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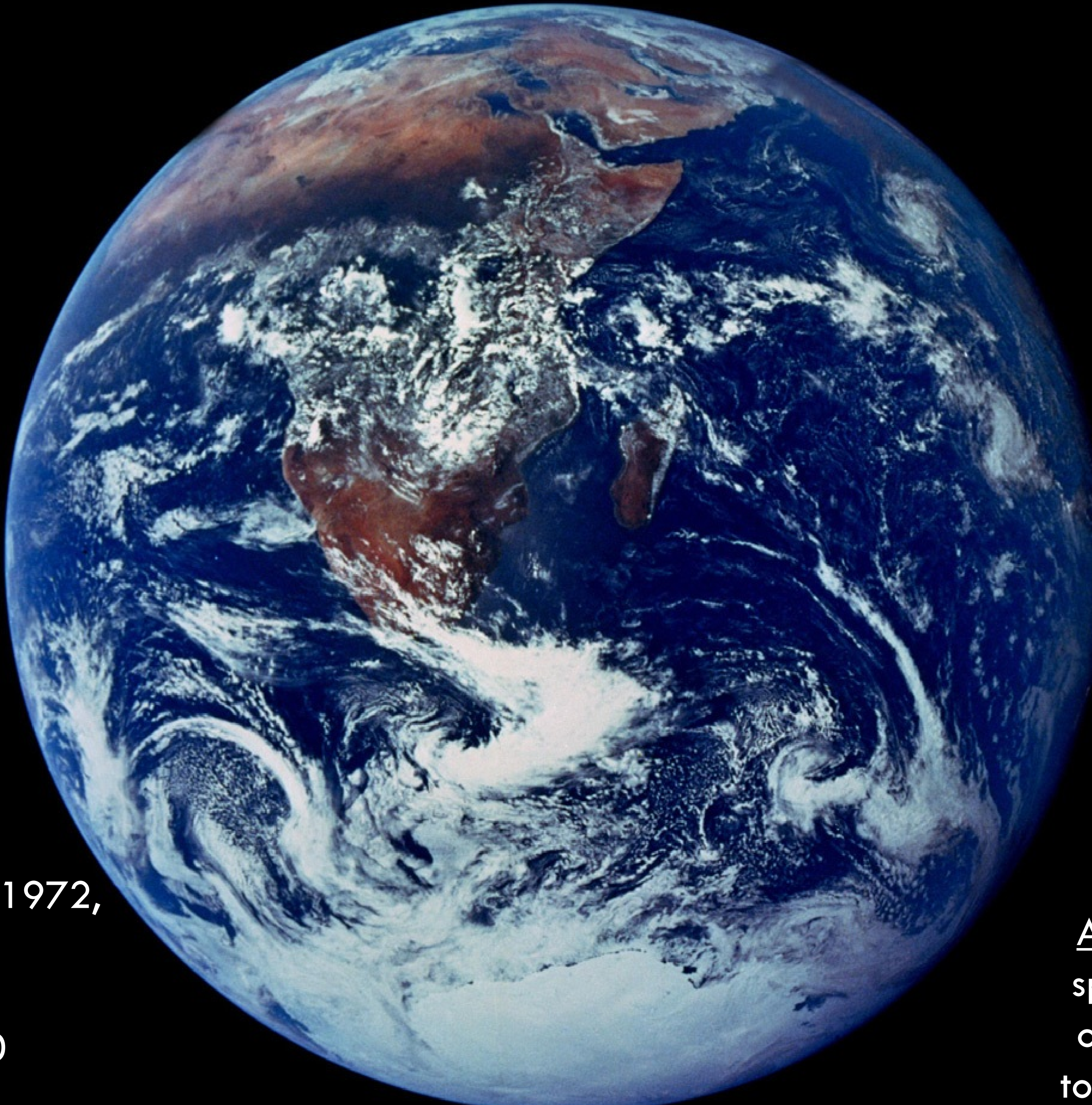
MUNI | RECETOX
SCI

CLIMATE CHANGE AND CRISIS: MYTH OR FACT?

https://pollev.com/lindan443



December 7, 1972, from a distance of about 29,000 kilometers

Apollo 17 spacecraft on its way to the Moon

What comes to your mind when I say "Climate Change"?

II. Climate Change (CC)

Earth System process	Control variable	Threshold avoided or influenced by slow variable	Planetary Boundary (zone of uncertainty)	State of knowledge*
Climate change	Atmospheric CO_2 concentration, ppm; Energy imbalance at Earth's surface, W m^{-2}	Loss of polar ice sheets. Regional climate disruptions. Loss of glacial freshwater supplies. Weakening of carbon sinks.	Atmospheric CO_2 concentration: 350 ppm (350–550 ppm) Energy imbalance: +1 W m^{-2} (+1.0–+1.5 W m^{-2})	1. Ample scientific evidence. 2. Multiple sub-system thresholds. 3. Debate on position of boundary.

Boundary: Atmospheric CO_2 concentration no higher than 350 ppm

Pre-industrial level: 280 ppm

Current level : Mauna Loa

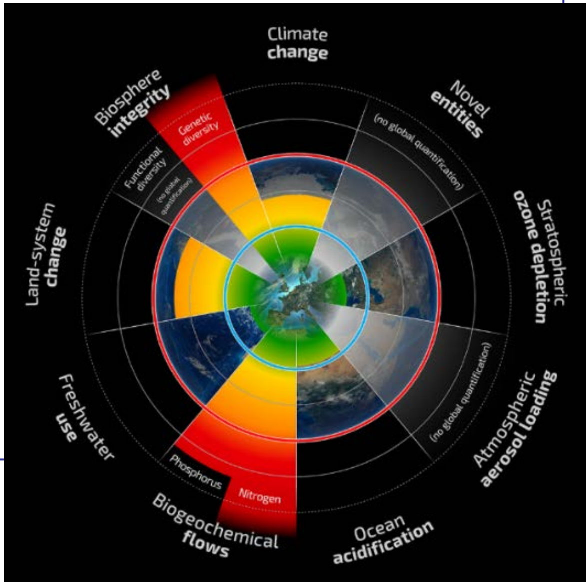
September 2022: 415.57 ppm

September 2021: 413.32 ppm

September 2012: 391.02 ppm

(Weekly average value)

Diagnosis: Boundary exceeded



History of climate change and research

The earliest interest in “climate” was of a rather pragmatic nature

Greek *klinein – „to incline, at an angle“*

Aristoteles (384-322 BC) – Meterologica - VALID FOR ROUGHTLY 2000 YEARS

Can you guess the year when the greenhouse effect was DISCOVERED?

Top

CC - history

1753 – discovery of CO_2

1824 – Joseph Fourier - greenhouse effect in the atmosphere

TEMPERATURE RELATED!

1861 – John Tyndall - water vapour and other gases are **GREEN HOUSE GASSES**

1896 – Svante Arhenius – hypothesis on enhancement of GH effect due to increase of CO_2 in the atmosphere as a consequence of fosil fuels combustion (HOTHOUSE)

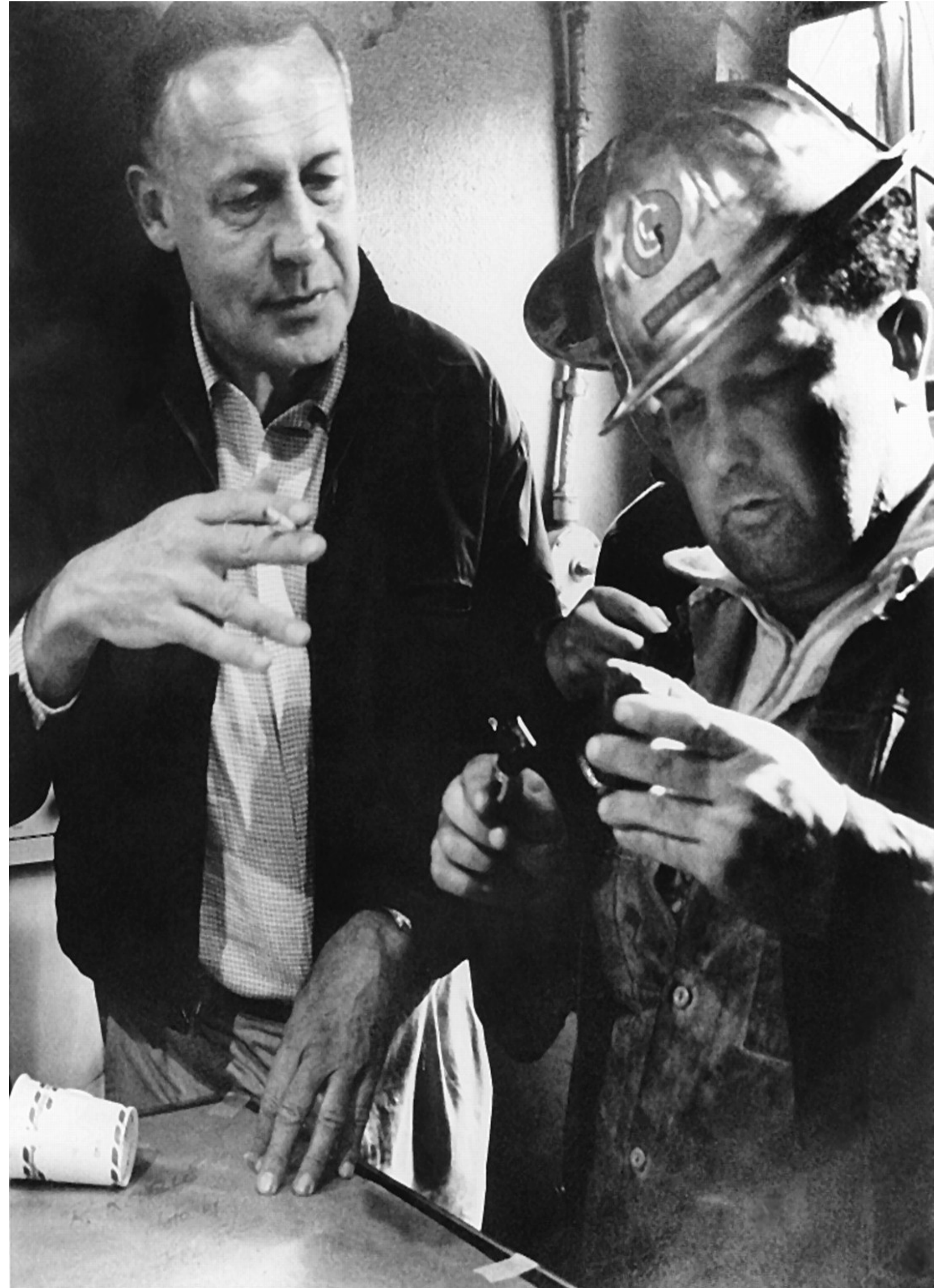
- the prognosis on increase of the temperature by several °C when GHG concentration doubles is still valid

1901 – term „**GREENHOUSE EFFECT**“ (Ekholm)

CC - history

1957 – oceanographer Roger Revelle and chemist Hans Suess shown that oceans **can not absorb entire CO_2 produced by people**

"*Human beings are now carrying out a large scale geophysical experiment.„*

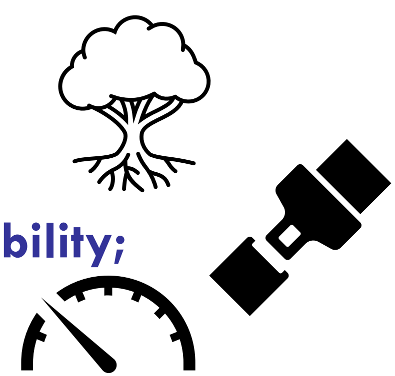


ipcc
INTERGOVERNMENTAL PANEL ON
climate change

WMO UNEP

- **The international body for assessing the science related to climate change.**
- Created in 1988
- To provide governments at all levels with scientific information that they can use to develop climate policies
- **Thousands of people** from all over the world contribute to the work of the IPCC. For the assessment reports, experts volunteer their time as IPCC authors to **assess the thousands of scientific papers** published each year to provide a comprehensive summary of what is known about the **drivers of climate change, its impacts and future risks, and how adaptation and mitigation can reduce those risks.**
- **The IPCC does not conduct its own research.**

- **Working Group I: the Physical Science Basis;**
- **Working Group II: Impacts, Adaptation and Vulnerability;**
- **Working Group III: Mitigation of Climate Change**



CC… and politics

1972 – UNCHE (The United Nations Conference on the Human Environment), *Stockholm*. CC becomes one of the global priorities

- Creation of United Nations Environment Programme (UNEP)

1990 – 1st IPCC report – *„Temperature increase by* ***0.3-0.6 °C*** *is caused also by the human activities"*

1992 – *Earth summit* – **United Nations Framework Convention on CC**,

Rio de Janeiro

2005 – **Kyoto Protocol (1997)**

! CHINA – developing country, USA – did not sign !

2013 - 5th IPCC report *„Scientists are 95% certain that humans are the "dominant cause" of global warming since the 1950s"*

2016 – **Paris Treaty came** into force

2021-2022 - 6th IPCC report

2021 – United Nations Climate Change Conference, *Glasgow*

Greenhouse Effect and Global Climate Change

- Greenhouse effect (GE) – natural atmospheric effect essential for life on the Earth

- GE dampens temperature fluctuation between day and night and thus provides favorable conditions for life

How Do Greenhouse Gases Actually Work?

When poll is active, respond at **pollev.com/lindan443**

Text **LINDAN443** to **+420 736 350 959** once to join

What is an average temperature on the Earth?

26 °C 0 °C 15 °C -2 °C

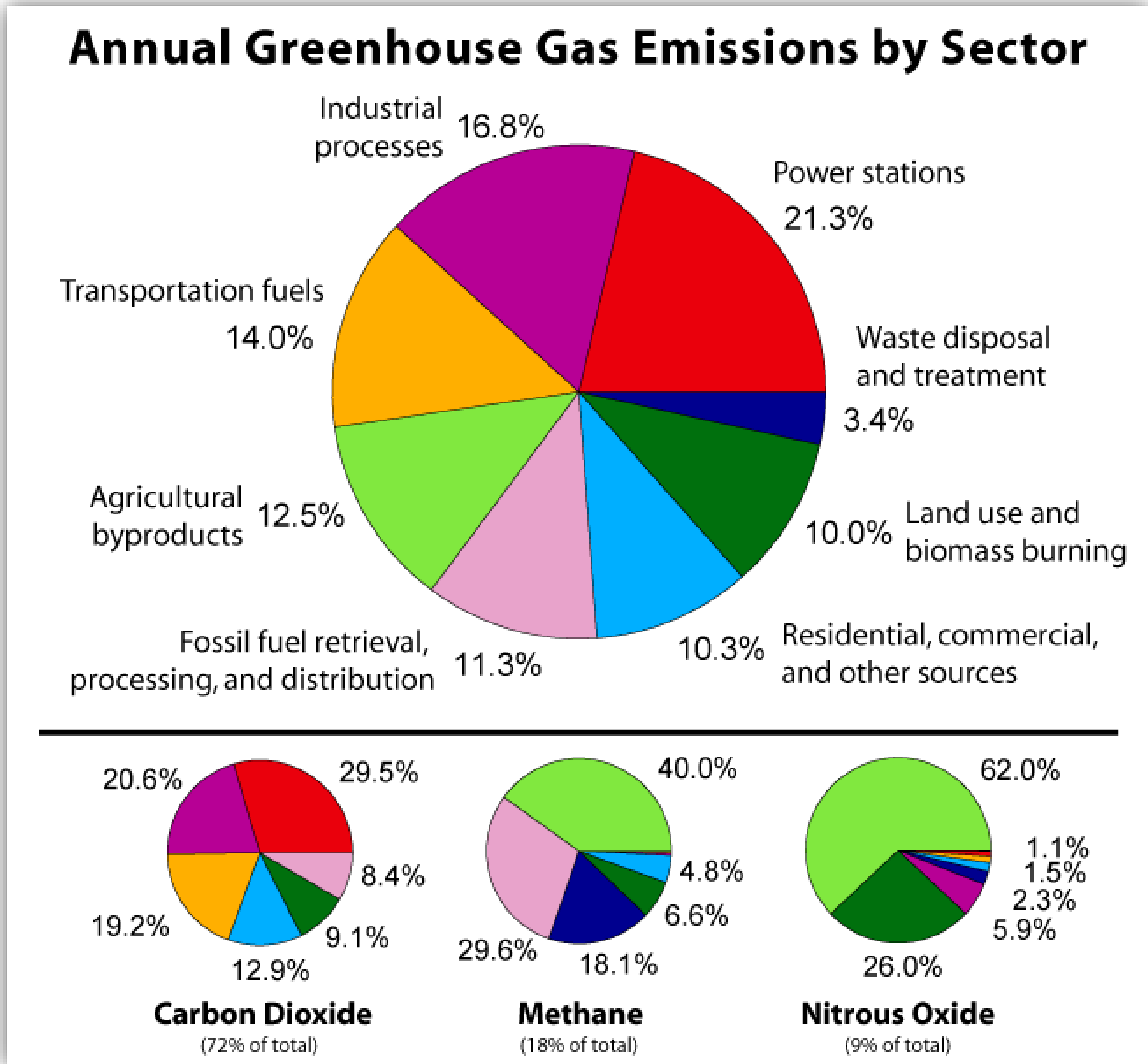
Greenhouse Gasses (GH) in the atmosphere

- the most important GHG is water vapour - $H_2O(g)$ that creates 2/3 of greenhouse effect
- however $H_2O(g)$ concentration in the atmosphere **is not significantly influenced** by human activities
- second most important GHG is **CO_2** (~ 20 % GH effect)
- last 13 % of GH effect – mainly gases like CH_4, N_2O, CFC

	Water	Carbon Dioxide	Methane	Nitrous Oxide
Atmospheric Concentration	0.01–4%*	385 ppm	1797 ppb	322 ppb
Rate of Increase	n/a	1.5 ppm/yr	7.0 ppb/yr	0.8 ppb/yr
Atmospheric Lifetime	Very short 1–5 days	Variable 5–200 yr	12 yr	120 yr
Global Warming Potential (GWP)	n/a†	1	21	310

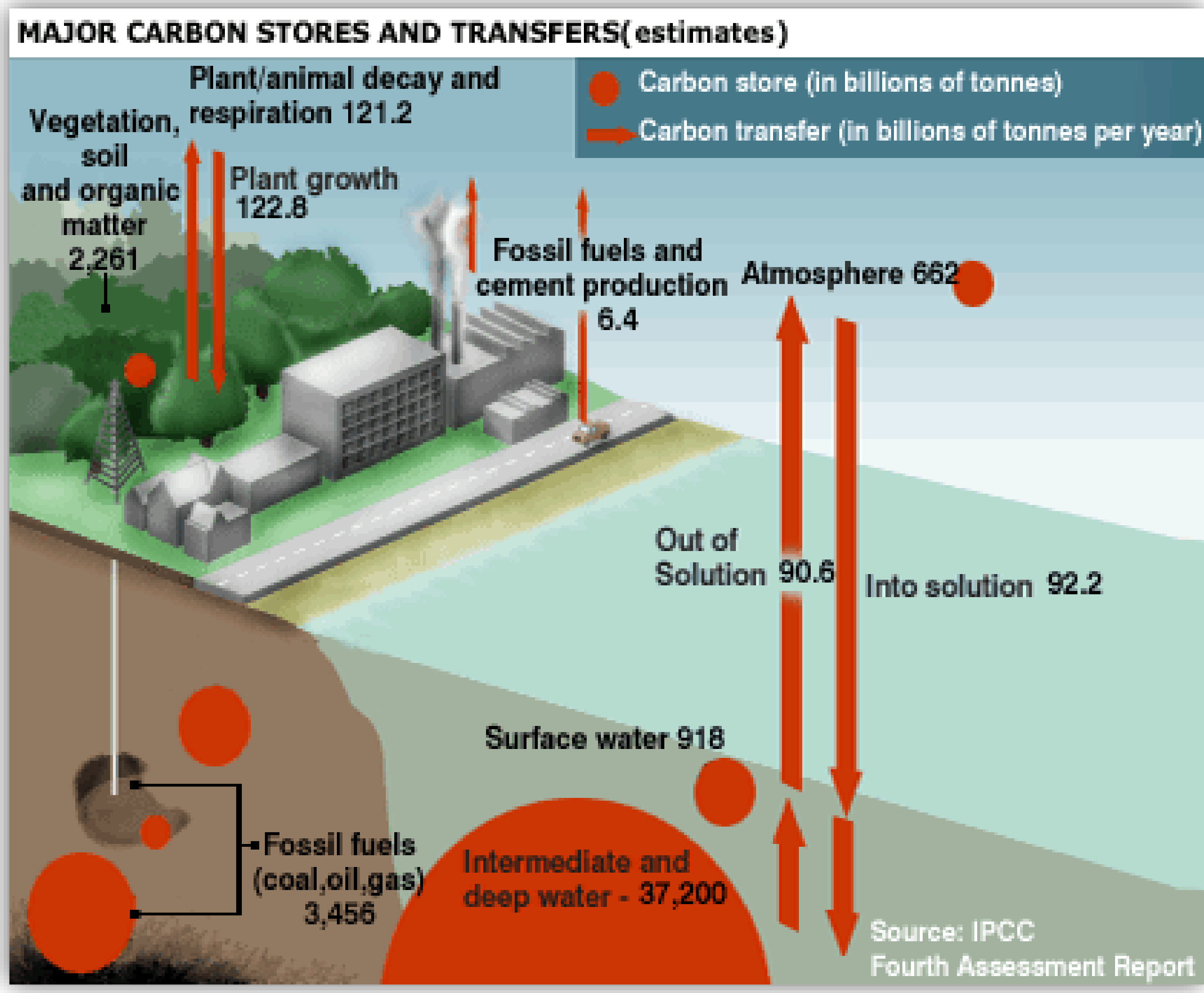
* The amount of water vapor in the air varies according to temperature and density of air (usually ~1–3% of troposphere)

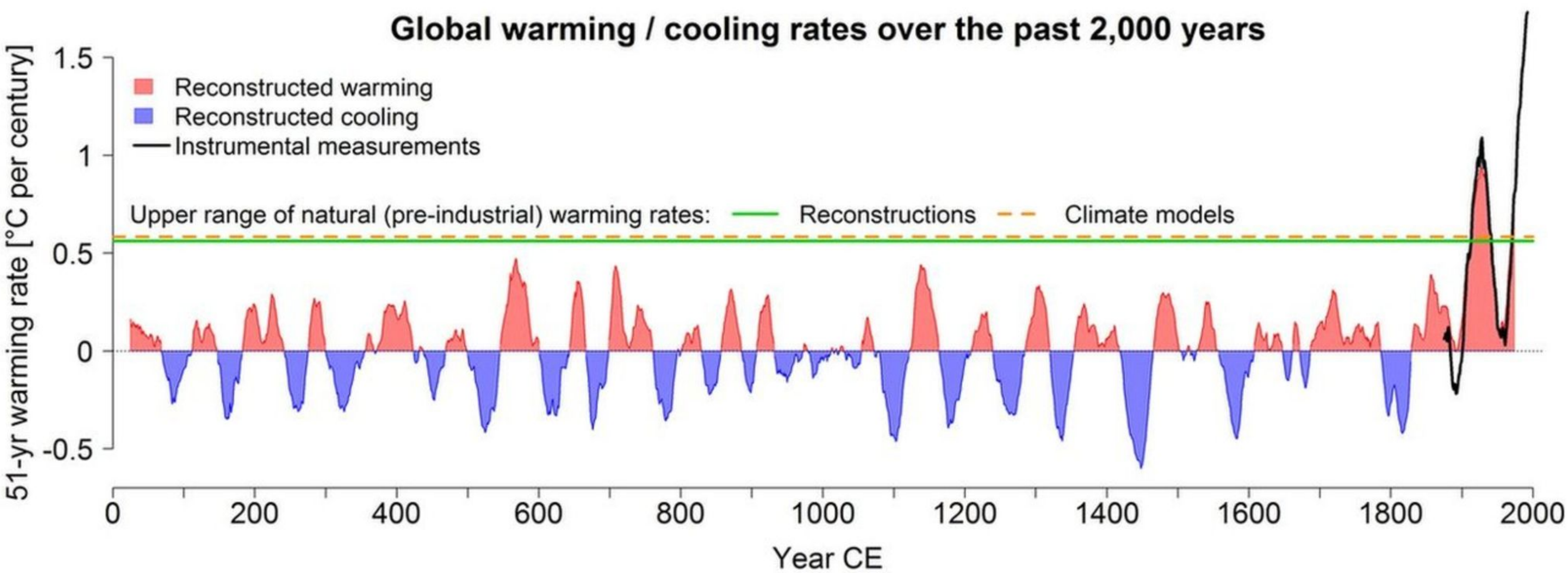
† Water vapor levels vary strongly according to region, so rates of change and warming potential cannot be assessed


Annual Greenhouse Gas Emissions by Sector
Industrial processes 16.8%
Power stations 21.3%
Transportation fuels 14.0%
Waste disposal and treatment 3.4%
Agricultural byproducts 12.5%
10.0% Land use and biomass burning
Fossil fuel retrieval, processing, and distribution 11.3%
10.3% Residential, commercial, and other sources
20.6%
29.5%
8.4%
19.2%
9.1%
12.9%
Carbon Dioxide
(72% of total)
40.0%
4.8%
6.6%
29.6%
18.1%
Methane
(18% of total)
62.0%
1.1%
1.5%
2.3%
5.9%
26.0%
Nitrous Oxide
(9% of total)

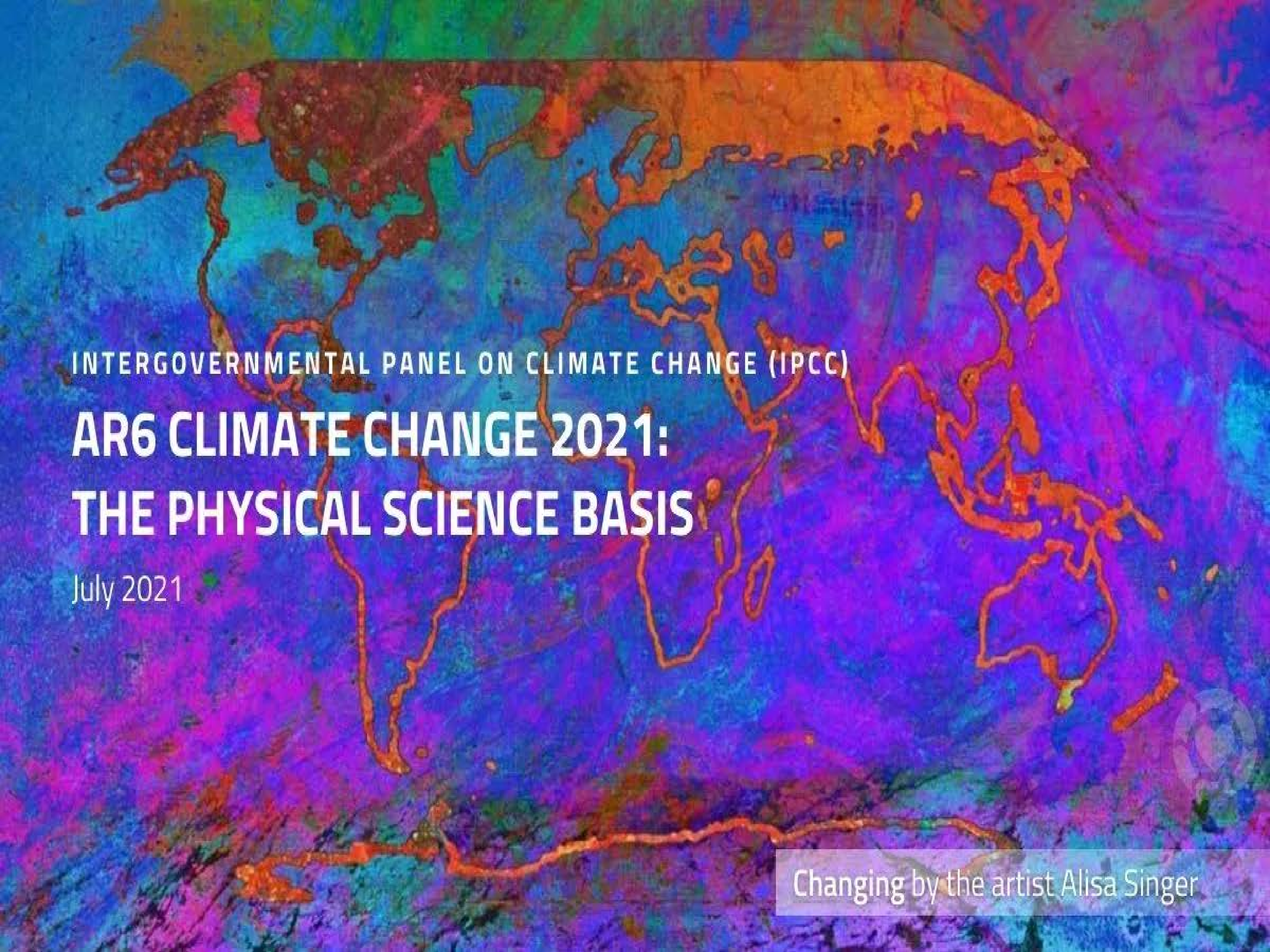
..... Problem?

- **increase of CO_2** level in the atmosphere due to the **antropogenic action** - disruption of the balance between **release and absorption of CO_2** in the carbon geochemical cycle





GLACIAL/INTERGLACIAL PERIOD



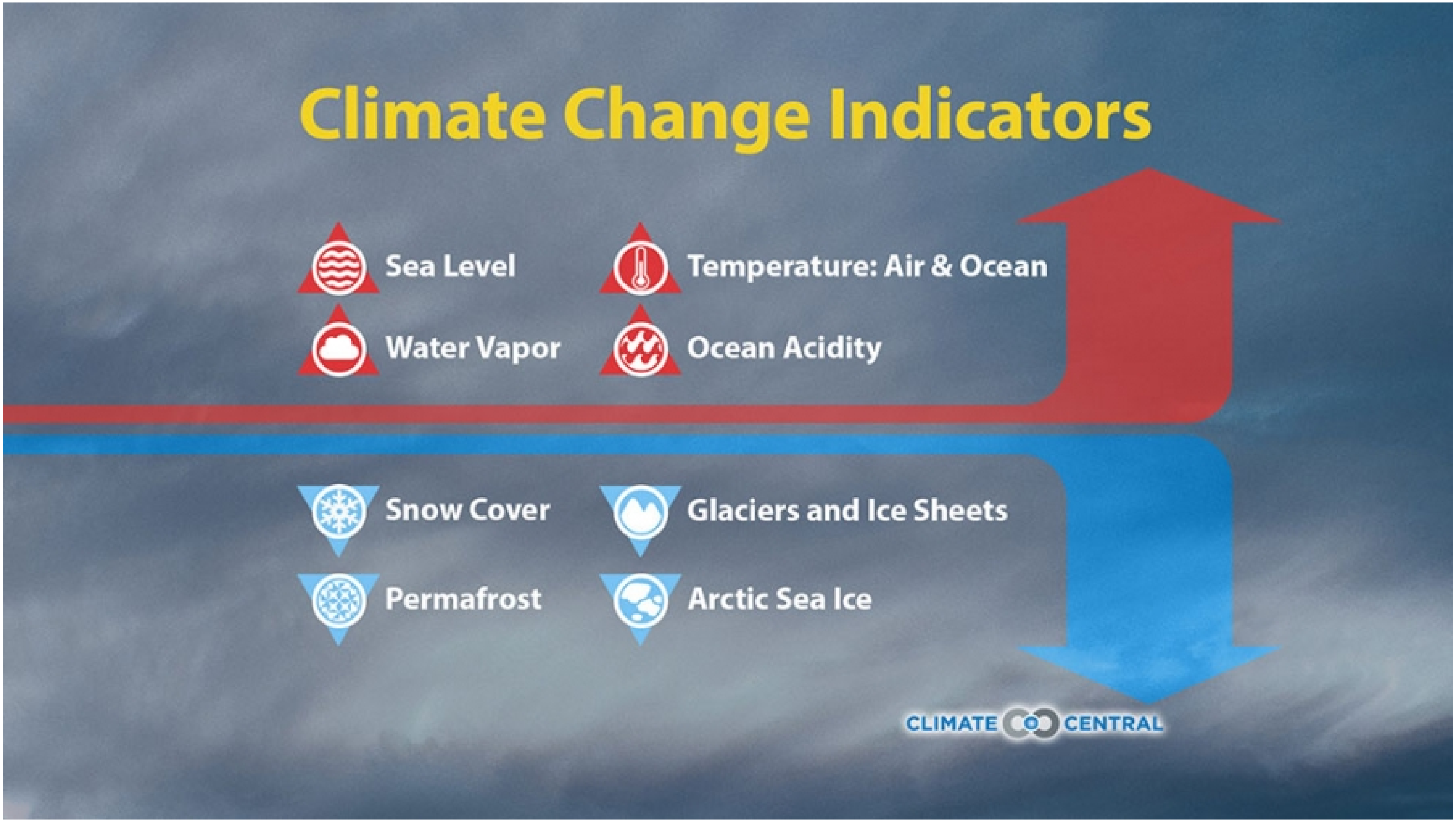
INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC)

AR6 CLIMATE CHANGE 2021: THE PHYSICAL SCIENCE BASIS

July 2021

Changing by the artist Alisa Singer

CC indicators

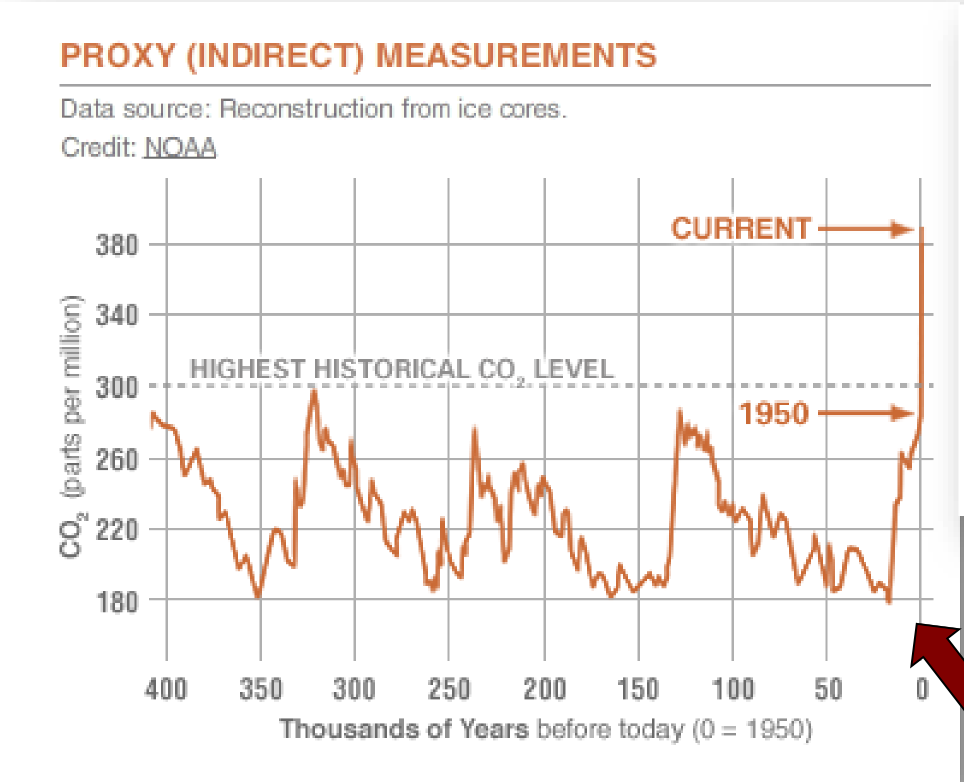


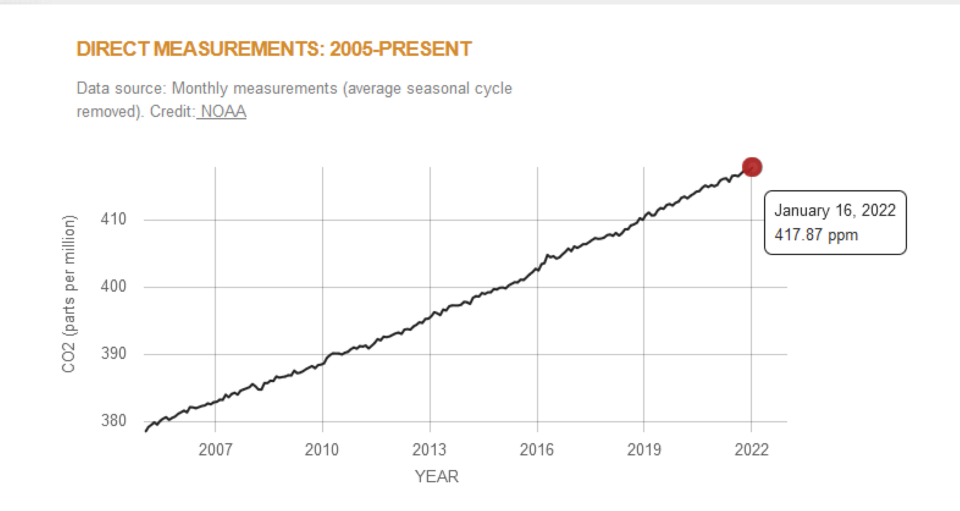
Increase of CO_2 level

- **CO_2 level increased more than >40 % since pre-industrial level**

- level of other greenhouse gases increases as well

- main source of this increase is **fosil fuels combustion + deforestation**





PROXY

Historical: memos, newspaper, diaries

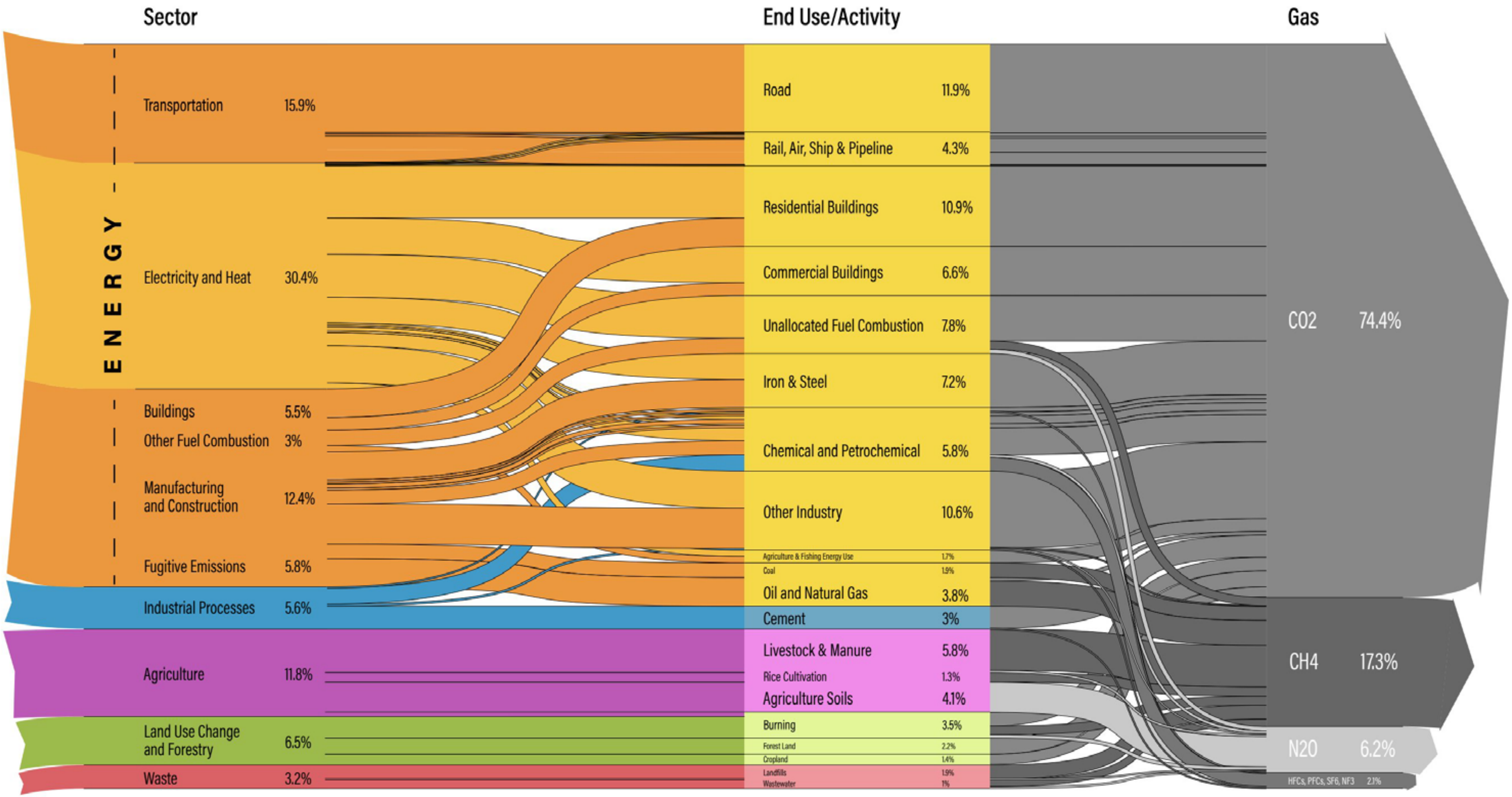
Biological: tree rings, corals, ice cores

Geological: ocean sediments,

ice sheets, past glaciers, stalactites

World Greenhouse Gas Emissions in 2016

Total: 49.4 $MtCO_2$

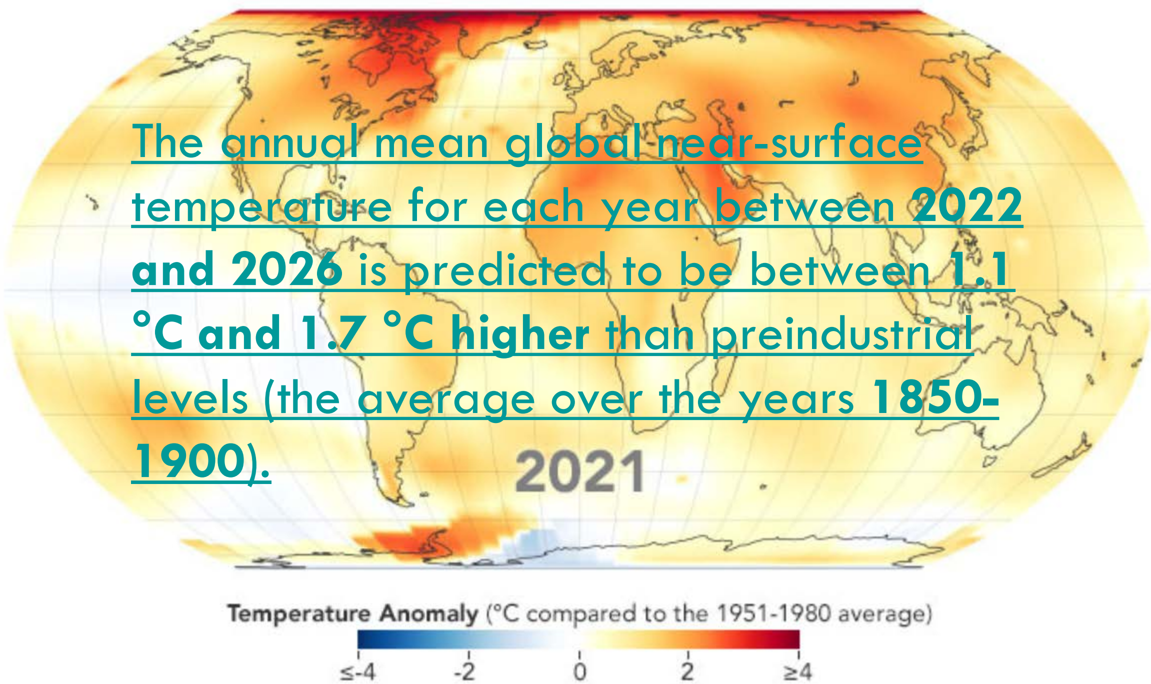


Source: Greenhouse gas emissions on Climate Watch. Available at: https://www.climatewatchdata.org

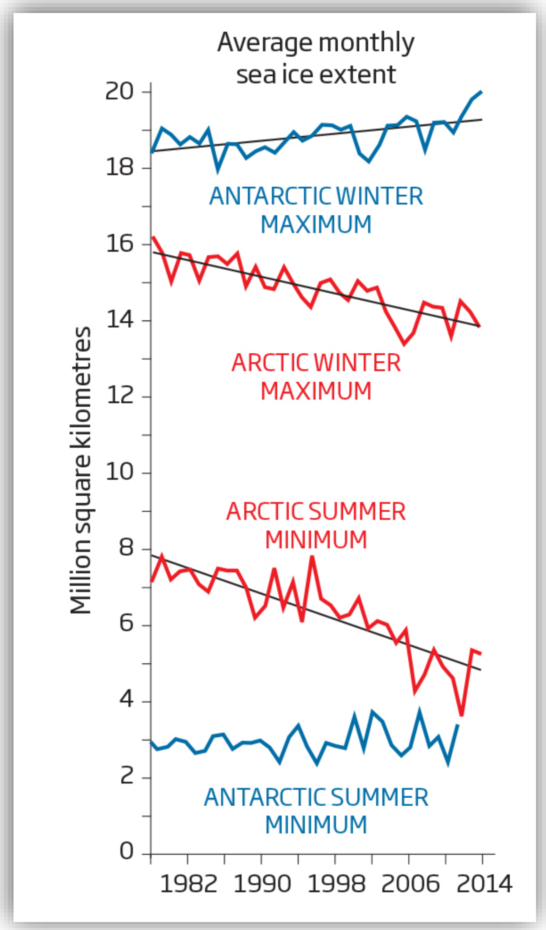
WORLD RESOURCES INSTITUTE

Other indicators (variables) of CC

- changes in temperature (land/ocean)
- changes in ice cover in Arctic ocean
- changes in ice cover in North and South pole
- sea level rise
- humidity rise



The annual mean global near-surface temperature for each year between **2022 and 2026** is predicted to be between **1.1 °C and 1.7 °C higher** than preindustrial levels (the average over the years **1850-1900**).



Less ice in the Arctic ocean

new naval routes
from Europe to Asia

Japan from Rotterdam - Suez Canal - **30 days**
- Northern Sea Route - **18 days**

WORLD ECONOMIC FORUM

Global Agenda | Arctic | Future of the Environment | Geo-economics

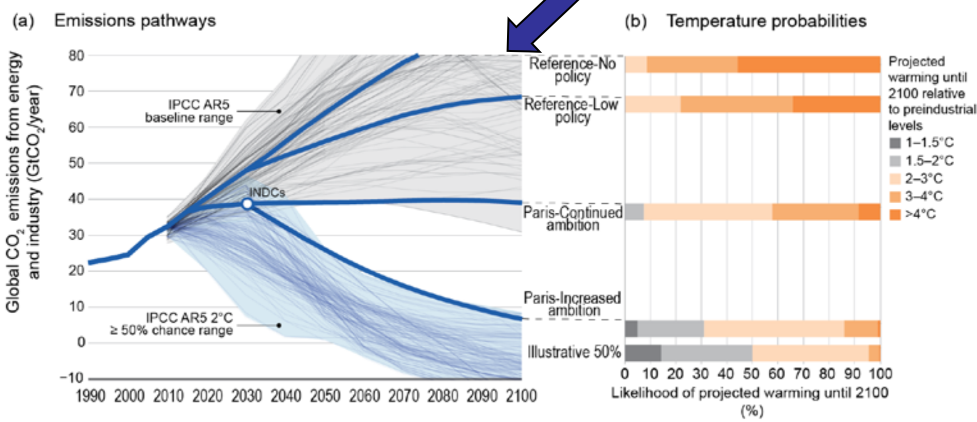
The final frontier: how Arctic ice melting is opening up trade opportunities

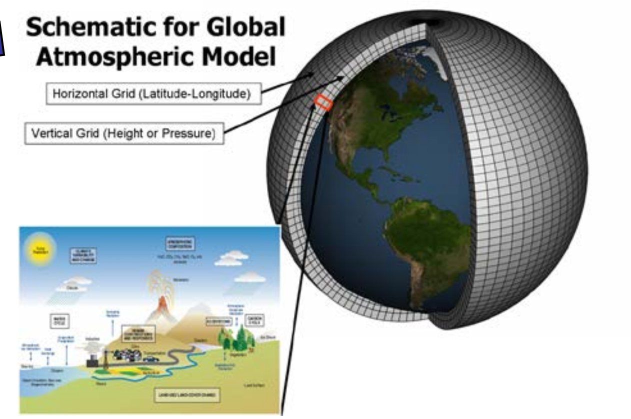
With financial gains to be exploited, will the world have enough restraint to resist damaging this landscape? Image: Unsplash/Valeria Bugaiova

„The United States Geological Survey estimates that the Arctic contains approximately **13%** of the world's **undiscovered oil resources** and about **30% of its undiscovered natural gas resources**."

Glacier calving in Arctic ocean

Scenario vs model?



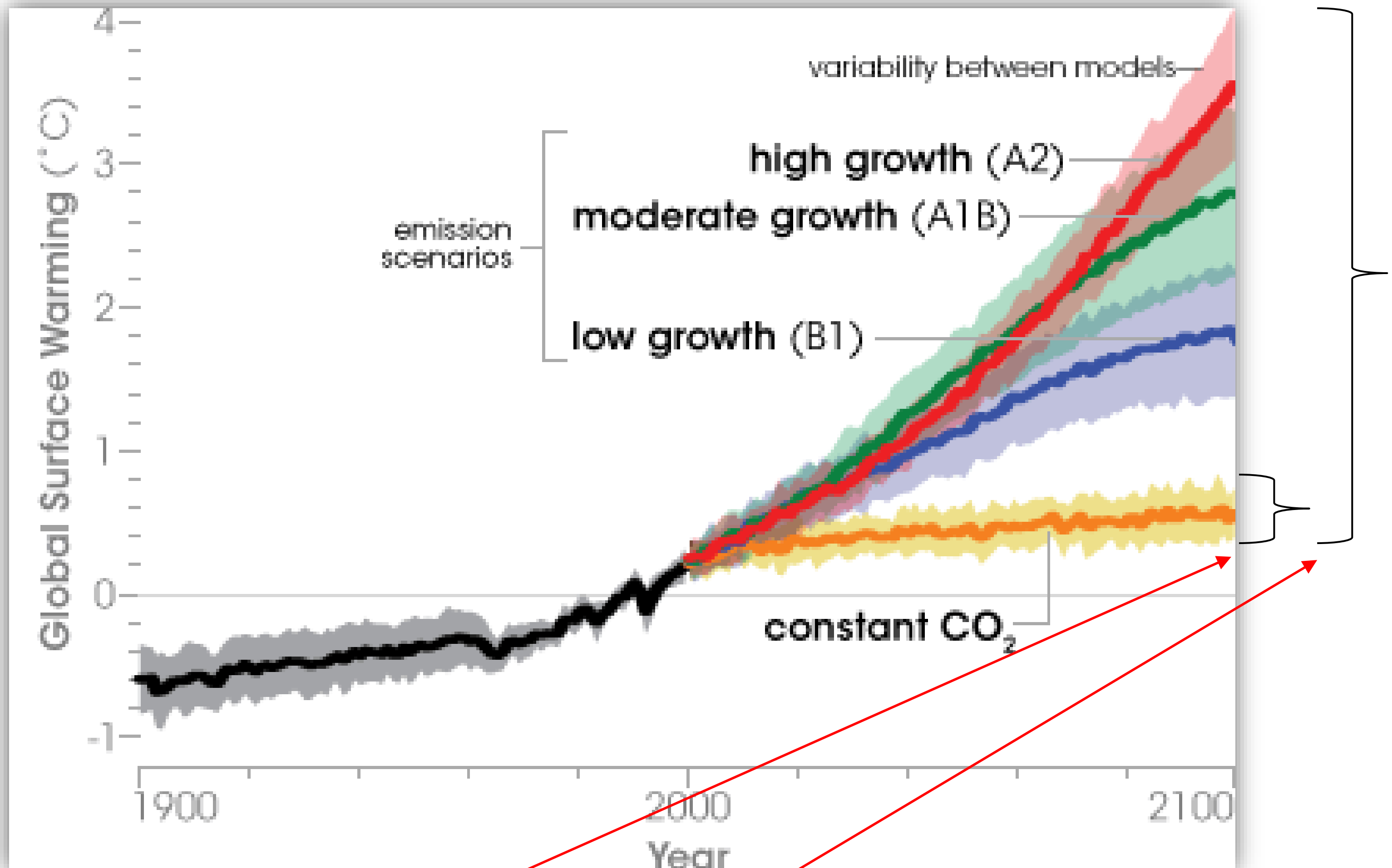


- plausible and **often simplified** description of how the future **may develop**, based on a coherent and internally consistent set of assumptions about driving forces and key relationships
- the impact of humans on the environment

- the climate models describe how the earth's **climate functions**
- based on physical laws and equations, approximation needed!

If the climate **models** are combined with the **emission scenarios**, it is possible to predict with a certain amount of **probability** how the climate will **be in the future.**

Temperature rise scenarios to 2100



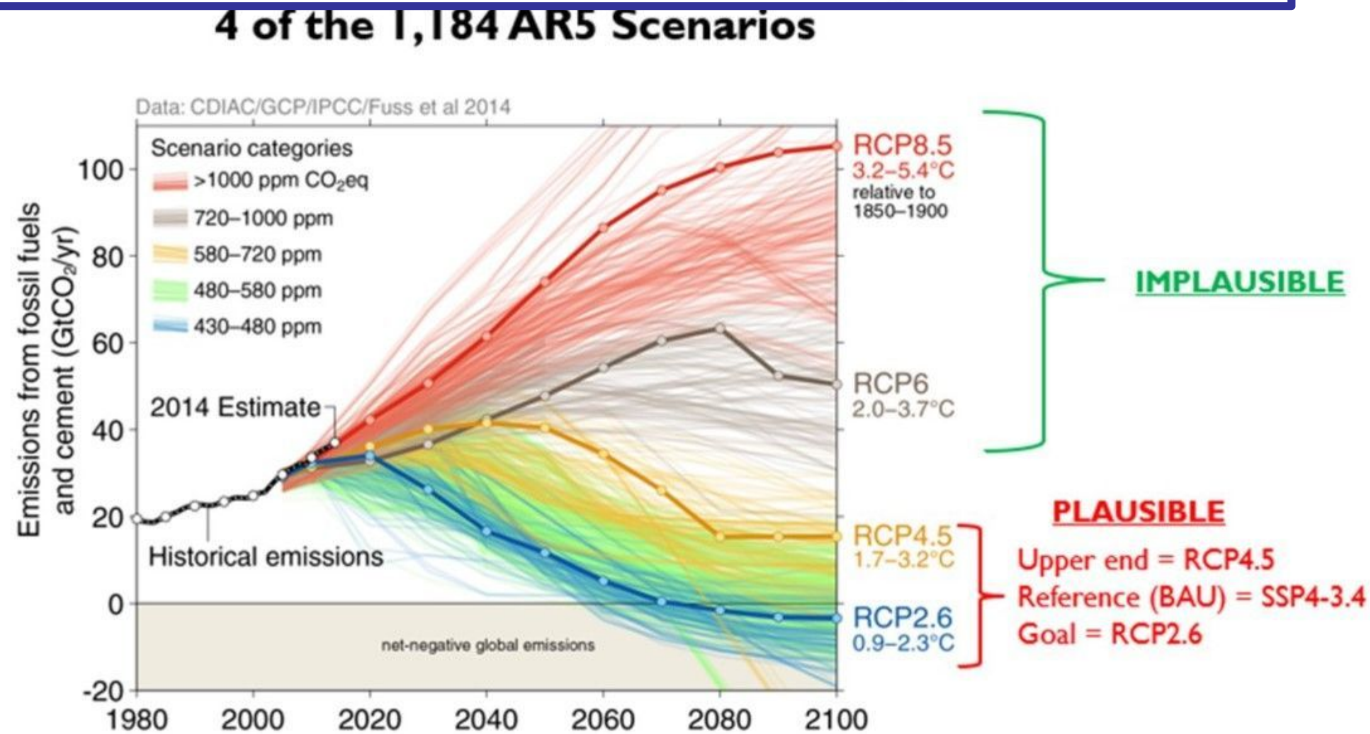
- scientific vs. political uncertainty

Representative Concentration Pathway Scenarios

IPCC AR 5

2014

GHG related



University of Colorado **Boulder**

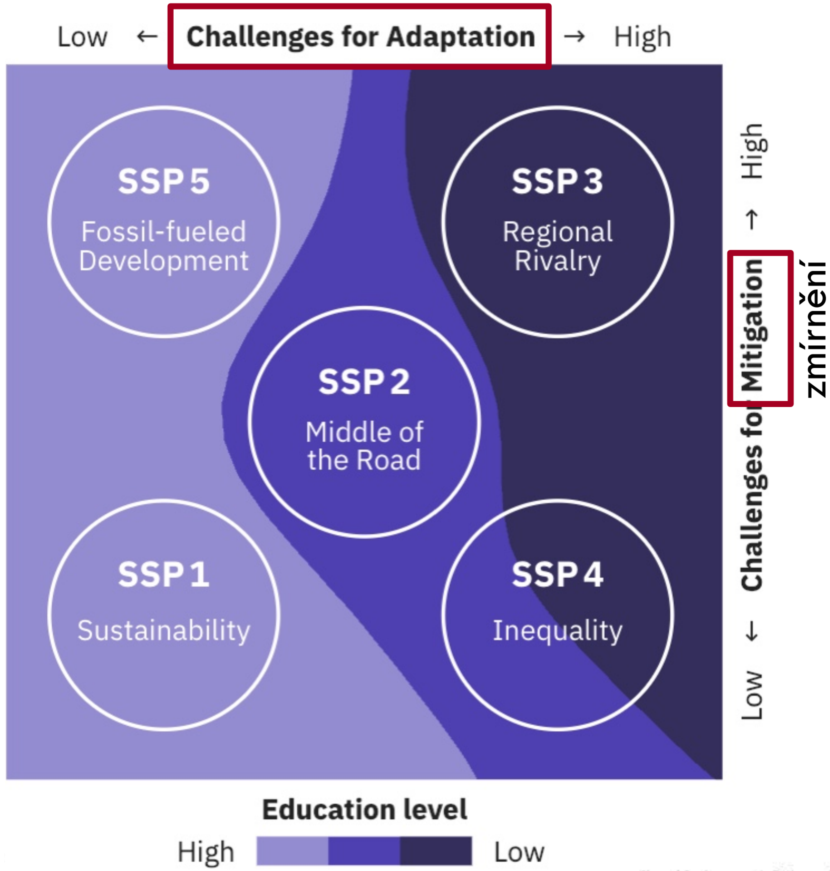
a) **RCP2.6** – 2,6 $W.m^{-2}$ – significant lowered concentration of CO_2 in atmosphere(421 ppm-2100)

b) **RCP4.5** – 4,5 $W.m^{-2}$ – stabilization of CO_2 levels on lower level (538 ppm)

c) **RCP6.0** – 6,0 $W.m^{-2}$ – stabilization of CO_2 levels on higher level (670 ppm)

d) **RCP8.5** – 8,5 $W.m^{-2}$ – „bussiness as usual“ (936 ppm)

Shared Socioeconomic Pathways (SSPs)



Socioeconomic challenges to **mitigate** vary, e.g., with the **resource and carbon intensity of consumption.**

Socioeconomic challenges to **adapt** vary, e.g., with the **level of education, health care, poverty and inequality in societies around the world.**

Shared Socioeconomic Pathways in the IPCC Sixth Assessment Report [14]:SPM-14 V·T·E

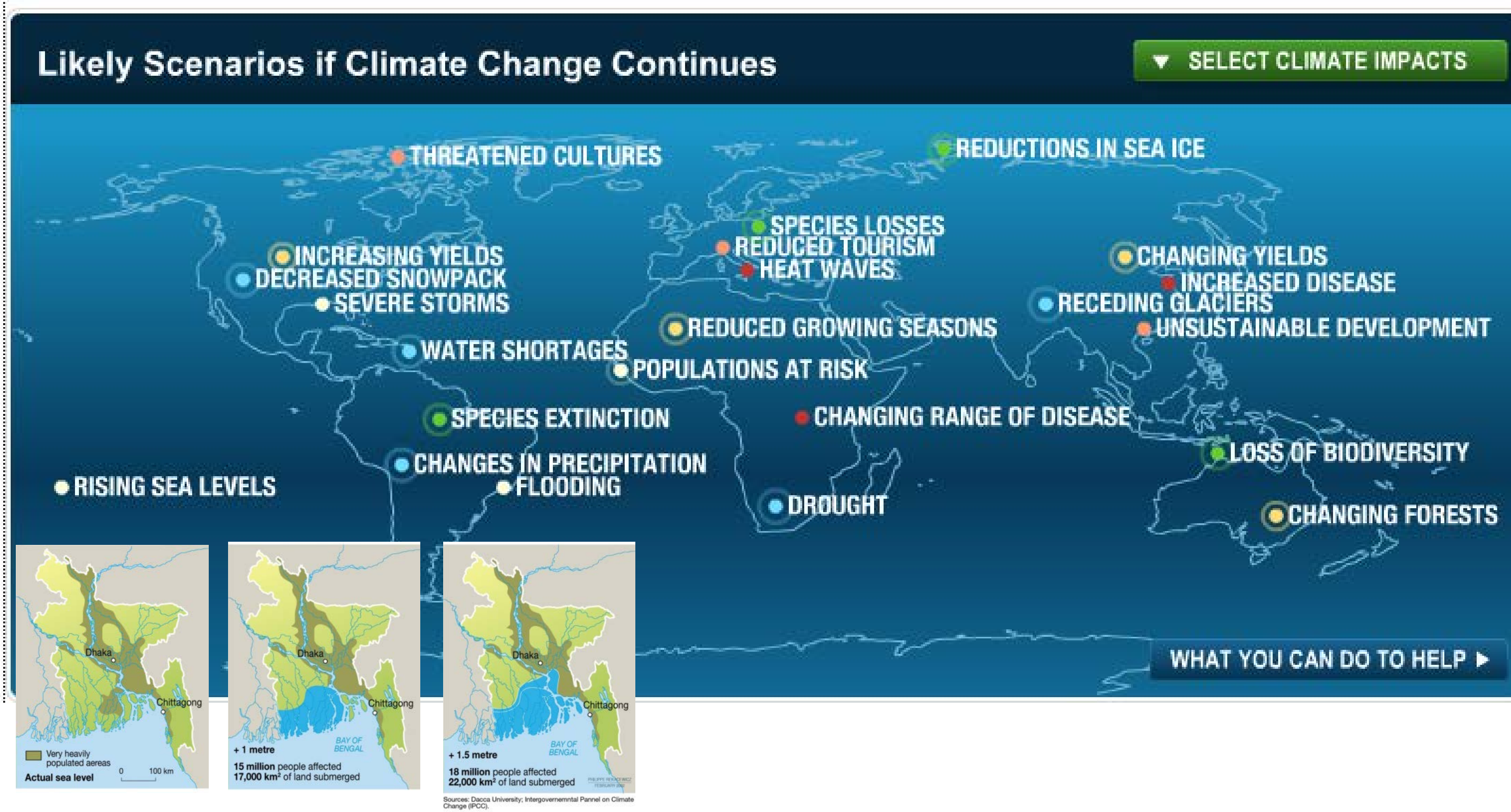
SSP	Scenario	Estimated warming (2041–2060)	Estimated warming (2081–2100)	Very likely range in °C (2081–2100)
SSP1-1.9	very low GHG emissions: CO_2 emissions cut to net zero around 2050	1.6 °C	1.4 °C	1.0 – 1.8
SSP1-2.6	low GHG emissions: CO_2 emissions cut to net zero around 2075	1.7 °C	1.8 °C	1.3 – 2.4
SSP2-4.5	intermediate GHG emissions: CO_2 emissions around current levels until 2050, then falling but not reaching net zero by 2100	2.0 °C	2.7 °C	2.1 – 3.5
SSP3-7.0	high GHG emissions: CO_2 emissions double by 2100	2.1 °C	3.6 °C	2.8 – 4.6
SSP5-8.5	very high GHG emissions: CO_2 emissions triple by 2075	2.4 °C	4.4 °C	3.3 – 5.7

The IPCC Sixth report did not estimate the likelihoods of the scenarios[14]:SPM-12 but a 2020 commentary described SSP5-8.5 as highly unlikely, SSP3-7.0 as unlikely, and SSP2-4.5 as likely.[15] However, a report citing the above commentary shows that RCP8.5 is the best match to the cumulative emissions from 2005 to 2020. [16]

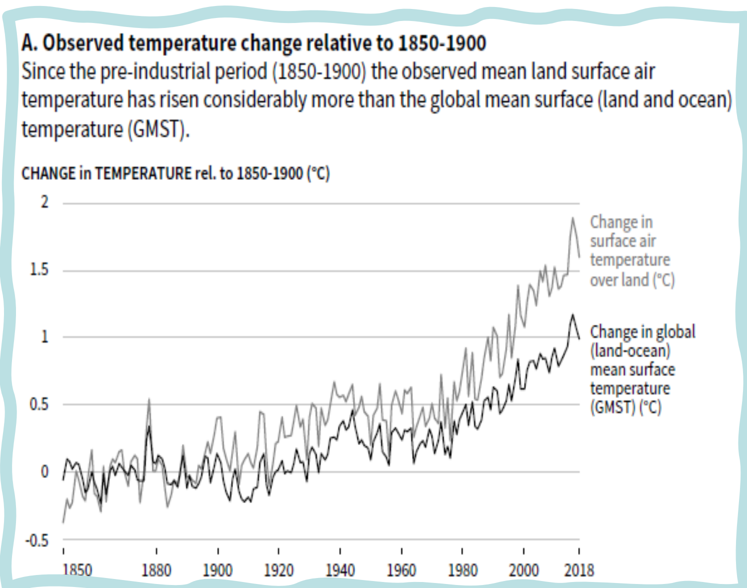
CC consequences

Consequences of CC

- **regionally specific**
- e.g. increasing vs. decreasing yields in some regions



Consequences of CC



- Heat waves, floods, drought, storm intensity
- **DESERTIFICATION**

- **CHANGES OF BIODIVERSITY**

higher vegetation cover (Asia, Europe, S Am, SE Australia)

drying of vegetation (N Eurasia, Central Asia, Congo Basin)

(2019)

6th IPCC Assessment Report

SPM

Impacts of climate change are observed in many ecosystems and human systems worldwide

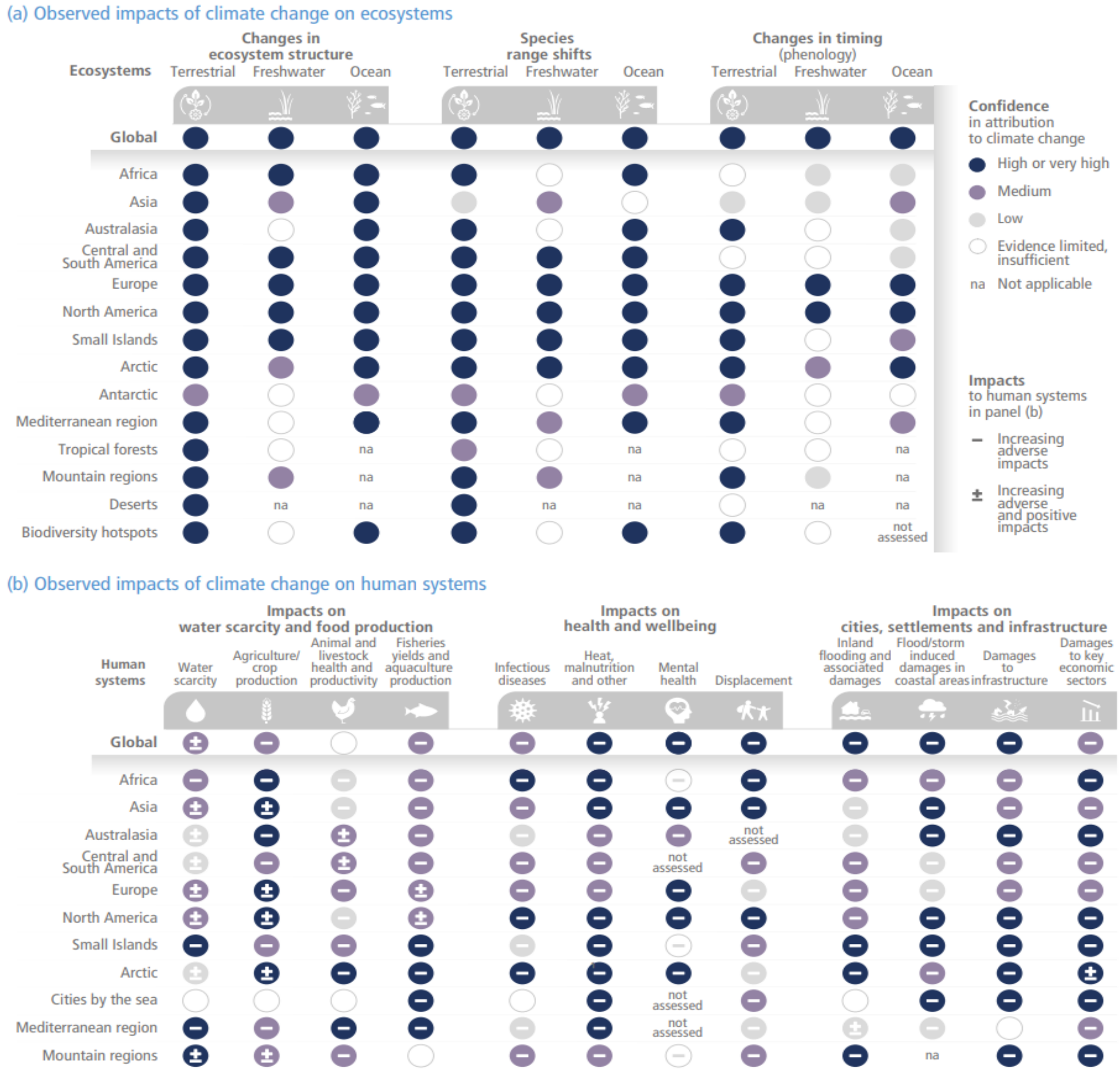
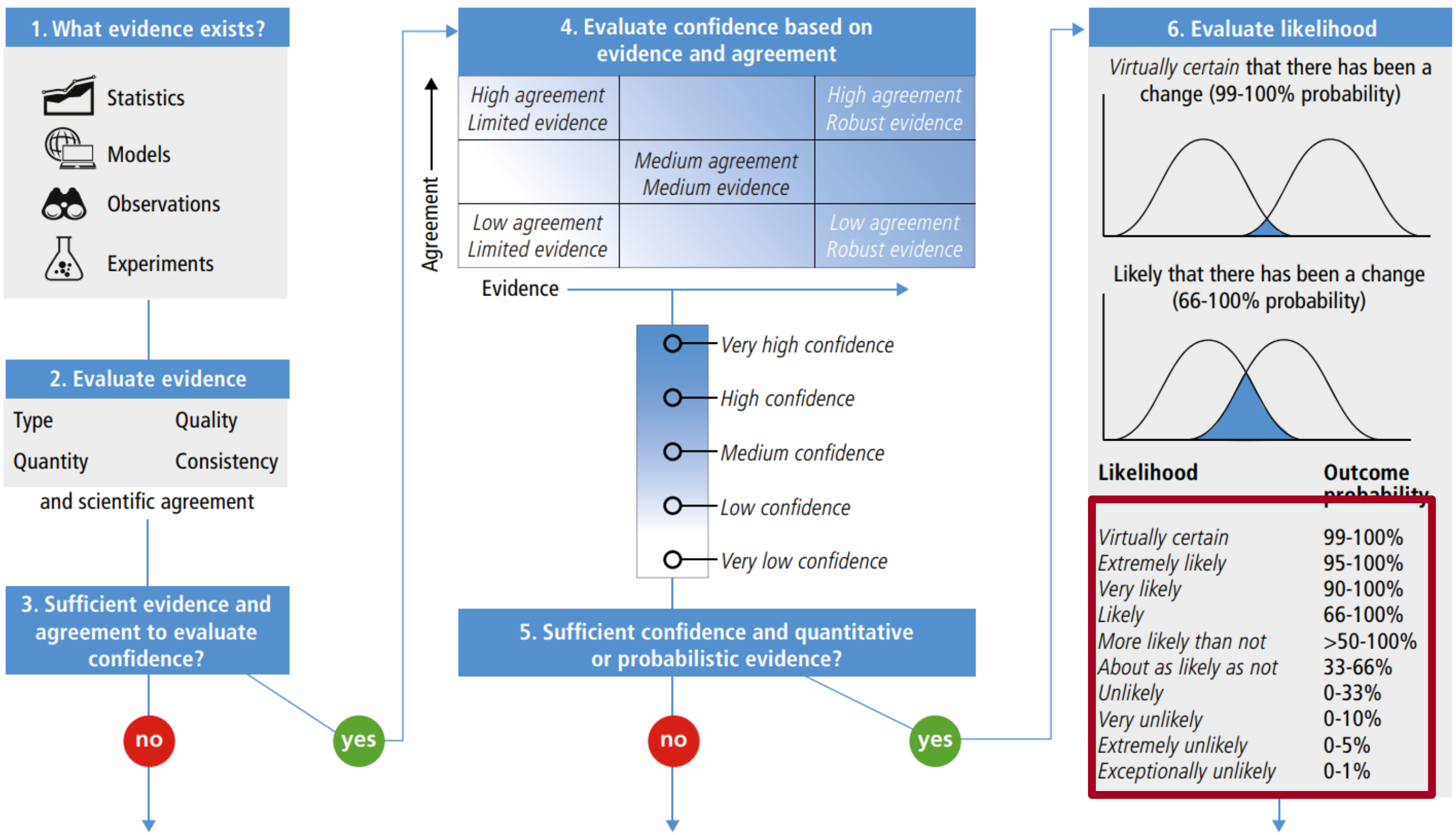


Figure SPM.2 | Observed global and regional impacts on ecosystems and human systems attributed to climate change. Confidence levels reflect uncertainty in attribution of the observed impact to climate change. Global assessments focus on large studies, multi-species, meta-analyses and large reviews. For that reason they can be assessed with higher confidence than regional studies, which may often rely on smaller studies that have more limited data. Regional assessments consider evidence on impacts across an entire region and do not focus on any country in particular.

(a) Climate change has already altered terrestrial, freshwater and ocean ecosystems at global scale, with multiple impacts evident at regional and local scales where there is sufficient literature to make an assessment. Impacts are evident on ecosystem structure, species geographic ranges and timing of seasonal life cycles (phenology) (for methodology and detailed references to chapters and cross-chapter papers see SMTS.1 and SMTS.1.1).

Evaluation and communication of degree of certainty in AR5 and AR6 findings



Present evidence and agreement

Behaviour, lifestyle, and culture have a considerable influence on energy use and associated emissions, with high mitigation potential in some sectors, in particular when complementing technological and structural change (*medium evidence, medium agreement*).

Present confidence

In many regions, changing preciptiation or melting snow and ice are altering hydrological systems, affecting water resources in terms of quantity and quality (*medium confidence*).

Present likelihood

It is very *likely* that the number of cold days and nights has decreased and the number of warm days and nights has increased on the global scale.

Main consequences of CC - summary

Phenomena Present trends	Confidence level
The rise in weather and climate extremes has led to some irreversible impacts as natural and human systems are pushed beyond their ability to adapt. (increases in the frequency and intensity of climate and weather extremes, including hot extremes on land and in the ocean, heavy precipitation events, drought and fire weather)	**High confidence**
Warm-water coral bleaching and mortality and increased drought-related tree mortality	**High confidence**
Increased heat-related human mortality	**Medium confidence**
Impacts in natural and human systems from ocean acidification, sea level rise or regional decreases in precipitation have also been attributed to human induced climate change	**High confidence**
Roughly half of the world's population currently experience severe water scarcity for at least some part of the year due to climatic and non-climatic drivers	**Medium cofidence**
Climate change including increases in frequency and intensity of extremes have reduced food and water security, hindering efforts to meet Sustainable Development Goals	**High confidence**
Climate change has adversely affected physical health of people globally and mental health of people in the assessed regions	**Very high confidence!!!**
Hot extremes including heatwaves have intensified in cities	**High confidence**

Phenomena Future trends	Confidence level
Biodiversity loss and degradation, damages to and transformation of ecosystems are already key risks for every region due to past global warming and will continue to escalate with every increment of global warming	**Very high confidence!!!**
Risks in physical water availability and water-related hazards will continue to increase by the mid- to long-term in all assessed regions, with greater risk at higher global warming levels	**High confidence**
Increases in frequency, intensity and severity of droughts, floods and heatwaves, and continued sea level rise will increase risks to food security	**High confidence**
Climate change and related extreme events will significantly increase ill health and premature deaths	**High confidence**
In the mid- to long-term, displacement will increase with intensification of heavy precipitation and associated flooding, tropical cyclones, drought and, increasingly, sea level rise	**Medium confidence**

Scientific language is very **brief** and talking in the words of **probability and confidence**

CC - controversy

„How much do we want to spend
on the climate compare to other problems?“

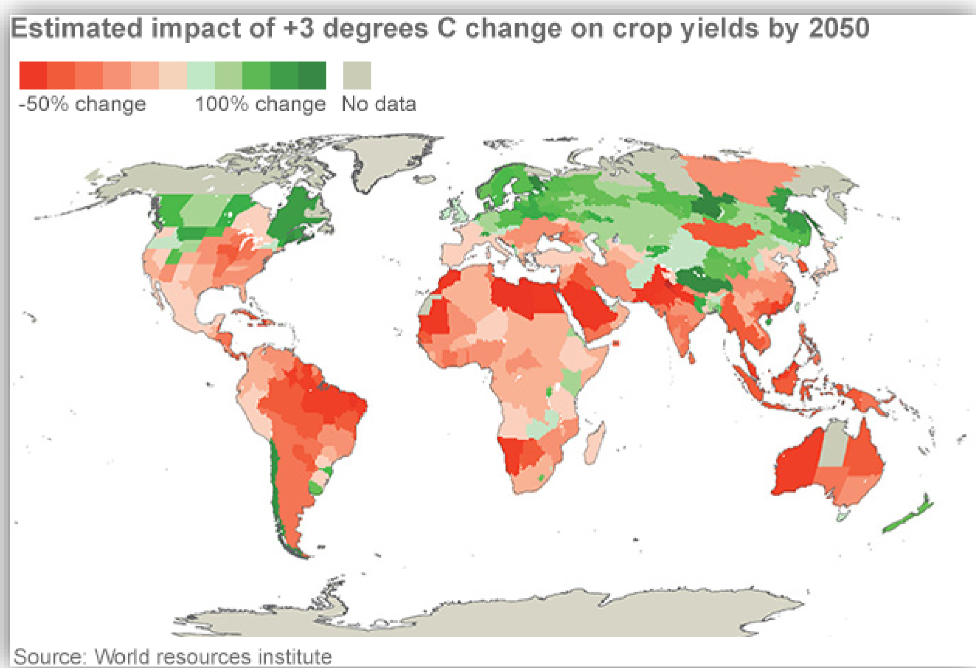
„...more heat will damage crop growth in many warmer climates, but it means better agricultural production in cold countries. And, CO_2 is a fertiliser — commercial greenhouses pump in extra CO_2 to grow bigger tomatoes. So overall, we can expect agriculture to gain from global warming in the short and medium term...“ B. Lomborg

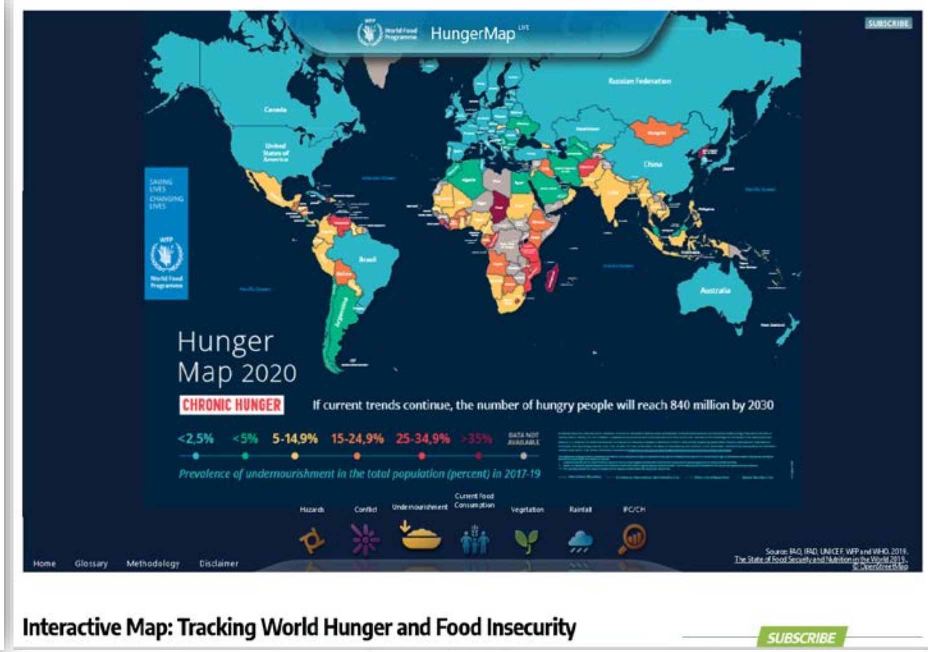
Let's discuss!

Moral dimension of CC

„...more heat will damage crop growth in many warmer climates, but it means better agricultural production in cold countries. And, CO_2 is a fertiliser — commercial greenhouses pump in extra CO_2 to grow bigger tomatoes. So overall, we can expect agriculture to gain from global warming in the short and medium term...“ B. Lomborg

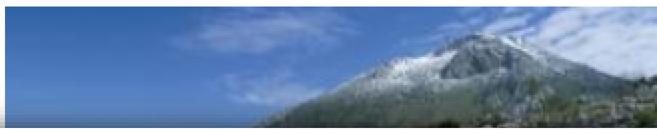
yes, increasing yields, but mainly in countries with the actual overproduction, while the agrarian countries in developing world (with significant hunger) will experience even drop in the production





Climate change: The great civilisation destroyer?

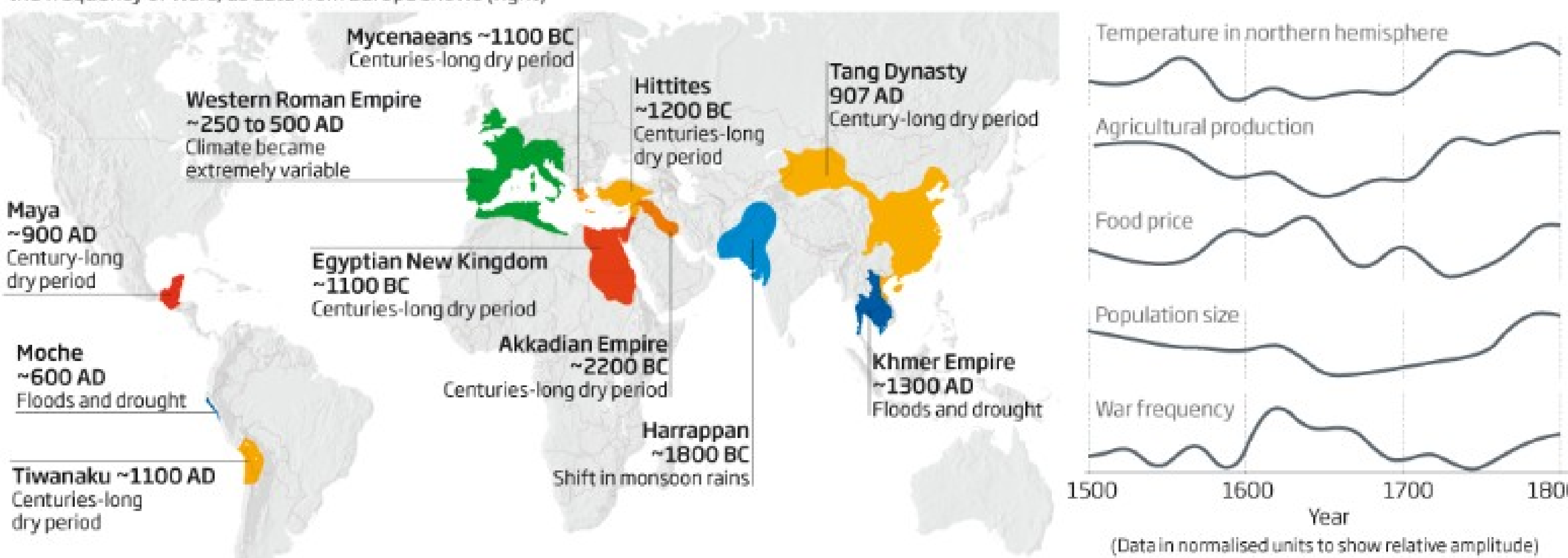
War and unrest, and the collapse of many mighty empires, often followed changes in local climes. Is this more than a coincidence?



More than coincidence?

©NewScientist

The decline and fall of many civilisations coincided with periods of climate change, and there are also correlations between climate change, population size and the frequency of wars, as data from Europe shows (right)



Solutions of CC?

Solutions?

Democratic polititian
Ex-vicepresident USA
Environmentalist

Gore held the "first congressional hearings on the climate change, and co-sponsor[ed] hearings on toxic waste and global warming".

The Nobel Peace Prize 2007
Intergovernmental Panel on Climate Change , Al Gore

Share this: 67

The Nobel Peace Prize 2007

IPCC
INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE
WMO UNEP

Intergovernmental Panel on Climate Change (IPCC)

Prize share: 1/2

Photo: Ken Opprann

Albert Arnold (Al) Gore Jr.

Prize share: 1/2

„...was one of the first politicians to grasp the seriousness of climate change and to call for a reduction in emissions of carbon dioxide and other greenhouse gases."

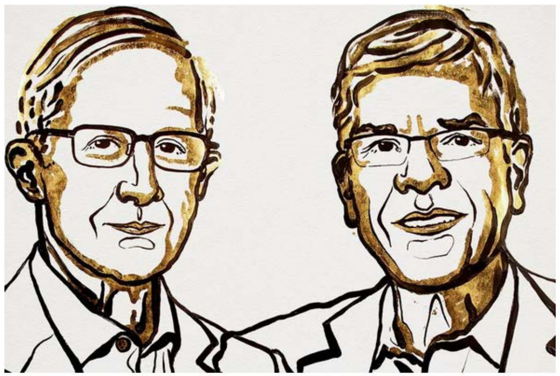
The Nobel Peace Prize 2007 was awarded jointly to Intergovernmental Panel on Climate Change (IPCC) and Albert Arnold (Al) Gore Jr. *"for their efforts to build up and disseminate greater knowledge about man-made climate change, and to lay the foundations for the measures that are needed to counteract such change"*

A 2018 Economics Nobel winner created an invaluable tool for understanding climate change

Prize winners William Nordhaus and Paul Romer studied long-term economic growth. Nordhaus calculated the impacts of climate change.

By Umair Irfan | Oct 8, 2018, 12:10pm EDT

SHARE



William Nordhaus, left, and Paul Romer, right, were awarded the 2018 Nobel Memorial Prize in Economic Sciences for their work on long-term economic growth. | Royal Swedish Academy of Sciences

On the heels of a **bracing report** from the top scientific body on global warming, two economists — one focusing on climate change and the other on technology — were awarded the **2018 Nobel Memorial Prize in Economic Sciences** on Monday.

SMART NEWS

Nobel Prize in Physics Awarded to Scientists Who Warned the World of Climate Change

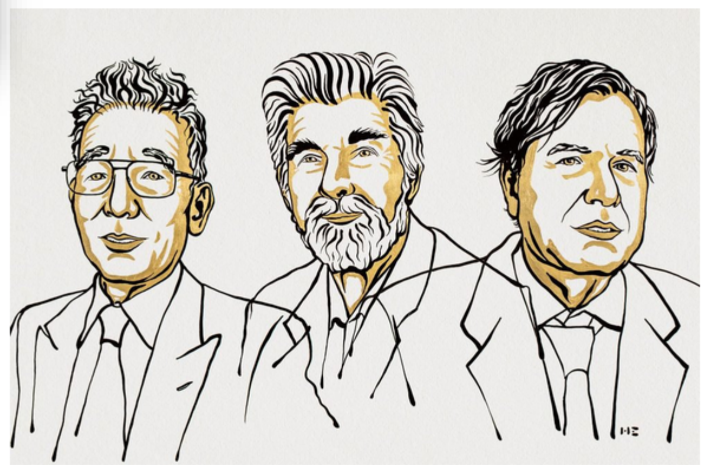
Their groundbreaking research answered fundamental questions about our universe and Earth's complex climate

Corryn Wetzel

Daily Correspondent

October 5, 2021

2021



The Nobel Committee in Physics was awarded to Syukuro Manabe, Klaus Hasselmann, and Giorgio Parisi earlier today. © Ill. Niklas Elmehed / Nobel Prize Outreach

Early Tuesday morning, three scientists received the Nobel Prize in Physics for their decades of work

Politics on CC

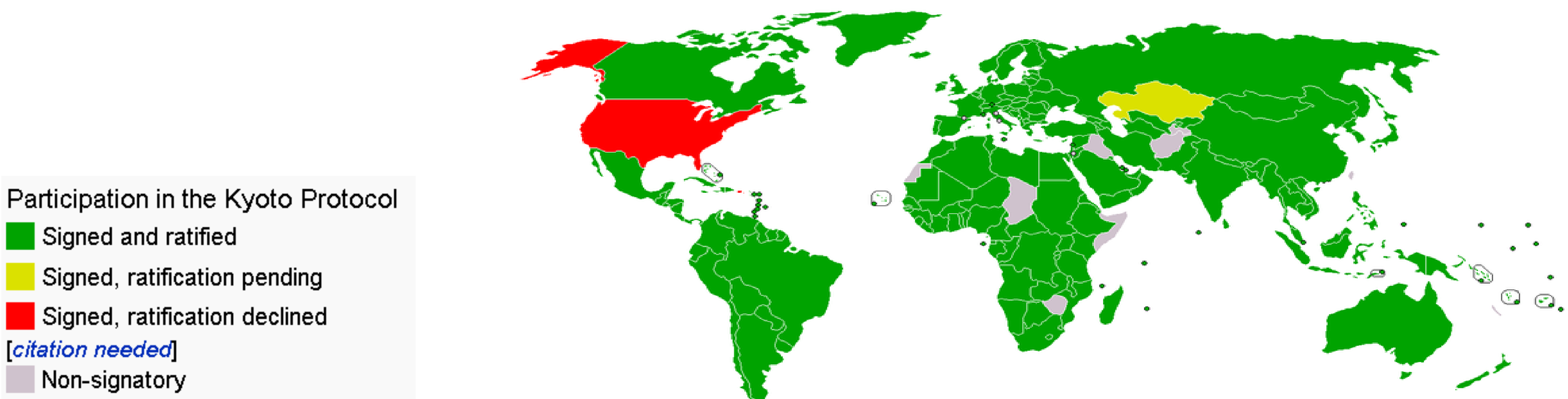
- main aim – decrease the GHG emissions, mainly CO_2

- 1992: UN Framework Convention on Climate Change

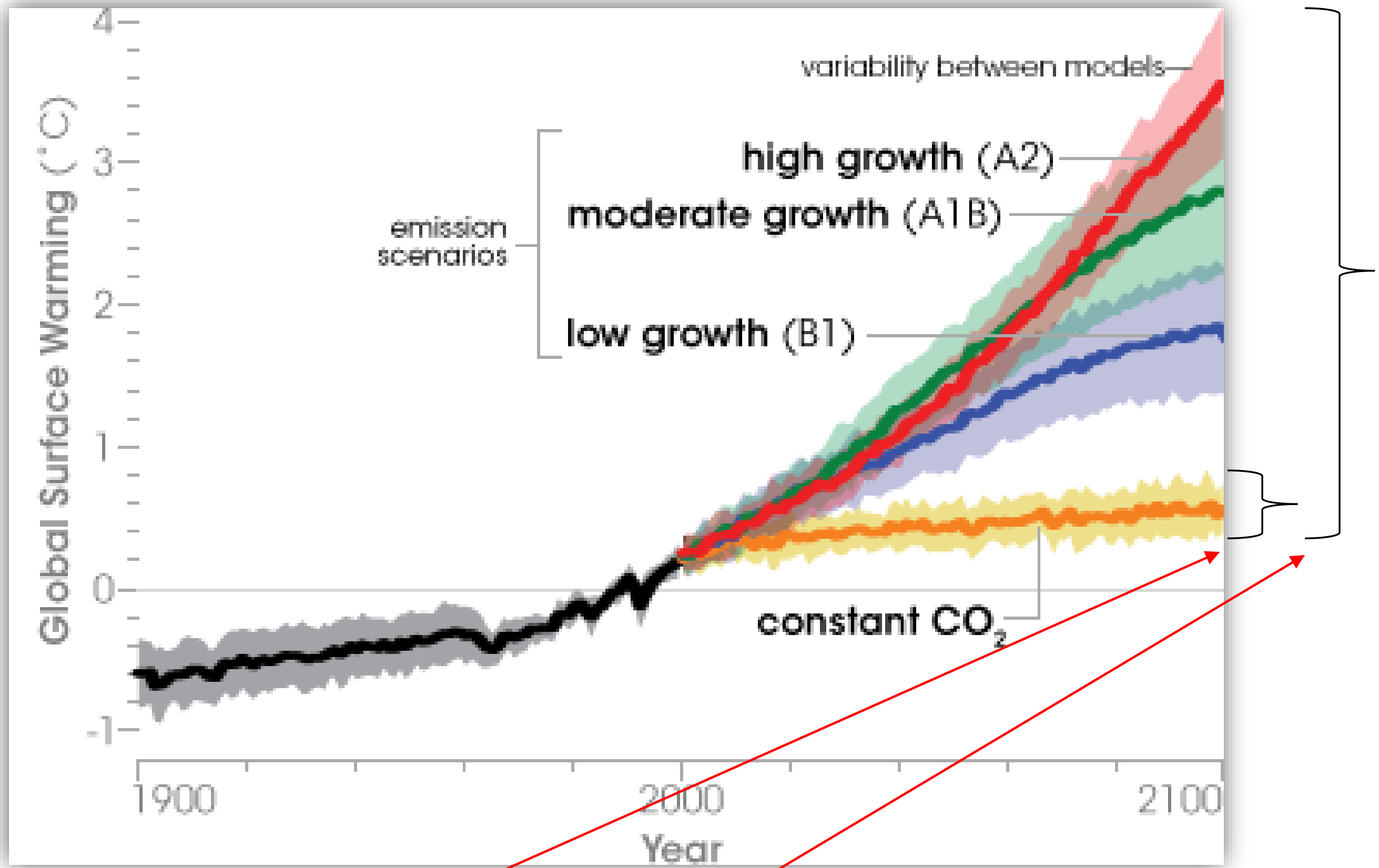
- 1997: Kyoto protocol (in force from 2005)

- **industrial countries should decrease their GHG emissions until the year 2012 for 5.2 % compared to the year 1990**
- different threshold for different countries (e.g. EU 8%)

- however, industrial countries (Annex I countries with Kyoto targets) contributed „only“ with 24 % of global CO_2 emission (2010)



Temperature rise scenarios to 2100

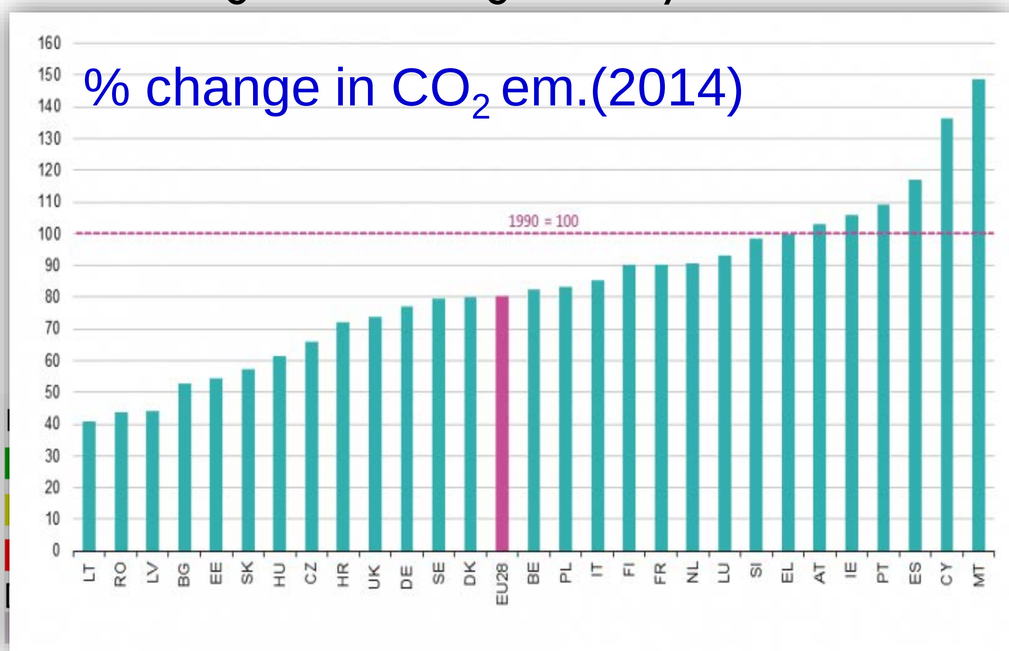


- scientific vs. political uncertainty

Kyoto protocol – result (2012)

Into force in 2005

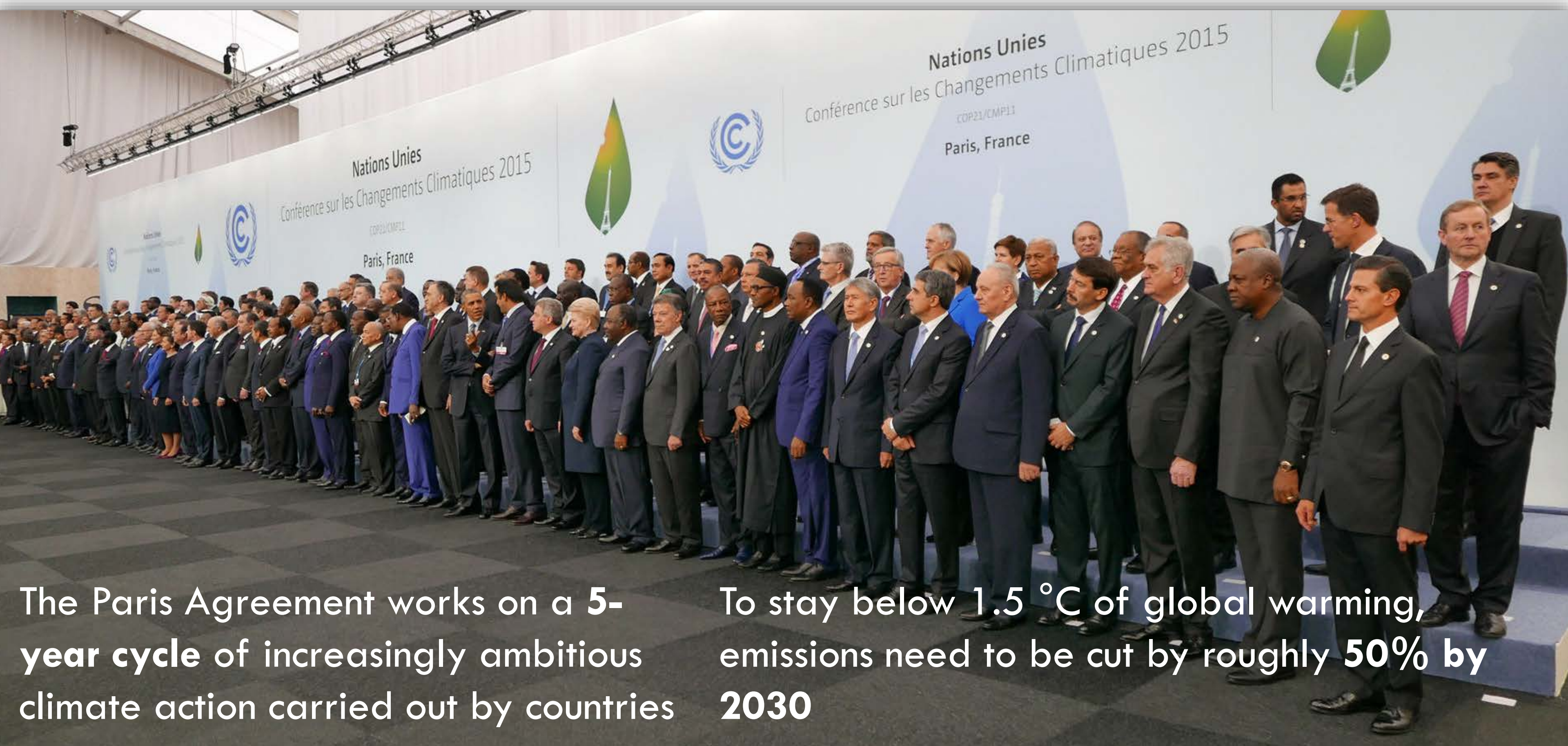
- industrial countries (Annex I countries with Kyoto targets) **reduced their emissions for 24.2 % !** (much more than promissed target 5.2 %)
- however, emission in other countries have risen so fast, that global CO_2 emissions **increased by 32 %** from 1990 to 2010 ☹
- extension of the Kyoto Protocol until 2020
- certain countries (the EU and a few other countries) have committed themselves to further reducing CO_2 emissions.
- EU e.g. by 20-30% compared to 1990
- Average – 18% - generally achieved



Paris treaty (2015)

- continuation of the prolonged Kyoto protocol (2020)
- aim: **Limit the temperature rise not more than 2 °C compared to pre-industrial era, ideally below 1.5 °C**
- came into force in November 4th 2016

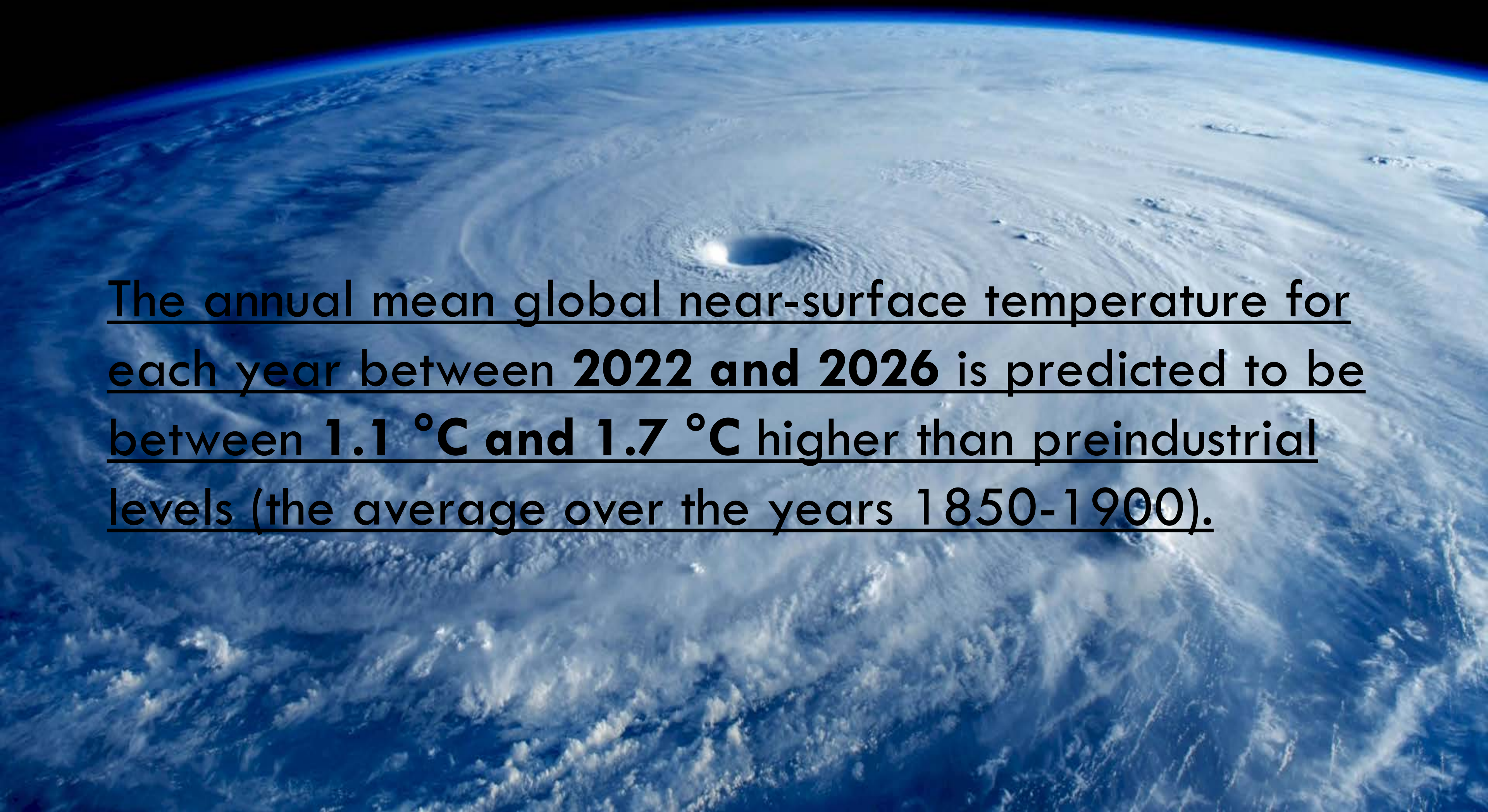
Shift in the rhetoric!



The Paris Agreement works on a **5-year cycle** of increasingly ambitious climate action carried out by countries

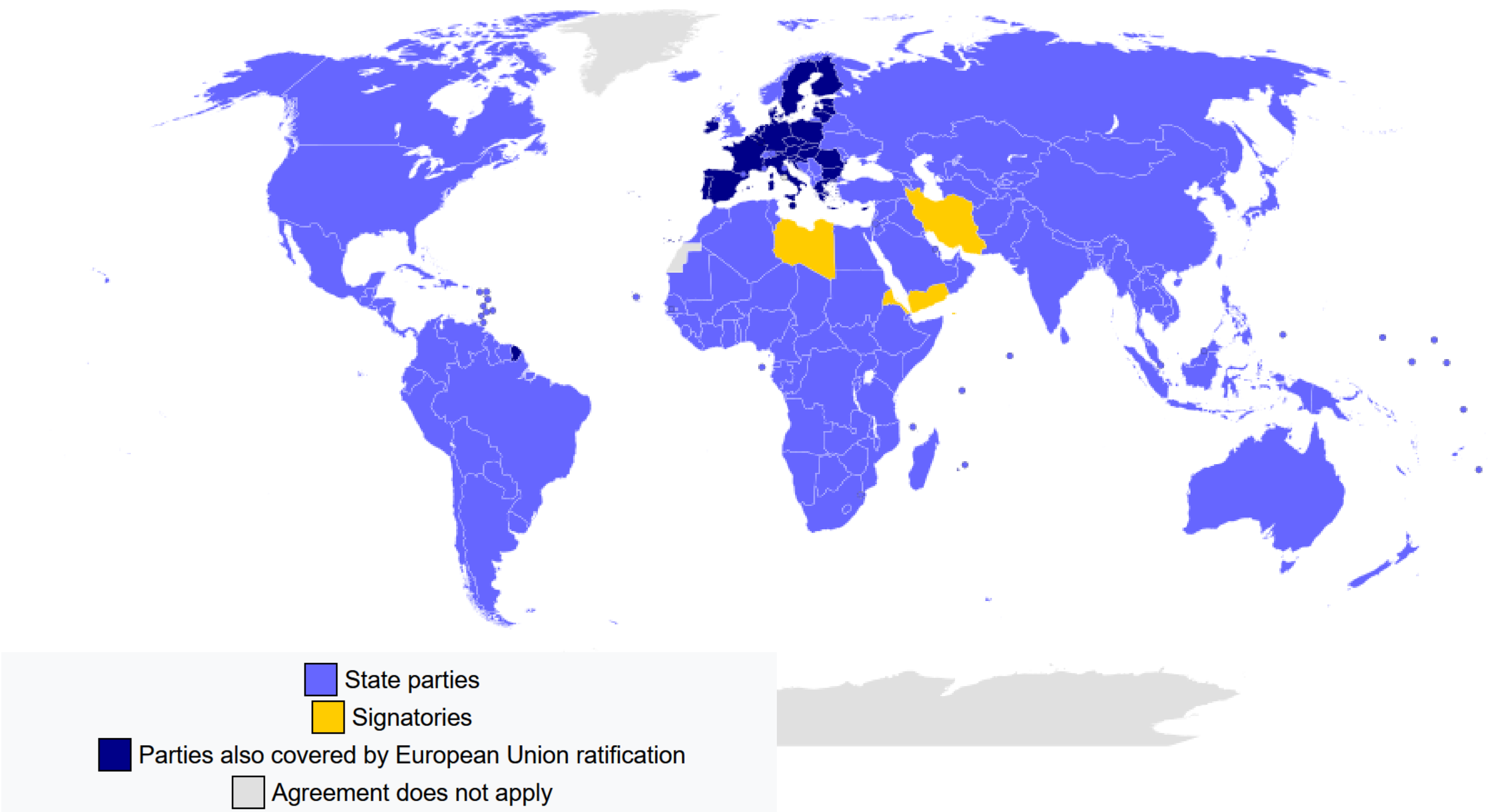
To stay below 1.5 °C of global warming, emissions need to be cut by roughly **50% by 2030**

„The 1.5°C figure is not some random statistic. It is rather an indicator of the point at which climate impacts will become increasingly harmful for people and indeed the entire planet," said WMO Secretary-General Prof. Petteri Taalas.



The annual mean global near-surface temperature for each year between **2022 and 2026** is predicted to be between **1.1 °C and 1.7 °C** higher than preindustrial levels (the average over the years 1850-1900).

In contrast to the 1997 Kyoto Protocol, the distinction between developed and developing countries is blurred, so that the latter also have to submit plans for emission reductions.



~~Solution~~

Adaptation and mitigation

SPM

Many options available now in all sectors are estimated to offer substantial potential to reduce net emissions by 2030. Relative potentials and costs will vary across countries and in the longer term compared to 2030.

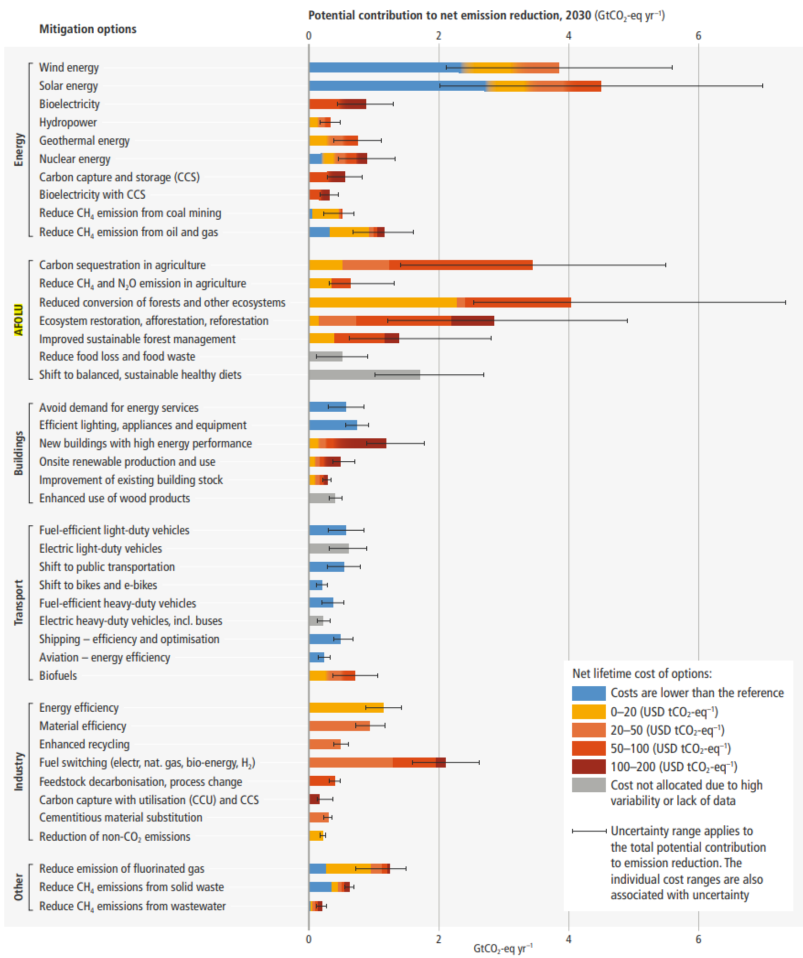


Figure SPM.7 | Overview of mitigation options and their estimated ranges of costs and potentials in 2030.

Mitigation options have synergies with many Sustainable Development Goals, but some options can also have trade-offs. The synergies and trade-offs vary dependent on context and scale.

SPM

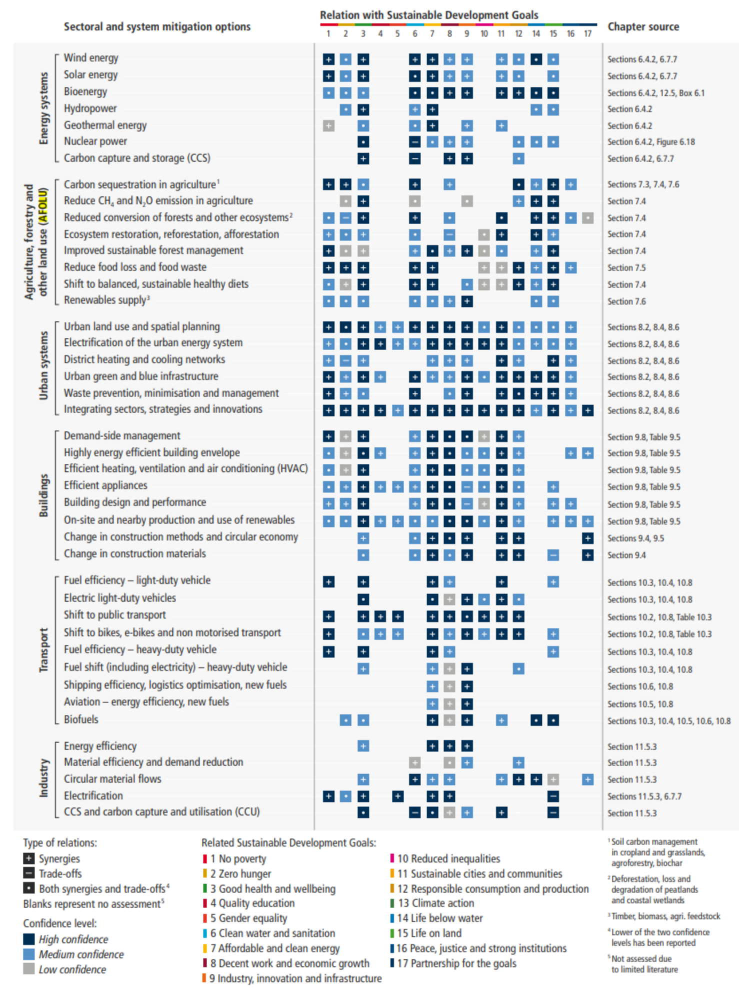


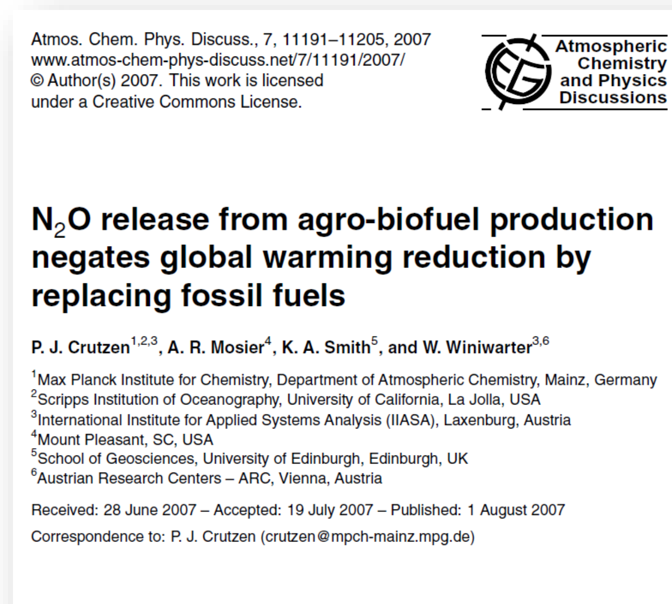
Figure SPM.8 | Synergies and trade-offs between sectoral and system mitigation options and the SDGs.

How to decrease CO_2 emmisions?

- decrease the fossil fuels consumption

  - increase efficiency of the industr. production
  - end the non-effective industr. production
  - save the energy and material

- economic tools to decrease CO_2 - EU Emissions Trading System (EU ETS)
- bio-fuels? Probably not...



Atmos. Chem. Phys. Discuss., 7, 11191–11205, 2007
www.atmos-chem-phys-discuss.net/7/11191/2007/

Atmospheric Chemistry and Physics Discussions

N_2O release from agro-biofuel production negates global warming reduction by replacing fossil fuels

P. J. Crutzen[1,2,3], A. R. Mosier[4], K. A. Smith[5], and W. Winiwarter[3,6]

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[3]International Institute for Applied Systems Analysis (IIASA), Laxenburg, Austria
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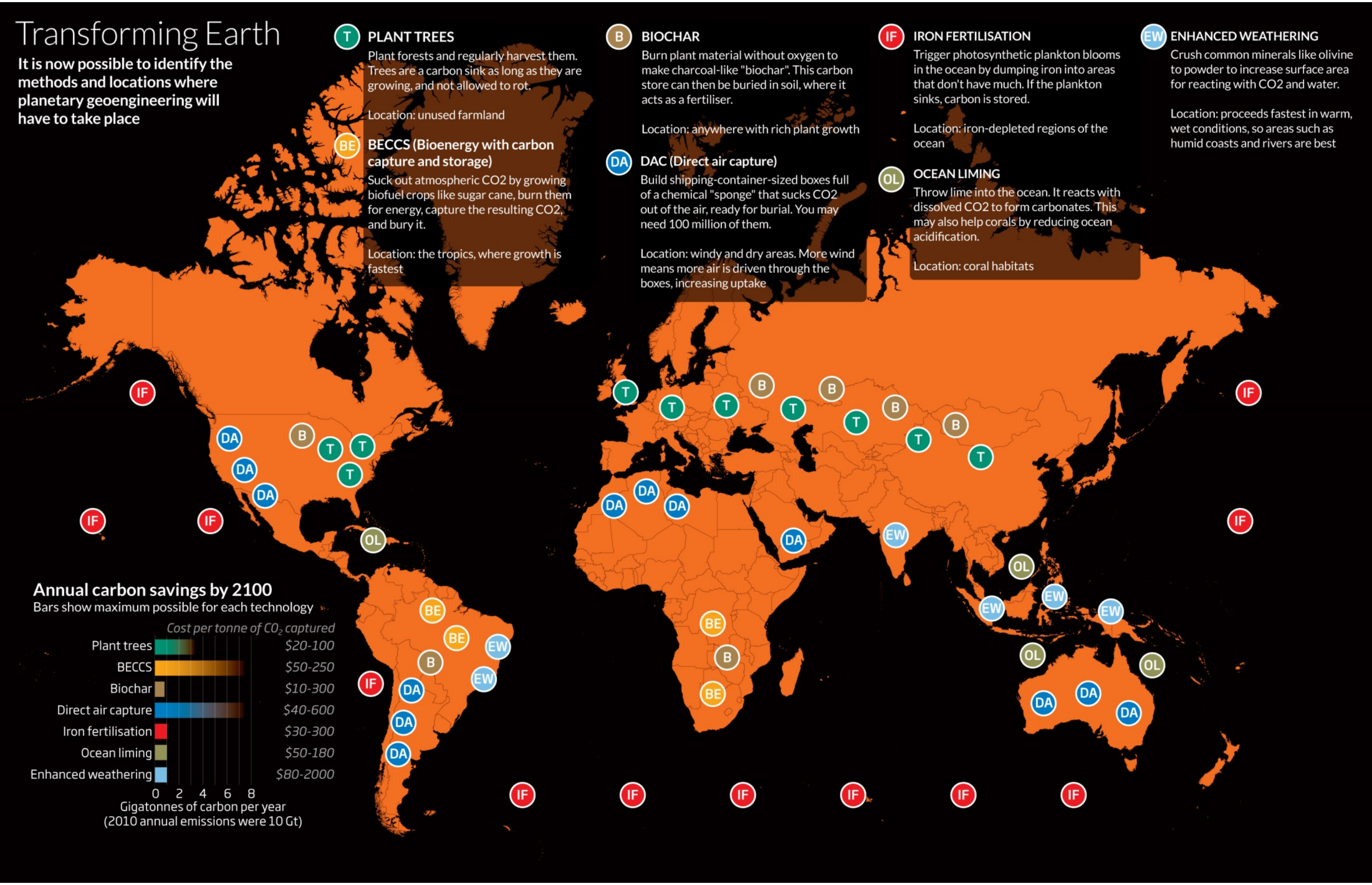
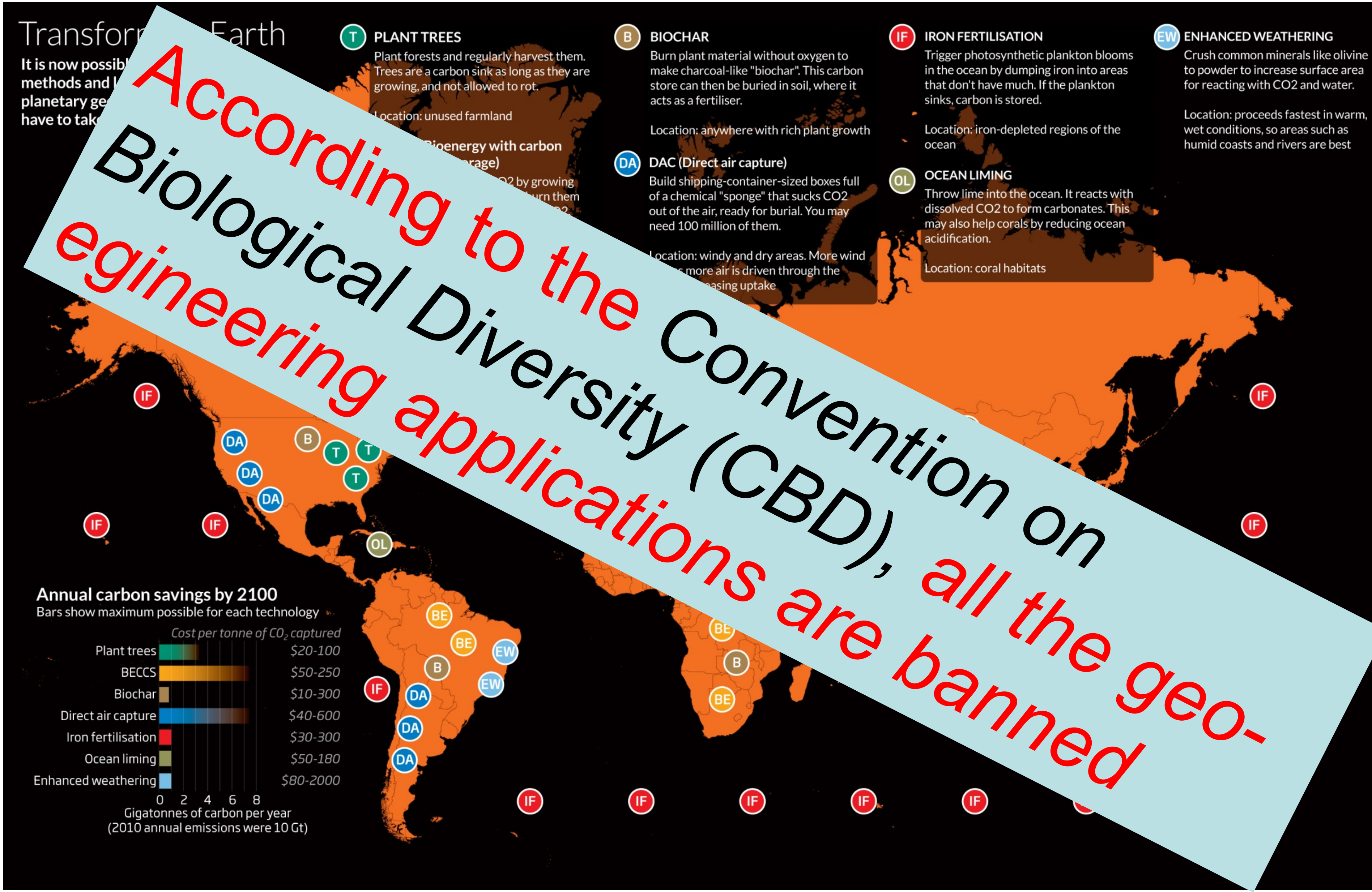
- Geo-engineering?

Geo-egineering – types and opportunities





According to the Convention on Biological Diversity (CBD), all the geo-engineering applications are banned

<u>Tree growth? (Christian Korner, 2022)</u>

- More productive forest – more trees….
- BUT!
- **Lower carbon storage**

CO_2 stimulate growth

⬇

Higher growth rate

⬇

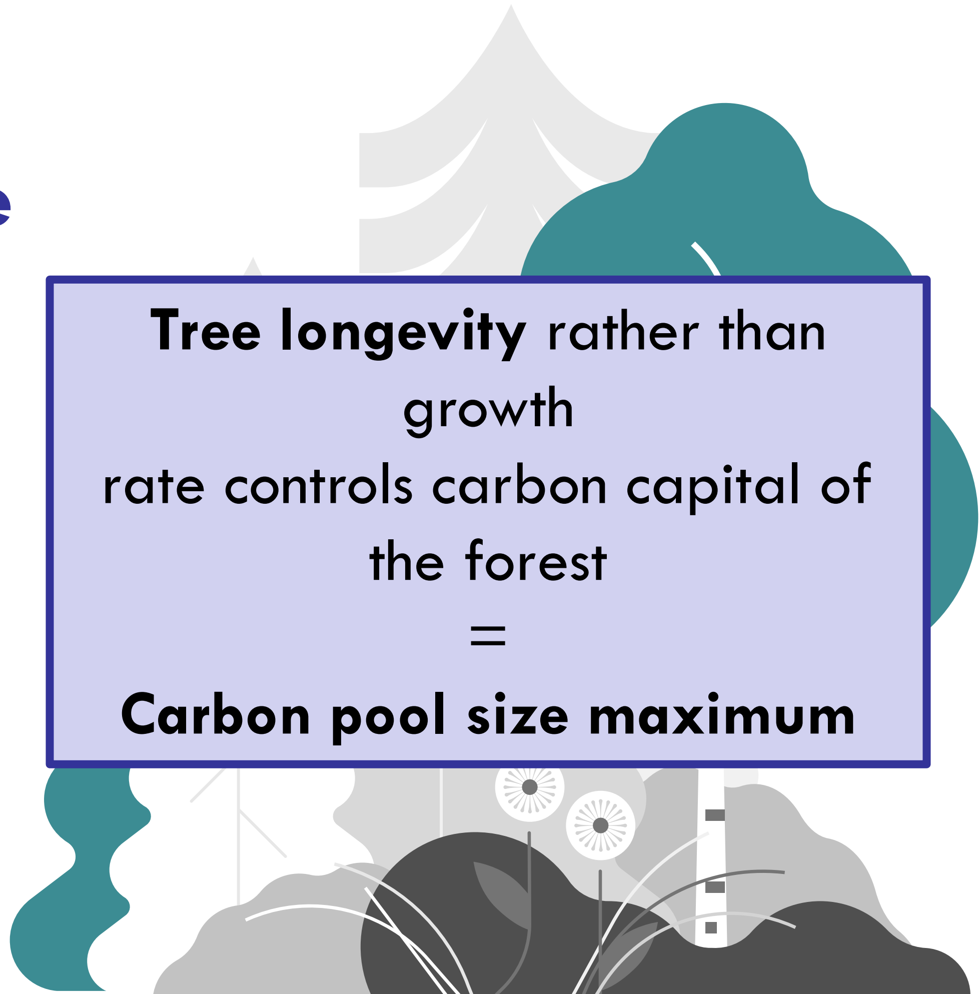
More dynamic system

⬇

Reduced resistence!!!

⬇

No higher
carbon sequestration



Tree longevity rather than growth
rate controls carbon capital of the forest
=
Carbon pool size maximum

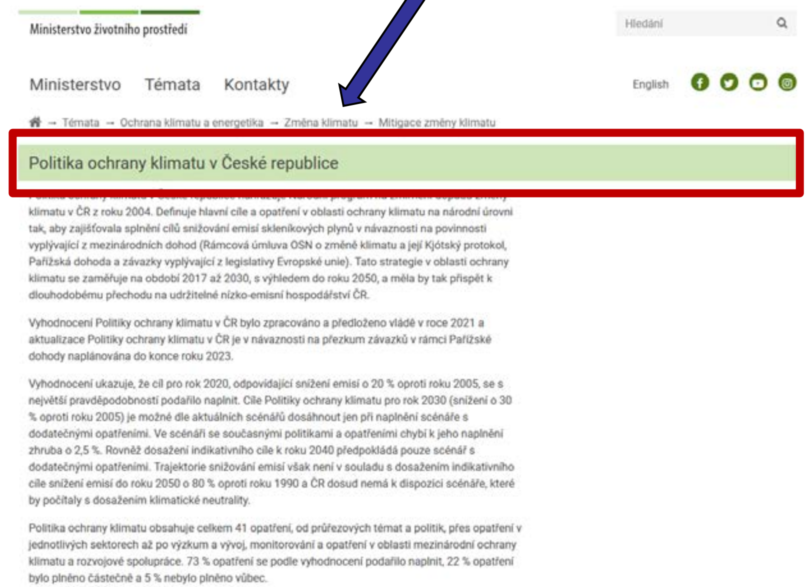
European Green Deal (December 2019)

Striving to be the **first climate-neutral continent**

The European Commission adopted a set of proposals to make the EU's climate, energy, transport and taxation **policies fit for reducing net greenhouse gas emissions by at least 55% by 2030**, compared to 1990 levels.

What about CR?

Mitigation



Ministerstvo životního prostředí

Hledání

Ministerstvo Témata Kontakty

English

→ Témata → Ochrana klimatu a energetika → Změna klimatu → Mitigace změny klimatu

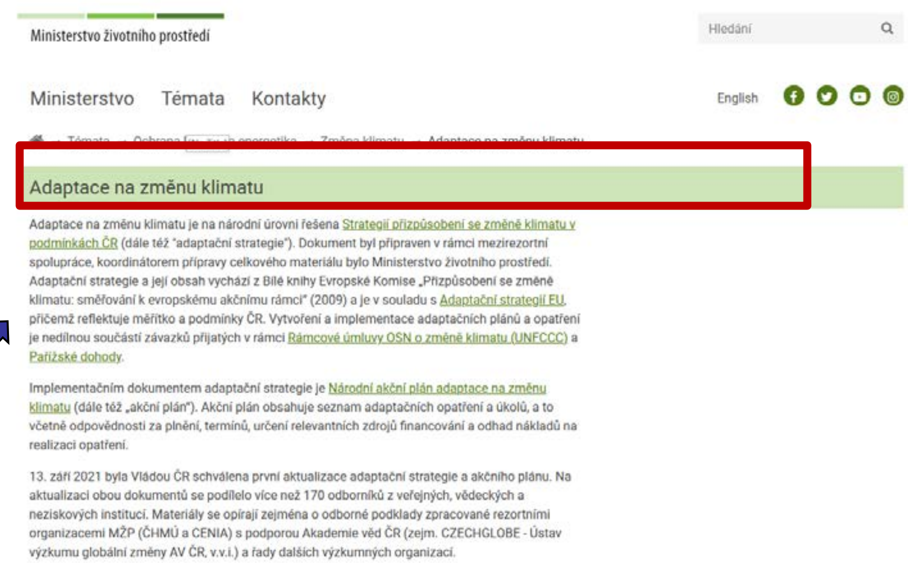
Politika ochrany klimatu v České republice

klimatu v ČR z roku 2004. Definuje hlavní cíle a opatření v oblasti ochrany klimatu na národní úrovni tak, aby zajišťovala splnění cílů snižování emisí skleníkových plynů v návaznosti na povinnosti vyplývající z mezinárodních dohod (Rámcová úmluva OSN o změně klimatu a její Kjótský protokol, Pařížská dohoda a závazky vyplývající z legislativy Evropské unie). Tato strategie v oblasti ochrany klimatu se zaměřuje na období 2017 až 2030, s výhledem do roku 2050, a měla by tak přispět k dlouhodobému přechodu na udržitelné nízko-emisní hospodářství ČR.

Vyhodnocení Politiky ochrany klimatu v ČR bylo zpracováno a předloženo vládě v roce 2021 a aktualizace Politiky ochrany klimatu v ČR je v návaznosti na přezkum závazků v rámci Pařížské dohody naplánována do konce roku 2023.

Vyhodnocení ukazuje, že cíl pro rok 2020, odpovídající snížení emisí o 20 % oproti roku 2005, se s největší pravděpodobností podařilo naplnit. Cíle Politiky ochrany klimatu pro rok 2030 (snížení o 30 % oproti roku 2005) je možné dle aktuálních scénářů dosáhnout jen při naplnění scénáře s dodatečnými opatřeními. Ve scénáři se současnými politikami a opatřeními chybí k jeho naplnění zhruba o 2,5 %. Rovněž dosažení indikativního cíle k roku 2040 předpokládá pouze scénář s dodatečnými opatřeními. Trajektorie snižování emisí však není v souladu s dosažením indikativního cíle snížení emisí do roku 2050 o 80 % oproti roku 1990 a ČR dosud nemá k dispozici scénáře, které by počítaly s dosažením klimatické neutrality.

Politika ochrany klimatu obsahuje celkem 41 opatření, od průřezových témat a politik, přes opatření v jednotlivých sektorech až po výzkum a vývoj, monitorování a opatření v oblasti mezinárodní ochrany klimatu a rozvojové spolupráce. 73 % opatření se podle vyhodnocení podařilo naplnit, 22 % opatření bylo plněno částečně a 5 % nebylo plněno vůbec.



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English

Adaptace na změnu klimatu

Adaptace na změnu klimatu je na národní úrovni řešena Strategií přizpůsobení se změně klimatu v podmínkách ČR (dále též "adaptační strategie"). Dokument byl připraven v rámci mezirezortní spolupráce, koordinátorem přípravy celkového materiálu bylo Ministerstvo životního prostředí. Adaptační strategie a její obsah vychází z Bílé knihy Evropské Komise „Přizpůsobení se změně klimatu: směřování k evropskému akčnímu rámci" (2009) a je v souladu s Adaptační strategií EU, přičemž reflektuje měřítko a podmínky ČR. Vytvoření a implementace adaptačních plánů a opatření je nedílnou součástí závazků přijatých v rámci Rámcové úmluvy OSN o změně klimatu (UNFCCC) a Pařížské dohody.

Implementačním dokumentem adaptační strategie je Národní akční plán adaptace na změnu klimatu (dále též „akční plán"). Akční plán obsahuje seznam adaptačních opatření a úkolů, a to včetně odpovědnosti za plnění, termínů, určení relevantních zdrojů financování a odhad nákladů na realizaci opatření.

13. září 2021 byla Vládou ČR schválena první aktualizace adaptační strategie a akčního plánu. Na aktualizaci obou dokumentů se podílelo více než 170 odborníků z veřejných, vědeckých a neziskových institucí. Materiály se opírají zejména o odborné podklady zpracované rezortními organizacemi MŽP (ČHMÚ a CENIA) s podporou Akademie věd ČR (zejm. CZECHGLOBE - Ústav výzkumu globální změny AV ČR, v.v.i.) a řady dalších výzkumných organizací.

Adaptation

Right choice?

REUTERS

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3 minute read · July 6, 2022 10:03 PM GMT+2 · Last Updated 3 months ago

EU parliament backs labelling gas and nuclear investments as green

By Kate Abnett

Summary

- Lawmakers back 'green' EU investment label for the fuels
- Likely to become law unless super-majority of states veto
- Gas, nuclear rules have split EU countries and lawmakers
- Luxembourg, Austria to challenge law in court

My View · Following · Saved

BRUSSELS, July 6 (Reuters) - The European Parliament on Wednesday backed EU rules labelling investments in gas and nuclear power plants as climate-friendly, throwing out an attempt to block the law that has exposed deep rifts between countries over how to fight climate change.

The vote paves the way for the European Union proposal to pass into law, unless 20 of the bloc's 27 member states decide to oppose the move, which is seen as very unlikely.

The new rules will add gas and nuclear power plants to the EU "taxonomy" rulebook from 2023, enabling investors to label and market investments in them as green.

Out of 639 lawmakers present, 328 opposed a motion that sought to block the EU gas and nuclear proposals.

The European Commission welcomed the result. It proposed the rules in February after more than a year of delay and intense lobbying from governments and industries.

"This is a poor signal to the rest of the world that
may undermine the EU's leadership position on climate action,"
said Anders Schelde, chief investment officer
at Danish pension fund Akademiker Pension.

If approved, the gas and nuclear rules would apply from Jan. 2023.

- **Gas plants must switch to run on low-carbon gases by 2035**
- **New nuclear plants must receive construction permits before 2045 to get a green investment** label, and be located in a country with a plan and funds to **safely dispose of radioactive waste by 2050.**

SYSTEM CHANGE NOT CLIMATE CHANGE

„CHANGE OUR OWN PRACTICES OF HOW WE WORK WITH KNOWLEDGE“