

# Building 'forward' green, just and resilient post-COVID 19

Coal Regions in Transition Virtual Week  
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# LARGE SCALE CHANGES ALREADY UNDERWAY

## BOREAL FOREST

Fire and pests changing

## AMAZON RAINFOREST

Carbon storage capacity reducing

## WEST ANTARCTIC ICE SHEET

Ice loss accelerating

## GREENLAND

Ice loss accelerating

## ATLANTIC CIRCULATION

Slow down since 1950s

## ARCTIC SEA ICE

Reduction in area

## PERMAFROST

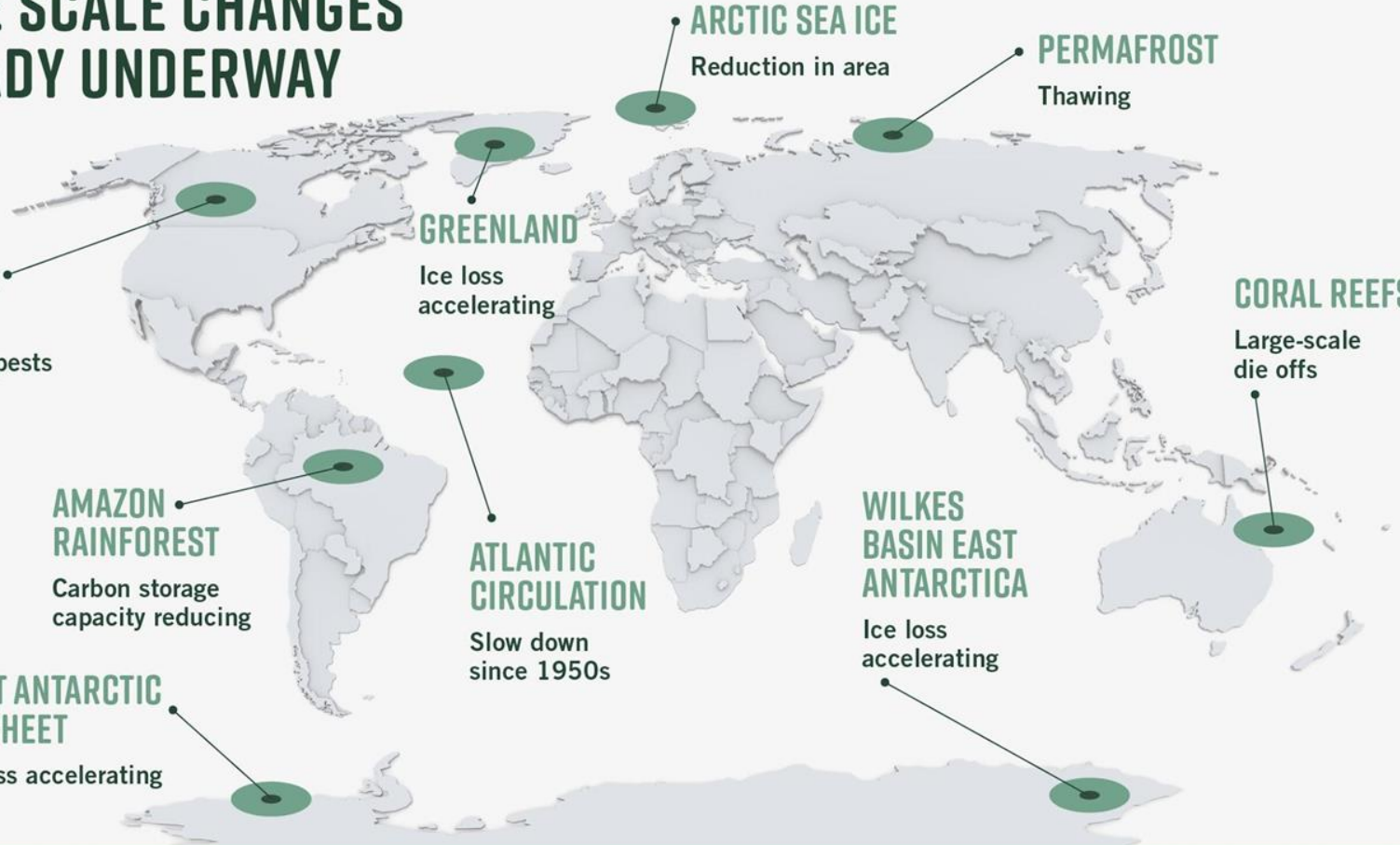
Thawing

## WILKES BASIN EAST ANTARCTICA

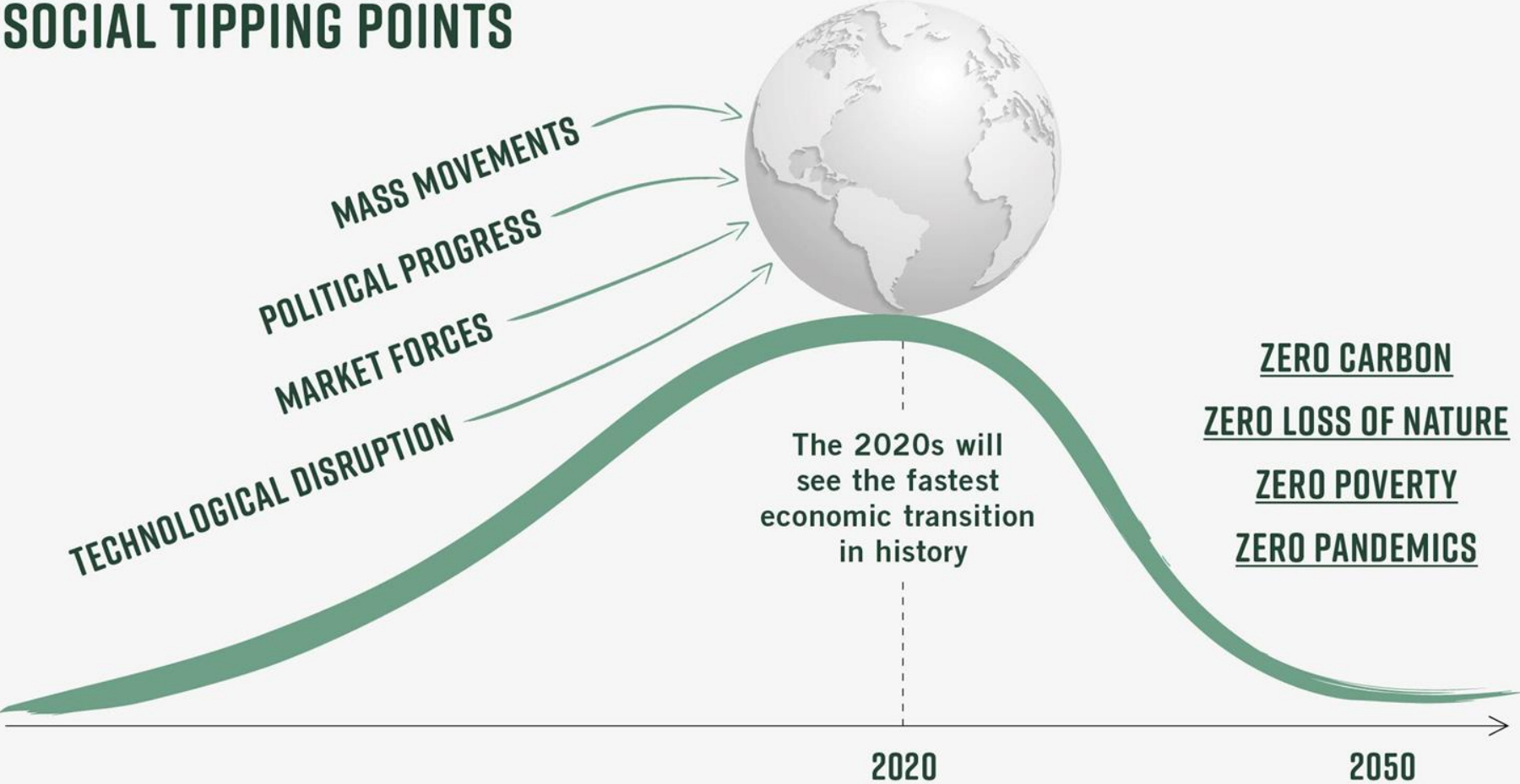
Ice loss accelerating

## CORAL REEFS

Large-scale die offs



# SOCIAL TIPPING POINTS



# Translating the system change compass to systemic orientations

*System Change Compass  
(10 Principles)*

*Application to the system to derive systemic orientations*



*30 System-level orientations*



*3-5 ecosystem-level orientations*



*50+ Champion orientations*



# Covid-19 recovery: COR Key Recommendations



1. COVID-19 shows that overnight transformational change is possible and highlights the importance of resilience to a multitude of convergent shocks across our health, economic and finance systems
2. Technology, governance and socioeconomic systems are currently mutating to respond to the crisis. Falling back to 20th century models of growth, planetary destruction and inequality is not an option. Europe should face this moment as an opportunity for deeper systemic change, innovation and renewal.
3. COVID-19 EXIT requires fast and strong responses to save as many lives as possible and address the devastating impacts on peoples' livelihoods and security
4. COVID-19 RECOVERY must not give up EGD, Climate objectives, SDG's and instead work towards the transition to resilient, low-carbon economies and nature-rich societies to reach a higher level of economic, social, environmental and institutional sustainability:
  - investing in renewable energy instead of fossil fuels
  - investing in nature and reforestation
  - investing in sustainable food systems and regenerative agriculture
  - shifting to a more local, circular and low carbon economy
5. People, Planet and Prosperity must be at the center of this deep transformation
6. Must look at those economies and leadership most resilient post COVID



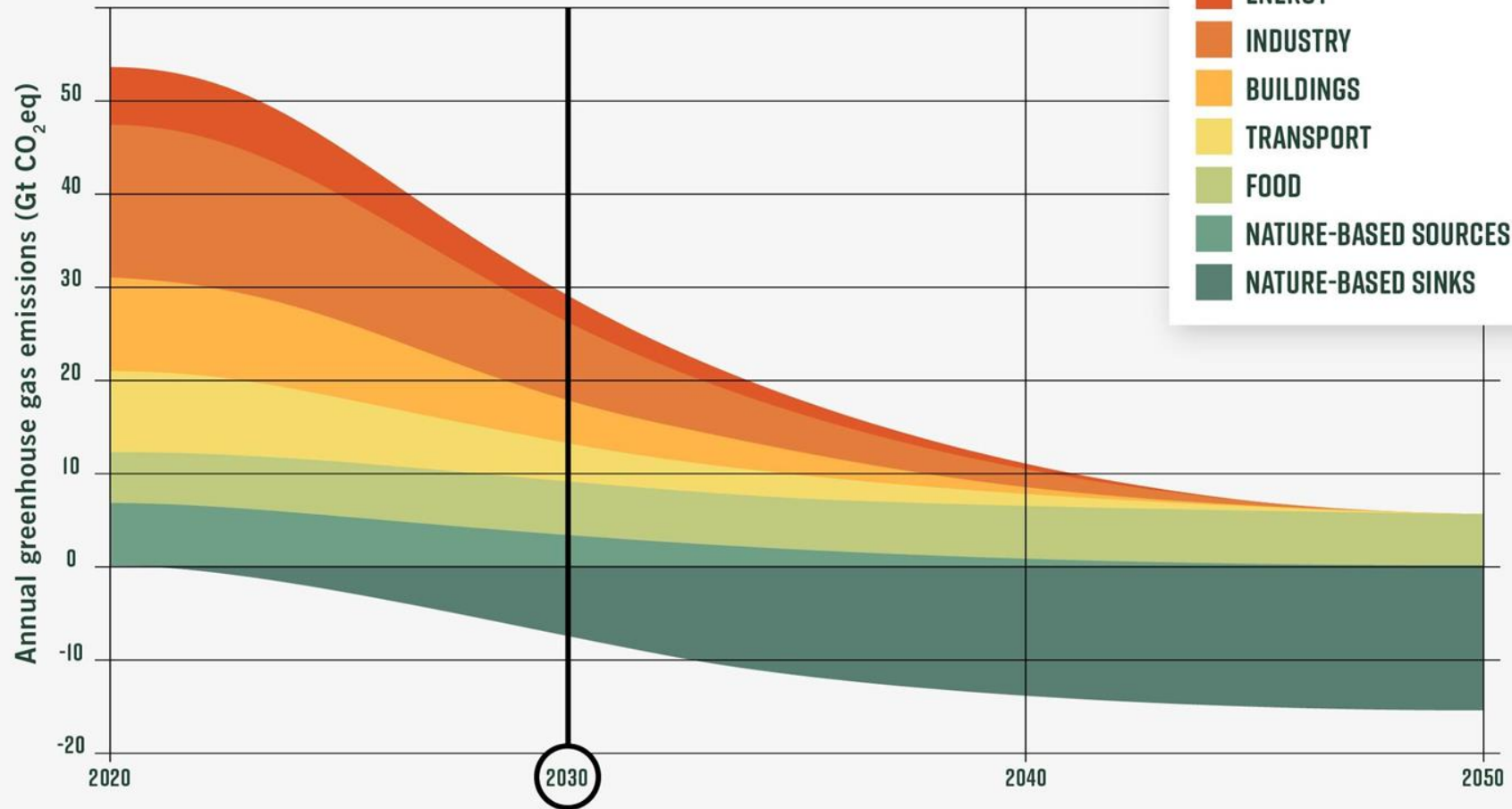
Education  
 AI & digitalisation  
 Circular economy  
 Digital economy  
 Network thinking  
 Skills  
 Equality  
 Youth  
 Sustainable Development Goals  
 Climate and Environment  
 Energy  
 Transport  
 Governance  
 Citizen engagement

# ESIR DGR&I Recovery: Protect-Prepare-Transform Europe

Europe needs to play a central role in changing our systems to ensure greater resilience by design, not by disaster. Research and innovation is essential part of COVID19 EU response:

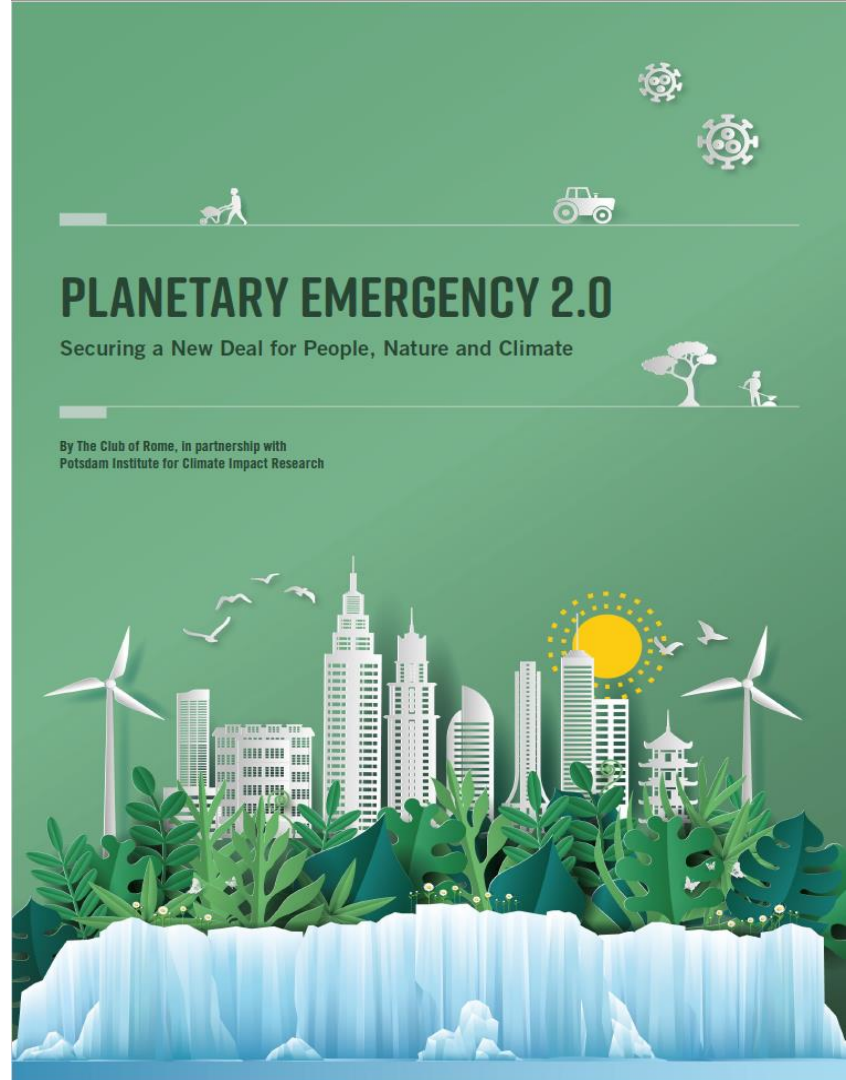
- PROTECT People-Planet-Prosperty
- PREPARE better for the next crises
- TRANSFORM Society, economy and regenerate the planet

# GREENHOUSE GAS EMISSIONS



# TRANSFORMING ENERGY SYSTEMS

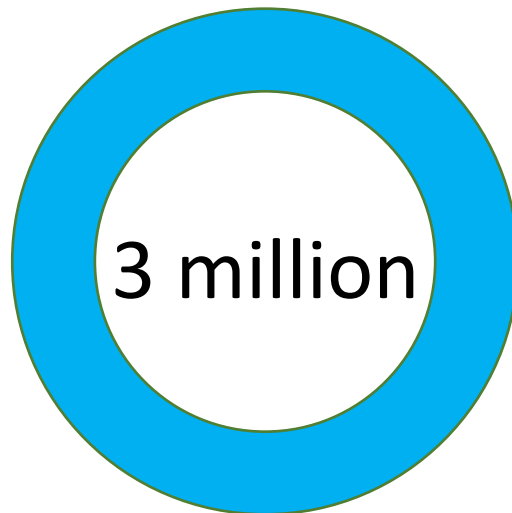
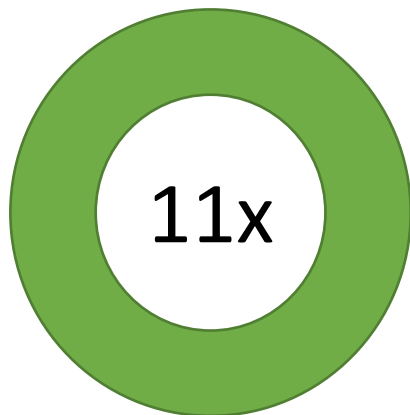
1. Halt all fossil fuel expansion, production and use by halting subsidies and shifting revenues and investments to low-carbon energy deployment
2. Continue doubling wind and solar capacity every four years by tripling annual investments and allocating at least 1% GDP in research, development and innovation before 2025
3. Set a global price on carbon to at least >30 USD/tonne CO<sub>2</sub>





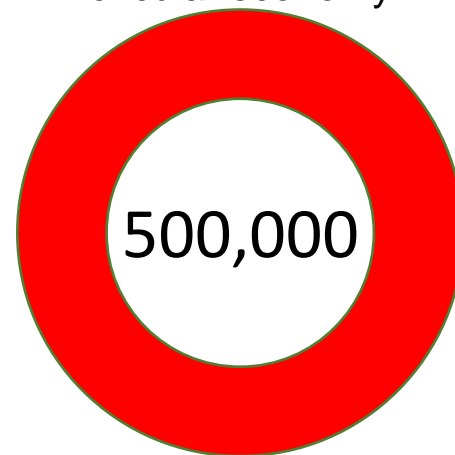
# Job creation via renewal

Ratio of Renewable  
Energy : Coal jobs in  
Germany



Potential for job creation  
by full-scale shift to  
organic/ regenerative  
agriculture

Potential for reduction in  
unemployment via  
circular economy



# 50+ nascent industrial champions that should be supported to built ecosystems based on compass orientations

## Healthy food



- Organic food and beverages
- Regenerative agriculture
- Sustainable aquaculture and fishing
- Reduce and valorise food waste
- Urban agriculture
- Product reformulation for nutritious food
- Alternative proteins

## Built Environment



- Smart urban planning
- Rethink built environment ownership
- Repurpose underutilized buildings
- Retrofit existing buildings
- Fluid and sufficiency-oriented space management
- Circular and net-zero housing

## Intermodal Mobility



- Fast charging infrastructure
- High speed railway infrastructure
- Modern and adapted transit infrastructure
- Car- and ride-sharing models
- End-of-life management for cars
- Electric and autonomous vehicles
- Infrastructure to improve traffic flow and AV adoption
- Green aviation
- Green shipping
- Walking/cycling infrastructure

## Consumer goods



- Product-as-a-Service models
- Maintenance and value retention in products
- Peer-to-peer product sharing platforms

## Nature-based



- Restoration of degraded land and coasts
- Smart forest management
- Urban greening
- Systems for paid ecosystem services
- Seaweed
- Marine and land-based environmental protection areas
- Ecotourism

## Energy



- Renewable power generation
- Energy storage
- Hydrogen economy
- Smart metering and (point-of-use) energy management
- Grid integration and technologies
- Production of low-carbon gaseous and liquid fuels (transition technology only)
- Carbon capture infrastructure (transition technology only)

## Circular Materials



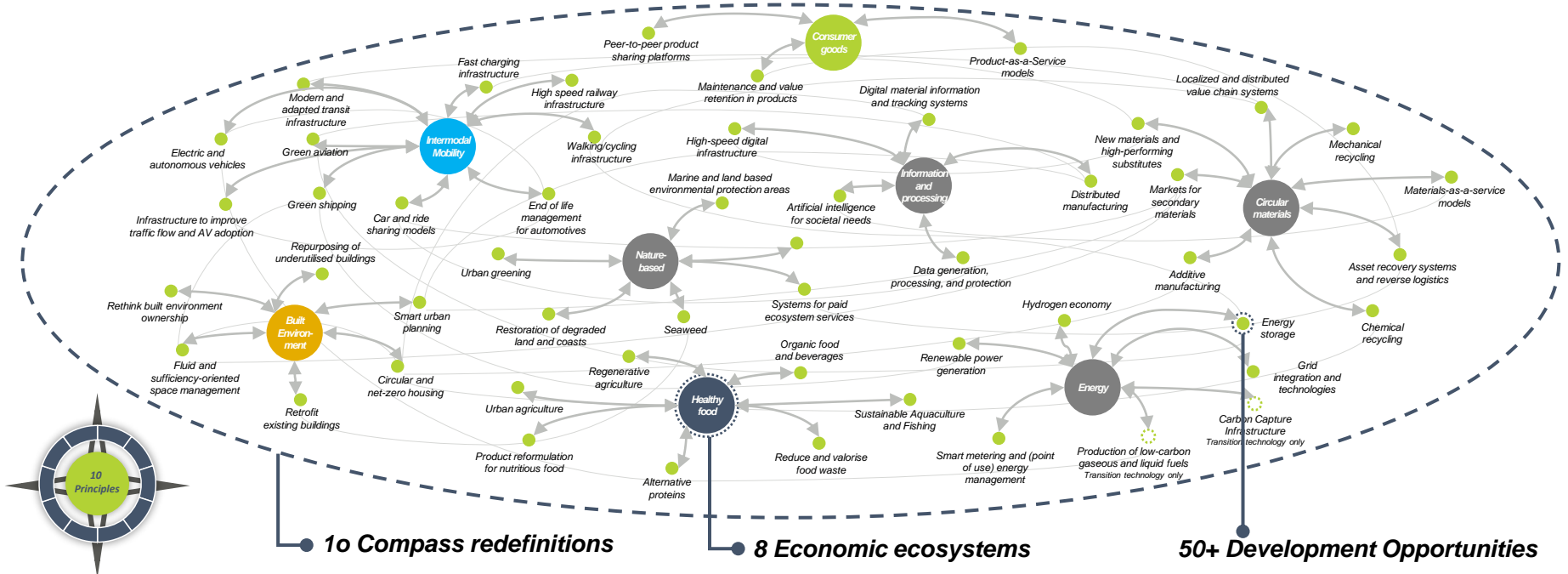
- Localised and distributed value chain systems
- Asset recovery systems and reverse logistics
- Markets for secondary materials
- High-value material recycling
- Materials-as-a-Service models
- New materials and high-performing substitutes
- Additive manufacturing

## Information and processing



- Distributed manufacturing
- High-speed digital infrastructure
- Digital material information and tracking systems
- Data generation, processing, and protection
- Artificial Intelligence for societal challenges

# EGD implementation system roadmap



**New organization of economic activities**

One overarching system that consolidates the European economy in its entirety.

Economic ecosystems can meet a specific societal need (e.g. intermodal mobility system) or support the fulfilment of multiple societal needs (e.g. new energy system).

"Champions" are economic subsystems which could become the new spearheads of the green, resilient and fair post-COVID economy Europe wants to build

**Application of the compass on each level**

10\*3 = 30 system-level policy orientations

3-5 specific economic ecosystem policy orientations

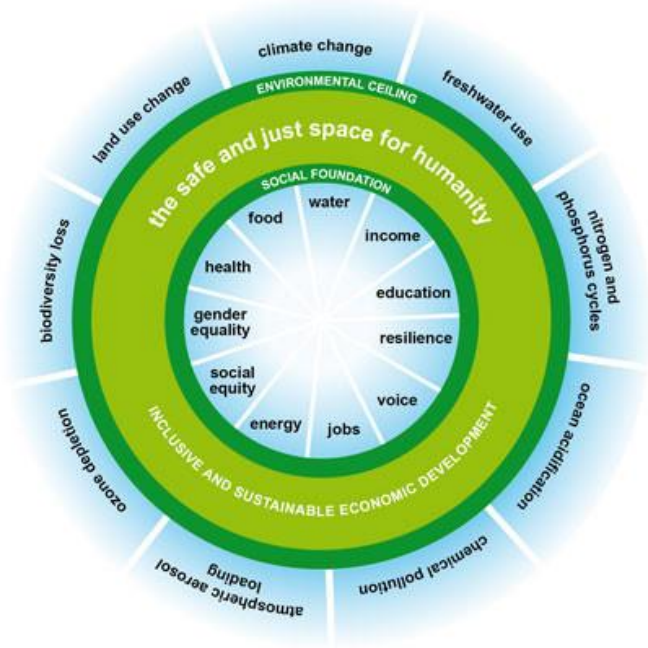
50+ economic subecosystems orientations

# Redesign v Refinance

Public Finance	Central Banks	EIB, Invest EU	Private Finance institutions	Private finance facilities
<ul style="list-style-type: none"><li>• EU budget</li><li>• MS national budgets</li></ul>	<ul style="list-style-type: none"><li>• Monetary Role</li><li>• Regulation</li></ul>	<ul style="list-style-type: none"><li>• Wholesale funding</li><li>• EU Investment Advisory Hub</li></ul>	<ul style="list-style-type: none"><li>• Banks</li><li>• Insurers</li><li>• Investment Funds</li></ul>	<ul style="list-style-type: none"><li>• Institutional &amp; professional investors - see CRFs</li><li>• Citizens empowerment - see UCISS</li></ul>

- Investment required in advisory support to accelerate flow of sustainable investment projects – shovel ready
- Mechanisms for greater integrated and systemic public & private finance – where is the coordination function?
- Necessary range of instruments to provide optimal blended support
- Funding mechanisms for private finance recovery equity (see CRF proposal)
- Frameworks for enabling retail investment to catalyse and democratise the recovery (see UCISS proposal)
- Local involvement in steering direction of PE & VC funding

# The doughnut – What will it take to avoid collapse?



- Current Failure: meet basic human min to ensure dignity
- Challenge: meet the needs of all within planetary boundaries
- Ensure no one falls short of life's essentials (food, housing, healthcare, political voice)
- Ensure don't overshoot pressure on Earth's life-supporting systems, on which we fundamentally depend
- The doughnut is a compass for human progress this century

# 21<sup>st</sup> CENTURY WELLBEING ECONOMICS



ECONOMIC INDICATORS:	SOCIETAL INDICATORS:	ENVIRONMENTAL INDICATORS:
<ul style="list-style-type: none"><li>• Jobs/employment</li><li>• Incomes (equality, poverty)</li><li>• Fair work &amp; business</li><li>• Employment &amp; economic conditions</li><li>• Housing (quality, access, etc.)</li></ul>	<ul style="list-style-type: none"><li>• Health and social care (equity, life expectancy, mental health, quality &amp; access)</li><li>• Education (knowledge, skills)</li><li>• Communities, social connections, social capital</li><li>• Culture</li><li>• Children &amp; young people</li></ul>	<ul style="list-style-type: none"><li>• Environmental protection &amp; climate (clean environment)</li><li>• Land use (land reclamation, protected areas, access to green and blue spaces)</li><li>• Energy</li><li>• Air &amp; water pollution</li><li>• Waste &amp; recycling</li></ul>



“WE NEED A RE-ARTICULATION OF HUMAN DEVELOPMENT FOR THE 21ST CENTURY – TO REDIRECT PURPOSE FROM GROWING GDP TO SECURING THE WELLBEING OF PEOPLE AND PLANET. NOW IS THE TIME TO FOCUS ON MEASURES OF WELLBEING”.

DAVID KORTEN

## NO SINGLE ANSWER OR MAGICAL SOLUTION

