



**EU-REI**

Creating a Resource  
Efficient India



# Increasing Resource Efficiency through Extended Producer Responsibility

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World Environment Day  
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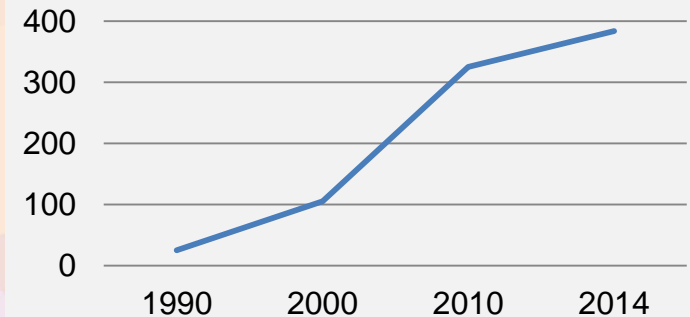




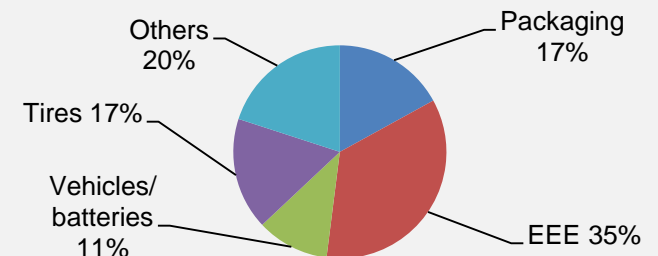
# Extended Producer Responsibility (EPR)

- EPR is an environmental protection strategy to decrease the total impact from a product, by making producers responsible for the entire life-cycle (Lindhqvist 1992)
- Dual objective of EPR is to improve upstream processes, i.e. Design for Environment (DfE), and downstream processes, i.e. waste management (Tojo 2004)
- Since the 1990s, adoption of 384 EPR policies worldwide (Kaffine & O'Reilly 2015), fuelling the creation of waste management industries with a revenue of 335 billion EUR by 2019 (UNEP 2011)
- However, manifold implementation challenges remain due to lack of target-setting, free-riding and insufficient enforcement, amongst others

**Global cumulative adoption of EPR schemes**

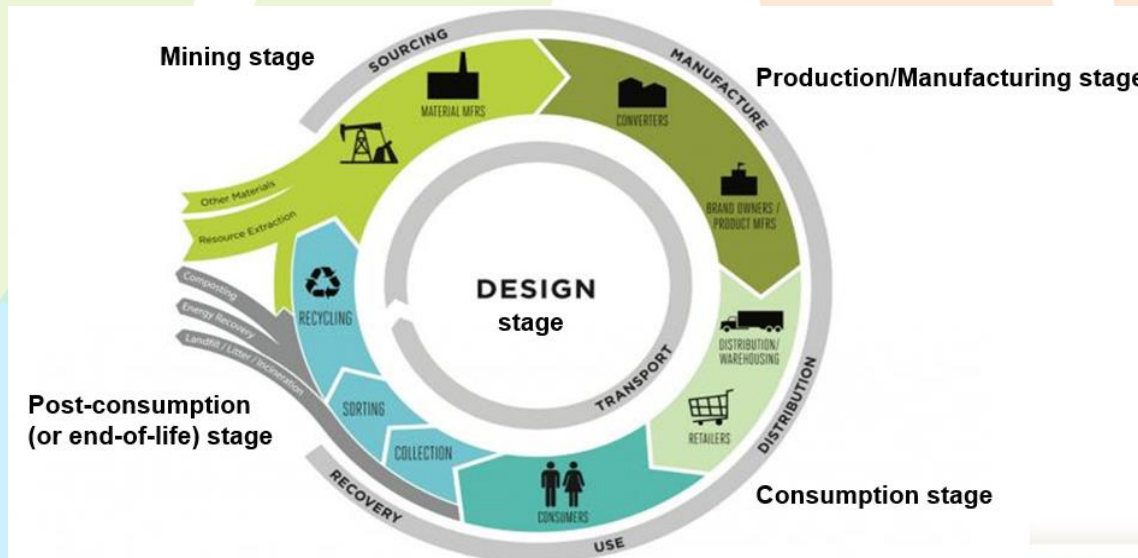


**Global application of EPR schemes by product type**





# Linkages of Circular Economy to Extended Producer Responsibility



Creativity and Innovation

Design

Business models

Reverse Logistics





# Challenges to Rethinking Models – Global and India



- Globally 44.7 million tonnes of e-waste is generated – 20% recycled and 80% is thrown into residual stream, traded or handled in substandard conditions (2017).
- Linear economic models promote environmental and health risks at the production and disposal stages.
- Regulations have been focussing on controlling e-waste flows than transporting items which have an intrinsic value leading to policy barriers
- Logistics is a major issue leading to unpredictable flow of returned products
- R&D & Innovation teams - Policy/ Government Relations teams?
- Data security, consumer behaviour and lack of repairability leads to stocking of obsolete EEE.
- Very few market leaders on circular products and business models
- Our world economy is only 9.1% circular, leaving a massive 'Circularity Gap' (WEF, 2018)



# Design for Circularity



- Design for Environment
- Repair, refurbishment and product longevity
- Fairphone – World's first phone modular phone with spare parts for easy repairs by consumers and engineering and production decisions that minimize our environmental footprint and support longevity



**Better design**





# Consumption stage



- Maximum utility of product – guarantees and transparency for refurbished products
- Material passports provides information on material composition and design for higher recovery
- Innovative Ownership models - Philips is applying 'paying for performance' is its 'pay per lux' lighting model, customers to use the best lighting solution for their needs without owning the hardware. Singapore (Street light installations)



## More information

to raise awareness and encourage responsible behaviour



# Post - Consumption stage

- Least valuable loop of Circular Economy (EMF, 2017)
- Galaxy (Samsung) Upcycling programme explores simple, 'do-it-yourself' ways for people to repurpose old Galaxy devices. The devices are equipped with built-in cameras and network modules, which could still take pictures and connect via the Internet of Things.







# Options for advancing resource efficiency

- *Implementation of EPR-based recycling fund (possibly eco-modulated) to mobilise investments in recycling infrastructure and increase demand for secondary raw materials*
- *Mandate creation and continuous development of standards (e.g. ISO, EN) for the entire e-waste value chain to ensure level playing field amongst all actors*
- *Encourage sectoral collaboration among the downstream processes to enhance including collection, dismantling and recycling*
- *Capacity building measures for consumers and (public and private) sector to enhance knowledge about EPR and product*

For more information, see forthcoming report on „**Enhancing Resource Efficiency through EPR**“ under EU-REI project in September 2018.