

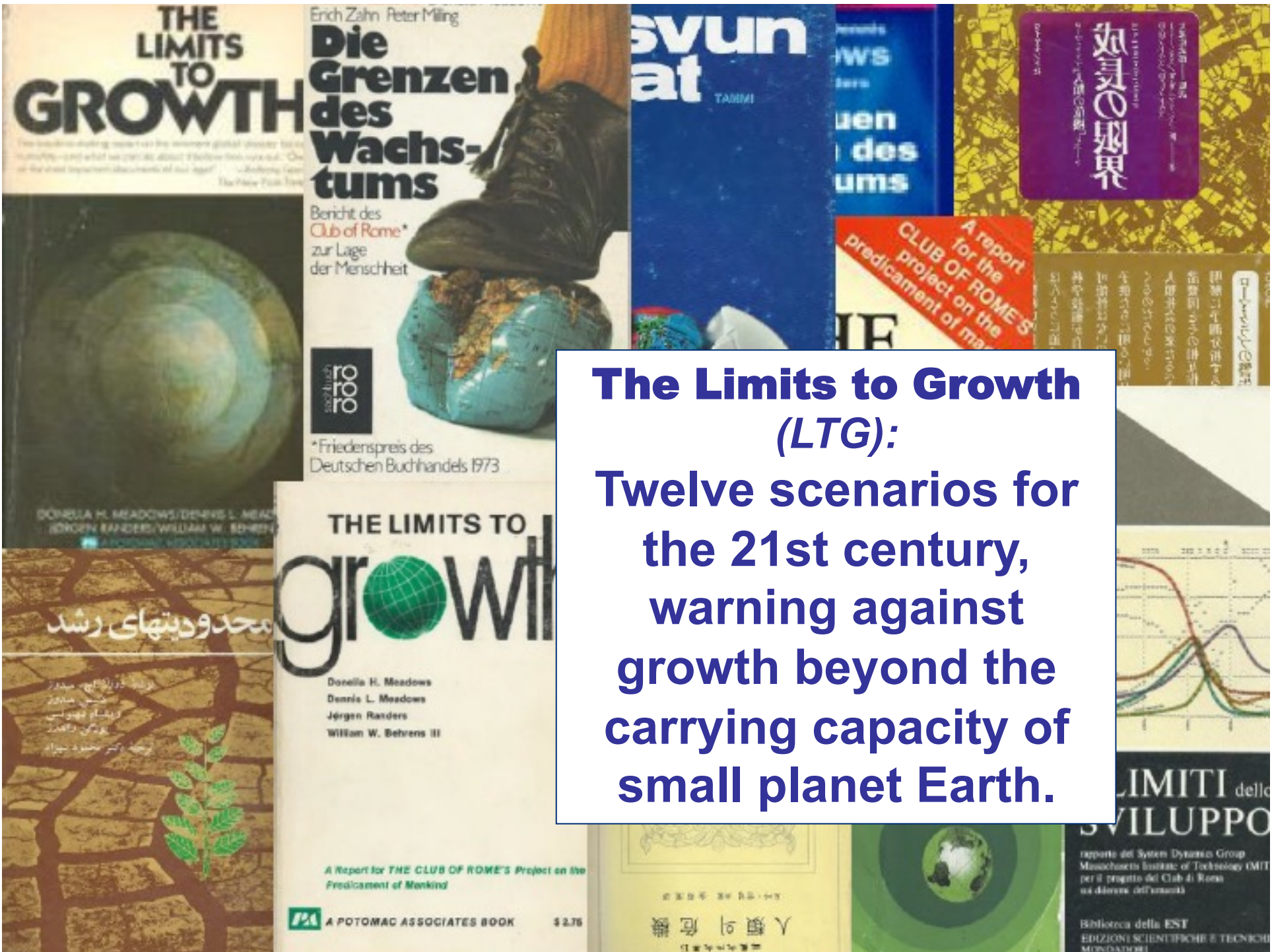


CENTER FOR
CLIMATE STRATEGY

***2052 – A Global Forecast
for the Next Forty Years:
The role of the Club of Rome***

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Club of Rome Fundraiser
Berlin, September 4th, 2015



**The Limits to Growth
(LTG):
Twelve scenarios for
the 21st century,
warning against
growth beyond the
carrying capacity of
small planet Earth.**

A much better future is possible

- 1.** Solving the climate challenge is not impossibly costly
- 2.** It requires a shift of 2 % of the world's labor and capital from “dirty” to “clean” sectors
- 3.** Sadly, it is difficult to find support for this solution

Plan for today

- 1.** What is likely to happen over the next 35 years, to 2050?
- 2.** What needs to be done to improve on this future?
- 3.** What forces will work against this solution?
- 4.** What can be done to reduce this resistance?
- 5.** What should the Club of Rome do?

A Global Forecast
for the Next Forty Years



Jorgen Randers

A REPORT TO THE CLUB OF ROME
COMMEMORATING THE 40TH ANNIVERSARY OF
The Limits to Growth

EINE GLOBALE PROGNOSE
FÜR DIE NÄCHSTEN 40 JAHRE



**2052 – A Global
Forecast for the Next
Forty Years**
A forecast of global
development to 2052,
predicting that the world will
follow the *LTG* pollution
scenario

See www.2052.info

今後 40 年のグローバル予測

ヨルゲン・ランダーズ
著
2012年11月

THE YEAR OF THE GREAT DIVIDE
COMMEMORATING THE 40TH ANNIVERSARY OF
THE LIMITS TO GROWTH

DEEPI



World population will peak in 2040

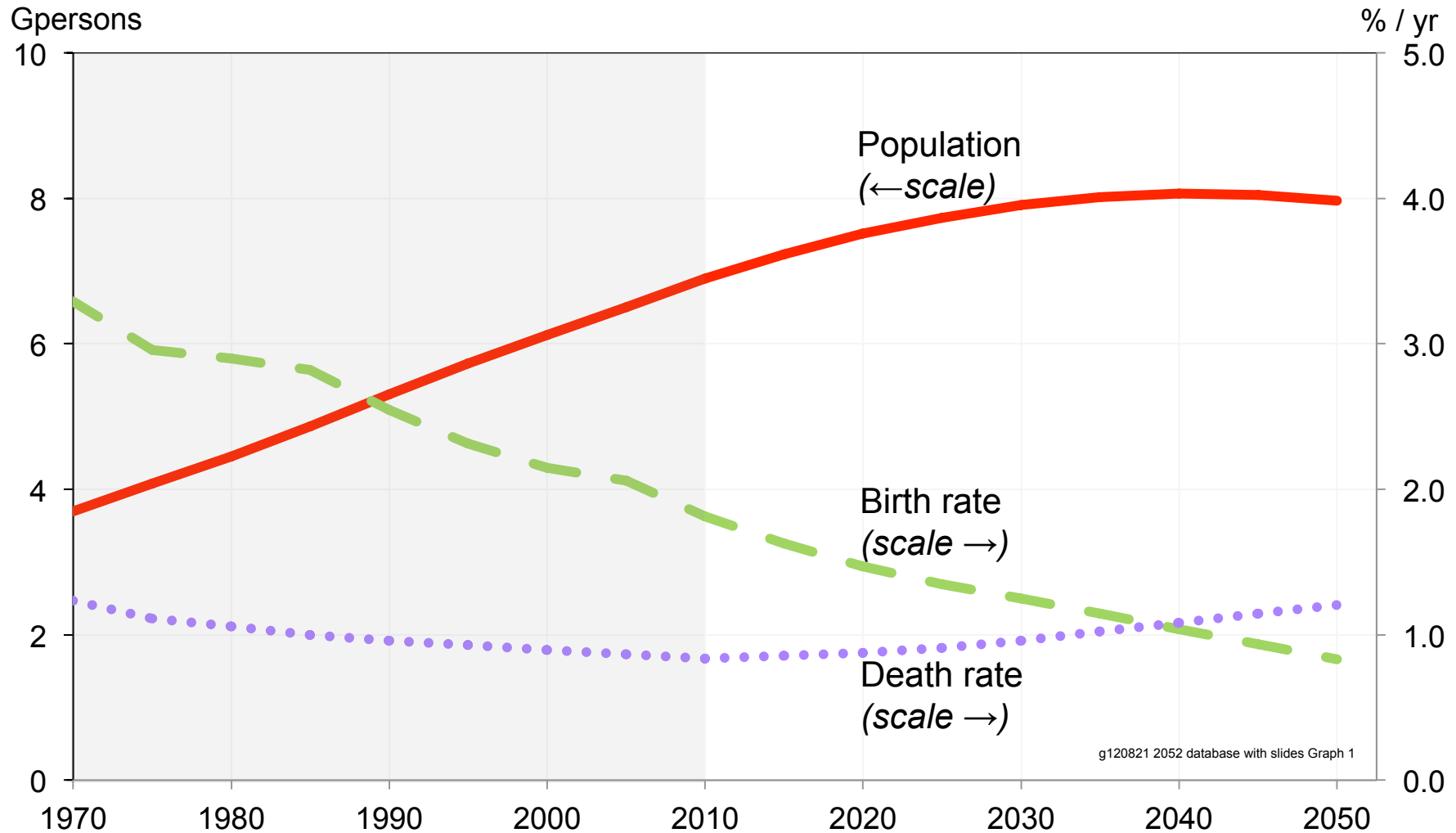


Figure 4-1 Population – World 1970 to 2050

World GDP growth will slow down

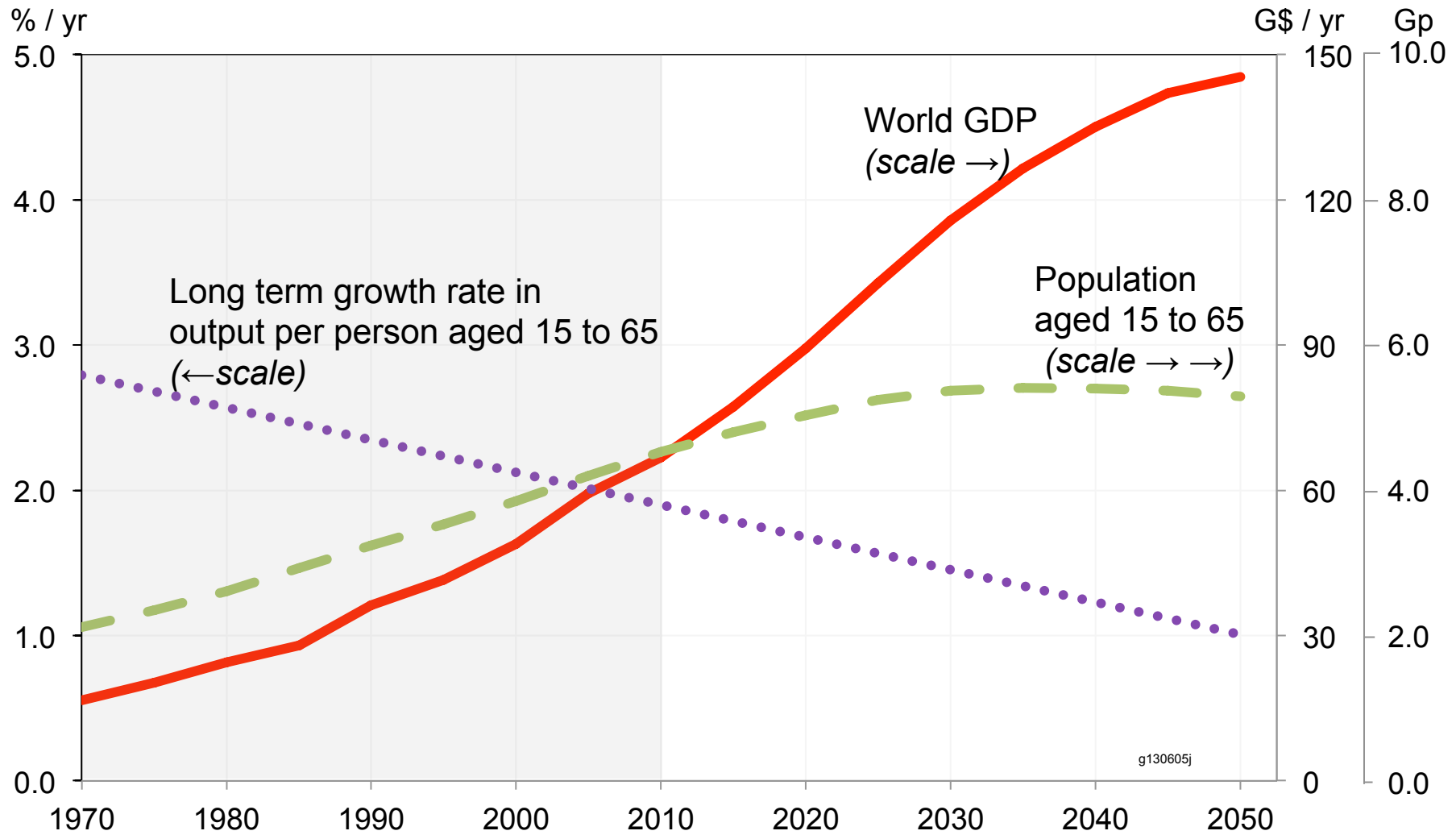


Figure 4-3b: Gross Domestic product – World 1970 to 2050

Definition: GDP = Population aged 15 to 65 years multiplied with Output per member of potential workforce

More unavoidable repair and adaptation work

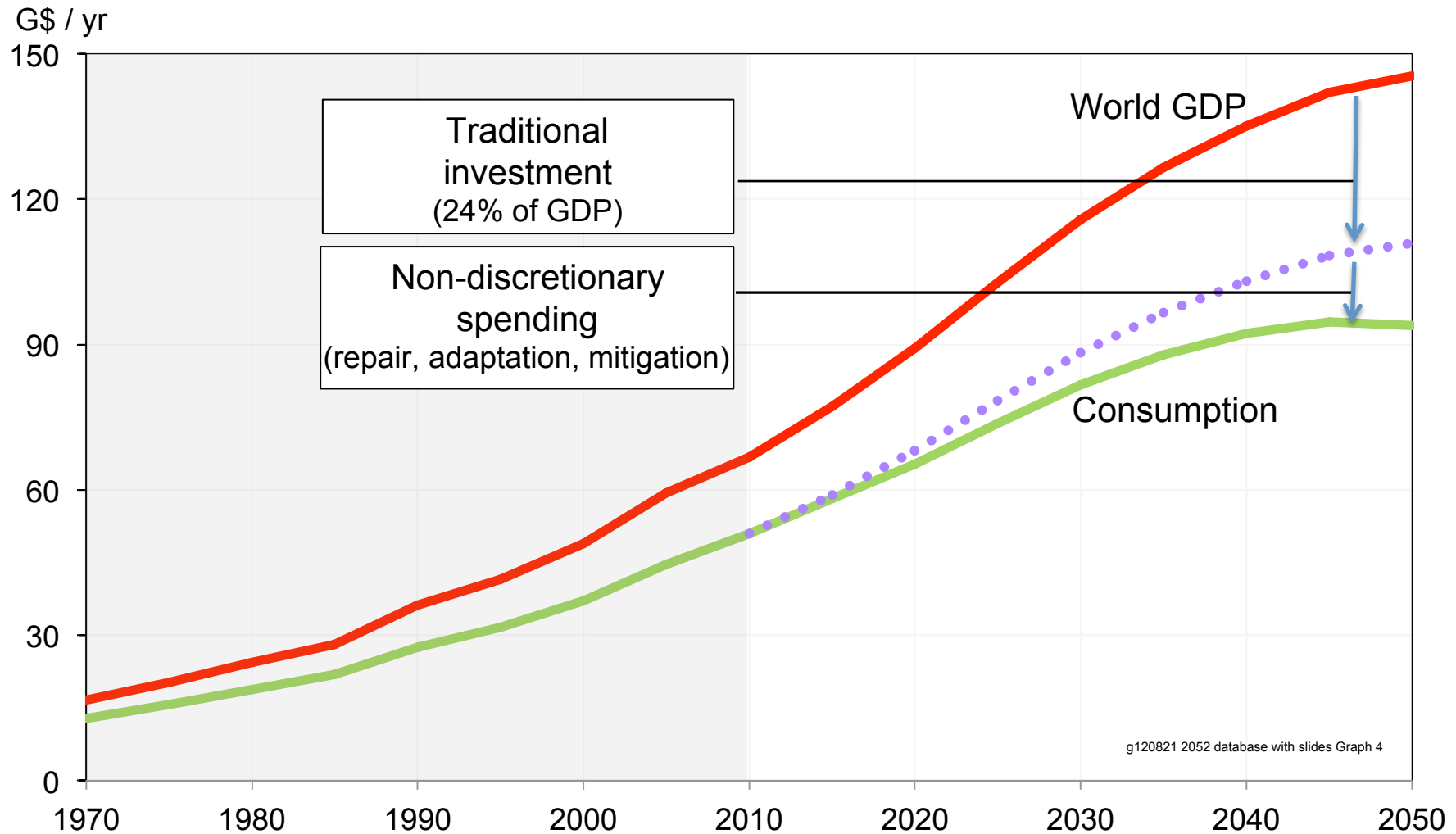


Figure 4-4: Production, Consumption and Investment – World 1970 to 2050

World energy use will peak in 2040

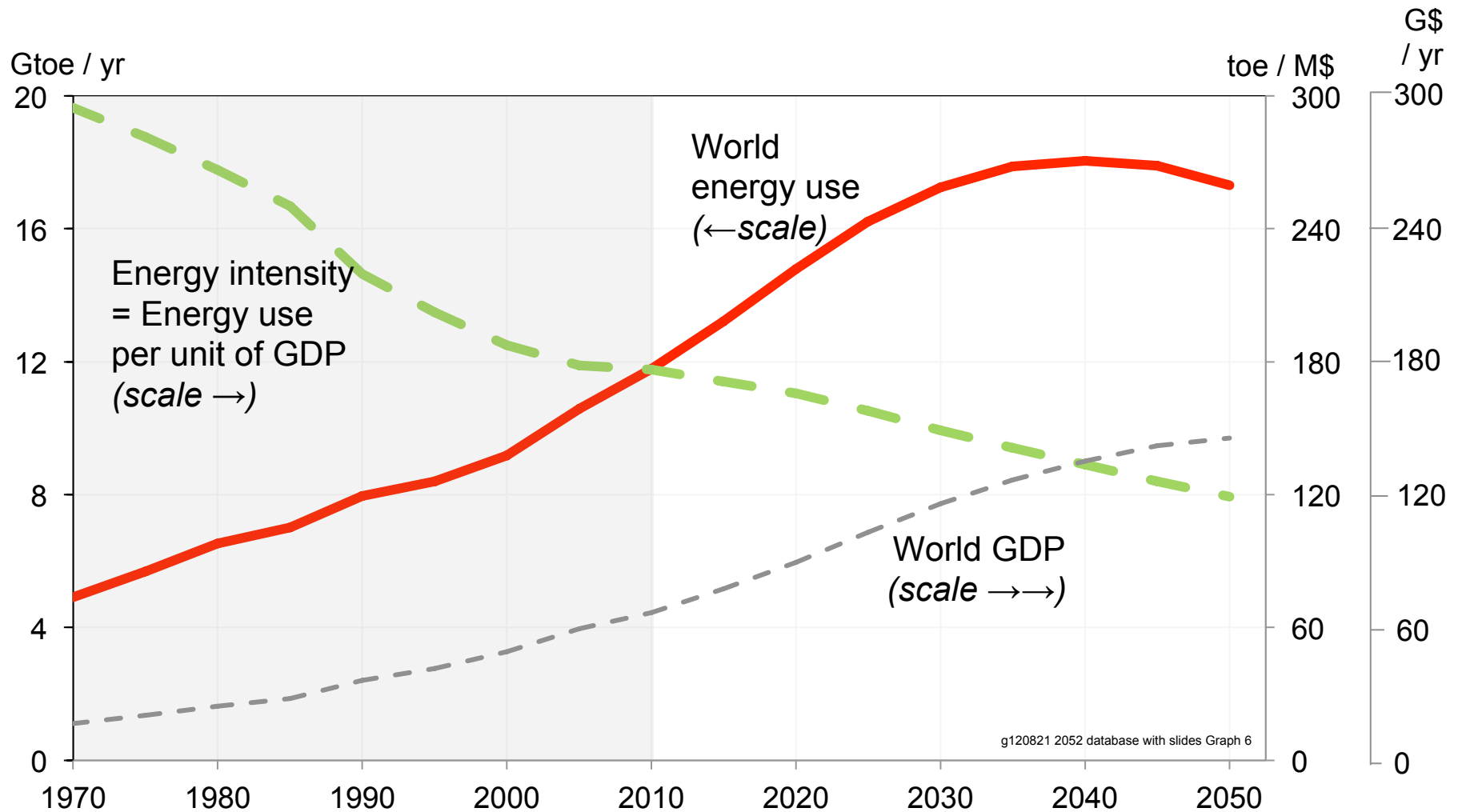


Figure 5-1: Energy Use – World 1970 to 2050

World use of fossil fuels will peak around

2030

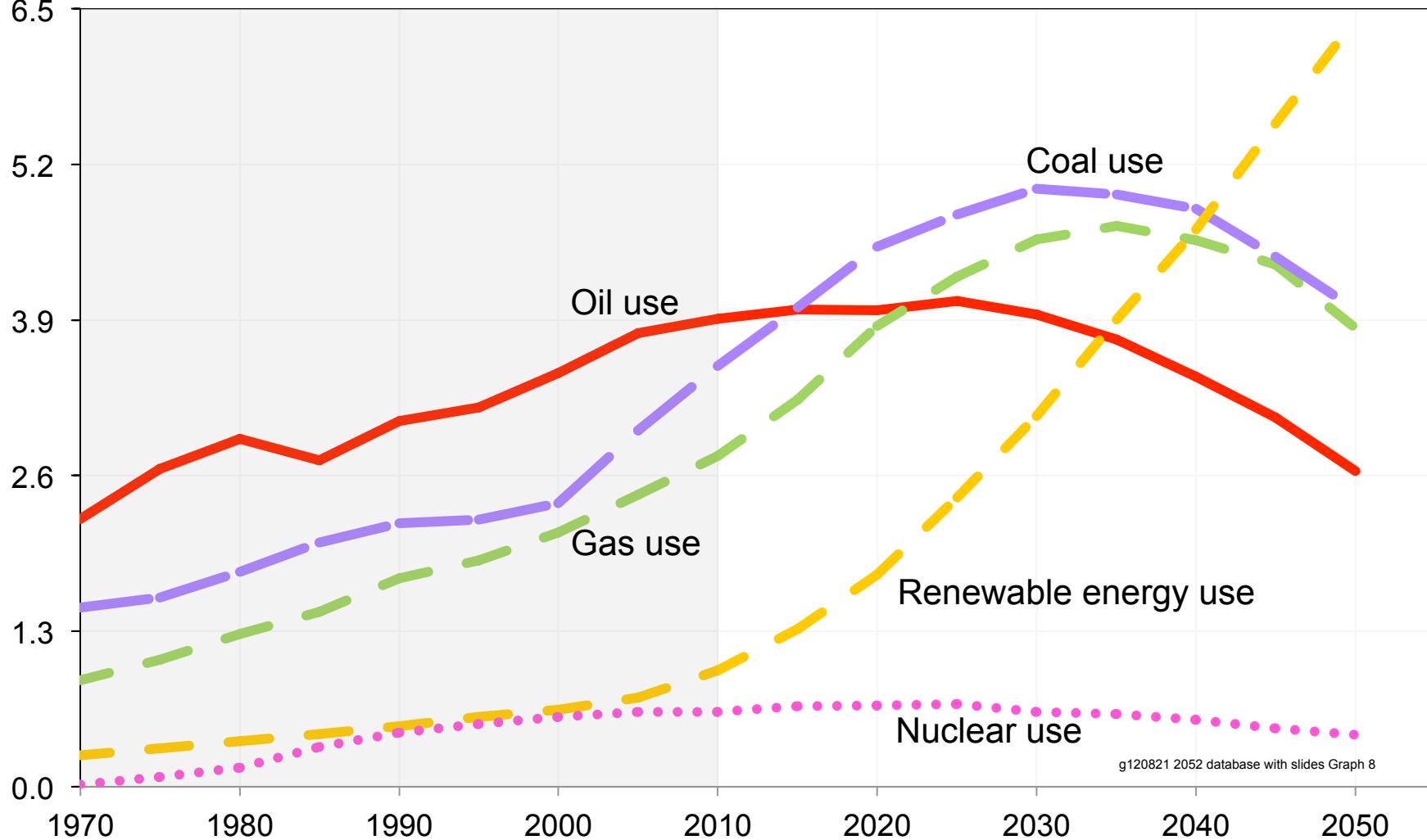


Figure 5-2: Energy Uses – World 1970 to 2052

World CO₂ emissions will peak in 2030

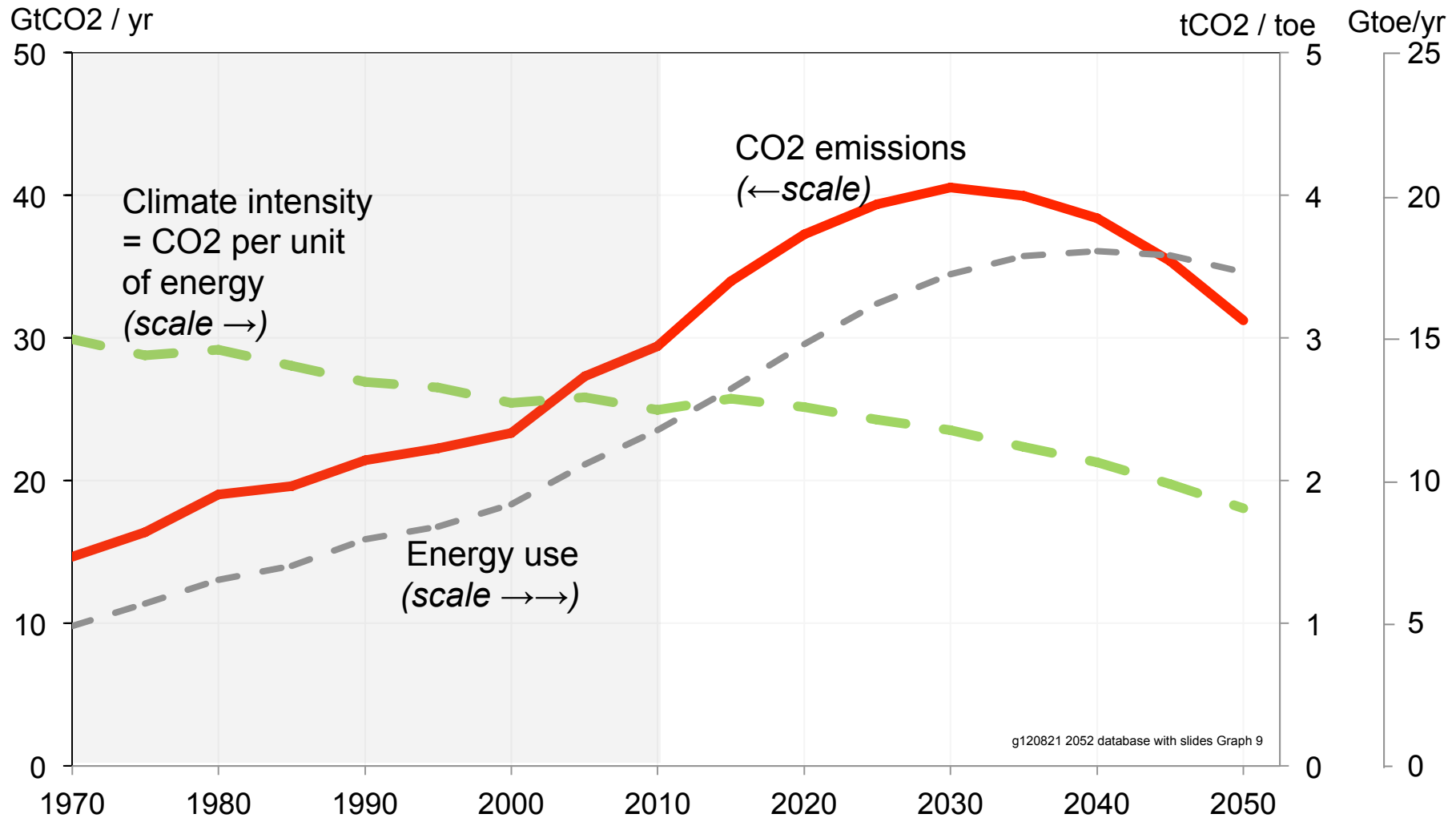


Figure 5-3: CO₂ Emissions from Energy Use – World 1970 to 2050.

Temperature will pass +2 degrees C in 2052

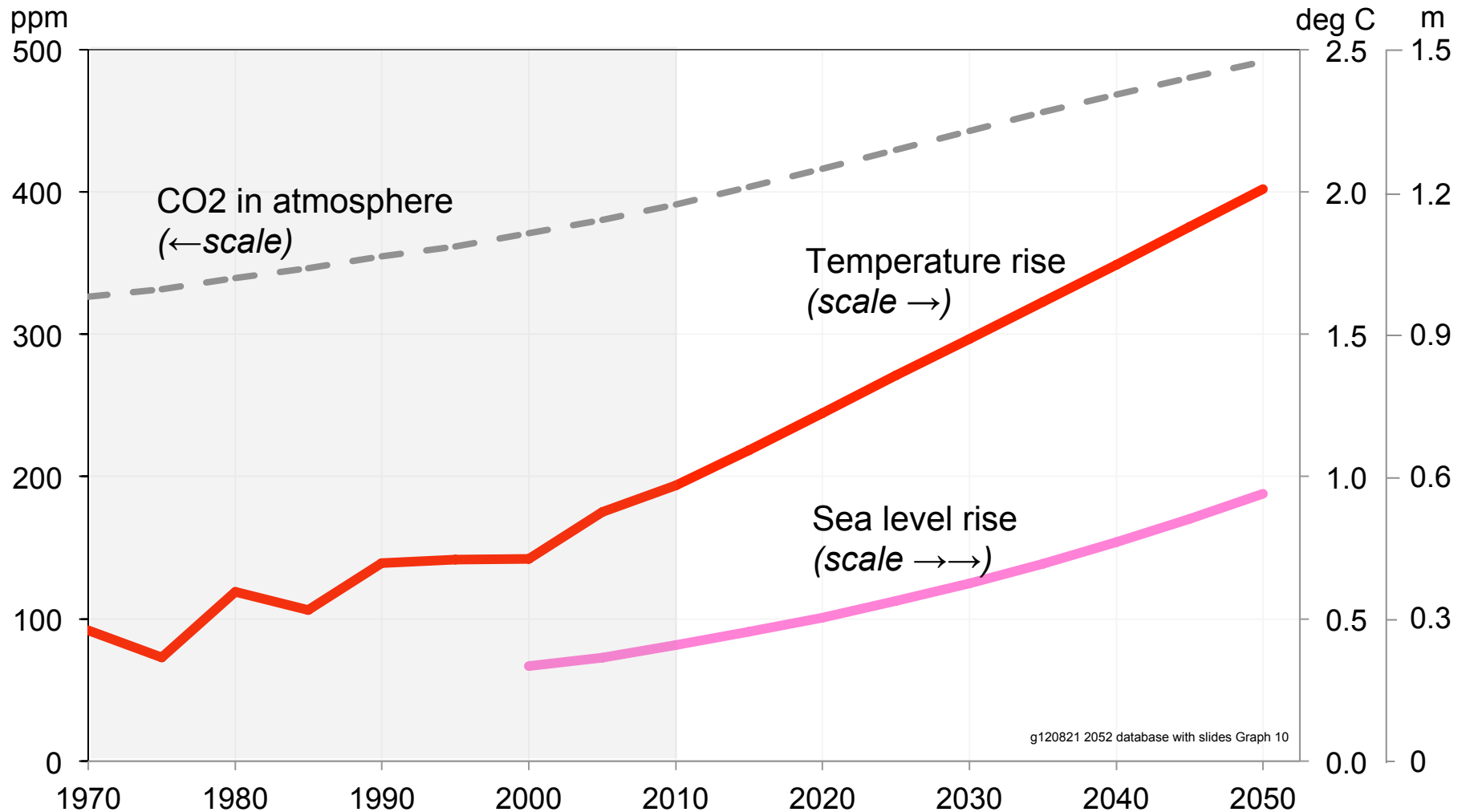
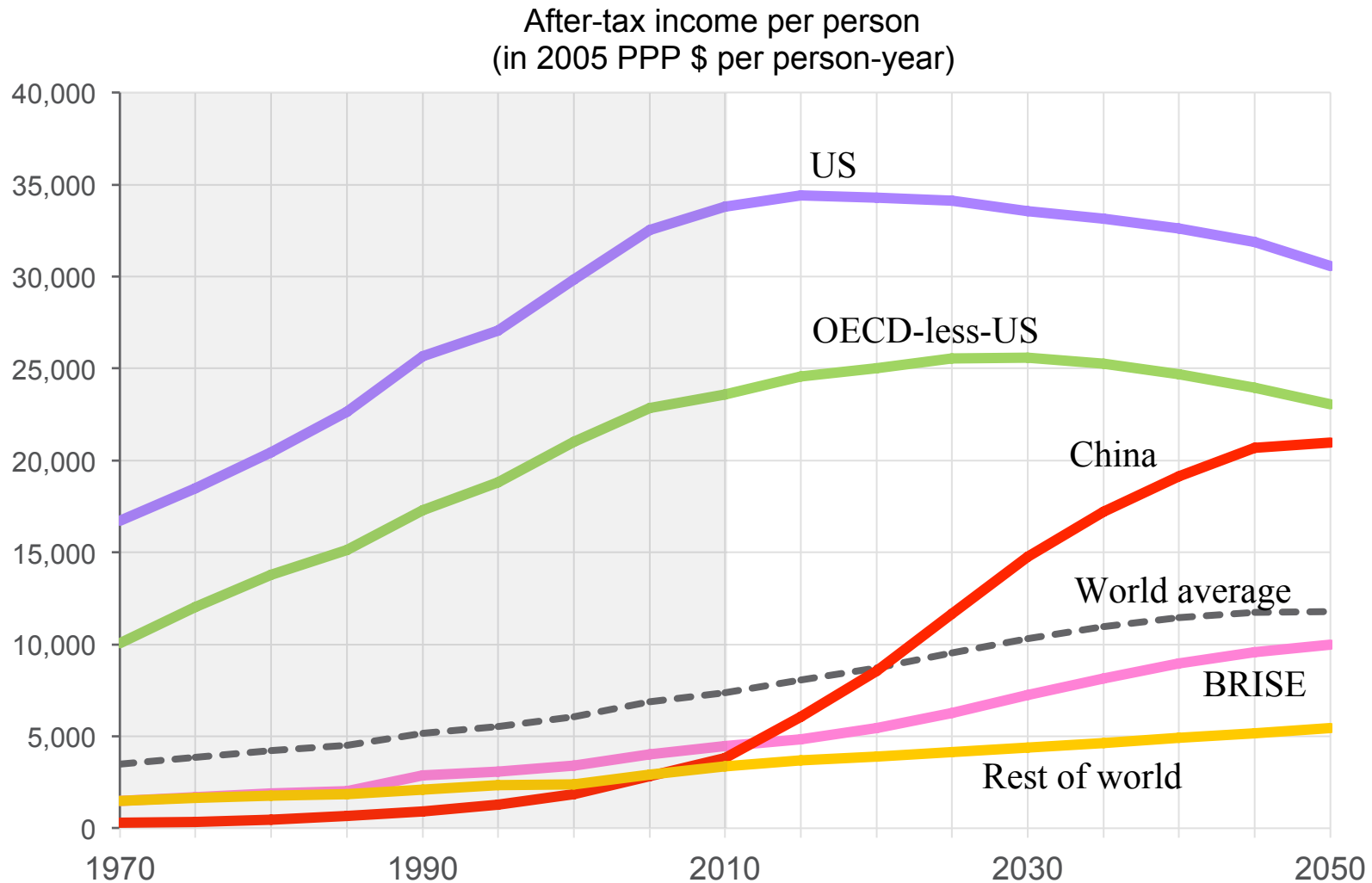


Figure 5-4: Climate Change – World 1970 to 2050

There will be huge regional differences



Main conclusions from the 2052 forecast

♣ World population and economy will grow more slowly towards 2052 than most people expect
- but still fast enough to trigger a climate crisis

♣ Consumption will stagnate because society will have to spend ever more labour and capital on repair and adaptation

♣ The short-term nature of man - reflected in the short term focus of democracy and capitalism - is the root cause of this development

What needs to be done to improve the future?

1. Remove poverty

Both in the rich and the poor world

Using traditional methods

But with more respect for central planning (which provided most of the real gains since 1990)

2. Reduce greenhouse gas emissions

First in the rich world

Means to reduce the use of coal, oil and gas

That is, to increase energy efficiency, renewable fraction, and CO₂ capture and storage (CCS)

Concretely: to reduce energy intensity (energy use per GDP) and CO₂ intensity (CO₂ per energy use)

twice as fast as during the last 40 years

What forces will work against this solution?

- 1. The incumbents in the “dirty” sectors**
Both workers and owners
“Dirty” means energy intensive, CO2 intensive, pollution intensive, resource intensive
- 2. Those who dislike high taxes and strong government**
They are many
Some principled, some based on egoism
Most based on short term perspective on societal development

What can be done to reduce the resistance?

Focus on solutions that give an advantage to a majority of voters in the short term.

1. Electric cars in the bus lane – to bypass the rush
2. Rooftop solar panels – for energy independence
3. Subsidy systems where the benefit comes first and the cost later (like financing of the Energiewende)
4. Green stimulus packages – for more jobs
5. Wealth tax on the top third to build low-carbon energy plant – “free” greening as seen by majority

It is time to act!



What should be done? - Ideally

- 1. Further slow population growth**
Introduce 1-child policy – first in rich world
- 2. Cut CO2 emissions – first in the rich world**
Ban the use of coal, oil and gas from 2024
- 3. Reduce poverty in the poor world**
Give a climate-friendly energy system to the poor
- 4. Reduce the ecological footprint of the rich world**
Legislate more compulsory vacation
- 5. Temper national short termism**
Establish supra-national institutions
- 6. Reduce the focus on income growth**
Establish “increased well-being” as the new goal

What can be done? – Realistically (1 of 2)

1. Further slow population growth
 - ◆ *Give moral support to women with < 2.1 children*
 - ◆ *Increase the pension age* ◆
 - Explain that the “support burden” will not grow*
2. Cut CO2 emissions – first in the rich world
 - ◆ *Subsidize energy efficiency in all sectors*
 - ◆ *Build no new coal capacity in the rich world*
 - ◆ *Tax coal and oil and distribute the money evenly*
3. Reduce poverty in the poor world
 - ◆ *Use most development aid to build renewable energy capacity in the developing world*
 - ◆ *Copy the planned rise of Japan, South Korea and China – and their use of “strong government”*

What can be done? – Realistically (2 of 2)

4. Reduce the ecological footprint of the rich world
 - ◆ *Simplify shift from dirty to clean production*
= *provide income security in transition*
 - ◆ *Reduce production growth*
= *reduce length of the work year, i.e. more leisure*
4. Temper national short termism
 - ◆ *Establish a global agreement where all nations promise to emit less CO2 per person than the US*
 - ◆ *Evolve IPCC to “IPCC 3” (a supernational org. with funding to pay for the most effective cuts)*
5. Reduce the focus on income growth
 - ◆ *Start measuring “growth in well-being” alongside “growth in GDP”*