



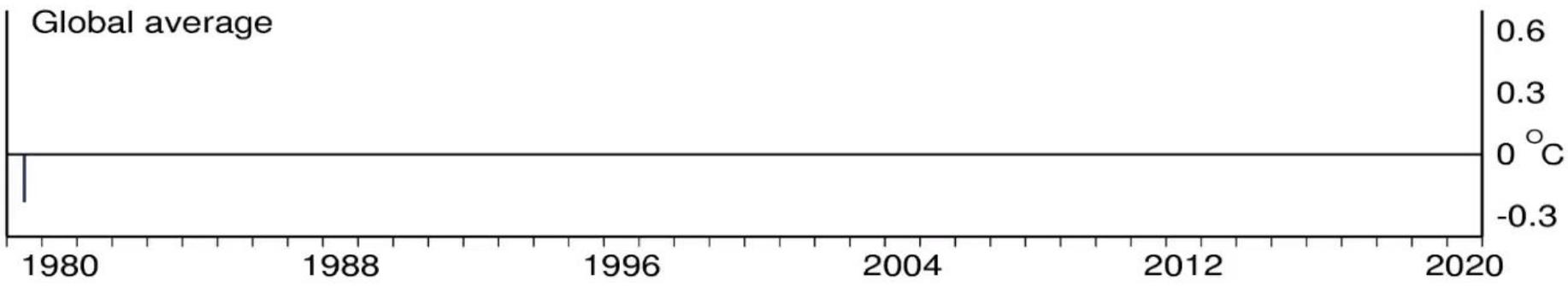
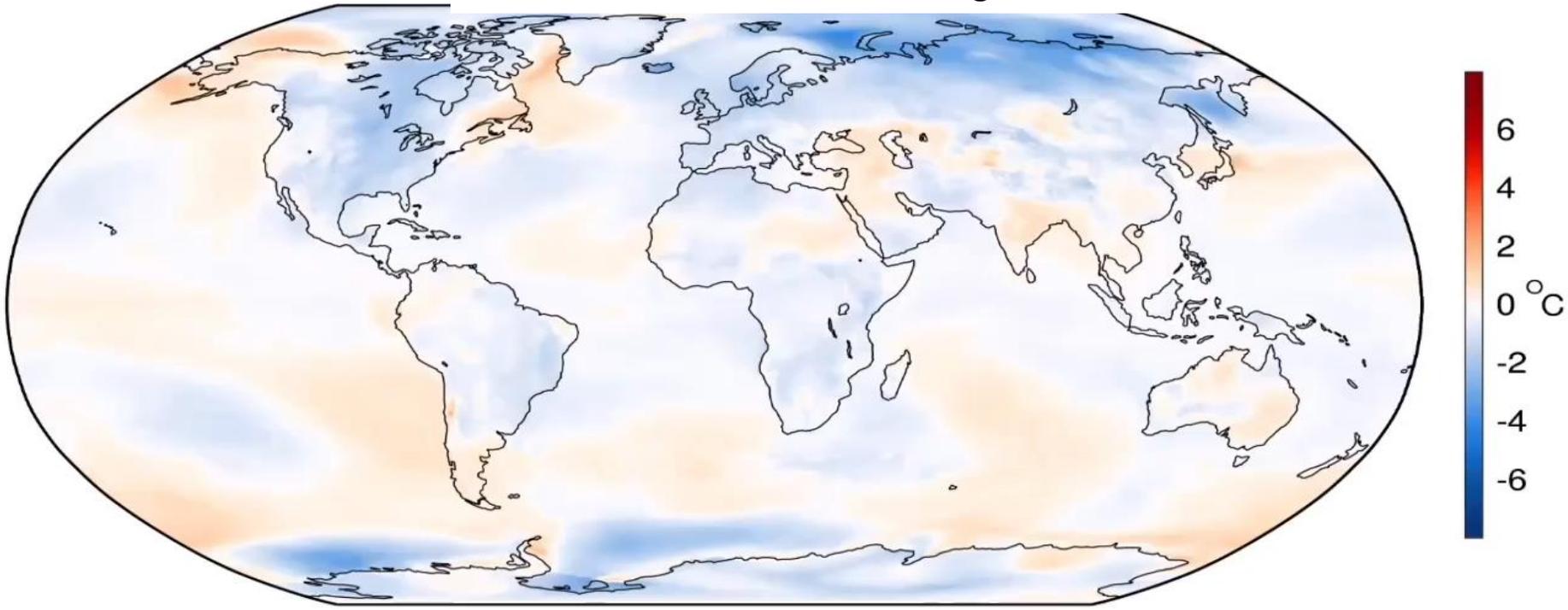
# Europe's energy transition: Embracing a new paradigm towards carbon neutrality

Hans Bruyninckx | Energy Evaluation Europe | 10 March 2021

# No more business as usual



Surface air t Monthly surface air temperature variation relative to 1981-2010 average



Source: Copernicus Climate Change Service

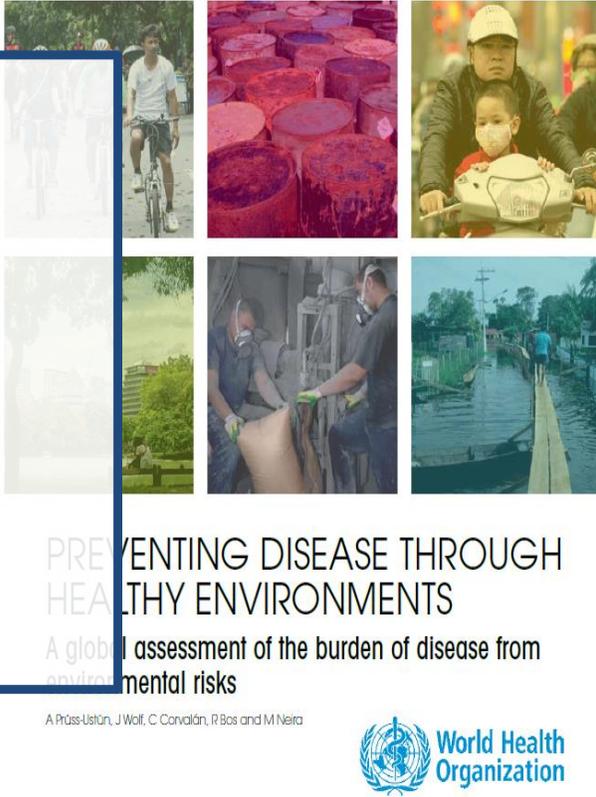
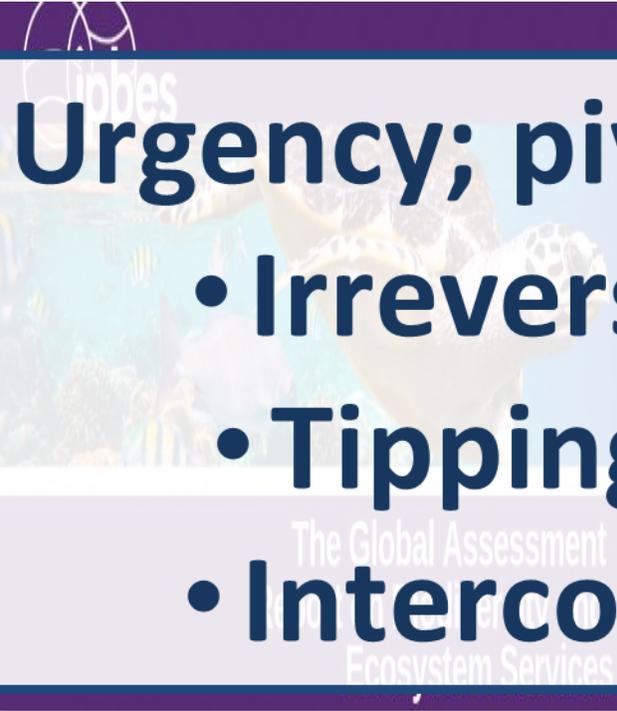
# Global context: unprecedented challenges, improved knowledge

1. IPCC: **climate change**

2. IPBES: **biodiversity loss** and ecosystem services

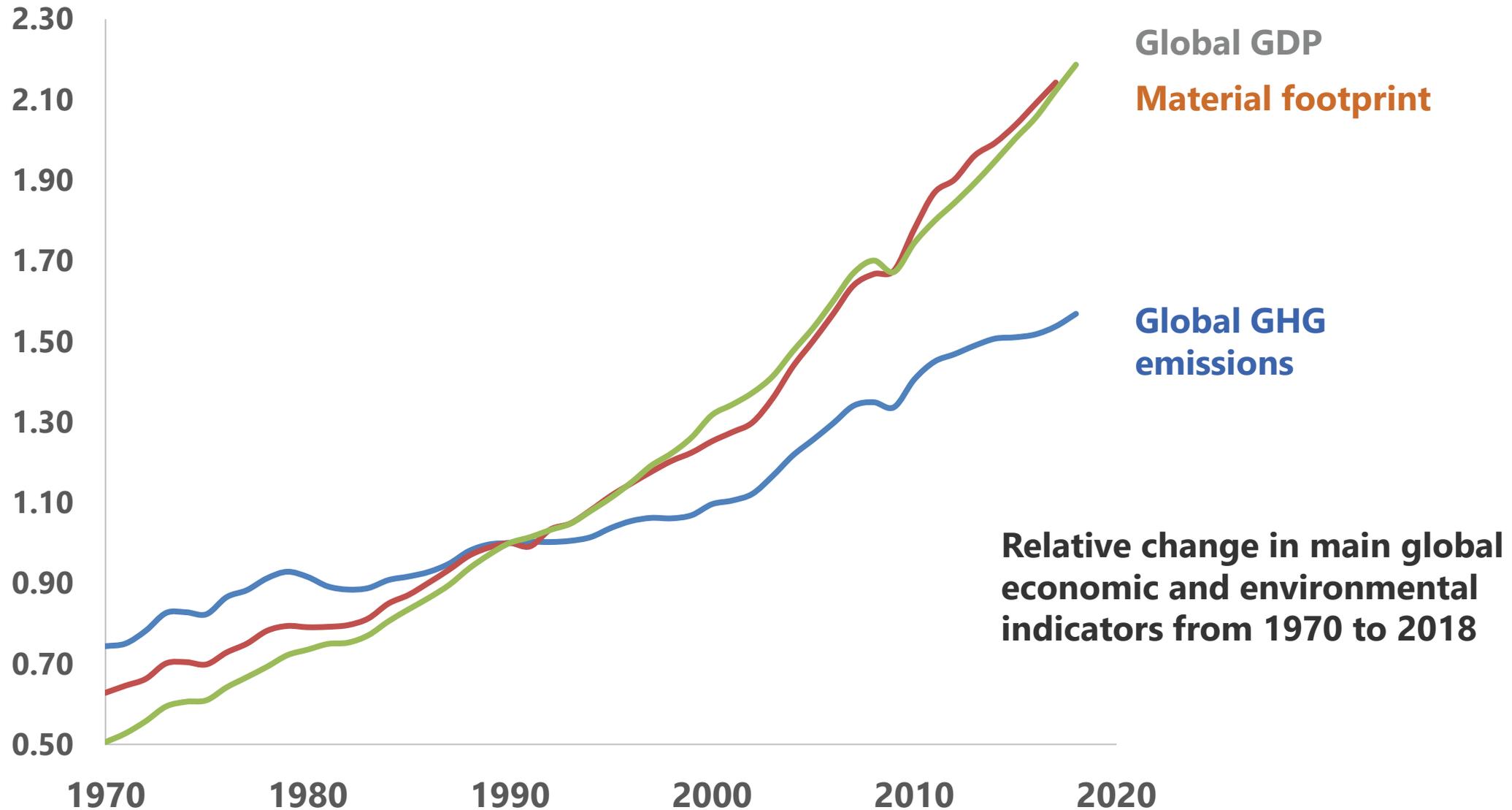
3. IRP: unsustainable **resource use**

4. WHO: environment and **health**



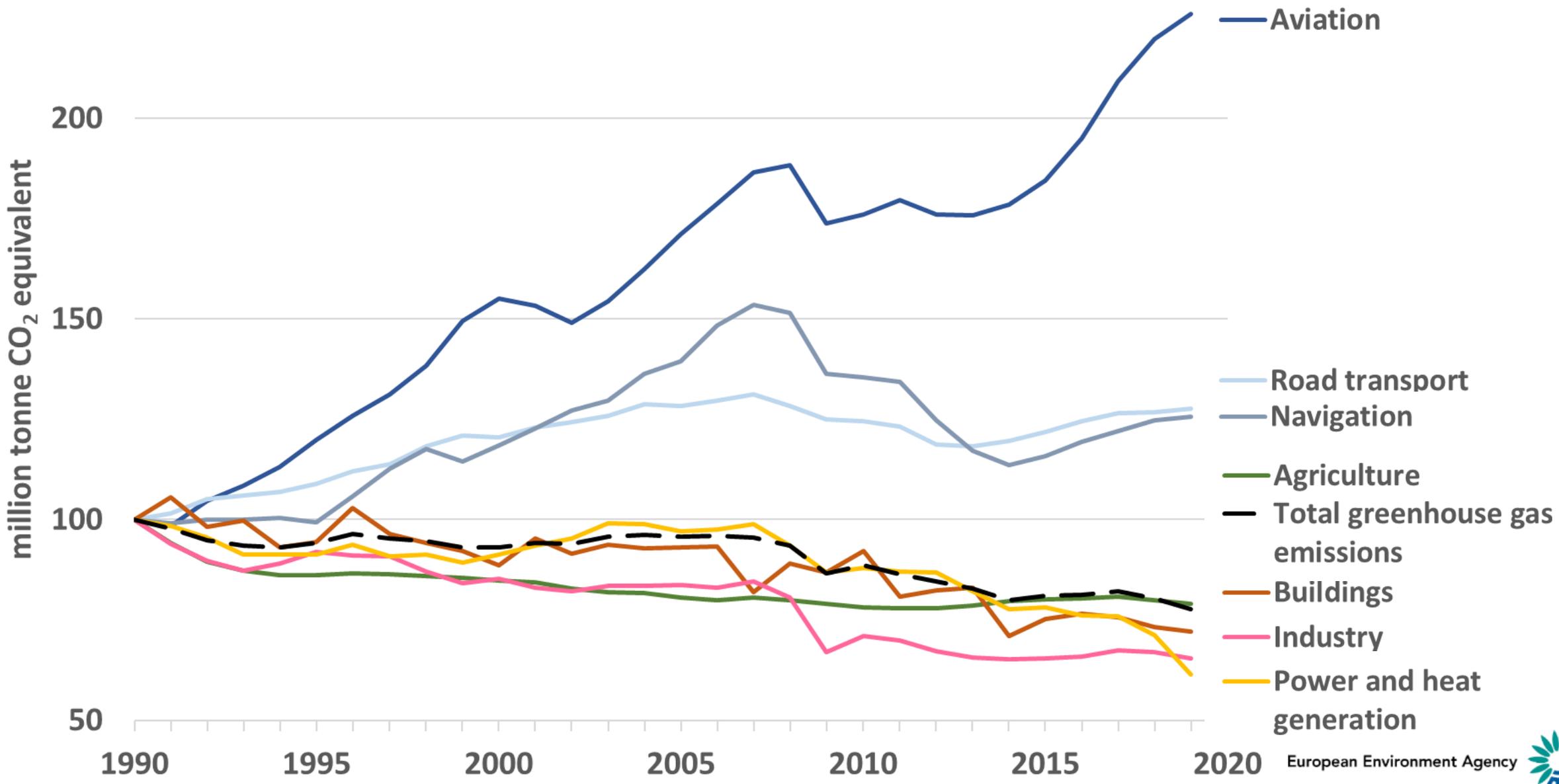
- Urgency; pivotal decade
- Irreversibilities
- Tipping points
- Interconnected

# 'Efficiency paradigm' has brought limited gains

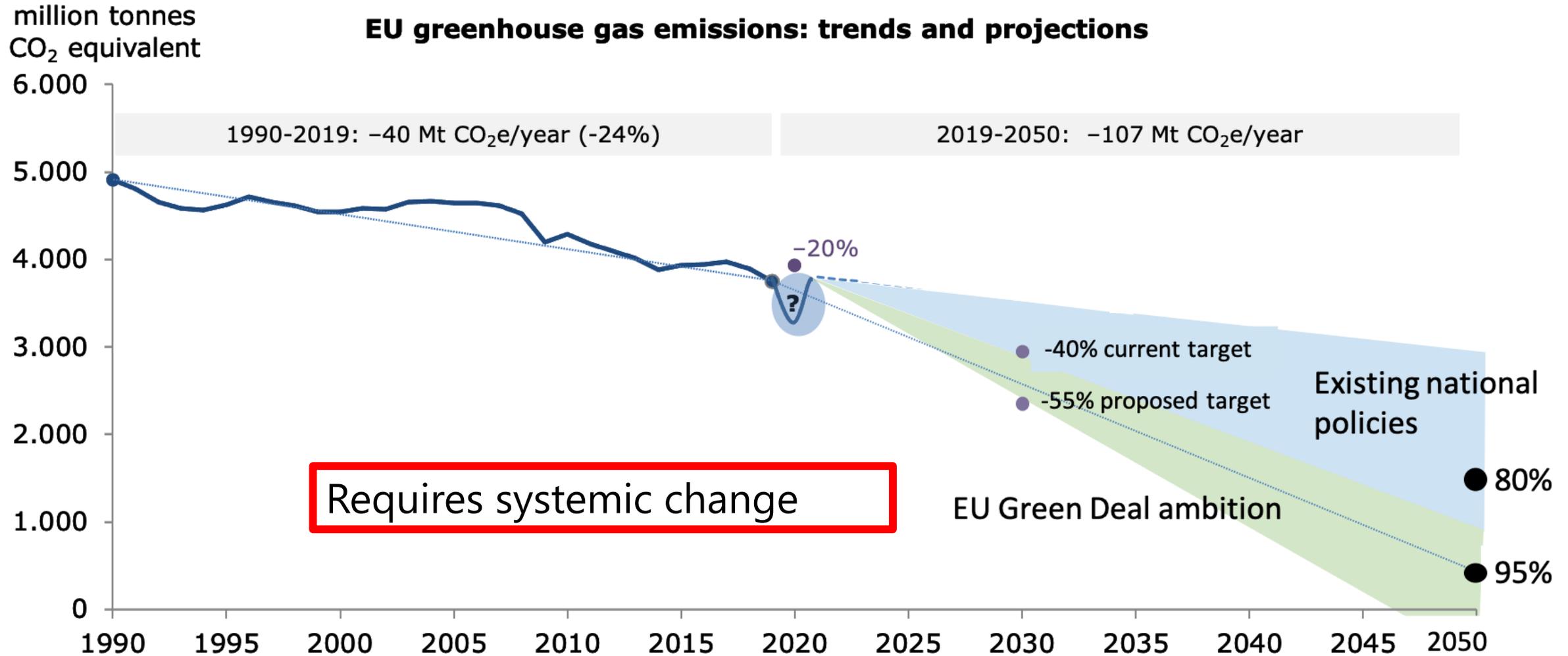


Sources: Modified from Wiedmann et al. (2020).

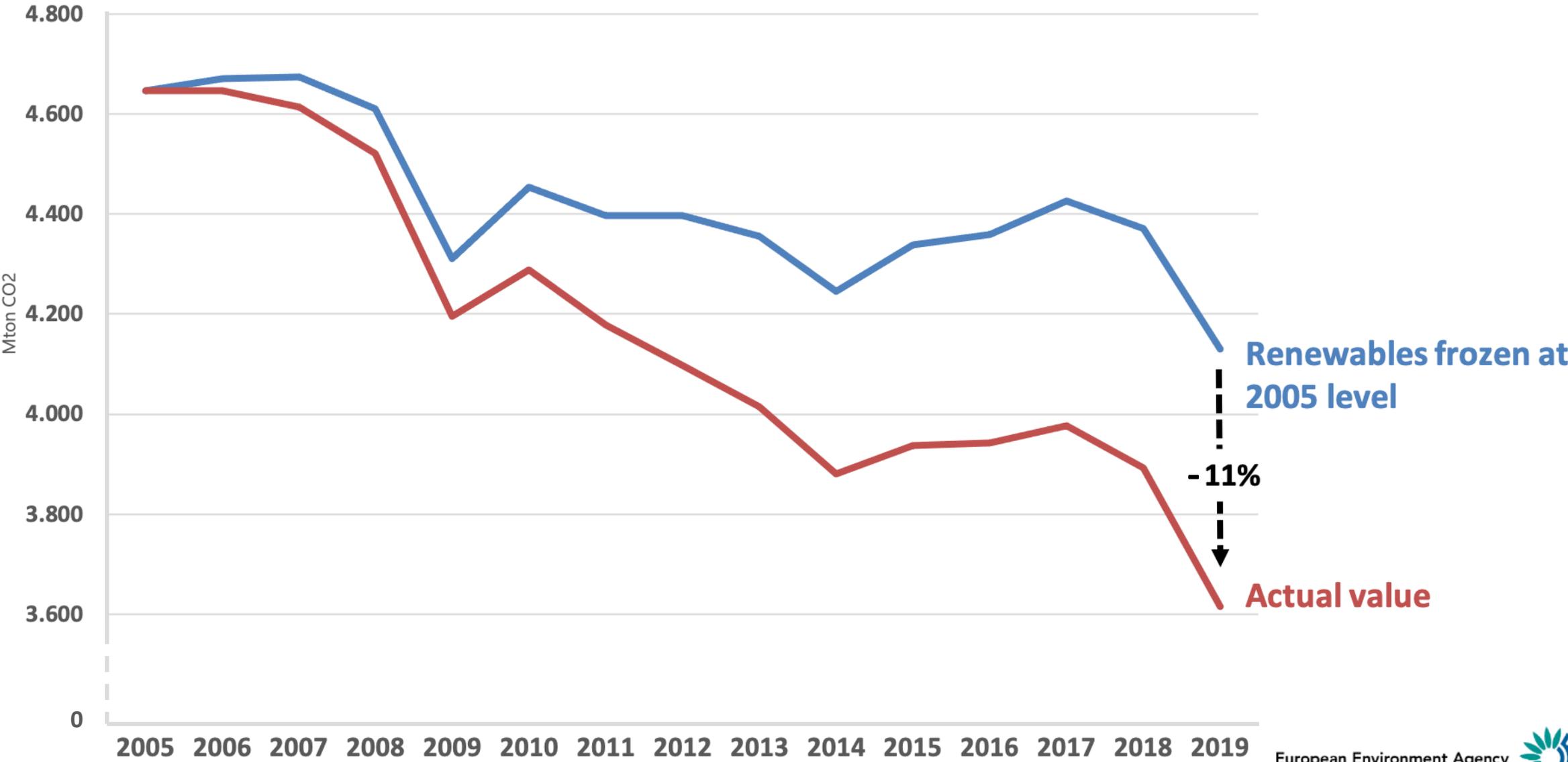
# Emissions by sectors: a mixed picture



# Ambitious targets require a paradigm shift

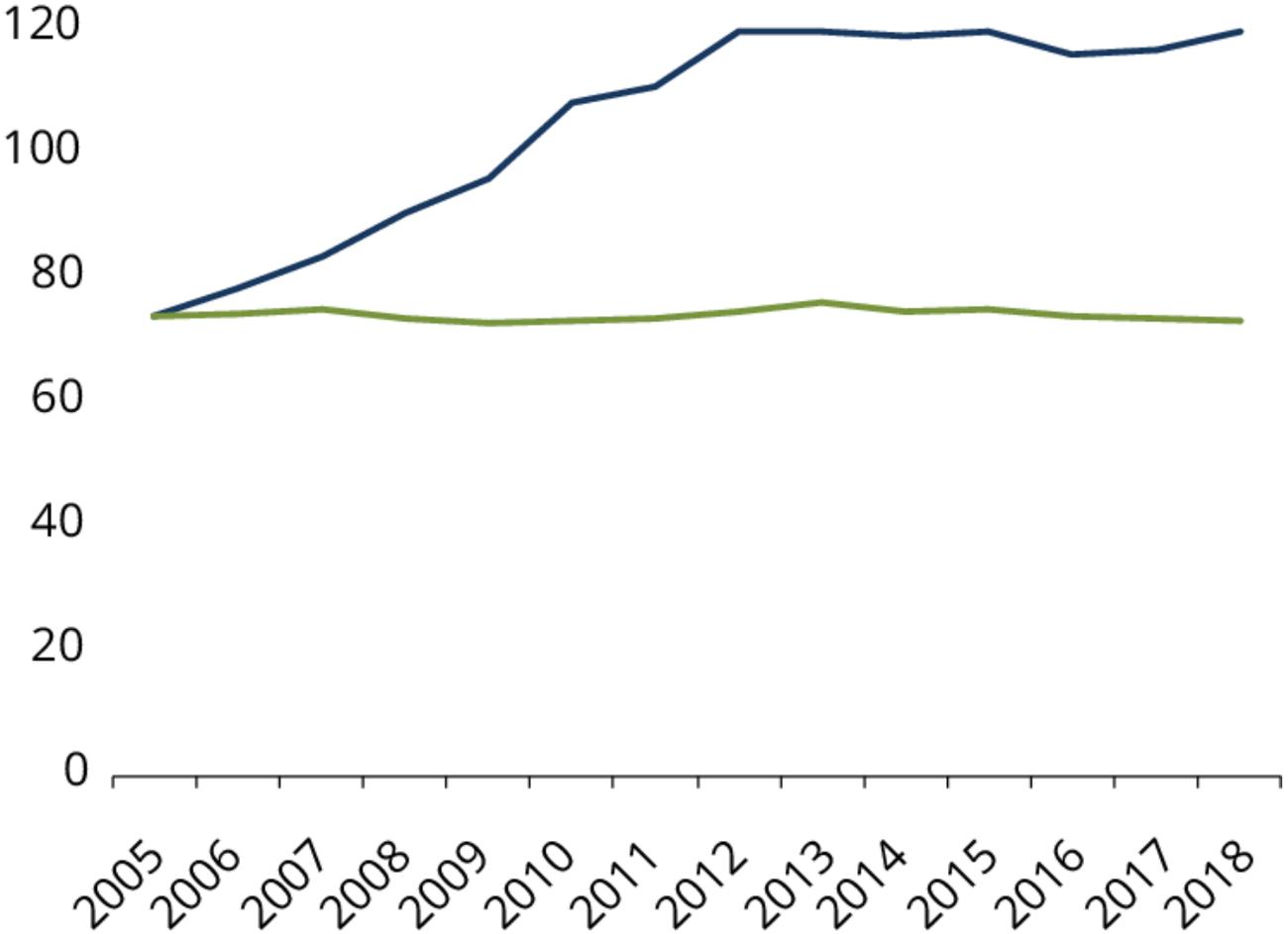


# Renewables key in reducing carbon emissions



# ...but renewable electricity is not impact free

Land occupation (km<sup>2</sup>a)



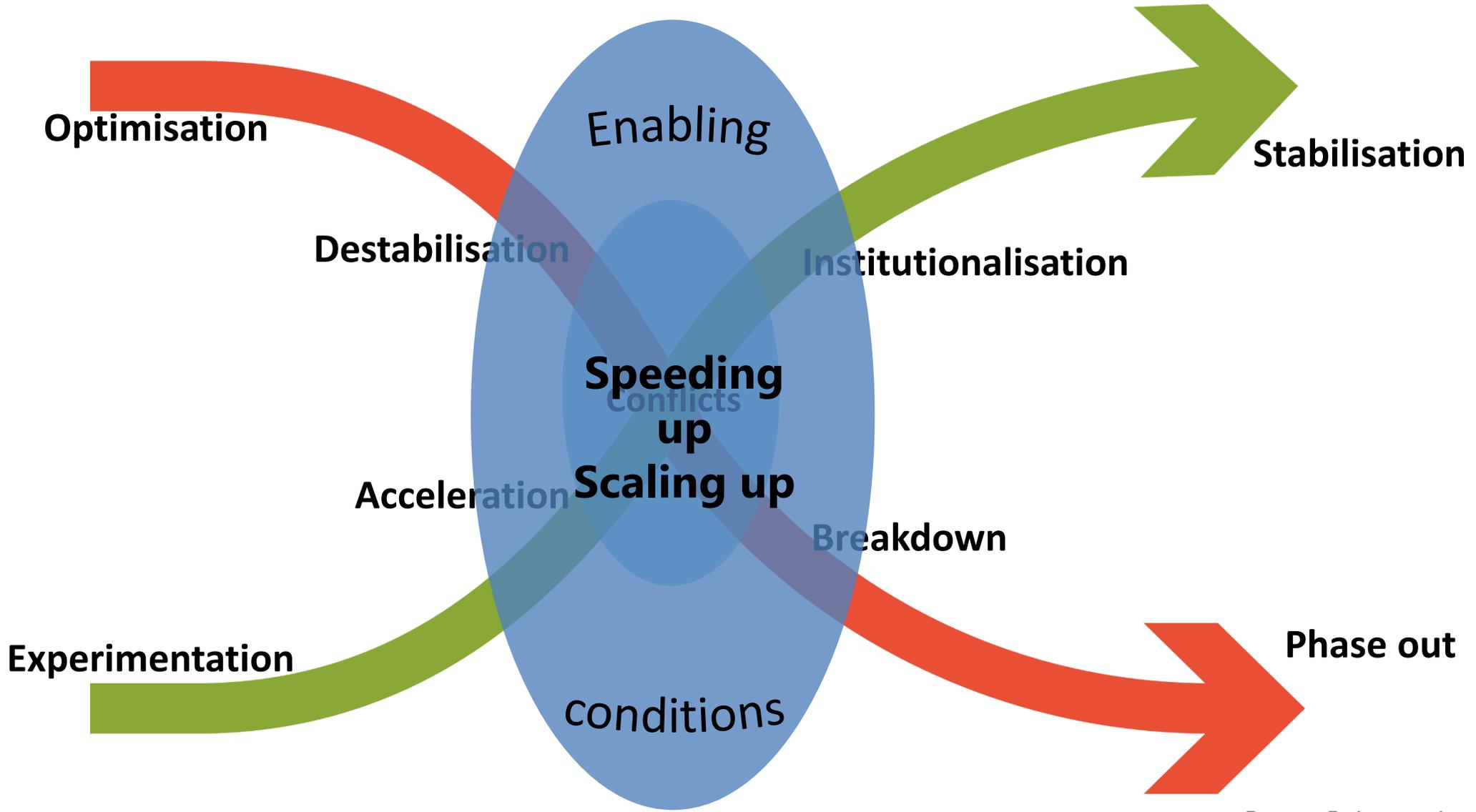
— Actual value      — Counterfactual with renewables at 2005 level



# What does a new paradigm look like?

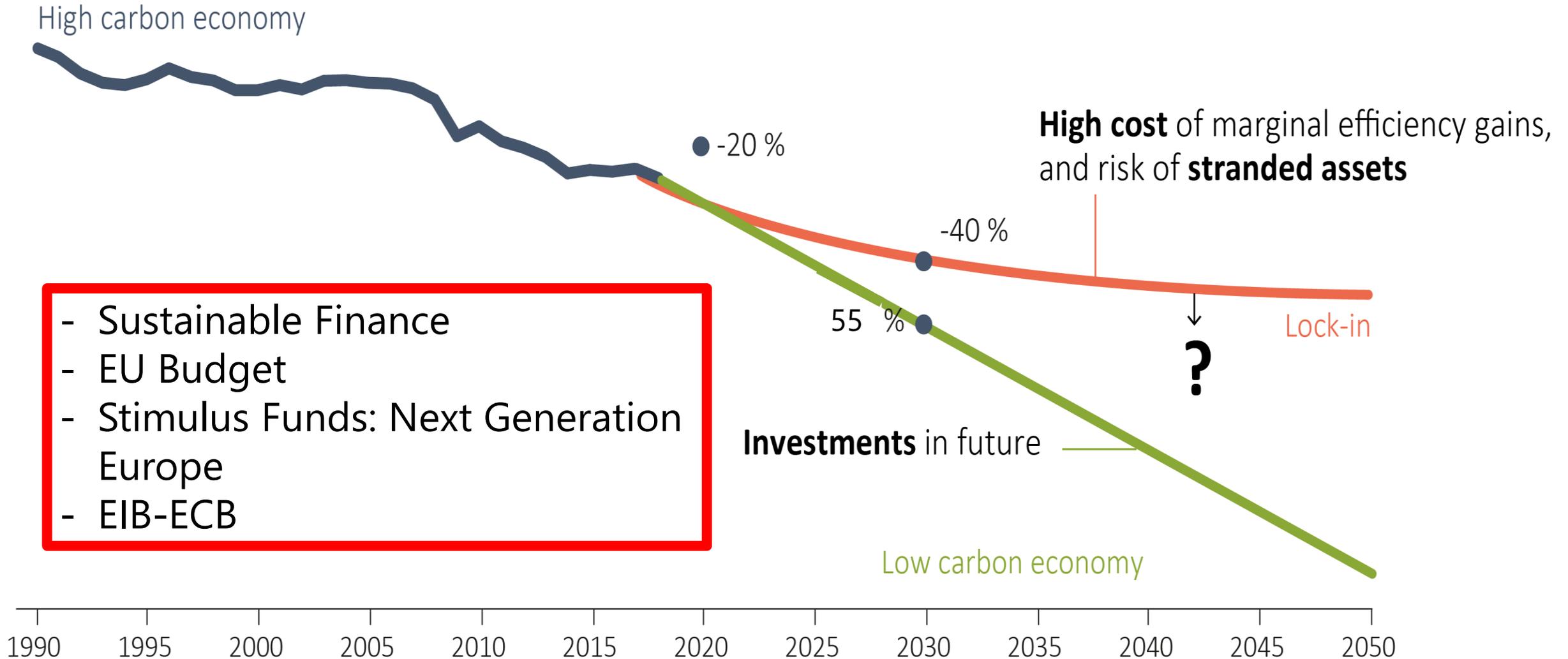


# Systemic change is disruptive: the 'x-curve'



Source: Loorbach et al .

# Investing in sustainability, not dead-end streets

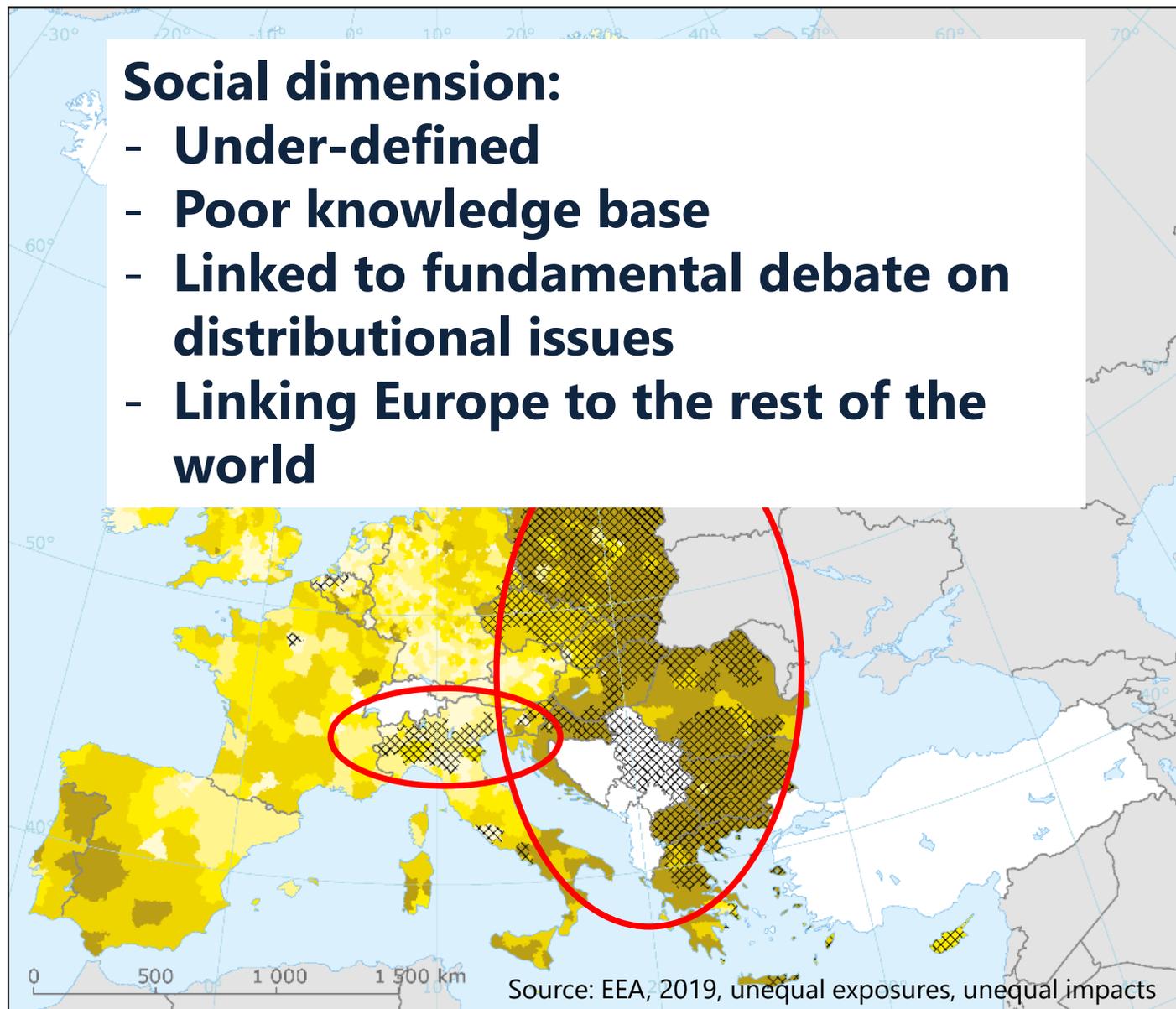


- Sustainable Finance
- EU Budget
- Stimulus Funds: Next Generation Europe
- EIB-ECB

# “Leaving no one behind”: it’s not just about coal

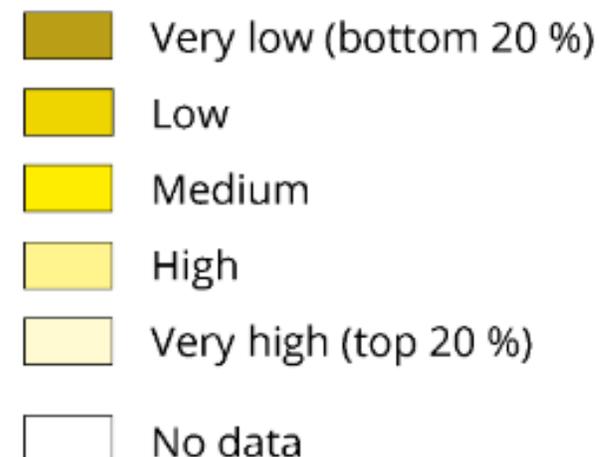
## Social dimension:

- Under-defined
- Poor knowledge base
- Linked to fundamental debate on distributional issues
- Linking Europe to the rest of the world

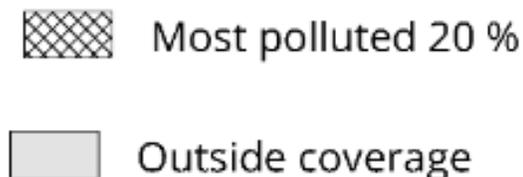


## Exposure to PM<sub>2.5</sub> mapped against GDP per capita (2013-2014)

### GDP per capita



### Exposure to PM<sub>2.5</sub>



# Transforming the Green Deal into action

- First climate-neutral continent
- Biodiversity Strategy 2030
  - The political, economic, investment, ..., priority for Europe
- New Circular Economy Action Plan
  - Strong systemic transitions logic
- Zero pollution strategy
  - Link with sectoral policies
- Farm-to-fork strategy
  - Interconnected
- Just transition strategy
  - Longer time horizon
- Sustainable European Investment Plan
  - Social dimension
- Future ready economy – new industrial strategy
  - Innovation, digitalization
  - Governance agenda



Ambitious, innovative, interconnected, systemic

How does the evaluation community respond to this?



**Thank you**

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