



**EU-INDIA:
PARTNERS FOR
CIRCULAR ECONOMY &
RESOURCE EFFICIENCY**



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THE WAY FORWARD FOR EU – INDIA COLLABORATION

Foreword

Meeting the needs and aspirations of a rising global population in an increasingly resource constrained world is one of the foremost global challenges we face today. There is an urgent need to find new growth models that allow for the pursuit of economic development in a sustainable manner. In response to these global challenges, the European Commission has recently presented the European Green Deal. It is a roadmap for making the EU economy sustainable by turning climate and environmental challenges into opportunities across all policy areas and making the transition just and inclusive for all.

The environmental and economic ambition of the Green Deal will not be achieved by Europe acting alone. Our Strategic Partnership with India in the field of resource efficiency and circular economy is set to gain even further importance in the next decade, as we address sectors and challenges that are high on our respective agendas, and seek a green recovery in a post-COVID world.

Resource efficiency and circular economy models can help us in decoupling economic growth from resource use and its negative environmental externalities. There is a growing global acknowledgement of the significance of resource efficiency and circular economy for achieving the UN Sustainable Development Goals and commitments under the Paris Climate Agreement. The transition to the circular economy requires a 'systemic shift' and global cooperation.

Cooperation between the EU and India is crucial to bring about accelerated development and prosperity. In recognition of this, the Government of India's Ministry of Environment, Forest and Climate Change (MoEFCC) and the EU Delegation to India signed a Joint Declaration of Intent in 2018 to cooperate in the areas of resource efficiency and circular economy.

The EU and its Member States recognise that the transition to circular economy offers significant economic, social and environmental benefits. In 2015, the EU adopted an ambitious Circular

Economy Package, consisting of legislative proposals on waste and a comprehensive action plan covering actions across the entire product lifecycle. In implementing the Circular Economy Action Plan, the EU has gained valuable experience in diverse areas including policy frameworks, business models, stakeholder engagements, research and innovation, new models of funding and investment, and innovative collaboration platforms. Under the European Green Deal, these actions will continue to be prioritized through the launch of a new circular economy action plan, a key enabler for reaching the Green Deal objectives.

The EU and its 27 Member States can share their learning and experiences from the evolving Resource Efficiency and Circular Economy models and pathways. The EU is in a unique position to engage with all key stakeholders to facilitate policy dialogue, exchange best practices and business solutions and create avenues for joint research and innovation. Since 2017, through its Resource Efficiency Initiative, the EU has been able to create effective policy partnerships with the Indian government through the Ministry of Environment, Forest and Climate Change (Government of India) and NITI (National Institution for Transforming India) Aayog, as well as some state governments.

As we continue to engage and collaborate with India on various aspects of resource efficiency and circular economy, the EU is keen to explore other areas of mutual interest to strengthen EU-India cooperation for accelerating the global 'green' transformation.



Ugo Astuto

Ambassador of the European Union to India

The European Union

Key Facts*

Population: 446 million

Population density: 108.8 persons/km²

Land area: 4 million km²

GDP: €13.9 trillion

GDP per capita: €31,100



The European flag features a circle of 12 gold stars on a blue background. They stand for the ideals of unity, solidarity and harmony among the peoples of Europe. The European flag symbolises both the European Union and, more broadly, the identity and unity of Europe.

- + The European Union (EU) is an economic and political union of 27 EU countries;
- + The EU has developed an internal single market through a standardised system of laws that apply in all Member States. EU policies aim to ensure the free movement of people, goods, services, and capital within the internal market;
- + The Member States delegate sovereignty to the EU institutions to represent the interests of the European Union as a whole. There are common policies for trade, agriculture, energy, environment, fisheries, competition, research, external relations and regional development;
- + The EU's main bodies are: the European Parliament, the Council of the European Union, the European Commission, and the European Court of Justice;
- + The guiding values of the EU include human dignity, freedom, democracy, equality, rule of law, and human rights;
- + The EU has delivered more than half a century of peace, stability and prosperity, helped raise living standards and launched a single European currency: the euro. More than 340 million EU citizens in 19 countries now use it as their currency and enjoy its benefits;
- + The EU is the largest trade bloc in the world, and the biggest exporter of manufactured goods and services and the biggest import market for over 100 countries;
- + The EU has a diverse and rich culture, with 24 official languages and over 60 indigenous regional or minority languages;
- + Collectively, the EU and its constituent countries are the world's leading donor of humanitarian aid;
- + In 2012, the EU was awarded the Nobel Peace Prize for advancing the causes of peace, reconciliation, democracy and human rights in Europe;
- + The motto of the EU is "united in diversity" which first came into use in 2000.

Key Dates

1950

On 9th May 1950, French Foreign Minister Robert Schuman gave a speech which publicly proposed the establishment of a European Coal and Steel Community (ECSC).

1951

The ECSC is founded by six countries (Belgium, the Federal Republic of Germany, France, Italy, Luxembourg and the Netherlands).

1957

The six countries set up the European Economic Community (EEC), for wider cooperation. One of its core objectives is to develop a common market offering free movement of goods, services, capital and people. Border checks and customs duties would be gradually removed.

1969

At the Hague Summit, the EEC's political leaders decide to move further ahead with European integration.

1973

Denmark, Ireland and the United Kingdom join the European Communities, bringing their membership to nine.

1981

Greece joins the European Communities, bringing their membership to 10.

1986

Spain and Portugal join the European Communities, bringing their membership to 12.

1991

The Maastricht European Council adopts a Treaty on European Union. It lays the basis for a common foreign and security policy, closer cooperation on justice and home affairs and the creation of an economic and monetary union, including a single currency. The inter-governmental cooperation in these fields added to the existing Community system creates the European Union (EU). The EEC is renamed the 'European Community' (EC).

1992

The Treaty on European Union is signed at Maastricht. It enters into force on 1 November 1993.

1993

The Single Market is created.

1995

Austria, Finland and Sweden join the EU, bringing its membership to 15.

1999

The currencies of 11 EU countries are replaced by the euro. The single currency is launched on the money markets. From this point onwards, the European Central Bank (ECB) has responsibility for the EU's monetary policy, which is defined and implemented in euro.

2002

People in the euro area countries begin using euro notes and coins.

2004

Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia and Slovenia join the European Union.

2007

Bulgaria and Romania join the EU.

2013

Croatia joins the European Union as its 28th member state.

2020

The United Kingdom withdraws from the European Union.

*Eurostat figures for EU27 (GDP and GDP per capita in current prices)

Elements for an EU Strategy on India

The European Union and India upgraded their long-standing relationship to a strategic partnership in 2004, acknowledging their common goals and principles. Nowadays, in a challenging international environment, the EU and India share the same values of democracy, human rights, fundamental freedoms and support the rules-based global order.

Pursuant to this, in November 2018, the European Commission and the High Representative of the Union for Foreign Affairs and Security Policy adopted a Joint Communication that sets out the EU's vision for a strategy to strengthen cooperation and the partnership with India. Through the strategy, the EU places an emphasis on reinforcing cooperation in foreign policy and developing security and defence cooperation with India, promoting effective multilateralism, and building on common values and objectives.

This Joint Communication replaces the last Commission Communication on India of 2004, recognising that India has emerged as the fastest-growing large economy and has acquired an important geopolitical role.

The Strategy aims to strengthen the EU-India Strategic Partnership by focusing on sustainable modernisation and on common responses to global and regional issues, and will provide the policy framework for the EU's deeper and broader engagement with India over the coming years.

EU-India: Partners in Progress

MODERNISATION

- + Investment in India's sustainable modernisation
- + New business opportunities
- + Enhanced connectivity and data protection
- + Sustainable urbanisation

ENVIRONMENT, ENERGY AND CLIMATE CHANGE

- + Implementation of the Paris Agreement
- + Clean energy transition, energy efficiency and renewable energy
- + Addressing major environmental challenges
- + India-EU Water Partnership
- + Joint Declaration on Resource Efficiency

TRADE & INVESTMENT

- + Balanced, ambitious and mutually beneficial agreements on trade and investment
- + Sound, transparent, non-discriminatory regulatory and business environment in India

INNOVATION

- + More people-to-people exchanges, utilising societal diversity
- + Cooperation on education and skills, mutual recognition of qualifications, mobility of talent
- + Innovation initiatives

Strengthening the Political Partnership

REINFORCING COOPERATION ON FOREIGN POLICY

- + Coordinating on the most relevant foreign policy issues
- + Working for stability and security in the overlapping neighbourhoods
- + Engaging India more on sustainable connectivity both at strategic and operational levels

DEVELOPING SECURITY AND DEFENCE COOPERATION

- + Fighting terrorism and radicalisation
- + Exchanging expertise on maritime and cyber security, non-proliferation / disarmament and hybrid threats
- + Military relations via personnel exchanges and trainings

PROMOTING EFFECTIVE MULTILATERALISM

- + Promoting the rules-based global order and trading system
- + Improving coordination in the United Nations, World Trade Organization and G20
- + Working on strong, sustainable, balanced and inclusive global growth

BUILDING ON COMMON VALUES AND OBJECTIVES

- + Promoting gender equality and women's empowerment, human rights and democracy, and the inclusion of young people
- + Coordinating on humanitarian and disaster relief operations
- + Delivering the UN Sustainable Development Goals and Agenda 2030

Resource Challenges and Responses in India

Introduction

Rapid economic growth, rising income levels and high rates of urbanisation have led to a surge in material consumption in India. Material requirements are projected to grow to about 15 billion tonnes by 2030, nearly three times the demand in 2010 (IGEP 2013).

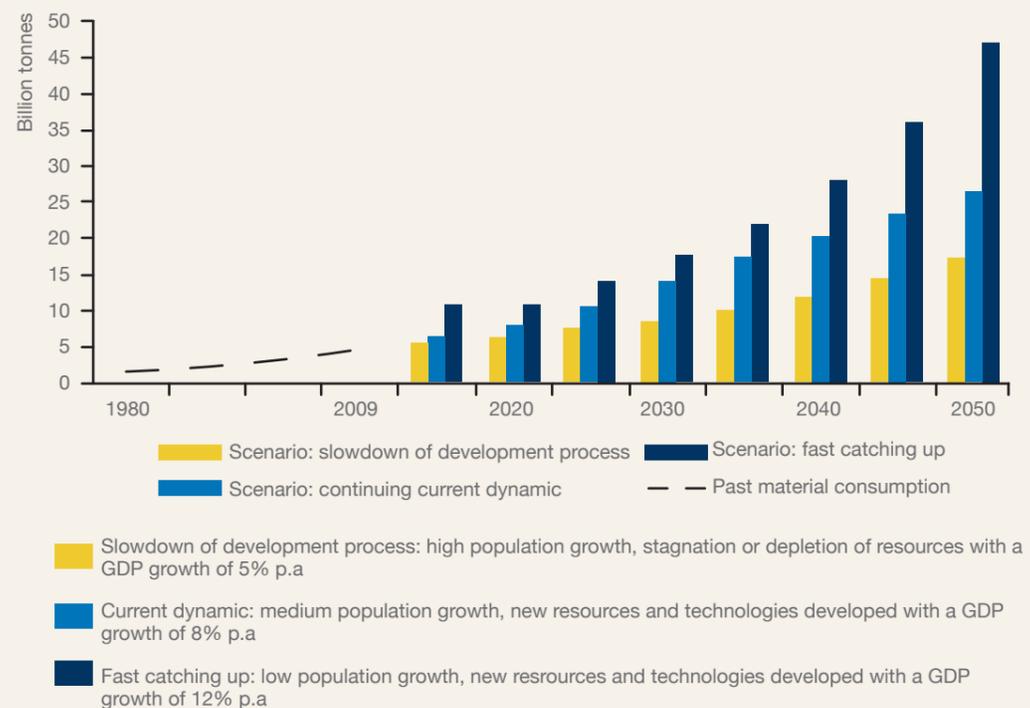
In the period between 1970 and 2010, the extraction of primary raw materials in the country increased by 420%. The extraction of abiotic materials, particularly non-metallic minerals, increased at a much higher rate than the extraction of biotic materials (UNEP 2016).

India meets its demand for materials predominantly through domestic extraction. It faces one of the highest extraction pressures in

the world - 1,579 tonnes per square kilometre, which is more than three times the global average (IGEP 2013). However, India is also highly import-dependent for certain critical materials such as molybdenum, copper and nickel (IGEP 2013, GIZ 2017).

In addition to resource availability and affordability concerns, meeting these material demands also poses significant environmental and social challenges. For instance, the mining of materials has resulted in the destruction of forest lands, population displacement and loss of livelihoods in several parts of the country. High levels of material consumption have also given rise to challenges in the management of waste.

Figure 1: India's future material demand projections until 2050 under three scenarios



Source: IGEP 2013

Priority Sectors and Materials

The need to address growing resource demands is especially relevant in some key sectors of the Indian economy on account of their dependence on high levels of abiotic material inputs and their strategic importance, in terms of:

- » high growth potential;
- » contribution to GDP;
- » generation of employment.

The following sections discuss some of the priority sectors for the Indian economy in more detail.

Automotive Sector

India is one of the largest producers of automobiles in the world in terms of volume and value. The automotive sector contributes 7% to the GDP and employs about 13 million people (1% of the population) (GIZ, 2016).

With the increasing demand for mobility in India, the automotive sector is expected to grow at an average of 7% annually over the next two decades. Meeting these mobility needs will increase the demand for six major raw materials required for automotive manufacturing to more than 100 million tonnes by 2030 – an increase of about 7 times over the 2015 value (GIZ, 2016).

At the other end of the life cycle, there is significant potential to recover high value materials from end-of-life vehicles, which can then be used as secondary raw materials. An estimated 8.7 million vehicles in India reached the end-of-life phase by 2015, and this number is expected to rise to 21 million by 2025 (Akolkar.et.al, 2015).

As per an estimate by the Society of Indian Automobile Manufacturers (SIAM 2015), by 2020, India could potentially recover over 1.5 million tonnes of steel scrap, 0.18 million tonnes of aluminium scrap and 0.075 million tonnes each of recoverable plastic and rubber from scrapped vehicles.

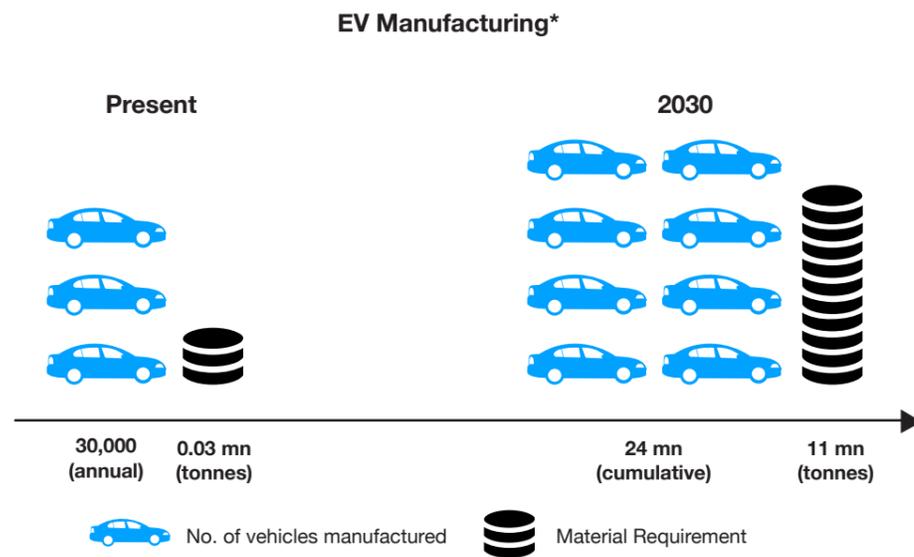
An Accenture (2018) analysis estimates that in 2025, recycling steel from end-of-life vehicles alone presents a \$2.7 billion opportunity.

The Indian government has also laid strong emphasis on the adoption of electric mobility in the country, with an aim to increase the share of Electric Vehicles (EVs) from less than 1% currently to nearly 30% by 2030. The recent notification of the second phase of the Faster Adoption and Manufacturing of Electric Vehicles (FAME-II) scheme, with an outlay of INR 10,000 crore, sends a strong signal for EV adoption and manufacturing in India.

However, there are a number of challenges in meeting the demand for materials that are used in the manufacturing of EVs. An estimated 11 million tonnes of material will be required by 2030 for manufacturing EVs in the four-wheeler hatchback segment alone (EU-REI 2018). Materials like lithium, copper and permanent magnets are heavily imported by India, and some of these could face significant supply risks. Recovering and recycling of critical materials like lithium will become crucial to meeting resource demands in the EV sector and enhancing India's material security.

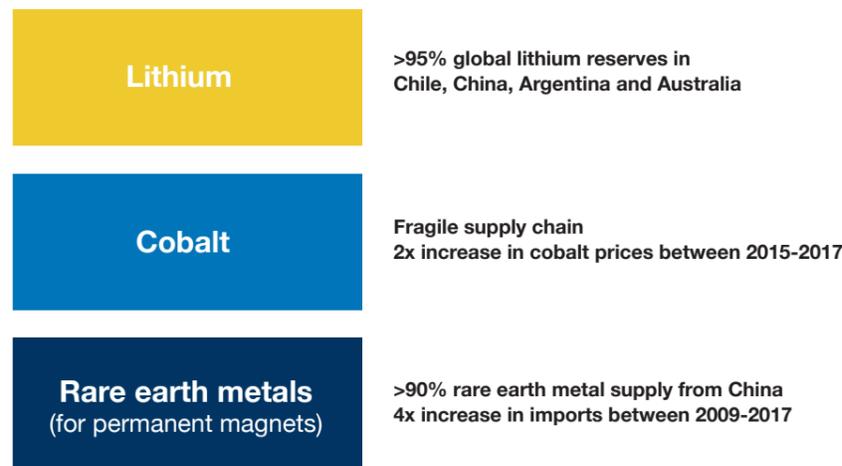


Figure 2: Estimated material requirement for electric vehicle manufacturing (hatchback segment) in India by 2030



(*Figure is not drawn to scale)
Source: EU-REI, 2018

Figure 3: Material availability and affordability risks for electric vehicle manufacturing in India



Source: EU-REI, 2018

Building and Construction Sector

70% of the building stock that will be in use in India in 2030 is yet to be constructed (NRDC-ASCI 2012). With a share of 7.5%, the construction sector in India is currently the second largest contributor to the GDP.

It is also the second largest segment in terms of employment generation, providing jobs to more than 35 million people (Planning Commission 2011).

Underpinned by the urbanisation trend, significant investments in urban infrastructure, roads, railways and housing, and government schemes such as Smart Cities Mission and Housing for All 2022, the construction sector is projected to grow at 7-8% annually till 2027 (Caleb et al., 2017). This growth will be heavily dependent on raw materials such as sand, soil, stone, limestone, and iron and steel.

Based on material consumption trends from the past and the projected growth rate, the construction sector is likely to become the highest material consuming sector in India before 2020 (Dittrich, 2012; IGEP, 2013). Some of these materials are already rapidly depleting, and their extraction and production have significant environmental and social impacts.

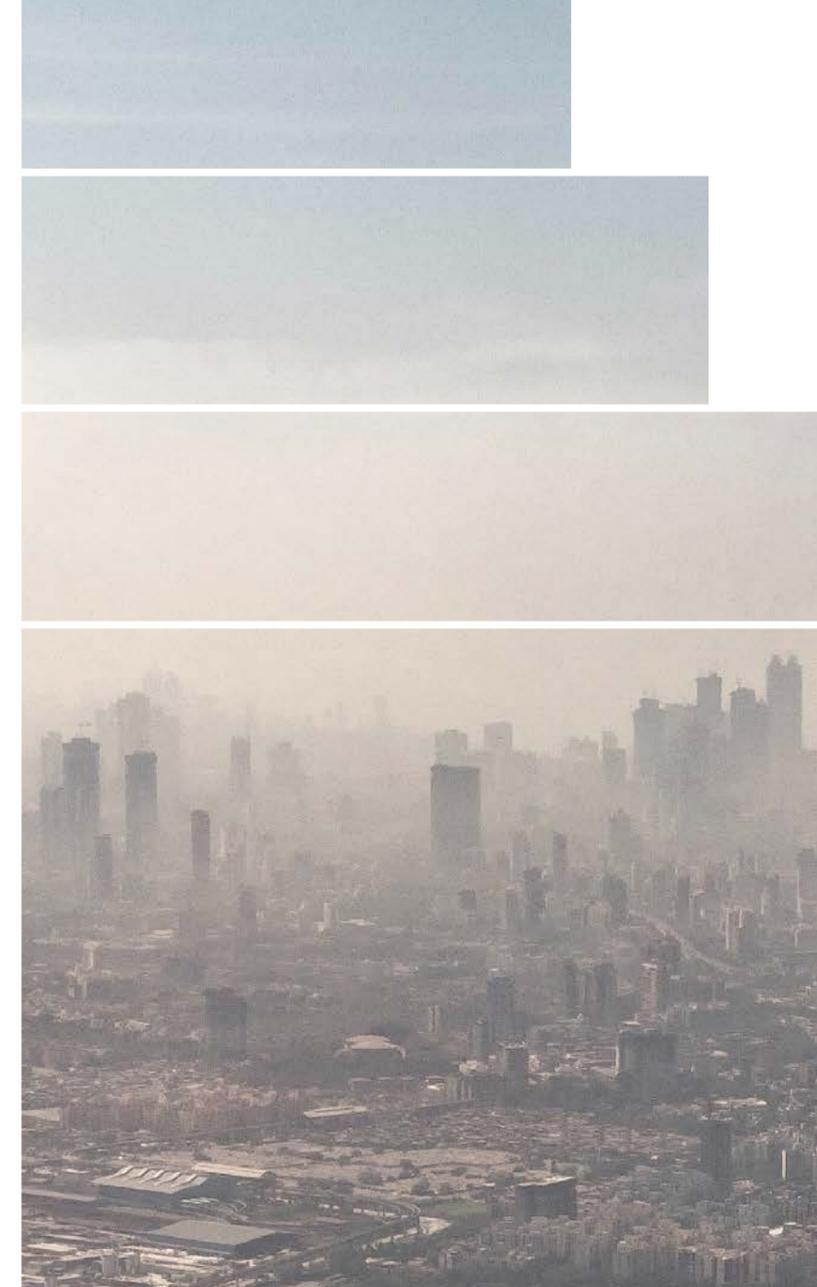
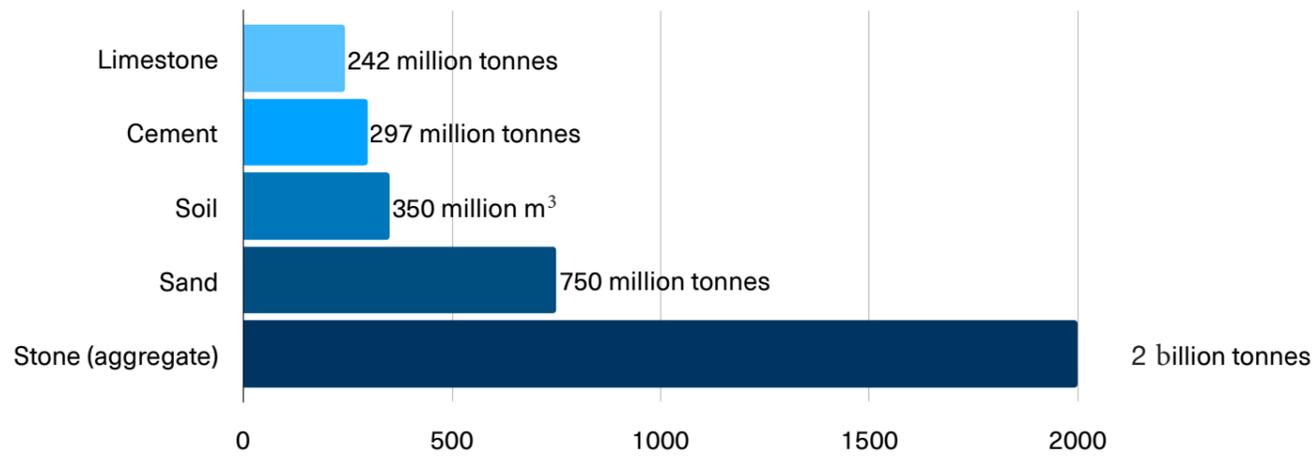


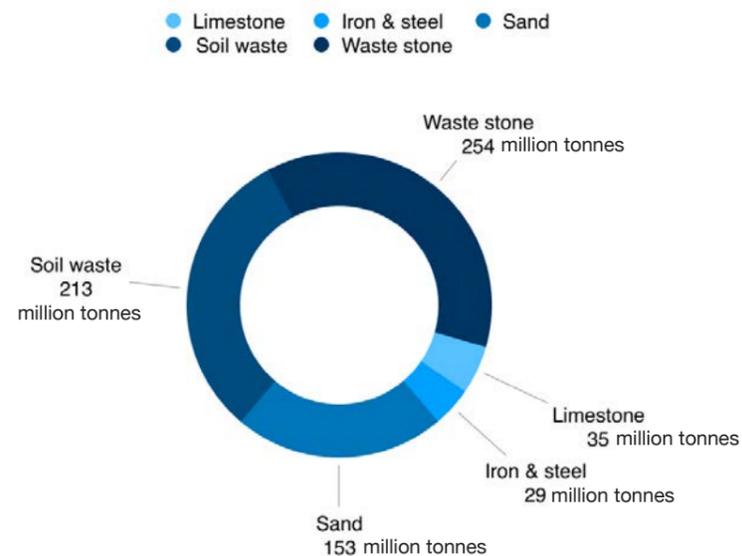
Figure 4: Estimated annual consumption of construction materials in India



(*Figure is not drawn to scale)
Source: GIZ, 2016

While on the one hand, raw material extraction pressures continue to increase, on the other, the sector generates a large amount of Construction and Demolition (C&D) waste, 80–90% of which can be recovered and reused.

Figure 5: Embedded material resources in construction and demolition waste per annum



Renewables

Renewable energy is critical for meeting the increasing energy demands of India’s growing economy, while keeping its commitment to the Paris Agreement. The installed renewable power generation capacity of India grew at a CAGR (Compound Annual Growth Rate) of 19.78 percent between 2014 and 2018 (IBEF 2019).

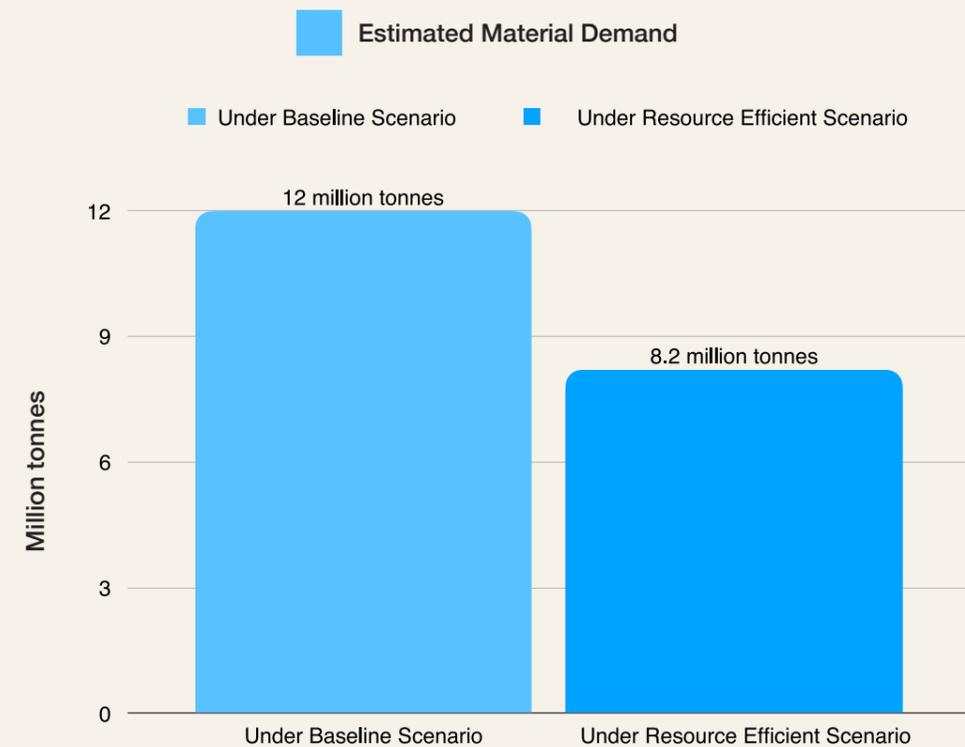
With the Indian government’s ambitious target of installing 225 GW of renewable energy capacity by 2022, growth in this sector is set to continue.

The renewable energy sector also provides scope for creating employment opportunities, with the solar and wind energy segments expected to generate over 300,000 jobs in this period (IBEF 2019).

With one of the largest renewable capacity expansion programmes in the world, India will face significant resource challenges in this sector. For instance, supply constraints for materials like neodymium can limit the large-scale adoption of state-of-the-art wind turbines. In the solar Photovoltaic (PV) sector, material demand will rise to nearly 12 million tonnes by 2030 for an estimated installed capacity of 170 GW. India is heavily import dependent for some of the key materials used in the PV sector, including silver and copper, exposing the sector to supply risks and price volatility. By 2030, the demand for silver in the PV sector alone is likely to be close to the current average import of 5,000 tonnes of silver per year (EU-REI 2018).

Waste generation in the PV sector is also expected to increase, reaching an average of 50,000 – 320,000 tonnes by 2030, and 4.4 – 7.5 million tonnes by 2050 (IRENA 2016).

Figure 6: Projected material requirement for solar photovoltaic sector in India by 2030 (estimated for 170 GW of crystalline photovoltaic-based solar capacity)



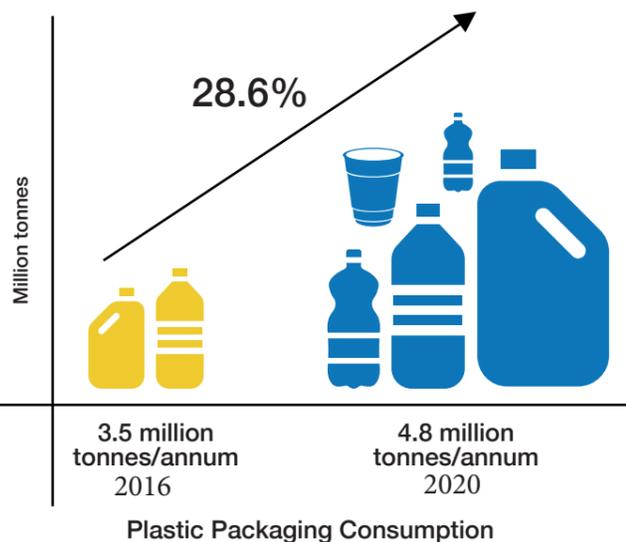
Source: EU-REI, 2018

Waste Streams – Plastic packaging waste and electronic waste

In addition to the priority sectors discussed in the previous sections, two waste streams – plastic packaging and electronic waste – are also significant for India from a resource perspective. The Indian government has mandated Extended Producer Responsibility (EPR) for plastic packaging waste and electronic waste (as part of two central legislations – the Plastic Waste Management Rules 2016 and the E-Waste Management Rules 2016, respectively) to hold producers accountable for collection, processing and disposal of these wastes.

The Indian Brand Equity Foundation (IBEF) estimates that plastic consumption in the country will reach 20 million tonnes by 2020. In the same timeframe, plastic packaging consumption is estimated to reach 4.8 million tonnes annually, close to one-fourth of the total plastic consumption (EU-REI 2018).

Figure 7: Growth of plastic packaging consumption in India



Source: EU-REI, 2018

According to the Central Pollution Control Board (2016), plastic packaging makes up 43% of the 5.6 million tonnes of plastic waste generated annually in India. While estimates on recovery and recycling rates of plastic waste vary widely, the informal sector plays a critical role, with 96% of plastic waste that is recycled being handled by the informal sector (WBCSD 2016).

An estimate by Accenture (2018) suggests that proper collection and recycling of plastic waste in India holds a \$2 billion opportunity, with the potential to generate around 1.4 million jobs.

The demand for electrical and electronic equipment (EEE) in India is projected to grow at a CAGR of 41% from 2016 to 2020, and reach €342.9 billion by 2020. With 26% of this demand to be met by domestic production (ASSOCHAM-NEC 2017), raw material use is also expected to rise significantly.

India generates around 1.8 million tonnes of electrical and electronic waste annually, making it the fifth largest producer of e-waste in the world. This is likely to triple to 5.2 million tonnes per annum by 2020 (ASSOCHAM 2017).

There is significant economic opportunity in recovering secondary raw materials from the large amount of e-waste generated in India. For instance, Accenture (2018) estimates that the recovery of gold from e-waste in India presents a \$1 billion opportunity. Much of the recovery and recycling of e-waste currently happens in the informal sector, with some estimates suggesting that close to 95% of e-waste recycling is carried out by this sector.

Figure 8: Potential value of raw materials in electronic waste in 2016

Materials	Million €
Iron	3,582
Copper	9,524
Aluminium	3,585
Silver	884
Gold	18,840
Palladium	3,369
Plastics	15,043

Source: The Global Electronic Waste Monitor Report, 2017

Rationale for Resource Efficiency and Circular Economy

Resource Efficiency (RE) and Circular Economy (CE) models are crucial for India to continue its rapid pace of economic growth in a manner that is decoupled from resource dependence and depletion. Resource efficiency and circular economy can help India realise significant economic gains, as well as social and environmental benefits. Some of these are outlined below:

- » Resource efficiency measures and the use of secondary resources can help improve resource availability, while reducing price shocks and dependence on imports. Hence, implementation of resource efficiency can help improve the competitiveness of businesses as well as improve the country's trade balance.
- » Material savings from implementing resource efficiency measures in the manufacturing sector alone can amount to around INR 60 billion (IGEP 2013). Resource efficiency measures can also spur new industries and innovation.
- » The adoption of resource efficiency measures also has the potential to create a large number of jobs in India.
- » Reducing extraction pressures in India's mining regions through the adoption of RE strategies can help reduce social conflict and displacement of people, while also mitigating environmental impact and pollution in these regions.
- » Efficient use of resources will also help to reduce waste generation and greenhouse gas emissions.

Policy Action Towards Resource Efficiency and Circular Economy in India

Several policies already exist in India to promote resource efficiency in different stages of the product lifecycle including mining, designing, manufacturing, consumption and end-of-life management, for instance:

- » A zero-waste mining goal in the National Mineral policy;
- » Emphasis on ecological design standards in the building sector in the Pradhan Mantri Awas Yojana;
- » Extended Producer Responsibility rules for plastic packaging waste and electronic waste.

Several programs and schemes of the Government of India (GoI) also include elements of resource efficiency:

- » Zero Defect, Zero Effect Scheme;
- » Make in India campaign;
- » Smart Cities Programme;
- » Housing for All Mission.

However, these policies have been limited in achieving resource efficiency goals. There is a lack of an overarching strategy for resource efficiency and a supportive ecosystem to enable the adoption of resource efficiency measures across different stages of the lifecycle.

Recognising the need for a comprehensive policy framework on resource efficiency, in November 2015, the Ministry of Environment, Forest and Climate Change (MoEFCC), Government of India constituted an advisory body of ten experts called the Indian Resource Panel (InRP), through the support of an Indo-German bilateral cooperation project on Resource Efficiency.

Indian Resource Panel

The InRP was the first ever national-level panel for addressing resource issues and included experts from the government, industry and civil society. It was established with the aim of supporting the government in the development of an Indian Resource Efficiency Programme (IREP). InRP recognised that a holistic resource efficiency programme for India is critical to meeting the country's Sustainable Development Goals (including Goal 12 on Responsible Consumption and Production) and Nationally Determined Contributions (NDCs) under the Paris Agreement. In April 2017, 'Recommendations for an Indian Resource Efficiency Programme (IREP): A Guiding Document for Policy Makers by the Indian Resource Panel' was released. It recommended key action points for mainstreaming Resource Efficiency and Secondary Raw Materials Strategy for India based on a life-cycle approach.

RE Cell and RE Policy

The recommendations of the Indian Resource Panel, amongst other things, stressed on the need for the development of an enabling policy framework for resource efficiency in India. Taking this into account, the MoEFCC constituted a Resource Efficiency (RE) Cell to provide a platform to mainstream resource efficiency in public policy.

The RE Cell will enable the preparation of an overarching Resource Efficiency policy for India and coordinated sectoral policies and regulatory mechanisms.

It aims to achieve this through coordinated thinking among the relevant ministries and agencies, and ensure the adoption of 'systems thinking' based on materials, products and processes to achieve resource efficiency goals. A Resource Efficiency Steering Committee (RESC) has also been formed under the Chairmanship of Secretary, MoEFCC, and experts from various domains including academia, civil society, think tanks, international and multilateral institutions to steer and guide the RE Cell.



Indian Resource Panel Members releasing the recommendations for the Indian Resource Efficiency Programme along with Mr Rajani Ranjan Rashmi, Special Secretary, MoEFCC and Dr Helge Wendenburg, Director General, BMUB, and other keynote speakers including Dr Bettina Rechenberg, Federal Environmental Agency, Germany (UBA), Ms Henriette Faergemann, Delegation of the European Union to India

EU Efforts Towards Resource Efficiency and Circular Economy

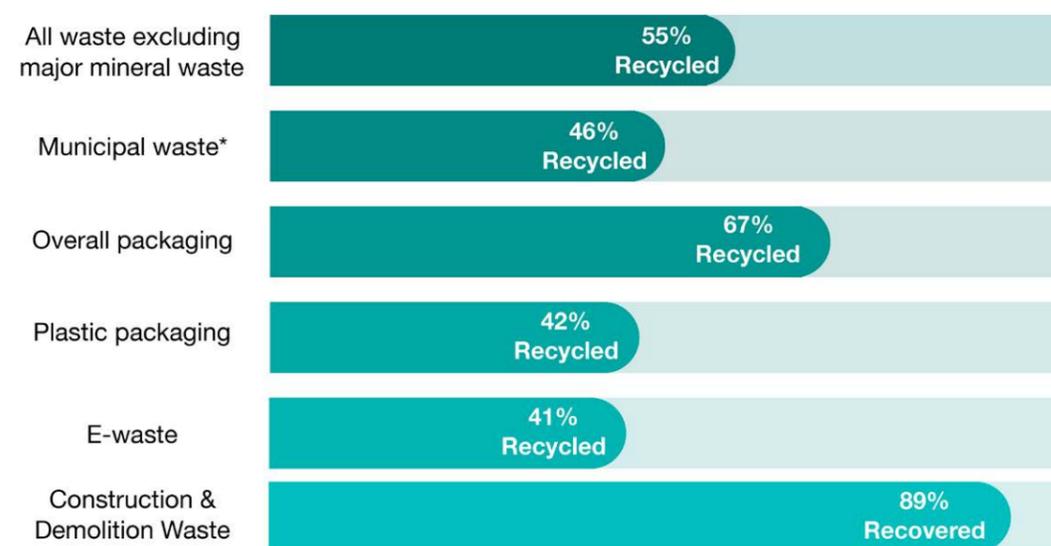
Introduction

The economy of the European Union (EU) is dependent on a wide variety of raw materials for production, many of which face availability or supply risks, or are expensive to procure. The EU imports a significant part of its raw material requirement, with the value of raw material imports amounting to €81.7 billion (Eurostat, 2019) in 2018. Import dependency for certain materials considered to be critical for the EU is close to 100% (European Innovation Partnership on Raw Materials 2016).

On the other hand, the EU currently loses a large amount of materials that are discarded as waste, which could instead be recovered and reintroduced into the product supply chain.

While recycling rates around the EU have been steadily improving, in 2016, only 12% of material resources came from recycled products and recovered materials (Eurostat 2019).

Figure 9: Overview of recycling rates of different waste streams in the European Union in 2016



*2017

Source: Eurostat, 2019

Roadmap to a Resource Efficient Europe 2011

Early efforts towards resource efficiency in Europe included the Roadmap to a Resource Efficient Europe that was launched in 2011, as part of the Resource Efficiency Flagship of the Europe 2020 Strategy. The Roadmap outlined how Europe's economy can be transformed into a sustainable one by 2050 by increasing resource productivity and decoupling economic growth from resource use and its environmental impact.

The Roadmap focused on areas where policy action could play a pivotal role, and recommended an integrated approach across many policy areas at both the European and Member State levels. It specifically addressed resource efficiency in the food, building and mobility sectors, which account for 70–80% of environmental impact.

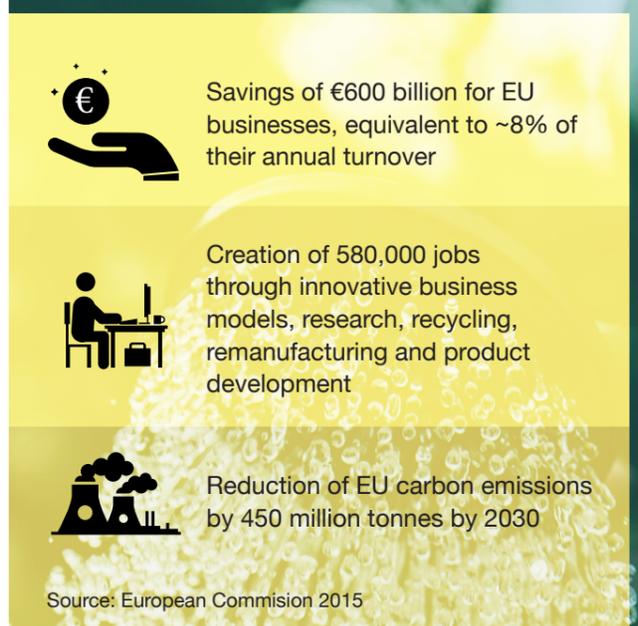
Key recommendations in the Roadmap included:

- » Incentives to promote green innovation and for consumers to purchase green products;
- » A greater role for Sustainable Public Procurement, eco-design and eco-labelling;
- » Adaptation of prices to reflect the real costs of resource use, especially on environment and health.

The EU Circular Economy Package

The circular economy model maintains the value of products, resources and materials for as long as possible while minimising waste generation. Transition to a circular economy is a crucial component in the EU's efforts towards developing a sustainable, low carbon, resource-efficient and competitive economy.

Figure 10: Potential economic, social and environmental benefits of the circular economy in the European Union



Action on the circular economy ties in closely with several key EU priorities, including:

- » jobs and growth;
- » the investment agenda;
- » climate and energy;
- » the social agenda;
- » industrial innovation.

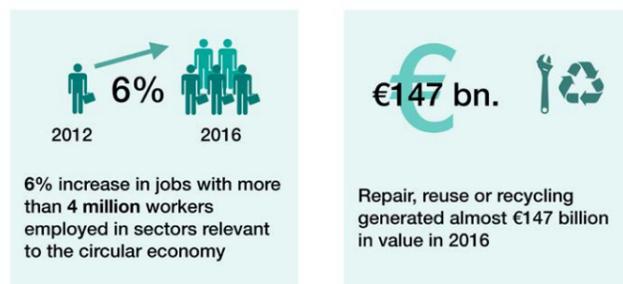
It also contributes to the EU's implementation of the 2030 Agenda for Sustainable Development adopted by the United Nations in 2015.

In 2015, the European Commission adopted the Circular Economy Package¹, consisting of legislative proposals on waste and a comprehensive Circular Economy Action Plan to accelerate Europe's transition towards a circular economy.

In May 2018, the EU Council approved the Circular Economy Package, including the Action Plan for the Circular Economy. The 54 actions set out under the Action Plan have been completed or are in the process of being implemented.

Transition to the circular economy has already had significant impact in the EU including in the creation of jobs, and development of new business models and markets for products.

Figure 11: Job creation and value generation from the circular transition in the European Union

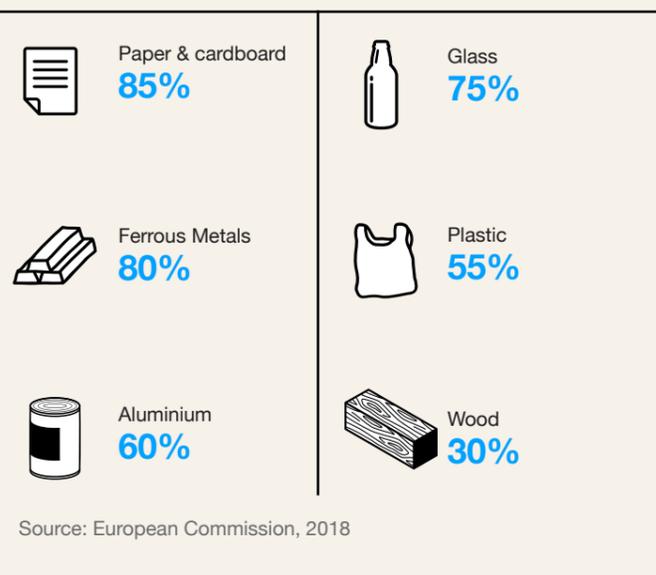


Source: European Commission, 2019

As part of the CE Package, a revised legislative framework on waste was also approved by the EU Parliament and came into force in July 2018. Key elements of the legislation include:

- » A common EU target for recycling by 2030: 70% of all packaging waste and 60% of municipal waste to be recycled;
- » Reduction in landfilling of municipal waste to 10% or less by 2035;
- » Recycling targets for specific packaging materials;
- » Simplification and harmonisation of definitions and calculation methods, and clarified legal status for recycled materials and by-products;
- » Reinforced rules and new obligations on separate collection for bio-waste, textiles and hazardous waste produced by households;
- » Minimum requirements for Extended Producer Responsibility;
- » Strengthened waste prevention and waste management measures, including for marine litter, food waste, and products containing critical raw materials.

Figure 12: Recycling targets for specific packaging materials by 2030 (as per EU waste legislative framework)



Creating an Enabling Ecosystem for Circular Economy in the EU

The Circular Economy Action Plan has focused on certain key enablers to accelerate the transition to the circular economy, including public investment in innovation, and strong stakeholder engagement. Highlights of the initiatives undertaken in these areas include:

- » **Innovation and Investment:** The European Commission has committed over €10 billion between 2016 and 2020 to support the circular transition through Horizon 2020, Cohesion Policy, European Fund for Strategic Investments and LIFE projects. The areas financed through these funds include closed loop manufacturing, circular plastics, and the implementation of EU waste legislation amongst others, and are aimed at encouraging innovation as well as adoption of circular models in industry;
- » **Stakeholder Engagement:** The European Circular Economy Stakeholder Platform has been instrumental in bringing together and facilitating dialogue amongst diverse stakeholders including policy makers, businesses and civil society. The platform showcases best practices, and helps in identifying challenges and opportunities in the transition to the circular economy.

In recognition of its efforts towards mainstreaming circular economy in the EU and internationally, the European Commission was awarded the Circularity Award (Public Sector Category) at the World Economic Forum 2019.



Implementation of the Circular Economy Action Plan

The Circular Economy Action Plan promotes a systemic approach to the transition towards a circular economy, with actions focused on each step of the product value chain – from design, production and consumption, repair and remanufacturing, waste management, and the looping back of secondary raw materials into the economy. Key highlights from the implementation of the Circular Economy Action Plan along different parts of the value chain include:

- » **Design:** With the implementation of the Ecodesign Working Plan 2016 – 2019, ecodesign and energy labelling measures have been updated to include rules on material efficiency requirements (for example, availability of spare parts, ease of repair etc);
- » **Empowering Consumers:** The Product Environmental Footprint (PEF) and Organisation Environmental Footprint (OEF) methods have been developed to enable companies to make reliable and comparable environmental claims, while simultaneously empowering consumers to choose products based on reliable information from companies;
- » **Closing Loops of Recovered Materials:** The regulation on Fertilising Products that is currently under consideration seeks to put in place harmonised rules for organic fertilisers that are produced from secondary raw material, including limits on hazardous substances in the fertilisers.

In addition to these actions, in January 2018, the EU adopted the Strategy for Plastics in a Circular Economy, the first EU-wide policy framework taking a material-specific lifecycle approach to integrate circular design, use, reuse and recycling activities into plastics value chains. Amongst other targets, it aims to ensure that all plastic packaging in the EU market is reusable or recyclable by 2030.

1: For more details on the EU Circular Economy Package, please refer to: http://ec.europa.eu/environment/circular-economy/index_en.htm

International Collaborations on Resource Efficiency and Circular Economy

International Resource Panel

The International Resource Panel (IRP) was launched by the United Nations Environment Programme (UNEP) in 2007 with the aim of building a knowledge base on improving the use of critical resources globally. The European Union has been actively supporting the IRP by providing technical inputs, and also incorporates insights from the IRP's evidence-based findings into its policy-making.

Circular Economy Missions (CEM)

The Circular Economy Missions are a series of high-level political and business meetings undertaken by the European Commission to increase cooperation between the EU and other countries on resource-efficient policies.

They bring together institutions, non-governmental organisations, businesses and other stakeholders from the EU and third countries for knowledge and policy exchange.

They are also aimed at understanding the environmental challenges faced in third countries and fostering business partnerships between EU businesses and relevant stakeholders in these countries.

Circular Economy Missions in the past have included those to India (September 2018), Japan and Indonesia (October 2018) and China (November 2016). Several more CEMs were undertaken in 2019 to Singapore, Malaysia and Mexico.



EU-India Partnership on Resource Efficiency and Circular Economy

Importance of EU-India cooperation

The EU recognises that maximising benefits from the circular economy model will require its adoption at a global scale, which can only happen through effective collaboration and partnerships between the EU and countries like India. With rapid technology advancements for achieving resource efficiency goals and the recent work on the Circular Economy Package, the EU has experience in creating the overarching policy frameworks and legislation required for circular economy transitions, along with effective models to spur technology development supported by research and innovation funding. Knowledge exchange between the EU and India on best practices and policies, and innovation partnerships for exploring circular solutions will play a critical role in accelerating the adoption of a circular economy in India.

The EU can also adopt some elements of circular models from India, including innovation that inherently addresses social issues, and India's 'jugaad' methods or resourcefulness. These principles can help in the development of frugal innovation and repair markets, which are currently high priority areas on the EU agenda. The EU and India can together make a difference in the global arena.

While the Indian government has already given substantial priority to RE at the national level (as reflected in various policies and programmes such as Make in India, Smart Cities, Swachh Bharat, and Ganga Rejuvenation Mission), it is now looking to strategically foster RE on a broader scale. Towards this end, the Indian government will be supported by the EU.

India and the EU joined forces to organise the

8th EU-India Environment Forum in July 2017 on the theme 'Resource Efficiency and the Circular Economy: Benefits beyond Environment.' Both sides agreed to further strengthen the cooperation in these areas, with the EU also extending support on aspects of outreach and consumer awareness. The Environment Forum brought together policy-makers, industry associations, academia, research organisations, civil society and experts from the Indian Resource Panel, to gather insights from Indian and EU experts on the benefits of resource efficiency, resource productivity through policy coherence, secondary resource management, business models, eco-innovation and insights on economic instruments to foster resource efficiency.

Furthermore, on 6 October 2017 during the EU-India Summit, leaders from both sides committed to moving towards a more circular economic model that reduces primary resource consumption and also agreed to further intensify cooperation on addressing environmental challenges.



At the 8th EU-India Environment Forum (from left to right): Mr Rakesh Kumar, Director, MoEFCC; Dr Tishyarakshit Chatterjee, Former Secretary, MoEFCC; Dr Cesare Onestini, then Deputy Head of Delegation, European Union Delegation to India; Mr A. N. Jha, Secretary, MoEFCC; Ms Astrid Schomaker, Director for Global Sustainable Development, Environment Directorate-General, European Commission, Brussels; Mr A.K. Mehta, Joint Secretary, MoEFCC; Mr B.N. Satpathy, Senior Consultant, NITI Aayog; Mr Sanjib Bezbaroa, Vice President, Corporate Environment Health and Safety, ITC

EU Resource Efficiency Initiative for India

Cooperation between the EU and India, under the EU-Resource Efficiency Initiative for India (EU-REI), aims to mainstream RE in the Indian economy and industry based on a life-cycle approach, and create an ecosystem for improving resource security whilst minimising environmental impacts.

EU-REI for India is a three-and-a-half year long project (Jan 2017 – July 2020) that 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 business best practices in resource efficiency to the Indian context, with the specific objective of fostering the efficient and sustainable use of natural resources in India. The initiative also aims to facilitate partnerships between Indian and European businesses and other stakeholders on resource efficiency in selected sectors. It is implemented on behalf of the European Union by a consortium led by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, with The Energy and Resources Institute (TERI), the Confederation of Indian Industry (CII) and Adelphi.

The major components of the EU-India cooperation for resource efficiency are:

- » **Policy Support:** Evidence-based policy advice and support to the Government of India initiatives including
 - NITI Aayog's Resource Efficiency Strategy;
 - Resource Efficiency Cell and Resource Efficiency Policy at the Ministry of Environment, Forest and Climate Change (MoEFCC);
 - State Action Plans on RE and CE.
- » **Assessment studies** of India's current and future use of resources to inform the development of policy, strategies and action plans on resource efficiency, specifically in the following four areas:
 - Mobility, with focus on Electric Vehicles;
 - Renewable Energy, with focus on Solar Photovoltaics;
 - Building and Construction Sector;

- Extended Producer Responsibility for Plastics Packaging and E-waste Management.
- » **Facilitating partnerships** and networking between European and Indian businesses and stakeholders for knowledge transfer and eco-innovation;
- » **Raising awareness** on the need for resource-efficient approaches among key government and non-government organisations, businesses, students, media and the general public, and the promotion of standards and best practices on resource efficiency.

Focus areas for EU-Resource Efficiency Initiative for India:



Joint Declaration of Intent for Cooperation on Resource Efficiency Policy Development

On June 2, 2018, at the World Environment Day celebration in Delhi, the Government of India's Ministry of Environment, Forest and Climate Change (MoEFCC) and the EU Delegation to India signed a Joint Declaration of Intent (JDI) for the implementation of the EU's Resource Efficiency Initiative for India (EU-REI).



Signing of Joint Declaration of Intent during the World Environment Day celebration in New Delhi on June 2, 2018 (from left to right): Ms Henriette Faergemann, First Counsellor, Environment Energy & Climate Change, EU Delegation to India and Mr Nikunja Kishore Sundaray, Joint Secretary, Ministry of Environment, Forest and Climate Change (MoEFCC)

The JDI builds on the interest expressed by the EU and India during the EU-India Summit in 2017 and the 8th EU-India Environment Forum in 2017 to cooperate in the areas of resource efficiency and circular economy.

The text of the JDI states as follows: "...Ministry of Environment, Forest and Climate Change (MoEFCC) and the European Union, Delegation to India... Desiring to support the implementation of the EU Resource Efficiency Initiative (EU-REI) Project in India, which fosters the improvement of Resource Efficiency (RE) and management of Secondary Raw Materials (SRM) thereby making important

contribution towards circular economy and implementation of Sustainable Development Goals.

The objective of the JDI is to strengthen technological, scientific and management capacities of MoEFCC, the EU and other relevant partners from the private and public sector along with the implementing partners in the field of Resource Efficiency and its implementation on the basis of equality, reciprocity, and mutual benefit for which the EU-REI project is envisaged."

The JDI endeavours to promote EU-India cooperation in the following areas:

- » Sectoral assessment studies in areas identified by the EU-REI project;
- » Dissemination and awareness creation on the recommendations of the study findings;
- » Support the Eco-labelling scheme of MoEFCC/CPCB for enhancing the promotion of products made from secondary resources and promotion of RE;
- » Support in recommending recycling standards for selected sectors (electronic waste, plastic waste, construction and demolition wastes);
- » Promotion of R&D and technology development on RE specifically for Green Mining, recycling facilities and common facilities for complex metal-rich wastes like End-of-life-Vehicles (ELVs), electronic waste and plastic wastes;
- » Development of Sectoral Sustainable Public Procurement (SPP) guidelines and implementation plan;
- » Support in the development of the Waste Exchange Platform with CII, as a marketplace for utilisation of by-products and industrial wastes;
- » Development of policy papers on the use of Secondary Raw Materials and support in targeted awareness on Waste Rules notified by the MoEFCC in 2016;
- » Capacity building of state governments, Urban Local Bodies (ULB) and relevant stakeholders, and to jointly organise national and international workshops/conferences on RE;
- » Provision of input to the recently formed G20 RE dialogue group and other multilateral initiatives and programmes with a direct link to RE.

Resource Efficiency Strategy for India

In November 2017, NITI (National Institution for Transforming India) Aayog, along with the European Union Delegation to India launched a Strategy on Resource Efficiency for India along with an action plan. The RE Strategy recognises the urgent need to use resources judiciously in order to sustain the long-term development and well-being of Indian society. It is the first policy document to emphasise resource productivity in the country. The objective of the RE Strategy is to provide for a holistic frame of actions and make recommendations for enhancing the resource-use efficiency of abiotic materials (especially of high priority materials in selected sectors like automobiles and construction). The key interventions identified in the RE strategy are:

- » Development of a baseline data collection framework for the federal as well as state level;
- » Development of an indicator monitoring framework on resource efficiency;
- » Capacity development and awareness raising of the relevant stakeholders;
- » Promotional policies and tools like recycling standards, voluntary labelling, Sustainable Public Procurement (SPP), and economic instruments;
- » Development of sustainable industrial clusters, and
- » Research and development for technological solutions.

The EU Delegation to India, through EU-REI, is providing due support for the implementation of the RE Strategy and its Action Plan.



Release of the Resource Efficiency Strategy (from left to right): Dr Tishyarakshit Chatterjee, former Secretary MoEFCC and InRP member; Mr Ratan P. Watal, Principal Advisor, NITI Aayog and Member Secretary to the Prime Minister's Economic Advisory Council; Mr Jigmet Thapa, Joint Secretary, MoEFCC; and Ms Henriette Faergemann, Counsellor, EU Delegation to India

The implementation agenda of the RE Strategy consists of a Core Action Agenda (2017–2018) and Medium-term Action Plan (2018–2020) in the thematic areas of institutional development, promotion and regulation.

An inter-departmental committee was constituted under the chairmanship of Mr Ratan P. Watal, Principal Adviser, NITI Aayog, with nine nodal officers representing relevant ministries and departments of the Government of India. The inter-departmental committee has been guiding the implementation of the action plan in the RE Strategy. A Task Force was also set up in February 2018, to support the inter-departmental committee and functions as an expert secretariat, providing feedback for finalisation of the strategy papers.

Inter-departmental Committee: Key Stakeholder Ministries

- | | |
|---|--|
| • Ministry of Commerce and Industry, Department of Industrial Policy and Promotion (DIPP) | • Ministry of Consumer Affairs, Food and Public Distribution, Department of Consumer Affairs (DCA) |
| • Ministry of Electronics and Information Technology (MeitY) | • Ministry of Environment, Forest and Climate Change (MoEFCC) |
| • Ministry of Finance, Department of Economic Affairs (DEA) | • Ministry of Heavy Industries and Public Enterprises, Department of Heavy Industry (DHI) |
| • Ministry of Housing and Urban Affairs (MoHUA) | • Ministry of Mines (MoM) |
| • Ministry of Steel (MoS) | |

Status Paper on RE and Sectoral Strategies

Based on the recommendation of the inter-departmental committee, a 'Status Paper and Way Forward on Resource Efficiency and Circular Economy' was developed, along with sectoral strategies and action plans for RE in the following sectors:

- » Steel;
- » Aluminium;
- » Construction and Demolition sector;
- » Electrical and Electronic Equipment sector.

The Status Paper indicates the current state of resource efficiency in India as well as the way forward to achieve circularity and resource efficiency. It makes 30 recommendations to ensure a holistic approach for the adoption of resource efficiency, including in the areas of policy, programmes and mainstreaming, regulations, efficient recycling, R&D and technology development, capacity development, outreach and monitoring.

The strategies recommend a holistic plan of action based on the current scenario, future projections and high-impact interventions for managing the selected material streams.

They were developed by NITI Aayog in collaboration with respective ministries including, the Ministry of Steel, Ministry of Mines, Ministry of Housing and Urban Affairs, and the Ministry of Electronics and Information Technology.

On January 22, 2019, Mr Ratan P. Watal, Member Secretary, Economic Advisory Council to the Prime Minister of India (EAC-PM) and Mr Tomasz Kozłowski, then Ambassador of the European Union to India, launched the Status Paper and four sectoral strategy papers, along with nodal officers from the respective ministries:

- » Ministry of Environment, Forest and Climate Change;
- » Ministry of Steel;
- » Ministry of Mines;
- » Ministry of Housing and Urban Affairs;
- » Ministry of Electronics and Information Technology.

Utilization of Bauxite Residue

In line with the approach identified in the Resource Efficiency Strategy in Aluminium Sector by the Ministry of Mines and NITI Aayog in January 2019, an Indo-European Meet on Resource Efficiency in the Aluminium Industry with a focus on Effective Utilization of Red Mud (bauxite residue) was successfully organised in September 2019. Meetings between EU visiting experts of several Horizon 2020 projects, and Ministry of Mines, officials from public and private Alumina refinery industry, and Jawaharlal Nehru Aluminium Research Development & Design Centre (JNARDDC) were organised. EU experts along with the EU-REI team also visited JNARDDC in Nagpur for a study visit in order to take forward the discussions on potential partnerships for exchange of knowledge and best practices.

State Strategies and Action Plans on RE and CE

Effective implementation of the RE strategy and adoption of resource efficiency across India is highly dependent on the participation of states. In addition to the support provided to NITI Aayog and the MoEFCC, the EU is also supporting work on resource efficiency in several states.

From January to April 2018, the EU and NITI Aayog jointly organised three regional workshops for awareness creation and capacity building on Resource Efficiency and Circular Economy in Bhubaneswar (Odisha), Hyderabad (Telangana) and Panaji (Goa). Experts from government, industry and academia participated in the workshops and

discussed the key elements for developing a Status Paper on RE and CE in the respective states, along with a strategic plan of action for the states.

The EU, through REI, is supporting the development of regional RE strategies in two Indian states – Telangana and Goa. These regional strategies will also factor into the development of a national RE policy, which is currently under consideration for finalisation by MoEFCC. These policy measures and strategies at the national, regional and sectoral levels are crucial for scaling up and mainstreaming the circular economy transition in India.



Participants at the First Regional Workshop on Resource Efficiency and Circular Economy in Bhubaneswar, Odisha



Participants at the Second Regional Workshop on Resource Efficiency and Circular Economy in Hyderabad, Telangana



Participants at the Third Regional Workshop on Resource Efficiency and Circular Economy in Panaji, Goa

Facilitating Partnerships Between EU and Indian Businesses and Stakeholders

The EU Delegation to India, under REI, hosted the Circular Economy Mission (CEM) to India from September 4–7, 2018. Mr Karmenu Vella, then Commissioner for Environment, Maritime Affairs and Fisheries, European Commission, led a high-level delegation of over 80 delegates representing 16 Member States of the EU. Over four days, the delegation engaged with the Indian government and over 300 businesses, entrepreneurs and NGOs for knowledge and policy exchange, and explored business partnerships for the circular economy transition. Over 140 business-to-business meetings were facilitated between EU and Indian stakeholders, with some stakeholders announcing a clear intent to cooperate.



Circular Economy Mission (CEM) to India 2018



EU Delegates

16 EU Member States



80 Delegates Representing

- Businesses
- National Governmental Organisations
- National Associations
- European Associations
- International Organisations
- Universities/ Research Institutes

Country flags shown above are representational only.

During the CEM, Commissioner Vella also held several bilateral meetings with his counterparts in key ministries and departments involved in circular economy and resource efficiency in India, including Environment, Forest and Climate Change (MoEFCC), Water Resources, Industry and Commerce, Housing and Urban Affairs (MoHUA), Road Transport and Highways, Shipping, River Development and Ganga Rejuvenation. He also discussed the implementation of India's Resource Efficiency Strategy at a roundtable discussion organised by NITI Aayog with high-level participation from the Ministry of Steel, Ministry of Mines and Ministry of Electronics and Information Technology.



From left to right: Mr Chandrajit Banerjee, Director General, Confederation of Indian Industry; Dr Harsh Vardhan, then Minister for Environment, Forest & Climate Change, Science & Technology, and Earth Sciences; Mr Karmenu Vella, then Commissioner for Environment, Maritime Affairs and Fisheries, European Commission

In the concluding session of CEM, Ms Astrid Schomaker, Director of Global Sustainable Development, Directorate General for Environment, European Commission, reiterated that EU-India cooperation on resource efficiency will continue, particularly focusing on:

- » Facilitating concrete initiatives, especially in the four priority sectors identified in the EU-REI project;
- » Promoting BREFs (Best Available Techniques Reference Documents) and standards which can promote ease of dismantling, improved recycling and shared economy models;
- » Supporting implementation of Extended Producer Responsibility.

Given the progress of the work, interest and engagement from India and the EU, it was also proposed to highlight the engagement on RE and CE at the next EU-India Summit and formally launch a partnership on these subjects.



From left to right: Dr Dieter Mutz, Team Leader, EU-REI; Dr Ashok Khosla, Founder and Director, Development Alternatives; Ms Astrid Schomaker, Director for Global Sustainable Development, Environment Directorate-General, European Commission, Brussels; Mr A.K. Jain, Additional Secretary, MoEFCC; Dr Ajay Mathur, Director General, The Energy and Resources Institute; Mr Ravi Agarwal, Director, Toxics Link

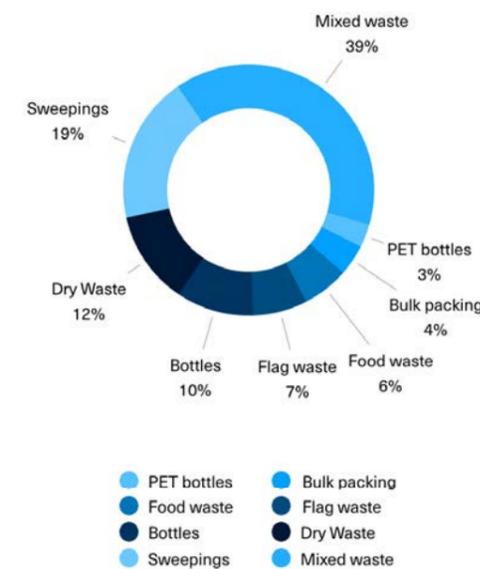
More than 140 exploratory meetings were organised between Indian and EU stakeholders during the CEM. These led to many expressions of interest for collaborating and partnering in various areas including:

- » Closed-loop technological solutions for managing construction and demolition waste;
- » Knowledge exchange on the practices of Producer Responsibility Organisations (PROs) in implementing Extended Producer Responsibility (EPR);
- » Capacity building of social enterprises in India and support for their circular products in the EU;
- » Exploration of sports as a medium for mass awareness creation on circular economy;
- » Better know-how and business models for e-waste management;
- » Remanufacturing as a key solution for a circular economy;
- » Research acceleration mechanisms on RE and CE.

Plastic Clean Bowled

A Material Flow Assessment study with a focus on Plastic Waste was initiated. The focus of this study and targeted awareness campaigns was to use cricket as a medium to increase awareness among cricket fans on reduction of plastic waste generation through the concept of resource efficiency and circular economy. Karnataka State Cricket Association partnered with EU-REI for the study wherein under the Plastic Clean Bowled campaign the aim was to make the Chinnaswamy Stadium in Bengaluru a plastic free stadium in India. In April-May 2019, an awareness raising campaign with six targeted events was undertaken before and after the Indian Premier League (IPL) matches for the home team Royal Challengers Bangalore to sensitize spectators and vendors on reducing plastic waste in the cricket stadium. The results of this engagement drive were encouraging.

Figure 13: Result – identification and quantification of different kinds of wastes generated inside the stadium:



Lead the Green Change Pledge

The Delegation of the European Union and EU Member State embassies in India took a Green Pledge on World Environment Day in 2018 committing to take up specific sustainability measures in their offices. The measures identified included discontinuing the use of single use plastics, reducing water and power consumption and proper management of wet and dry waste.

On World Environment Day in 2019, a special campaign was launched by the EU Delegation to India called 'Lead the Green Change'.

Under this campaign, an e-waste awareness drive was organised with 11 EU Member State offices in Delhi to raise awareness on responsible management and disposal of electronic waste on June 6, 2019. Around 1,700 kgs of e-waste was disposed off to the Indian authorized producer responsible organization (PRO) for proper collection and channelisation of waste. On June 7, 2019, the pledges were renewed where representatives of the Member State embassies shared their experiences and plans going forward. Additionally, in 2019, the campaign increased the participation of new institutions and organisations in India including universities, industrial associations, NGOs, sports associations and hotels. EU-REI supported the campaign by designing the e-waste take-back programme and is also supporting the follow-up activities of the pledge signing ceremony.



The Way Forward for EU–India Collaboration

Within the current scope of EU-India cooperation on resource efficiency for key abiotic resources, there is great opportunity for the EU and India to continue working collaboratively on several areas. These include the development of common standards, improving the implementation of EPR schemes based on learnings from the EU, solutions for management of end-of-life resources, and exploring policy options for fostering a global circular economy. The EU and India can also partner for setting up of research and innovation initiatives for resource efficiency and circular economy. Resource efficiency with respect to biotic resources, which is likely to become a focus area for the Indian government in the near future, could also become a key area of cooperation.

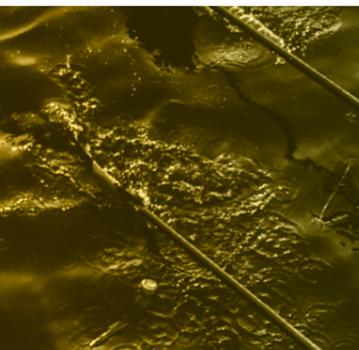
More Information

Websites

- » EU Resource Efficiency Initiative for India: <http://www.eu-rei.com/>
- » EU Circular Economy Package: http://ec.europa.eu/environment/circular-economy/index_en.htm
- » Circular Economy Action Plan: <https://eur-lex.europa.eu/legal-content/EN/>
- » Legislative Framework on Waste: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ:L:2018:150:TOC>
- » Monitoring Progress towards the Circular Economy: <https://ec.europa.eu/eurostat/web/circular-economy/overview>
- » Circular Economy Research and Innovation: Connecting Economic and Environmental Gains: https://ec.europa.eu/programmes/horizon2020/sites/horizon2020/files/ce_booklet.pdf
- » European Circular Economy Stakeholder Platform: <https://circulareconomy.europa.eu/platform/>
- » European Strategy for Plastics in a Circular Economy: http://ec.europa.eu/environment/waste/plastic_waste.htm
- » Highlights of the Strategy for Plastics in a Circular Economy: <http://ec.europa.eu/environment/circular-economy/pdf/plastics-strategy-brochure.pdf>
- » Reports on the Critical Raw Materials and the Circular Economy: <https://ec.europa.eu/docsroom/documents/27327>
- » Circular Economy Missions: http://ec.europa.eu/environment/international_issues/missions_en.htm
- » International Resource Panel: <http://www.resourcepanel.org/>

Factsheets

- » Circular Economy Package: https://ec.europa.eu/commission/sites/beta-political/files/circular-economy-factsheet-general_en.pdf
- » Helping Consumers Make Sustainable Choices: https://ec.europa.eu/commission/sites/beta-political/files/circular-economy-factsheet-consumption_en.pdf
- » Closing the Loop: Production Phase of the Circular Economy: https://ec.europa.eu/commission/sites/beta-political/files/circular-economy-factsheet-production_en.pdf
- » Closing the Loop: Better Waste Management – targets and tools: https://ec.europa.eu/commission/sites/beta-political/files/circular-economy-factsheet-waste-management_en.pdf
- » Closing the Loop: From Waste to Resources: https://ec.europa.eu/commission/sites/beta-political/files/circular-economy-factsheet-waste-management_en.pdf
- » Changing the Way We Use Plastics: <http://ec.europa.eu/environment/waste/pdf/pan-european-factsheet.pdf>
- » A European Strategy for Plastics in a Circular Economy: https://ec.europa.eu/commission/sites/beta-political/files/plastics-factsheet-challenges-opportunities_en.pdf
- » Increasing the Sustainability of the European Plastics Industry: https://ec.europa.eu/commission/sites/beta-political/files/plastics-factsheet-challenges-opportunities_en.pdf
- » Single-use plastics: reduce marine litter: http://ec.europa.eu/environment/waste/pdf/single-use_plastics_factsheet.pdf



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