

European Green Deal and Smart City Development

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In cooperation with:



Partners of Connective Cities



Commissioned by





The European Green Deal

The Greenhouse Effect

Some solar radiation is reflected by the Earth and the atmosphere.

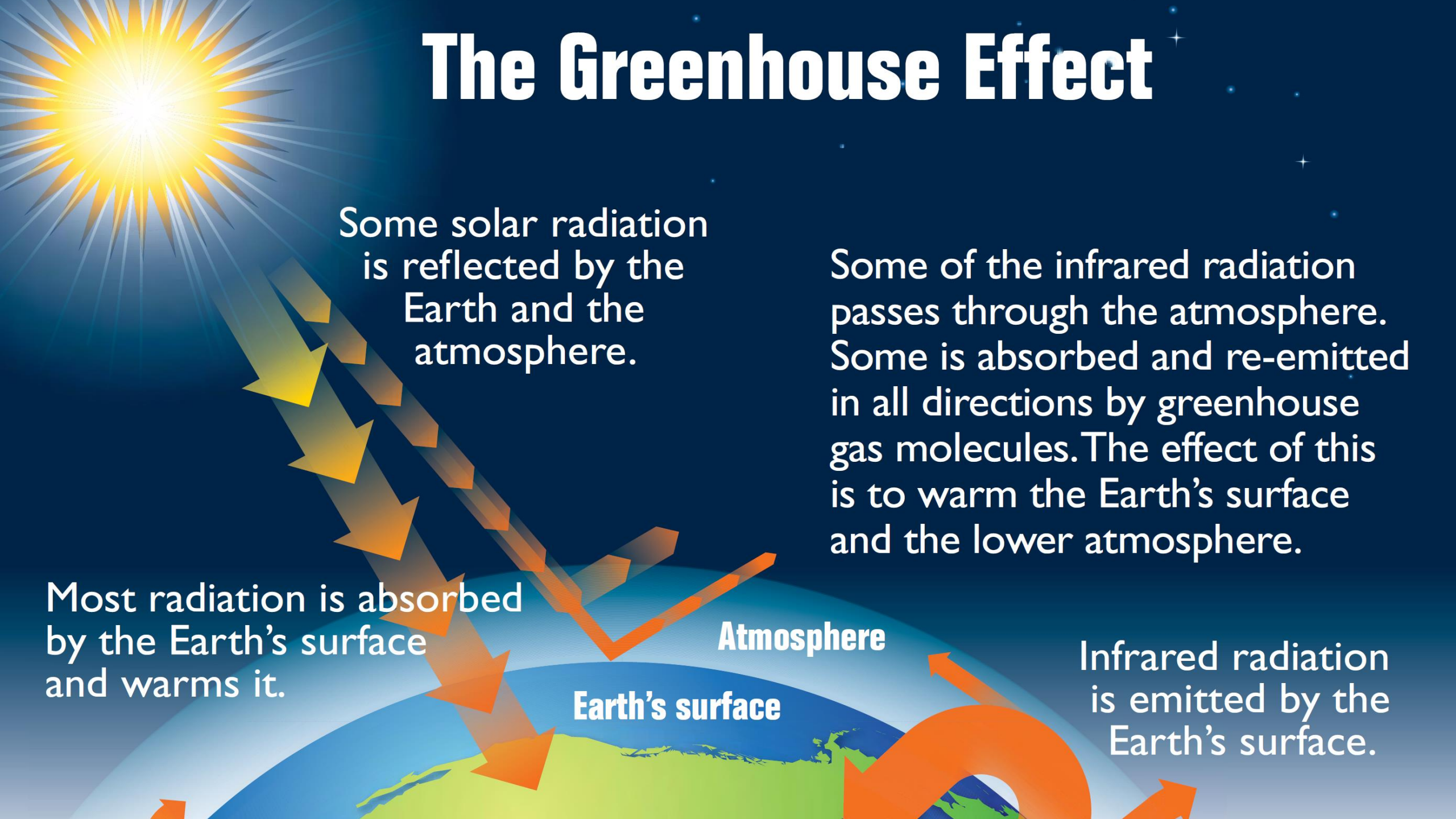
Some of the infrared radiation passes through the atmosphere. Some is absorbed and re-emitted in all directions by greenhouse gas molecules. The effect of this is to warm the Earth's surface and the lower atmosphere.

Most radiation is absorbed by the Earth's surface and warms it.

Atmosphere

Earth's surface

Infrared radiation is emitted by the Earth's surface.



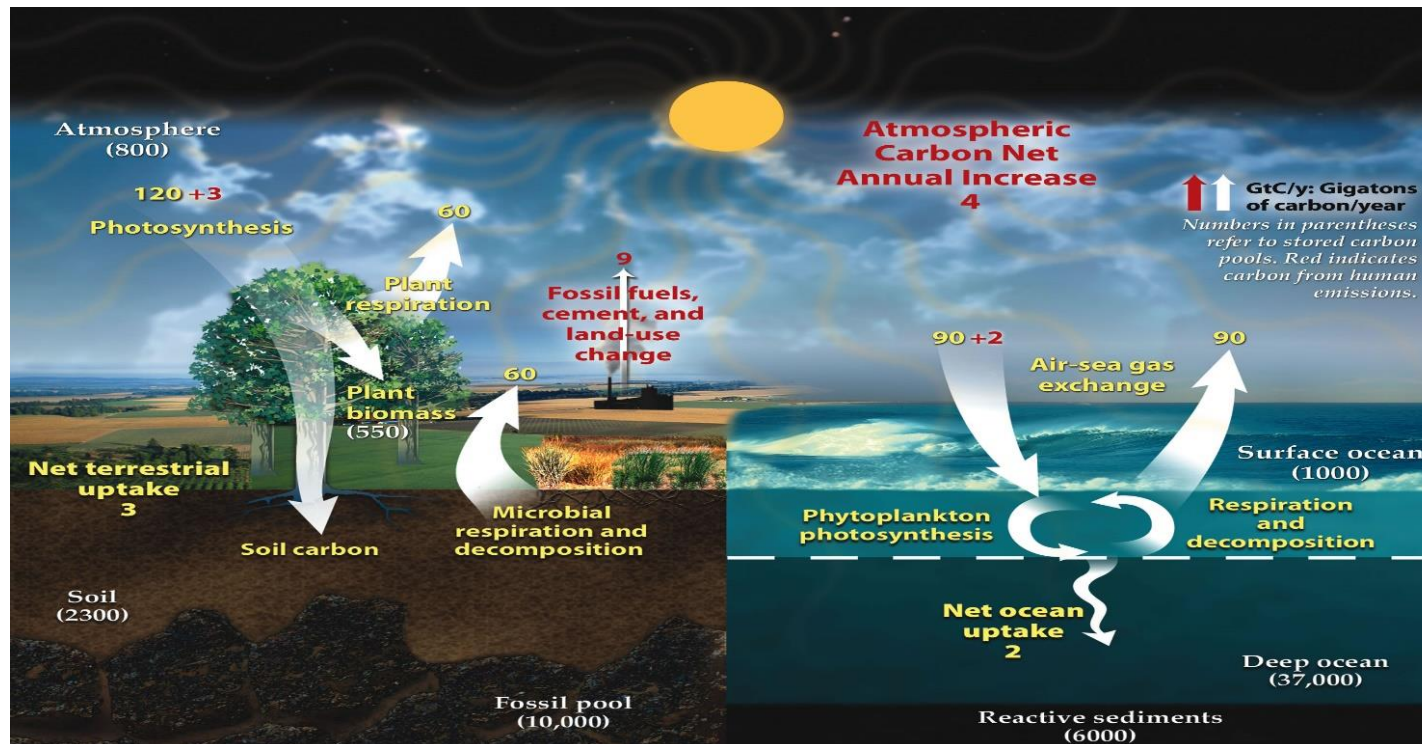
What is carbon neutrality?

Carbon neutrality means that there is a balance between carbon emissions and the uptake of carbon from the atmosphere by carbon sinks. Removing carbon monoxide from the atmosphere and then storing it is called carbon sequestration. To achieve net zero emissions, all greenhouse gas emissions worldwide must be counterbalanced by carbon sequestration.



What is a carbon sink?

- A carbon sink is any system that absorbs more carbon than it emits
- The main natural carbon sinks are **soil, forests and oceans**
- Natural runoff is estimated to remove 9.5 to 11 Gt CO₂ per year
- Annual global CO₂ emissions reached 38.0 Gt in 2019
- To date, no man-made carbon sinks can remove carbon from the atmosphere on the scale required to combat global warming

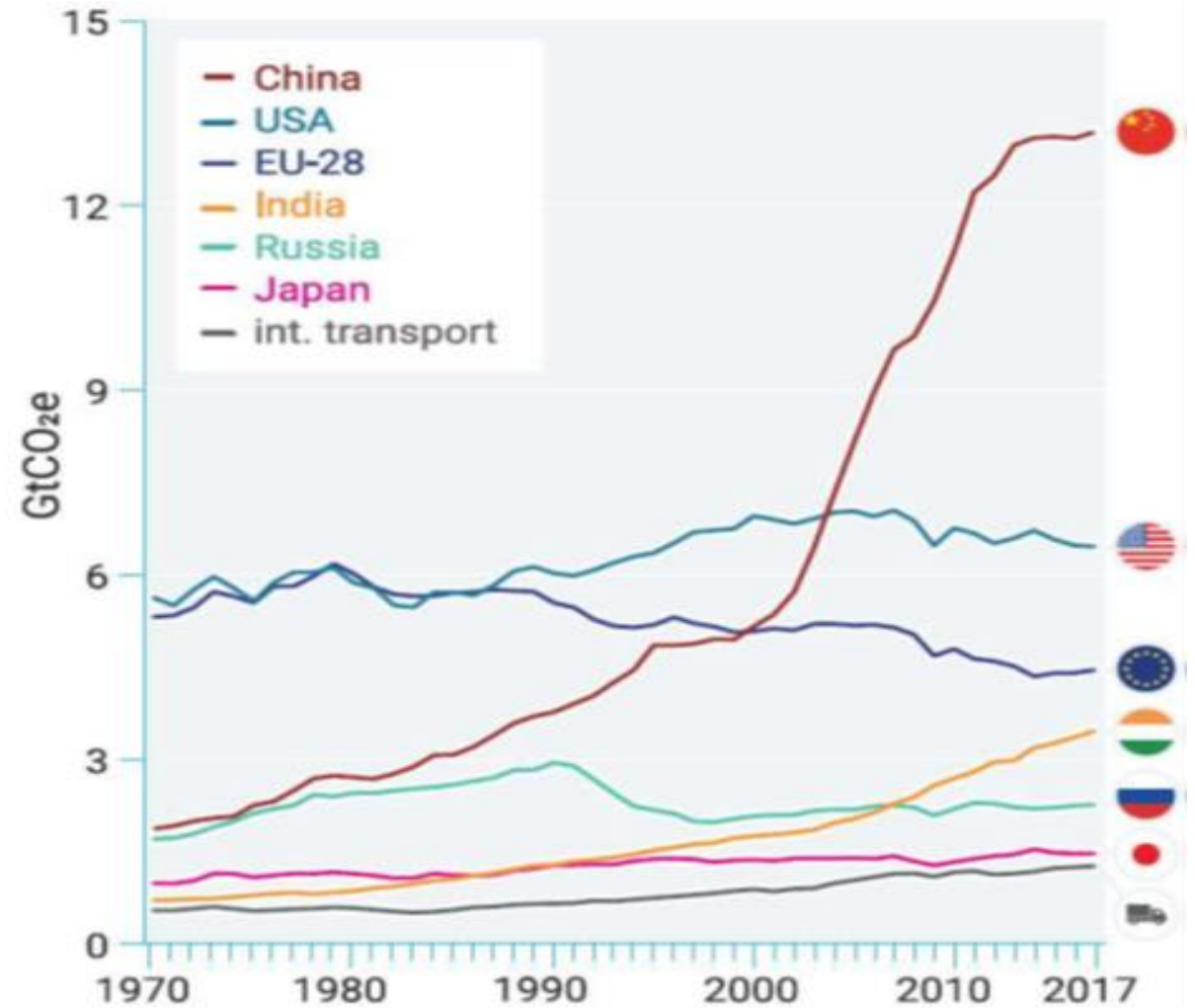
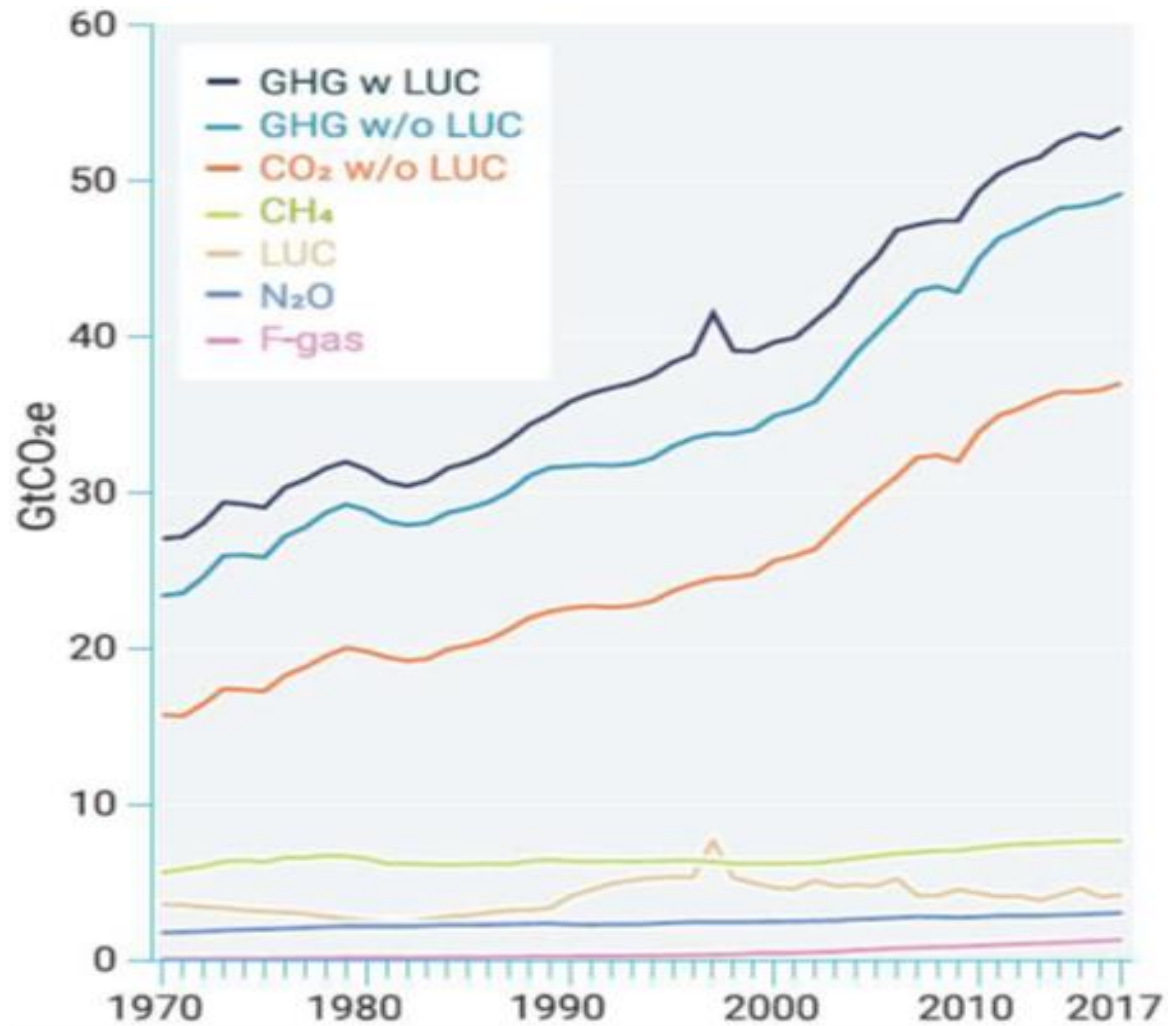


What is carbon offsetting?

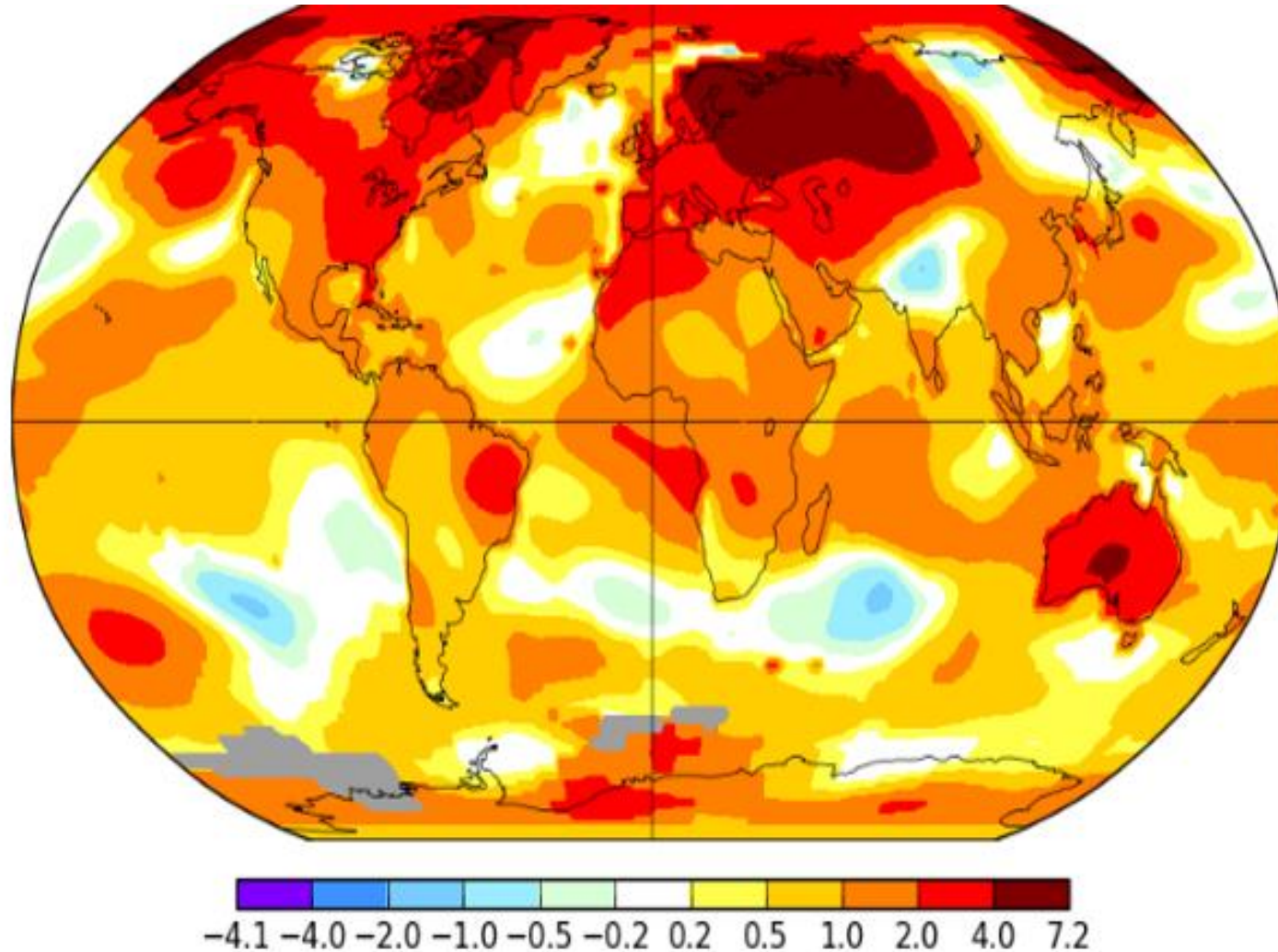
- Another way to reduce emissions and achieve carbon neutrality is to offset emissions from one sector by reducing them in another
- This can be done through investments in renewable energies, energy efficiency, or other clean, low-carbon technologies
- The EU Emissions Trading System (ETS) is an example of a carbon offset system



Global greenhouse gas emissions

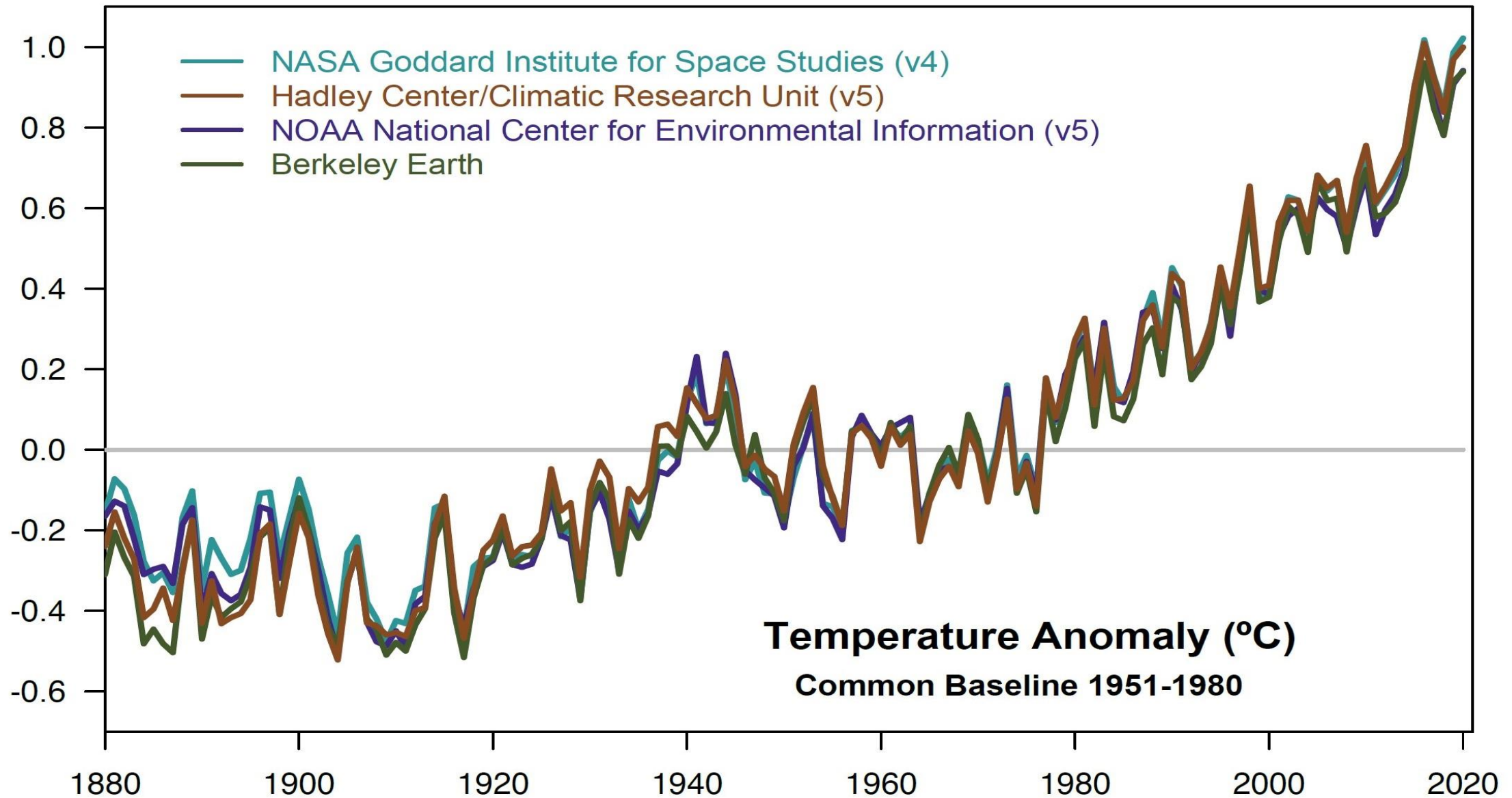


According to NASA analysis, 2020 will be the warmest year on record



Source: <https://www.nasa.gov/press-release/2020-tied-for-warmest-year-on-record-nasa-analysis-shows>

Temperature anomaly



A wide-angle photograph of a deforested landscape. The foreground and middle ground are filled with numerous dark, charred tree stumps of varying heights, scattered across a patchy green and brown field. In the background, rolling hills and mountains are visible under a heavy, overcast sky with grey clouds. The overall scene conveys a sense of environmental loss and degradation.

One million species of animals and plants are now threatened with extinction, more than ever before in human history

Statement issued in Paris on 6 May 2019 by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services

2020 crisis year for biodiversity

- Scientists and most governments agree that the world is facing an unprecedented ecological crisis, with vast numbers of species on the brink of extinction and global temperatures continuing to rise.



Sources: <https://www.nytimes.com/2020/01/10/world/australia/bushfire.html>

2020 crisis year for biodiversity

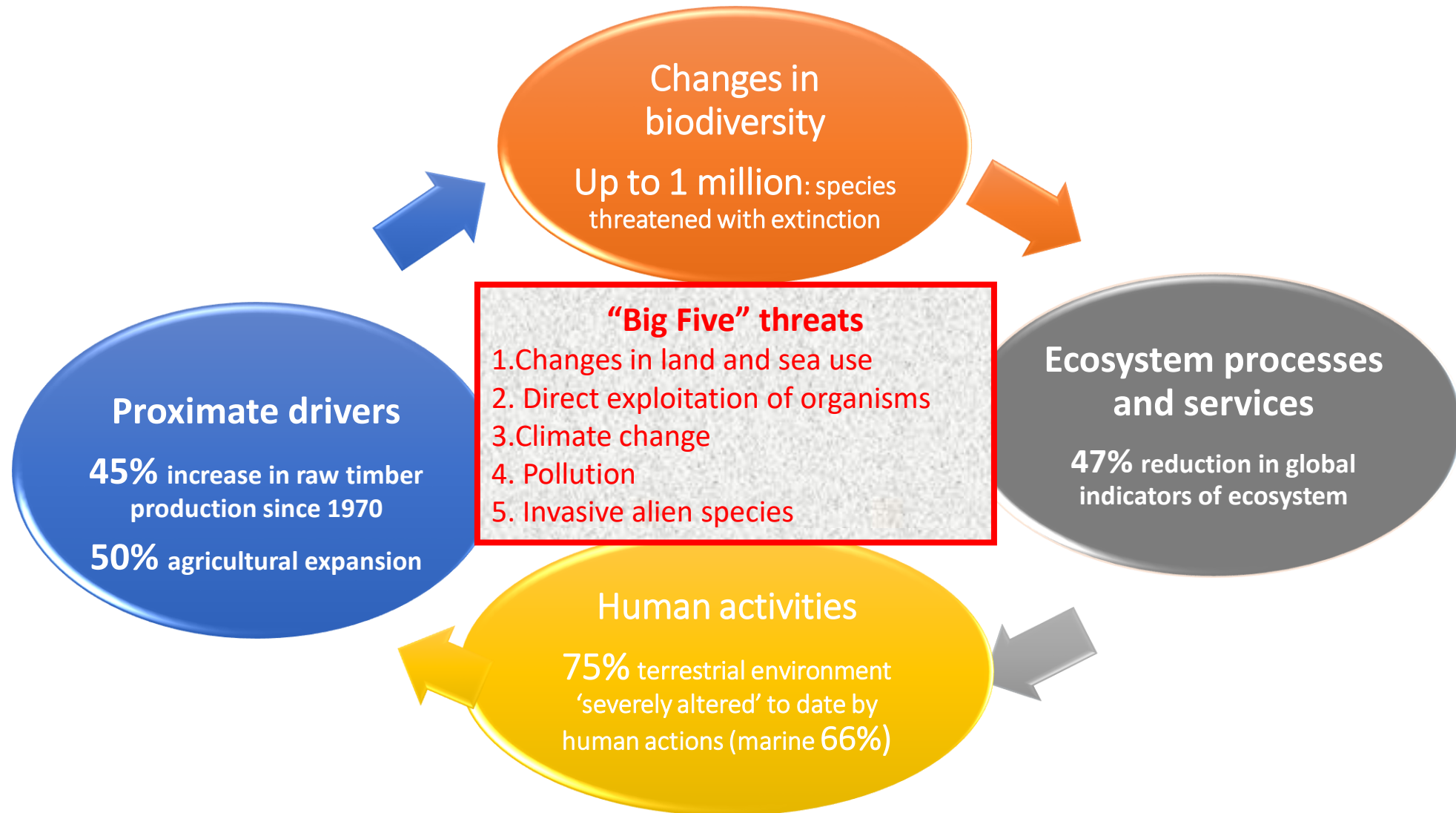
Warming warnings are becoming more and more alarming in various parts of the world.

Summarizing **57** scientific articles, it is assumed that the effects of climate change go beyond natural variability in **22%** of areas where fires can occur.



Sources: www.gyvasmiskas.lt

The main components of the environmental crisis





What is the Green Deal?



<https://www.politico.eu/article/what-is-the-green-deal/>

European Green Deal - Introduction (2)

- Describes the investments needed and the financing instruments available, and explains how to ensure a fair and inclusive transition
- Covers all sectors of the economy, especially transport, energy, agriculture, construction and industries such as steel, cement, information and communication technology (ICT), textiles and chemicals

European Green Deal - Introduction (2)

- On December 11 2019, the European Commission launched the European Green Deal (EGD), a roadmap for ensuring the resilience of the EU economy by turning climate and environmental concerns into opportunities in all policy areas and ensuring a fair and inclusive transition
- European green course: provides a roadmap for action to improve resource efficiency by moving to a clean circular economy and halting climate change, reversing biodiversity loss and reducing pollution



Basic Provisions of EGD (1)



CLIMATE NEUTRAL

EUROPE

2050

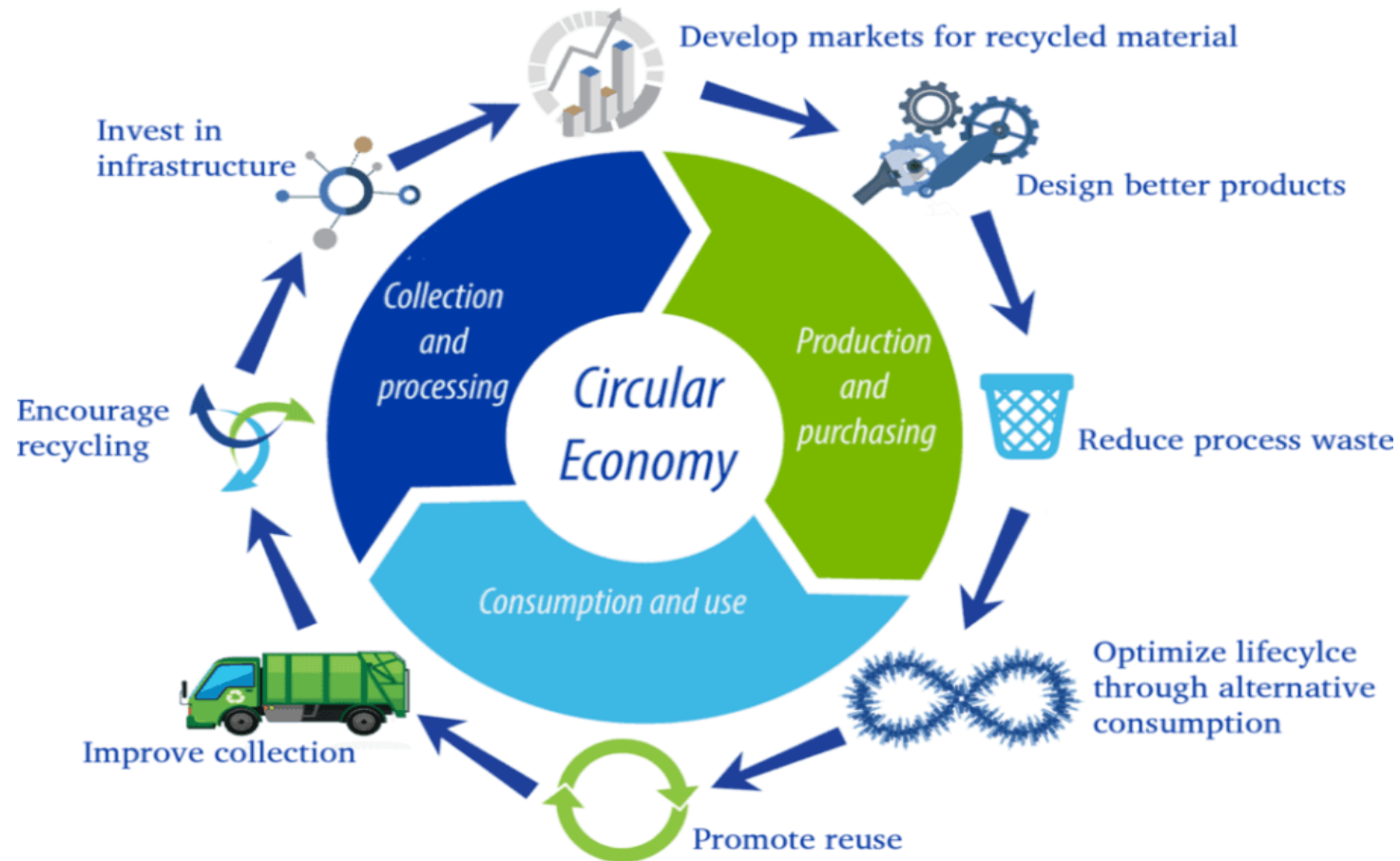
"Climate Neutral" Europe. This is the main goal of the European Green Deal. The EU will strive to achieve zero net greenhouse gas emissions by 2050

This means renewing the EU's climate ambitions for 2030 with a 50-55% reduction in greenhouse gas emissions instead of the current 40% target. The 55% figure will be subject to a profitability analysis

The Commission plans to review all EU laws and regulations to bring them in line with the new climate targets

Basic Provisions of EGD (2)

- In March 2020, a **new circular economy action plan** was adopted as part of the broader EU industrial strategy. It includes a sustainable product policy with guidelines on how we do things to use fewer materials and to ensure that products can be reused and recycled



Basic Provisions of EGD (3)

- **Renovation of buildings**

It is expected to be one of the flagship programs of the Green Deal. The main task here is to “at least double or even triple” the level of renovation of buildings, which currently stands at about 1%

- **Zero pollution**

Whether it's air, soil or water, the goal is to create a “pollution-free environment” by 2050. New initiatives include a chemical strategy for a toxic-free environment



Basic Provisions of EGD (4)

- **Ecosystems and Biodiversity**
- A new biodiversity conservation strategy was presented in March 2020
- Europe wants to set an example with new measures to tackle the main drivers of biodiversity loss. This includes measures to tackle soil and water pollution as well as a new forestry strategy. More trees are needed both in the city and in the countryside. New labeling rules will be introduced to promote agricultural products without deforestation.



Basic Provisions of EGD (5)



- **Farm-to-fork strategy**
- The new strategy will focus on creating a “green and healthy agriculture” system. This includes plans to significantly reduce the use of chemical pesticides, fertilizers and antibiotics.
- New national strategic plans to be submitted next year by member countries under the Common Agricultural Policy will be scrutinized to see if they are in line with the goals of the Green Deal

Basic Provisions of EGD (6)



Transport

- The current target is to reach 95 g CO₂ / km by 2021. Now we need to work towards reaching zero in the 2030s
- Electric vehicles will continue to be encouraged with the goal of deploying 1 million public charging points across Europe by 2025. Every European family should be able to drive their electric car without worrying about the next charging station
- “Sustainable Alternative Fuels” - biofuels and hydrogen - will be promoted in aviation, shipping and heavy-duty road transport, where electrification is currently not possible

Basic Provisions of EGD (7)



- **Financial resources (1)**

- To “leave no one behind”

The Commission is proposing a Fair Transition Mechanism to help the regions most heavily dependent on fossil fuels

The goal is to mobilize **€ 100 billion** targeted specifically to the most vulnerable regions and sectors. The proposed € 100 billion instrument has three stages:

- The **Just Transition Fund**, which will mobilize resources from the EU regional policy budget
- **Invest EU program**, funds come from the **European Investment Bank (EIB)**
- EIB financing from the equity capital of an EU bank

Basic Provisions of EGD (7)

- **Financial resources (2)**

- Each euro spent from the fund can be supplemented by 2 or 3 euros from the region. In this context, the EU government aid guidelines will be revised so that national governments can directly support investment in clean energy
- The regions will also be offered technical assistance to help them “master” the funds while adhering to strict EU spending rules. However, any government assistance would have to be considered by the Commission as part of the new regional transition plans submitted in advance to Brussels



Basic Provisions of EGD (7)

- **Financial resources (3)**
- With a proposed budget of € 100 billion over the next 7 years (2021-2027), Horizon Europe's research and innovation program will also contribute to the Green Pact. 35% of EU research funding will go to green technologies, in accordance with an agreement signed earlier this year. And a series of EU research "lunar imagery" will focus mainly on environmental objectives



Roadmap - Key Actions (1)



Climate ambitions

- **"Climate Law"**, establishing the goal of climate neutrality by 2050
- Comprehensive plan to increase the EU's 2030 climate target to at least **50% and 55%**
- **Cross-border carbon tax mechanism** for selected sectors
- New **EU Strategy for Adaptation to Climate Change**
(adopted on 23 February 2021)

Roadmap - Key Actions (2)

- Clean, affordable and safe energy
- Assessment of the final national energy and climate plans
- Smart Sector Integration Strategy
- The Wave of Renewal initiative for the construction industry
- Assessment and Review of the Trans-European Network - Energy Ordinance
- Offshore wind strategy
- EU Industrial Strategy
- Circular Economy Action Plan
- Stimulating markets for climate-neutral and closed products in energy-intensive industries
- Proposal to Support Zero Carbon Steel Manufacturing Processes by 2030
- Battery Legislation in Support of the Battery Strategic Action Plan



Roadmap - Key Actions (3)

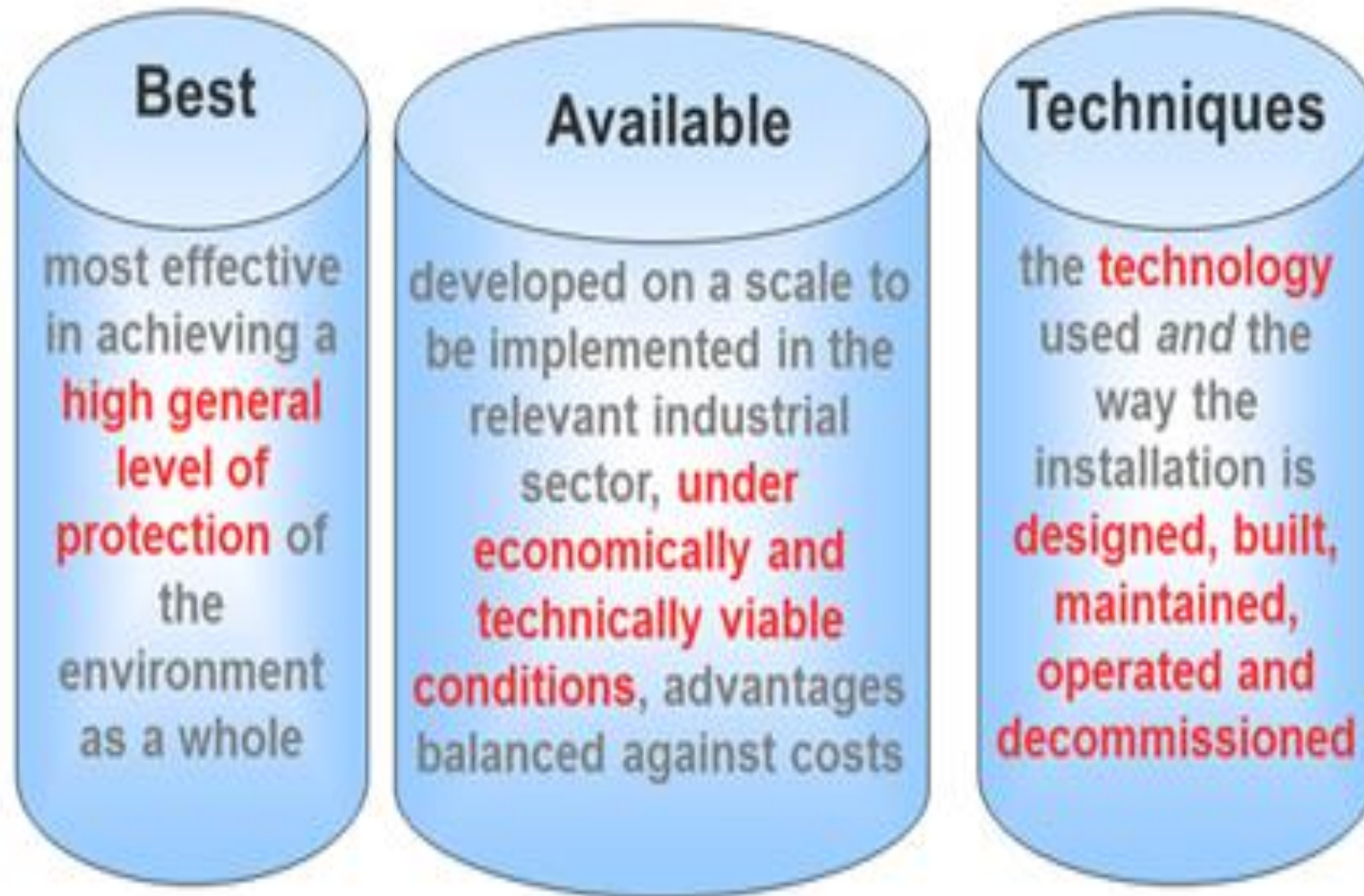
- **Smart mobility strategy**

- Call for funding to support the deployment of public fueling points as part of an alternative fuel infrastructure
- Assessment of legislative options to increase production and supply of environmentally friendly alternative fuels for various modes of transport
- Revision of legal acts (draft Combined Transport Directive, Alternative Fuels Infrastructure Directive and Trans-European Network - Transport Regulations)
- Draft for Stricter Air Pollutant Standards for Vehicles with Internal Combustion Engines



Roadmap - Key Actions (4)

Best Available Techniques (BAT)



Roadmap - Key Actions (4)

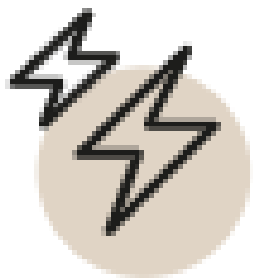
- **BAT is the best available technology**
- The introduction of BAT contributes to the achievement of the following main objectives of the Green Deal:
 - Climate neutral Europe (reducing greenhouse gas emissions)
 - Circular economy (reduced consumption of primary raw materials and reduced waste generation)
 - Zero pollution (reduction of emissions of pollutants into the atmosphere and discharges into water)

Roadmap - Key Actions (5)

- The main tool for reducing greenhouse gas emissions - carbon dioxide - in BAT is to improve energy efficiency, which very often also leads to a decrease in air pollution



Communicating the Green Deal



- **Raise awareness** of EU action for a more sustainable Europe



- **Trigger public support** for the EU solutions to the climate and biodiversity crises



- **Convince citizens** to make more sustainable choices

Raising awareness on key topics



- **Farm 2 Fork:** making food systems fair, healthy and environmentally-friendly to reverse biodiversity loss and keep food affordable while generating fairer economic returns
- **Climate Pact:** engaging citizens and communities in action for our climate and environment
- **Renovation wave:** Renovating and improving the EU's public and private buildings to pave the way for a decarbonised and clean energy system

Why we need a behavior change?



I realise that climate change is a **reality** and that something must be done urgently.

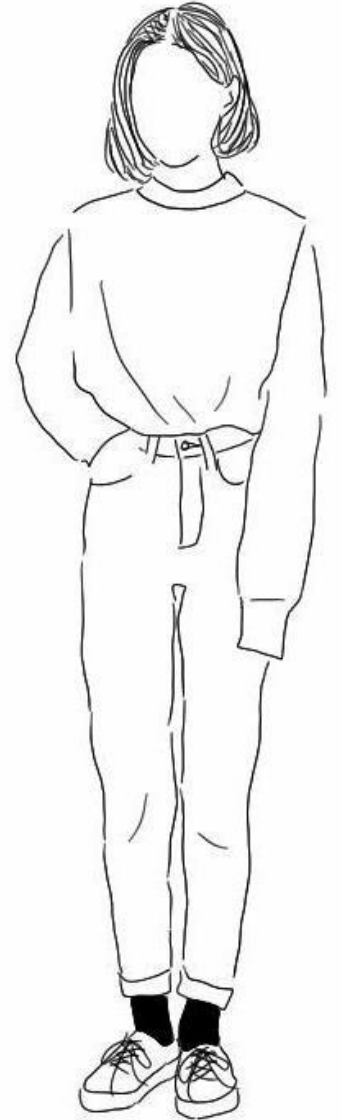
79% of respondents think that climate change is a very serious problem (Eurobarometer 490, April 2019)

But am I doing something **myself**? Not really... I don't know how and why.

60% of respondents say they have taken action to fight climate change the past 6 months (Eurobarometer 490, April 2019)

Information campaign objective: Nudge citizens to change their behavior and make sustainable choices about...

- ❖ Food
- ❖ Housing
- ❖ Appliances
- ❖ Transport
- ❖ Household goods
- ❖ Travelling



"It takes a village to ... save the planet"

- Join forces to contribute to the success – **together**
- Aligning wide range of stakeholders and multipliers
- Adapting outreach at local level



How to engage society in cities?

- ✓ Use the **look and feel**
- ✓ Use the **stories and assets**
- ✓ Advocate and promote main **messages**:
 - Use the campaign hashtag on your social media channels
 - Add links to the campaigns' websites on your own websites
 - Build partnerships with local actors to serve as campaign multipliers



Smart cities and environmental protection: can they be combined?



Why are they important to the environment and smart cities development?



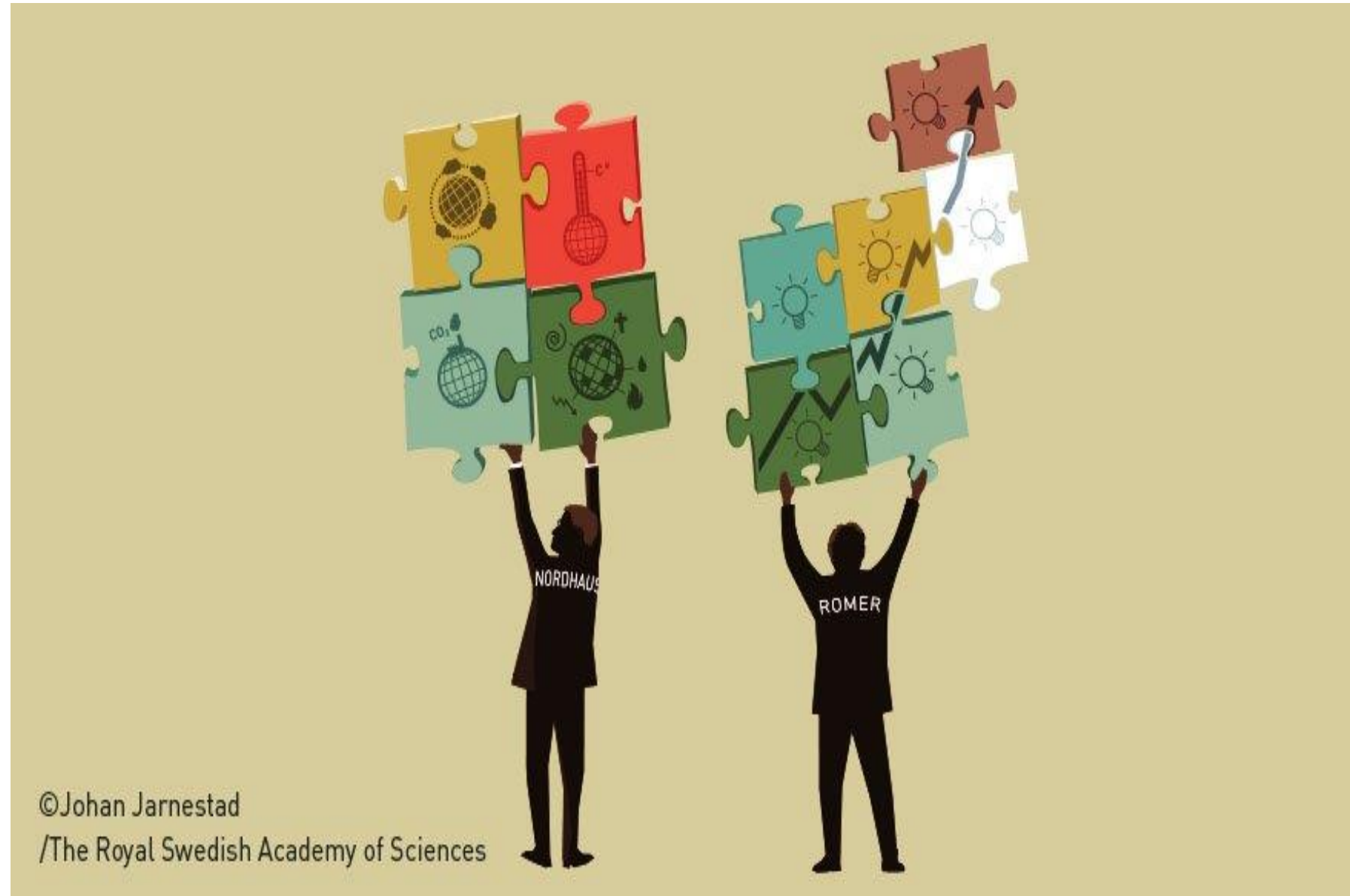
William Nordhaus



Paul Romer

Nobel Prize in economics in 2018

The ideas of both scientists solve the same important problem for humanity - how to reconcile economic progress with the environment. Researchers have developed models that allow you to see economic growth, sustainable development, climate change, technological progress and their links in the long term



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/The Royal Swedish Academy of Sciences

Models DICE-PACE

Optimal CO2 abatement in DICE-PACE

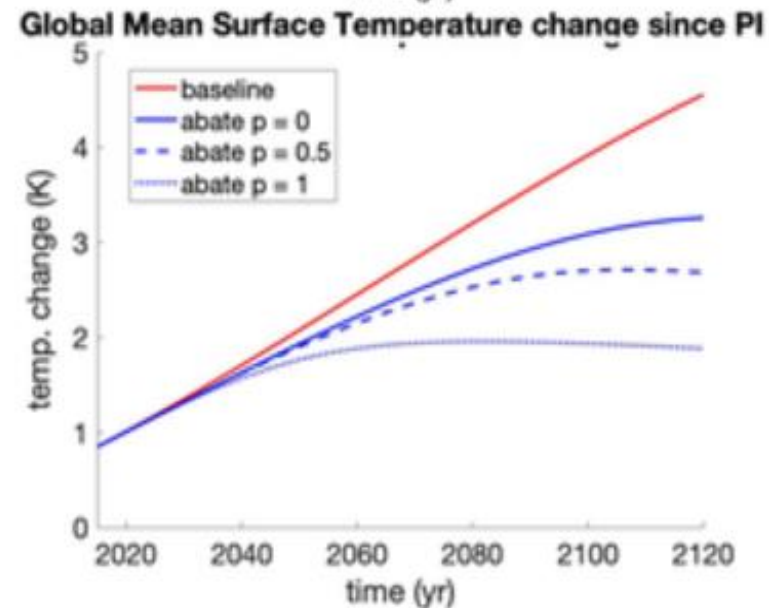
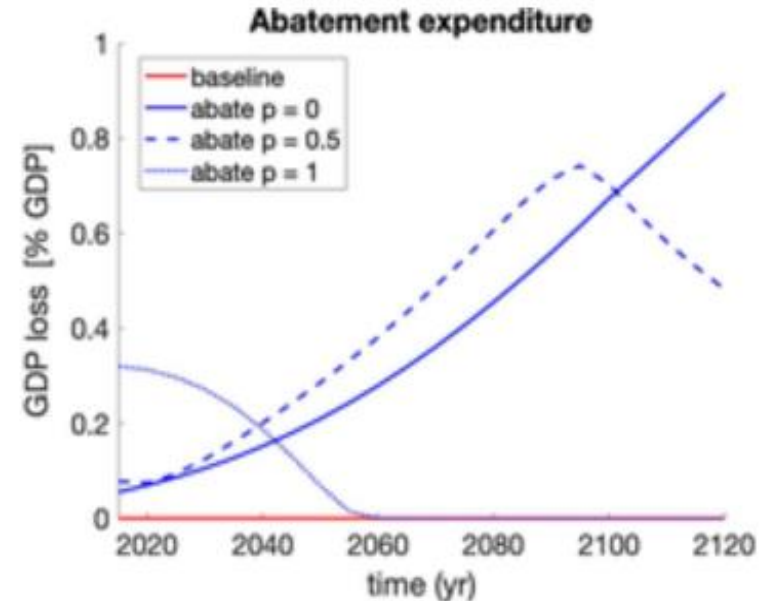
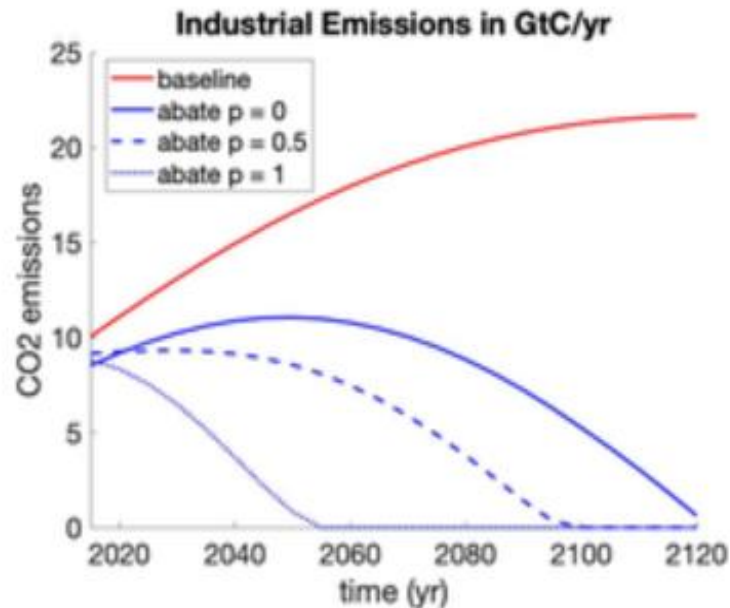
$p=0$ (non-pliable):

- only enduring (operational) costs
- postpone strong abatement
- warming > 3.2 degree

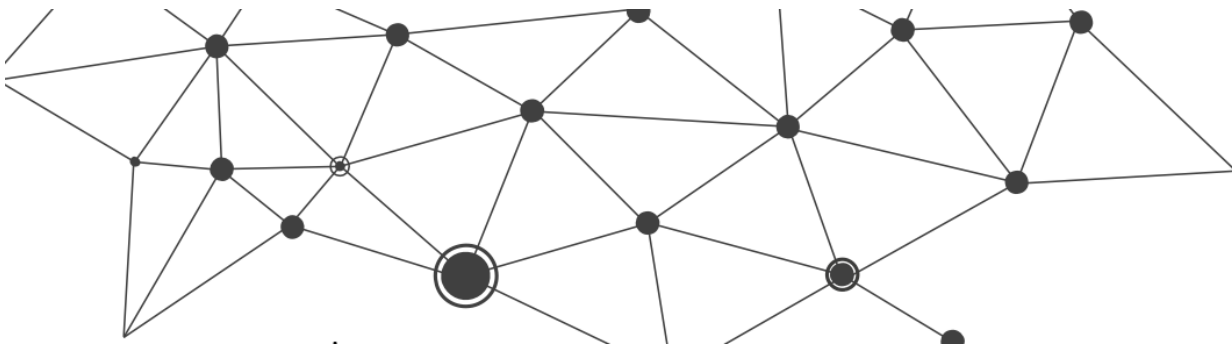
$p=1$ (fully pliable):

- only transitional (investment-like) costs
- immediate strong abatement
- warming < 2 degree

If transitional costs dominate: Abate fast!







Дякую!

Рахмат!

Շնորհակալություն!

Спасибо!

Gracias!

Didi madloba!

Dziękuję!

Salamat!

Faleminderit!

Благодаря!

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