently taking up joint projects of mutual interests shall be borne by the respective organisations. However, it is agreed to



provide local travelling facilities to the visiting faculty/experts by the host organisation wherever possible. *Seed fund for ISSAR Steel will be utilized.*

2.4 Essar Steel Limited and IIT-KGP shall provide access to their respective Libraries and other infrastructure to the faculty/experts of both the organisations. *Reading room facility?*

2.5 It is also agreed that a Joint Steering Committee (JSC) will be formed within two weeks from the date of signing of this Agreement, for providing overall guidance and monitor the activities under this Agreement. *in per norms* *// during the visit and stay*

2.6 The ownership of the assets created under any specific joint project, undertaken under this Agreement, shall be decided on case to case basis on mutually agreeable terms and conditions. ✓

### 3.0 Methodology:

3.1 IIT-KGP shall undertake Research and Development projects as mutually agreed and render necessary consultancy services or as and when requested by Essar Steel Limited, subject to the condition that the relevant expertise is available with IIT-KGP and the terms and conditions are agreeable to both the parties on case-to-case basis. *→ and funded* ✓

3.2 It is mutually agreed that for any sponsored project including third party sponsored projects, either fully or partially, if jointly undertaken under this Agreement, the modality of functioning shall be as follows.

3.2.1 Depending upon the scope of responsibilities and administrative convenience either Essar Steel Limited or IIT-KGP shall function as the project leader. The project leader shall organise and administer the project and shall be the direct recipient of the entire project funding, including sponsored fund. Audited statement of accounts shall be submitted as per requirement of sponsoring agency.

The project leader will be interacting with nominated project co-ordinators from both the parties who would be directly responsible to carry out the project activities as detailed in the project proposal. The project leader shall distribute the project fund as per the detailed project proposal to the project co-ordinators as per mutually agreed terms and conditions and maintain accounts.

3.2.2 The manpower deployment process of the project would include provisions of deployment of qualified engineers/scientists of Essar Steel Limited to acquire PhD or other degrees by fulfilling all the requirements for the award of the degree at IIT KGP while working in the project or to take up the project assignment as post-doctoral work. Research Associates/equivalent may be employed by IIT-KGP in addition to the above depending on the mutually agreed manpower needs of each project. Manpower employed at IIT KGP as research associates/equivalent will be fully sponsored from the project. *(Signature)*

3.2.3 All the liaison work with the sponsoring agency shall be done by the project leader.



Each project will be identified with goals, workplan, manpower, ~~materials~~ equipment, ~~software~~ and other needs and a full budget. These shall be conducted in project mode as per norms of IIT-KGP.

3.2.4 The project leader shall prepare and submit project completion report in consultation with the project co-ordinators from either side and submit the same to the sponsoring agency.

3.3 Each party agrees to provide necessary consultancy services or undertake assignments for the Research and Development work or depute their experts for delivering limited numbers of technical lectures to the other party subject to the availability of expertise for the same and in accordance with the terms and conditions as agreeable to both the sides in each of the specified cases. Copyright for any educational material provided to the other party will belong to the party providing the same.

3.4 IIT-KGP shall provide short term training to the engineers/scientists of Essar Steel Limited on specific subjects as part of the Steel Technology Centre's plan to organise short-term courses in specific areas. The subjects to be covered for such courses may be taken up by the relevant faculty of IIT-KGP or external faculty, when relevant expertise is not available at IIT-KGP. Steel Technology Centre will organise and administer such short courses. ~~These will be~~

3.5 IIT-KGP shall offer academic programmes for the engineers/scientists of Essar Steel Limited leading to M. Tech degrees, with the thesis topic suited to the short duration project themes. On completion of their course work, IIT-KGP shall permit the students to carry out their project work at Essar Steel Limited.

3.6 The laboratory facilities available with either side can be utilised by the other side on case to case basis and on finalisation of terms and conditions.

#### 4.0 Financial Arrangement:

4.1 Essar Steel will initiate activities at STC (Steel Technology Centre) through payment of Rs 25 lakhs as seed money towards mobilization efforts for initiation of the collaboration. About 5 lakhs would be set aside to create infrastructure related to the agreement and the balance would be held with IIT as reserve and will be used up in projects or training as mutually decided.

4.2 Regarding individual projects (vide list of projects in Annexure 1) Essar Steel Limited and IIT-KGP shall finalise financial arrangement on case-to-case basis.

4.3 Settlement of account in case of premature termination of a project will be done by the project leader after due consultation with all concerned.

#### 5.0 General:

5.1 All the data, information and results emerging out of the joint activities under this Agreement shall be the joint property of Essar Steel Limited and IIT-KGP and they shall not divulge the same to any third party without the written consent of the other.

5.2 Both the parties may publish the results obtained under such joint activities except those which the other party wishes to keep secret as decided by its co-ordinator, in



open technical publications after obtaining prior consent of the other party. Such consent or intimation of refusal should be given within 30 days of the receipt of such request, with adequate reason and explanation in case of latter. However, the names of the investigators and students involved in the activity from both the sides shall be mentioned in such publications.

- 5.3 Any IP arising out of the projects undertaken under this Agreement shall be owned jointly by Essar Steel Limited and IIT-KGP during the period of validity of patent. All expenses on filing and maintenance of such patents/ copyrights by Essar Steel Limited and IIT-KGP shall be shared equally.

Each party shall utilise any technology or findings emerging out of the joint projects for in-house use without payment of any fee to the other party. However, each party will have the right to enhance the technology and use it in house. Such derivative IP will be owned solely by the inventing party.

*licensing to third party, jointly done on mutually agreed terms. Tripathi*

- 5.5 All disputes and differences whatsoever arising between the parties out of or relating to the interpretation, meaning and operation or effect of this Agreement or the breach thereof, shall be settled after mutual discussions between the parties. In case such mutual discussion fails to resolve the issues, the matter will be referred to a mutually acceptable arbitrator.

- 5.6 Any modifications or amendments to this Agreement shall be valid only if they are made in writing and duly signed by authorised representatives of both the parties of this Agreement.

- 5.7 Essar Steel Limited and IIT-KGP shall be free to offer technical, academic and/or professional services to other parties without referring to the terms and conditions of this Agreement.

- 5.8 During the tenure of the Agreement, either party can terminate the Agreement for breach of any of the terms of the Agreement or otherwise giving three months notice in writing to the other party. In the event of termination of Agreement, the rights and obligations of the parties thereto shall be settled by mutual discussion. This Agreement shall also be terminated by mutual agreement amongst the Parties, if it becomes apparent that the proposed concept is not feasible.

- 5.9 This Agreement shall come into effect when it has been duly signed by both parties and shall initially remain valid for a period of three years. It shall be extendable for a further period by mutual consent.

6.0 Confidentiality:

*the content of Confidential Info or but ? its existence is confidential? Do we want this?*

- 6.1 The Parties shall treat this Agreement confidential. In the course of negotiations non-public, proprietary and confidential information will be exchanged amongst the Parties. The Parties agree to treat such information confidential and to use their best efforts to protect such information from disclosure to any non-party.

**7.0 Contact Persons:**

**7.1**

<b>Essar Steel Limited</b>	<b>IIT-KGP</b>
Senior Vice-President, Research and Development, Essar Steel Limited, Hazira, 27 <sup>th</sup> KM, Surat Hazira Road. Hazira- 394270 Gujarat Tel. : +91-9879100025 Fax : +91 0261 6683143 E-mail : Achintya.Das@essar.com	Chairman, Steel Technology Centre Indian Institute of Technology Kharagpur, Kharagpur – 721 302. Tel. : 3222-281760 Fax : 3222-282280/255303 E-mail : pksen@metal.iitkgp.ernet.in

In witness whereof, the parties hereto have put their hands and seal to this Agreement on the date, month and the year first hereinabove mentioned.

**For and on behalf of**

**For and on behalf of**

**Indian Institute of Technology,  
Kharagpur –721 302**

( )

( )



**ANNEXURE 1**  
**List of Generic Projects**

**1. Simulation and Modelling**

- Iron and Steelmaking Processes
  - Fluid Flow Modelling
  - Heat and Mass Transfer Modelling
- Least energy-cost model for Blast Furnace, corex
- Overall energy-optimised operation model involving raw material saving and other variables.

**2. Product Characterization and Cost-optimisation**

- Automobile Grades
- High Strength Microalloy Grades

**3. Exploratory Project on Nano-Particle application in Iron and Steel processes/ products**

**4. Development of new grades in laboratory scale**

- Alloy Grades for special applications

**5. Characterization of Imperfections of cast/rolled products**

DRAFT Agreement

Pls see my comments.  
May show once to PIC (IPR&IR)  
should be easily workable  
after the required modification  
and placed in MOU Comm.

*[Signature]*  
2/11/10

Prof. A. Patra, Dean (IPR&IR)

1. MOU commi. Hec
2. Prof. S. Tripathy, PIC (IPR&IR)  
for his comments.

This AGREEMENT made on this ..... Day of the month .....  
of the year 2010.

BETWEEN

Essar Steel Limited

AND

Steel Technology Centre, INDIAN INSTITUTE OF TECHNOLOGY, Kharagpur located at Kharagpur, an autonomous statutory organisation functioning within the purview of The Institutes of Technology (amendment) Act, 1963 and being administered centrally by the IIT Council, an apex body established by the Govt. of India, herein after referred to as "IIT-KGP", (which terms of expression shall, unless excluded by or repugnant to the context or the meaning thereof be deemed to include its successors and permitted assigns) on the OTHER PART.

To be changed to our format

WHEREAS, Essar Steel Limited is a noted steel producer in India and abroad

WHEREAS, IIT-KGP is a premier Academic Institute providing Graduate, Post Graduate and Ph. D degrees in the Technical Discipline/ Sciences and having a cluster of highly qualified scientists, academicians engaged in teaching and Research and Development activities and having regular interaction with International scientific community and ultimately contributes the industrial development and economic growth of the country by preparing a cadre of engineers and scientists, who provide technical support in R&D work for industries.

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provide local travelling facilities to the visiting faculty/experts by the host organisation wherever possible.

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Funds?  
Costs?

3.5 IIT-KGP shall offer academic programmes for the engineers/scientists of Essar Steel Limited leading to M. Tech degrees, with the thesis topic suited to the short-duration project themes. On completion of their course work, IIT-KGP shall permit the students to carry out their project work at Essar Steel Limited.

Eligibility?  
MS by research?

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→ preparing for foundations, taking up

4.3 Settlement of account in case of premature termination of a project will be done by the project leader after due consultation with all concerned.

#### 5.0 General:

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from the joint funds?

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Need to discuss carefully esp with Tripathy

- 5.5 All disputes and differences whatsoever arising between the parties out of or relating to the interpretation, meaning and operation or effect of this Agreement or the breach thereof, shall be settled after mutual discussions between the parties. In case such mutual discussion fails to resolve the issues, the matter will be referred to a mutually acceptable arbitrator.

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<b>Essar Steel Limited</b>	<b>IIT-KGP</b>
Senior Vice-President, Research and Development, Essar Steel Limited, Hazira, 27 <sup>th</sup> KM, Surat Hazira Road Hazira- 394270 Gujarat Tel. : +91 9879100025 Fax : +91 0261 6683143 E-mail : Achintya.Das@essar.com	Chairman, Steel Technology Centre Indian Institute of Technology Kharagpur, Kharagpur – 721 302 Tel. : 3222-281760 Fax : 3222-282280/255303 E-mail : pksen@metal.iitkgp.ernet.in

In witness whereof, the parties hereto have put their hands and seal to this Agreement on the date, month and the year first hereinabove mentioned.

**For and on behalf of**

**For and on behalf of**

**Indian Institute of Technology,  
Kharagpur –721 302**

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## **ANNEXURE 1**

### **List of Generic Projects**

#### **1. Simulation and Modelling**

- Iron and Steelmaking Processes
  - Fluid Flow Modelling
  - Heat and Mass Transfer Modelling
- Least energy-cost model for Blast Furnace, corex
- Overall energy-optimised operation model involving raw material saving and other variables.

#### **2. Product Characterization and Cost-optimisation**

- Automobile Grades
- High Strength Microalloy Grades

#### **3. Exploratory Project on Nano-Particle application in Iron and Steel processes/ products**

#### **4. Development of new grades in laboratory scale**

- Alloy Grades for special applications

#### **5. Characterization of Imperfections of cast/rolled products**