



## **CORPORATE RESEARCH AND DEVELOPMENT (R&D) POLICY OF IREL**

### **Introduction:**

IREL (India) Limited has planned to set up downstream industries for value addition of its products viz. ilmenite, zircon & rare earth compounds during the course of XII plan period. In view of the above objective, it is essential to put impetus on Research & Development (R&D) activities for which the R&D policy is being framed.

Notwithstanding the above, IREL has been pursuing its R&D activities through IREL Technology Development Council; (IRELTDC) and its in-house efforts.

### **R&D Policy:**

IREL is committed to pursue application-oriented research activities in the areas of value addition and product/process up gradation of beach sand minerals with a view to achieve self dependence on advanced materials for strategic applications and meet the business objectives by satisfying customer requirement.

### **Objectives:**

IREL's R&D program will focus on the following:

- A. Value addition and product/Process up-gradation.
- B. New product/process development.
- C. Development of auxiliary industries based on IREL's products.
- D. Data base creation for bench marking of processes, equipment's, etc.
- E. Setting up of Pilot Plant facilities as demonstration plants.

Some of the thrust areas identified for value addition are given below:

1. Development of Ferro Titanium for hydrogen storage.
2. Development of process for production of high purity zirconia/stabilized zirconia/rare earth zirconates for Defense/Space/Nuclear applications.
3. Development of process for producing Rare Earth compounds of 99.99% purity.
4. Demonstration plant for the production of Titanium slag and metal from ilmenite.
5. Rare earth metal production.
6. Setting up of pilot plant facilities for the production of high purity rare earths to cater to specific applications.
7. Development of uses of rare earths in smart materials.

8. Non-conventional value addition of Sillimanite and ultra fine Garnet.
9. Recovery of nuclear materials from various secondary sources.
10. Indigenization and import substitution of process equipments and chemicals required for beach sand mineral processing and its value addition.
11. Development of mathematical modeling tools for improvement of purity & recovery Mineral.

**Implementation:**

Due to the limitations of IREL in pursuing R&D activities in specific areas i.e. Green processes, energy saving measures and advanced materials, we propose to promote collaborative efforts with participation of research laboratories and academic institutes.

All CSIR laboratories as well government owned universities and IITs either stand alone or in collaboration with DAE units would be eligible for submitting project proposals.

**Evaluation of the Proposals:**

Sponsored R&D projects should have potential for large scale application at the end of their completion. Each of the proposals received from various research organizations will be scrutinized for funding, by a committee consisting of External Experts in the relevant area, Chairman & Managing Director of IREL, Director (Technical), Director (Finance) and Director (Marketing) of IREL "Member Secretary, IRELTDC will co-ordinate for evaluation of the project proposal" The proposals must be complete with its objective, scope, deliverables and techno-commercial benefits. The duration of the project will be generally for a period of three years.

**Source of fund:**

IREL proposes to earmark minimum 0.75% of its turnover for funding R&D Projects in addition to the funding received through IRELTDC funded by DAE. Additional funds, if required, will be sought from the government, for projects of wider national interests like process development of rare earth magnets, rare earth metals, etc., where fund requirement will be more.

**Disbursement of funds:**

The proposal if found feasible will be approved by the committee for funding. Before the disbursement of the funds the Principal Investigator must enter into an agreement with IREL towards meeting the commitments envisaged in the proposal. The fund will be disbursed in three installments. 5% of the total cost of the project shall be retained with IREL till the final report is approved and accepted by the Committee. The proposal application form is annexed.

**Monitoring:**

The R&D projects sanctioned by the Committee shall be monitored by the IRELTDC every quarter. The evaluation of the project shall be done with respect to the deliverables/milestones set at the beginning of the project. The periodical progress report submitted by the Principal Investigator shall contain both the physical and financial progress of the project. The Committee shall decide during the review whether a particular project shall be continued or shall be abandoned. Evaluation shall include need for any course correction, modification of funding pattern, IPR feasibility, etc.

The Committee will identify a senior officer within IREL to coordinate with PI to help him identify the specific objective of IREL towards commercialization. A yearly review of the progress of the project by an expert shall be undertaken.

**Propagation and Promotion:**

The outcome of R&D projects shall be published in various journals and presented in National and International seminars/conferences/workshops for its commercial exploitation. The scientist/engineers involved in the project will be encouraged to take patents for their respective innovations for protecting the IPRs.

**Incentives & Rewards:**

Timely and successful completion of the projects with respect to the milestones/deliverables shall be considered and the team leader/principal investigator shall be honored with citations and cash awards. The scientists and engineers shall also be considered for incentives for their outstanding R&D activities like IPR-patent filing, Publications, Commercialization of process/know-how, etc.

**Performance Indicator:**

The R&D work pursued by IREL will be aiming at accruing tangible benefits from the results of the R&D projects with a view to enhance the revenue generation and improve operation efficiencies.

Notwithstanding the above, the applicable performance indicators will be used to monitoring R&D activities:

- i) R&D expenses as compared to gross sales
- ii) Projected expenses vis-à-vis budget
- iii) Market share increase due to introduction of new product
- iv) Additional profit generated vis-à-vis cost incurred on R&D in case of new process development
- v) Cost savings realized vis-à-vis cost incurred in R&D
- vi) Number of IPR's (patents, copyrights, etc.) generated.