



From rhetoric to reality
Facing the challenges of climate change

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The Rhetoric...

Copenhagen Accord et al & G8 Camp David (2012)

International commitments to a fair contribution...

*“To hold the increase in global temperature **below 2 degrees Celsius**, and take action to meet this objective consistent with **science** and on the basis of **equity**”*

The UK Low Carbon Transition Plan states ...

“ to avoid the most dangerous impacts of climate change, average global temperatures must rise **no more than 2°C** ”

Mitigation question is clear

What **emission reductions** give a good chance of staying below 2°C?

... and for adaptation, in case the global community fails to mitigate ...

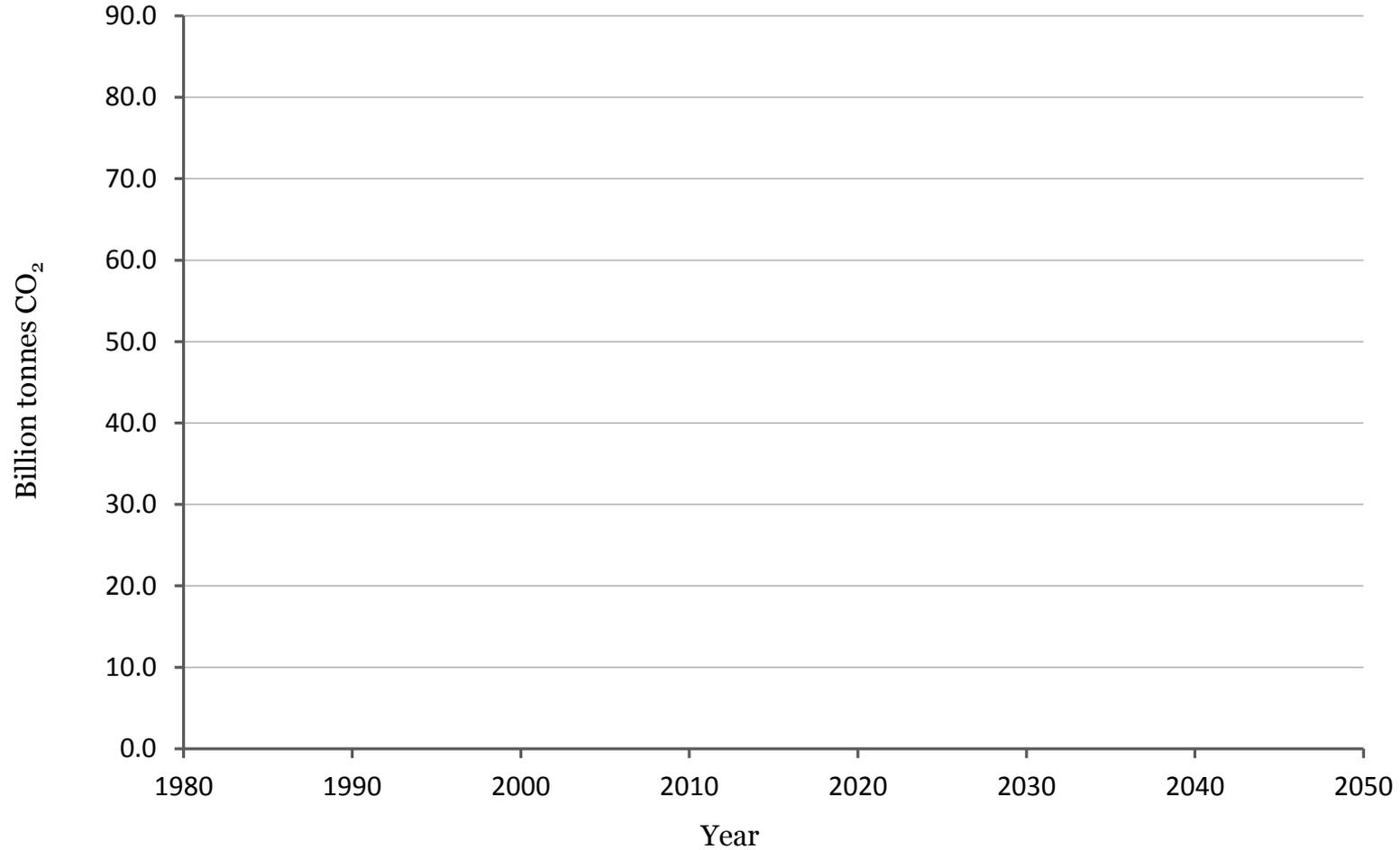
What **temperatures**/climate should we prepare for?

*How consistent are these 2 °C intentions
with emission trends?*

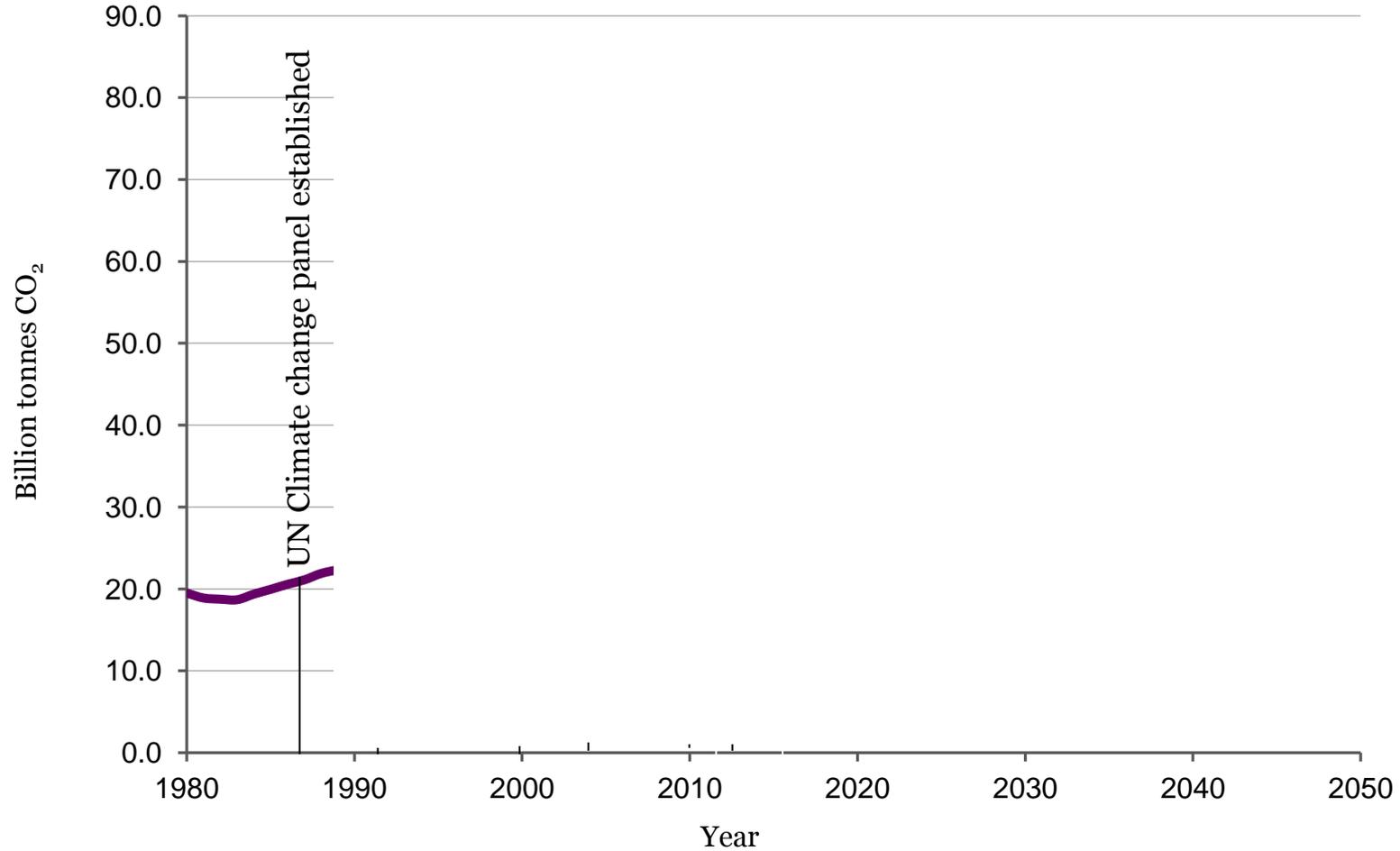


The Reality...

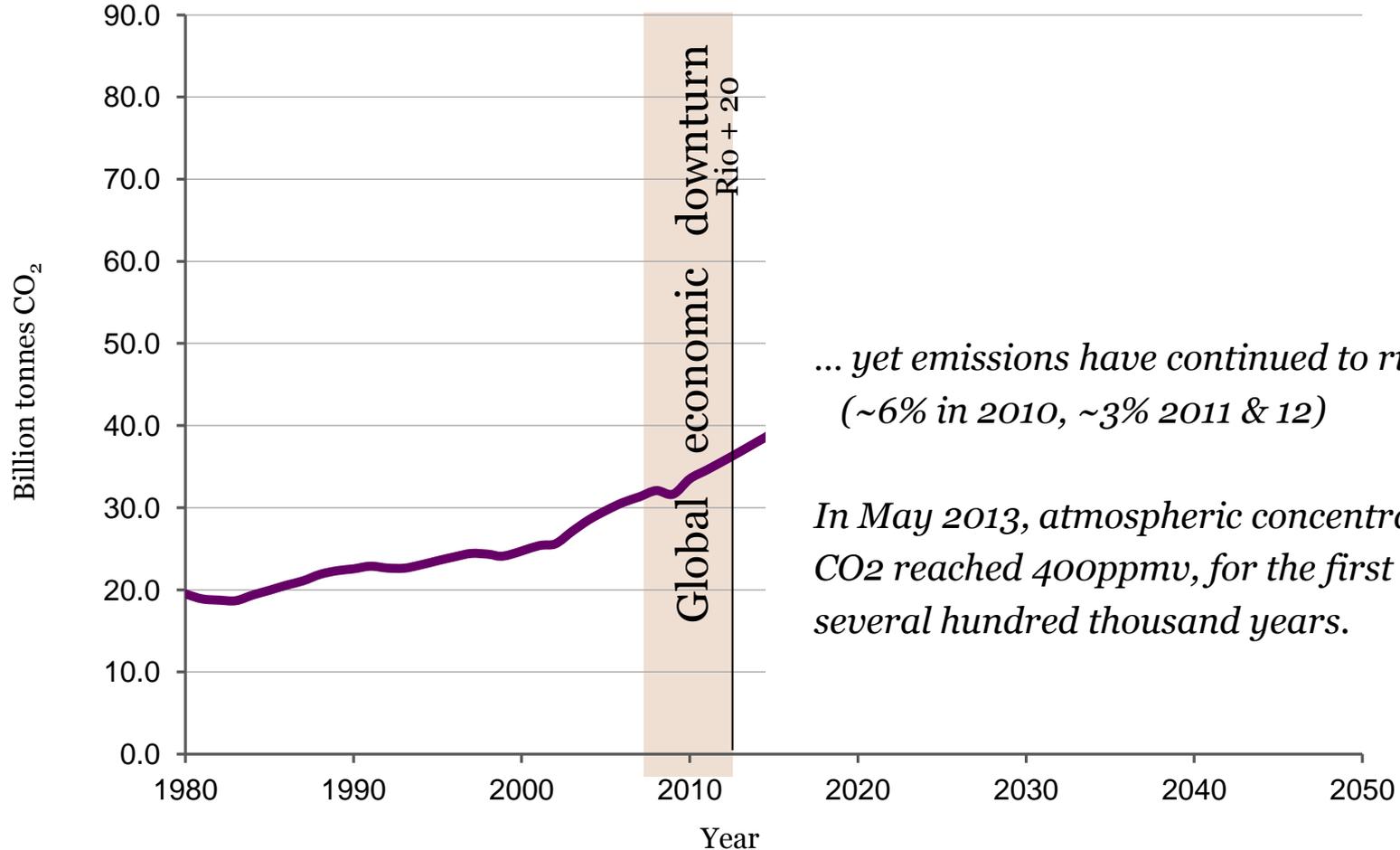
Global emission of fossil fuel CO₂ (inc. cement)



Global emission of fossil fuel CO₂ (inc. cement)



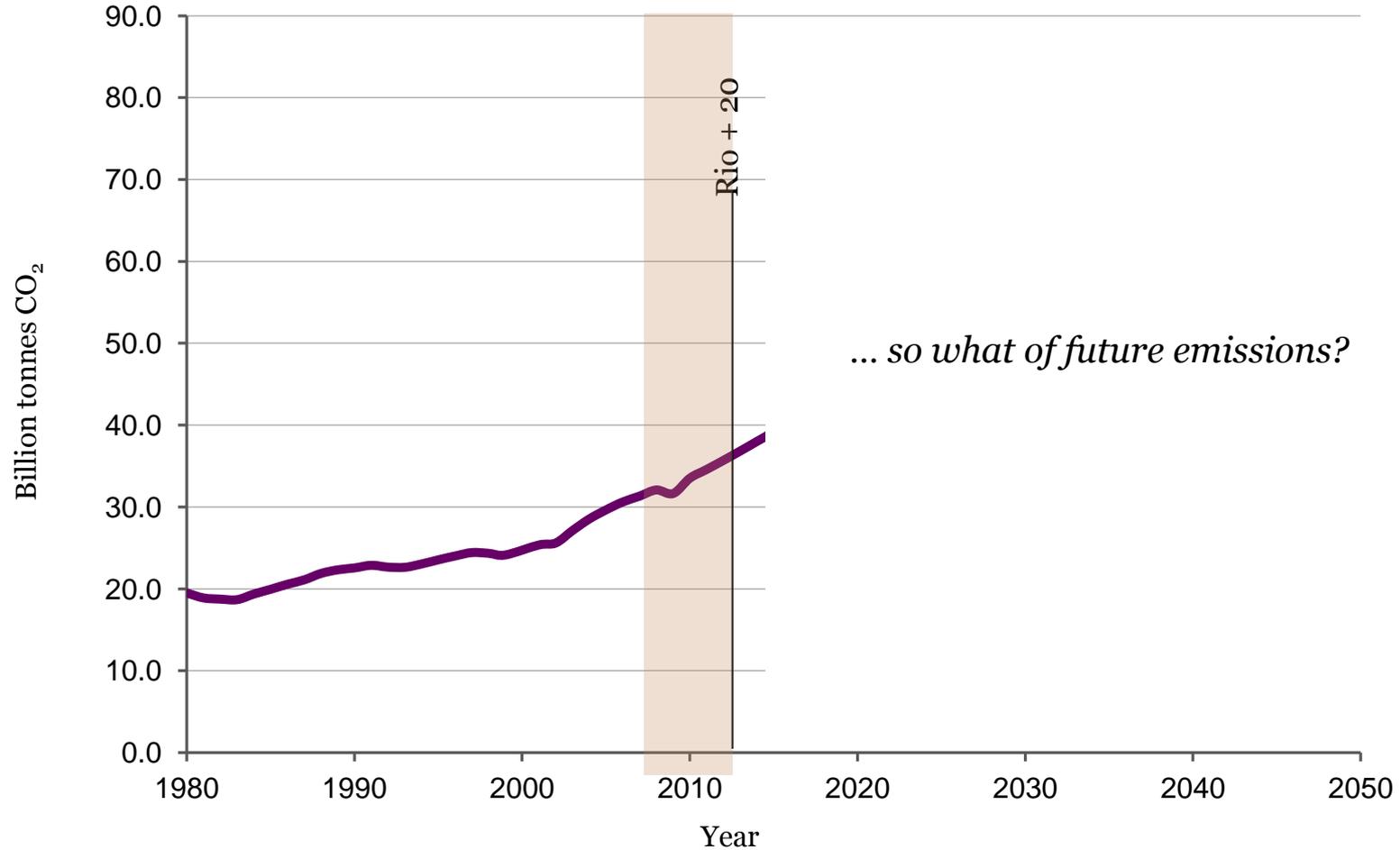
Global emission of fossil fuel CO₂ (inc. cement)



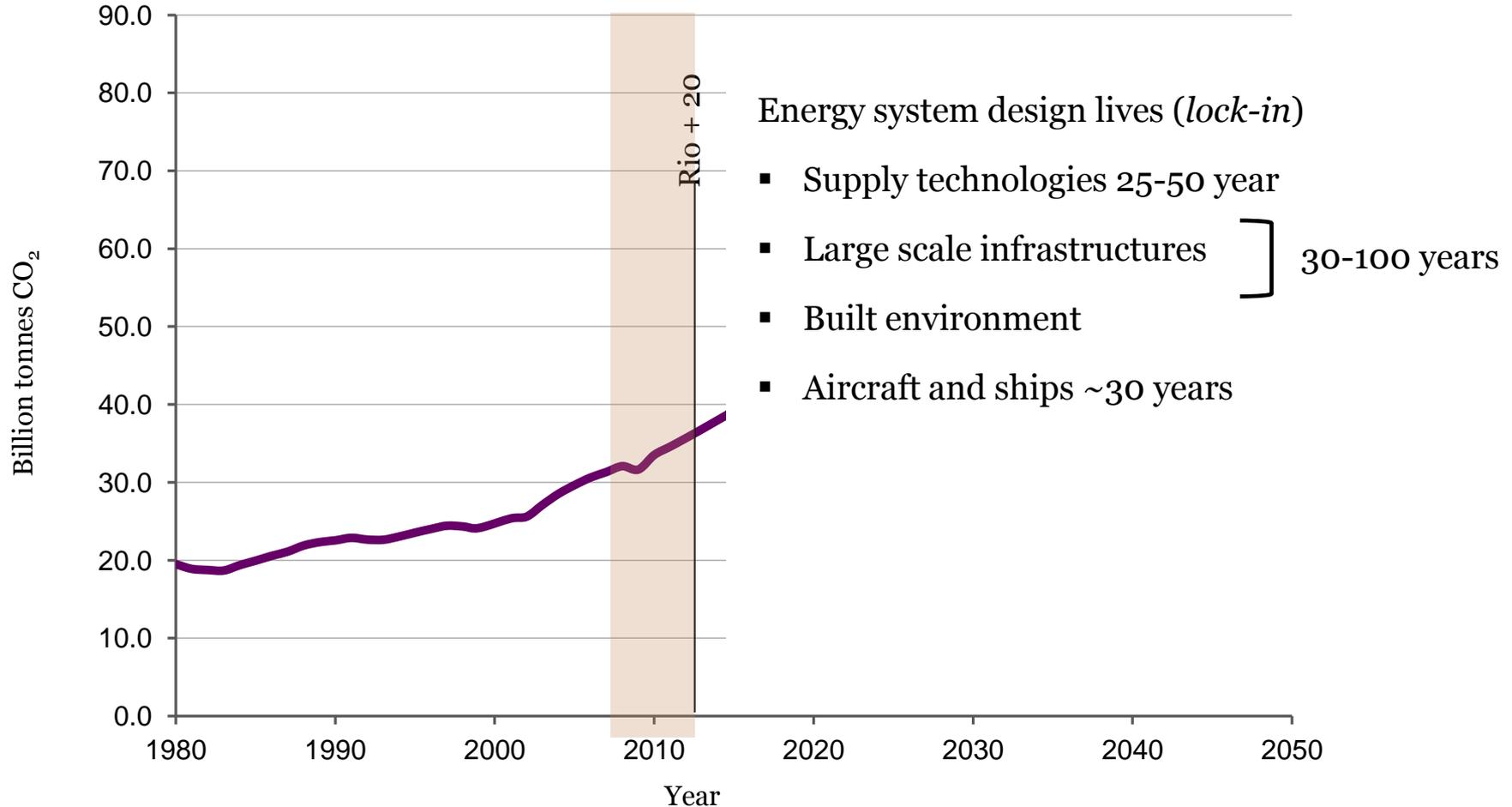
*... yet emissions have continued to rise
(~6% in 2010, ~3% 2011 & 12)*

*In May 2013, atmospheric concentrations of
CO₂ reached 400ppmv, for the first time in
several hundred thousand years.*

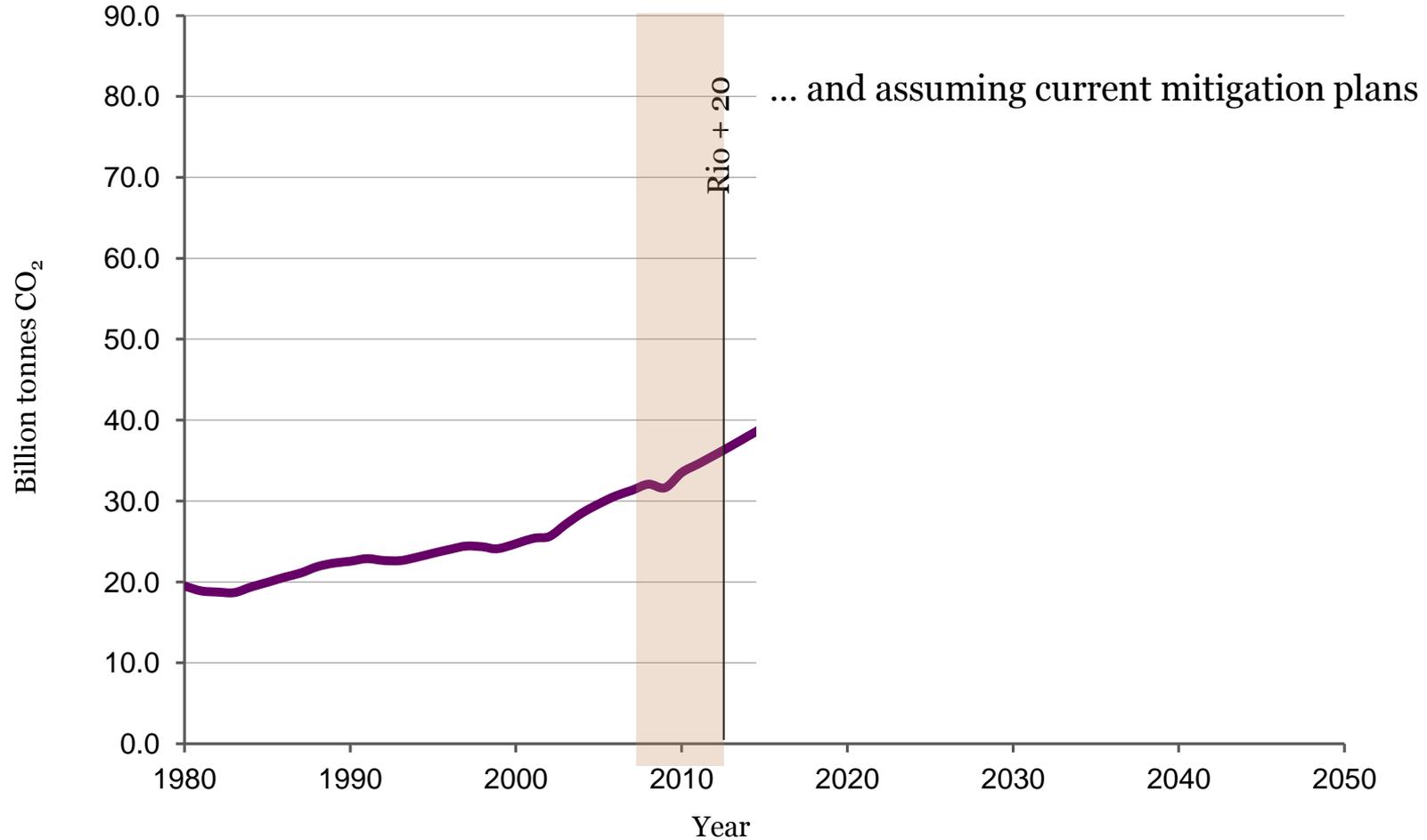
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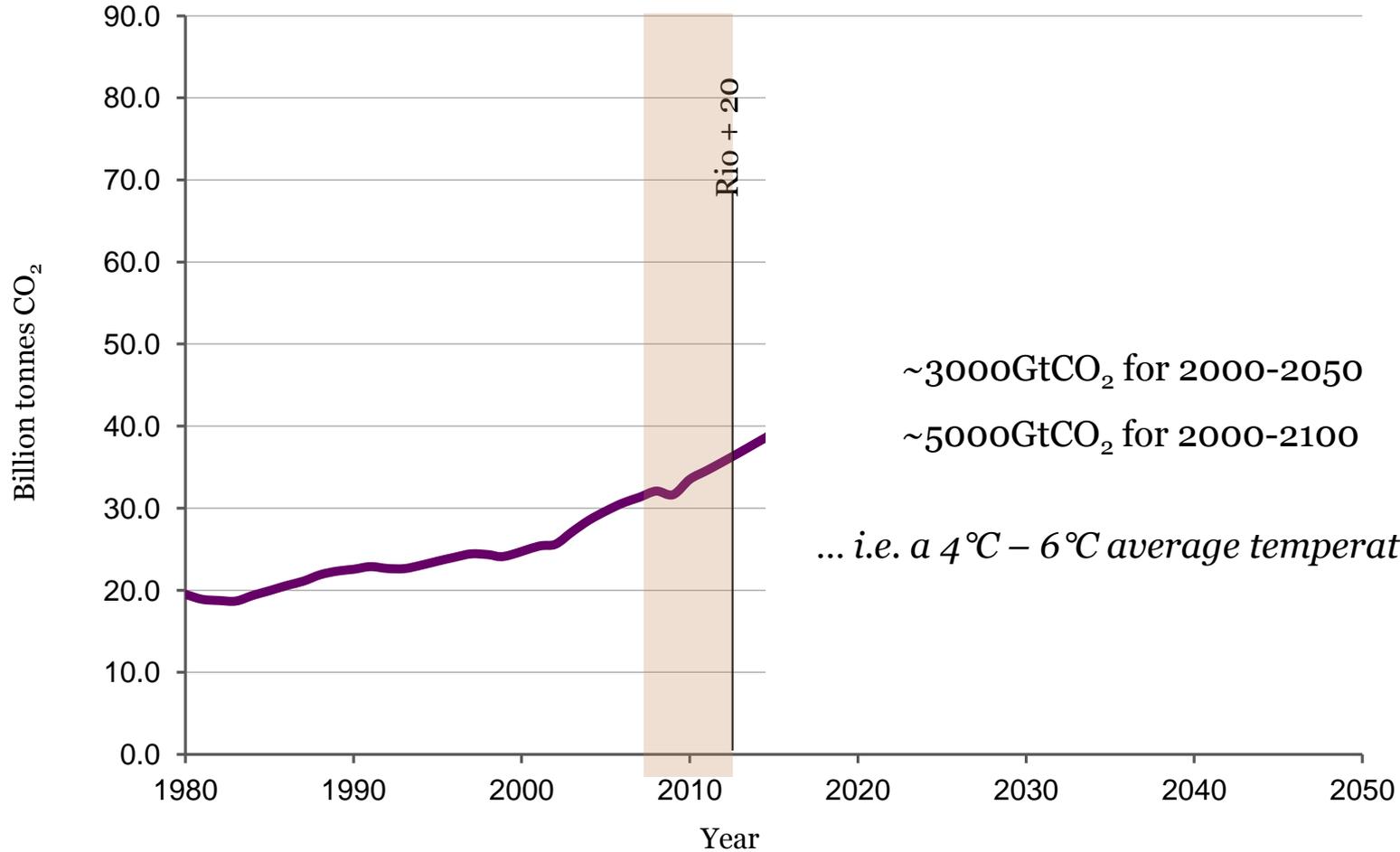
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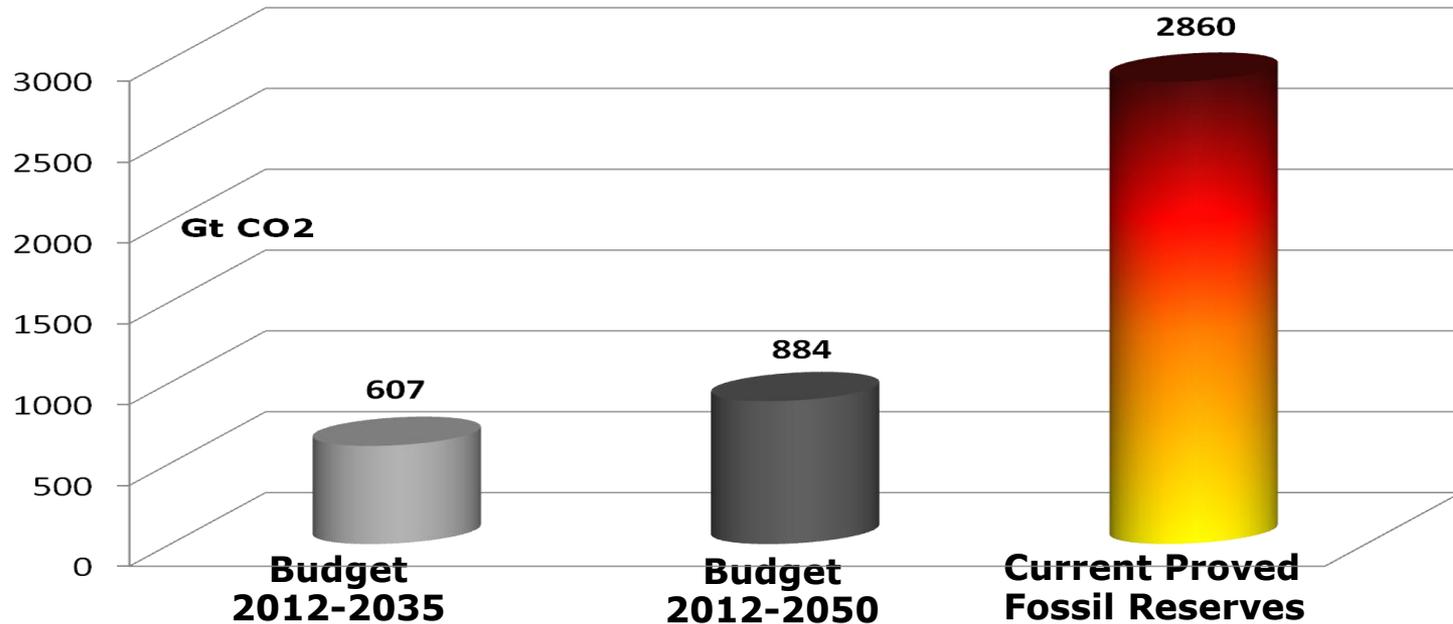


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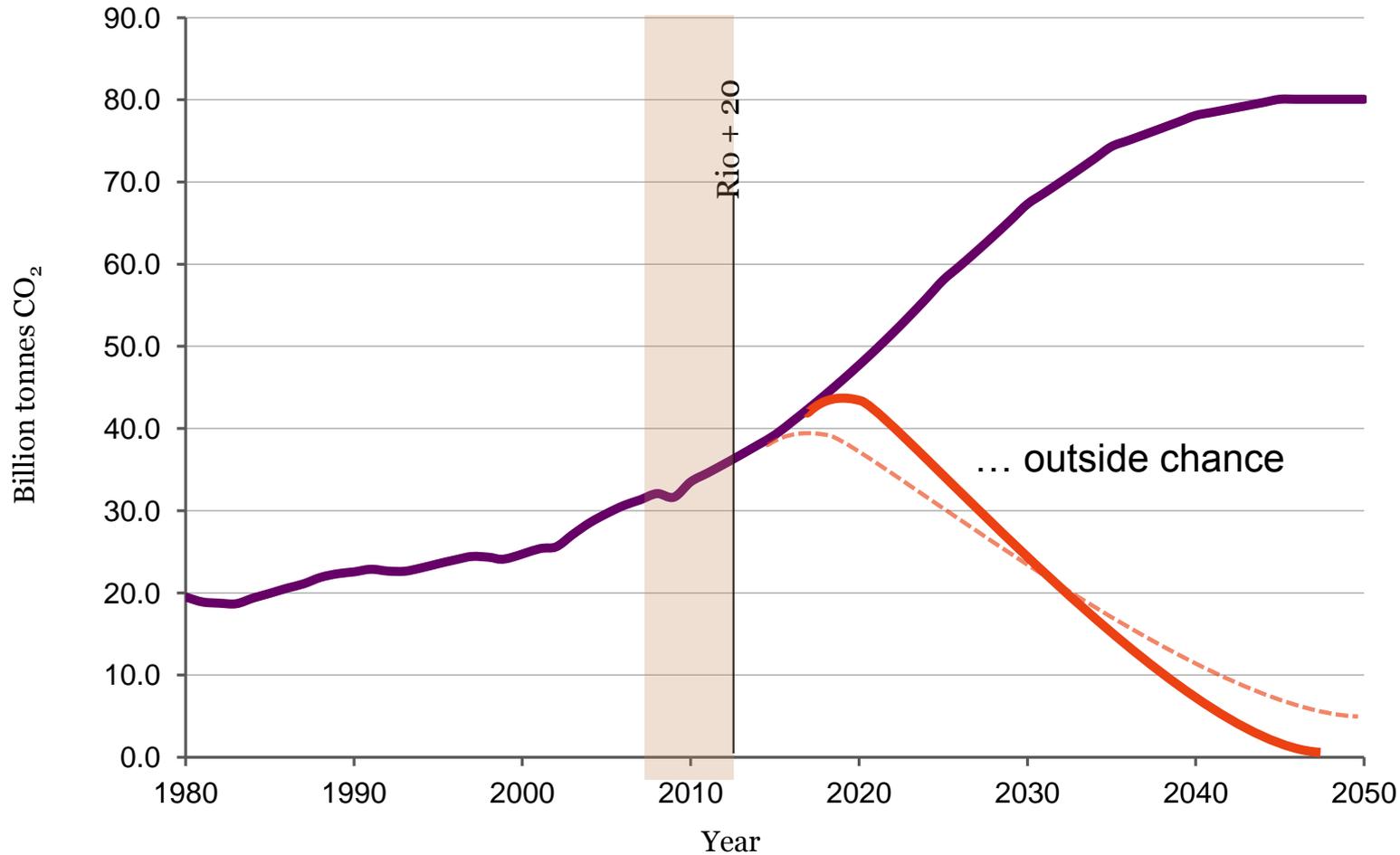


“Far from running out of fossil fuels, we have more than enough to fry the planet”

Dieter Helm (2012)



Global emission of fossil fuel CO₂ (inc. cement)



The **Global** context of Climate Change

... the IEA view

“When I look at this [CO₂] data, the trend is perfectly in line with a temperature increase of 6 degrees Celsius, which would have devastating consequences for the planet.”

Fatih Birol - IEA chief economist

... and according to the World Bank, at just 4°C

"There will be water and food fights everywhere,"

Jim Yong Kim – WB president

Returning to 2°C



Inconsistencies in UK 2°C targets

- Copenhagen Accord: *“hold ... below 2 °C Celsius”*
- UK Low Carbon Transition Plan: *“must rise no more than 2 °C”*
- EU: *“do not exceed ... by more than 2 °C”*

IPCC taxonomy: a *“very unlikely”* to *“exceptionally unlikely”* chance of exceeding 2°C
... correlates with less than a 10% chance of exceeding 2 °C

Despite this:

- the Government adopts a pathway with a 63% of exceeding 2°C

Carbon budget for 63% chance of exceeding 2°C is:

- Over twice the size as for a ~10% chance of exceeding 2°C

That is:

The UK government's legally-binding carbon budget is twice the size of that accompanying the UK's explicit international commitments on 2 °C!

... the implications of this are profound

2°C mitigation requires *(for Annex 1/OECD nations)*

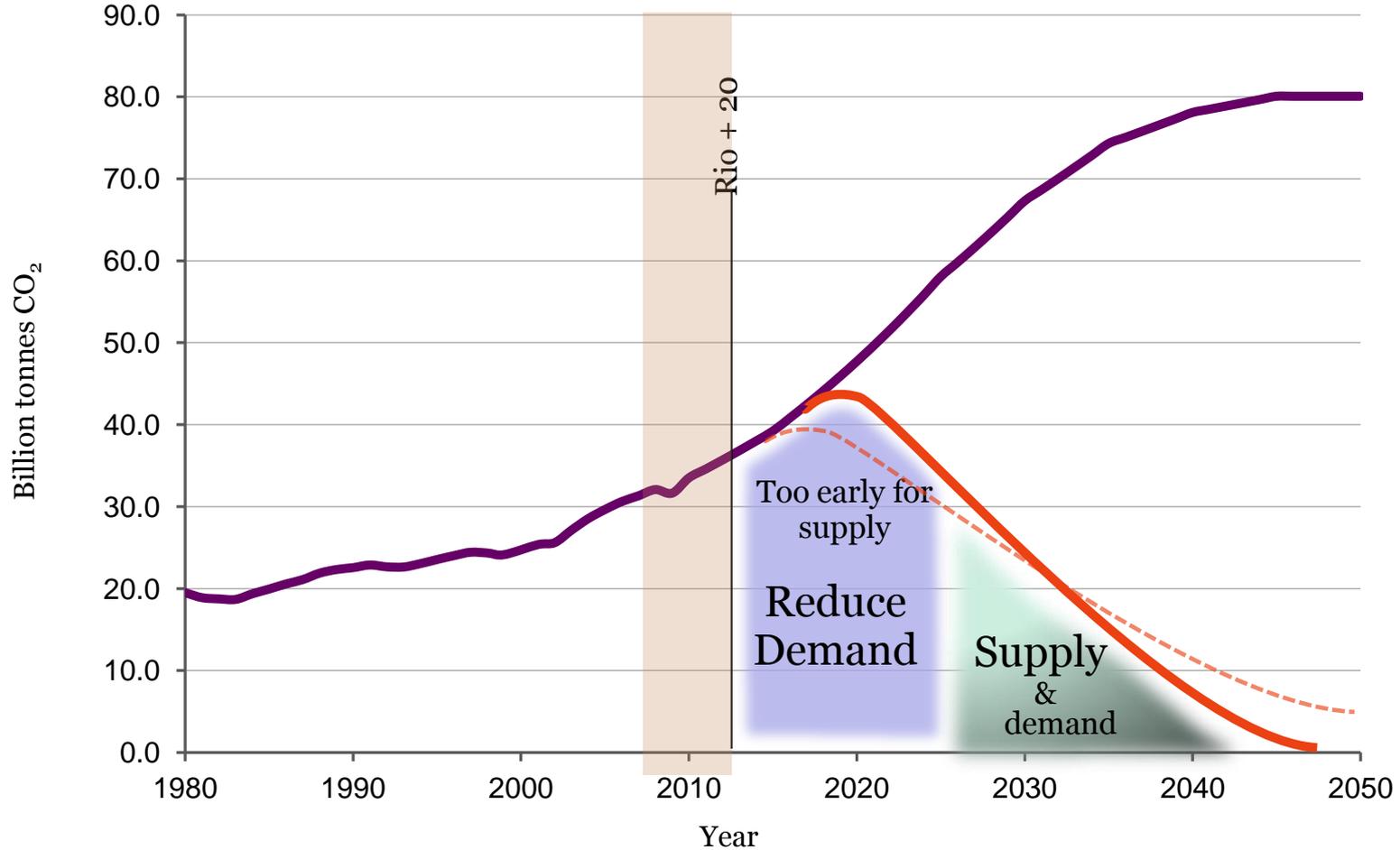
10% reduction in emissions year on year

~40% reduction by ~2015 (c.f. 1990)

~70% ~2020

~90+% ~2030

Global emission of fossil fuel CO₂ (inc. cement)



If 2°C looks too difficult

... what about a 4°C future?

For **4°C** & emissions peaking by 2020 a
~ **3.5%** p.a. reduction in CO₂ from energy is necessary

... & such a reduction rate is achievable

so is aiming for 4°C more realistic?

For **4°C** global mean surface temperature

5°C - 6°C global **land** mean

... & increase **°C** on the hottest days of:

6°C - 8°C in China

8°C - 10°C in Central Europe

10°C - 12°C in New York

In low latitudes **4°C** gives

up to **40% reduction** in maize & rice

as population heads towards **9 billion** by 2050

There is a widespread view that 4°C is:

- incompatible with an organised global community
- beyond ‘adaptation’ for many
- devastating to ecosystems – compounded by acidification
- unknown stability – possibility of ‘tipping points’

... consequently ...

4°C should be avoided at ‘all’ costs

2°C mitigation requires *(for Annex 1/OECD nations)*

10% reduction in emissions year on year

~40% reduction by ~2015 (c.f. 1990)

~70% ~2020

~90+% ~2030

Two impossible futures?

... is living with a 4°C global temperature rise by
any 2050-70 less impossible?

Before despairing ...

Have we got the **agency** to achieve the unprecedented reductions rates linked to an outside chance of 2°C ?

The IEA proposes “4-for-2”

Actions that offer significant reductions by 2020 as a bridge to wider transformation.

1. Adopting **energy efficiency** measures (**49%** of savings)
2. Limiting coal power stations
3. Minimising methane from oil & gas industry
4. Phasing out subsidies on fossil fuels

Finally:

“at every level the greatest obstacle to transforming the world is that we lack the clarity and imagination to conceive that it could be different.”

Roberto Unger

Thank you

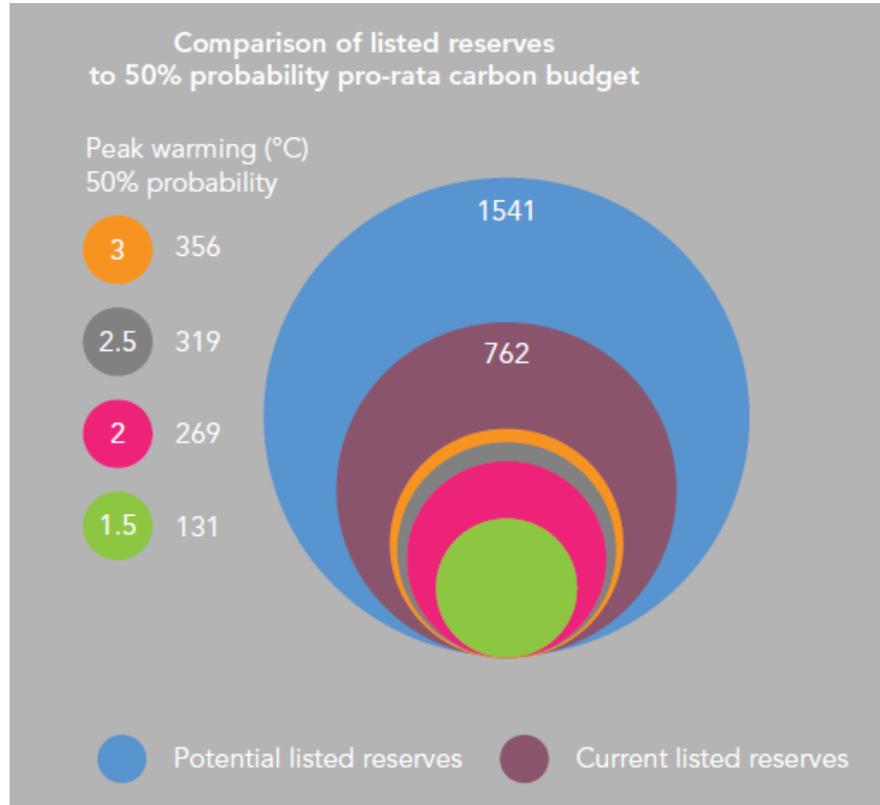
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Financial Risk: Unburnable Carbon



A precautionary approach means only 20% of total fossil fuel reserves can be burnt to 2050.

*As a result the global economy already faces the prospect of assets becoming stranded, with the problem only likely to get worse if current investment trends continue - in effect, a **carbon bubble**.*

James Leaton, Carbon Tracker