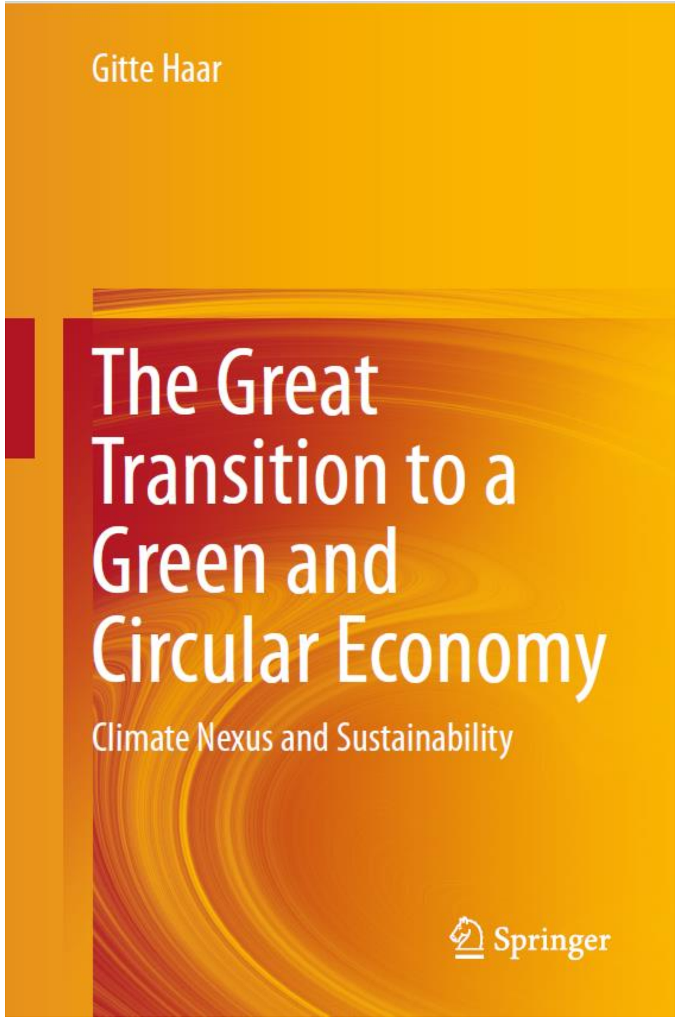
A sustainable energy transition is integrated and circular.



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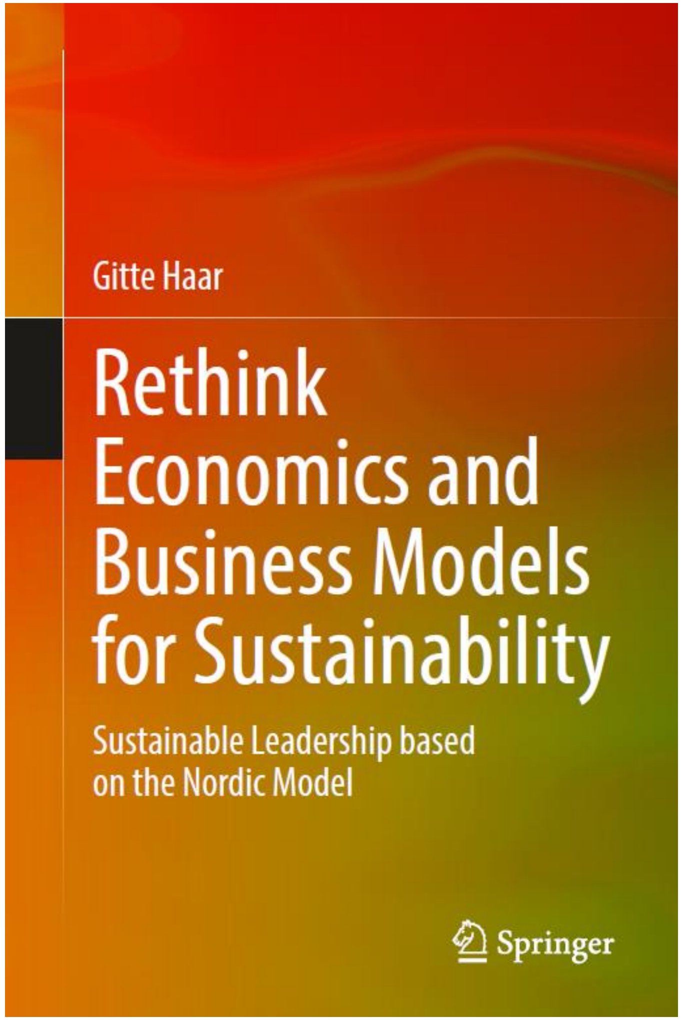

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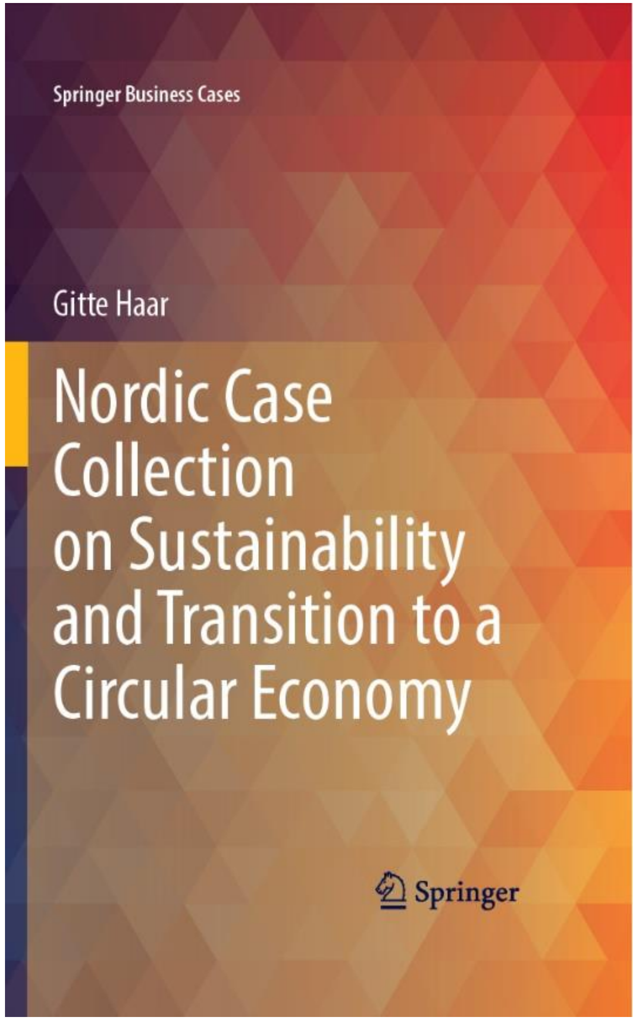
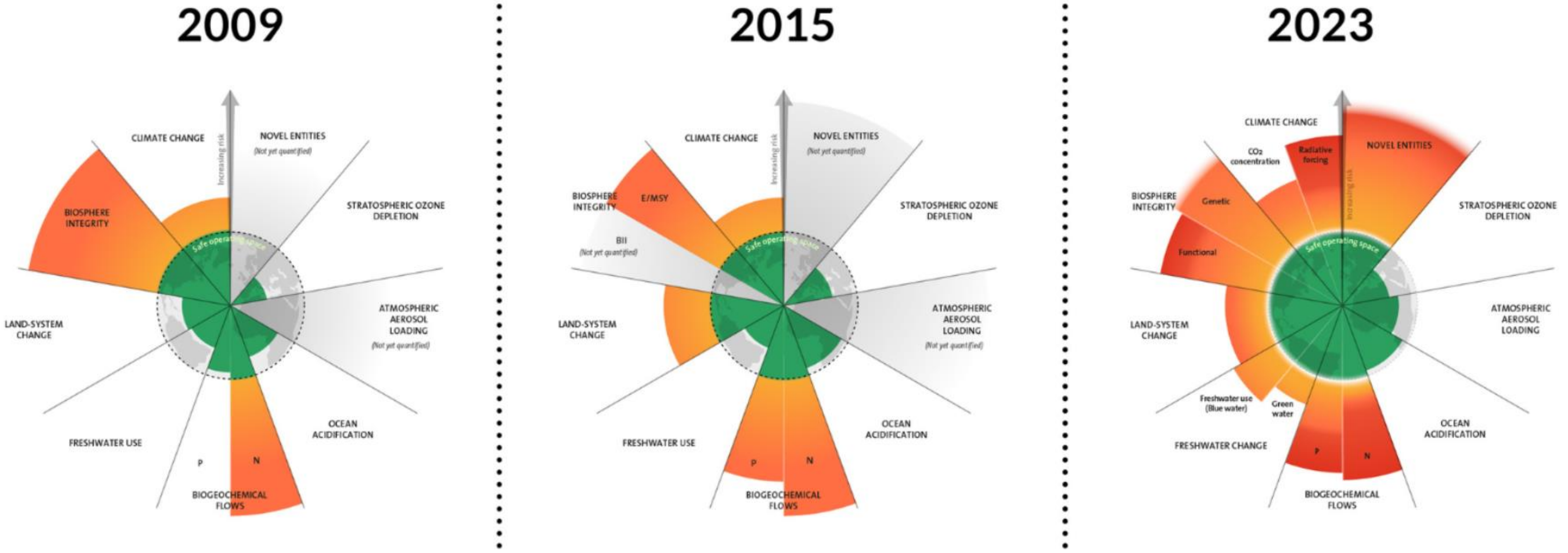


https://link.springer.com/book/9783031786372

CENTER FOR CIRKULÆR ØKONOMI

Six out of Nine Planetary Boundaries are exceeded

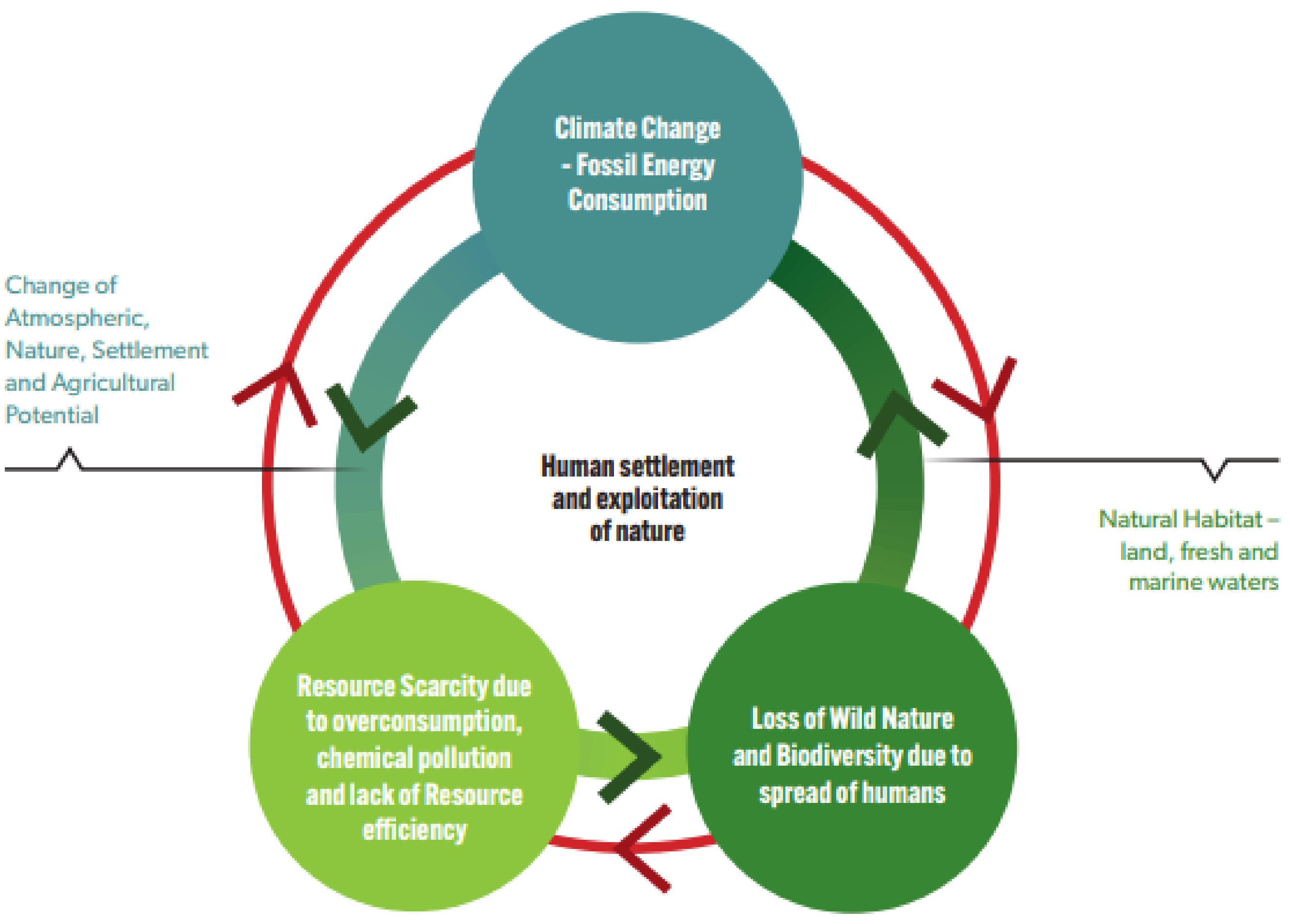
Green water: precipitation / evapo-transpiration



https://www.stockholmresilience.org/research/planetary-boundaries.html

The Anthropocene Age

Figure 1 Anthropocene Age.

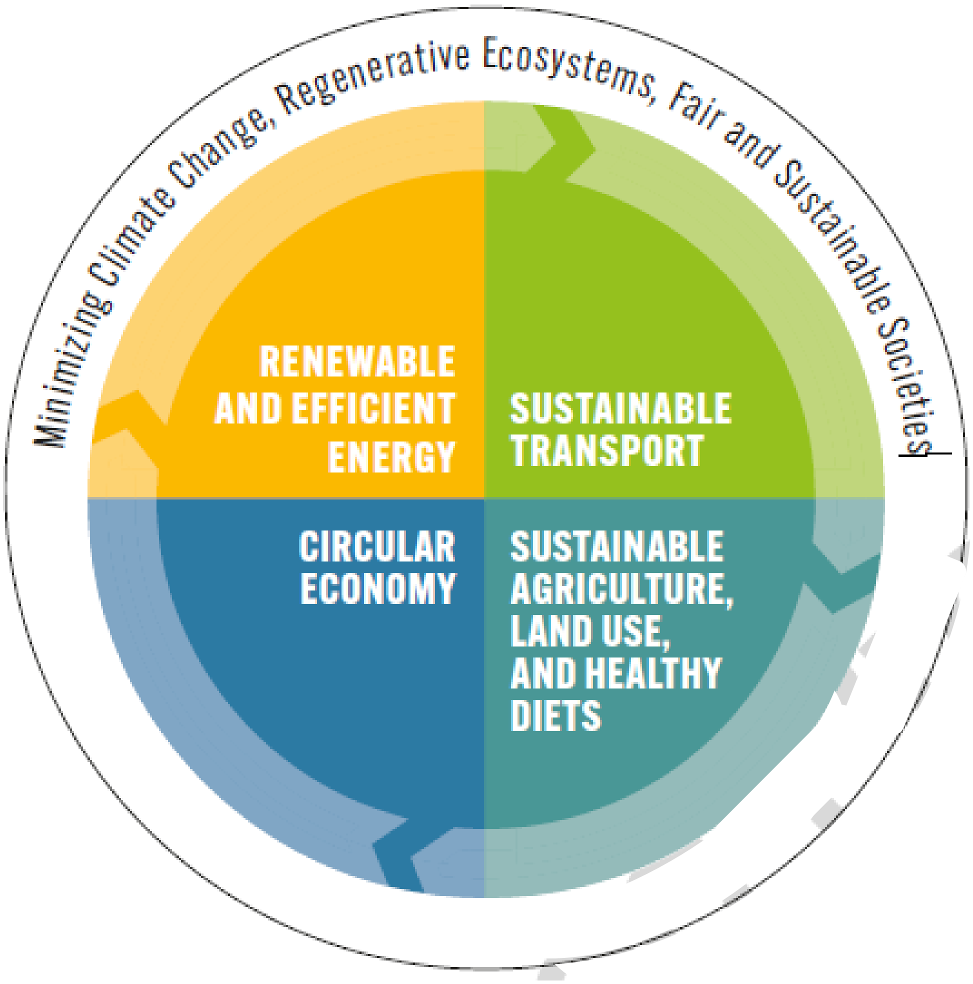


All figures in this presentation are from the book: The Great Transition to a Green and Circular Economy. 2024. Gitte Haar. SpringerNature. They can only be replicated when using the correct reference.

Climate Nexus in a Nordic Perspective

Very low impacts from energy with integrated plans to meet international commitments. Except Norway with no goal on stop of fossil extraction

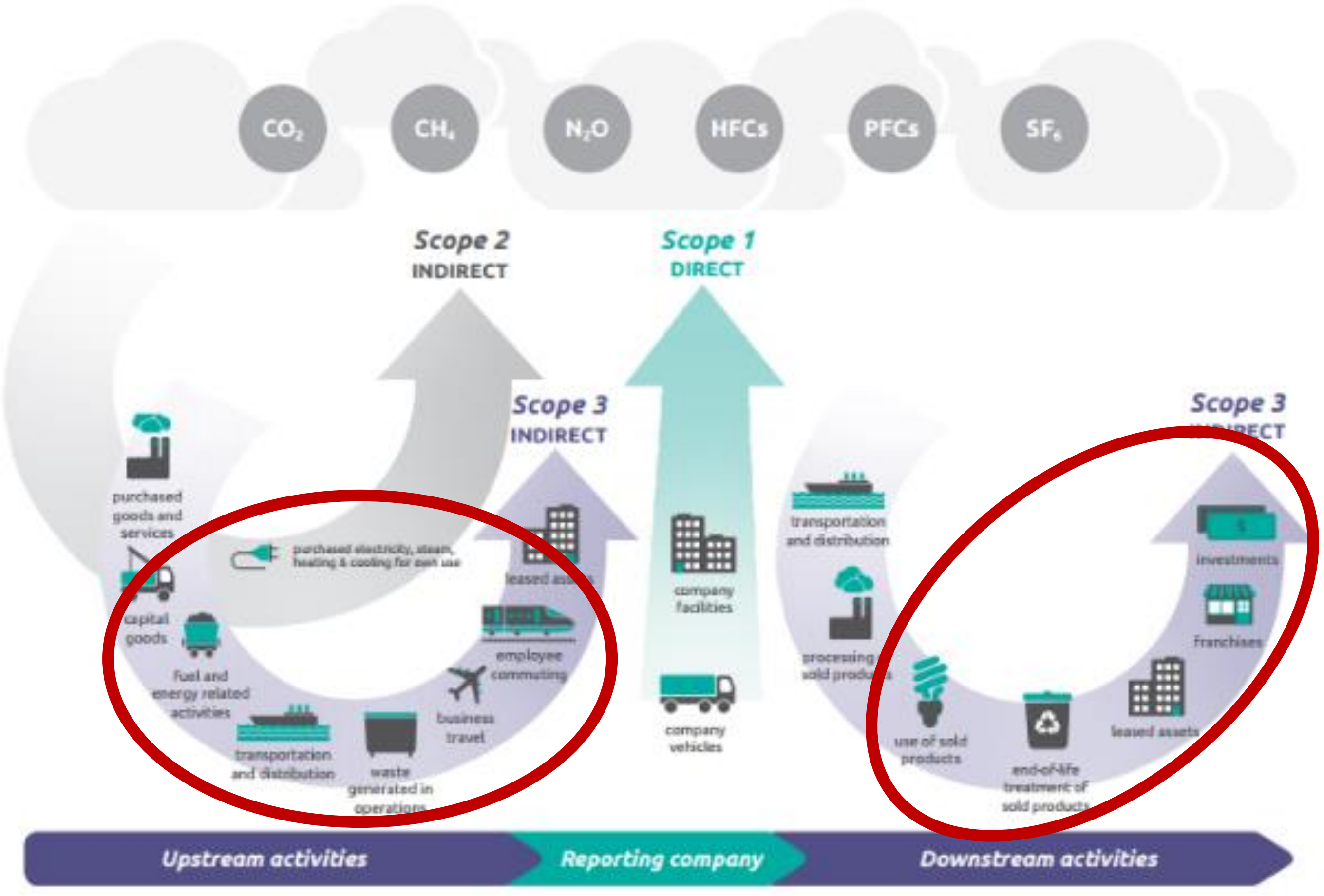
The Nordics are large consumers of imported goods from other regions, only exceed by US. We are least circular with 3-4%. Here needs strong implementation



Far from livable cities and strong shared transport. The large emitter is road transport, and we need to get back to energy efficient means of transportation of goods and people

Agriculture and forestry is challenging Wild Nature and Biodiversity, especially in Denmark and Finland. The waters as North Sea and The Baltic Sea, is challenge by intensive agriculture, industrialized fishing and chemical pollution

UN GHG Protocol for Renewable Energy Installations



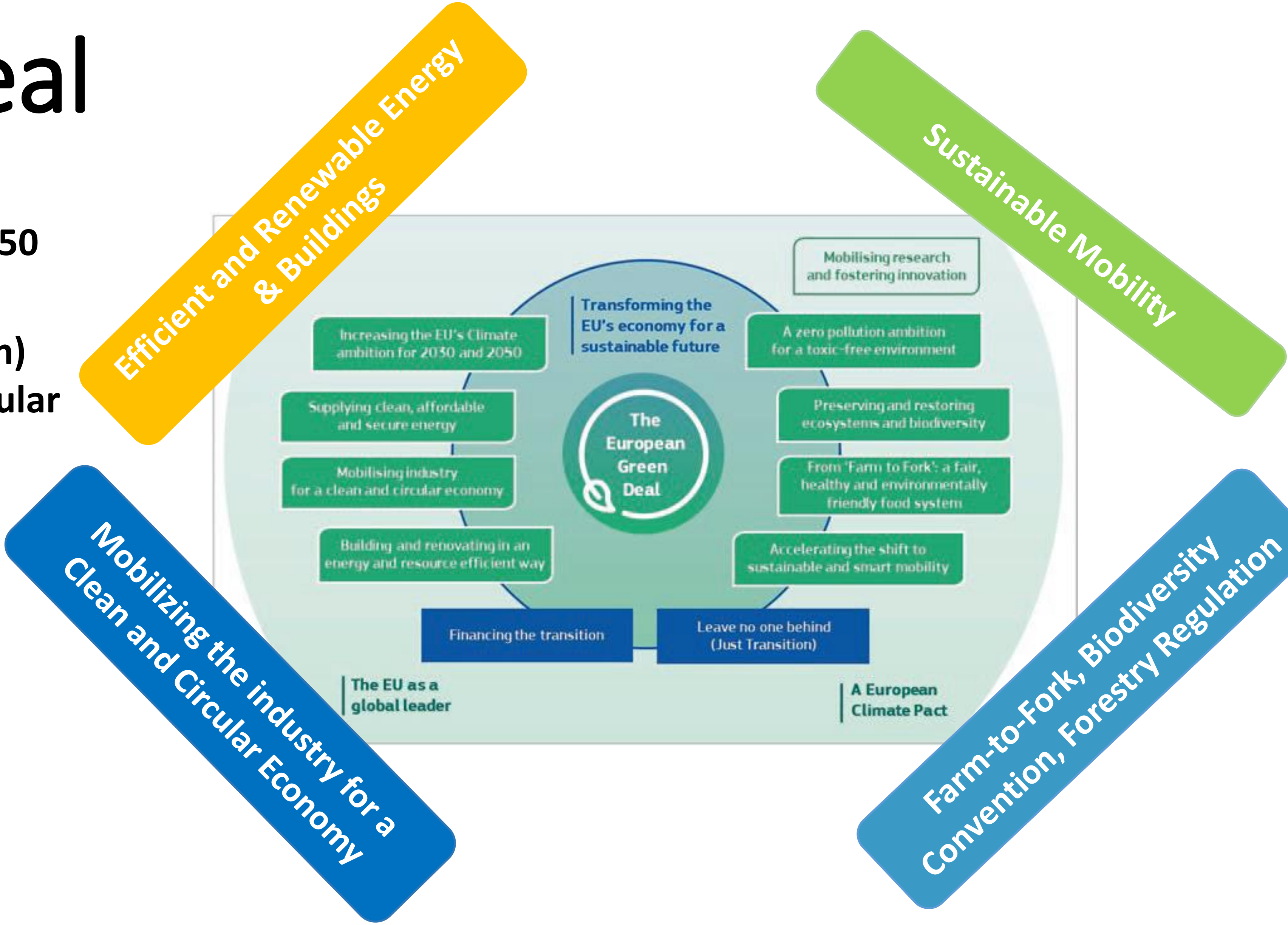
GHG Protocol

Generating Renewable Energy for others scope 2
=
Avoided Emissions (“scope 4”)

Scope 3 accounts for
80-90% of GHG-emissions
for most manufacturers
- also RE Installation

EU Green Deal

- Climate Neutral Region in 2050 (2035)
- Decouple growth from (virgin) recourse consumption = Circular Economy
- Not leave anybody behind in the transition
- Become the most Biodiverse Region, globally



Wild Nature and Biodiversity

Increasing organic farming and biodiversity-rich landscape features on agricultural land

Halting and reversing the decline of pollinators

Restoring at least 25 000 km of EU rivers to a free-flowing state

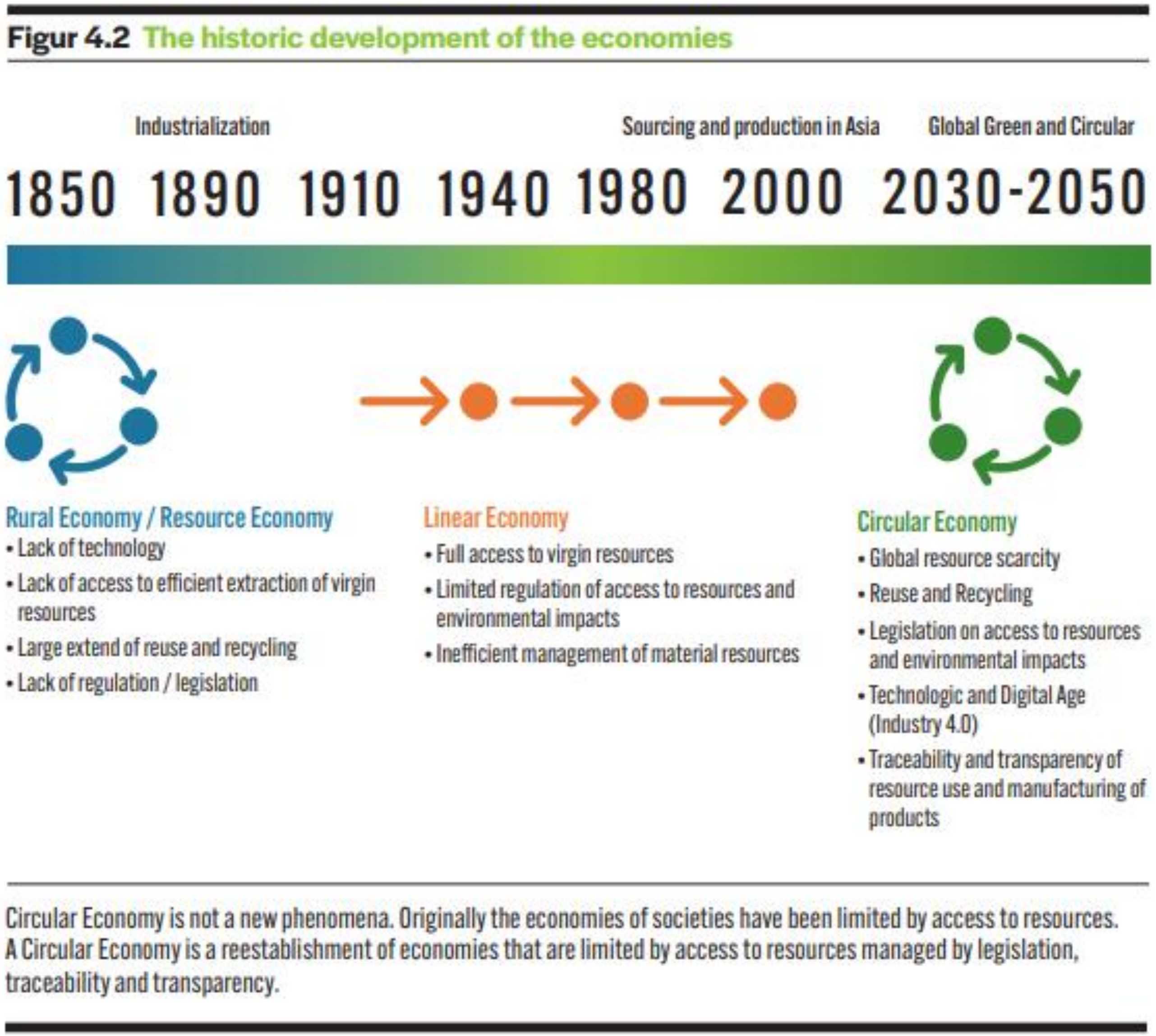
Reducing the use and risk of pesticides by 50% by 2030

Planting 3 billion trees by 2030

- **30% protected land and ocean in the EU**
- **10% wild nature - strictly protected**
- **€20 billion/year for regenerative biosystems**
- **Leading position on biodiversity based on the UN's new global framework for biodiversity**

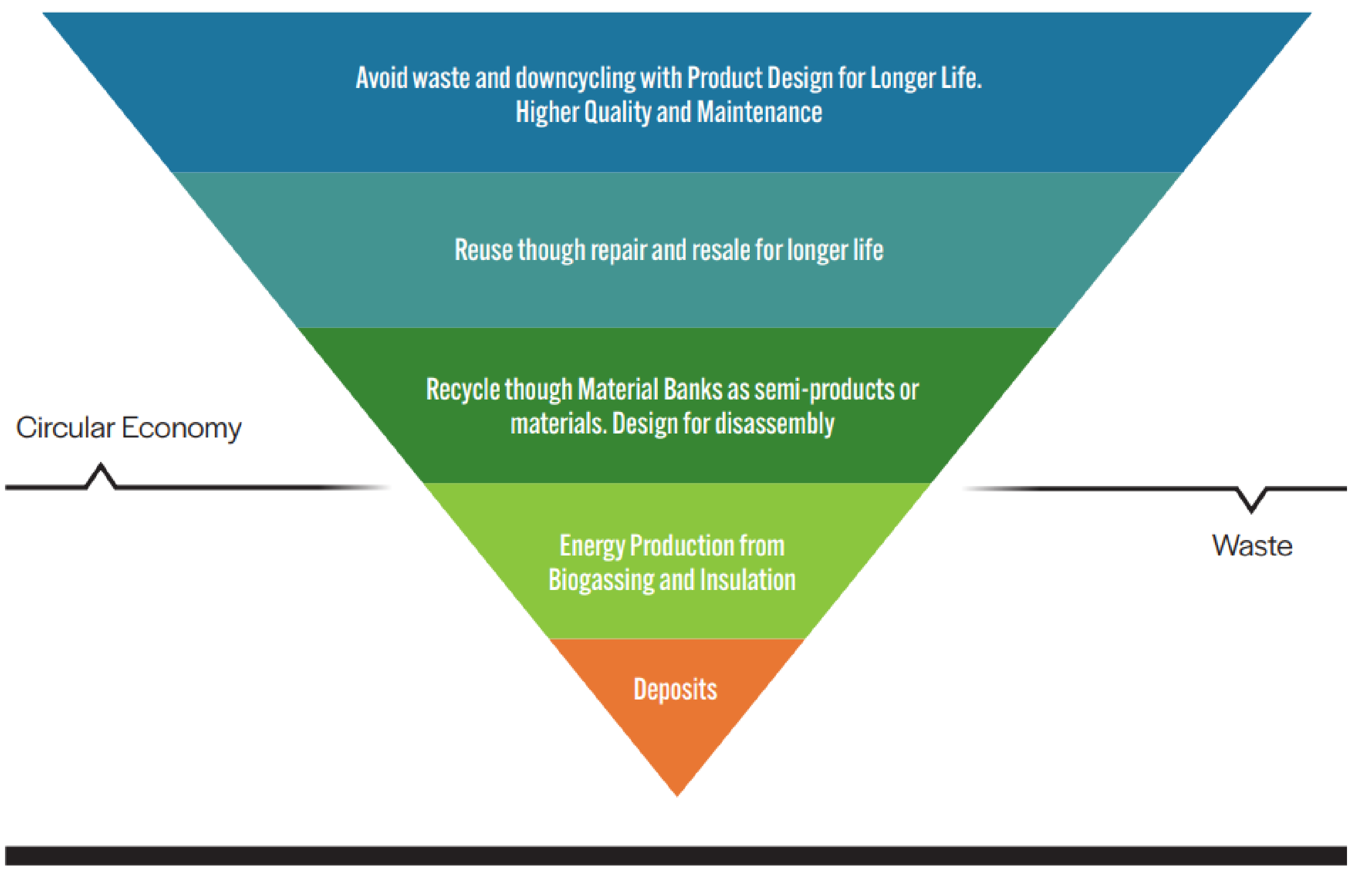
CIRCULAR
ECONOMY

From a resource economy to a Circular Economy



Resource Hierarchy

Figure 8 Resource Hierarchy



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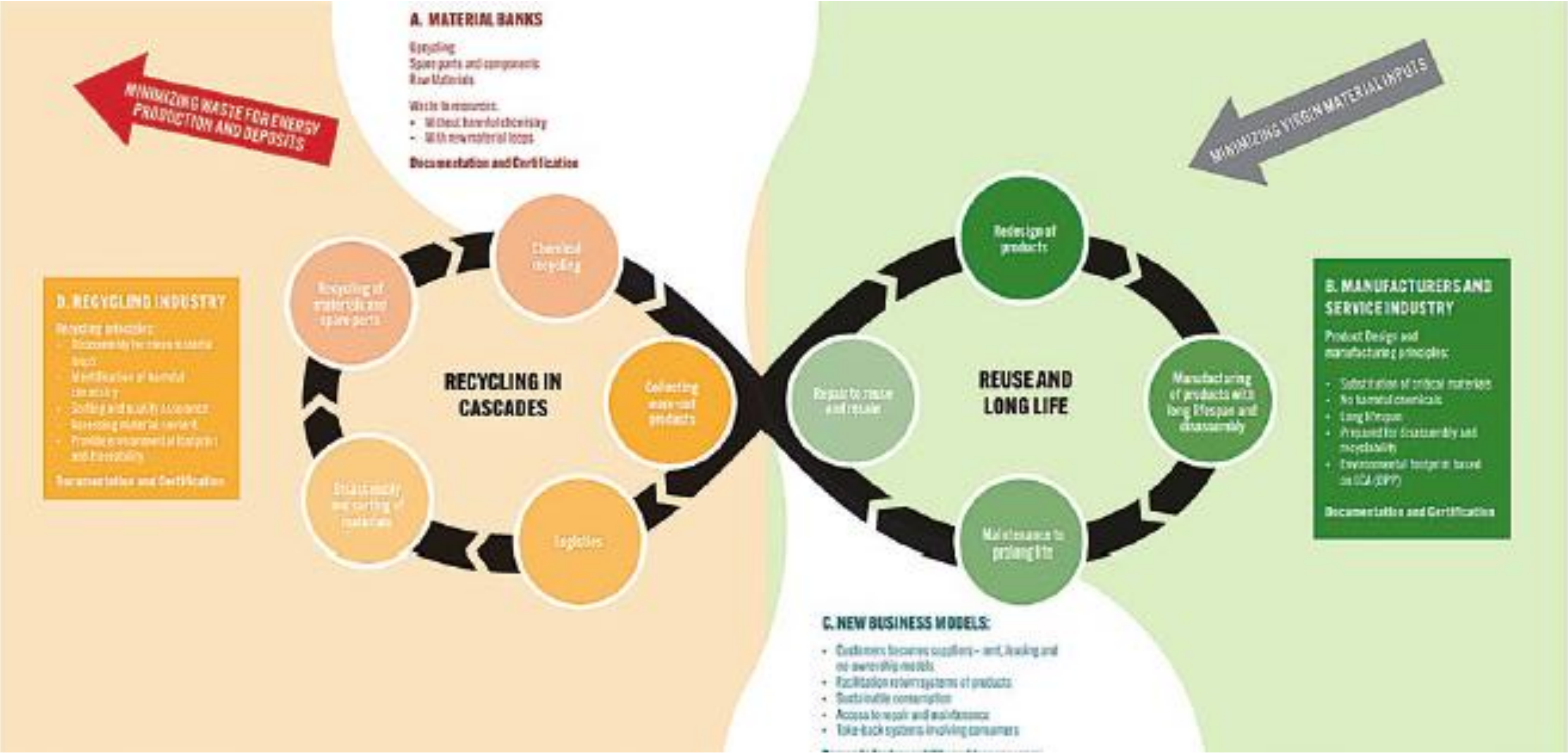
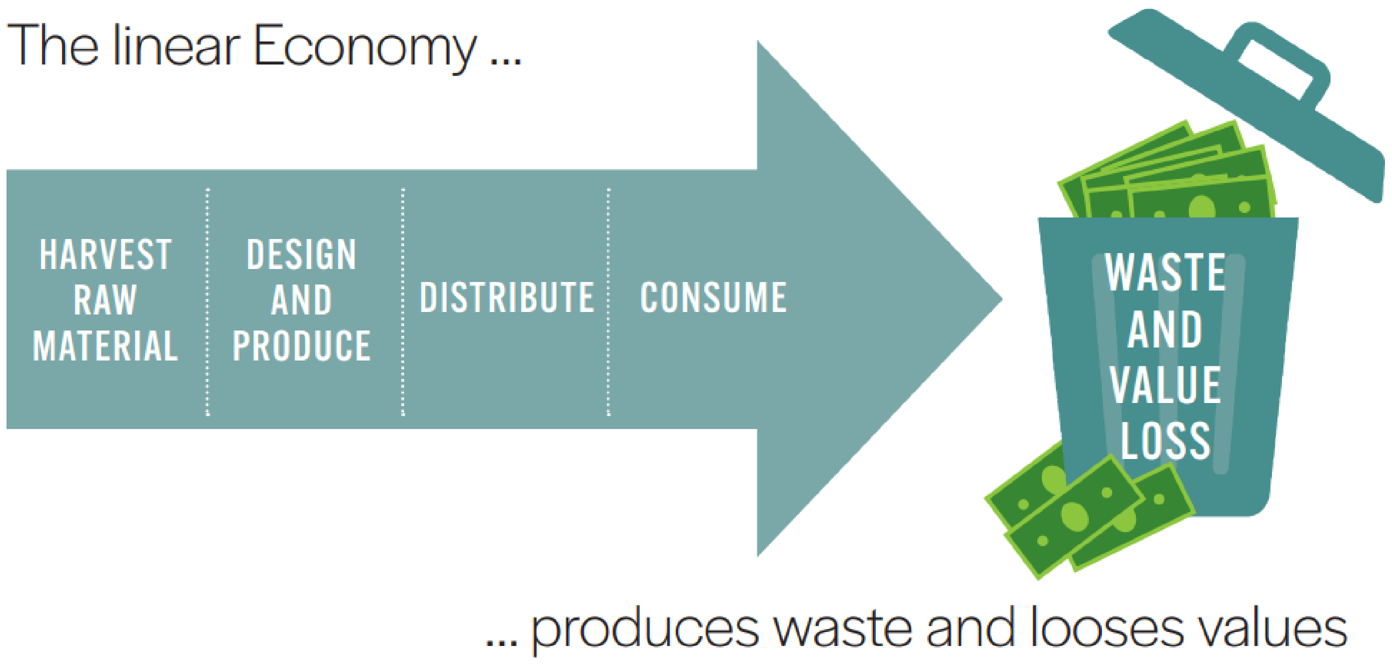
Circular Economy in EU in 2030

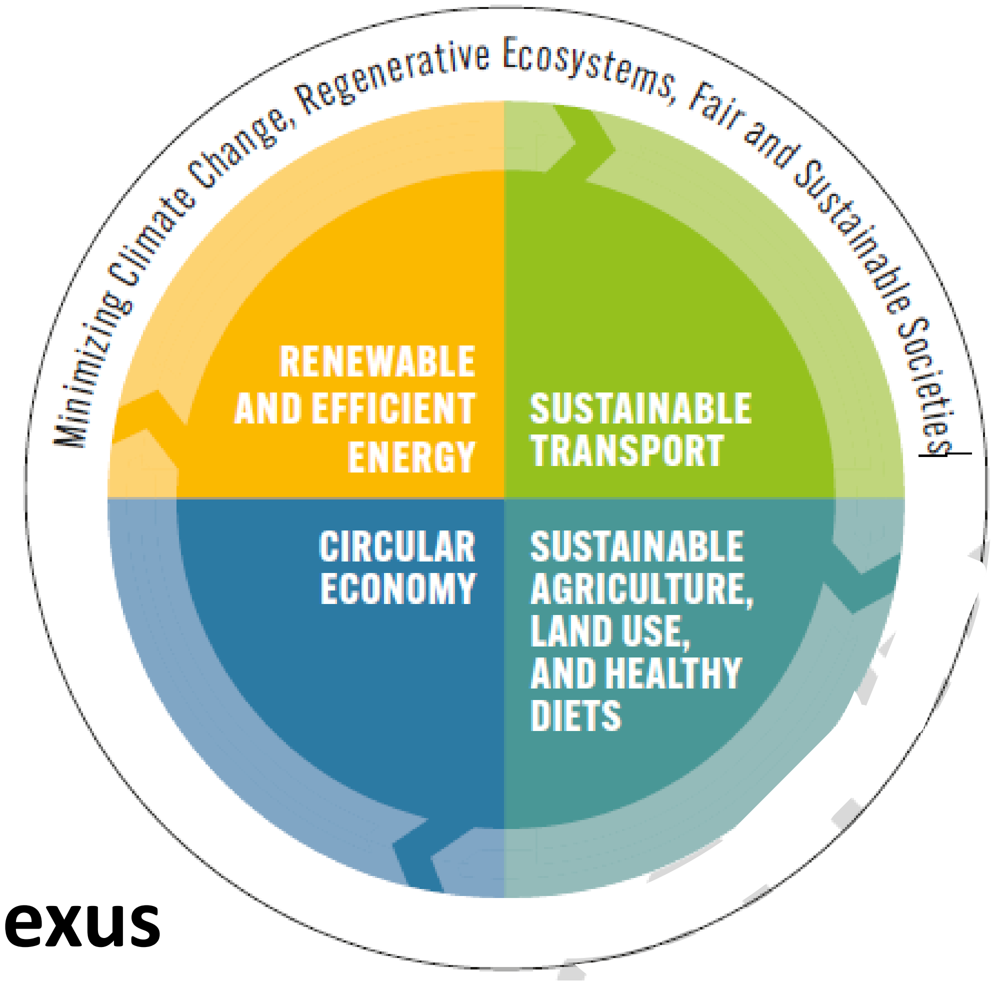


Is the Renewable Energy Industry still in the Linear Economy?

Figure 12 **Linear Economy**



A sustainable solution is integrated and circular



Climate Nexus

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