

**MINISTRY OF STEEL**  
**Technical Division**  
**Udyog Bhawan**  
**New Delhi-110107**

**PROMOTION OF RESEARCH & DEVELOPMENT IN IRON & STEEL SECTOR**

**No: S-20/2/2025-TECH**  
**Government of India**  
**Ministry of Steel**

**R & D Scheme Highlights, Guidelines & Terms & Conditions**

**1.0 Name of the Scheme:** Promotion of Research & Development in Iron & Steel Sector

**The Mission:** To catalyze innovation, sustainability, and global competitiveness in the steel sector by funding cutting-edge research and development initiatives. The scheme aims to empower industry, academia, start-ups, and individual innovators to collaboratively address technological challenges, enhance resource efficiency, and accelerate the adoption of advanced materials and processes for a resilient and future-ready steel ecosystem.

**2.0 Objectives of the Scheme:** The objective of the scheme is to promote Research & Development in the Iron & Steel Sector by providing financial support to the stakeholders to address the R&D needs of national importance.

**3.0 The thrust areas** for providing support are as under:

- Development of innovative/ path breaking technologies for utilization of iron ore fines and non-coking coal.
- Beneficiation of raw materials like iron ore, coal etc. and agglomeration.
- Improvement in quality of steel produced through the various routes of steel making including the Induction Furnace route.
- Development of commercially viable technology for utilization of steel plant and mine wastes including LD/EAF/IF Slag.
- Development of indigenous technologies for improved processes.
- Development of indigenous technologies for product development aimed at reducing import dependency in the Iron and Steel sector.
- R&D for achieving global benchmarks in Productivity, Quality, Raw material consumption, Energy consumption, Water consumption, Refractory consumption etc.
- Development of Low carbon technologies for reduction in GHG emission.
- Development of innovative technology for effective recovery of waste heat in different iron & steel making processes including downstream processes.
- To pursue R&D on steel intensive design of building/ bridges/ structures with an aim to increase usage/ consumption of steel.
- Development of innovative solutions for addressing the challenges faced by the iron & steel industry.
- To pursue R&D on any other subject of national importance concerning the Iron & Steel sector

The Ministry of Steel shall regularly organize stakeholder events, including MSMEs, to identify and review thrust areas & larger goals of the R&D scheme.

#### **4.0 Background of the Scheme:**

Ministry of Steel had introduced an R&D scheme viz. "Promotion of R&D in Iron & Steel Sector", for providing financial assistance for the R&D projects identified for funding by Ministry of Steel. R&D Project Proposals are invited from the stakeholders viz. reputed Academic Institutions, Research Laboratories and Indian Steel Companies for pursuing R&D projects for the benefit of the Iron & Steel Sector in the country.

The scheme was introduced in the year 2009-10, based on the recommendation of the Working Group for Iron & Steel Industry for the 11<sup>th</sup> Five Year Plan. Subsequently, the scheme has been continued further and the current approval is till March 2031. The Scheme is of continuous nature since the R&D projects being pursued under the scheme are of varying durations, usually 2-3 years duration and new projects are being approved every year. Further, R&D has very long gestation periods before any fruitful results can be achieved. Accordingly, the scheme needs to be continued further to provide uninterrupted support to the stakeholders on in carrying out R&D for the Iron & Steel sector.

#### **5.0 Scope of Support:**

R&D work in Lab Scale/ Bench Scale and scale-up to Pilot Scale/ Demonstration Plants will be supported.

- In case of Industrial/ Commercial organisations pursuing R&D projects with Plan Fund, financial assistance of upto 50% of the total cost is permissible.
- In case of Academic Institutions & National/ Regional Research Laboratories, financial assistance of upto 70% is permissible. Preference will be given to R&D project having tie-up with user industry.
- For Pilot/ Demonstration Scale R&D projects, financial contribution from Plan Fund will be limited to upto 40% & the balance to be met by the industrial partner.
- Joint Proposals with other laboratories/ institutions/ industry are desirable for providing support under the scheme.
- Financial assistance up to 100% for multidimensional team shall be under discretion of Secretary Steel on merit of the proposal.

The Ministry shall create a categorized Pool of industrial partners, including MSMEs, aligned with key thrust areas. If a Principal Investigator (PI) cannot secure industry partnership, the Ministry will route the proposal to the relevant pool for review and potential funding/collaboration.

Individual innovators and start-ups in the steel sector will be granted access to scheme-funded facilities and equipment (e.g., at NML and IIMT). Based on the merit of their proposals, suitable industry and institutional partners shall be provided.

#### **6.0 Quantum of Support:**

The budget allocated for the scheme is around Rs 5-10 Crore per year.

## **7.0 Approval & Monitoring Mechanism of the R&D Projects:**

- An Evaluation Group comprising members from Principal Scientific Adviser to the Government of India, DRDO, DSIR, DST, Premiere Academic Institutions and Industry, carry out evaluation of the R&D proposals received for funding under the scheme.
- A Project Approval and Monitoring Committee (PAMC) under the Chairmanship of Additional Secretary & Financial Adviser and Joint Secretary, Ministry of Steel, Director IIT Kharagpur, Director IMMT, Director NML, Representative from MSME are the 2nd Stage approving body for the R&D proposals recommended by Evaluation Group.
- Final approval is accorded by the designated authority based on the cost of the project as per the guidelines issued by Department of Expenditure.
- A Project Review Committee monitors the progress of the on-going projects on a regular basis.

## **8.0 Last date for Receipt of the R & D Proposals**

Submission of R &D proposals is continuous and there is no last date for submission of the proposals.

## **9.0 Submission of R &D Proposals**

The applicants are requested to go through guidelines, formats and terms & conditions given as Annexures before submitting the R&D Proposals.

R&D Proposals duly signed and forwarded by Head of the Institutions/ Organisations/ Companies should be uploaded to the Ministry of Steel R & D portal and sent in Pdf to be send to [mosteel-rd@gov.in](mailto:mosteel-rd@gov.in). The URL of the portal is <https://research.steel.gov.in/Applicant> .

For further queries, contact details are as follows:

Technical Division, Ministry of Steel

Tel: 011-26773364

## **10.0 Guidelines, Terms & Conditions and Formats**

<b>SI. No.</b>	<b>ITEM</b>
Annexure-1	Guidelines for approval of R&D projects under the Scheme.
Annexure-2	Terms & Conditions for release of grants for the R&D Projects under the Scheme.
Annexure-3	Guiding Format for submission of research proposal seeking financial support from ministry of steel.
Annexure-4	Format for Quarterly Project Status Report of the R&D projects funded by Ministry of Steel.

**Guidelines for approval of R&D projects under the Scheme**

<b>Sl. No</b>	<b>Proposed New Terms &amp; Conditions</b>
1	The R&D projects supported by the Ministry of Steel must have a heavy bias in favour of commercialization and technology development. Basic research should not be funded/should be funded in much less quantum & numbers through this scheme as there are other agencies of the Government to promote basic research like Dept. of Science & Technology.
2	Researchers may be asked to submit their proposal jointly in collaboration with one or more industry partners in which the industry partner is willing to at least fund 15% of the research expenditure and in return may claim the right of first use of the research outcomes.
3	It is advisable that the department may adopt a portfolio approach where in 80% projects may be funded in the growth and maturity stages i.e. in research projects that are amenable to commercialization, technology development and immediate absorption by the industry. Whereas 20% of the projects may belong to basic research that is belonging to emerging stage of the technology s-curve or in technologies or which are matured where economic value is limited.
4	Necessary institutional mechanism needs to exist with the Implementing Agencies for taking the completed R&D projects towards commercialisation. Implementing Agencies must give in writing that on successful completion of the projects, these shall be taken forward through the existing institutional mechanism.
5	The R&D Implementing Agency shall submit beforehand the road map for commercialisation that they will take up on successful completion of the R&D project. The R&D Implementing Agency shall indicate the stakeholders to be associated by them for the commercialisation activities. R&D Implementing Agency shall provide the reasons on why these stakeholders are not being associated beforehand in the R&D project.
6	<p>The Grantee institution may use the following guidelines in case there is no laid down mechanism within their own institution for managing IPR and Technology Transfer/ Commercialization:</p> <ul style="list-style-type: none"> <li>• Grantee Institution to possess the IPR arising out of the Ministry funded project while the patent may be filed in the name(s) of inventor(s)/ the institution(s). In cases of collaborative projects, the IP rights would be appropriately shared among the collaborators.</li> <li>• For the Intellectual Property that has been proposed for deployment/use for non-commercial purposes, the Ministry of Steel (MoS) shall have right to obtain a royalty free license. On the other hand, for the IP proposed for commercial usage, the provisions of licensing may be mutually agreed upon with the grantee institution(s) possessing the IPR.</li> <li>• The Ministry shall be duly informed by the grantee institution about the patents filed/granted and IPR emerging out of the R&amp;D project on yearly basis during the project tenure and following 5 years period after completion of the project.</li> <li>• In case of any commercial event like trading/ selling/ transferring /licensing</li> </ul>

	<p>the IP rights, the grantee institution shall provide information to the Ministry within a period of 6 weeks from the closure of the agreement.</p> <ul style="list-style-type: none"> <li>• While licensing of patents/transfer or commercialization of technology, the grantee institution shall ensure that the interests of India and its citizens are fully protected.</li> <li>• The institution is permitted to retain the benefits and earnings arising out of the IPR for plough back to conduct research/research related activities. Notwithstanding the above, the Ministry reserves the right to take over ownership of the rights of IP in case of national priority without any compensation to the grantee institution.</li> <li>• The central office of the grantee institution equipped to handle legal issues with regard to technology/ IP licensing would be responsible for the transfer of technology</li> <li>• A Transfer of Technology (ToT) Committee for evaluation of the applications for ToT may be constituted by the grantee institution. The committee will also work on the appropriate revenues expected out of the ToT</li> <li>• Prior to seeking the expression of interest for technology transfer/commercialization, it is necessary to provide sufficient disclosure of the following: <ul style="list-style-type: none"> <li>○ The technical details</li> <li>○ Potential and uniqueness of the project through various marketing channel like advertisement, publicity through print media, publication on the websites of the Institution and of the Ministry, exhibitions and digital marketing</li> <li>○ In order to increase the efficiency on public spending, it must be ensured that the industry collaborates with research/academic organization in which the research project would be housed. A small token contribution from the industry could be an indication of the interest in taking the project forward.</li> <li>○ Interested parties may be given a period of 6 months to file their applications relating to Expression of Interest</li> <li>○ A prescribed format for the application has to be provided which may be customized based on the technology/product/service/prototype proposed to be transferred by the grantee institution.</li> </ul> </li> <li>• A techno-commercial evaluation (2-stage process) shall be adopted by the ToT Evaluation Committee to evaluate the applications received.</li> <li>• The primary responsibility of the ToT Evaluation Committee would be working out the cost of ToT on case-to case basis based on the following <ul style="list-style-type: none"> <li>○ Project cost</li> <li>○ Potential demand of the technology/product in the market</li> <li>○ Industry's readiness and capability to pay for the technology</li> <li>○ The cost involved from prototyping to packaging</li> <li>○ An estimated cost may be calculated after excluding the cost of capital of the equipment from the total cost of development which is then be used as the Internal Bench Mark (IBM) for evaluating the ToT fee and royalty, in Stage 2.</li> </ul> </li> <li>• A technology transfer/ licensing agreement that includes license of IPRs through existing legal procedures is then be signed after due diligence by the ToT committee.</li> </ul> <p>For exclusive licensing, It is necessary to obtain approval from the Ministry.</p>
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7	The research organization should supply along with a research proposal a skill development plan through which M.Tech./B.Tech./ Ph.D. students in the field of metallurgy will be trained in sophisticated equipments through formal means like skill development workshop, training apprenticeships etc.
8	A dissemination plan to be in place at the time of research proposal, whereby the researcher will conduct seminars not just for the research community, but also for academic community, especially for students in junior levels.
9	Stricter monitoring through a LOGFRAME approach: Logframes are a tool for monitoring and evaluation that originated from a planning approach used by the US military. It has since then become a standard tool for monitoring of internationally granted projects. In its simplest form a logframe is a 4x4 matrix with 16 cells. In it, you note down what you want to achieve while granting a project and how you'll get there and in what time frame. This brings clarity to fund projects and also makes monitoring very objective. The Logframe matrix to be submitted by the researcher as part of the R&D proposal submitted for consideration.
10	Declarations in writing be obtained from the R&D agencies that similar projects have not be pursued earlier by them or other organizations.
11	In case substantial unspent grants are lying with an organisation, grants in new projects should not be released. Use of unutilised funds from existing projects in new projects may be insisted upon.
12	There should be a cap on the funding on overheads. It can be around 10-15% of the total project cost subject to a cap of 25 lakhs.
13	Under the scheme, financial assistance is provided from Government for R&D projects pursued by Research Laboratories, Academic Institutions & Steel Companies, in line with the objectives of the scheme. Projects with Industrial Partnership (joint collaborative projects) will be preferred. For commercial organisations Government assistance will be upto 50% of the cost of the project.
14	<p>Approval process</p> <ul style="list-style-type: none"> <li>○ An Evaluation Group comprising members from Principal Scientific Adviser to the Government of India, DRDO, DSIR, DST, Premiere Academic Institutions and Industry, carry out evaluation of the R&amp;D proposals received for funding under the scheme.</li> <li>○ A Project Approval and Monitoring Committee (PAMC) under the Chairmanship of Additional Secretary &amp; Financial Adviser and Joint Secretary, Ministry of Steel, Director IIT Kharagpur, Director IMMT, Director NML, Representative from MSME are the 2nd Stage approving body for the R&amp;D proposals recommended by Evaluation Group.</li> </ul> <p>Final approval is accorded by the designated authority based on the cost of the project as per the guidelines issued by Department of Expenditure.</p>
15	The R&D 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. Undertaking shall be sought from the R&D Agency.
16	Declaration in writing be obtained from the implementing agencies that the terms & conditions of the sanction are acceptable to them.

**Terms & Conditions for release of grants for the R&D Projects under the Scheme:**

<b>S.No.</b>	<b>Terms &amp; Conditions</b>
1	Research Agency pursuing the R&D projects under the Scheme will be held responsible for the completion of the project.
2	The R&D Agency will not allow the project coordinator to leave the project undertaken by him without completing it or without making alternative arrangement in consultation with Ministry of Steel.
3	The R&D Agency shall not entrust execution of project to another institution/organization unless and otherwise approved by the Project Approval and Monitoring Committee in the Ministry of Steel.
4	Fund would be released in instalments as approved by the Approving Authority and subject to the provisions of GFR.
5	A dedicated project account/ head should be created for keeping the Government grant so that the expenses in the project under various heads could be tracked.
6	The grants released shall be exclusively earmarked for the project and should not be diverted for any other purpose.
7	If the R&D Agency fails to utilize the grant for the purpose for which it has been sanctioned, it will be required to refund the entire amount of the grant, with interest thereon @ 6% per annum.
8	In case of any interest earning from the Government Grant, the same should be returned to the Government on yearly basis, along with details of the transactions. In case of surplus money on completion of the project, the same will be returned to the Government. Details of the transactions to be submitted.
9	The R&D Agency pursuing the project will be required to furnish Progress Reports of the project based on the actual physical & financial progress vis-à-vis envisaged, duly endorsed by the head of the Organisation, as per the following schedule: <ul style="list-style-type: none"><li>• On a monthly basis within 7 days of completion of the month.</li><li>• On a quarterly basis within 7 days of completion of the quarter.</li></ul>
10	The R&D Agency will be required to submit Utilisation Certificate and Audited Statement of Account, as per the Format Specified in GFR, duly endorsed by the head of the Organisation, as per the following schedule: <ul style="list-style-type: none"><li>• Utilisation Certificate &amp; Statement of Account endorsed by Head of Organisation to be submitted on a quarterly basis within 7 days of completion of the quarter.</li><li>• Utilisation Certificate &amp; Audited Statement of Account endorsed by Head of Organisation to be submitted on a yearly quarterly basis within one month of completion of the financial year.</li></ul>
11	The grant in aid released to the R&D Agency shall be open to inspection by the sanctioning authority/internal Audit Party of the Chief Controller of Accounts, Ministry of Steel, New Delhi.
12	A Project Review Committee (PRC) under the Chairmanship of Additional Secretary/ Joint Secretary, Ministry of Steel or Domain Expert will undertake review of the project on half yearly basis. <b>It shall be preferred to hold meetings online.</b>

13	Five copies of the project completion report shall be sent by the organization to the Ministry of Steel within one month of the completion of the project.
14	<p>The assets including prototype(s) or pilot plant if any, wholly or partly acquired from the Government money during the course of the implementation of the project or any materials including scrap/component etc. generated during the execution of the project or left over at the end of the project shall not be disposed within 10 years of procurement/installation without the written permission of the MOS. In case when assets are sold with the permission of MOS, the money may be paid back to the Government in proportion of actual amount received.</p> <p>The following may be done to ensure just &amp; fair apportionment of credit to the Ministry through use of the residual life of the equipment :</p> <ul style="list-style-type: none"> <li>a) Name of the Ministry and Research scheme must be displayed prominently.</li> <li>b) In subsequent work either, it must be officially informed and due credit must be given to the Ministry.</li> <li>c) If the equipment is scrapped through available provisions of GFR-2017, the Ministry must be informed of the residual value.</li> <li>d) The items that have been declared as Surplus or Obsolete and are in working order can also be gifted to educational institutions.</li> </ul> <p>Asset register is mandatory to be sent by all PIs for all ongoing schemes duly endorsed by the head of the Organisation, as per the following schedule</p> <ul style="list-style-type: none"> <li>• On a monthly basis within 7 days of completion of the month</li> <li>• On a quarterly basis within 7 days of completion of the quarter</li> </ul> <p>Asset register shall be available in public domain.</p>
15	The Research Organisation and the collaborating agencies will own the Knowledge/ Intellectual Property/ Patent generated in the project (as per the agreement they enter into). They will also indemnify the Government against any possible infringement of IPR.
16	The Research Organisation shall not publish or present research results before patenting without specific permission of the MOS.
17	Parking of Government Funds in the R&D projects should be avoided. Funds under capital head may be released only after ensuring that the R&D agency is ready to place the orders for procurement of the equipment. Funds under capital head shall be released only when all the necessary work on finalisation of the technical specifications, selection & finalisation of the supplier for placement of order has been completed. Release of funds in revenue heads like manpower, travel, contingencies etc be released judiciously based on estimation of actual requirement.
18	There is a concern of delay in procurement of equipment in the R&D projects pursued under the scheme. To address the issue, the Organisations may be requested to make the procurement through GEM. If the equipment is not covered under GEM, the organisations can procure from outside. However parallel, on-boarding of the equipment under GEM may be taken up.
19	Funds shall be released on pro-rata basis after ensuring that the specific/proportionate instalments have already been paid by the other funding agencies (Either industrial partner and/or R&D agency themselves).
20	Last instalment (10% of the total revenue grant) to be released only on submission of Project Completion Report in prescribed format and acceptance

	<p>of the report by Ministry of Steel.</p> <p>In case project is recommended as foreclosed/failed by PRC last instalment shall not be released.</p> <p>Further, as it is difficult for PIs to utilize the money after completion of the project, way forward may be considered as</p> <p><b><i>The Ministry of Steel (MoS) can take an undertaking from the respective Institutes stating that the Institutes will provide the final 10% of the project funding to the Principal Investigators (PIs) on behalf of the MoS. This amount will be reimbursed to the Institutes by the MoS upon receipt and approval of the Project Completion Report in the prescribed format.</i></b></p>
21	<p><b>In case of delayed projects, PRC to judge whether delays are due to genuine reasons or due to negligence of the PIs/Industry partner.</b></p> <p><b>In the case of negligence, a show cause notice shall be issued to PI and Industry partner with a copy to respective Director of Institute and CEO of Industry.</b></p> <p><b>If such incidents occur repeatedly within a single project or across multiple projects led by the same Principal Investigator or industry entity, they shall be deemed ineligible for future government grants.</b></p>
22	<p><b>For successful completion of project and commercially adoption, respective PIs shall be getting recognition awards/certificate and attribution in official repositories/ digital repository of indigenous technologies and compendiums.</b></p>
23	<p>The R&amp;D agencies/ industrial partner not pursuing the projects as per the envisaged objectives shall be debarred for funding in new projects.</p>
24	<p>Technology and Intellectual Property Rights developed jointly in the projects will be shared among the partners only. The technology will not be given to any other organisation without specific approval of the partners. Further, if the technology is shared by any other organisation, they will have to pay royalty for acquiring the technology. The royalty will be shared among the partners in proportion to their contribution in the project. The stakeholders will sign Memorandum of Agreement for pursuing the project.</p>

**GUIDING FORMAT FOR SUBMISSION of RESEARCH PROPOSAL  
SEEKING FINANCIAL SUPPORT FROM MINISTRY OF STEEL**

**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
    - o Reduction in Energy consumption
    - o Reduction in specific raw material consumption
    - o Improvement in productivity
    - o Reduction in emissions and control of pollution
    - o 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.

5a) 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

5b) Is it presently under consideration by any other agency?

**6 Financial Outlay and Time Schedule:**

**i. Financial Outlay**

	Heads	Total cost of the Project				Industry Funding				Financial Assistance Required			
		Year1	Year2	Year3	Total	Year1	Year2	Year3	Total	Year1	Year2	Year3	Total
1	Equipment												
2	Raw Materials												
3	Consumables												
4	Manpower												
5	Travel												
6	Contingencies												
7	Institutional Overheads												
	Total												

**Note :**

- a) Detailed break-up and justifications for all the above should be given in annexures.
- b) 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.
- c) Provide Phasing of expenditure on quarterly/ yearly basis.

**ii. Time Schedule**

- Provide Activity sequence and time schedule for each activity (bar chart)
- Stages of activities in the project

S.No	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.

**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

**9** The research organization should supply along with the research proposal a **skill development** plan through which M.Tech./B.Tech./ Ph.D. students in the field of metallurgy will be trained in sophisticated equipment through formal means like skill development workshop, training apprenticeships etc.

**10** **A dissemination plan** to be in place at the time of submission of research proposal, whereby the researcher will conduct seminars not just for the research community, but also for academic community, especially for students in junior levels.

**11** Logframes are a tool for monitoring and evaluation that originated from a planning approach used by the US military. It has since then become a standard tool for monitoring of internationally granted projects. In its simplest form a logframe is a 4x4 matrix with 16 cells. In

it, you note down what you want to achieve while granting a project and how you'll get there and in what time frame. This brings clarity to fund projects and also makes monitoring very objective. The **Logframe matrix** to be submitted by the researcher as part of the R&D proposal submitted for consideration. A representative Logframe is given below:

Hierarchy Of Objectives	Performance Indicators	Data Sources	Assumption & Risks
<b>Goal</b> <i>Longer-term project impact</i>	Measurable indicators for Goal	Data sources for verifying status of Goal-level indicators	Assumptions / risks between Goal and Super-Goal
<b>Purpose</b> <i>Near-term project impact. The essential motivation for undertaking the project</i>	Measurable indicators for End-of-project Impact	Data sources for verifying status of purpose – level indicators	Assumptions/risks between Purpose and Goal
<b>Outputs</b> <i>The deliverables of the projects</i>	Measurable indicators for Outputs	Data sources for verifying status of Output-level indicators	Assumptions/risks between Outputs and Purpose
<b>Activities</b> <i>Smaller work packages needed to accomplish each Output</i>	Budget Summary	Data sources for verifying status of budget and Activities	Assumptions/risks between Activities and Outputs

- 12 **Declaration in writing** be given alongwith the R&D proposal by the R&D agencies that similar projects have not be pursued earlier by them or other organizations.
- 13 The R&D agencies are advised to go through the Scheme Guidelines/ Terms & Conditions. **Declaration in writing** to be given alongwith the R&D proposal by implementing agencies that the Scheme Guidelines/ Terms & Conditions are acceptable to them.

#### 14 Envisaged Outcome of the project:

S.N o	Outcome Indicator	Envisaged Outcome
1	Publications/ Working Papers	
2	IPR/ Patents : Applied, Awarded	
3	New Process developed	
4	New product developed	

5	Workshop for dissemination of the knowhow developed	
6	Skill Development	
7	Commercialisation	
8	Any other	

**15: Techno-economic Benefits Envisaged vis-à-vis baseline data for existing technologies, for the new process or product to be developed as per the objective of the Project**

<b>Sl. No.</b>	<b>Parameters</b>	<b>Baseline Data from existing technology</b>	<b>Target Envisaged</b>
1	Specific Energy Consumption		
2	GHG Emission		
3	Mitigation of Pollution		
4	Waste Utilisation		
5	Reduction in cost of production		
6	Improvement in quality		
7	Any Other		

**(Signature of the Project Investigators) (Signature of the Head of the Institutions)**

**Note :**

- a. The above format is only for guidance and individual project proposals may be prepared flexibly taking the points into account.
- b. Latest Annual Report/ Balance Sheet of the company may be enclosed.
- c. In case of joint proposals with other agencies, the proposals should be jointly forwarded by executing agencies and collaborating agencies duly signed by the Head of the respective organisations.

**Annexure-4**

**Format for Quarterly Project Status Report of the R&D projects funded by Ministry of Steel**

<b>Sl.No.</b>	<b>Progress Parameters</b>	<b>Notes/ Inputs</b>
1	Highlights of the Work Done so far since the start of the project vis-a-vis the objectives of the Project	
2	Status of the Project as per the Logframe Matrix	
3	Total work completed since the start of the project (Gantt Chart showing the schedule of the project Vs actual work) (Representative Template for reporting Physical Progress, Financial Progress and Project Outcome attached)	
4	Highlights of the Work Done in the last quarter	
5	Highlights of the Balance work to be carried out	
6	Quarterly Targets of the balance work to be done out of the total work	
7	Scheduled date of Completion and whether work is as per schedule	
8	Whether project is successful in achieving the objectives so far (What objectives have been achieved)	
9	Number of Patents filed/ generated through the project since start of the project (Provide details date wise)	
10	Number of Publications/ Working Papers made through the project since start of the project (Provide details date wise)	
11	Number New Process Developed through the project since start of the project (Provide details date wise)	
12	Number of New Products Developed through the project since start of the project (Provide details date wise)	
13	Whether the New Processes/ New Products have been commercialized/ adopted by the Iron & Steel industry	
14	If commercialisation is not yet done, what is the future course of action/ roadmap to be carried out by the PI/ Organisation, for generation of IPR and also commercialisation of the project	
15	Fund received by the R&D agency in the project from Ministry of Steel	
16	Status of Utilisation of Funds already released by Ministry of Steel. Status of Submission Utilisation Certificate as per GFR Format.	
17	Status of uploading of Expenditure in EAT Module of PFMS	
18	Requirement of Funds from Ministry of Steel in the project for next instalment alongwith justification	

**Outcome of the project since inception (NITI Aayog Dashboard Framework):-**

S.No	Outcome Indicator	Actual Achievement
1	Publications/ Working Papers (details date-wise)	
2	IPR/ Patents : Applied, Awarded (details date wise)	
3	New Process developed	
4	New product developed	
5	Workshop for dissemination of the knowhow developed	
6	Skill Development	
7	Commercialization	
8	Any Other	

**Technoeconomic Benefits Achieved vis-à-vis envisaged for the new process or product to be developed as per the objective of the Project:-**

Sl.No	Parameters	Baseline Data from existing technology	Target Envisaged	Actual Achievement
1	Specific Energy Consumption			
2	GHG Emission			
3	Mitigation of Pollution			
4	Waste Utilisation			
5	Reduction in cost of production			
6	Improvement in quality			
7	Any Other			