



PARIS AND OUR UNCOMMON FUTURE

Poking the Elephant

jesse.schrage@uib.no



Centre for Climate
and Energy Transformation

Good morning & a provocation ...

*“Everybody complains about the **Climate change**
but nobody does anything about it”*

~~Charles Dudley Warner~~



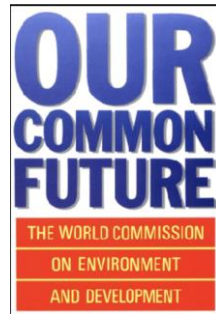


What would the policy implications of such approach be?

How does a focus on equity reframe a global to local mitigation agenda?

Norway – A Land of Low-Carbon Promises?

“Sustainable development requires meeting the basic needs of all and extending to all the opportunity to satisfy their aspirations for a better life “



1987
Chaired By Gro Brundtland



1990
Norway establishes its
Sovereign 'wealth' fund

The geographical distribution of fossil fuels unused when limiting global warming to 2 °C

Christophe McGlade & Paul Ekins

[Affiliations](#) | [Contributions](#) | [Corresponding author](#)

Nature 517, 187–190 (08 January 2015) | doi:10.1038/nature14016

Received 18 February 2014 | Accepted 27 October 2014 | Published online 07 January 2015

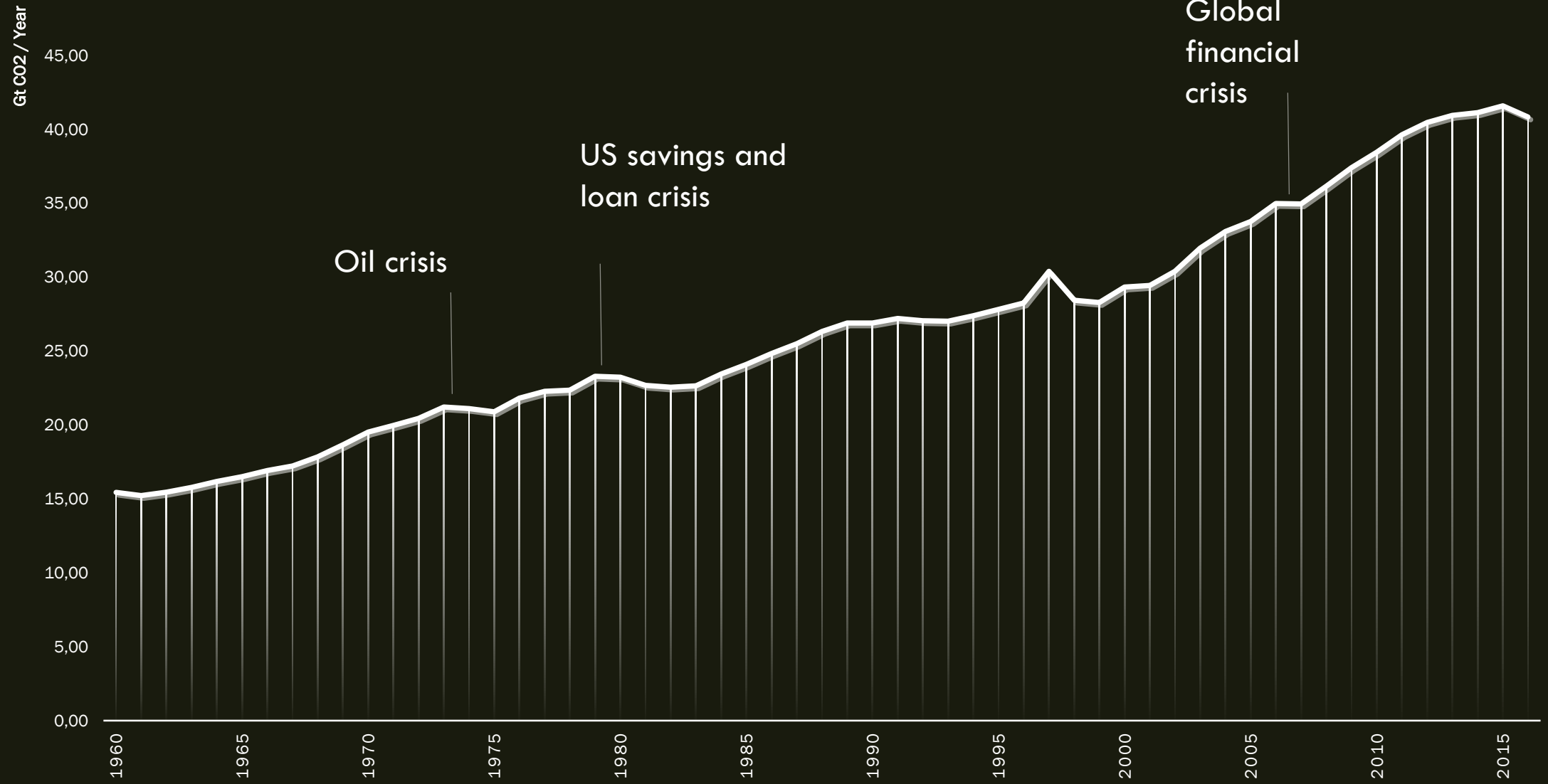
“likely” chance 2°C, near 80%+
need to remain unused

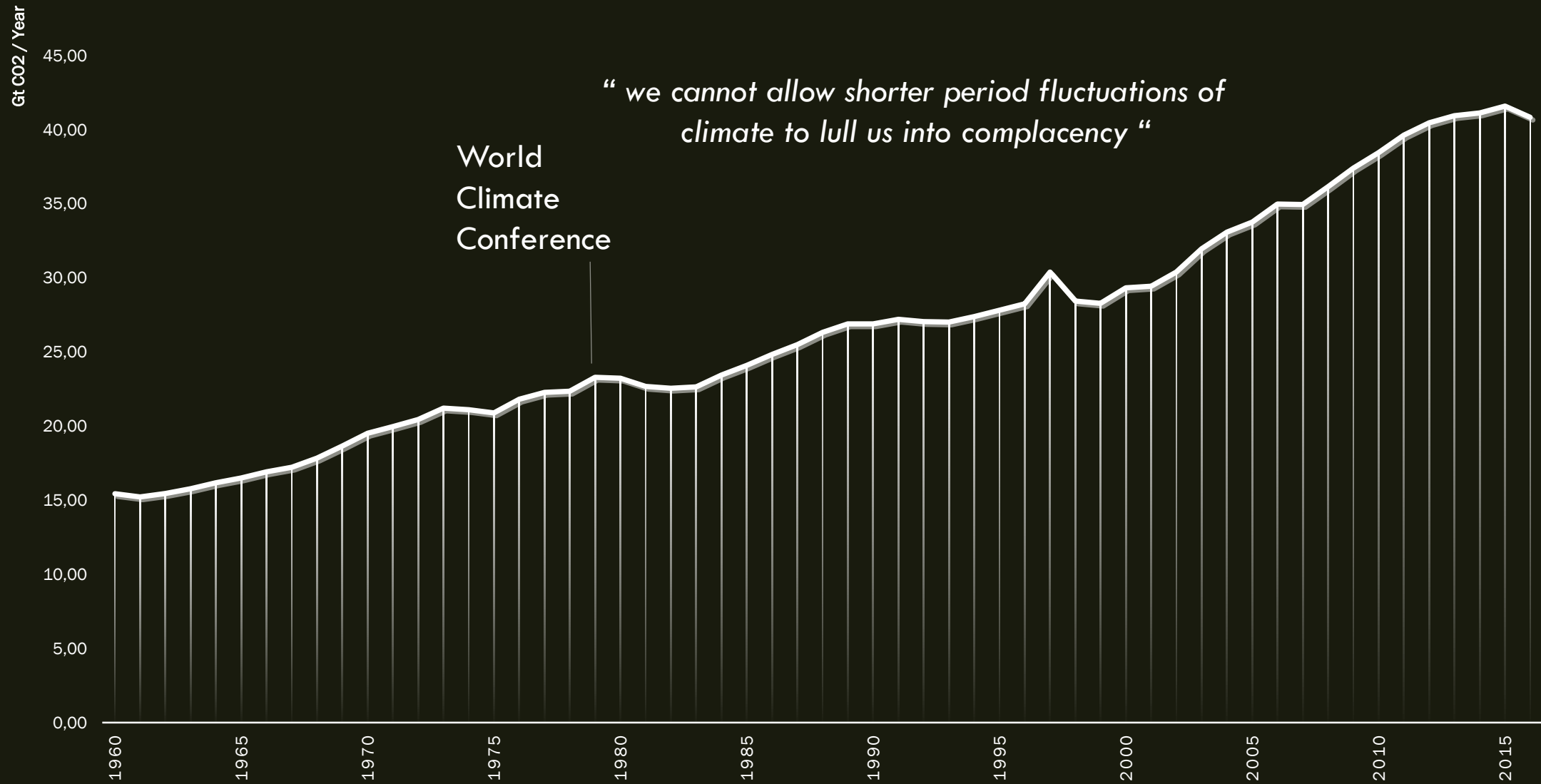


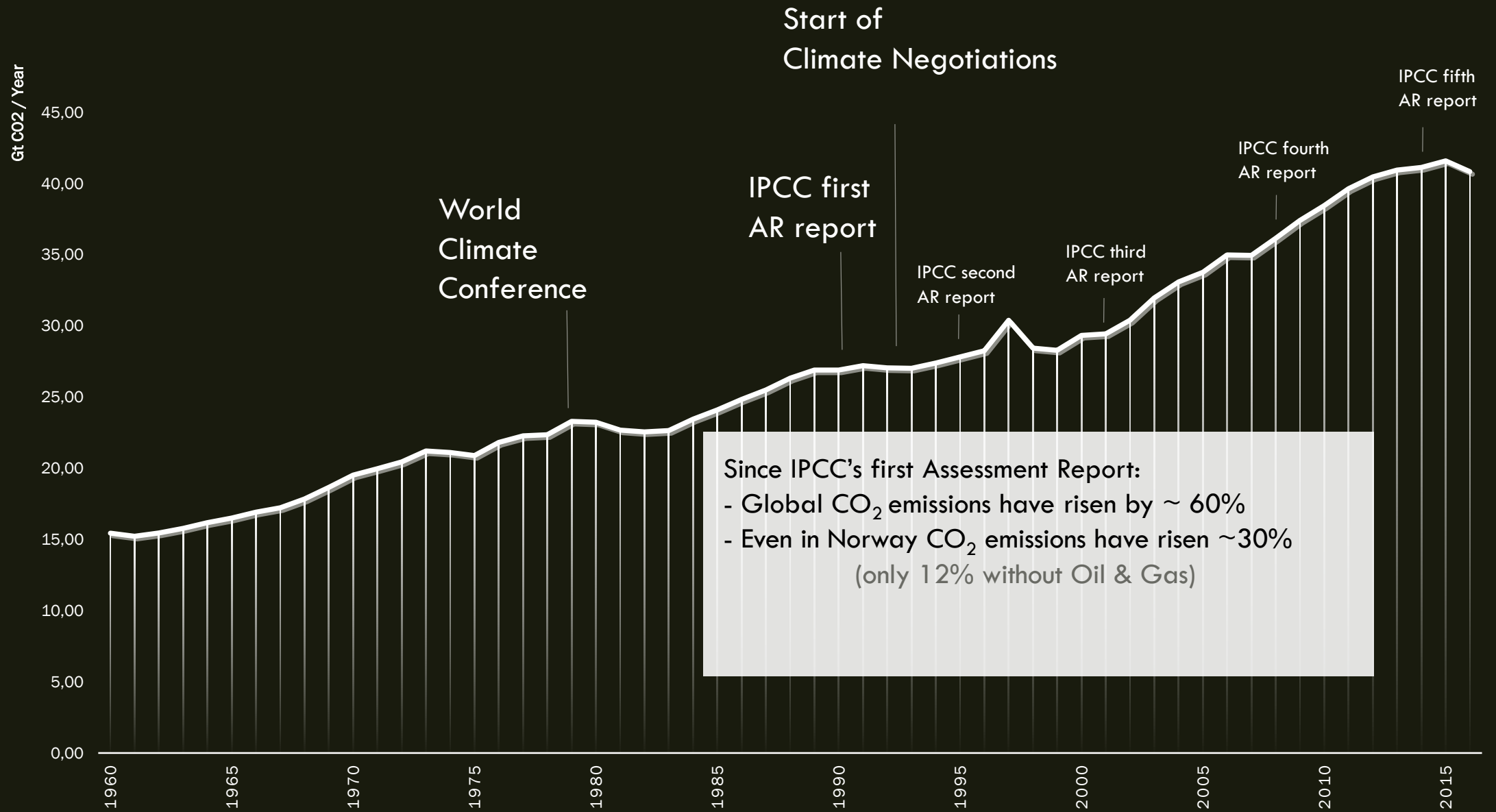
Norwegian Oil Directorate
June 2018

“about 55 per cent of anticipated oil and gas resources have yet to be produced”

Runaway Emissions?







An aerial photograph of a coastal city, likely Bergen, Norway, showing a dense urban area built on a hillside overlooking a large fjord. In the background, there are several large, forested mountains under a clear blue sky. The city's buildings are mostly light-colored, and the water is a deep blue. A large white ship is docked at a pier on the right side of the image.

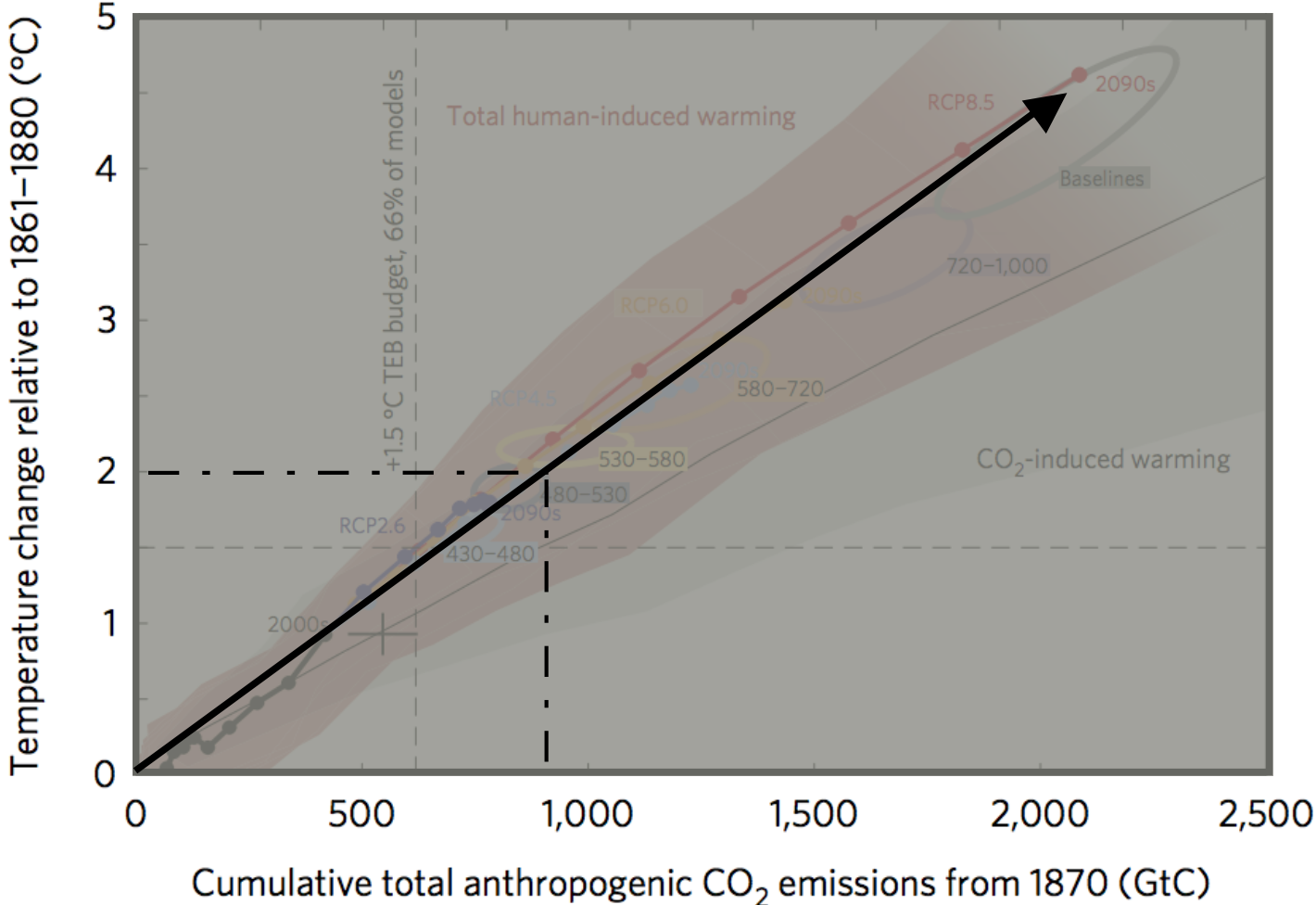
THE LOGIC OF CUMULATIVE EMISSIONS



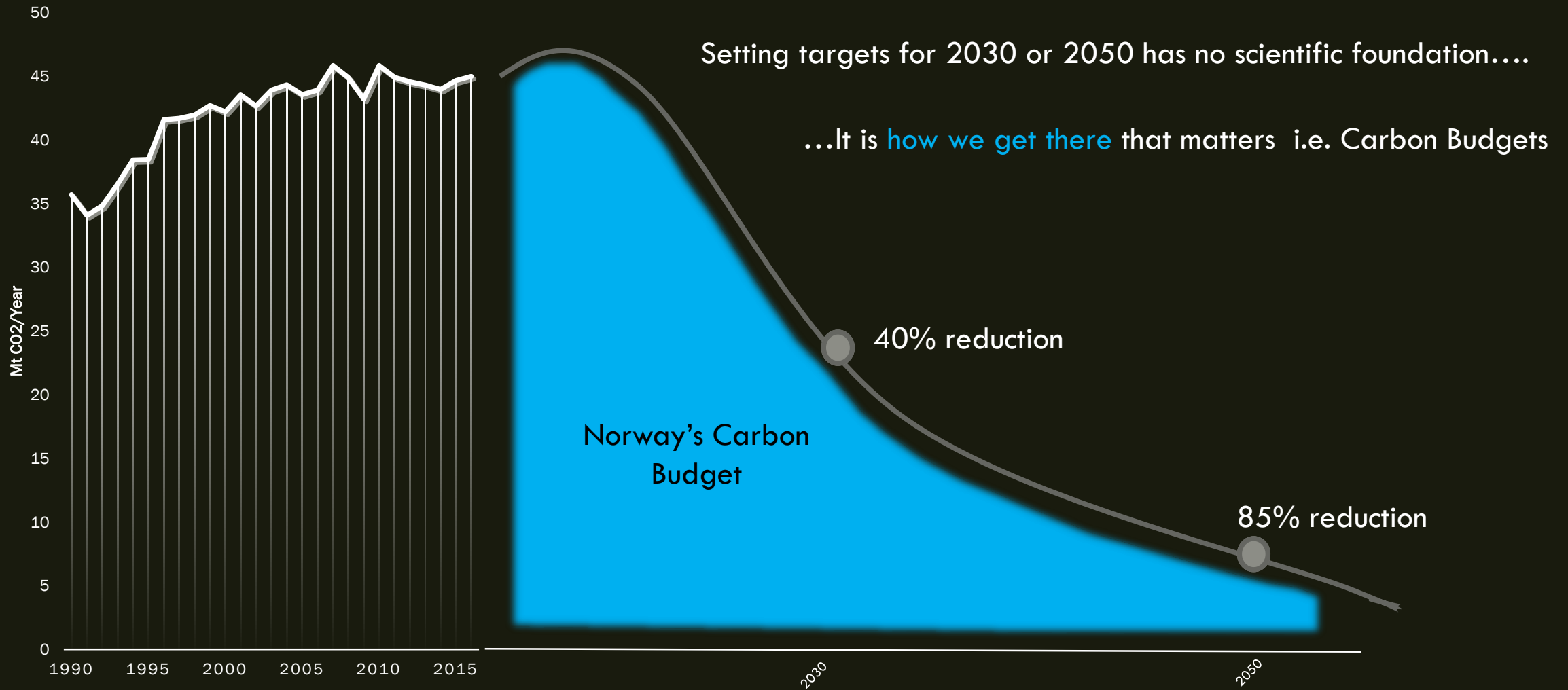
What the science tells us...

“There is a near-linear relationship between **cumulative CO₂ emissions** and the global temperature response by the end of the century”

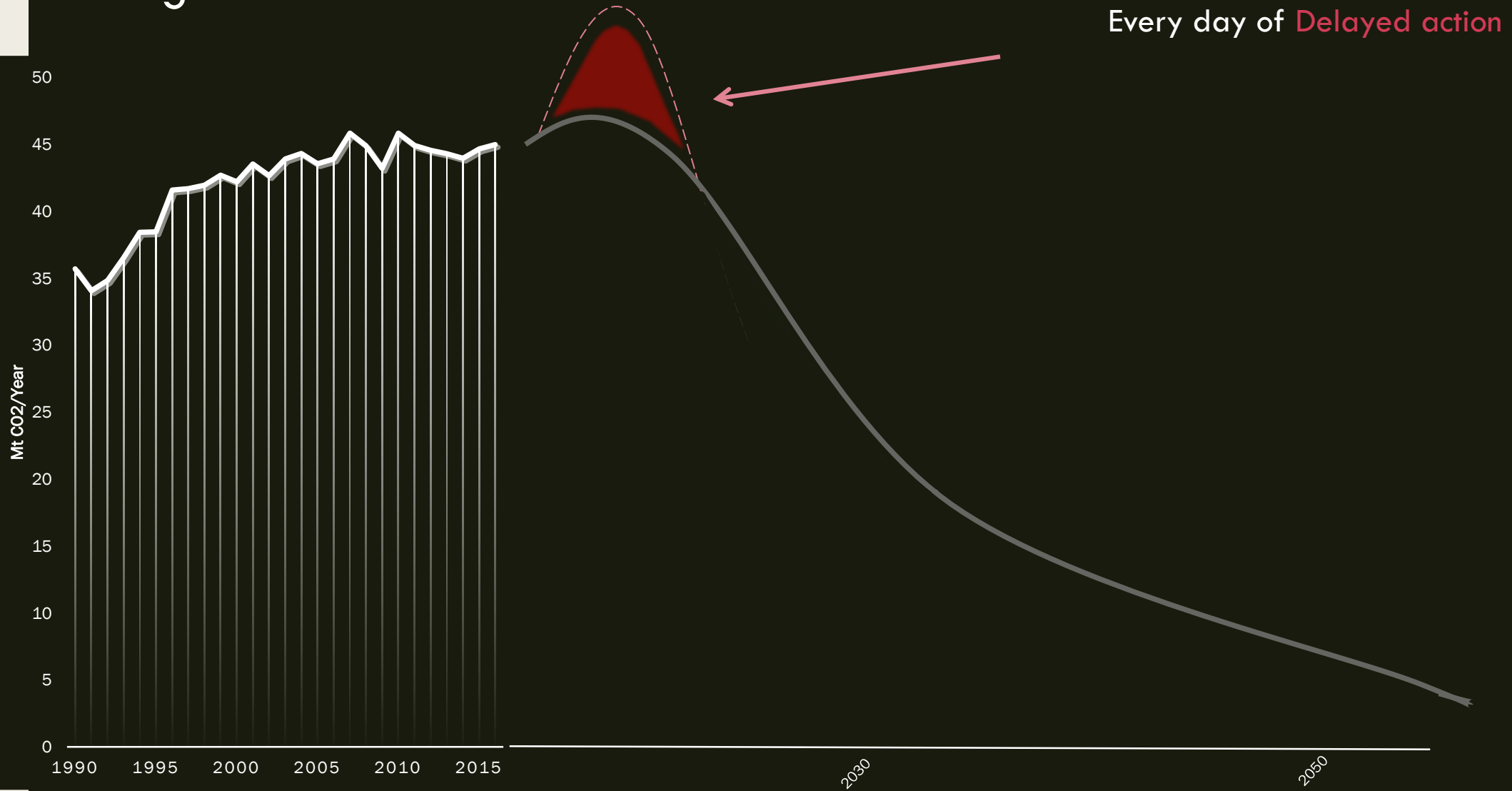
Collins, M., T. F. Stocker et al.
The Physical Science Basis. IPCC 2013



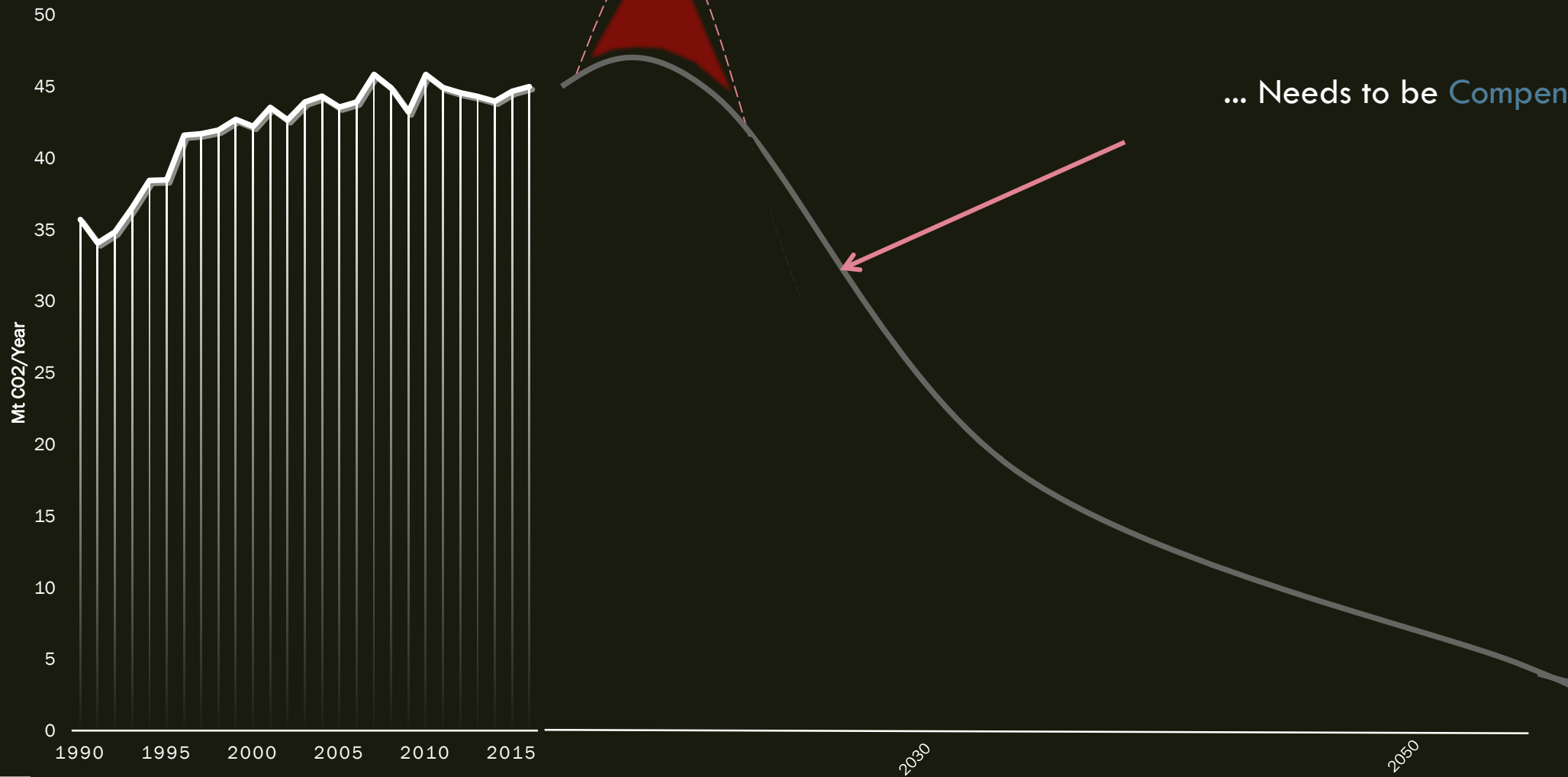
The case of Norway



A logic of limits....



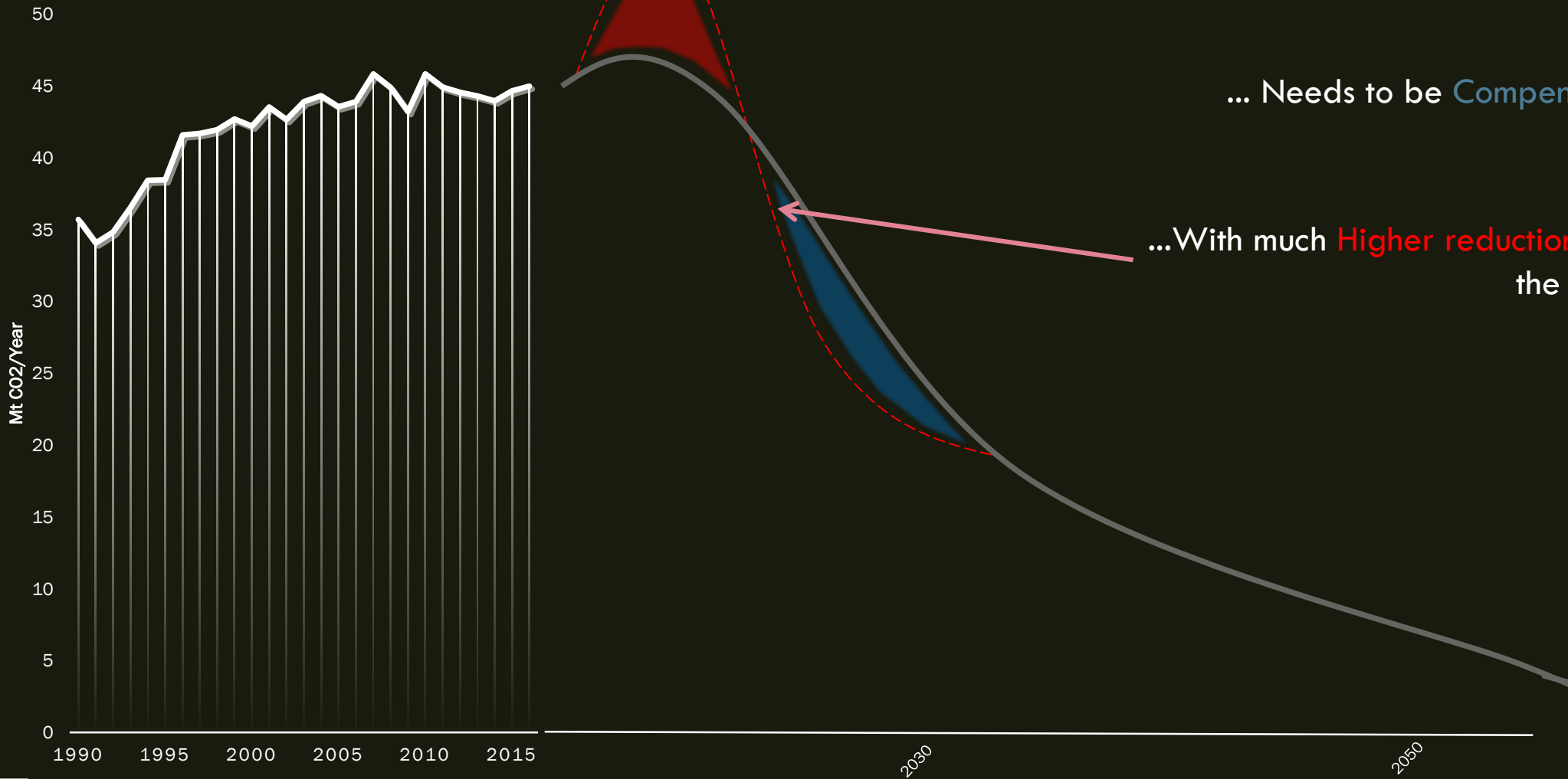
A logic of limits....



Every day of **Delayed action**

... Needs to be **Compensated** ...

A logic of limits....



Every day of **Delayed action**

... Needs to be **Compensated** ...

...With much **Higher reduction rates**
the following year

So for a given temperature change across the century ...

We have a set
Global Carbon Kransekake
(Budget)



The image is a composite of two photographs. The top half shows a wide, hazy aerial view of Paris, France, with the Eiffel Tower visible on the right side. The bottom half shows a closer, high-angle view of a Parisian street, likely the Champs-Élysées, with buildings, trees with autumn foliage, and a large rock formation in the foreground on the right. The text is centered over the hazy aerial portion of the image.

SO WHAT DOES THE PARIS AGREEMENT
MEAN FOR OUR COMMITMENTS?

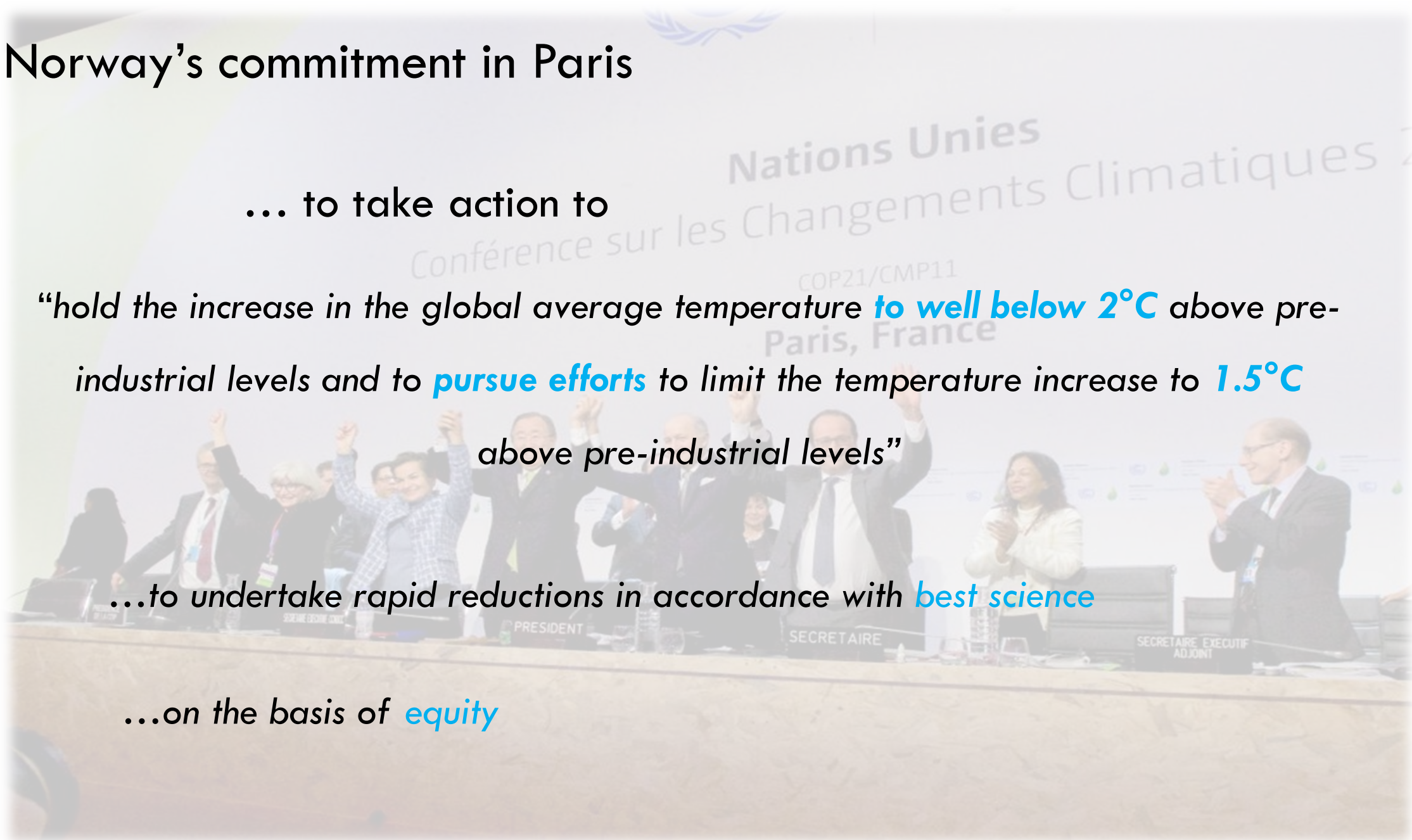
Norway's commitment in Paris

... to take action to

“hold the increase in the global average temperature **to well below 2°C** above pre-industrial levels and to **pursue efforts** to limit the temperature increase to **1.5°C** above pre-industrial levels”

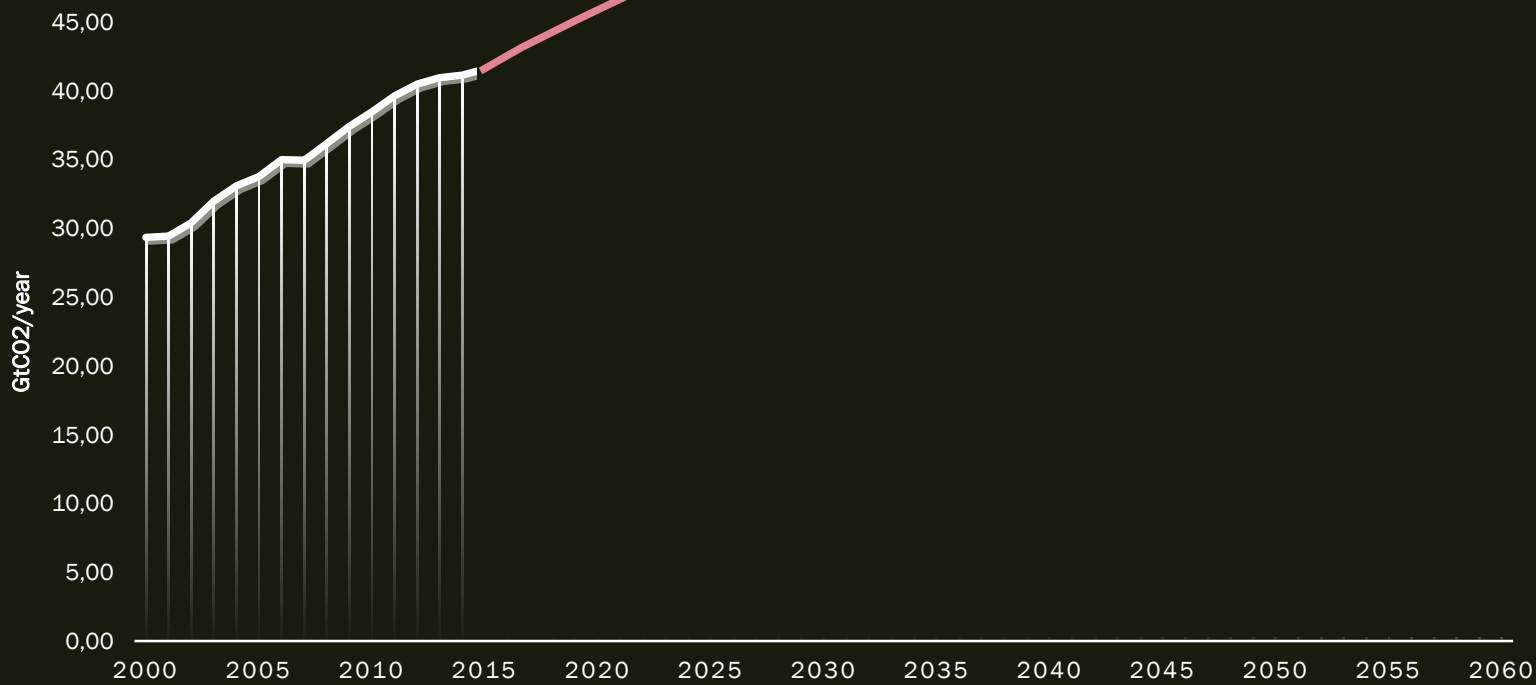
...to undertake rapid reductions in accordance with **best science**

...on the basis of **equity**

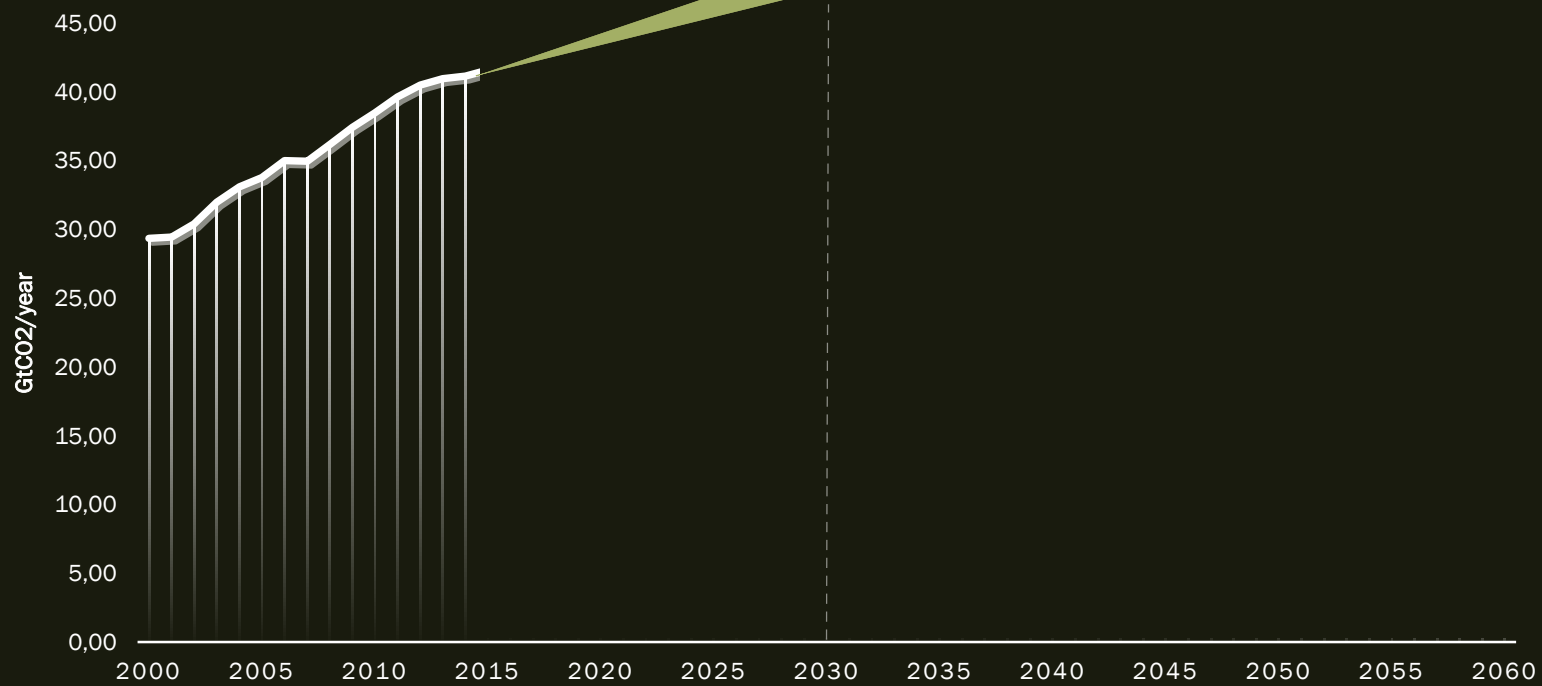


Business as usual
emissions growth

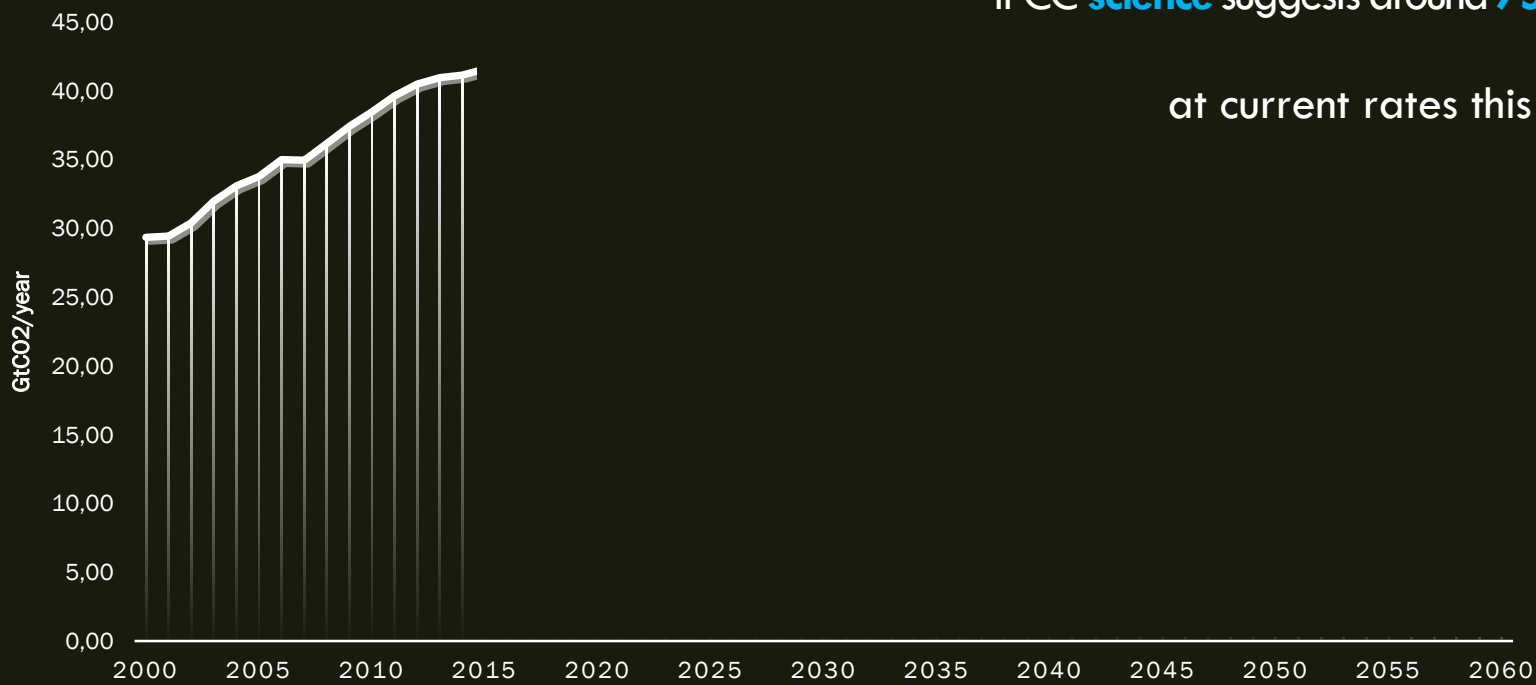
5°C by 2100



With Paris' Agreement NDC



3-4°C by 2100



IPCC science suggests around **750GtCO₂** from 2019

at current rates this budget will be exhausted in **~20 yrs**

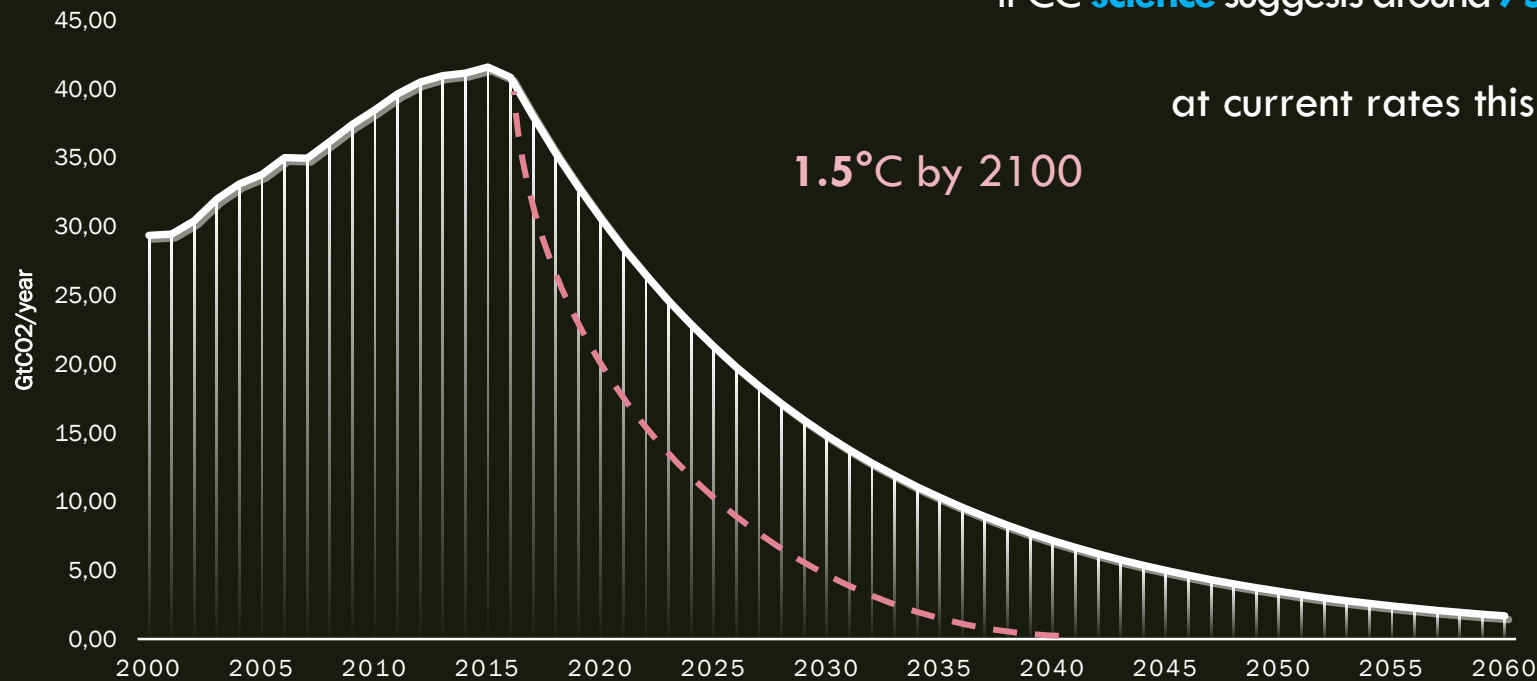
What would it take to live
under 2°C Carbon Budget ?

IPCC science suggests around **750GtCO₂** from 2019

at current rates this budget will be exhausted in **~20 yrs**

1.5°C by 2100

What would it take to live
under 2°C Carbon Budget ?



The Paris Agreement has also a strong **equity** dimension

And recognizes that ...

*“... **peaking will take longer** for developing country parties”*

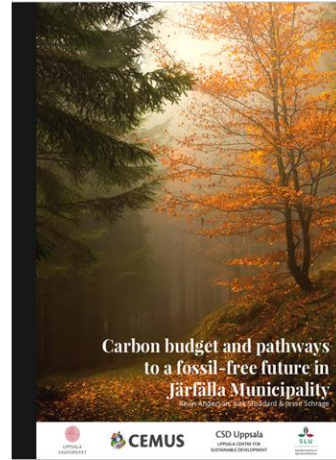


The mitigation challenge will demand

- considerable more **leadership** and **concrete action** from industrial nations
- ... and support poor countries develop zero-carbon societies

An aerial photograph of a fjord. In the background, there are large, rugged mountains with patches of snow under a blue sky with wispy clouds. The middle ground shows a wide, calm body of water. In the foreground, a dark green, forested peninsula juts into the water. To the left of the peninsula, there is a small town or village with buildings and roads. The overall scene is a beautiful, natural landscape.

BRINGING THE MITIGATION CHALLENGE HOME



2017

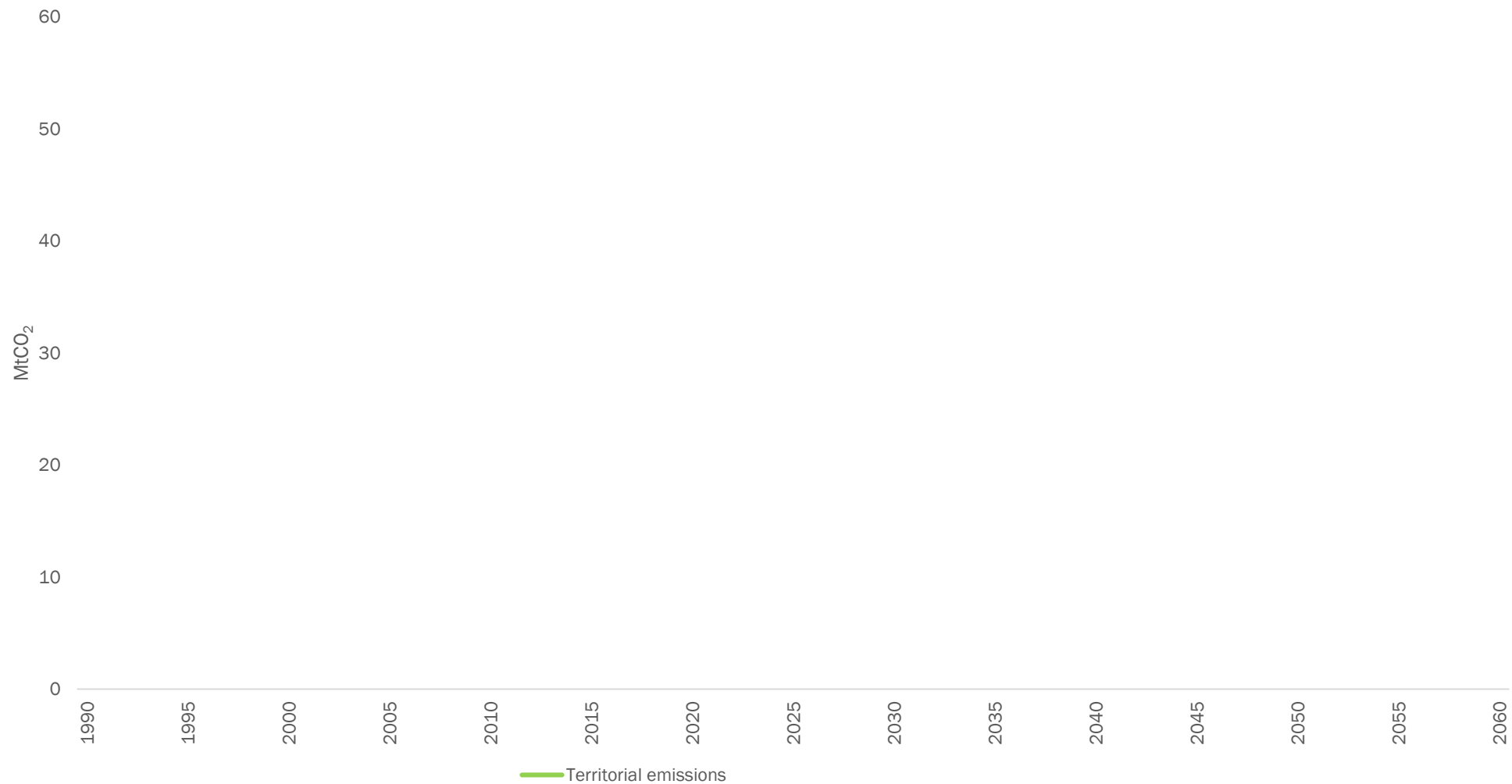
- Carbon budget for Järfälla kommun
- Associated emission reductions required
- Pathways to a post-carbon future in line with the climate commitments in the Paris Agreement

2018

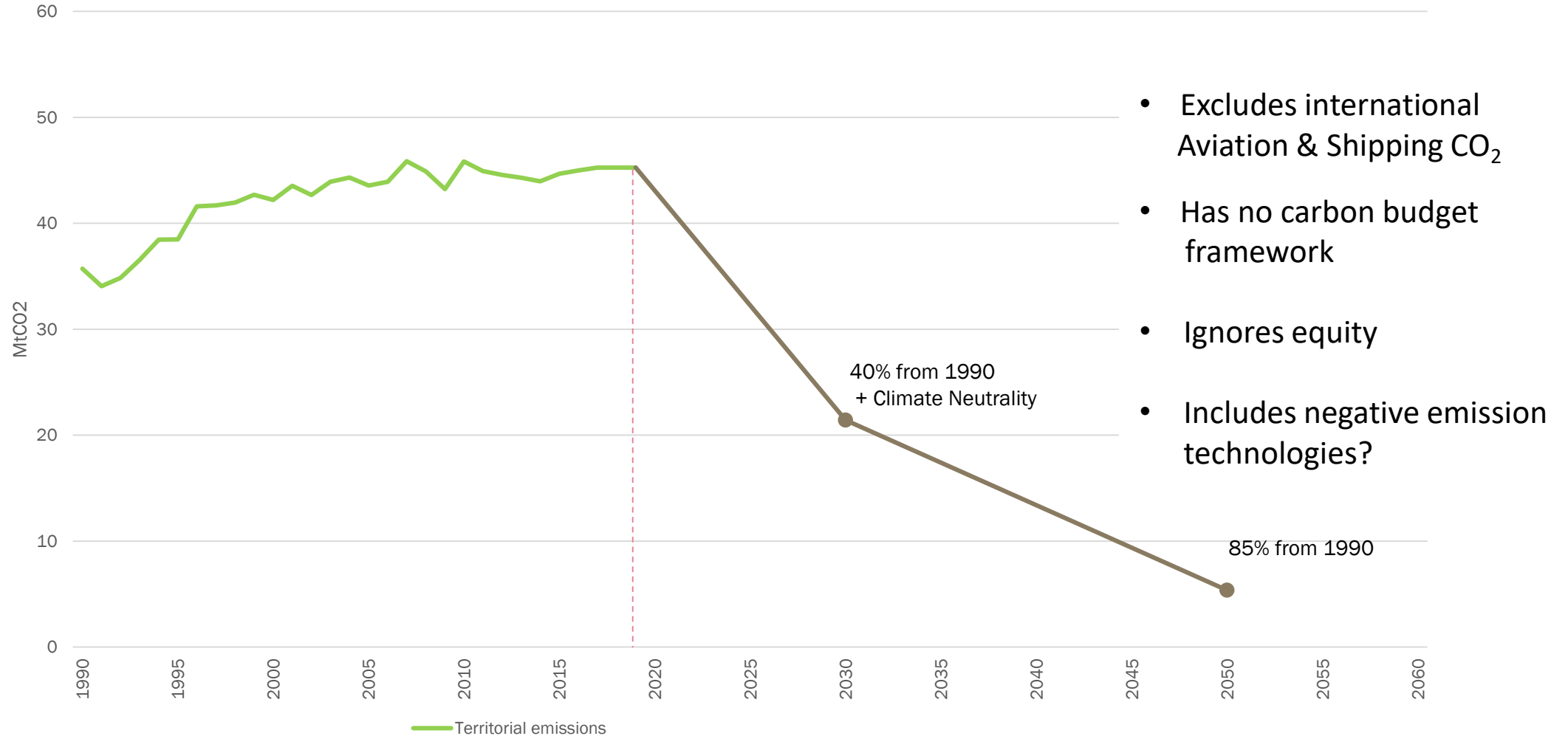
- 6 regions
- 10 Municipalities
- 1 Methods report (In English)

2019...

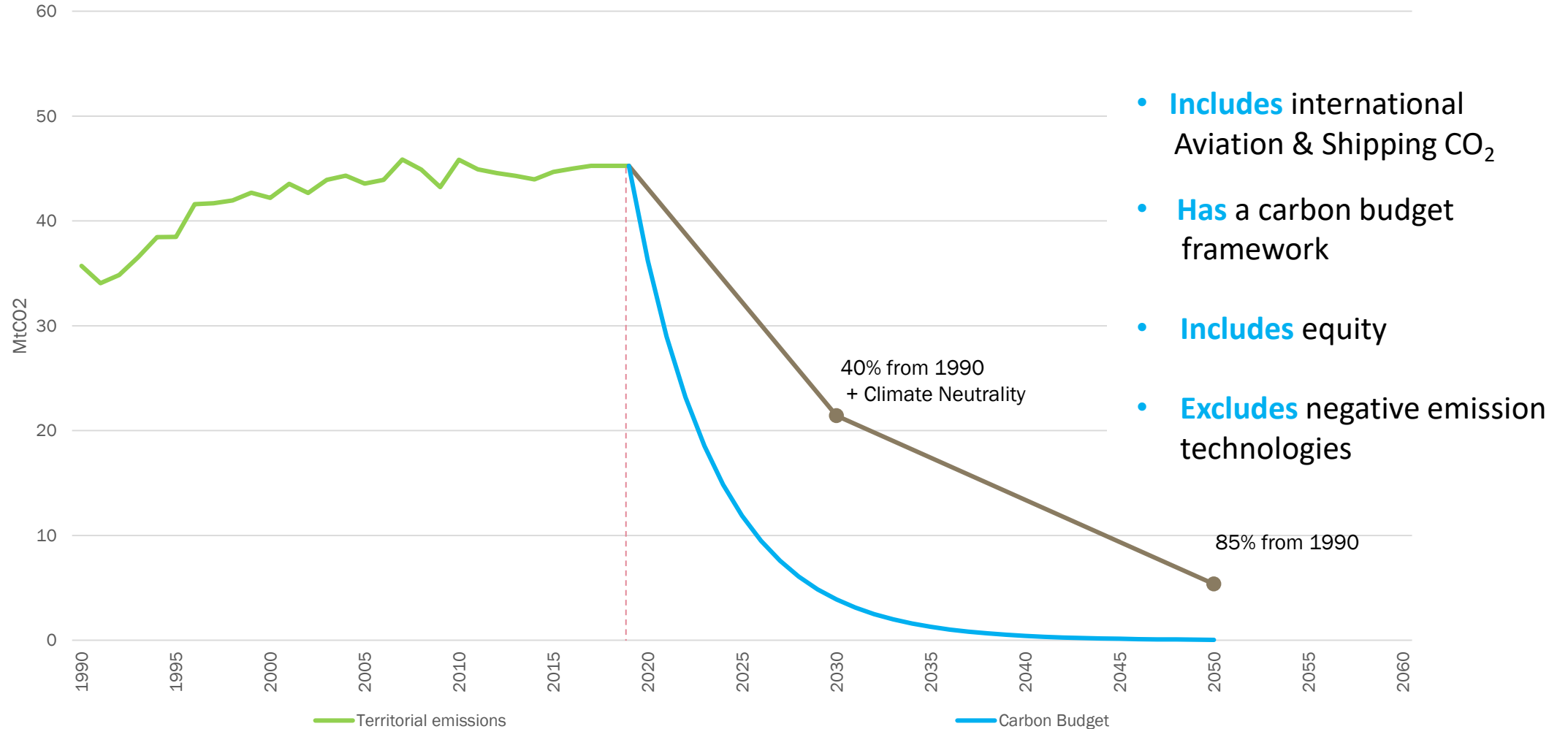
Norway's Climate Commitments



Norway's Climate Commitments



Norway's Climate Commitments



A scenic landscape featuring a prominent, snow-capped mountain peak in the center. The foreground is filled with dark, jagged rocks. A dark, calm lake or body of water stretches across the middle ground. The sky is a deep, dark blue, speckled with numerous small white stars, suggesting a clear night sky. The overall mood is serene and majestic.

WHAT ARE THE POLICY IMPLICATIONS
FOR THE HERE & NOW?

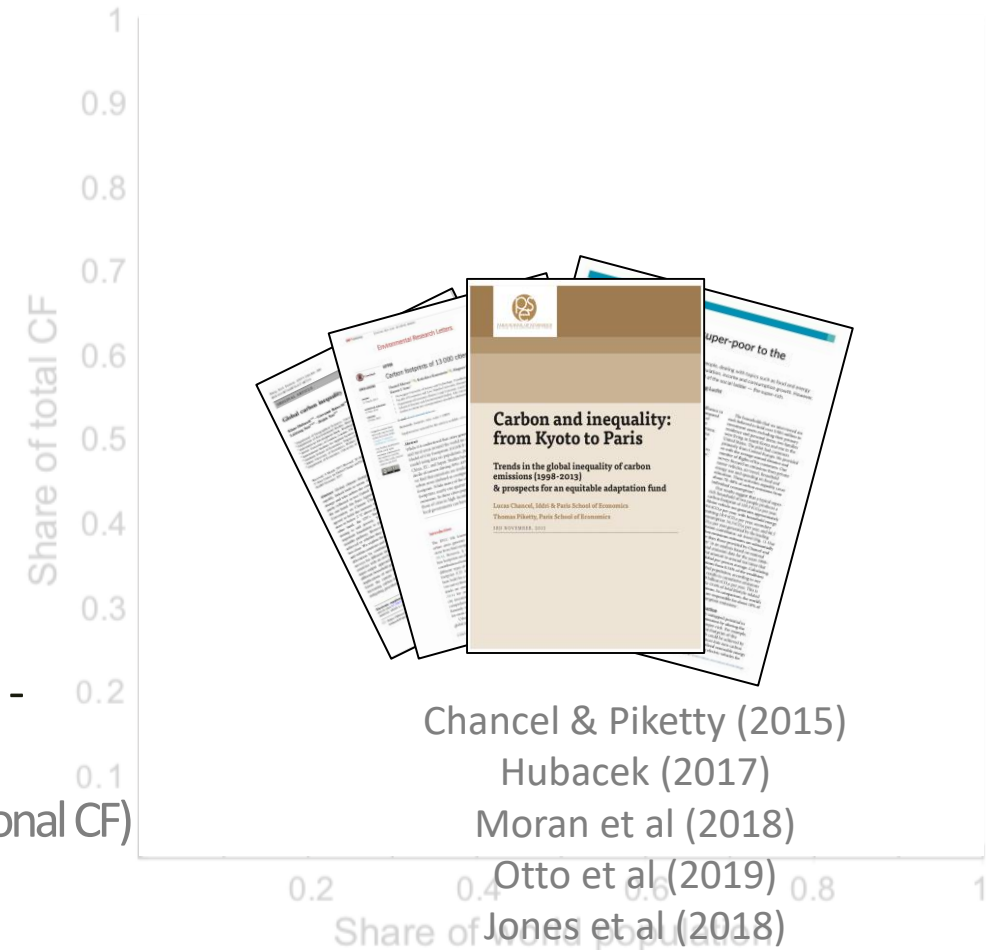
Reviewing the literature - Where are emissions coming from?

Strong interrelation between **GDP & CO2**
(growth in primary energy consumption, lifestyles,...)

There is huge **asymmetry in responsibility**
(top 10% income earners \approx 50% of global CF)

Even within countries, national CF is unequally distributed -
Linked to Urban Form
(e.g. in US - top 10 cities + top 5% of suburban = 50% of national CF)

Linked to Household Expenditure
(e.g. in Norway – HE has a linear relation to CF
approx. 400kg CO2 for every 10 000NOK)



A relevant energy & climate policy portfolio?

- “Energy Conservation” of the 70s’

- Focus on Energy Efficiency

- Energy \$

- Behavioural Perspectives (Support policy interventions, Framing, Communication, ...)

- Diffusion of innovation (Rates of diffusion, pricing signals, market actors, ...)

... With a focus on high emitters:

What policy instruments can we think of to target households with high energy demand ?

- Focus on afforestation, energy supply and demand, transportation and buildings

- Lacks coherence? – CFs driven by finance and investment, fashion and retail, international aviation, ...

Taming the Elephant in the room...

Addressing Supply & Demand

Rapid retirement of all hydrocarbon assets (From pension funds, public institutions, uni,...)

Moratorium on airport expansion

Major investment and development of public transportation such as hi-speed rail (incl. sleeper trains),
subways, trams etc

...

... with a more approach addressing high consumption !

Avoiding private jets and reducing flying (Frequent flyer levy, progressive flying tax,...)

Building regulations for second and third homes ?

Compulsory restrictions on household (through building and regulatory standards,..
and individual emissions (Personal Carbon allowance,...)

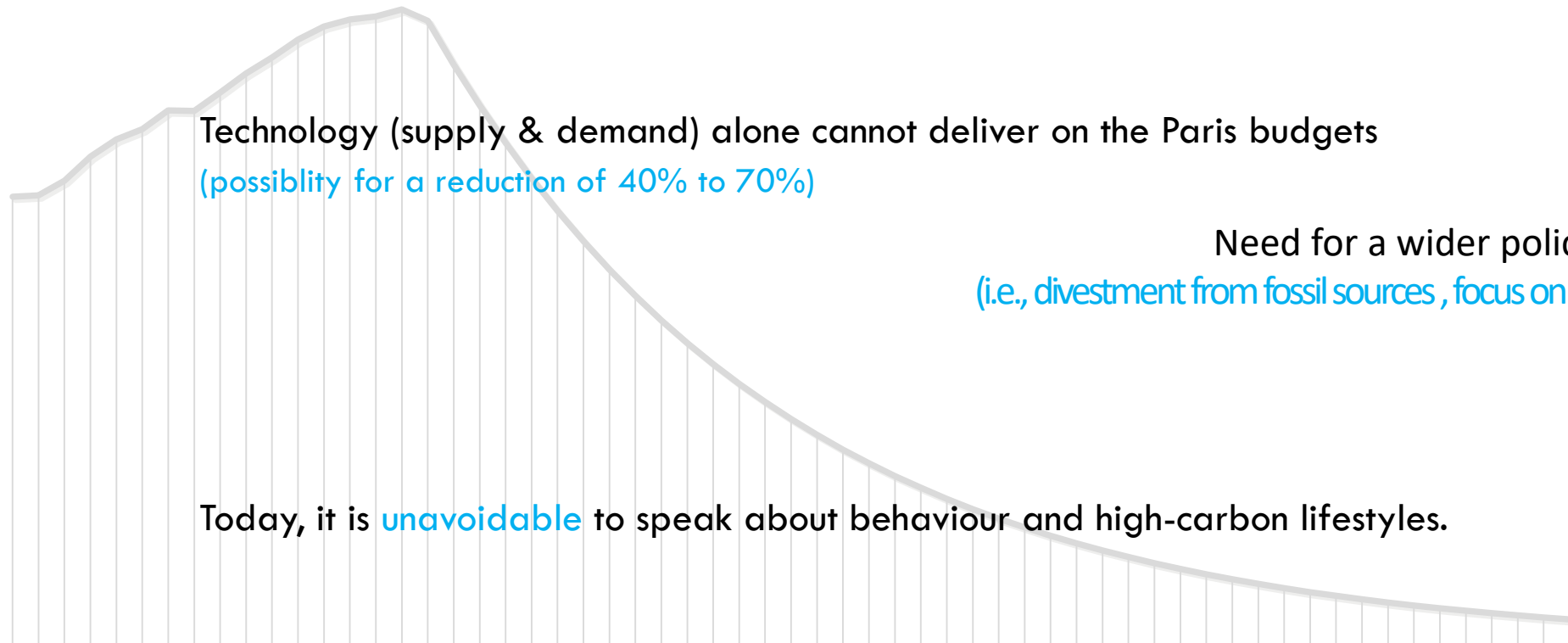
EVs for high income earners

Inheritance tax to fund a global mitigation fund?

...

Looking beyond Supply and Demand

We live in an extraordinarily *Uncommon Future*





THANK YOU !

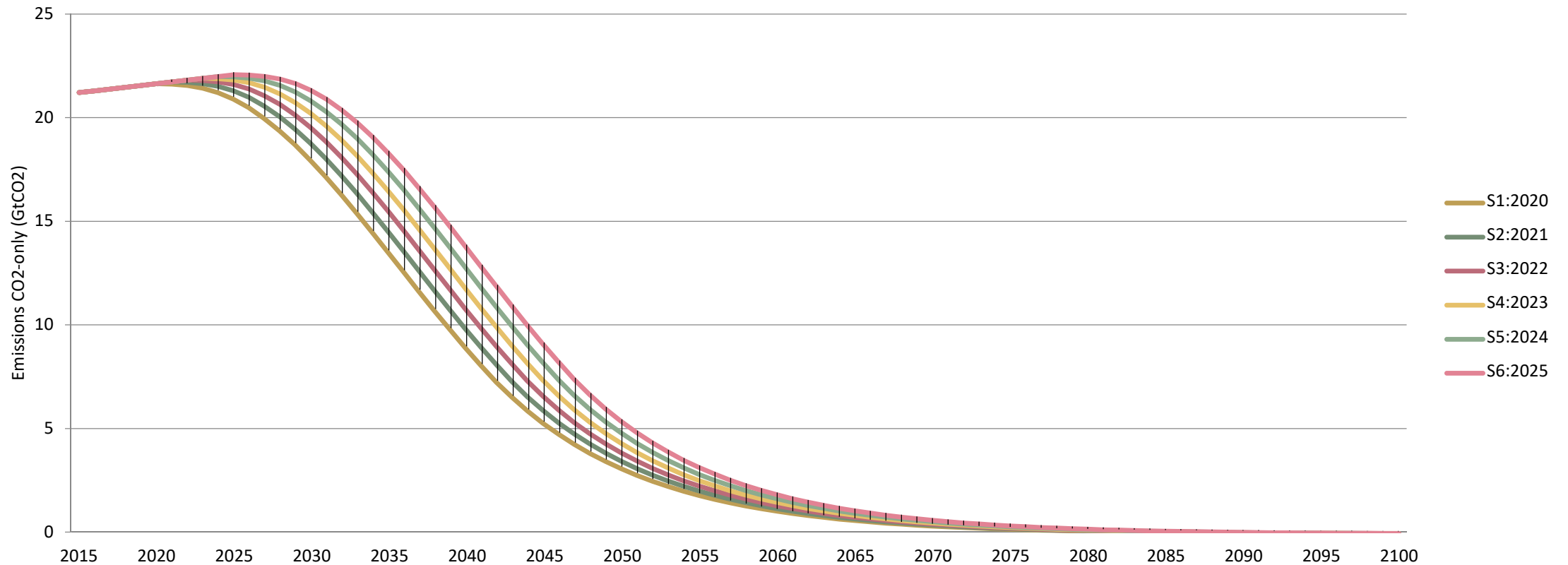
Jesse.Schrage@uib.no



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Methodology – *Sequential Logic*

non-OECD fossil-fuel only CO₂ (2015-2100)
with 2020-2100 budget range of 437 to 555GtCO₂



Methodology – *Sequential Logic*

- Sweden has committed to reduce emissions in line with staying “*well below 2 °C*” and “*pursuing ... 1.5 °C*”
- The IPCC provide a range of carbon budgets for these temperatures
- We derive very ambitious mitigation pathways for poorer (non-OECD) nations
- Estimate the accompanying range of non-OECD carbon budgets & subtract from the global budget
- This gives an OECD carbon budget (i.e. from 2020 onwards)
- Divide the OECD budget ‘fairly’ to give a Swedish carbon budget range
- Divide the Swedish ‘fairly’ to give a Municipal/Regional carbon budget

References:

Sovacool

Chivel

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