ACED:
Accelerated Circular Economy Development

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- Reduce
- Reuse
- Repair
- Remanufacture
- Recycle
- Recover
- Replace

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Sections

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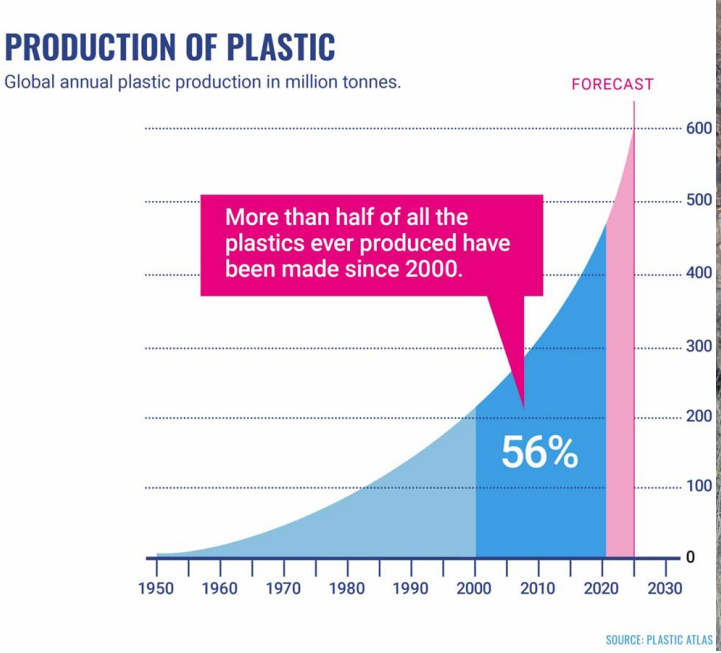
Leakage and adaptation: Fossil fuels to FUELS

Now and future: fossil fuels to plastic to FUELS



OUR BIG IDEA

Accelerate the transition to “zero” fossil fuels by:

- **Valuing/pricing waste**
- **And using to stimulate reducing, recirculating, recycling, and recovering materials for 2nd-life applications**
- **Fast-tracking replacements for carbon-based products**

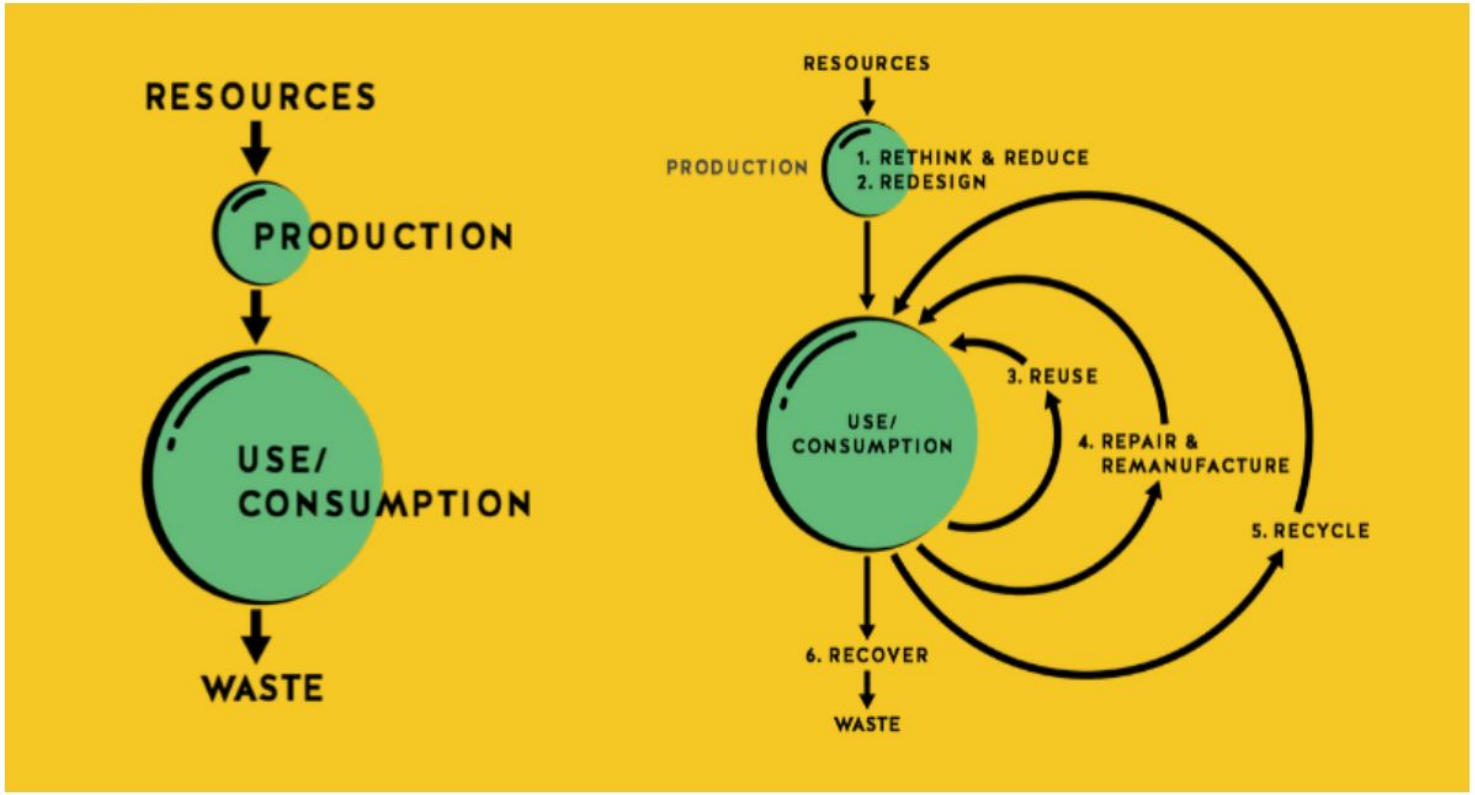
… In novel, pragmatic, economic, and equitable ways

ACTIONABLE

FILLING THE GAP

PRAGMATIC

Elizabeth Lyon



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Circular Economy diagram adapted from PBL Netherlands Environmental Assessment Agency. themasites.pbl.nl/circular-economy/

https://www.uschamberfoundation.org/blog/post/circular-economy-toolkit-small-businesses

Designing and pricing system level models for ACED

System Level Goals: Transition to zero, equity/justice, efficiency, cross-disciplinary objectives.

Innovations: Strategies, markets, operations, computation, behavior, policies, materials, manufacturing, localization, property rights

Spatial and time scopes: Household, city, state, county, continent, global; Now, 1 year, decade

We need: integration between lifecycle models (accounting, simulation), independently operated system optimizations, planning and investment processes be linked by prices of shared inputs and outputs

The mathematical problem: How can we effectively determine such prices, what properties do they have, and what policies should govern their evolution, and how optimized objectives between several aspects within the system can be achieved?

What Goal Area(s) does this address?

1) Waste reduction motivated by costing/valuing waste
2) Public health problems
3) Sustainable replacements for fossil-/carbon-derived products
4) Urgency to make rapid movement towards climate goals
5) Address sustainability in an equitable manner
6) Inspire greater collaboration among all potential stakeholders

Wh **cular, sustainable world?**

1) **o problem conceptualization and**

ers: consumers, product developers,

ting/data/math modelers, engineers
s, industrial, control, etc.), physical

2) **ele**

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ion of waste for 2nd-life applications

3) **esigns to price mechanisms for waste**

4)

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Thank you