

(B) R&D with Government Budgetary Support (Plan Fund):

Government's approval:

To encourage R&D in the steel industry further, during the 11th Five Year Plan Government has started a new scheme "Scheme for Promotion of R&D in Iron and Steel Sector" and had allocated Rs.118 crore. As per the approval of the Expenditure Finance Committee (EFC) the three broad areas to be pursued under this scheme are:

- a) Development of innovative/ path breaking technologies for utilization of iron ore fines and non-coking coal.
- b) Beneficiation of raw materials like iron ore, coal etc. and agglomeration.
- c) Improvement in quality of steel produced through the induction furnace.

Administrative Setup:

A Project Approval and Monitoring Committee (PAMC) under the Chairmanship of Secretary (Steel) and members comprising Additional Secretary & Financial Adviser and Joint Secretary, Ministry of Steel, Chairman SAIL, Director IIT Kharagpur, Director IMMT, Director NML and other members, is the decision making body for approval of R&D projects, monitoring of ongoing projects and for overall direction.

Technical Wing (TW) of the Ministry of Steel works as the Secretariat of the PAMC to scrutinize the research proposals, obtain views of experts and monitor the progress of the projects for reporting to the PAMC. In this regard a three tier system is followed viz., 1) preliminary examination by TW, 2) Detailed techno-economical assessment by the panel of independent experts, 3) Final Approval by PAMC Chaired by Secretary (Steel). A Project Review Committee (PRC) comprising domain experts also monitors the progress and fund utilization of each project.

Projects Undertaken:

Eight R&D projects have so far been approved within the aforesaid 3 broad areas with a total cost of Rs.144 crores involving Plan Fund of Rs.96.23

crores (approx). Details of the eight approved projects are given in the following table.

List of approved R&D projects under Plan Fund:

(In Rs. Crore)

Sl No	Name of the project & Implementing organization	Implementing Agency	Total cost of the project	Government contribution
1	Improvement in sinter productivity through deep beneficiation and agglomeration technologies for rational utilization of low grade iron ores and fines	NML , Jamshedpur, IMMT, Bhubaneswar, IIT, Kanpur & RDCIS Ranchi	12.56	12.56
2	Alternate complementary Route of Iron/Steel making with reference to Indian raw material viz low grade iron ore and non coking coal	NML , Jamshedpur, IMMT, Bhubaneswar, AMPRI, Bhopal, CIMFR, Dhanbad, RDCIS, Ranchi	8.58	8.58
3	Production of low Phosphorus Steel using DRI through Induction furnace route adopting innovative fluxes and/or design (refractory) changes	NML , Jamshedpur, NISST, Mandi Govindgarh	2.37	2.37
4	Development of futuristic Technology for carbon free iron production using alternate reductants like hydrogen with minimum or no CO2 emission. Smelting reduction of iron ore/fines by hydrogen plasma and elimination of CO2 emission	IMMT , Bhubaneswar	9.90	9.90
5	Beneficiation of Iron Ore slimes from Barsua and other mines in India	RDCIS , Ranchi, Tata Steel & Essar Steel	48.29	23.03
6	Development of pilot scale pelletization technology for Indian Goethitic/hematite ore with varying degree of fineness	RDCIS , Ranchi, IMMT, NML, IIT Kharagpur	41.89	22.06
7	CO2 abatement in Iron and Steel production by process optimisation	IIT , Kharagpur	0.84	0.84
8	Production of low ash (10% ash) coal (coking non coking) from high ash Indian coals including desulphurisation of high sulphur North East coal	IMMT , Bhubaneswar, RDCIS, Ranchi, NML, Jamshedpur; CIMFR,	19.44	16.89

		Dhanbad, CMPDI, Ranchi, NEIST, Jorhat		
--	--	--	--	--

Current Status:

Actual work in these projects started w.e.f. 2010-11. The tenure of the projects is from 2-3½ years. The project at serial no. 3 is scheduled to be completed by 2012. All other projects are scheduled to be completed by 2013-15. So far Rs.39.02 crores has been released and the year-wise release of fund is as follows:

Sl.No.	Year	Fund released (Rs.in crore)
1.	2009-10	4.13
2.	2010-11	27.05
3.	2011-12 (upto Sept)	7.84

Major projects covered under the scheme include exclusive R&D initiatives to upgrade Indian low grade iron (including BHQ/BHJ) and Indian coking/non-coking coal. Presently, these projects are at the preliminary stage of work but when completed, and if results are successful; these may go a long way in making available high quality inputs from lean ore/coal for the iron/steel industry.

Guidelines for submission of Research Proposal for financial support from GBS

The research proposals in the following areas for laboratory scale, bench scale or pilot plant scale development will be entertained:

- a) Development of innovative/ path breaking technologies for utilization of iron ore fines and non-coking coal.
- b) Beneficiation of raw materials like iron ore, coal etc. and agglomeration.

- c) Improvement in quality of steel produced through the induction furnace

Industrial units, national research organisations, academic institutions, regional R&D organisations both in public and private sectors can submit the proposal(s) either singly or jointly. Proposals, which will have support from industry or others in the form of funds/services/kind, will be preferred.

The applications as per guidelines may be initially submitted in 8 copies (alongwith a soft copy of the proposal on CD) to:

Industrial Adviser,
Ministry of Steel,
Udyog Bhawan,
Maulana Azad Road,
New Delhi - 110107
Phone No: 91-11-23061064
Fax No: 91-11-23061064
91-11-23063236

Guiding format for Research proposal seeking full/partial financial support from GBS

1. General:
 - a) Name and address of the industrial firm including telephone, email, fax nos. (Give address of the registered office, head office and local office in Delhi, if any)
 - b) Brief history of the industrial firm including products being made, capacities, related collaborations, achievements, capabilities, etc. (latest annual report and company brochure may be given)
 - c) Is the Research Laboratory recognized by DSIR?
 - d) Details of the manpower available (give separate details of Executive and collaborating agencies, if any)
 - (i) Number of Scientists/Technologists
 - (ii) Number of other staff in R&D Unit

2. Enclose Summary Sheet (not more than 2 pages) covering title, objective, sources of budget, duration, linkages with industry etc.
3. Research proposal details: (Details specific to the proposal may be furnished)
 - (a) Title of the proposal
 - (b) Details of the proposal including :
 - i) Objectives of the research.
 - ii) Salient features of existing technology/manufacturing problems and technological gaps
 - iii) Details of new or improved technology to be developed
 - iv) If up gradation of technology towards process development is envisaged, please indicate likely benefits in terms of either
 - Reduction in Energy consumption
 - Reduction in specific raw material consumption
 - Improvement in productivity
 - Reduction in emissions and control of pollution
 - Increase in waste utilisation
 - v) Status of work done in national/international area
 - vi) Details of IPR/Patents held
 - vii) Status of research/development by the firm or at the collaborating research laboratory, if any, their scope of work and role in the present project.
 - viii) Application areas.
 - ix) Action plan for implementation of the proposed project including literature survey, patent search, lab-work, pilot plant/prototype development, design and engineering, field trials and pre-production activities etc.
 - x) Consultancy arrangements etc. if any, with other consulting engineering organisations/ national laboratories and institutions and assistance from research laboratories/institutions etc.
 - (c) Techno-economic Assessment :
 - i) Please give a comparison of technical parameters and detail of the technology (both in product/process) which is

proposed to be implemented as a result of the project, vis-à-vis the international technological trends, in this area.

- ii) Please indicate if a market survey has been undertaken covering demand profile over next 5 years, likely markets/applications domestically and abroad, competing products, reasonable prices, etc. If so, please give highlights of the survey or enclose a copy of the same. If no such survey has been undertaken, please indicate the above details quoting sources.

4. For R&D Labs/Academic Institutions - Has the project been tied up with a User Industry? If yes, the extent of commitment by industry for making equipments available for trials, manpower and marketing (in case of new products) and financial contribution (if any). This may preferably be backed by a letter from user industry.

5. a) Has this proposal been submitted to any other funding agency in the last 3 years (like DST, TIFAC, DSIR or some financial institution) : If so, what was the outcome and any decision/recommendations or the concerned funding agency: or

b) Is it presently under consideration by any other agency?

6. Financial Outlay and time Schedule;

i) Do you require concessions in import duty as per Custom & Excise Notification No. 50/96-Customs dt. 23.7.1996. Give details.

ii) Financial Outlay

Heads	Share in total cost of the project				
	Total cost of the Project	Industry	Collaborating Agency	Any other Assistance	Government Assistance required
	(1)	(2)	(3)	(4)	(5)
a) Capital Equipment <ul style="list-style-type: none"> • For infrastructural facilities • Testing Equipment 					
b) Pilot Plant/Prototypes					

i) Pilot Plant Equipment (in process industries) or components and sub assemblies for building prototypes (in Engg. Industries) - Indigenous - Imported					
ii) Tools, Jigs, Fixtures, Dies required for prototypes/pilot plant					
iii) Consumables used for prototype or pilot plant - Indigenous - Imported					
iv) Work subcontracted outside					
v) Manpower i. Literature Surveys and lab works, design and engineering/ software ii. Fabrication of prototype/pilot plant					
c) Cost of testing and trials of prototype or pilot plant i) Materials ii) Consumables iii) Manpower iv) Total					
d) R&D/Engineering consultancy for prototype/pilot plant/trials and testing, if any - Indian - Foreign					
e) Travel Cost i) Own Computer ii) Outside experts					
f) Overhead expenses					
g) Any other costs					
Total					

Note :

i) Detailed break-up and justifications for all the above should be given in annexures.

ii) In case collaborating agency(ies) is/are involved, the resource allocation against each of above items should show a break-up of outlay at both executing agency and collaborating agency(ies), as well as respective totals.

iii) Time Schedule

- Activity sequence and time schedule for each activity(bar chart)
- Phasing of expenditure on a three monthly basis
- Stages of activities in the project

Activity	Time in months from commencement of period		Agency
	Start	Finish	
a. Literature Survey & Patent Search			
b. Design and Engineering			
c. Procurement and installation of pilot plant/test equipment etc.			
d. Testing, performance/field trials			
e. Modifications and scaling up, if required			
f. Final report			

7. Bio-data of the Project Coordinators and other personal/experts with Contact details including: Telephone no., Mobile No., emails etc. : Give in Annexure

8. Please indicate steps proposed:

(a) to ensure timely completion of the project such as setting up of a project execution group, internal monitoring groups etc.

(b) for technology demonstration and commercialization of the project

Signature of Chief Executive/Director(Technical)/Director(R&I)

Note :

- (a) The above format is only for guidance and individual project proposals may be prepared flexibly taking the points into account.
- (b) The project proposal should be submitted in 8 copies (alongwith soft copy on CD).
- (c) Latest Annual Report/Balance Sheet of the company may be enclosed.
- (d) In case of joint proposals with other agencies, the proposals should be jointly forwarded by executing agencies and collaborating agencies duly signed by Chief Executives/Directors of the respective organisations.

Standard Conditions for R&D Projects to be financed from Plan Fund (GBS).

1. The amount released shall be exclusively earmarked for the project and should not be diverted for any other purpose. The agency shall maintain a separate account in respect of funds released by Ministry of Steel to implement R&D Project mentioned in sanction letter.
2. The agency shall not entrust execution of project to another institution/organization unless and otherwise approved by the Project Approval and Monitoring Committee (PAMC) in the Ministry of Steel.
3. If the agency fails to utilize the grant for the purpose for which it has been sanctioned, it will be required to refund the amount of the grant, with interest thereon @ 6% per annum.
4. The agency must ensure that no grant in aid for the same purpose has been availed from any other Ministry/Department of the Government of India or State Government.
5. The ownership of the physical and intellectual assets created or acquired out of the grant shall vest in Ministry of Steel. A register of assets acquired out of the funds shall be maintained and shall not be disposed without the prior approval of Ministry of Steel except those declared as obsolete/unserviceable/condemned as per the procedure laid down in the General Financial Rules.

6. The amount paid to the agency shall be open to inspection by the sanctioning authority/internal Audit Party of the Chief Controller of Accounts, Ministry of Steel, New Delhi.
7. The agency shall furnish utilization certificate within 12 Months from the closure of the Financial Year to the effect that the funds have been utilized for the purpose for which they have been sanctioned together with the Audited Statement of Accounts.
8. The agency shall furnish a performance-cum-achievement report on a quarterly basis including utilization of funds which should be utilized before the release of the next installment.
9. The project shall be open to review by the PAMC in the Ministry of Steel twice a year.
10. If at any stage of review, it is felt that the purpose of the project is not being served, Ministry of Steel shall have the discretion to discontinue the project.
11. The interest accrued on unutilized Government fund during implementation of the project will be returned to Pay and Accounts Office, Ministry of Steel, Udyog Bhawan, New Delhi-110107.