



## Significance of RETTP technologies

### CAPACITY FLEXIBILITY

The technologies can be implemented for different production scales ranging from pilot-scale demonstration units to commercial manufacturing plants. Factors that vary with plant capacity include:

- Number and size of electrolysis units (for Ce and La metal).
- Availability and arrangement of NdFeB magnet scrap for processing (RE recycling)
- Annual production capacity.
- Number and size of process equipment.
- Degree of process automation.
- Installed electrical load.
- Utility consumption.
- Building and infrastructure requirements.
- Manpower deployment.
- Production output and operating economics.
- Storage and logistics infrastructure.

The final plant configuration is determined based on the feedstock availability, desired production output, product quality requirements, market demand, and investment considerations.

### STRATEGIC SIGNIFICANCE

Neodymium metal is a critical raw material for permanent magnet manufacturing and numerous advanced technology applications. Indigenous production capability strengthens national supply-chain security, promotes value addition within the rare earth sector, supports clean energy technologies, and reduces dependence on imported rare earth metals. The technology provides a pathway for establishing an integrated rare earth ecosystem encompassing rare earth separation, metal production, alloy manufacturing, and permanent magnet fabrication within the country.

The recycling of rare earth elements from NdFeB magnets provides an important secondary source of critical materials required for clean energy technologies, electric mobility, electronics, defence systems, and advanced manufacturing. The technology contributes to resource security, waste reduction, environmental sustainability, and development of a domestic rare earth circular economy ecosystem.

### TECHNOLOGY TRANSFER PACKAGE

The technology transfer package may include:

- Process know-how and operating methodology.
- Basic engineering inputs and process flow information.
- Equipment specifications, selection criteria, and technical recommendations.
- Quality assurance and product characterization guidelines.
- Material handling and storage recommendations.
- Safety, environmental, and operational practices.
- Training of technical personnel and plant operators.
- Technical consultation during scale-up and commercial implementation.

The scope of technology transfer can be tailored according to project requirements and production capacity.