

EU-REI
Creating a Resource
Efficient India



Resource Efficiency Initiative (India)



Background and Objectives



Increasing resource consumption to sustain India's robust economic growth has meant an increase in the extraction of primary raw materials by about 420% between 1970 and 2010, dominated by the extraction of abiotic materials (minerals, metals). India's material demand in 2010 was the 3rd largest in the world, after that of China and the United States, with a consumption of about 7.2% of globally extracted raw materials in that year. A study from UNEP in 2016 indicates that consumption rates in India in 2015 may have already overtaken those of the USA. If current trends continue, India's material requirements are projected to be 15 billion tonnes by 2030 and 25 billion tonnes by 2050, with fossil fuels, metals and minerals accounting for the biggest increases (Dittrich, 2015).

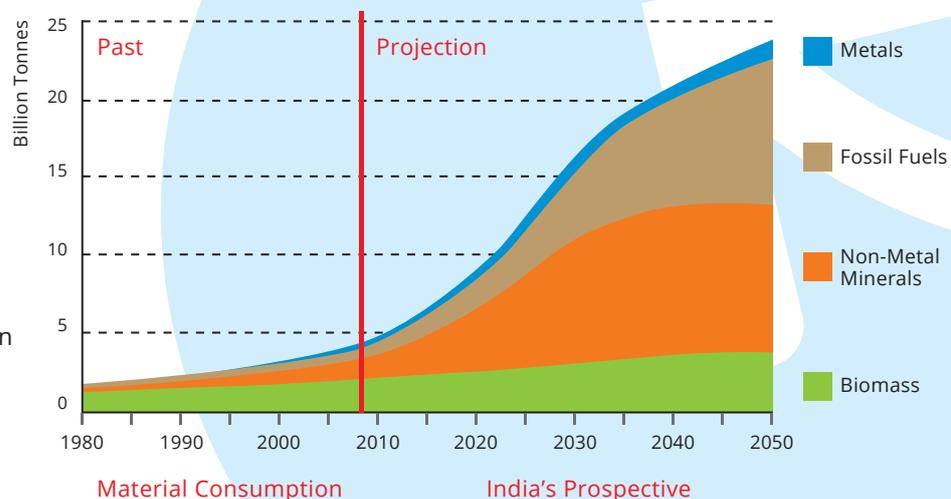


European Union's Resource Efficiency Initiative (EU-REI) for India is a three-and-a-half year project (until July 2020), and aims to support India in the implementation of the United Nations global Sustainable Consumption and Production (SCP) agenda by way of adapting international standards and best practices in business on resource efficiency and fostering the efficient and sustainable use of natural resources. The project is implemented on behalf of the EU by a consortium led by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH with The Energy and Resources Institute (TERI), Confederation of the Indian Industry (CII) and adelphi. The initiative aims to facilitate partnerships between Indian and European businesses and stakeholders on resource efficiency (RE) in selected sectors. The Indian Resource Panel's (InRP, set up in November 2015) engagement will be key in achieving this objective.



The project will work towards creating a dialogue on the need for resource efficient approaches in India among key government and non-governmental organisations, businesses, students, media and the general public. It will also underscore the link between recovering of raw materials from different waste streams and creating an enabling ecosystem for management of secondary raw materials in the context of a circular economy. Adoption of RE standards and benchmarks and business best practices on resource efficiency will remain key in this transition. The primary sectors of interest are mobility, building and construction, renewable energy (photovoltaics), and resource recovery from waste (e-waste, plastics and packaging).

The graph shows the projection to 2050 of resource consumption in India in various categories:



Main assumptions: India follows typical material use pattern during development process; economic growth rates of about 8% p.a. until 2030, thereafter around 7% p.a. until 2035 and 6% p.a. until 2050. Date sources: Dittrich, 2012; SERI, 2011; TERI, 2012; UN Data, 2012; World Bank, 2012

Project Components



The initiative will focus on abiotic resources (metals and minerals) with three major components:

1. **Assessing** India's current and future use of resources. Based on the assessment studies, strategies and action plans for resource efficiency will be prepared and initiated for implementation.
2. **Facilitating** partnerships and networking between European and Indian businesses and stakeholders on resource efficiency in sectors of interest.
3. **Raising awareness** on the need for resource efficient approaches among key government and non-government organizations, businesses, students, media and the general public through promotion of standards and business best-practices on resource efficiency.



Focus Areas

i Mobility (Electric and Hybrid Vehicles)

- The Government of India has introduced the National Electric Mobility Mission Plan 2020 which is expected to transform the automotive and transportation industry. By 2020, nearly 6–7 million electric vehicles (EVs) will ply on the Indian roads.
- Till March 2016, 0.4 million EVs were sold across the country, an increase of 37% from 2014–15 (Sarkar & Nigam 2017).
- Rare earths are critical materials for batteries and electric car motors, and most of these have to be imported.
- Linear shifting from combustion engines to EVs alone will not address the environmental impacts that arise from resource-use through extraction, production, dismantling and disposal. We have to look at the entire life cycle of the product.
- The above figures suggest the importance of examining the resource consumption patterns and availability of primary and secondary raw materials. The resource recovery, environmental impacts of EV's, and end-of-life management would be the focus areas of the project interventions.



ii Building/Construction

- The sector's material demand (soil, sand, stone, limestone) is largest in the country after agriculture, and accounts for 23.6% of the country's CO₂ emissions (Planning Commission, 2014).
- 70% of building stock that will be in use in 2030 is yet to be constructed, and urbanisation remains a major driver of resource consumption in construction (NRDC-ASCI-Shakti, 2012).
- Two particular schemes of the Government of India, the Smart Cities scheme and Pradhan Mantri Awas Yojna (PMAY) offer great opportunities for RE and secondary resource utilization.
- Initiative will focus on the use of alternative input material including secondary raw materials derived from construction and demolition waste.

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Focus Areas (Continued)

iii Renewable Energy (Photovoltaics)

- India targets 100 GW of solar power by 2022, including 40 GW of grid-connected solar rooftop systems to address climate change commitments.
- Photovoltaic waste could average 50,000–320,000 tonnes by 2030, possibly culminating in 4.4–7.5 million tonnes by 2050 (IRENA and IEA-PVPS, 2016).
- Demand for metals and rare earths such as Indium is on the rise on account of their use in the solar PV systems, but their supply is scarce.
- The project will develop an understanding on the material consumption to meet the demand of PV generation and environmentally sound management of end-of-life solar panels and batteries.



iv Waste (Plastics, Packaging and E-waste with Focus on Extended Producer Responsibility)

- 15.3 tonnes of plastic waste per annum (CPCB, 2014-2015); 1.8 million metric tonnes of electronic waste per annum (Assocham-cKinetics, 2016) is generated in India. The CPCB (2013) estimates that 70% of plastic packaging products are converted into waste in a very short time span.
- The Plastics and E-waste Rules 2016 notified by the Ministry of Environment, Forest and Climate Change, highlight Extended Producer Responsibility (EPR) as a principle for waste management.
- The initiative will support the implementation of EPR as an enabling framework to encourage producers and manufacturers to consider product design and material substitution for efficient resource recovery.



Expected Outcomes

- Material use trends for sectors of interest are identified and assessed to develop sector-specific action plans.
- EU – India business partnerships are fostered leading to knowledge transfer and eco-innovation.
- Evidence-based policy advice and support to the Indian Resource Panel (InRP) is provided for RE strategy.
- RE is enhanced through the adoption of international standards and an ecosystem for better utilisation of secondary raw materials is created.
- Broad-based public discourse on the significance of resource efficiency initiated among policy makers, academia, private sector, youth, civil society and media.

Contact Information

EU-REI Project
Deutsche Gesellschaft für
Internationale Zusammenarbeit (GIZ) GmbH
B-5/1, Safdarjung Enclave
New Delhi 110029
T: +91 11 4949 5353
I: www.giz.de

Responsible:
Dr. Dieter Mutz
E: dieter.mutz@eu-rei.com
Dr. Rachna Arora
E: rachna.arora@eu-rei.com
rachna.arora@giz.de

