



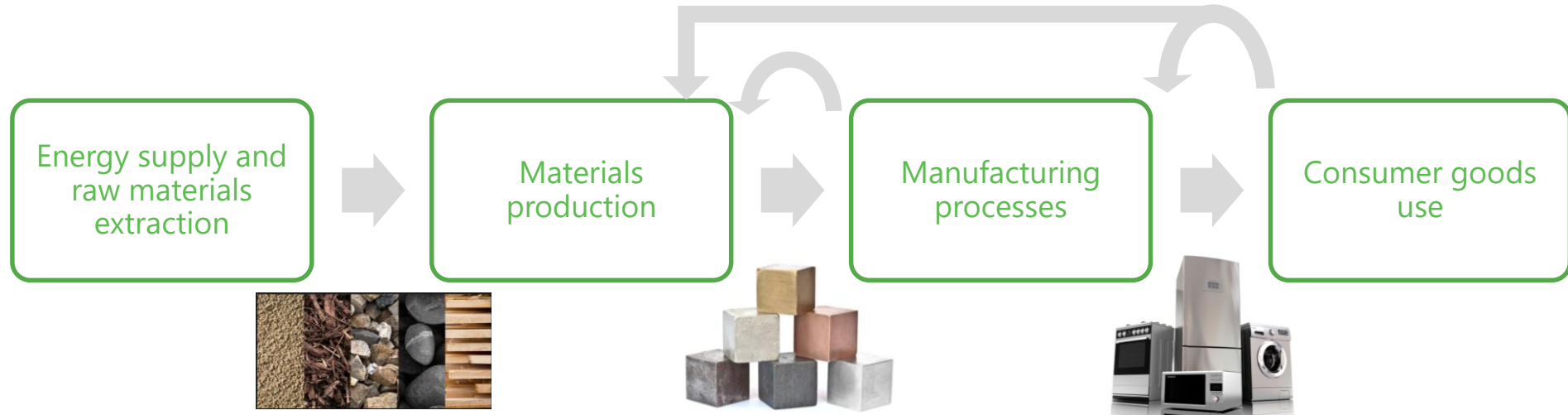
Redefining supply value chains to meet climate goals

Araceli Fernandez

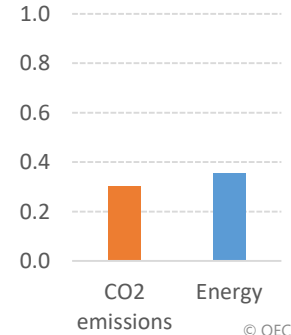
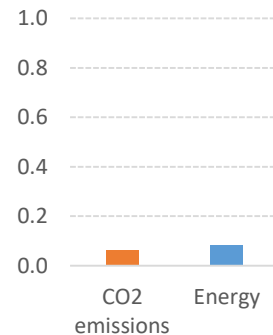
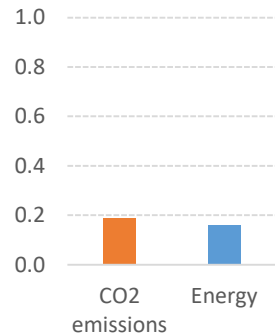
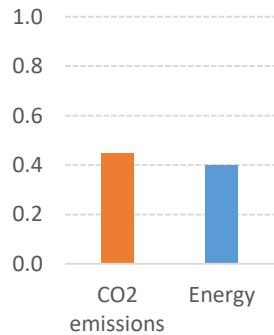
Bonn Climate Conference, 2 May 2018



Supply value chains connect natural resources with consumers through material and energy flows

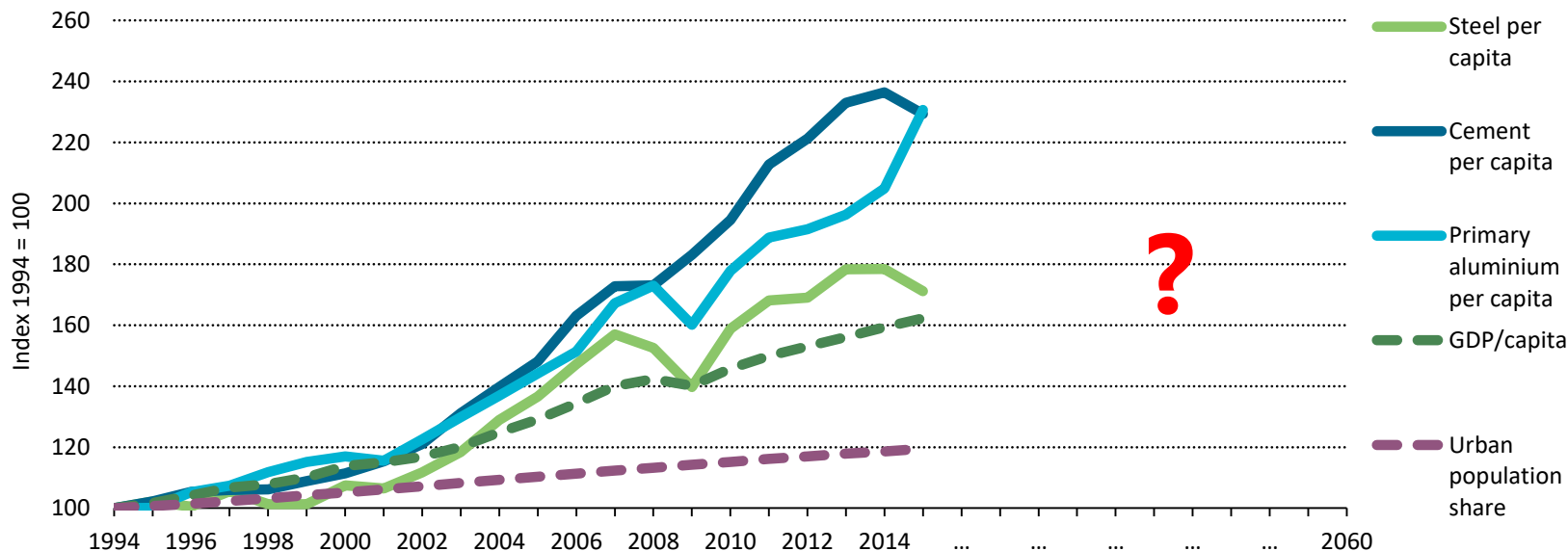


Global CO₂ and energy use shares, 2015



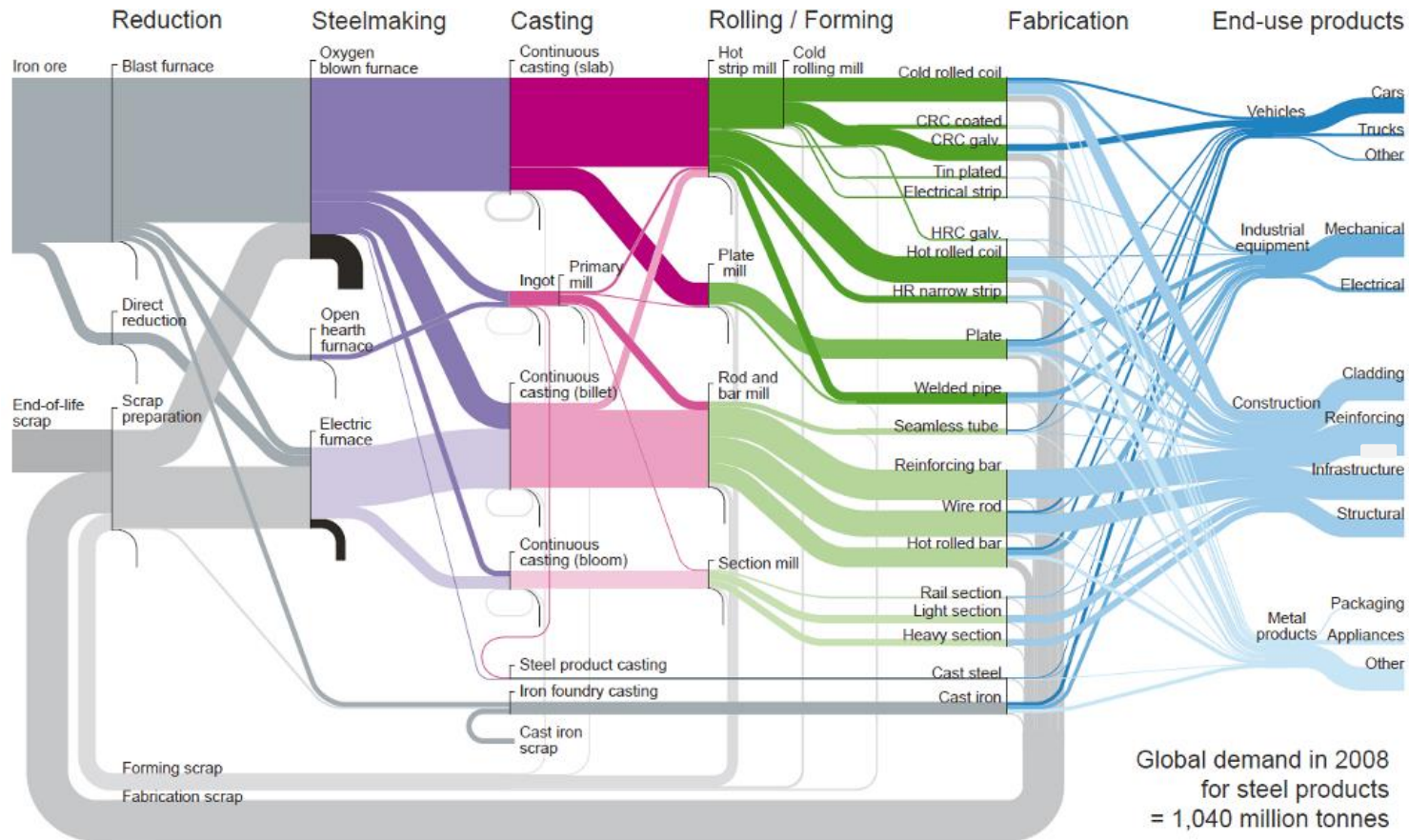
Projecting materials demand from socio-economic indicators... a difficult question!

Global materials production and socio-economic indicators evolution

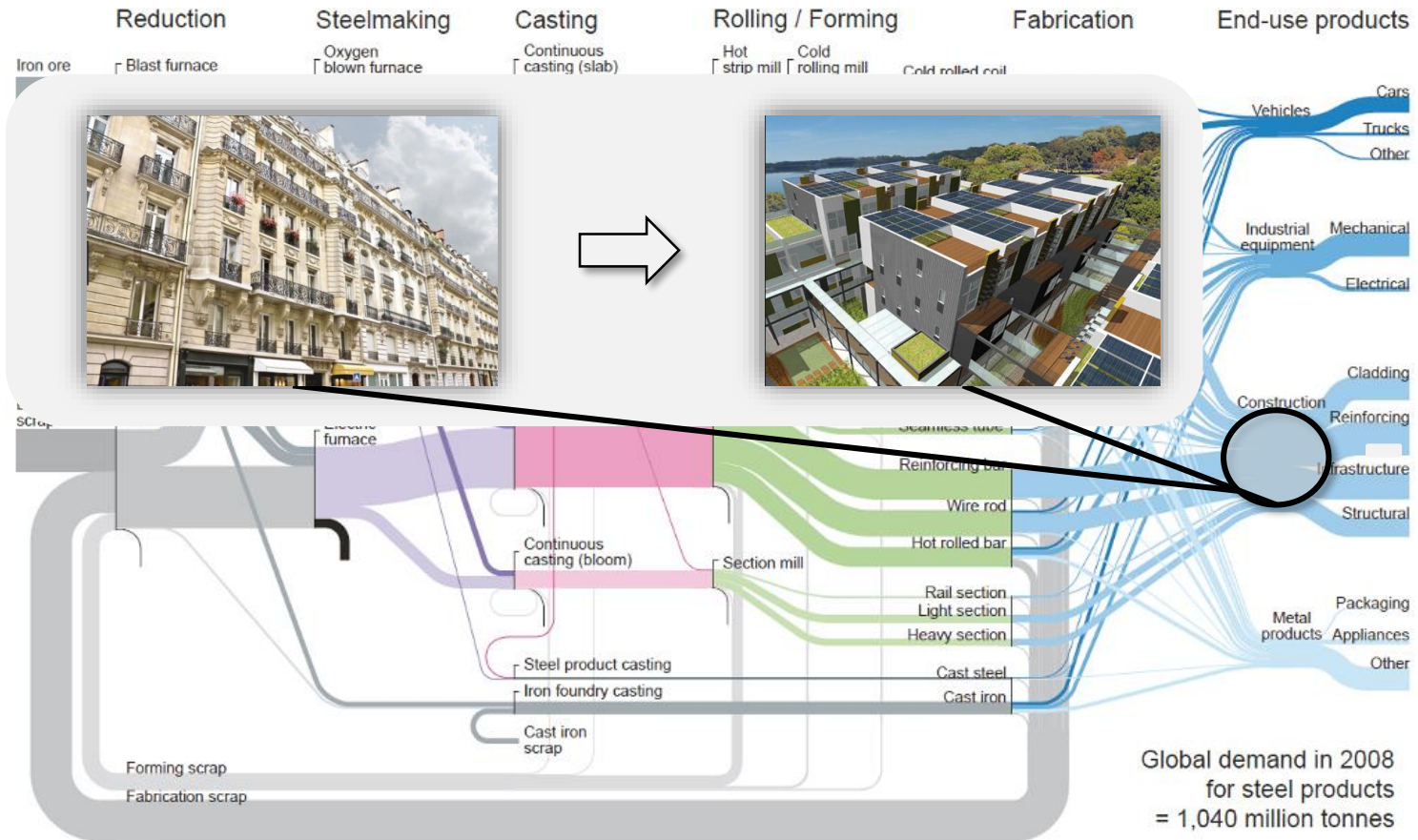


Key materials demand responds differently across countries to per capita income and urbanisation trends depending on industrial structures, infrastructure development needs among other factors.

Understanding existing complex supply value chains is needed...



...but supply value chains are also continuously evolving



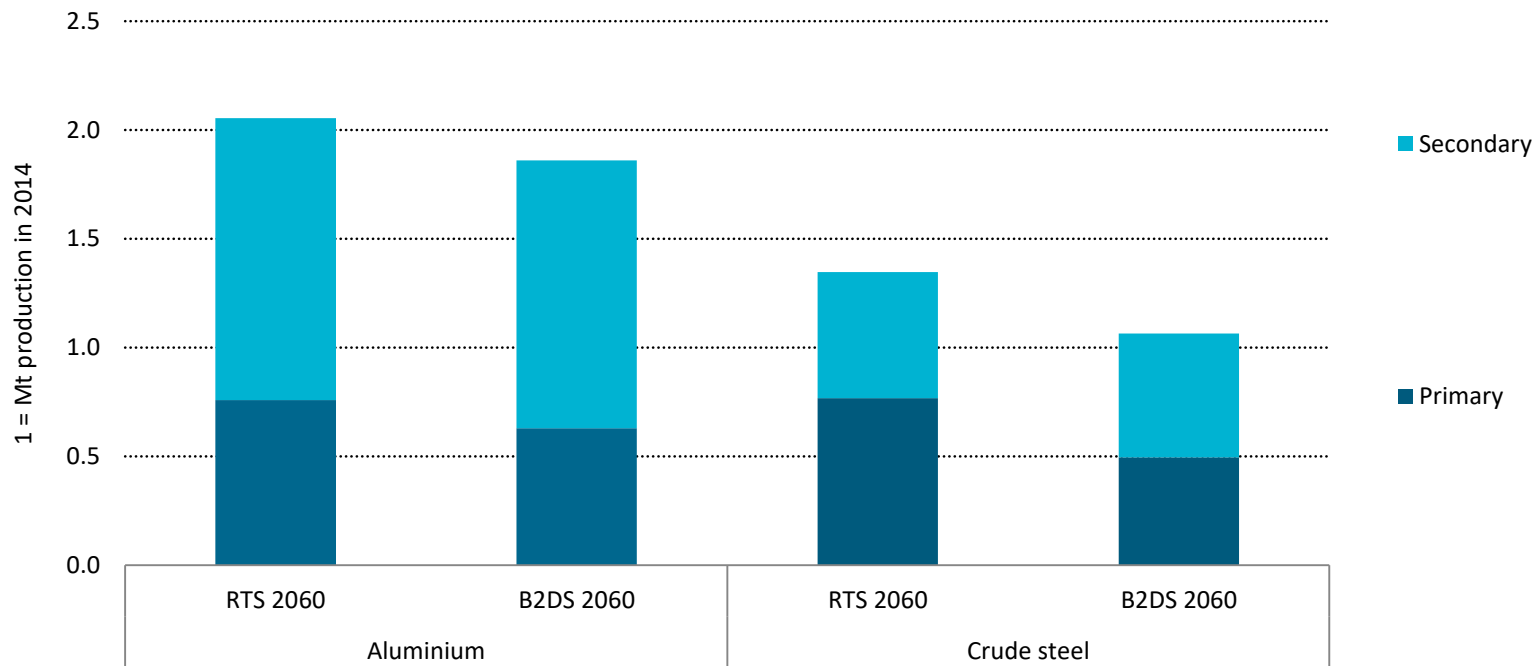
...and materials efficiency strategies also impact supply chains



	Industry	Transport	Buildings	Energy Supply
Light-weighting (using less materials for same service)	Producing less dense office paper or lighter plastic bottles. Using less detergent for same cleanliness level	Optimal component design strategies to reduce materials mass for same service; improved construction techniques		Optimum distribution grids routing
Reducing yield losses	Semi-manufacturing and manufacturing yields improvements			
Extending product life time or using products more intensively (related to users)	Longer-lasting industrial facilities Consumer products being used for a longer-time	Longer-lasting roads. Shared mobility	Longer-lasting buildings and appliances; including modular designs	Longer-lasting infrastructures
Others	Clinker-to-cement ratio reduction			
Recycle	Secondary materials production routes	Steel, aluminium, plastics scrap recycling. Vehicles modular designs	Steel, aluminium, plastics scrap recycling. Modular designs.	Steel, aluminium, plastics scrap recycling
Reuse	Post-consumer scrap fed directly to manufacturing processes. Re-use of plastic consumer products (e.g. bottles, packaging)	Remanufacturing; reuse/repurposing of components (e.g., batteries). Modular designs	Reusable building components and assemblies. Modular designs	Reuse of components, e.g. remanufacturing of wind turbines

Material efficiency opens opportunities for energy and CO₂ savings

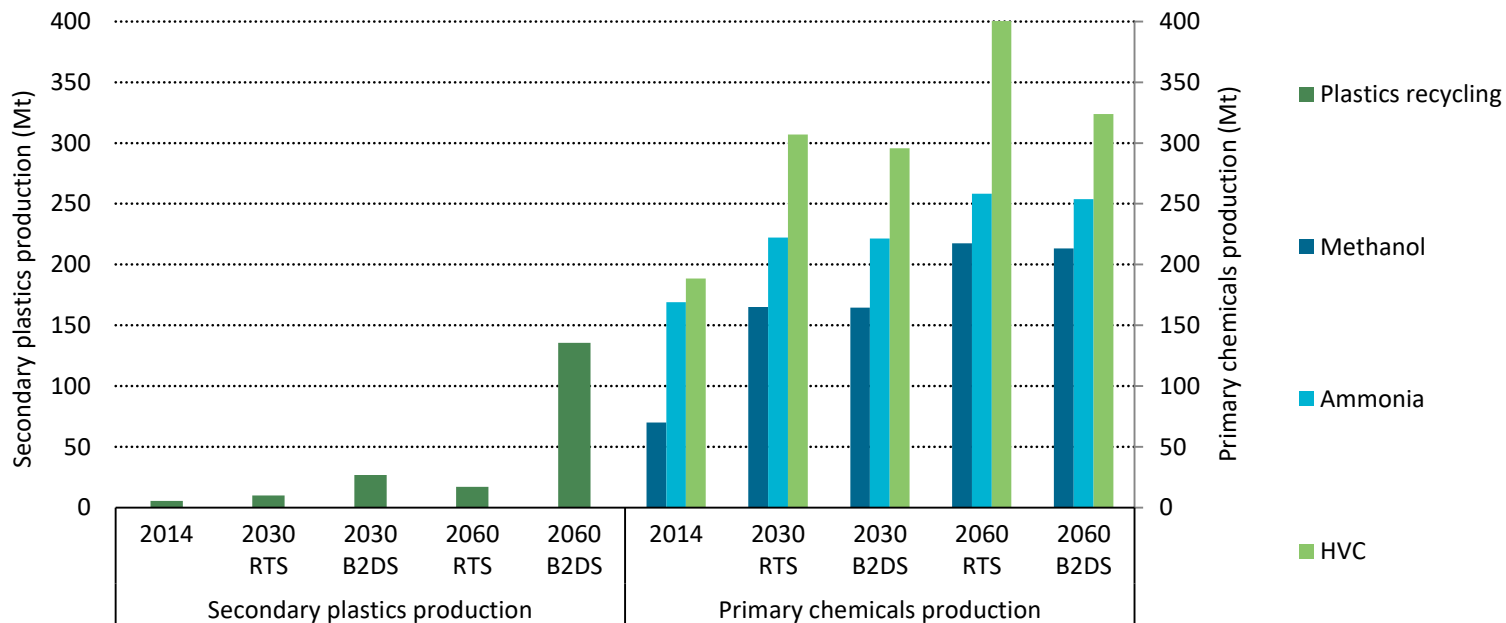
Normalised global materials production to 2014 levels



Wider implementation of material efficiency strategies lead to a reduced demand of materials, as well as to increased shares of less energy-intensive secondary routes production in the B2DS.

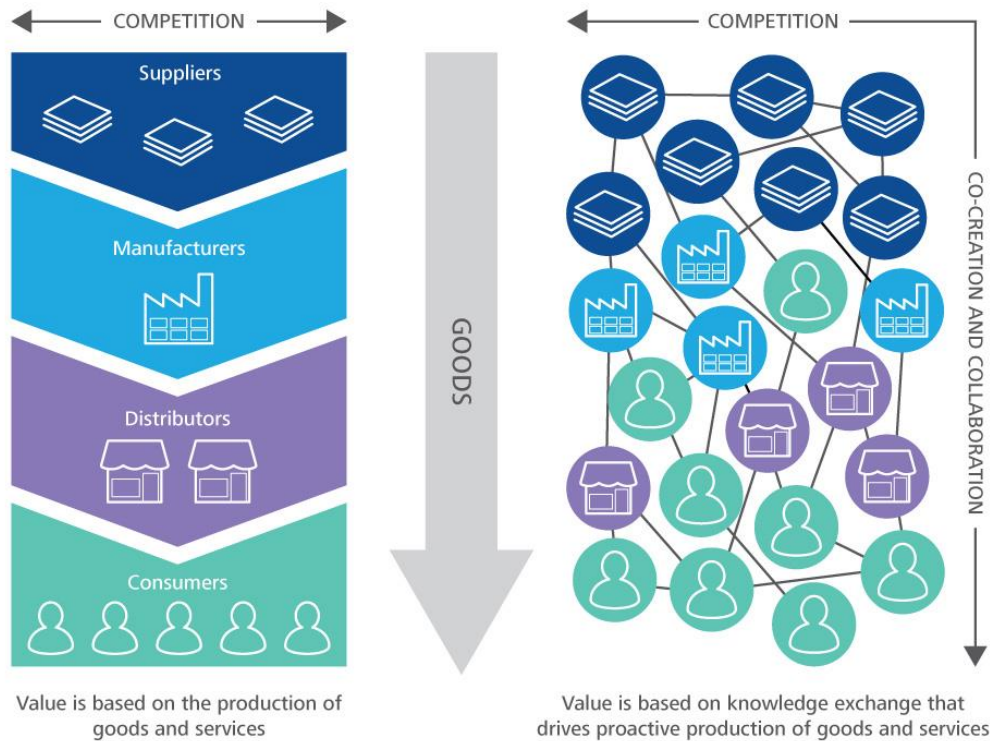
Material efficiency opens opportunities for energy and CO₂ savings

Global secondary plastics and primary chemicals production by scenario



Cumulative increase in recycled plastics production in the B2DS accounts for a cumulative decrease of 4% in primary chemicals production enabling energy savings equivalent to 12% of today's global industrial TFC

Connecting supply value chains



Source: Deloitte analysis.

Graphic: Deloitte University Press | DUPress.com

Linear supply value chains are evolving into complex, dynamic and connected webs facilitating circular economy concepts.

- Supply value chains connect natural resources with consumers through material and energy flows.
- They are complex and continuously evolving. Understanding value chains is the key to make the most sustainable use of those resources for societal development.
- Material efficiency can provide significant opportunities for energy and CO₂ savings, and should be rolled out hand-in-hand with innovative technologies and product designs developed across value chains.
- Policy and regulatory frameworks should concurrently incentivize both, material efficiency and technology innovation.



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