EDITS
Energy Demand changes Induced by Technological and Social innovations

RITE Research Institute of Innovative Technology for the Earth

IIASA

Demand-side solutions that enhance transformation towards net-zero cities

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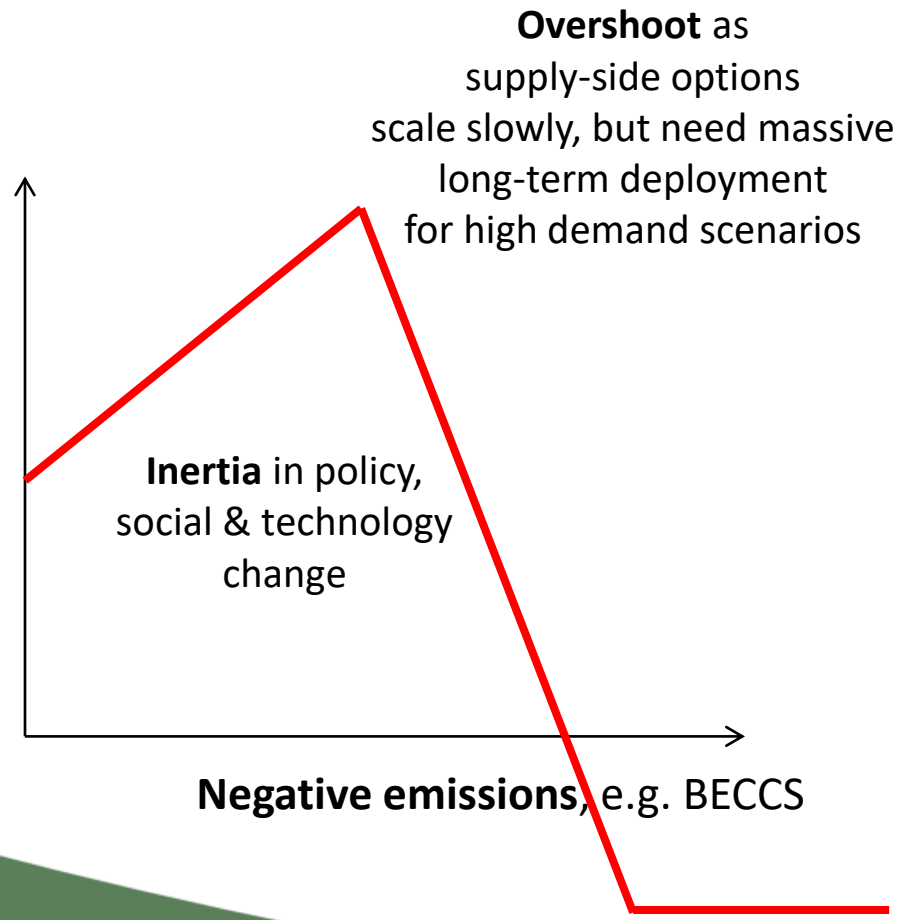
INTERNATIONAL VIENNA ENERGY & CLIMATE FORUM 2023

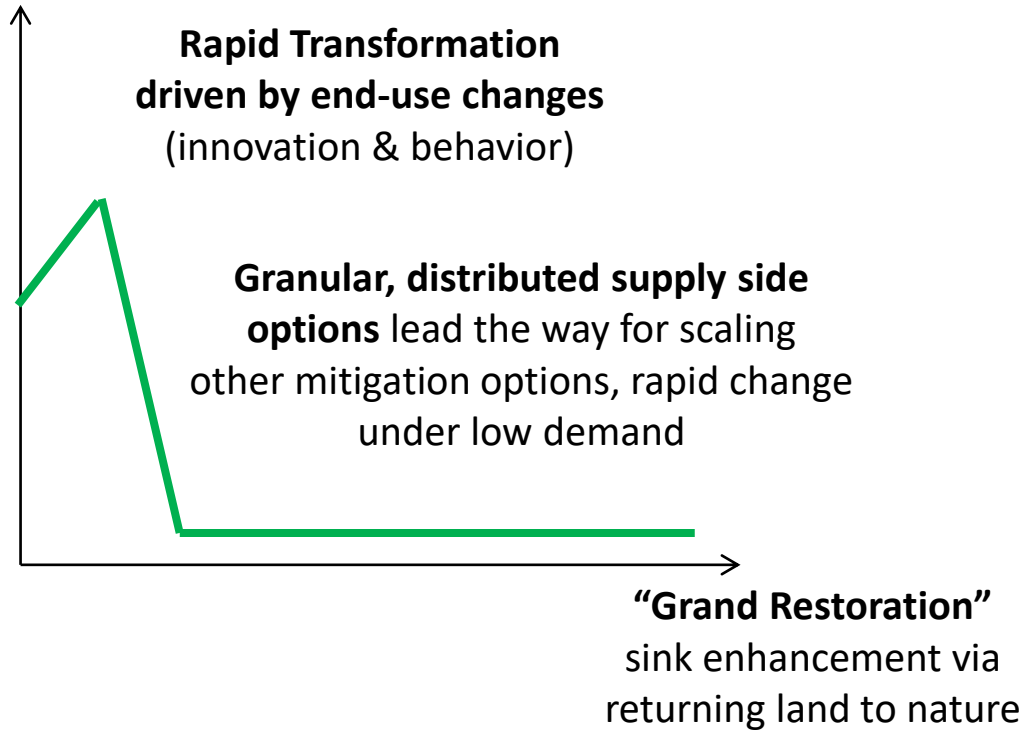
Two Perspectives on Meeting 1.5°C

GHG Emissions Profiles

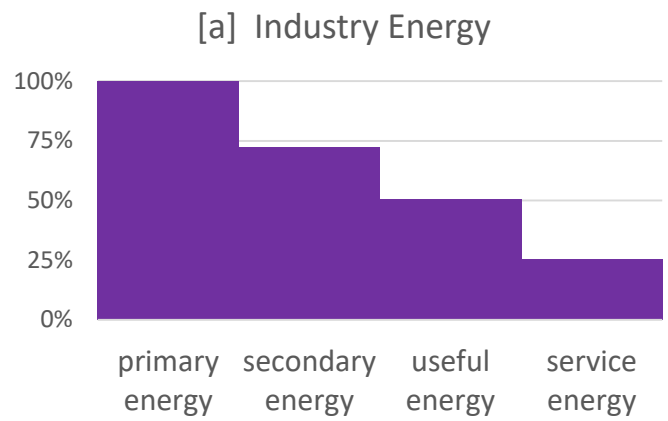
"Conventional" 1.5 C Scenario

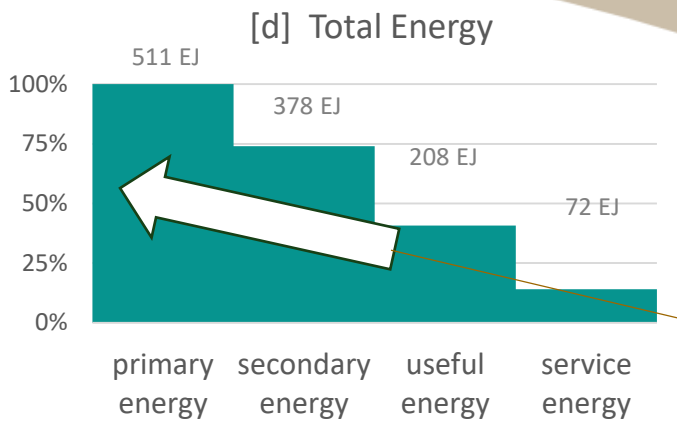


Rapid transformation through demand-side solutions and granular technologies



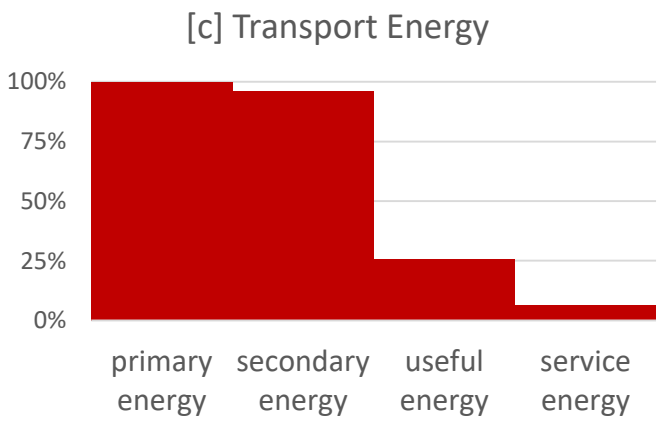
There is an enormous potential for services-led transformation

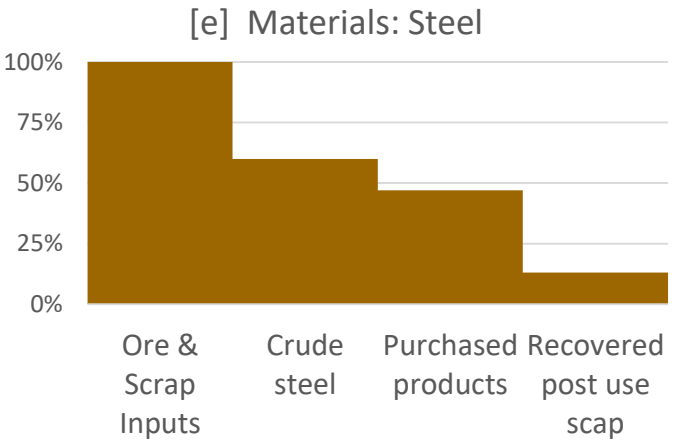


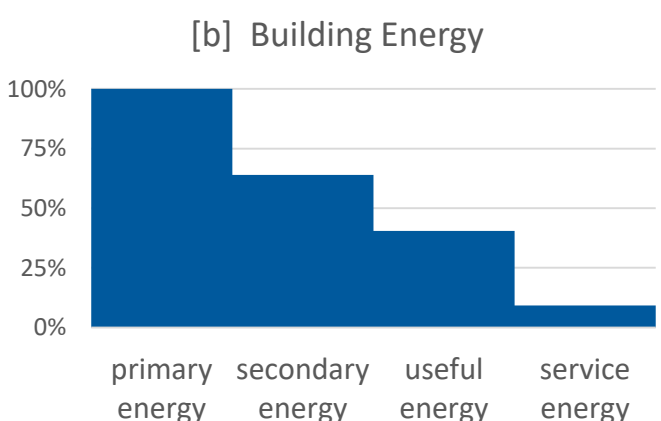


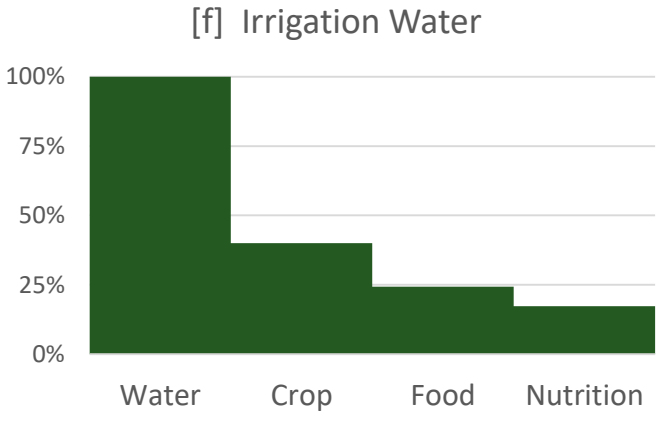
Service sector has enormous leverage to reduce upstream energy use

"resource conversion cascades"



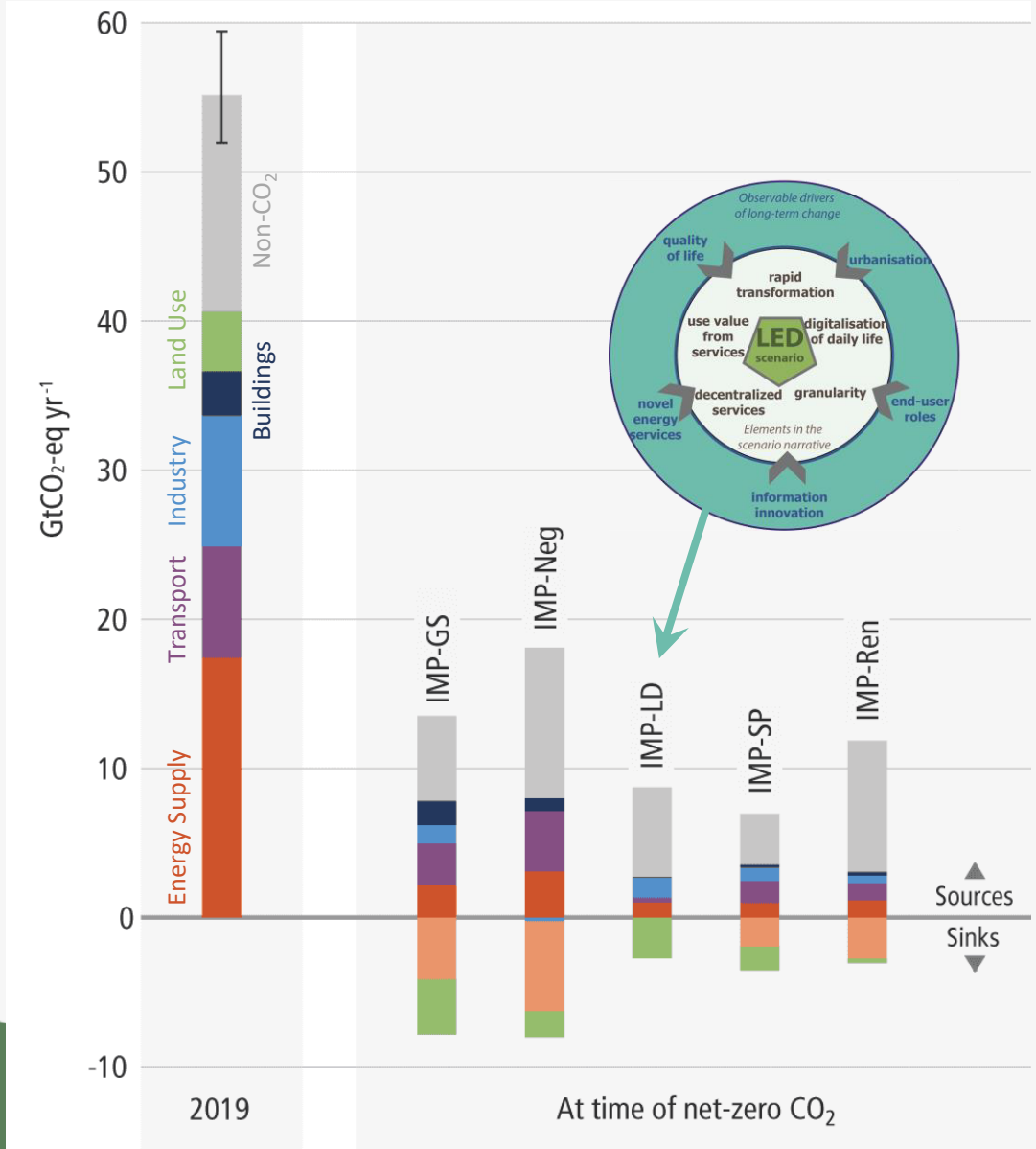






Source: Wilson, Grubler, and Zimm (2022). Energy-Services Led Transformation. In: *Routledge Handbook of Energy Transitions* (Ed: Araujo).
Data from: Grubler et al. (2018), De Stercke (2014), Nakicenovic et al. (1993), Nakicenovic (1990).

Demand side measures show major benefits in IPCC AR6



Benefits of low Demand:

- Reduced dependence on carbon dioxide removal technologies (CDR)
- Reduced trade-offs with SDGs, particularly biodiversity and food security
- Increased supply flexibility and lower reliance on high-cost supply technologies (eg, nuclear)
- Focus on increased wellbeing

(IPCC AR6, Chapter 3, Riahi et al, 2022)

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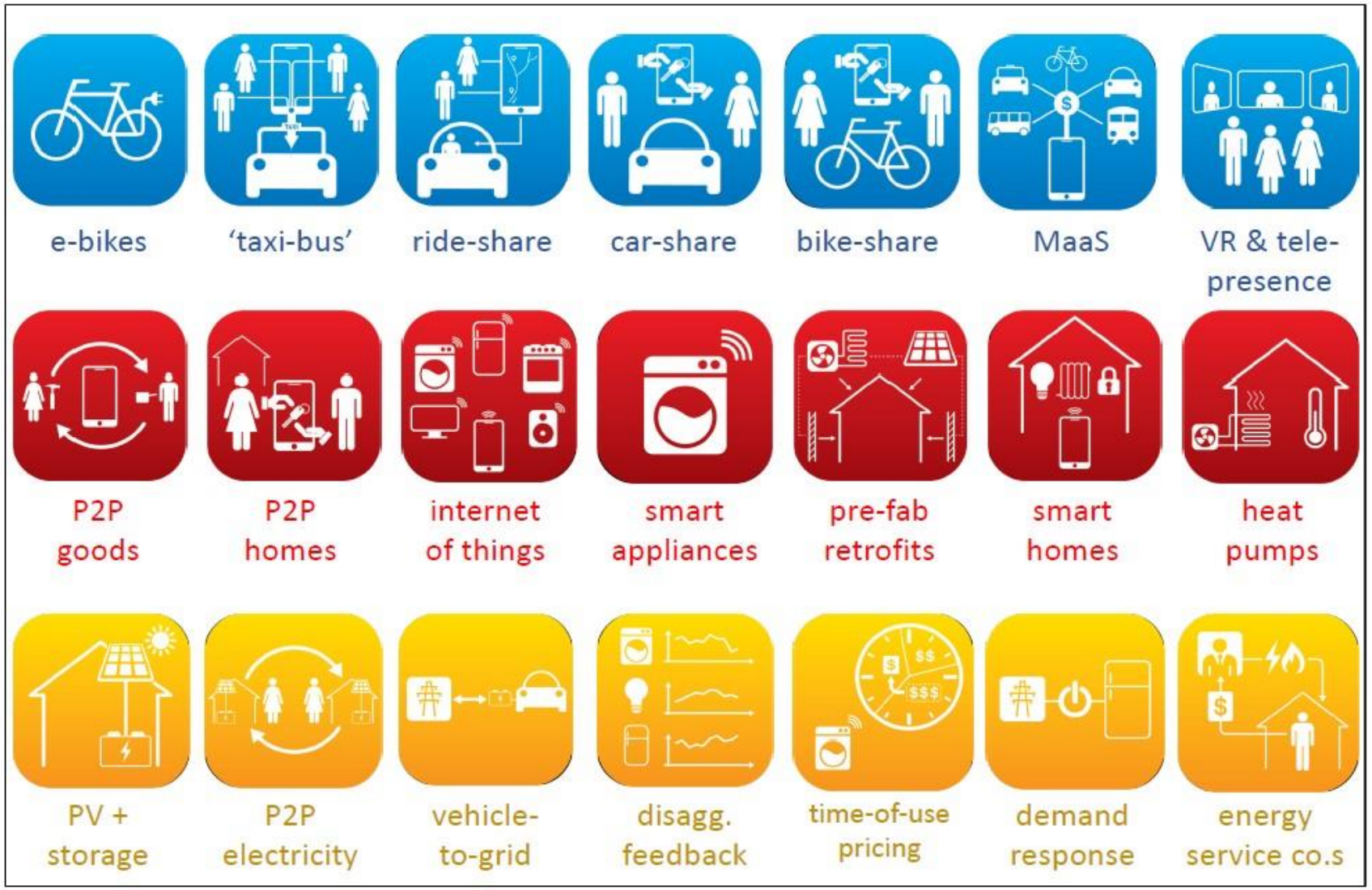
Trends in Social and Technological Change

- Changing consumer preferences (e.g. diets)
- Generational change in materialism (service rather than ownership)
- New business models (sharing & circular economy)
- Pervasive digitalization and ICT convergence
- Rapid innovation in granular technologies and integrated digital services

Disruptive End-user Innovations



- ✓ Ownership to usership
- ✓ Sharing economy
- ✓ Automized to connected

Source: Charlie Wilson

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My balkony in 2050

EDITS arts competition 2022

Thank you.

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