

A sustainability framework and sectoral digitalization: The case of energy

PULSES - The Convergent Innovation Webinar Series

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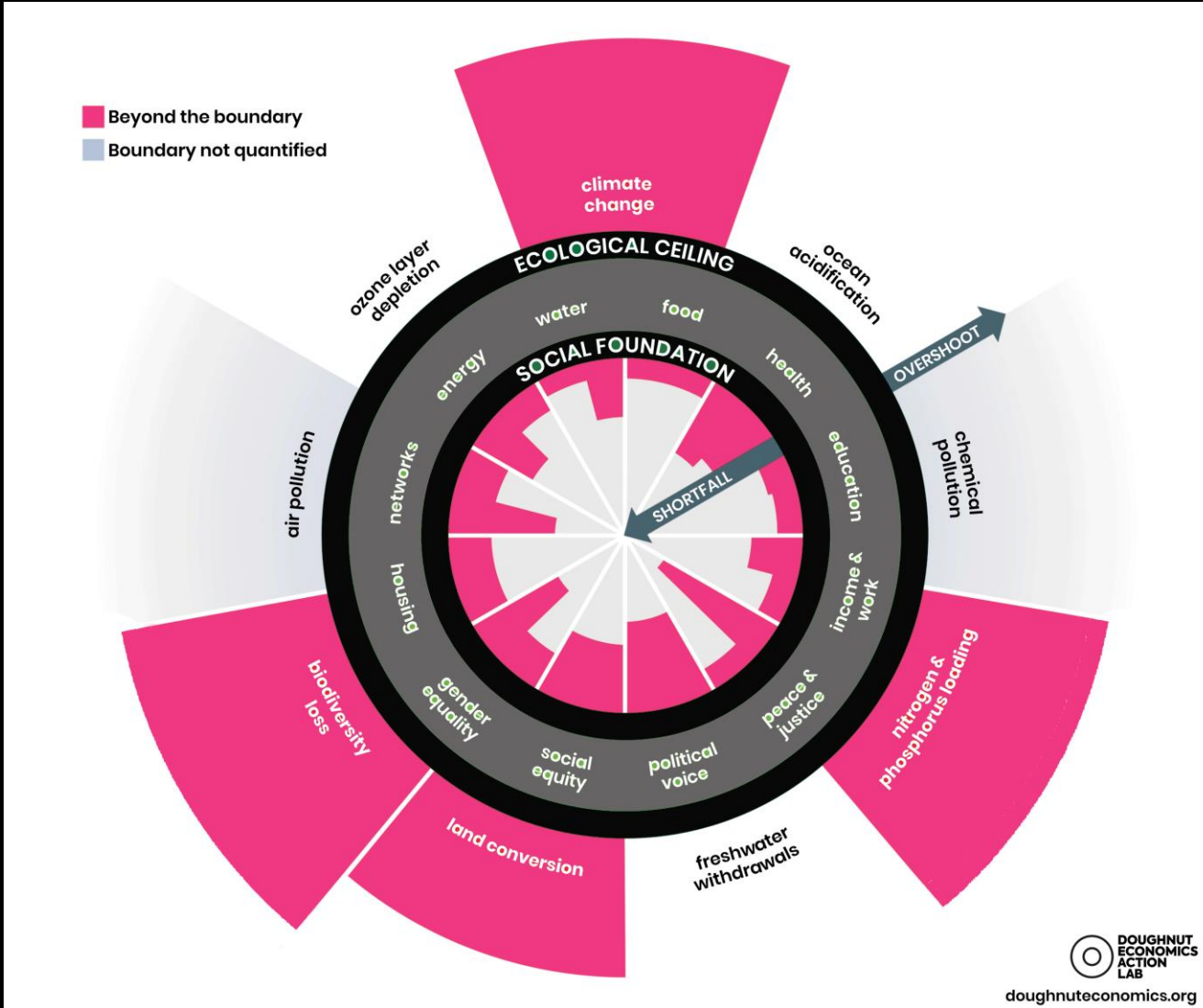
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EARTH CAN'T KEEP PACE WITH GROWING HUMAN NEEDS

WE'RE FALLING SHORT ON SOCIAL FOUNDATIONS WHILE OVERSHOOTING ECOLOGICAL BOUNDARIES



1 UNEVEN GROWTH 2 ENVIRONMENTAL DEGRADATION

The world economy is doubling every 20 years and billions remain in poverty.

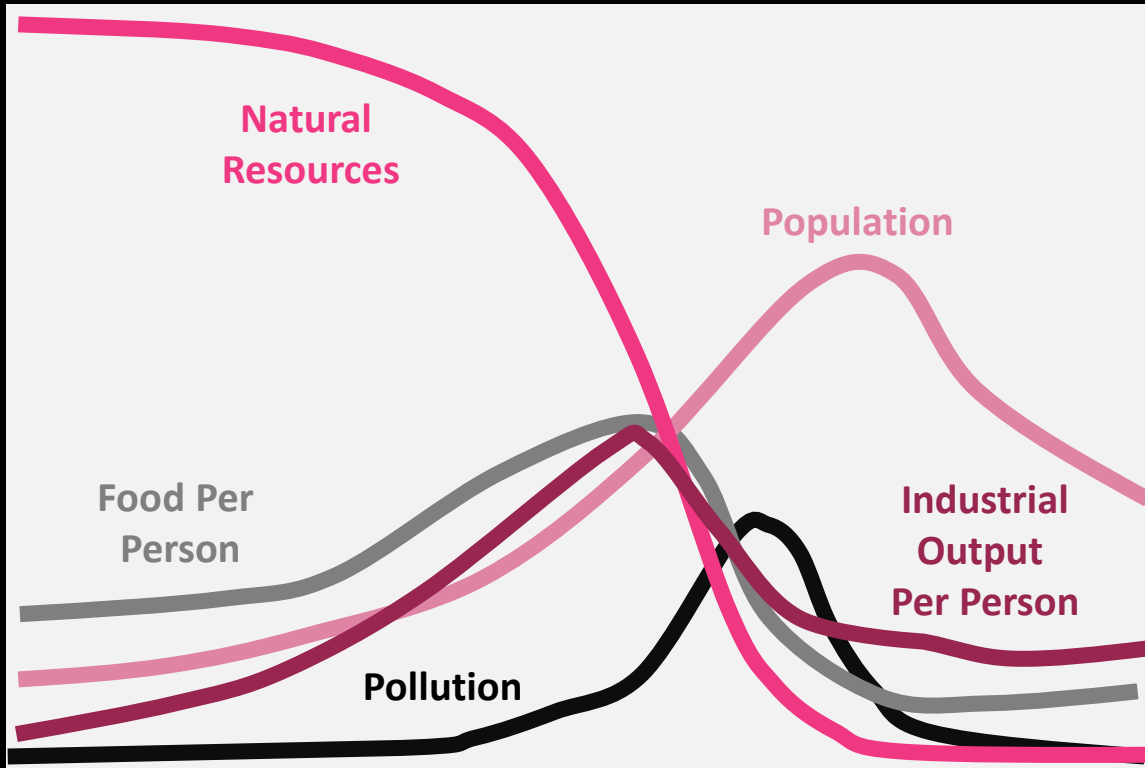
Humanity has already exceeded the Earth's capacity to sustain life indefinitely.

IMPERATIVE

WE **URGENTLY** NEED TO BRING ABOUT **SYSTEMIC CHANGE** TO AVERT **CATASTROPHIC** CONSEQUENCES.

THE WORLD WE KNOW COULD COLLAPSE BY 2040

CURRENT DATA SUGGESTS WE ARE ON TRACK TO EXPERIENCE THE 1972 LIMITS TO GROWTH STUDY PREDICTION.



DATA TRACKED

Population
Fertility (birth rate)
Mortality (death rate)
Industrial output per capita
Food per capita
Services per capita
Non-renewable resources
Persistent pollution
Human welfare
Ecological footprint

COLLAPSE SCENARIO

Non-renewable resource scarcity
Widespread Starvation
Plummeting Production & Standards of Living

A COMPETITIVE/COOPERATIVE DICHOTOMY DEFINES OUR TIMES

Acute Inequality & Technological Unemployment

Digital tech likely to create winner-take-all markets ⁴
Decoupling income from labor productivity ⁴
Widening gap in access to connectivity (broadband) ⁵

Platform Economy 01

Platform Economy

7 of 12 largest companies are platform businesses ¹
Digital Ecosystems worth \$60T by 2025 ¹
Digital Ecosystem Leaders 8X P/E ratio ²
Platforms targeting multi-industry experiences ³

02

03

Societal Unrest

Migrants reached 258 million in 2017 ⁶
Widespread Nationalism ⁷
Assault on democratic institutions and truth ⁸
2019: 13th consecutive year of decline in # of democracies ⁹
50% cost of trade war tariffs directly impact corporate profits ¹⁰

04

Escalating Global Challenges

Global warming & climate crisis ¹²
Lack of international community to address UN sustainable development goals ¹¹

Rapidly Changing Consumer Preferences

05

89% of Millennials would buy from companies with solutions for social issues ¹³
Want convenient, connected, socially conscious and sustainable experiences ¹⁴
Data: US CDPA proposes data breach fines up to 4% revenue and 20 years jail for Execs ¹⁵

WE BELIEVE

**NO SINGLE ORGANIZATION CAN CREATE A SUSTAINABLE
FUTURE.**

AN ECOSYSTEM APPROACH IS NEEDED

Ecosystems enable a shift toward sustainability



Advance global causes and unlock new forms of value that create transparency, fairness, and sustainability

Embed products & services from multiple providers and industries into convenient, sustainable consumer life experiences

Realize efficiency, remove waste and drive sustainable innovation across supply chains

Facilitate collaboration and agile, sustainable innovation within the enterprise

Examples of sustaining ecosystems and their stakeholders

Sustainable Mobility Ecosystem

- Airlines, Airports, Car rentals, Railways
- Hospitality
- Shipping
- Logistics
- Postal
- Courier, Express and Parcels

Sustainable Resources Ecosystem

- Oil & gas
- Utilities
- Consumers, Industrial Customers
- Investors, Citizens, Host Governments
- Engineering & Infrastructure
- Materials: Mining and Agriculture
- Scientific Community & Technology Providers

Sustainable Maker Ecosystem

- Research & Innovation
- Design
- Manufacturing
- CPG
- Retail
- Life sciences

Sustainable Means Ecosystem

- Banks – Retail, Commercial & IB
- Asset Managers
- Pension & Hedge Funds
- Insurance firms

Sustainable Resources Ecosystem

VISION/PURPOSE

- Scale & Integrate New Sustainable Energy Sources
- Make legacy Oil & Gas and Utility assets sustainable
- Affordable, Equitable Energy Access for All

PARTICIPANTS

- Oil & gas, Utilities
- Consumers, Industrial Customers
- Investors, Citizens, Host Governments
- Engineering & Infrastructure- OFS, EPC, Transportation & Distribution.
- Materials: Mining and Agriculture
- Scientific Community and Technology Providers

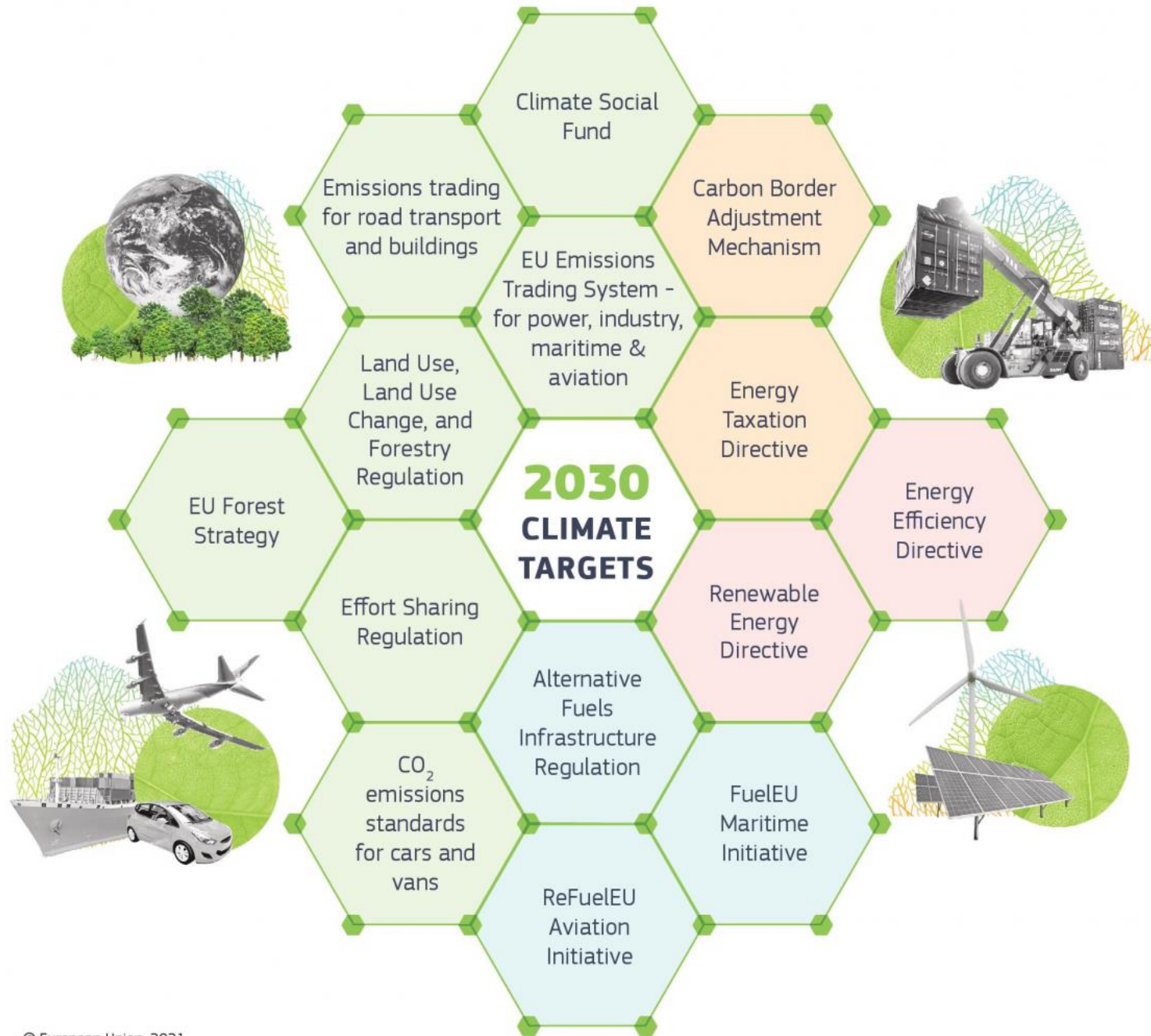
OUTCOMES

- Smart Cities
- Distributed energy ecosystem for Prosumers - VPP
- EV charging ecosystem (V2G)
- Collaborative Retail (future of gas stations/ Hydrogen). E.g. F&B at gas/EV stations

WHAT IS NEEDED TO CATALYZE SUCH ECOSYSTEMS ?

The European Green Deal is a catalyst for sustainable development





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Connectivity

is the key enabler to form ecosystems and transition to a sustainable economy

Digitalising the energy sector – EU action plan

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About this consultation

Consultation period 04 October 2021 - 24 January 2022 (midnight Brussels time)

Topic Energy

Target audience

The questionnaire seeks to collect views from citizens; business communities and industry, including energy and ICT companies; Member States and public authorities; local, economic and social partners, including non-governmental organisations; consumers organisations; academia and research institutes; as well as other digital and energy stakeholders.

Why we are consulting

The Commission is working on an action plan on the digitalisation of the energy system. In this context, it is carrying out a public consultation to gather input from stakeholders and individuals. The consultation survey covers multiple facets of the digitalisation of the energy system, which are addressed through targeted sections and questions. It follows the Roadmap of the initiative which was published in July and for which feedback was also received.

The entire landscape of the energy system is shifting - a profound transformation through digitalization is needed

Digitalization of the energy sector is crucial to meet the EU's climate goals, as it enables greater penetration of renewables, efficiency and innovative customer services.

Examples:

- Tracking energy flows in all forms and prices from production to consumption
- Tracking carbon credits / offset flows through the value chain
- Tracking capital flows within energy sector, especially relevant to 'new energy' like renewables
- Using technology to bring efficiencies in processes at each stage of the energy production and consumption cycle by identifying focus areas for emissions reduction and energy efficiency
- Managing energy flows to establishing energy stability and affordability parameters
- Optimization at each step, and as a whole - optimization decisions take carbon into account, in addition to costs and reliability
- Enabling state-of-the-art IT such a "edge computing".

Recommendations to policy makers (EU perspective)

- Digitization of the sector is happening and will affect many areas of society. Everyone involved, be that in policy or industry need to actively play a role and ensure that the transformation will be a success for the society, economy and industry
- To fully reach a digital single market, future legislation should not stifle growth, nor act as an obstacle for the development of innovative businesses. Policy makers should aim to reach the digital and sustainable goals through business growth
- Legislation should enable the market to overcome barriers to data flows to ensure that it creates opportunities for everyone involved
- A framework is needed for the greater collection and sharing of data – in a safe, secure and anonymized manner - can help customers better understand their energy use and alternative solutions
- Consolidate the role of energy vendors in this transition by incentivizing them to works towards more efficient energy
- More investment is needed in digital skill and R&I to facilitate greater understanding about how energy data can be digitalized

Policy makers and industry must share a common vision on harnessing the power of technology to bring future-proof efficiencies to the energy sector.

Industry needs to be an active collaborator within the ecosystem, defines vision and innovates towards achieving ambitious sustainability goals.