

Our climate is changing rapidly...also in Europe!

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IPCC Contributing Author, AR5 (2013)

IPCC Lead Author, AR6 (2021–2023)

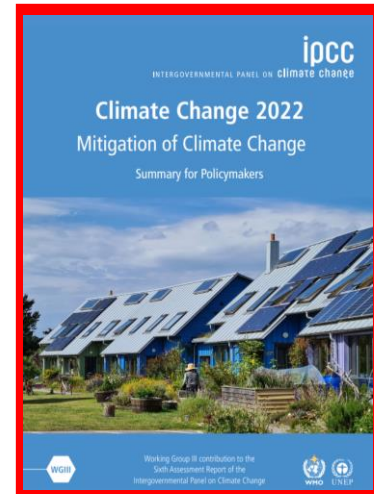
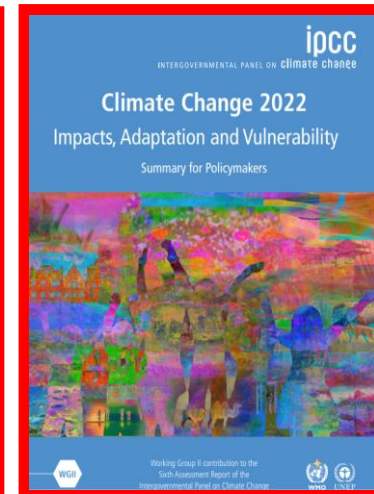
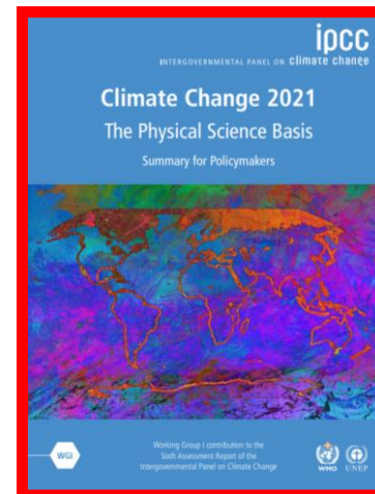
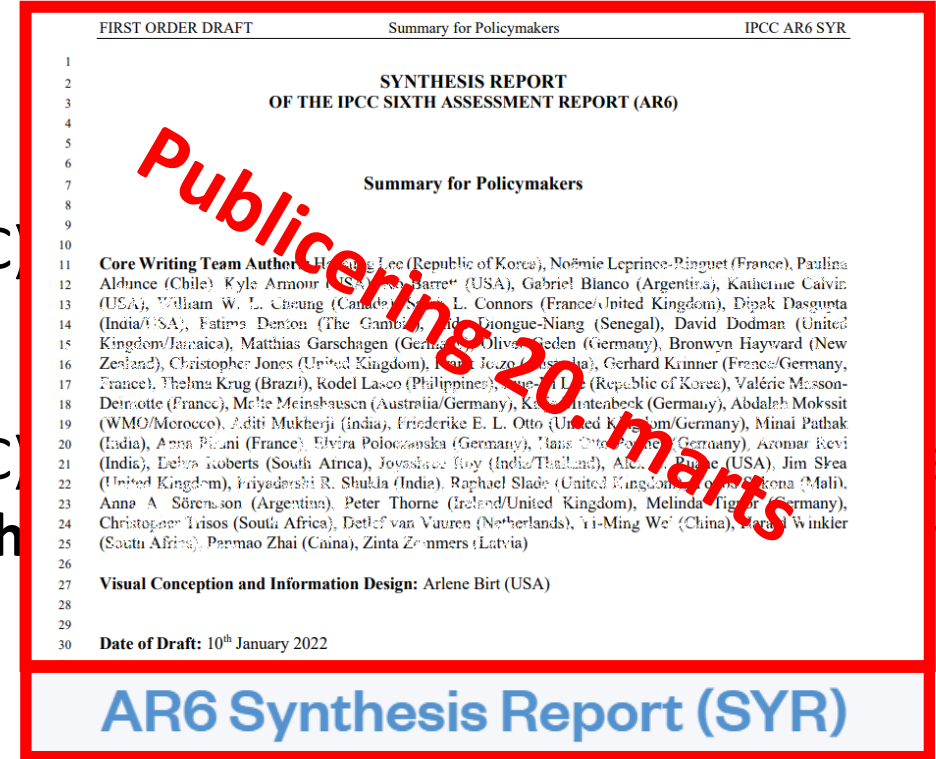


The Intergovernmental Panel on Climate Change (IPCC) **assessing the science related to climate change.**

The Intergovernmental Panel on Climate Change (IPCC) **provides reports to** policymakers with regular **scientific assessments on the state of the climate change.**

Year of publication of IPCC assessment reports:

- 1990: The First IPCC Assessment Report (FAR)
- 1995: The Second Assessment Report (SAR)
- 2001: The Third Assessment Report (TAR)
- 2007: The Fourth Assessment Report (AR4)
- 2013/14: The fifth Assessment report (AR5)
- 2021/22: The sixth Assessment report (AR6)



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climate change



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FIRST JOINT SESSION OF WORKING GROUPS I, II AND III
Incheon, Republic of Korea, 1 - 5 October 2018

WG-I, WG-II & WG-III: 1st/Doc. 2^a, Rev. 2
(8.X.2018)
Agenda Item: 4
ENGLISH ONLY

Special Reports

Climate Change and Land

An IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems

The Ocean and Cryosphere in a Changing Climate

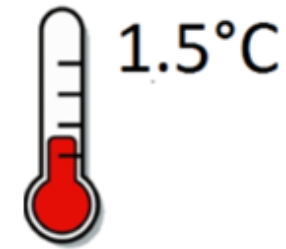
IPCC SPECIAL REPORT ON GLOBAL WARMING OF 1.5°C

An IPCC special report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty.

Revised Final Draft Summary for Policymakers

(Submitted by the Co-Chairs of Working Groups I, II and III)

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Summary for Policymakers is submitted to the First Joint Session of Working Groups I, II and III and the Summary for Policymakers will be forwarded to the Forty-Eighth Session of the Panel of Governmental Experts (1 - 5 October 2018) for acceptance.

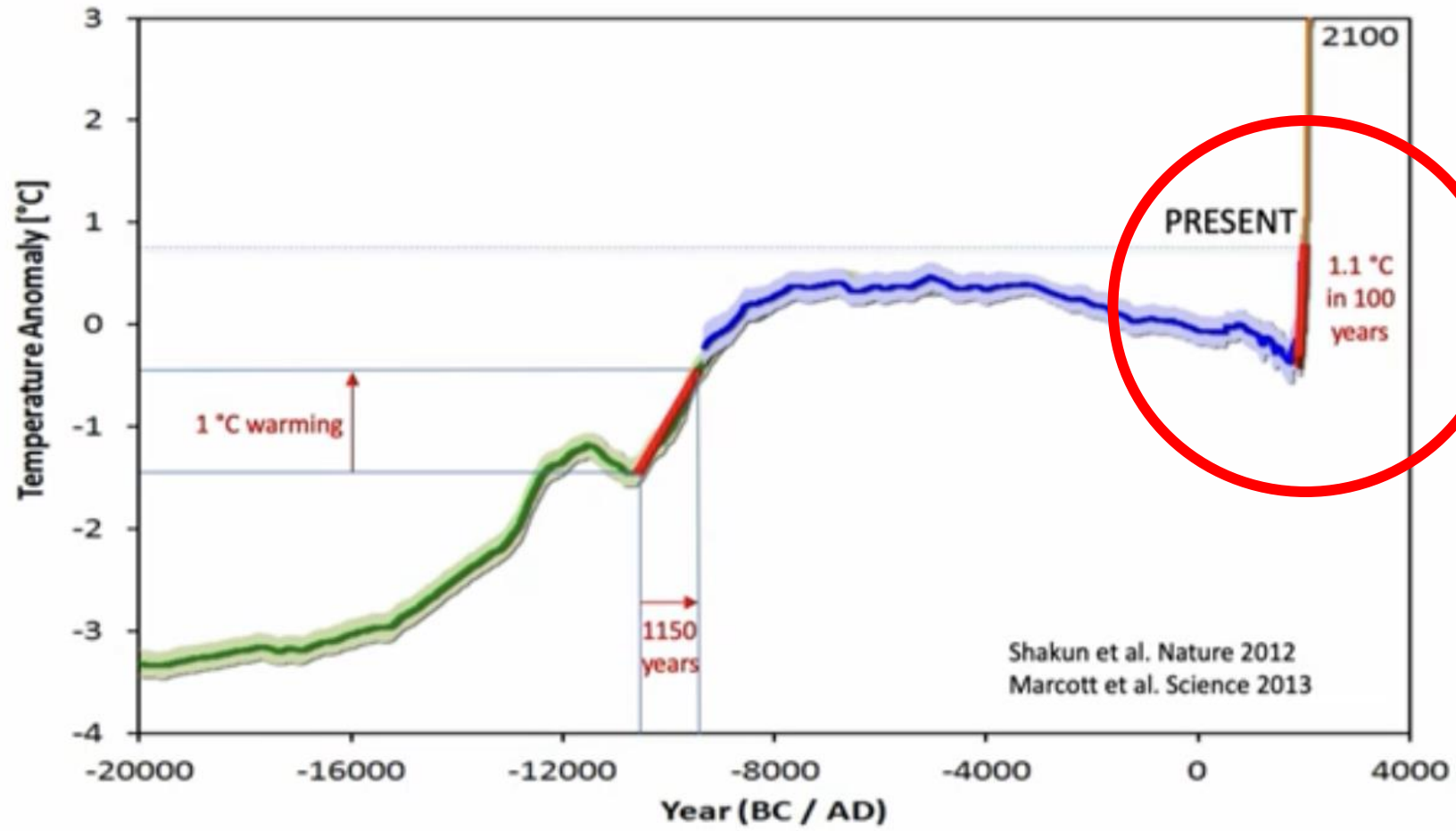
IPCC Secretariat

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telephone : +41 (0) 22 730 8208 / 54 / 84 • fax : +41 (0) 22 730 8025 / 13 • email : IPCC-Sec@wmo.int • www.ipcc.ch

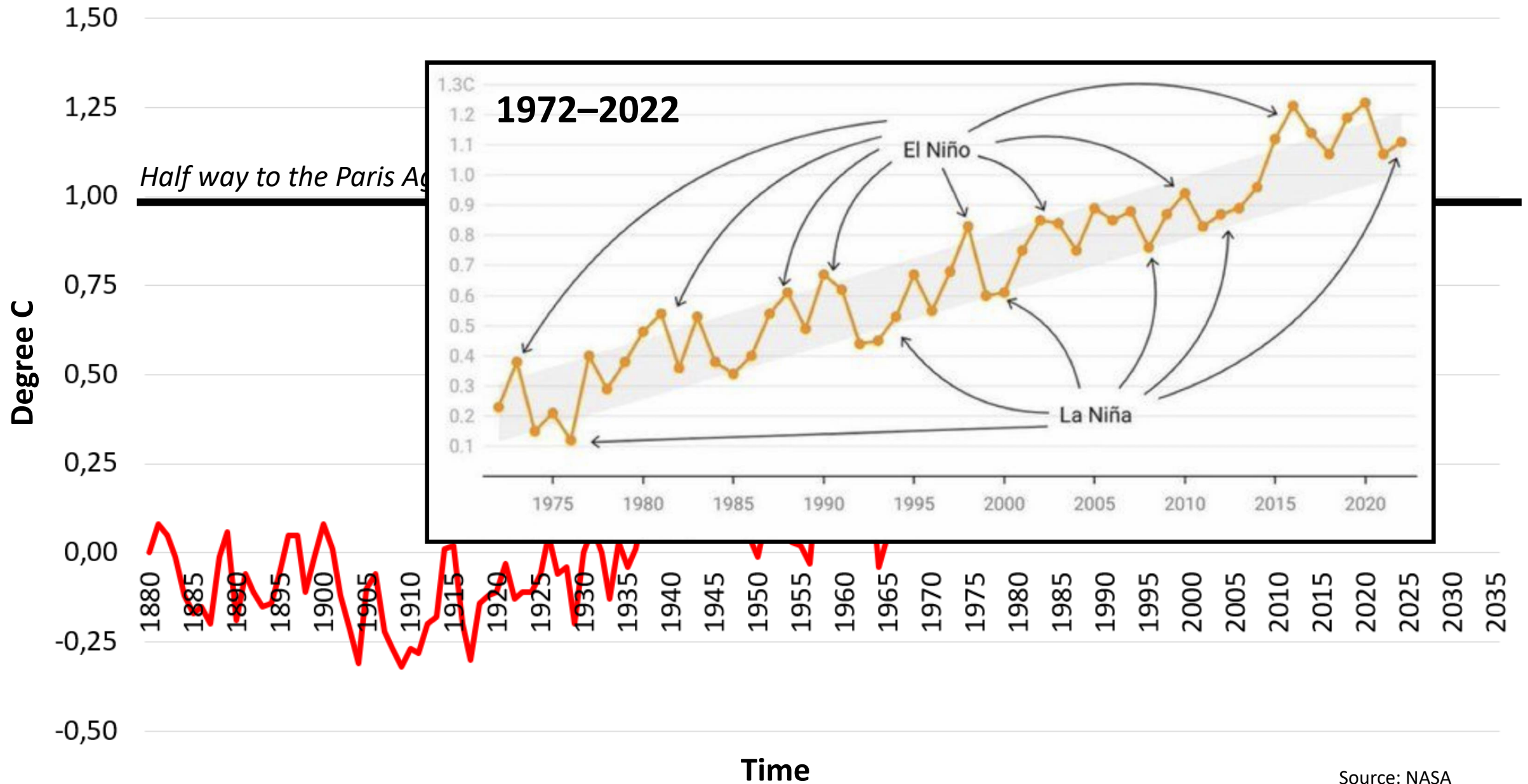


- 
- Hvilke klimaforandringer har vi set siden 1850?
 - Parisaftalen: hvornår rammer vi en temperaturstigning på 1,5 eller 2,0 grader?
 - Hvor meget kan vi udlede af CO2 for at holde os under 1,5 eller 2,0 grader?
 - Hvad er konsekvenserne af et varmere menneskeskabt klima?

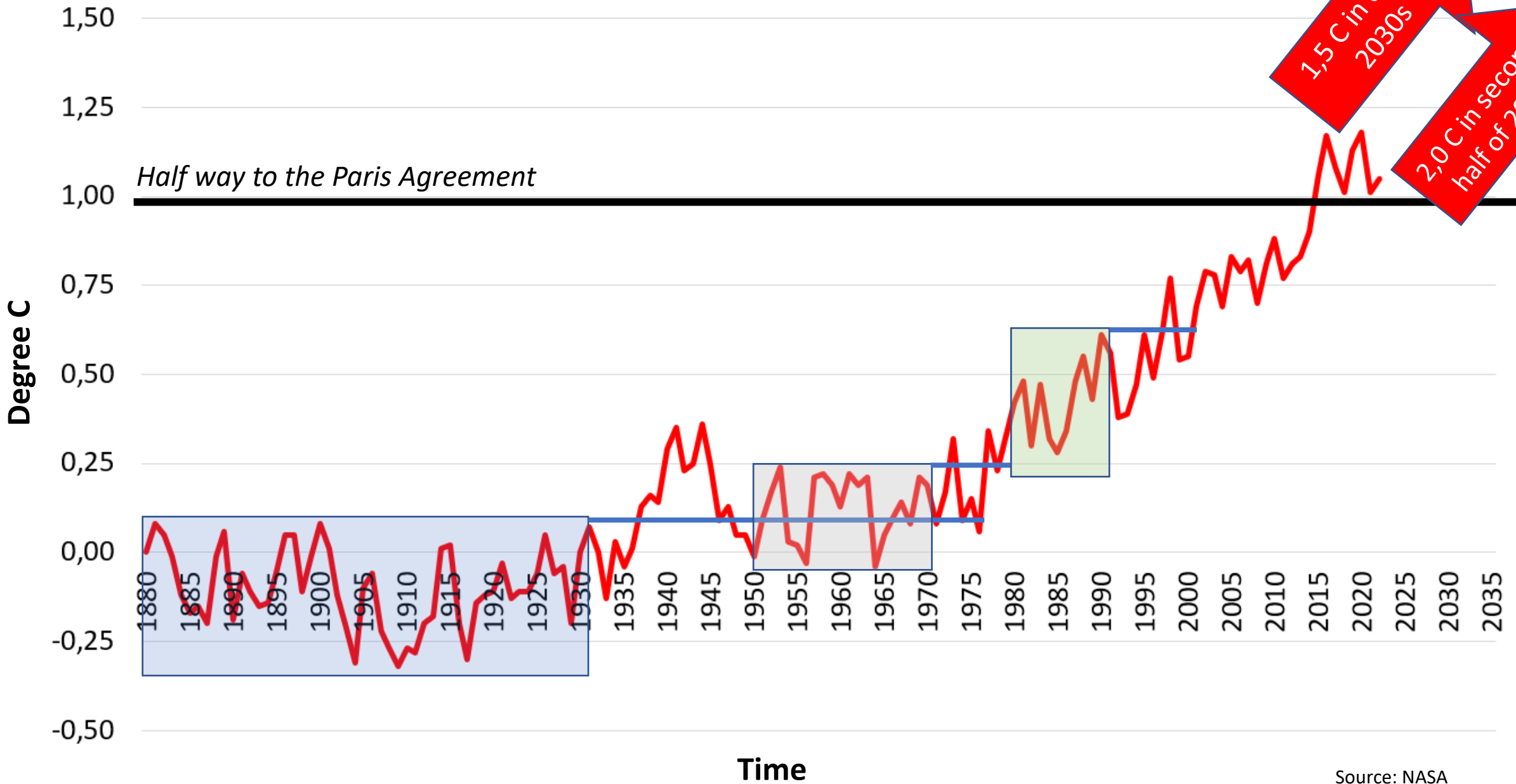
GLOBAL TEMPERATURE SINCE THE LAST ICE AGE



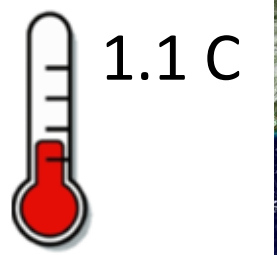
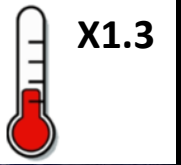
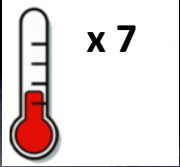
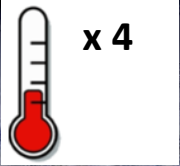
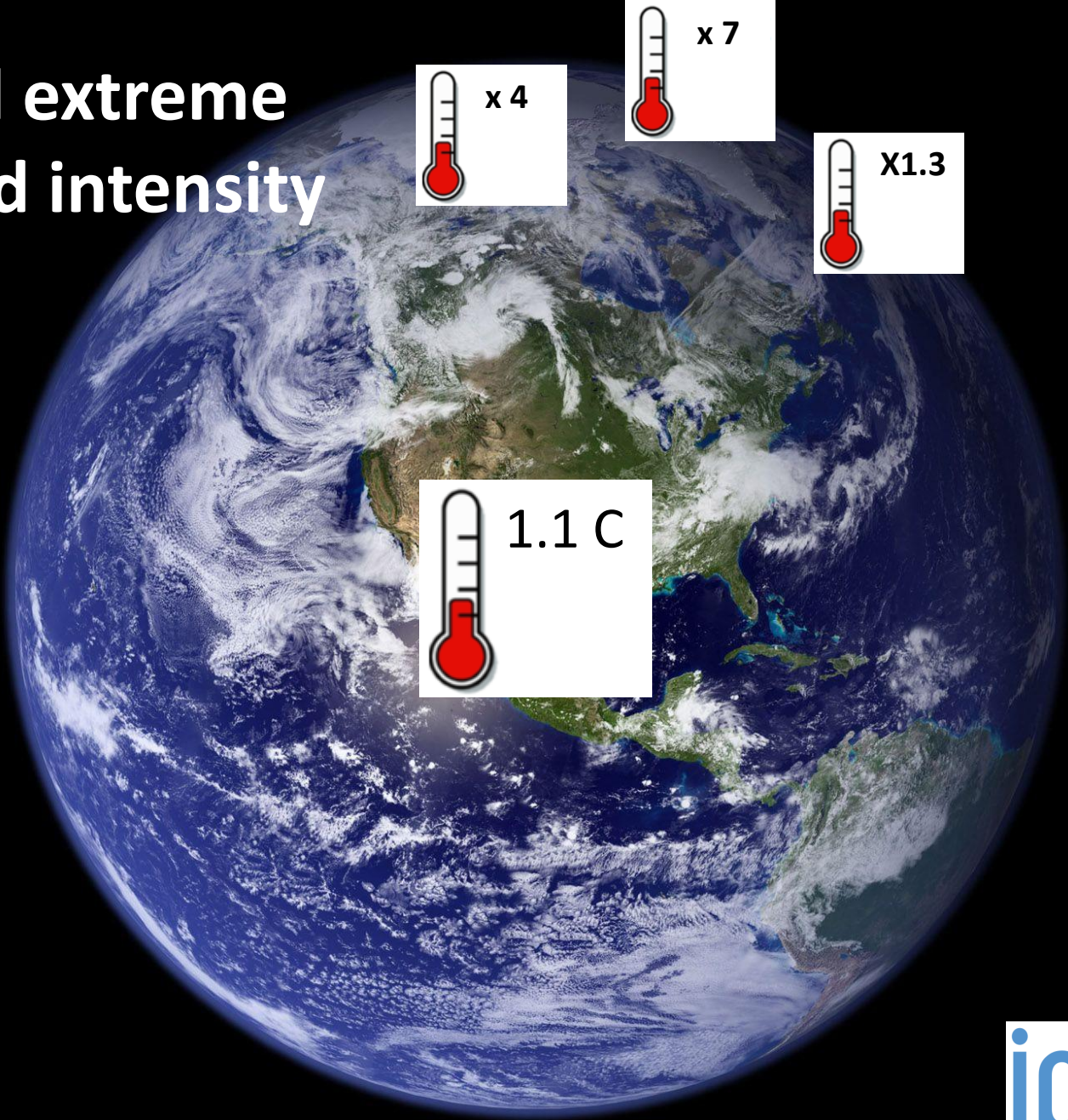
Global Mean Surface Air Temperature, 1880–2022



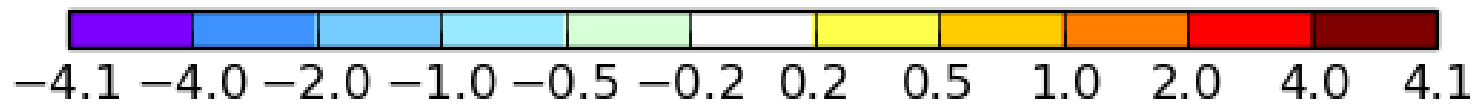
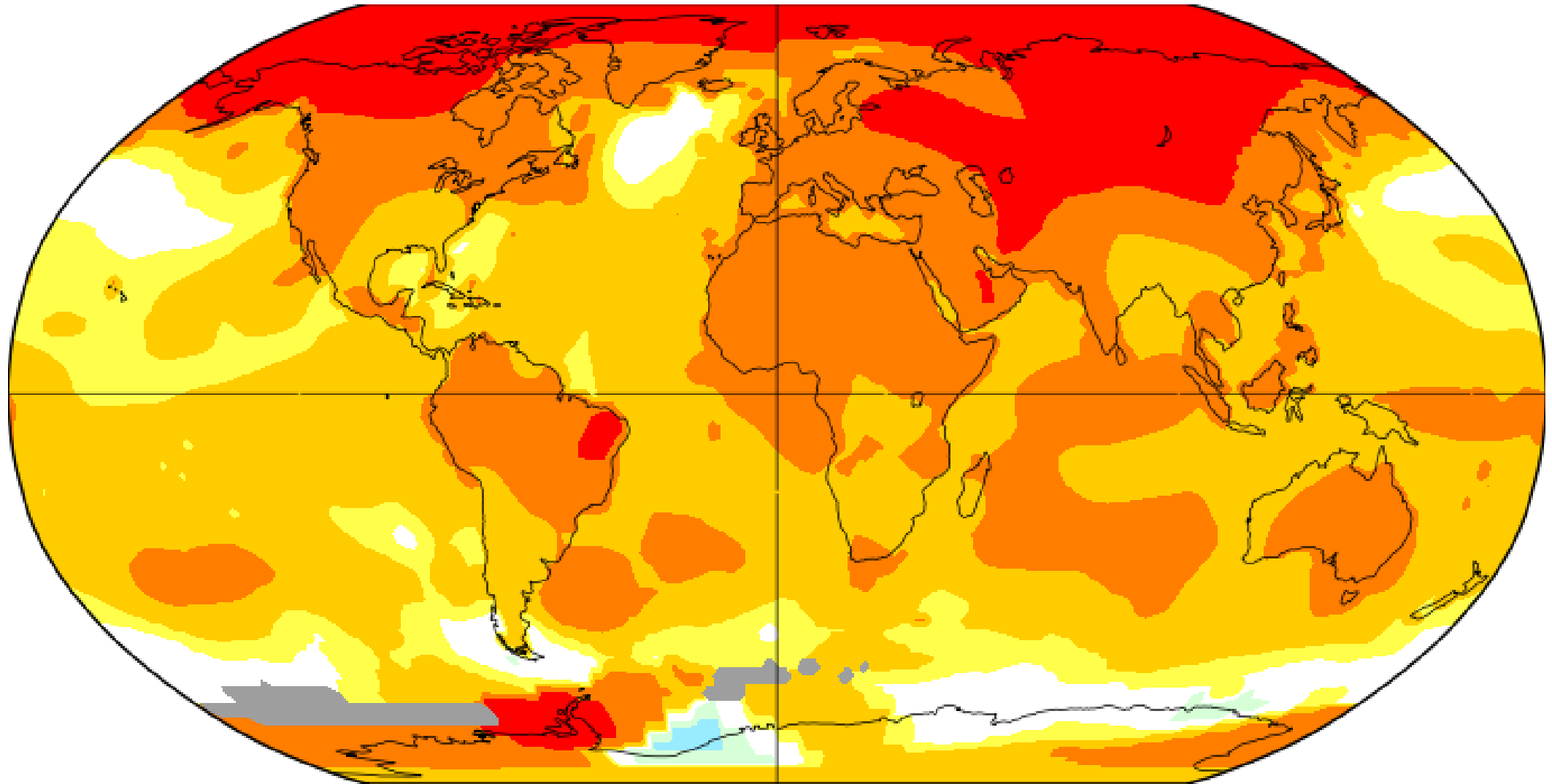
Global Mean Surface Air Temperature, 1880–2022



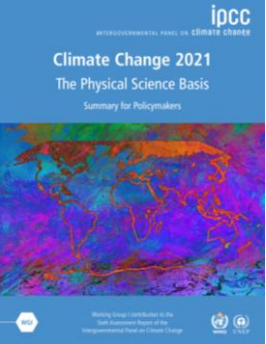
Warm, wet, and extreme in frequency and intensity



Global Mean Surface Air Temperature, 1880–2022



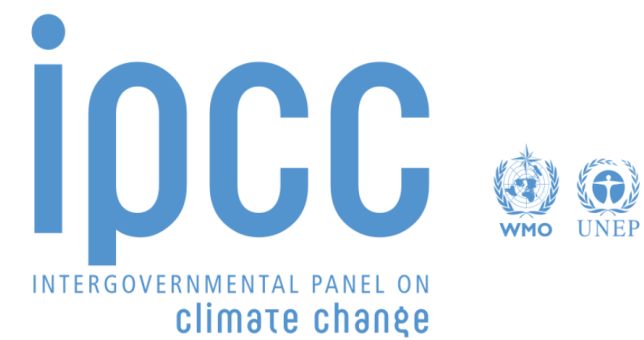
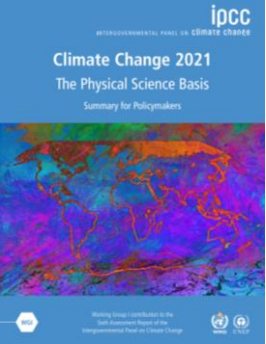
Kilde: NASA



It is **unequivocal** that **human influence has warmed the atmosphere, ocean and land**. Widespread and rapid changes in the atmosphere, ocean, cryosphere and biosphere have occurred.

Global surface temperature was **1.09°C** higher in 2011–2020 than 1850–1900 (pre-industrial).

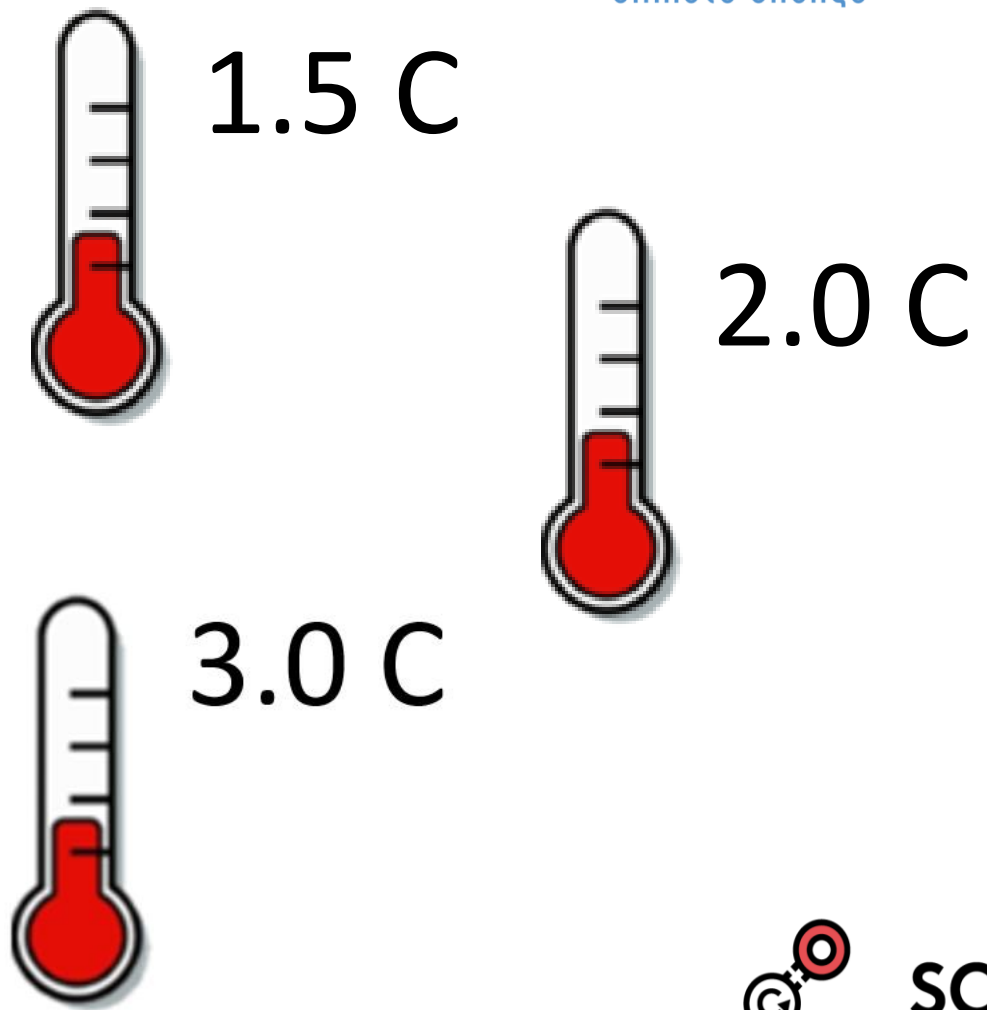
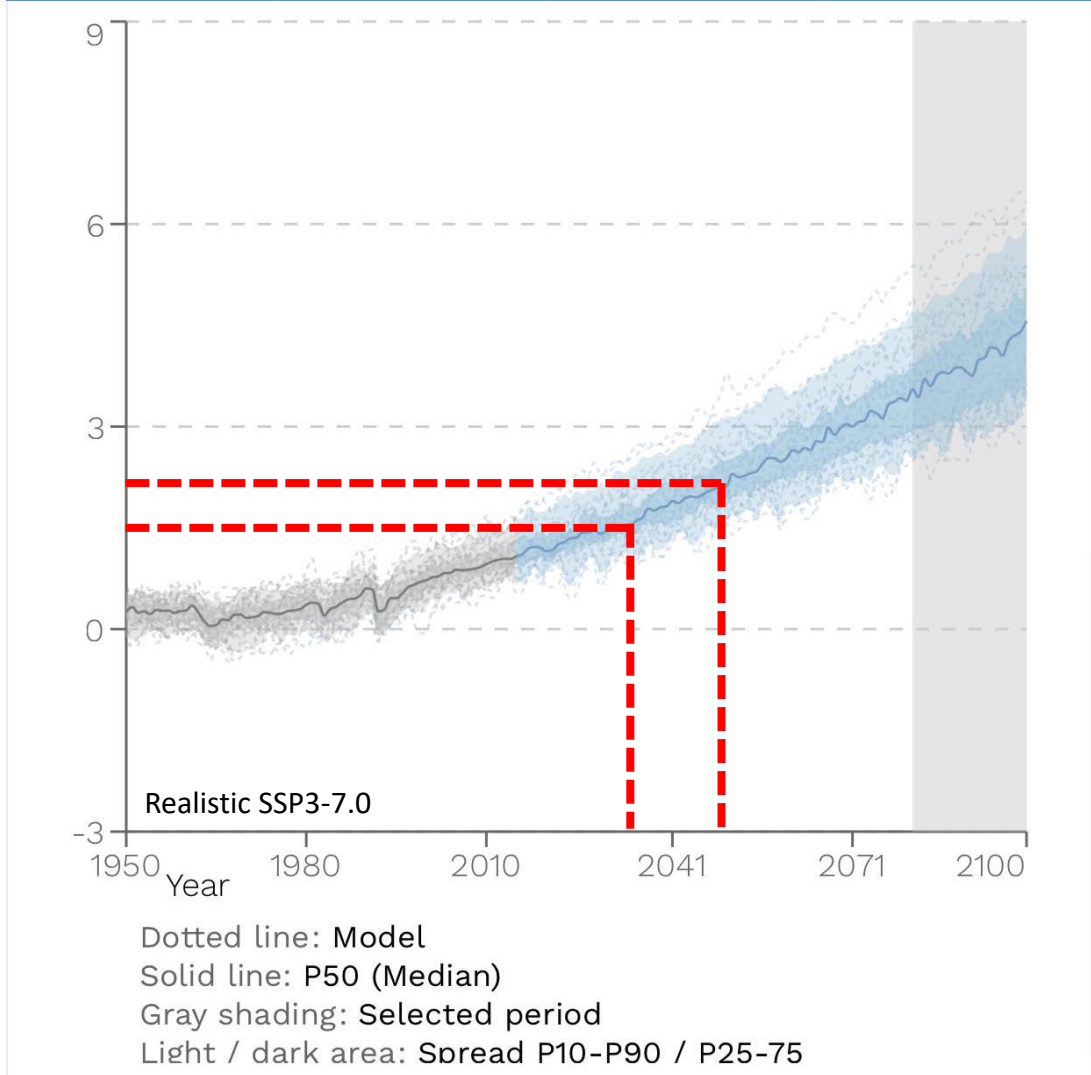
The *likely* range of total human-caused global surface temperature increase from 1850–1900 to 2010–2019, with a best estimate of **1.07°C**.



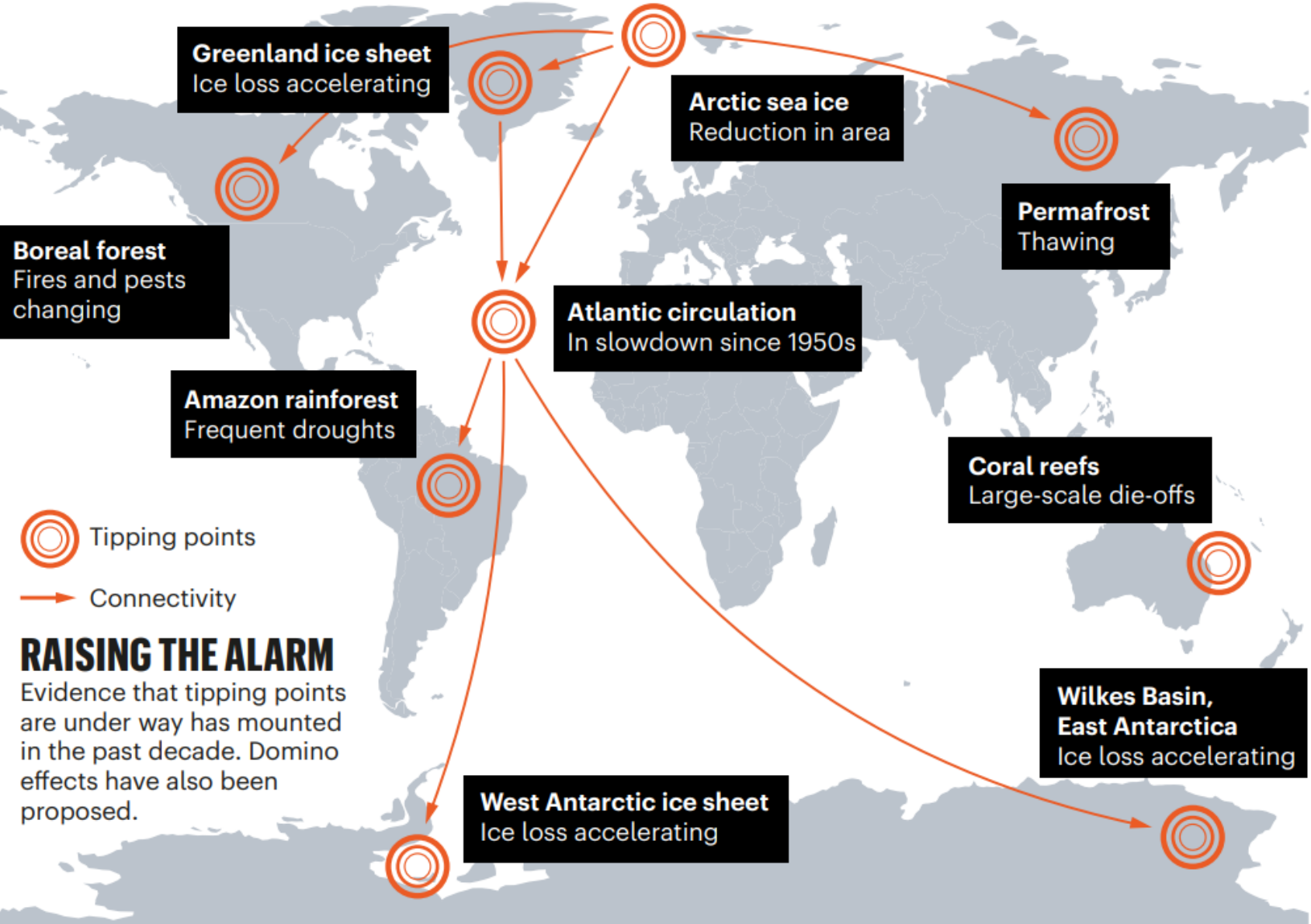
Global surface temperature has **increased faster since **1970** than in any other 50-year period over at least the last 2000 years.**

It is *virtually certain* that **hot extremes** have become more frequent and more intense across most land regions since the 1950s, while cold extremes have become less frequent and less severe.

Some recent hot extremes observed over the past decade would have been *extremely unlikely* to occur without human influence on the climate system.



Evidence that tipping points are under way...



RAISING THE ALARM

Evidence that tipping points are under way has mounted in the past decade. Domino effects have also been proposed.

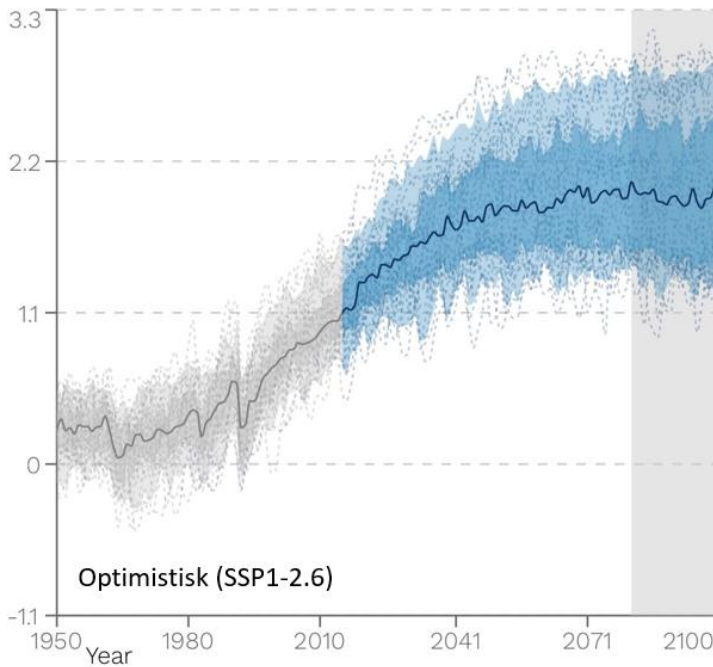
Mean Temperature Change (C)



IPCC WGI Interactive Atlas:
Regional information
(Advanced)



CMIP6 - Mean temperature (T) Change deg C - Long Term (2081-2100)
(Global)



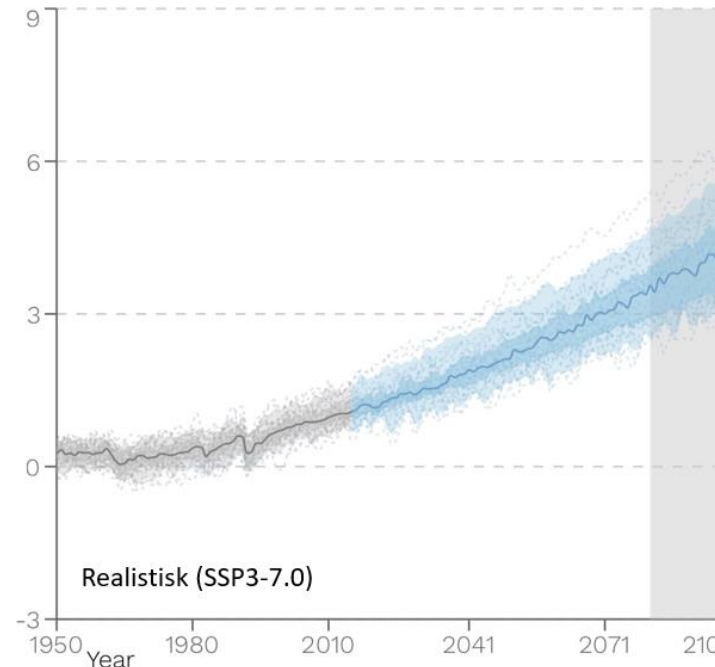
Dotted line: Model
Solid line: P50 (Median)
Gray shading: Selected period
Light / dark area: Spread P10-P90 / P25-75



IPCC WGI Interactive Atlas:
Regional information
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CMIP6 - Mean temperature (T) Change deg C - Long Term (2081-2100)
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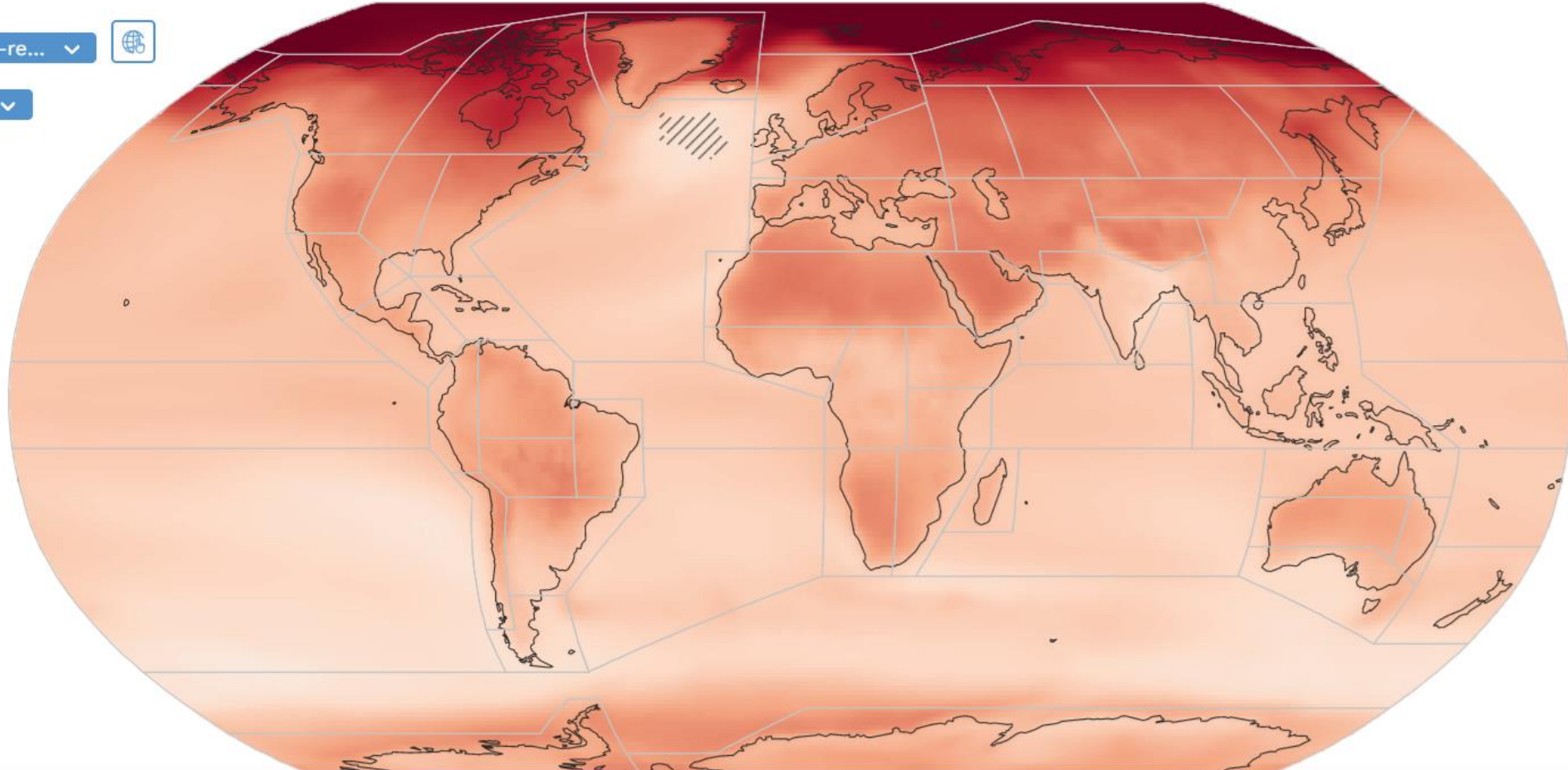
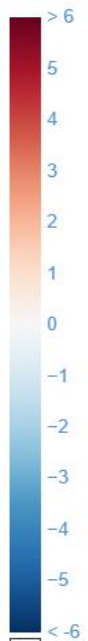
Dotted line: Model
Solid line: P50 (Median)
Gray shading: Selected period
Light / dark area: Spread P10-P90 / P25-75

DATASET VARIABLE QUANTITY & SCENARIO SEASON

Region Set: WGI reference-re...

Uncertainty: Simple

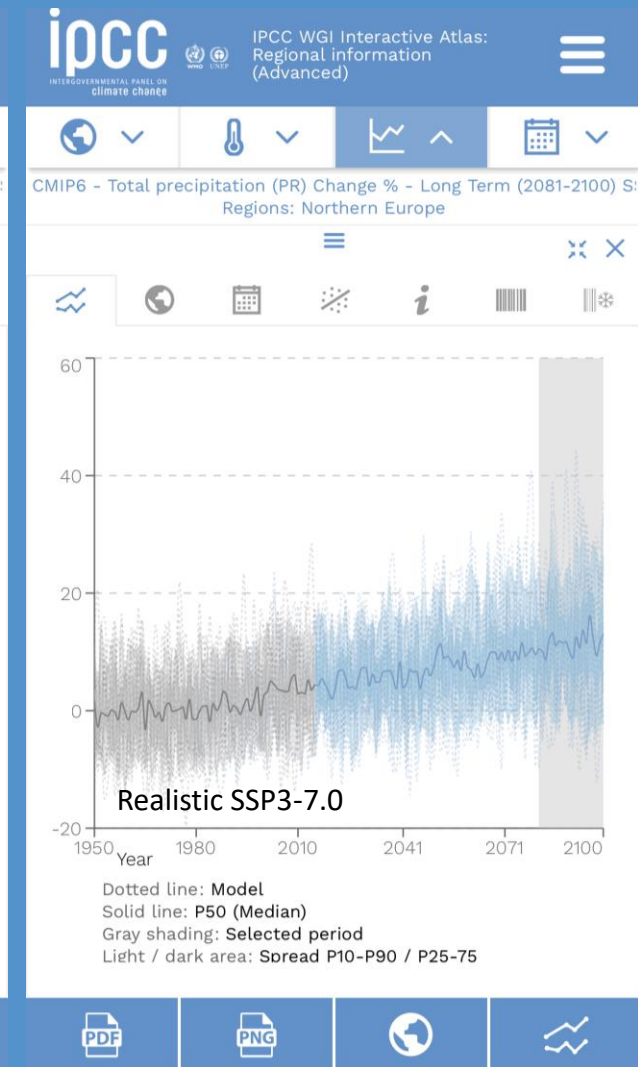
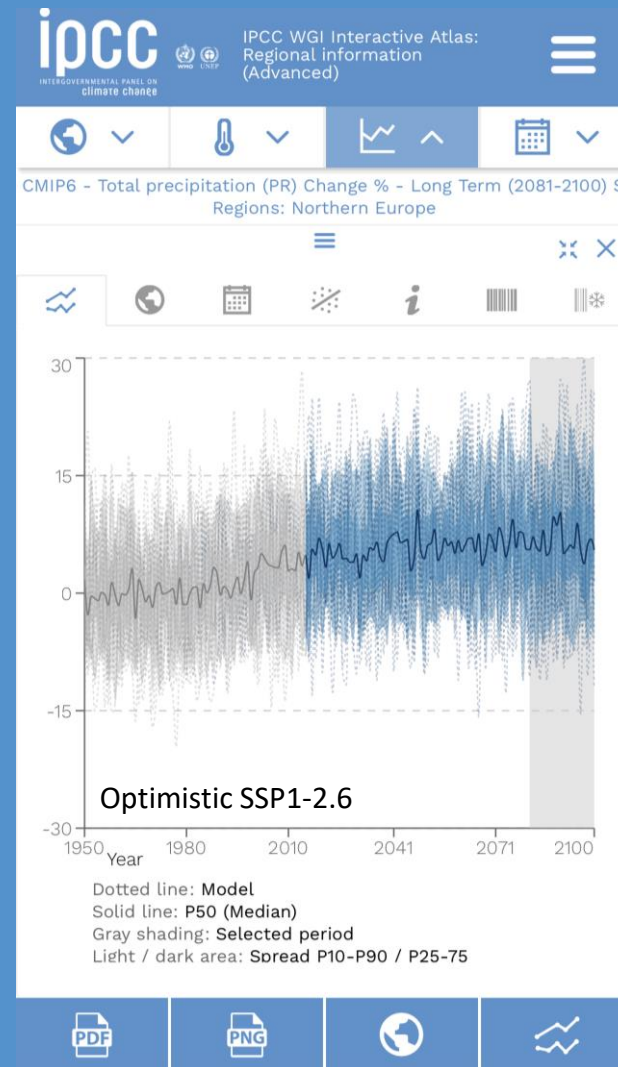
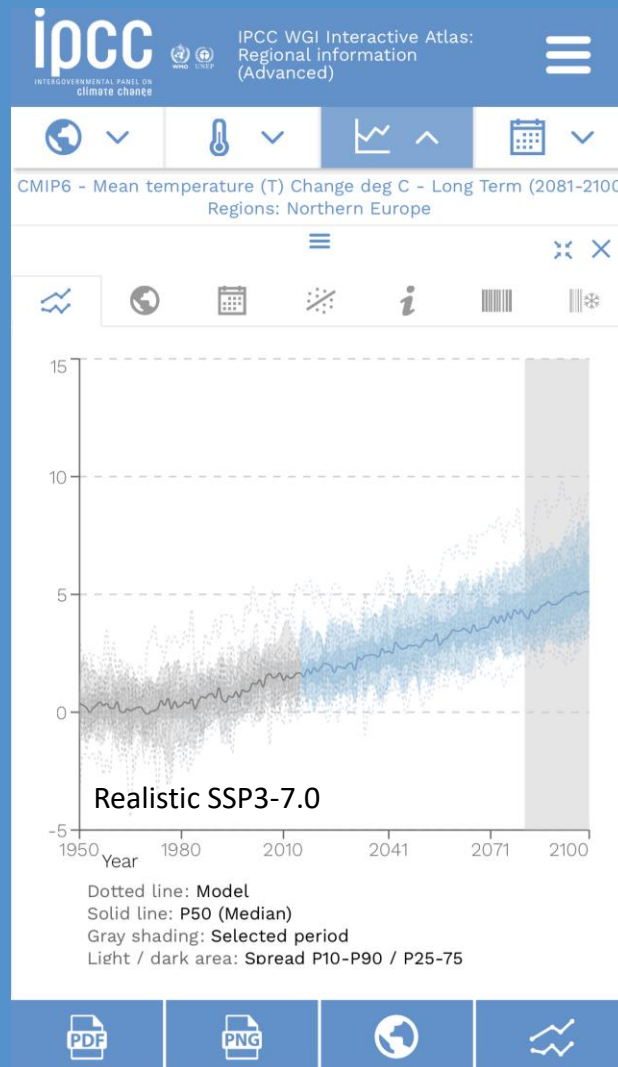
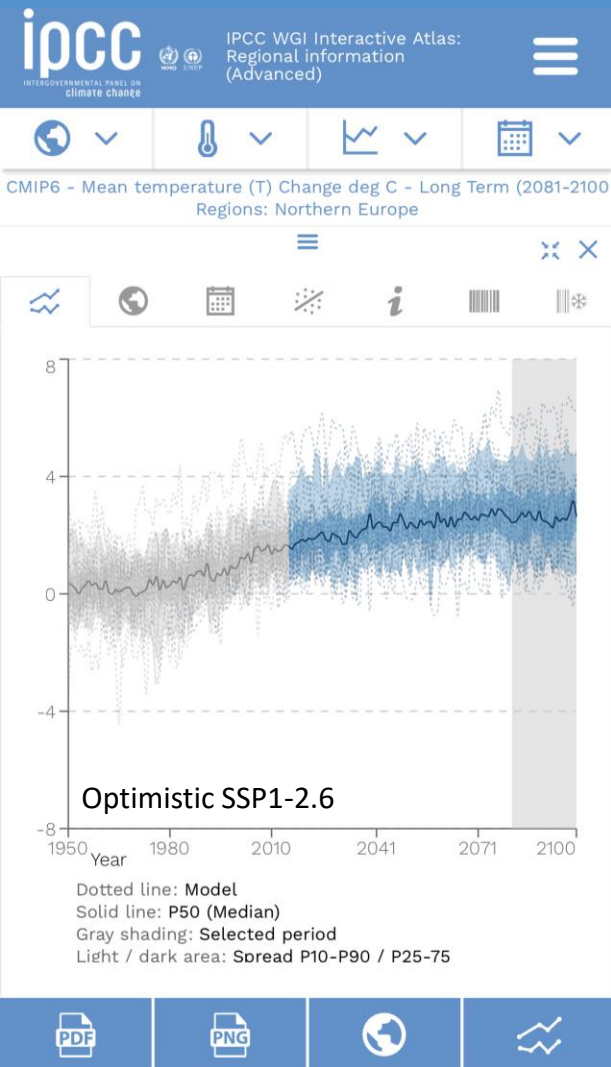
deg C

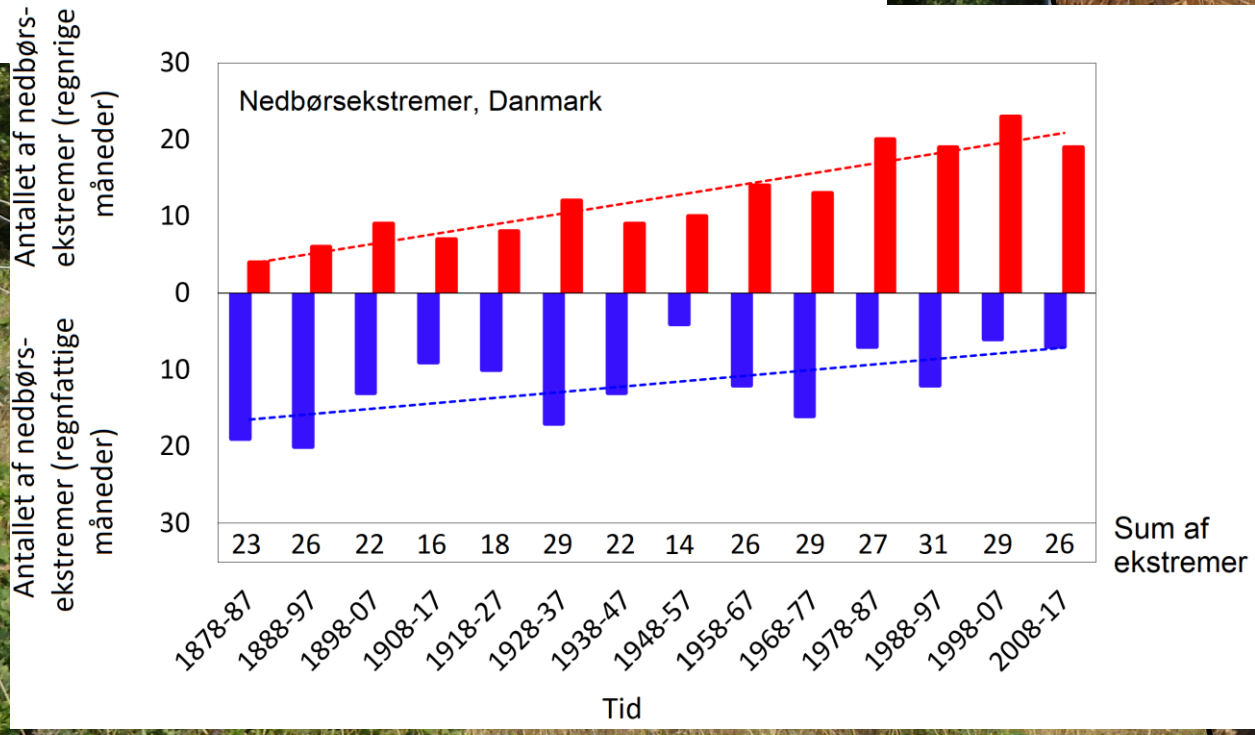
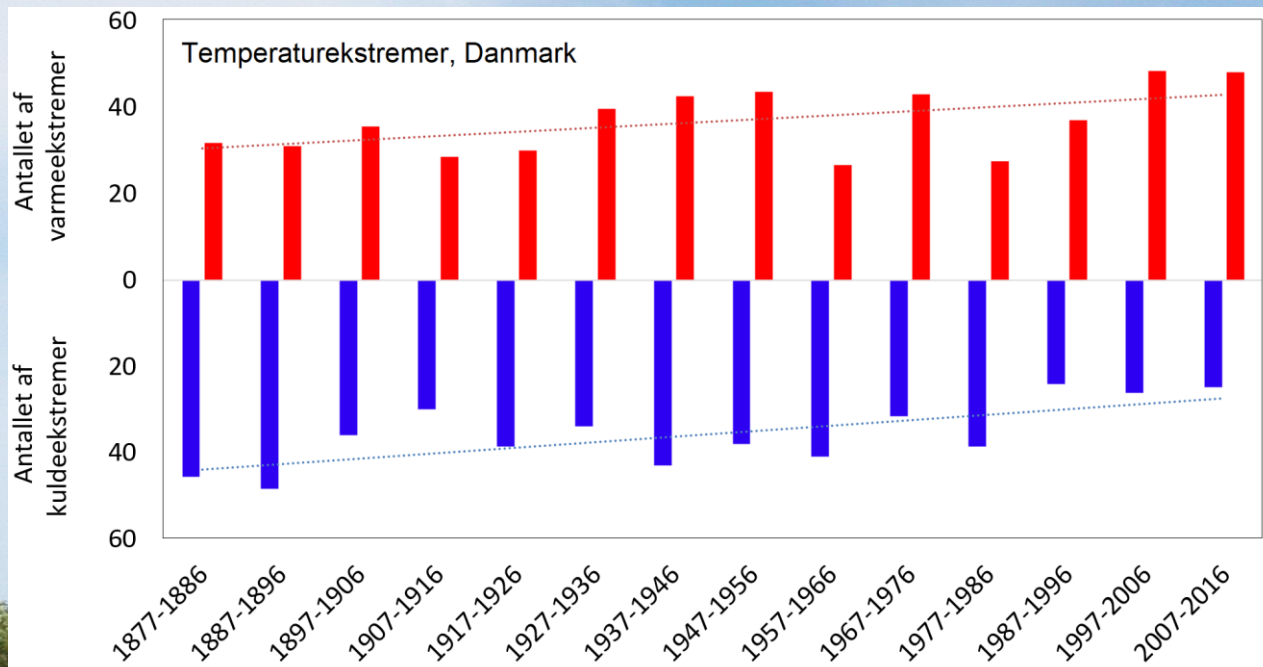


CMIP6 - Mean temperature (T) Change deg C - Warming 2°C SSP5-8.5 (rel. to 1850-1900) - Annual (34 models)

Mean Temperature Change (C)

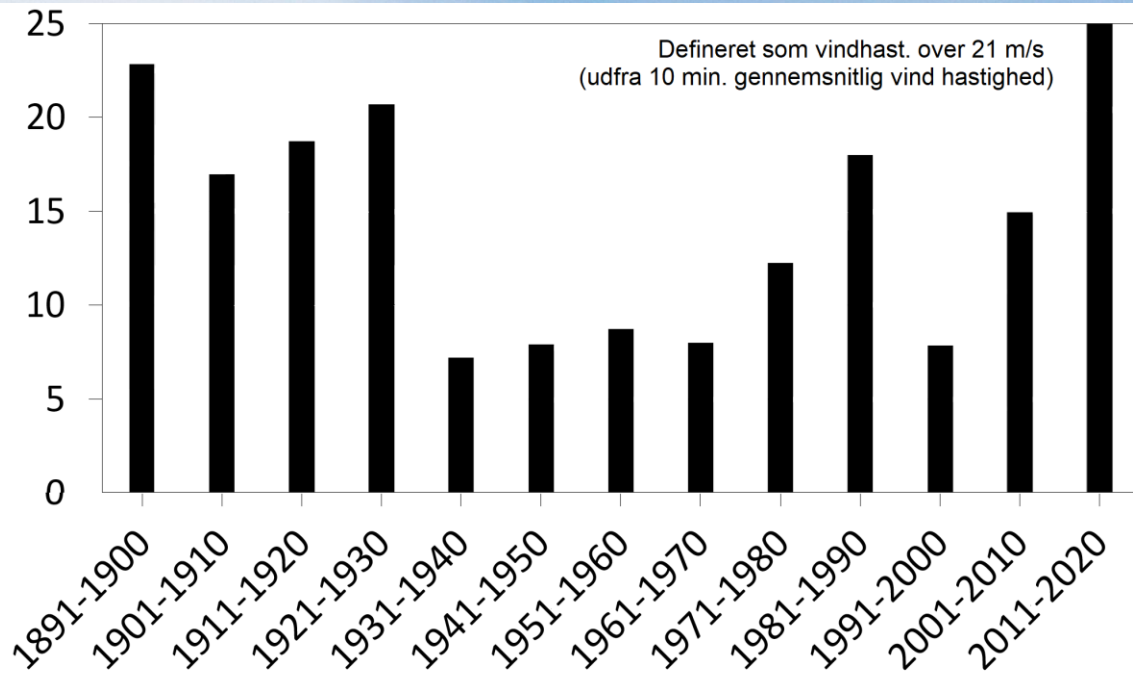
Total Precipitation Change (%)



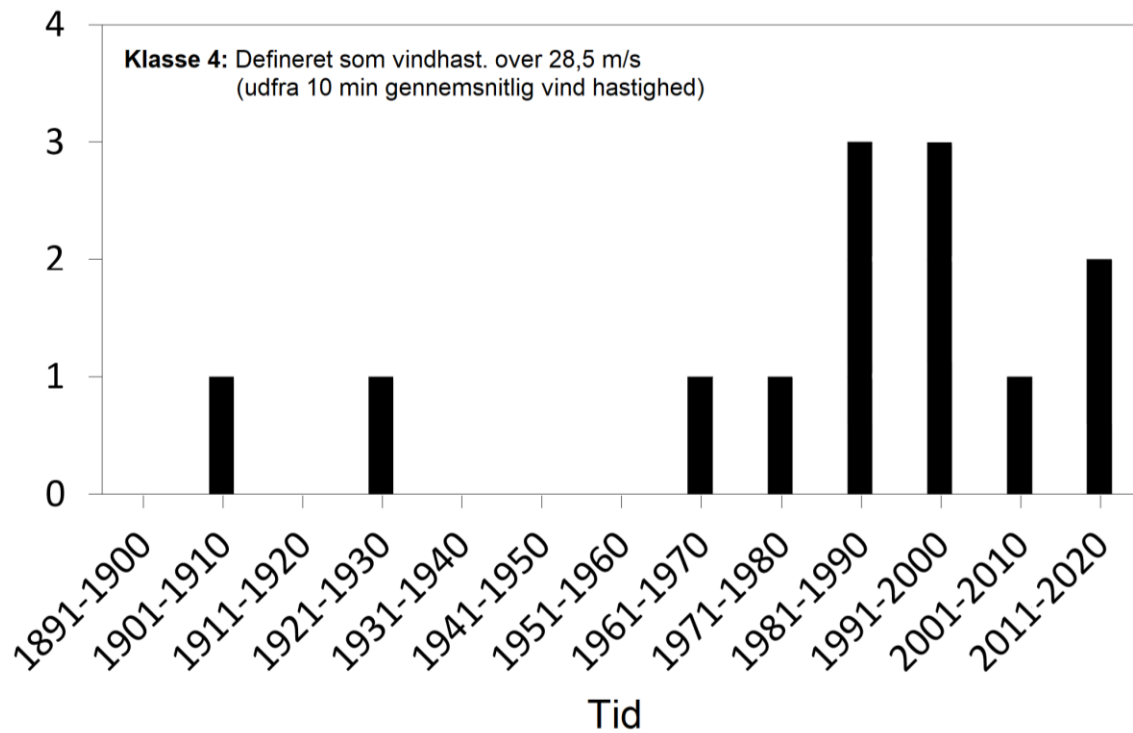


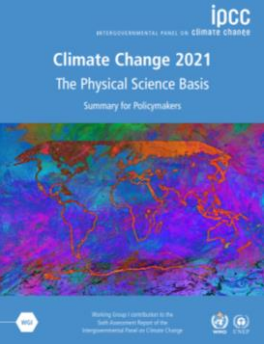
Maj, juni og juli 2018

Antal storme



Antal storme klasse 4





The **frequency and intensity of heavy precipitation events have increased** since the 1950s over most land area for which observational data are sufficient for trend analysis.

With every additional increment of global warming, changes in extremes continue to become larger. **For every additional 0.5°C of global warming causes clearly discernible increases in the intensity and frequency of heavy precipitation.**

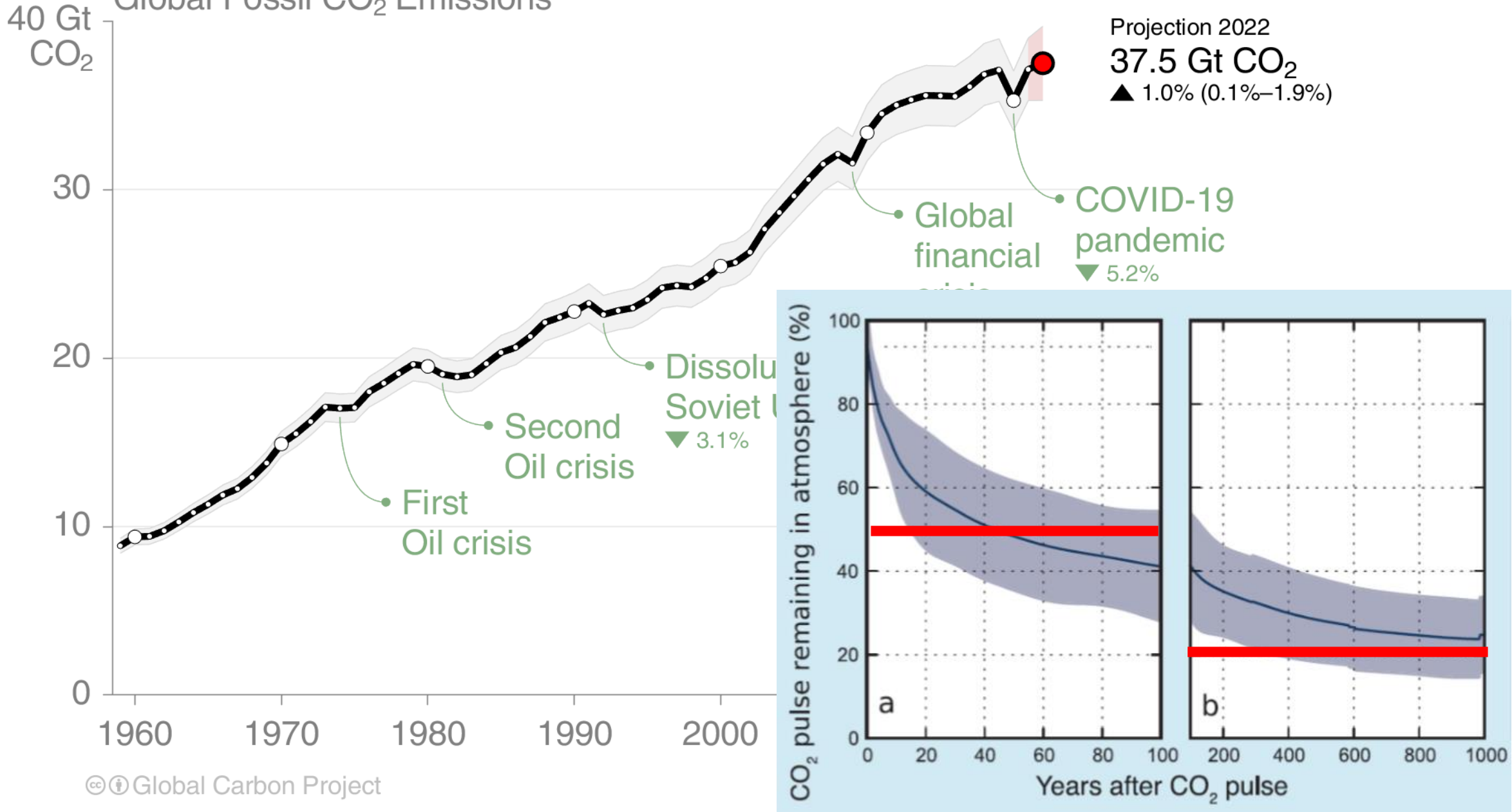
At the global scale, **extreme daily precipitation events are projected to intensify** by about 7% for each 1°C of global warming.

AR6, WG1 (2021):

Estimated remaining carbon budgets from the beginning of 2020 (GtCO₂).....it is about likelihood!

		Estimated remaining carbon budgets from the beginning of 2020 (GtCO ₂)				
Approximate global warming relative to 1850–1900 until temperature limit (°C) ^a		Likelihood of limiting global warming to temperature limit ^b				
		17%	33%	50%	67%	83%
1.5		900	650	500	400	300
2.0		2300	1700	1350	1150	900

Global Fossil CO₂ Emissions



Varmeste dag i juli og Danmarks næsthøjeste temperatur nogensinde - her slog varmen rekorder

Ny rekord: Europa fik den varmeste sommer i over 140 år

"Ikke overraskende - men bekymrende," siger dansk klimaprofessor.

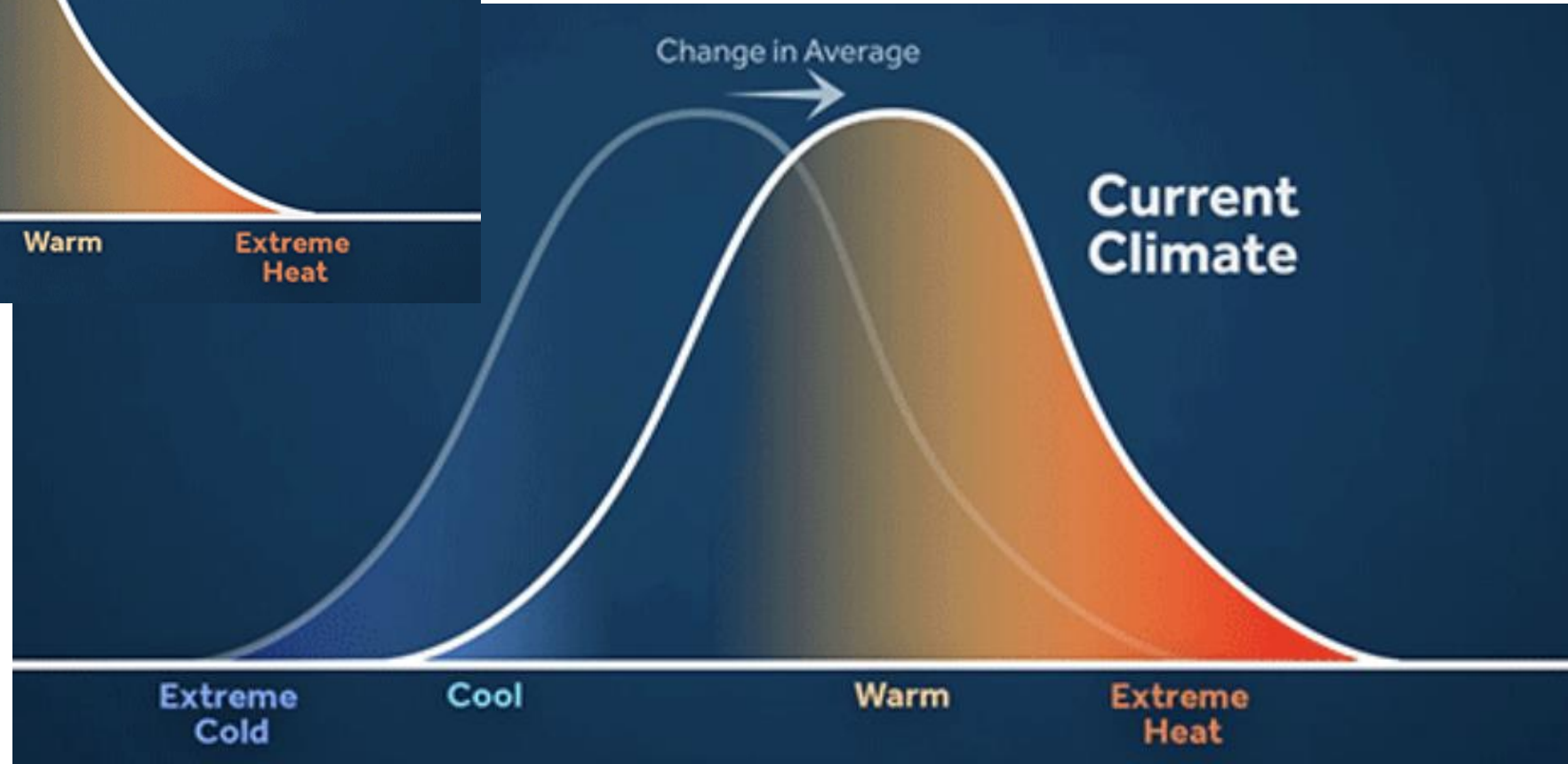
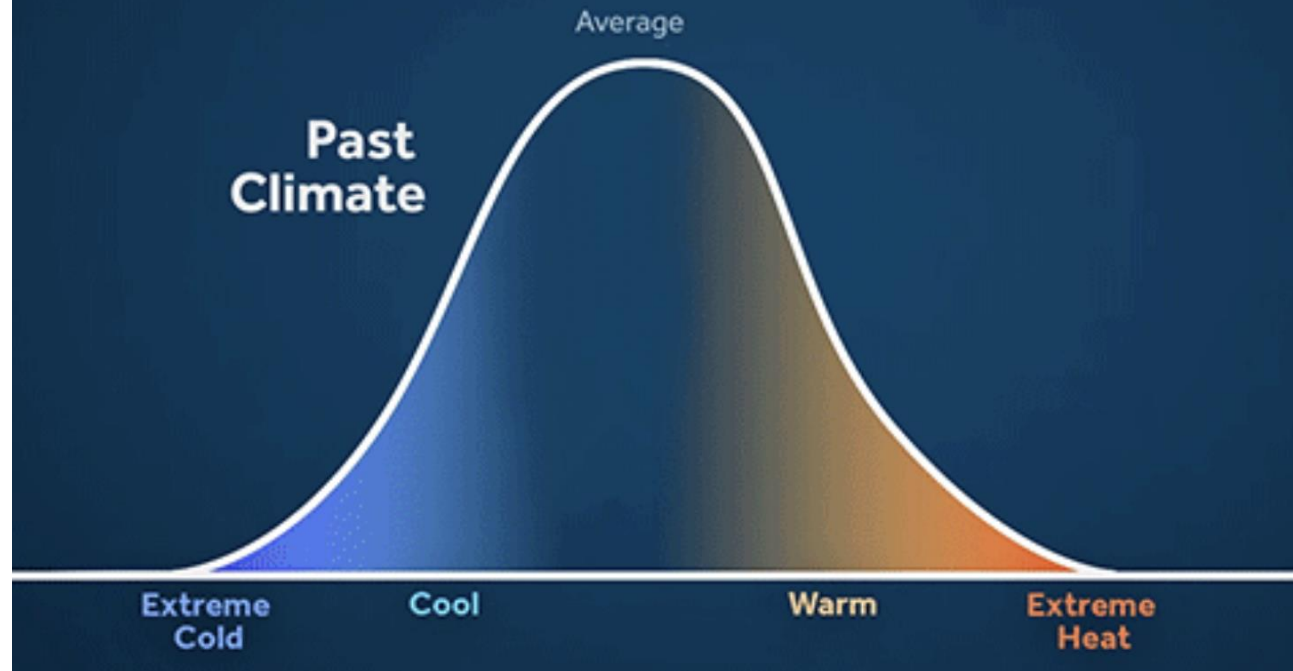
KLIMA

Skisæsonen skrumper: Alperne har mistet over en måned med sne

I 500 år har snedækket i Alperne været stabilt, men siden vi begyndte at lukke drivhusgasser ud, er det skrumpet med 36 dage, viser nyt studie.



SMALL CHANGE IN AVERAGE BIG CHANGE IN EXTREMES



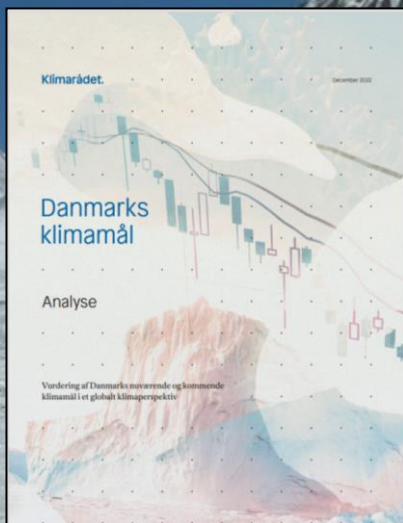
<p style="text-align: center;">Lov om klima</p>
<p>VIMARGRETHE DEN ANDEN, af Guds Nåde Danmarks Dronning, gør vitterligt: Folketinget har vedtaget og Vi ved Vort samtykke stadfæstet følgende lov:</p>
<p style="text-align: center;">Kapitel 1</p> <p style="text-align: center;"><i>Formål</i></p> <p>§ 1. Formålet med denne lov er, at Danmark skal reducere udledningen af drivhusgasser i 2030 med 70 pct. i forhold til niveauet i 1990, og at Danmark opnår at være et klimaneutralt samfund i senest 2050 med Paris-klimaabtalen som grundlag, og at begrænse den globale temperaturstigning til 1,5 grader celsius. § 2. Danmark skal arbejde aktivt for Paris-klimaabtalen som grundlag, og at begrænse den globale temperaturstigning til 1,5 grader celsius. § 3. Klimaministerens skal ske under hensyntagen til en række guidende principper: 1) Klimaudfordringerne er en global problemstilling. Derfor skal Danmark være et foregangsland i den internationale klimaindsats, som kan inspirere og påvirke resten af verden. Danmark har desuden både et historisk og moralsk ansvar for at gå forrest. 2) Indførelsen af Danmarks klimamål skal ske så omkostnings effektivt som muligt under hensyntagen til både den langsigtede grønne omstilling, bæredygtig erhvervsudvikling og dansk konkurrencekraft, særligt offentlige finanser og beskæftigelse, samt at dansk erhvervsvalg skal udvikles og ikke afvikles. 3) Danmark skal vise, at det kan leve en grøn omstilling og samtidig bibeholde et stærkt velfærdssamfund, hvor sammenhængskraften og den sociale balance sikres. 4) De tiltag, der skal anvendes for at reducere udledningen af drivhusgasser, skal medføre reelle indtægts reduktioner, men samtidig skal det sikres, at danske borgere ikke bærer byrden af drivhusgasudledningen uden for Danmarks grænser. § 4. Klima-, energi- og forsyningsministeren fastsætter mindst hvert femte år en national klimamålsætning med et 10-årigt perspektiv. En ny klimamålsætning må ikke være mindre ambitiøs end den senest fastsatte målsætning. § 5. Klima-, energi- og forsyningsministeren offentliggør mindst hvert femte år og som minimum i forbindelse med fastsættelse af klimamålsætningerne, jf. stk. 1, en klimaudringsplan med et 10-årigt perspektiv.</p>
<p style="text-align: center;">Kapitel 2</p> <p style="text-align: center;"><i>Klimarådets opgaver</i></p> <p>§ 6. For at fremme udviklig rådgivning om klimaindsatsen består klima-, energi- og forsyningsministeren af Klimarådet. § 7. Klimarådet består klima-, energi- og forsyningsministeren ved fastsættelse af nationale klimamålsætninger, jf. § 2, stk. 1. § 8. Klimarådet skal årligt afgive anbefalinger til klima-, energi- og forsyningsministeren om klimaindsatsen. Klimarådet skal i anbefalingerne forholde sig til principperne nævnt i § 1, stk. 3. § 9. Klimarådet skal i anbefalingerne endvidere vurdere, om regeringens klimaindsats anses tilstrækkelig, at klimamålene, jf. § 1, stk. 1, og § 2, stk. 1, nås. § 10. Klimarådet skal i forbindelse med anbefalingerne give en status på Danmarks internationale målsætninger. § 11. Klimarådet skal kommentere den årlige klimastatus og -fremskrivning, jf. § 6, og klima-, energi- og forsyningsministerens årlige klimaprogram, jf. § 7, stk. 1 og 2.</p>

Regeringen

Ansvar for Danmark

Det politiske grundlag for Danmarks regering

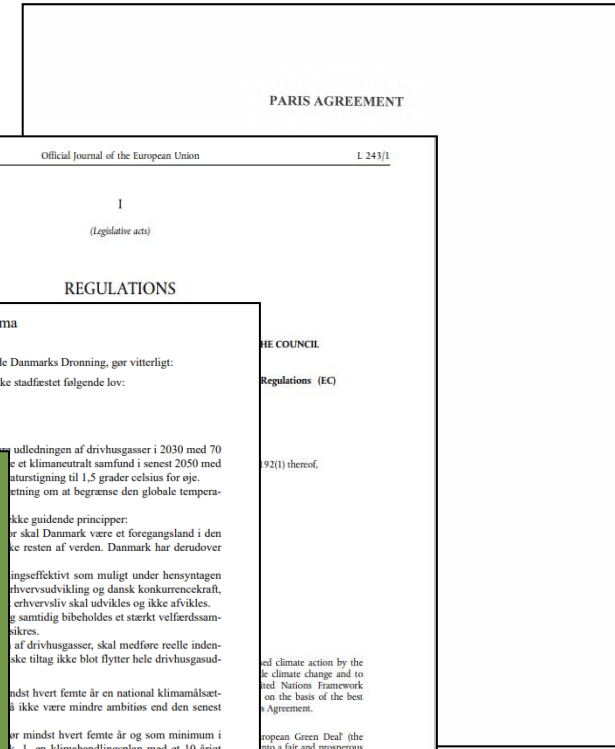
DECEMBER 2022



Klimarådet (2023–2050)	Mio tons CO2e	Global middeltemperaturstigning (hvis alle gør som Danmark)
Klimaloven (70% i 2030 ift 1990)	555	1,7 grader (2045–2050)
Regeringsgrundlaget (nettonul i 2045 og 110% i 2050)	473	1,7 grader (2045)
80% i 2030	458	1,6–1,7 grader (2040 –2045)
Nettonul i 2040	440	1,6 grader (2040)
80% i 2030 og nettonul i 2040	382	1,5–1,6 grader (2035–2040)

How to act among strategies?

- Paris Agreement (Global)
- EU Regulations 'Fit for 55' (Union)
- Climate Law (National)
- DK2020 Plan (KL-regi)
- Municipalities/Regions/companies



Regeringen

Ansvar for Danmark

Det politiske grundlag for Danmarks regering

DECEMBER 2022

BYG•TEK Aktuelle nyheder - Byggeri



Byggesektoren står foran stor klimaomstilling de kommende år

September 2021 - Folkebo side 1 | 5

DK2020

Klimaplaner for hele Danmark

KLIMAHANDLEPLAN 2022

Klimaneutral

KLIMÆNDRINGER OG INNOVATION I BYGGERIET

ProjectZero

Borger Virksomheder Transport City

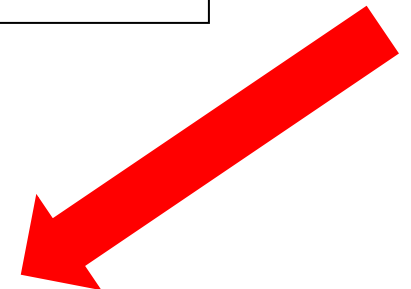
Sønderborg viser verden vejen

Læs mere om ProjectZero og vores vision mod et CO2-neutralt Sønderborg i 2029.

Region Syddanmark klar med ambitiøs klimaplan

Regionsrådet i Region Syddanmark vedtog i dag en klimastrategi, der skal mindske CO2-udledningen i regionen med 40 pct. inden 2020 i forhold til 1990

Strategic conditions



Applied conditions

Thank you...

