State, society, capital and (in)ability to deliver sustainability: lessons from global EU(rope)

Yuliya Yurchenko PhD

PEGFA/GPERC

University of Greenwich

Vice-chair of CPERN

World Economy Working group board member, IIPPE

REFORM meeting 2020
Mixed and virtual reality of COVID-19 multiverse

Climate heating & the need for systemic change – setting out the problem

- Climate politics discourse is moving ahead while politics and policies are lagging behind;

- Time is limited to halt climate (IPCC 2018), overwhelmingly capitalogenic change driven by productivist systems and making the ecosocialist transformation a matter of global urgency (Yurchenko 2020).

- World economic system modelling rests on assumptions of exponential economic growth via industrialisation, increasingly mechanised production and a faster consumption of goods with increasingly shorter lifespans. All those processes require increasing amounts of energy that still mostly comes from fossil fuels and require a close examination of the relationship between society and nature (Malm 2017), grasping the role of capitalocene - "a system of power, profit and re/production in the web of life" (Moore 2017: 1) - in the current environmental catastrophe and imagining, designing alternative systems of generation, distribution, ownership, and governance.

- A sustainable future relies on energy production, and distribution systems to be sustainable too; many agree that this will require de-acceleration, and de-growth.
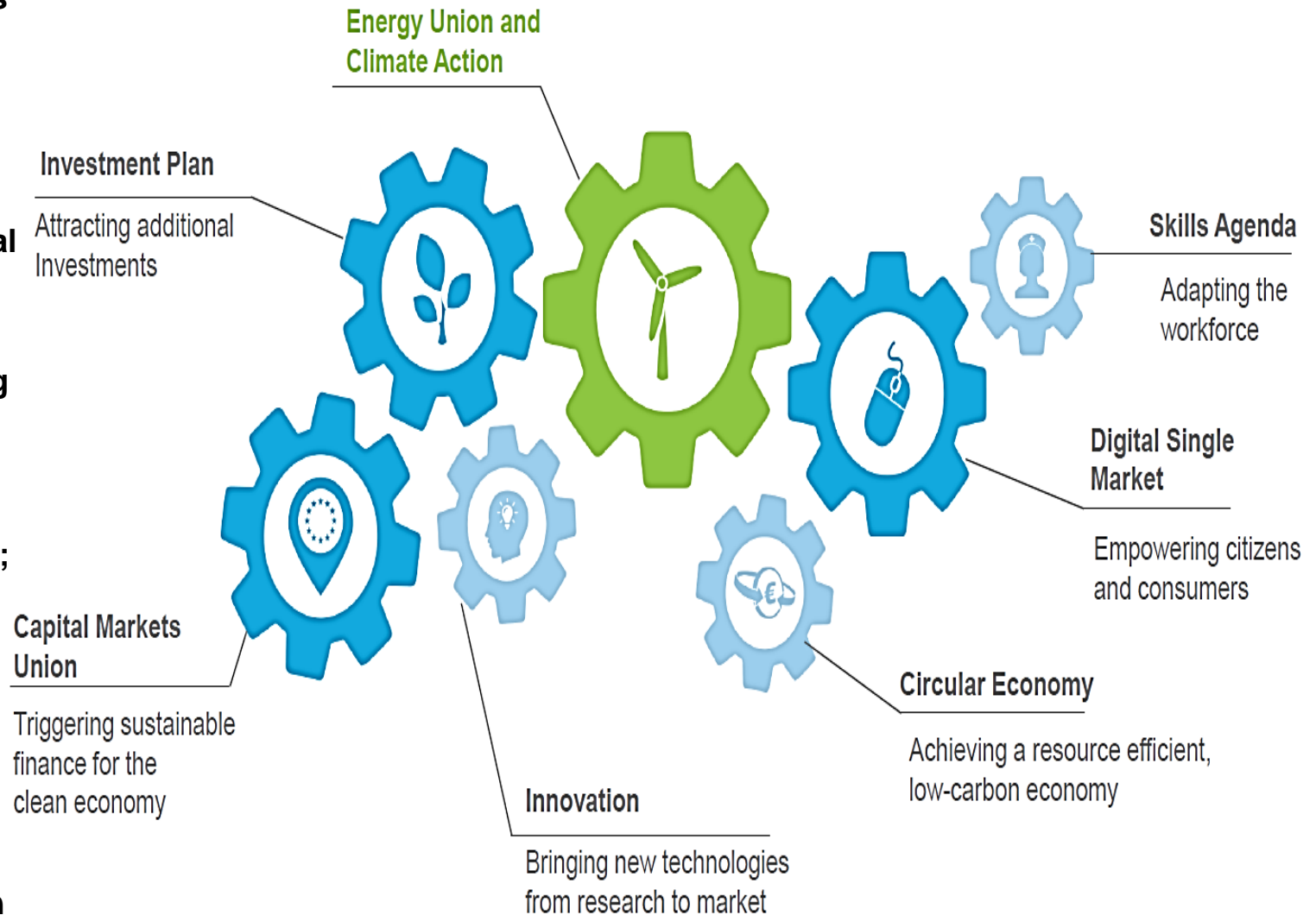
Ostrom's as a framework to tackle the problem

- EU fancies itself a champion of green politics while their emissions reduction framework has been widely criticised for being ill-conceived, ill-prescribed and insufficient, especially in the context of internationalised production and consumption of emissions. A radically different approach is needed for a socio-ecological transformation of "global" Europe and decarbonisation of the EU energy sector as a complex socio-ecological system (SES; Ostrom 2012).

- Building on research into some 20 years of EU energy market reform I argue that decarbonisation aims are jeopardised without (1) public national, local and collective form of ownership and financing of energy (generation and supply) as a common pool resource (CPR)/commons; and (2) a poly-centric mode of governance (Ostrom 2010).

The 4th Package has three main goals:
- Putting energy efficiency first;
- Achieving global leadership in renewable energies;
- Providing a fair deal for consumers'.

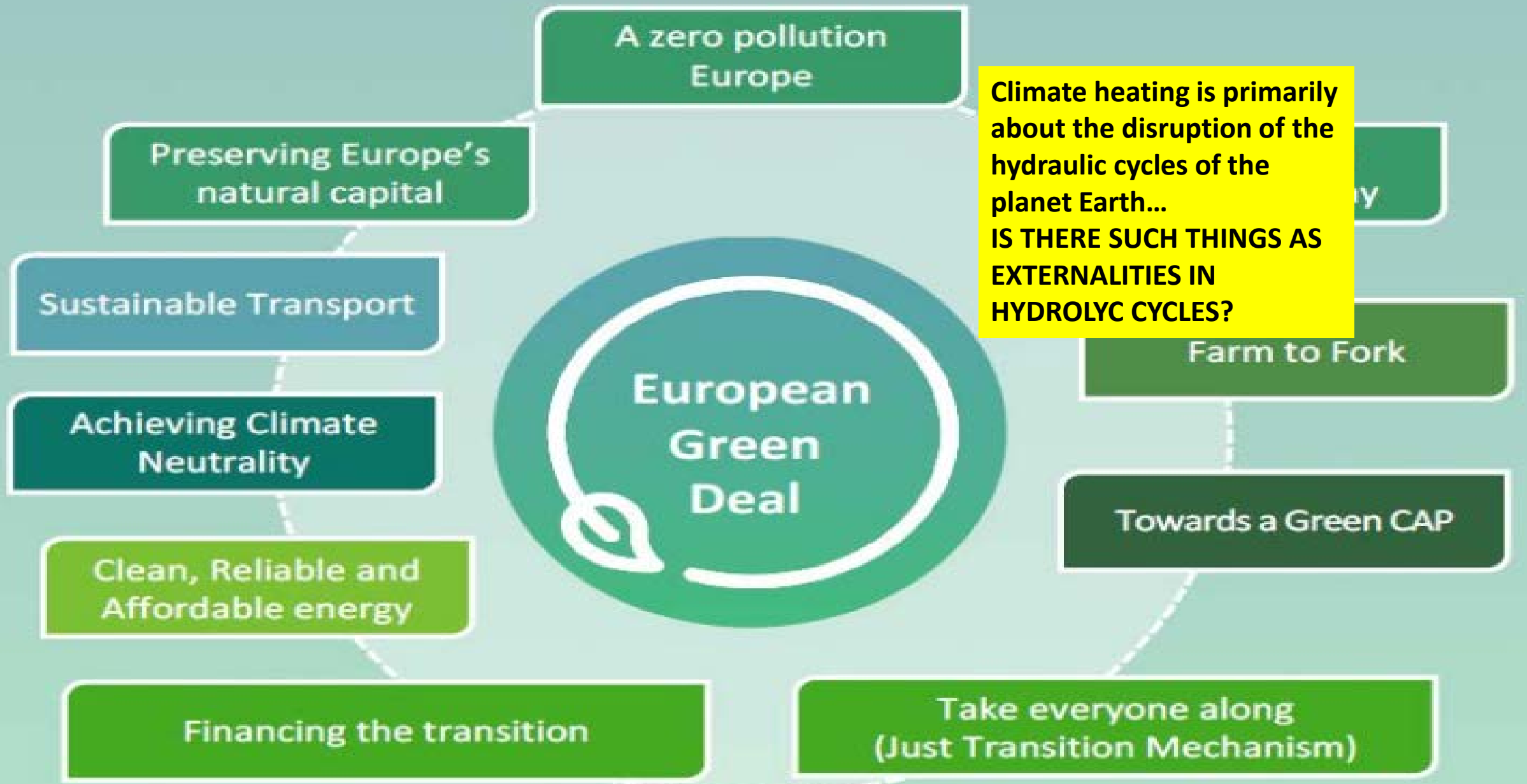To be achieved via 'mutually reinforcing and closely interrelated dimensions':
--- energy security;
- solidarity and trust;
- a fully integrated European energy market;
- energy efficiency contributing to moderation of demand;
- decarbonising the economy; and research, innovation and competitiveness.

Energy Union and Climate Action

Investment Plan

Attracting additional Investments

Skills Agenda

Adapting the workforce

Digital Single Market

Empowering citizens and consumers

Capital Markets Union

Triggering sustainable finance for the clean economy

Innovation

Bringing new technologies from research to market

Circular Economy

Achieving a resource efficient, low-carbon economy

European Green Deal – an opportunity that cannot be wasted

> Our European Green Deal is ambitious. It is designed to be just, and it is made in Europe for Europe.

#EUgreendeal

Ursula von der Leyen
President of the European Commission

European Commission

The apogee of the EU climate effort commitment to date was the European Commission President Ursula von der Leyen unveiling of the European Green Deal on December 11, 2019; calling it the Europe's "'man on the moon' moment" (Euronews 11 Dec 2019). But is the plan fit for the task? And how do we even conceptualise energy systems if we are to position them in the context of a wider socio-economic and ecological transformation?
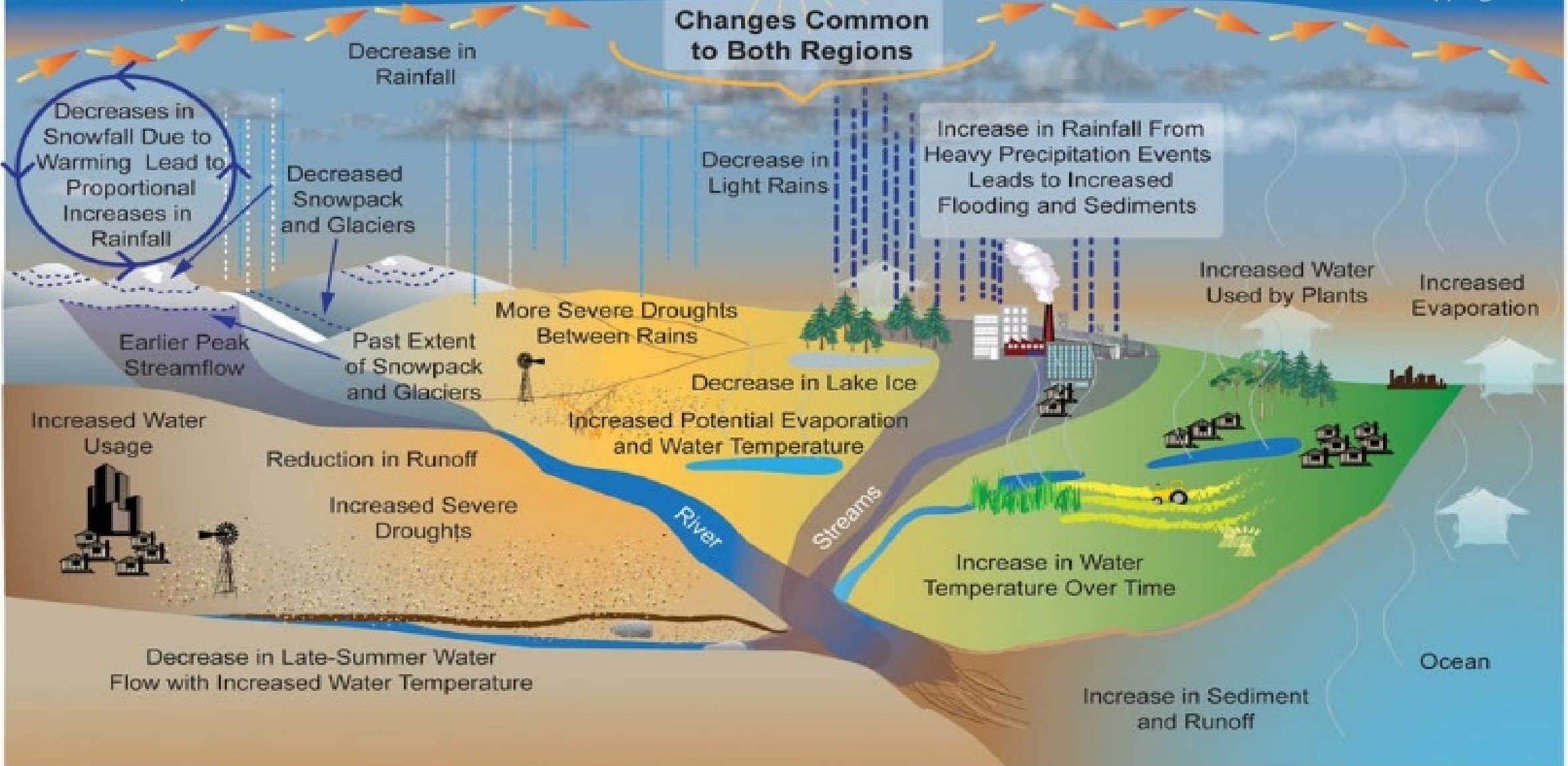
A zero pollution Europe

Preserving Europe's natural capital

Sustainable Transport

Achieving Climate Neutrality

Clean, Reliable and Affordable energy

European Green Deal

Farm to Fork

Towards a Green CAP

Financing the transition

Take everyone along (Just Transition Mechanism)

Climate heating is primarily about the disruption of the hydraulic cycles of the planet Earth…
IS THERE SUCH THINGS AS EXTERNALITIES IN HYDROLYC CYCLES?

Hotter/Drier Conditions (Interior West)

Heat Trapped by the Atmosphere Causes more Evaporation and More Precipitation

Decreases in Snowfall Due to Warming Lead to Proportional Increases in Rainfall

Decrease in Rainfall

Decreased Snowpack and Glaciers

Earlier Peak Streamflow

Past Extent of Snowpack and Glaciers

Increased Water Usage

Reduction in Runoff

Increased Severe Droughts

Decrease in Late-Summer Water Flow with Increased Water Temperature

Changes Common to Both Regions

More Severe Droughts Between Rains

Decrease in Light Rains

Decrease in Lake Ice

Increased Potential Evaporation and Water Temperature

River

Streams

Hotter/Wetter Conditions (NE and Coasts)

A Warmer Atmosphere Holds More Water Vapor, Which is Also a Heat Trapping Gas

Increase in Rainfall From Heavy Precipitation Events Leads to Increased Flooding and Sediments

Increased Water Used by Plants

Increased Evaporation

Increase in Water Temperature Over Time

Ocean

Increase in Sediment and Runoff

Social, economic, and political settings (S)

Resource system (RS)

Governance system (GS)

Resource units (RU)

Interactions (I)

Users (U)

Outcomes (O)

Related ecosystems (ECO)

# How does one fix the EU energy market problems in the context of decarbonisation?

- The EU energy market is a large coordinated, interconnected and centralised system of systems involving actors, entities and infrastructure of varying size and capacity e.g. high voltage network operators, and medium/small systems and actors e.g. low voltage decentralised networks and generators;
    - **it is a polycentric system.**
- Evolution of the EU decarbonisation framework is a manifest record of the growing acknowledgment, acceptance and attempts at grasping on the level of policy of complex systems within which energy systems are embedded i.e. implicit acceptance of it being a '**social-ecological systems' (SES**) – systems in which all resources used by humans are embedded.
- Tackling climate change requires diagnoses by "cumulative capacities" of the problems and potentialities of the complex SESs (Berkes and Folke 1998, Liu et al. 2007), the necessity of development of such capacities substantiated by Ostrom (2007, 2009).
- Energy union, market and systems are polycentric sub-systems of the planetary SES; they must be understood as an integral part of such, part of the universal dialectical circulation of matter and energy (Yurchenko 2020).

8 mutually reinforcing principles for successful in governing common pool resources (CPRs) or commons of Ostrom(s & Co)

(1) commons need to have clearly defined boundaries,

(2) rules should fit local circumstances,

(3) participatory decision-making is vital,

(4) commons must be monitored,

(5) sanctions for those who abuse the commons should be graduated,

(6) conflict resolution should be easily accessible,

(7) commons need the right to organise, and

(8) commons work best when nested within larger networks (Wall 2017; Williams 2018; Trebeck and Williams 2018).e

Energy system need to be treated as CPRs/commons (few do so now; Laerhoven, Schoon and Villamayor-Tomas 2020) - collective forms of financing, ownership and management that will follow are precisely what is needed for a full and rapid transformation of the sector and the EGD delivery.
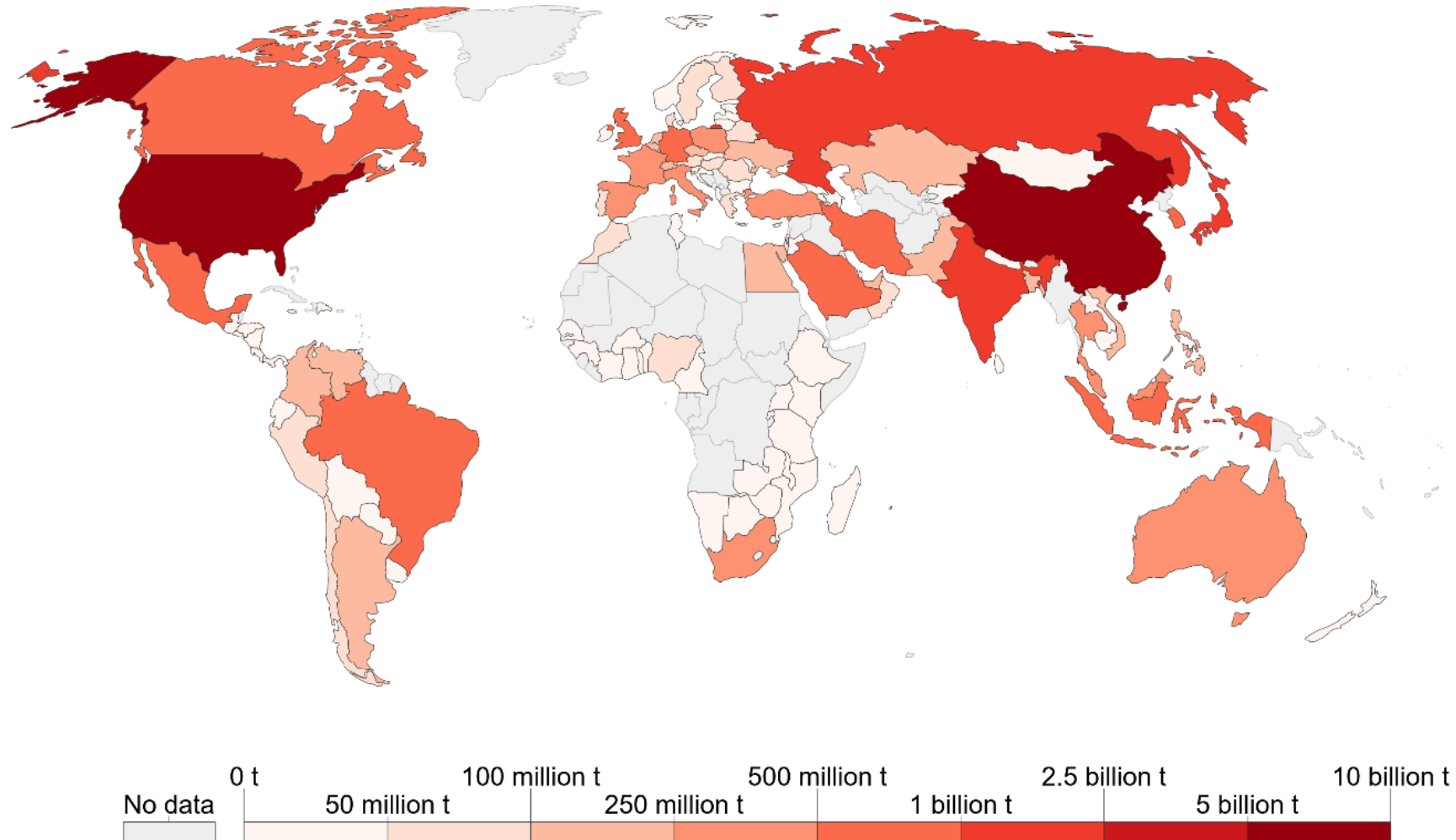
Annual CO2 emissions from fossil fuels by country, 1959-2017
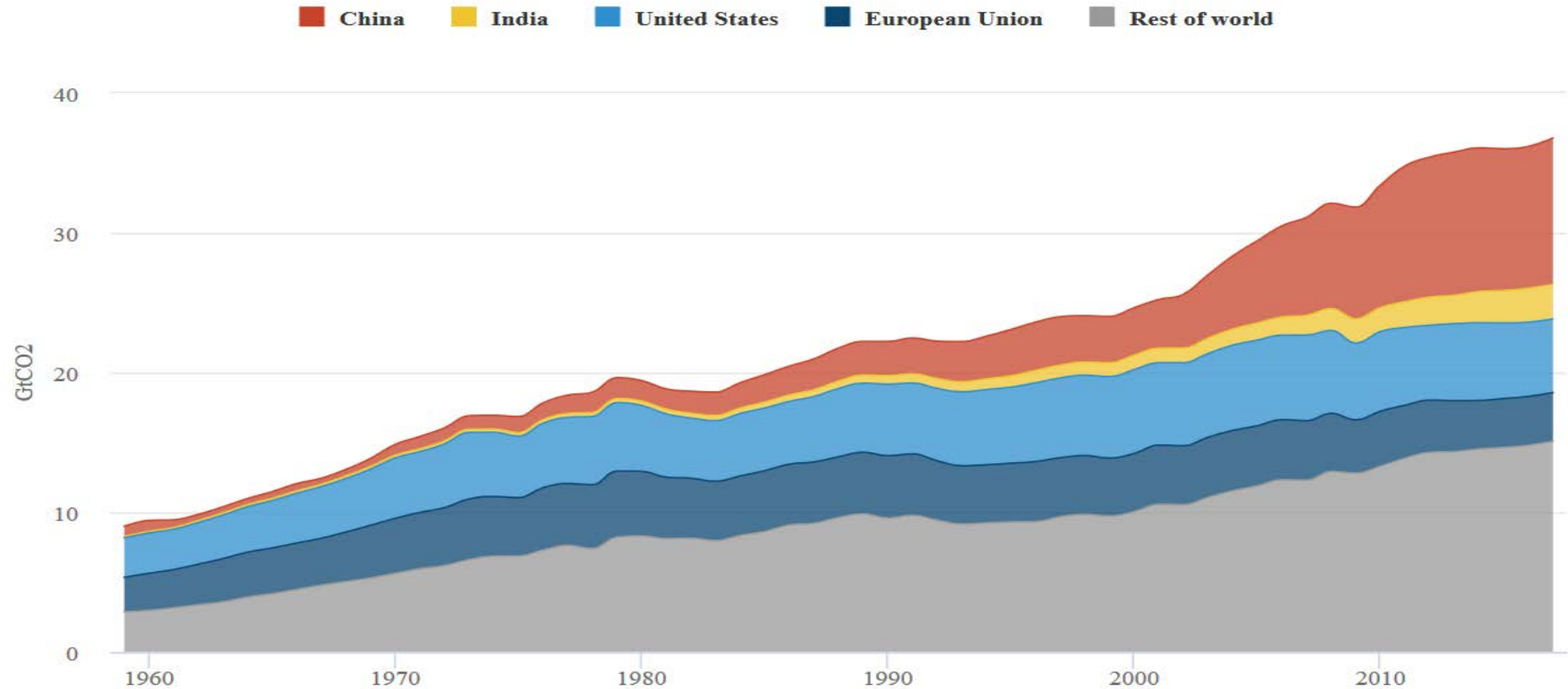
Source: Annual CO2 emissions from fossil fuels by major country and rest of world from 1959-2017, in gigatons CO2 per year (GtCO2). Note that 2017 numbers are preliminary estimates. Data from the Global Carbon Project.

Consumption-based CO₂ emissions, 2017

In contrast to production-based emissions, consumption-based emissions are adjusted for trade: emissions that were caused abroad by the production of imported goods are included; emissions caused in the production of goods that were exported to another country are excluded.

No data	0 t	100 million t	500 million t	2.5 billion t	10 billion t
	50 million t	250 million t	1 billion t	5 billion t	

OurWorldInData.org/co2-and-other-greenhouse-gas-emissions • CC BY

Per capita consumption-based CO₂ emissions, 2017

Consumption-based carbon dioxide (CO_2) emissions are national or regional emissions which have been adjusted for trade (i.e. territorial/production emissions minus emissions embedded in exports, plus emissions embedded in imports).

| No data	0 t	1 t	2.5 t	5 t	7.5 t	10 t	15 t	20 t	>50 t
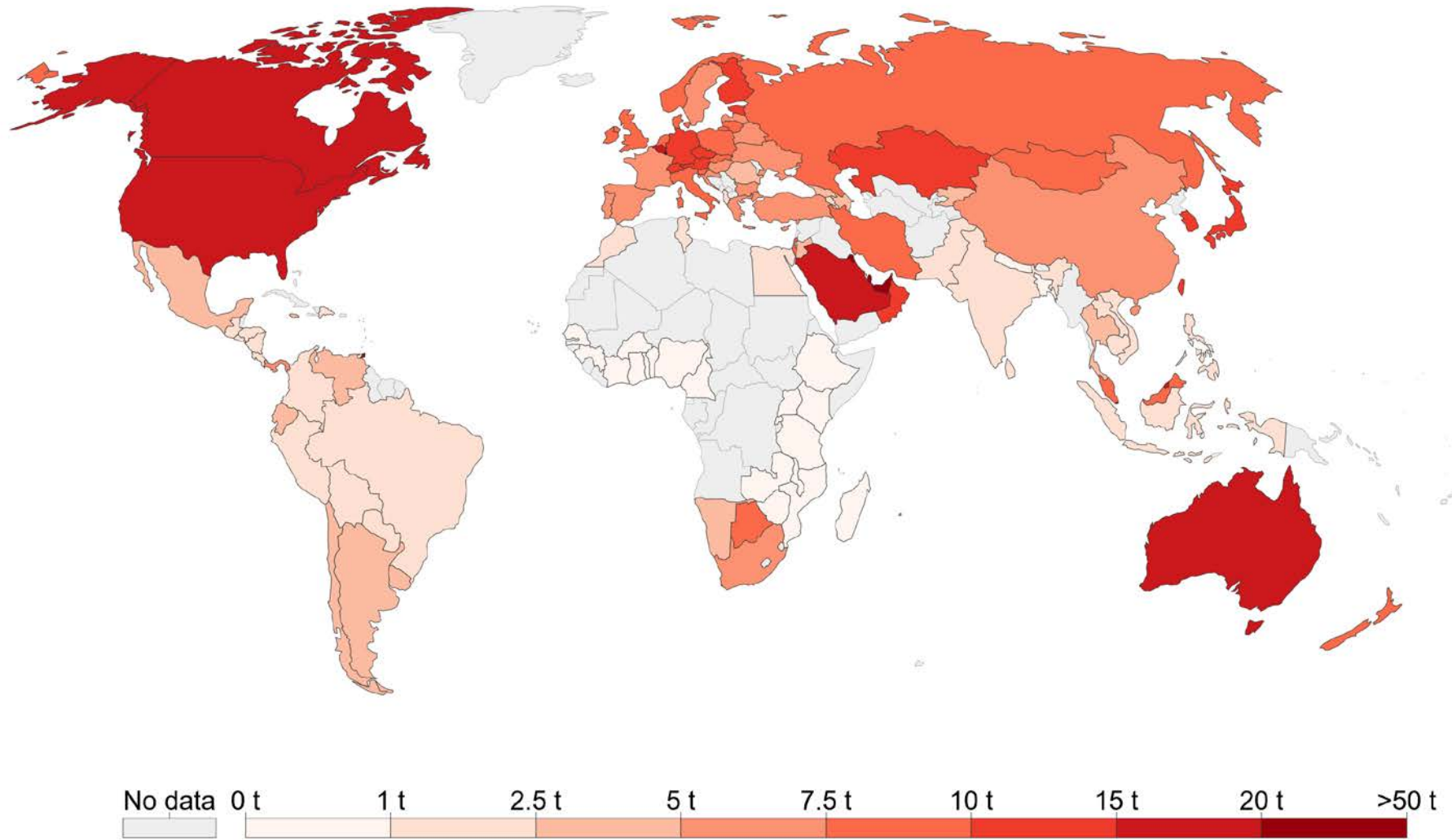
Imported or exported CO₂ emissions per capita, 2017

CO₂ emissions embedded in trade, measured as the net import-export balance in tonnes of CO₂ per capita.
Positive values (red) show net importers of CO₂ (i.e. '1 tonne' means a country net imported 1 tonne of CO₂ per capita). Negative values (blue) show net exporters of CO₂.

No data	<-10 t		-2.5 t	0 t	2.5 t		>10 t
		-5 t	-1 t	1 t		5 t	
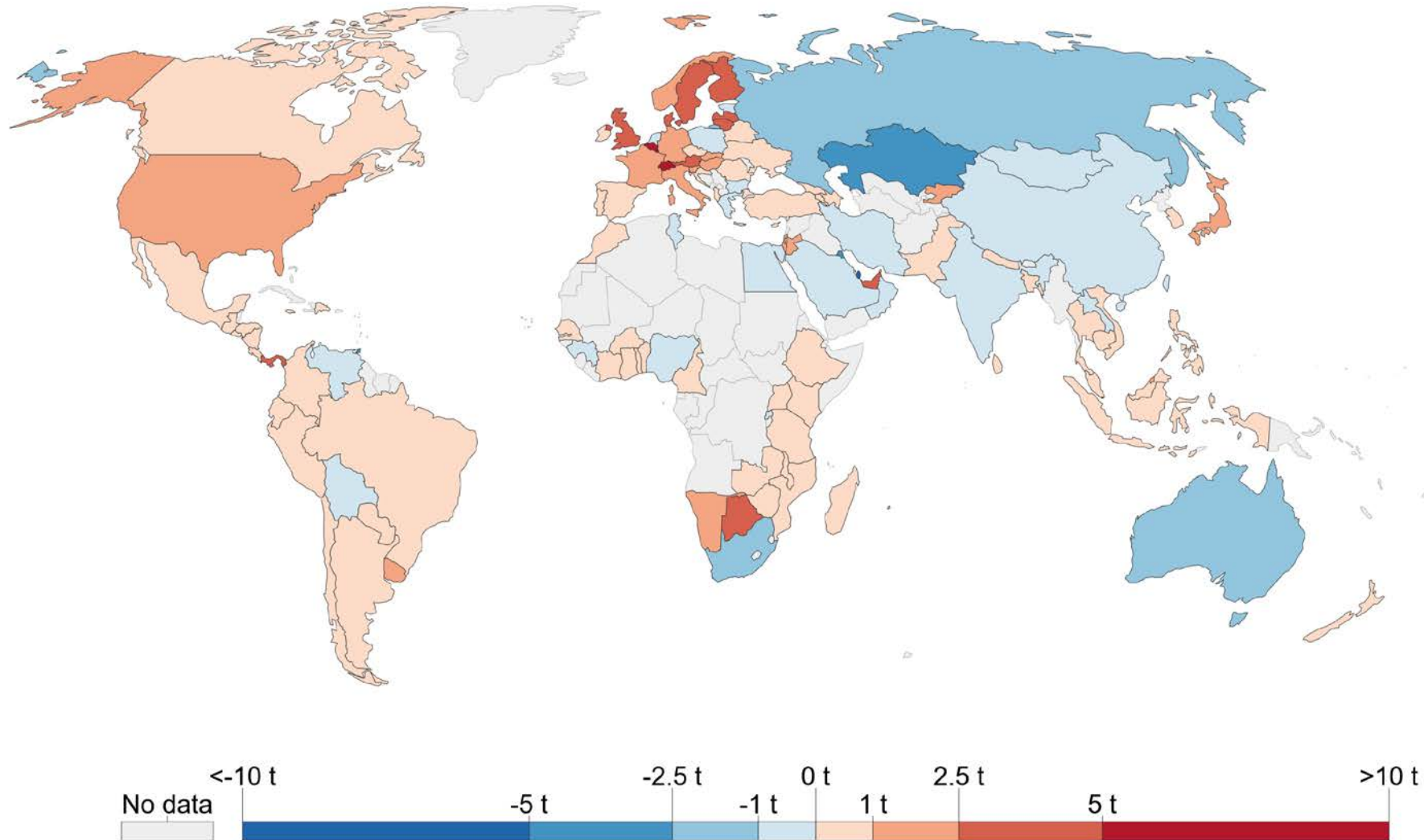
CO₂ emissions embedded in global trade, 1990 to 2017

Carbon dioxide (CO₂) emissions embedded in trade, measured as the net import-export balance in tonnes of CO₂ per year. Positive values (red) represent net importers of CO₂ (i.e. "100 million" would mean a country was a net importer of 100 million tonnes of CO₂ in a given year). Negative values (blue) represent net exporters of CO₂.
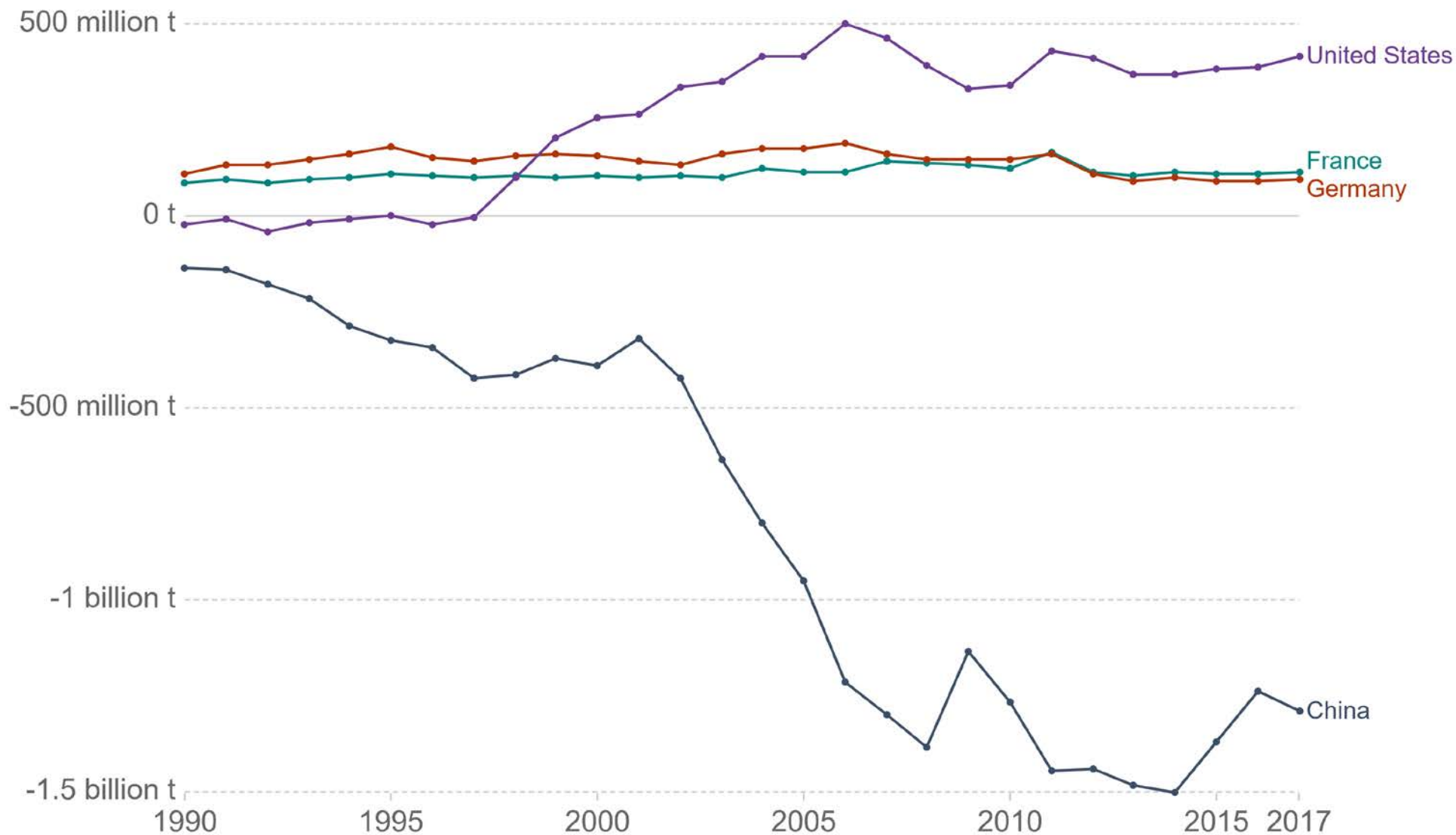
Energy market as a cluster of SESs within the planetary SES and energy as a CPR – the 8 tests:

(1) energy market does have clearly defined boundaries but rules about who produces and sells what at what price and when are much less clear, market – not people - decide;

(2) rules fit local circumstances in some cases while in other create problems e.g. electricity price setting hurts poorer households,

(3) participatory decision-making is malfunctioning not least due to the inadequacy of power dynamics in the Social Dialogue framework (EPSU 2019),

(4) commons are being monitored yet both monitoring and targets are riddled with problems not least due to complex internationalised component of emission-making,

(5) sanctions for those who abuse the commons exist yet fossil industries are still subsidised,

(6) conflict resolution can be costly and time/expertise consuming (EPSU 2019),

(7) right – and the socio-economic ability - of commons to organise varies from country to country and that needs to be more coordinated and supported, yet

(8) energy commons work best when nested within larger networks and in the EU Energy community they are; a lot of necessary architecture is in place, next what is needed is democratisation of the functions.

Energy market as a CPR and sustainability transition – what is to be done? (1)

- EU energy market is run by the member states who 'operate within a hybrid institutional framework combining supranational and intergovernmental elements, in which formal and informal authority distribution is unstable and contested; a system Bocquillon and Maltby (2020) describe as 'embedded intergovernmentalism', which too is a form of an SES.

- With increasing participation from smaller actors, prosumers, and diversification of generation and type of energy in the interconnected grids, the mode of governance of it too is – and needs to be – transforming.

- A multilevel system of policy-shaping and implementation agents of various size is necessary with 'citizens assemblies and forums' (e.g. the Convention Citoyenne pour le Climat in France (Mellier-Wilson 2020) and similar in Ireland, UK and Canada) and their growing experience of bringing experts and citizens together (Gough 2020; Rifkin 2018), especially related to matters the latter hold the knowledge and understanding related to the needs of communities they represent (as Ostrom's work has extensively shown).

Energy market as a CPR and sustainability transition – what is to be done? (2)

1. Universal access, stability and security of supply must be guaranteed while RE capacity must be deployed fast and in an organised manner

2. public ownership of energy enterprises as despite the liberalisation mantras, 'there are often significant improvements in productivity when separate parts of a system are merged under public ownership, because transaction costs are reduced' (Hall 2016: 3)
   - several alternative approaches already in existence, including public financing for sustainability projects that would allow to save costs in the long run (Marois 2017; TUED 2017).

3. energy democracy – "socially just energy system, with universal access, fair prices and secure, unionised and well-paid jobs" (ED 2016) – and sustainable transition can be achieved if the EU 'multi stakeholder' model is made functional – is democratised - and includes a deep, constructive and empowered dialogue between local communities, workers, trade union, civil society organisations, municipalities, enterprise management teams, etc.; if energy is treated as a CPR/commons and energy market as a SES, if collective responsibility for the fiction of "externalities" is assumed.

Thank you!

Dr. Yuliya Yurchenko

PEGFA/GPERC

University of Greenwich

y.yurchenko@gre.ac.uk