

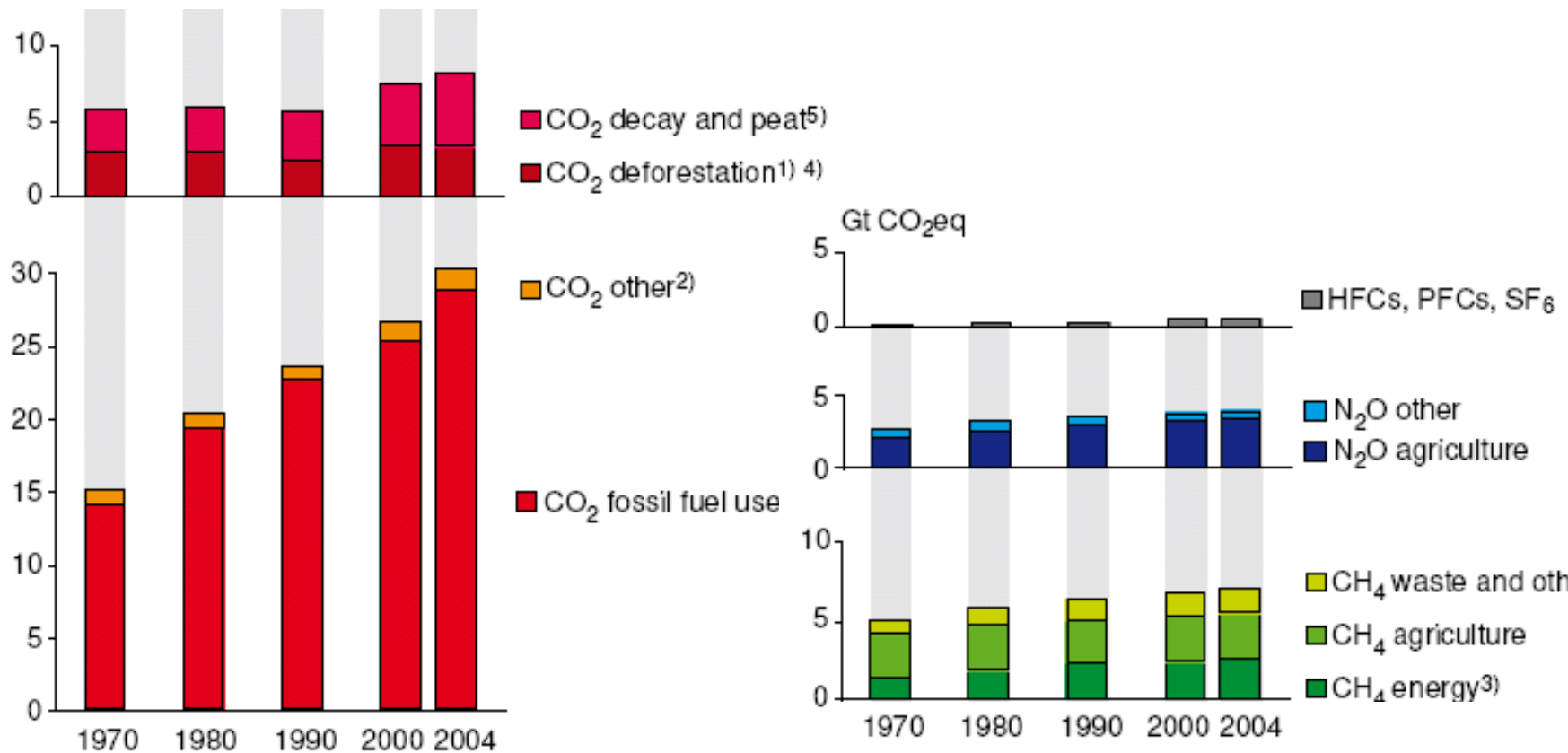
Klimaschutzziele: Welche Emissionsreduktionen brauchen wir und wie können diese erreicht werden?

Prof. Dr. Kornelis Blok
Ecofys / Universiteit Utrecht
Europäische Akademie,
Bonn, 24. März 2010

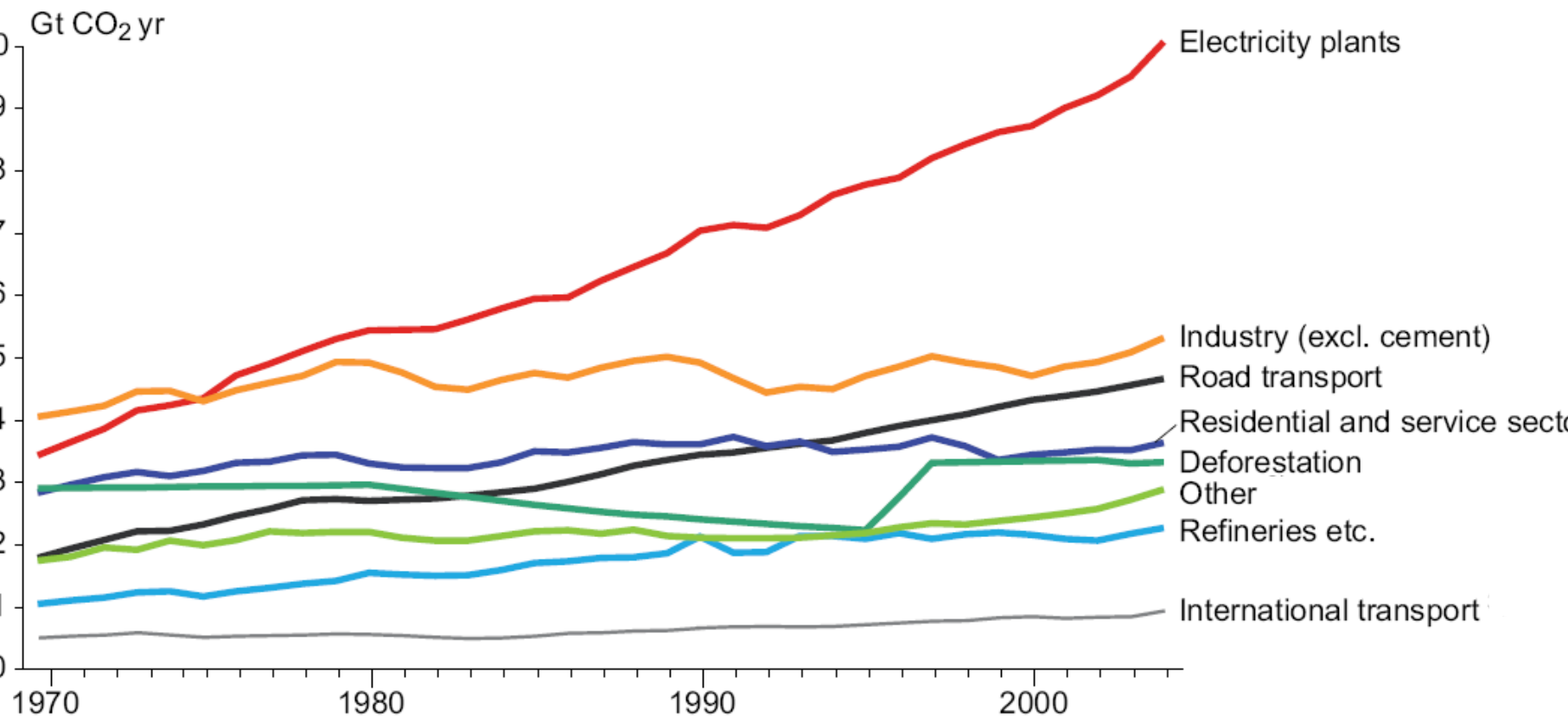
Die Herausforderungen (Global Energy Assessment)

- Klimawandel (und weitere Umweltprobleme)
- Sicherung der Energieversorgung
- Zugang zu Energie für die Entwicklungsländer

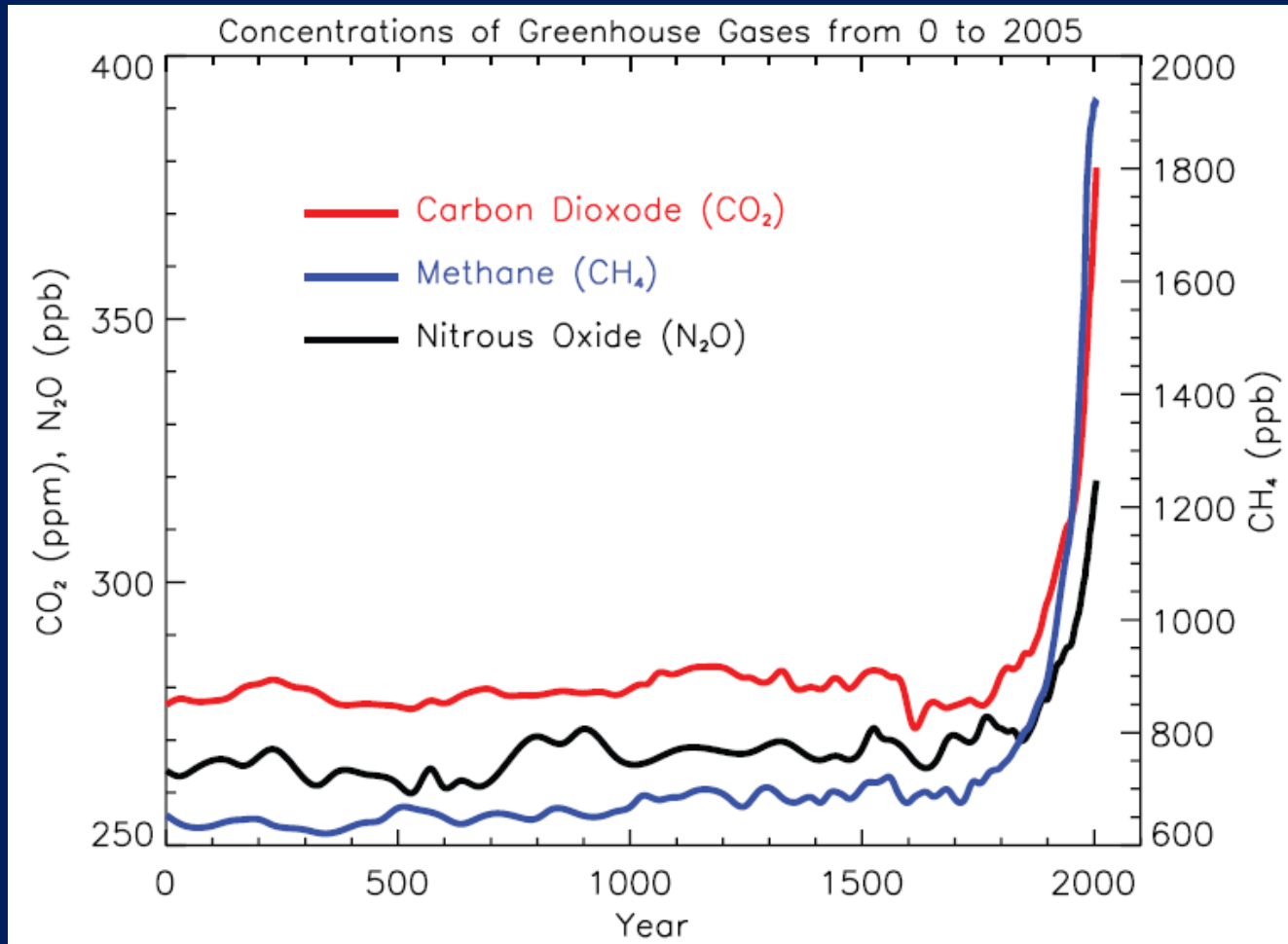
Treibhausgas-Emissionen steigen



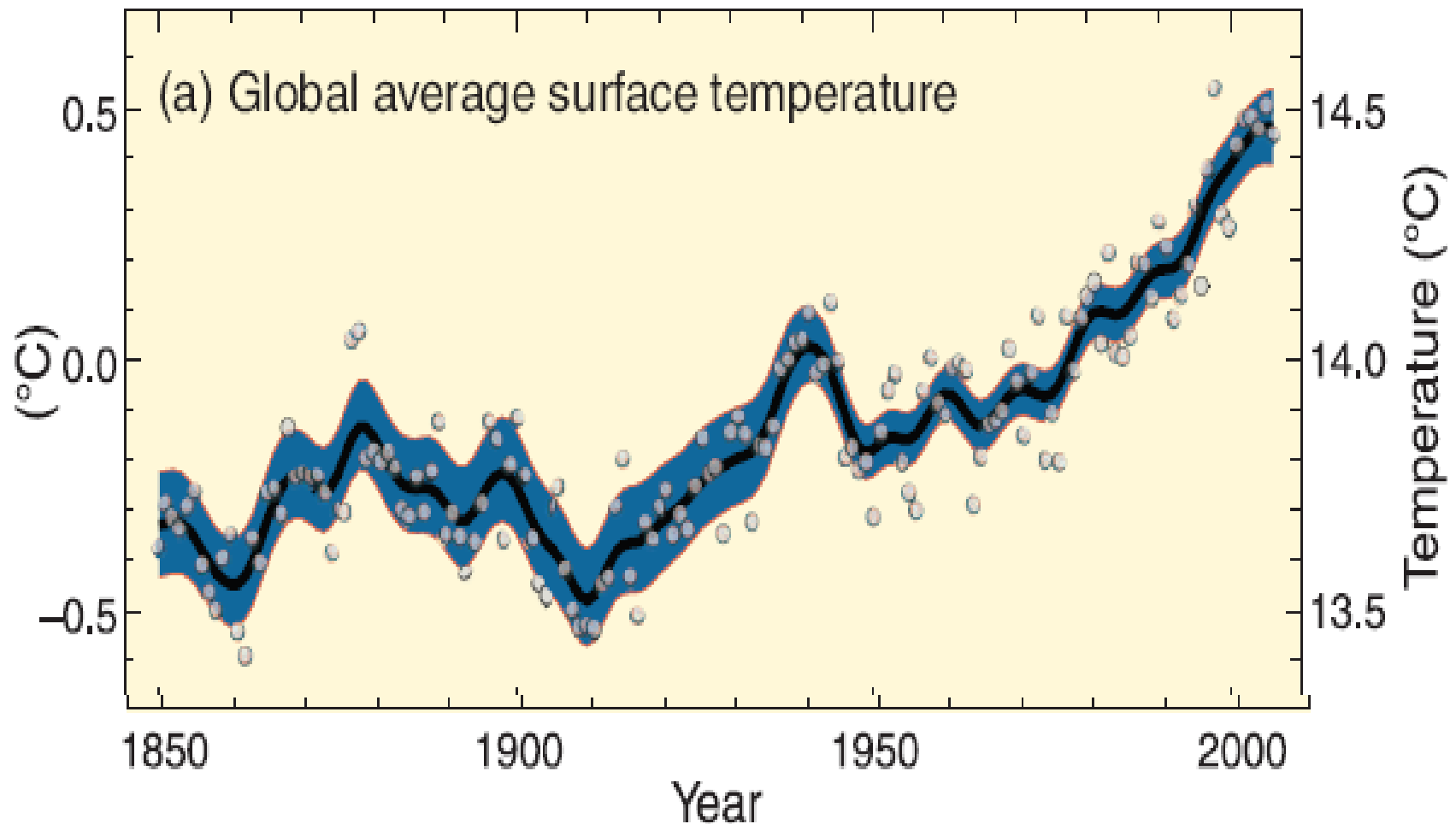
Vor allem die CO₂-Emissionen steigen



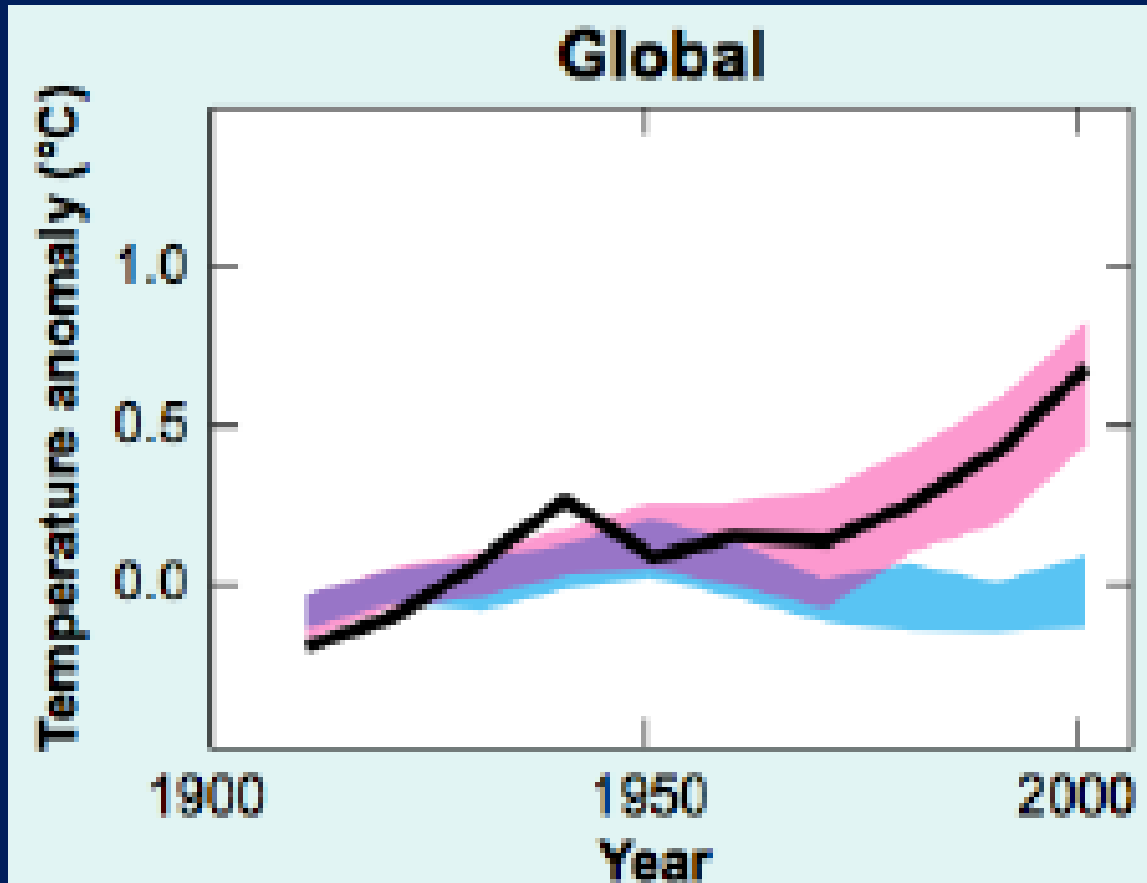
Treibhausgas-Konzentrationen steigen

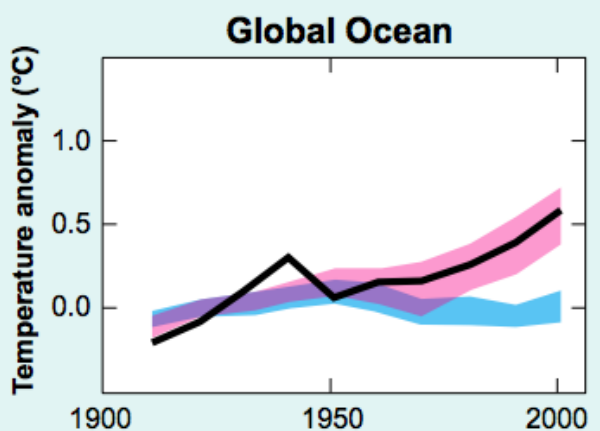
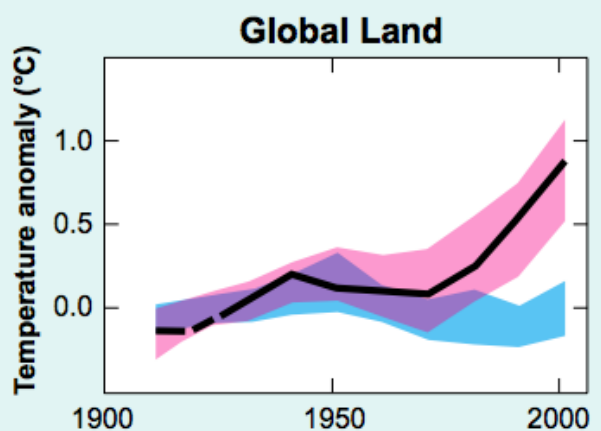
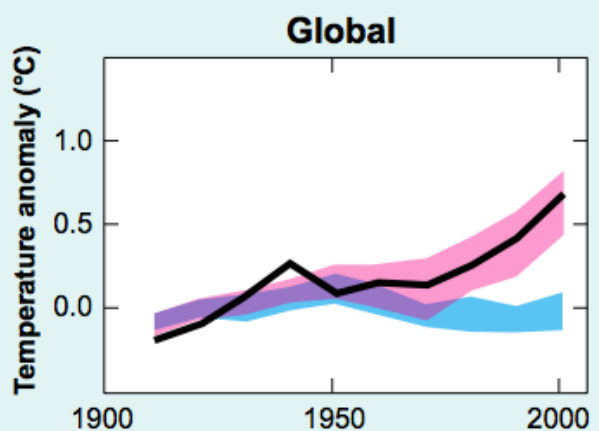
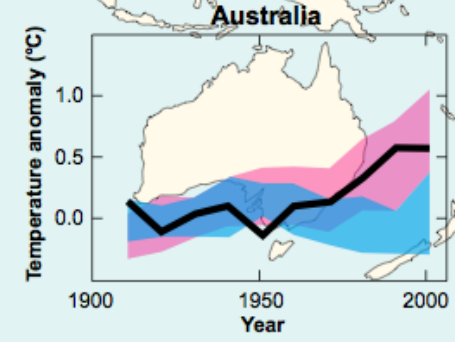
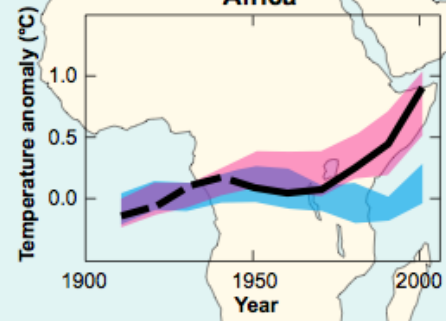
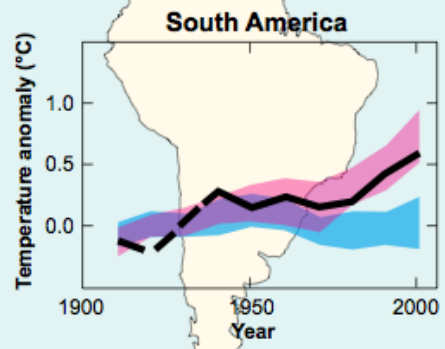
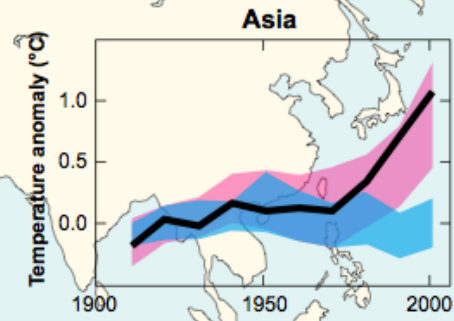
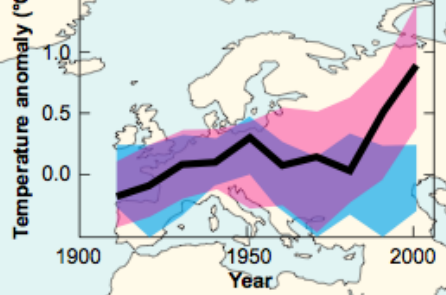
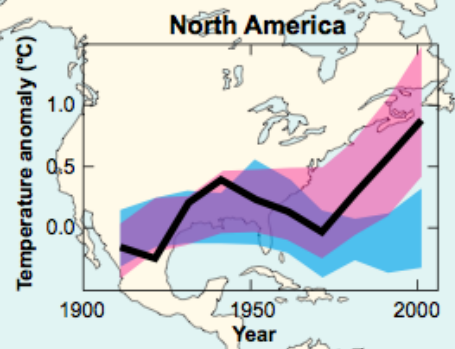


Die Durchschnitts-Temperatur steigt



Natürliche oder anthropogene Ursachen?





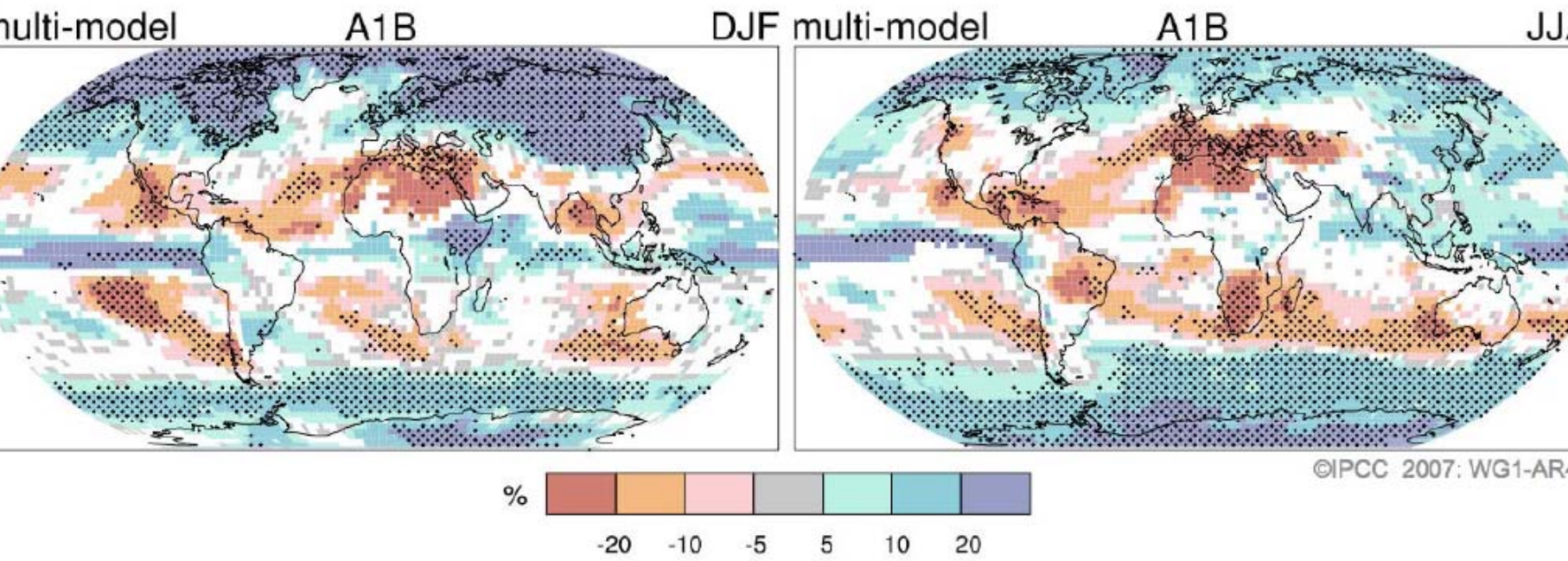
Warum kümmern wir uns um den Klimawandel?

- Anstieg des Meeresspiegels
- Wassermangel
-
-
-
-



Prognostizierte Veränderungen der Niederschläge

Projected Patterns of Precipitation Changes



Warum kümmern wir uns um den Klimawandel?

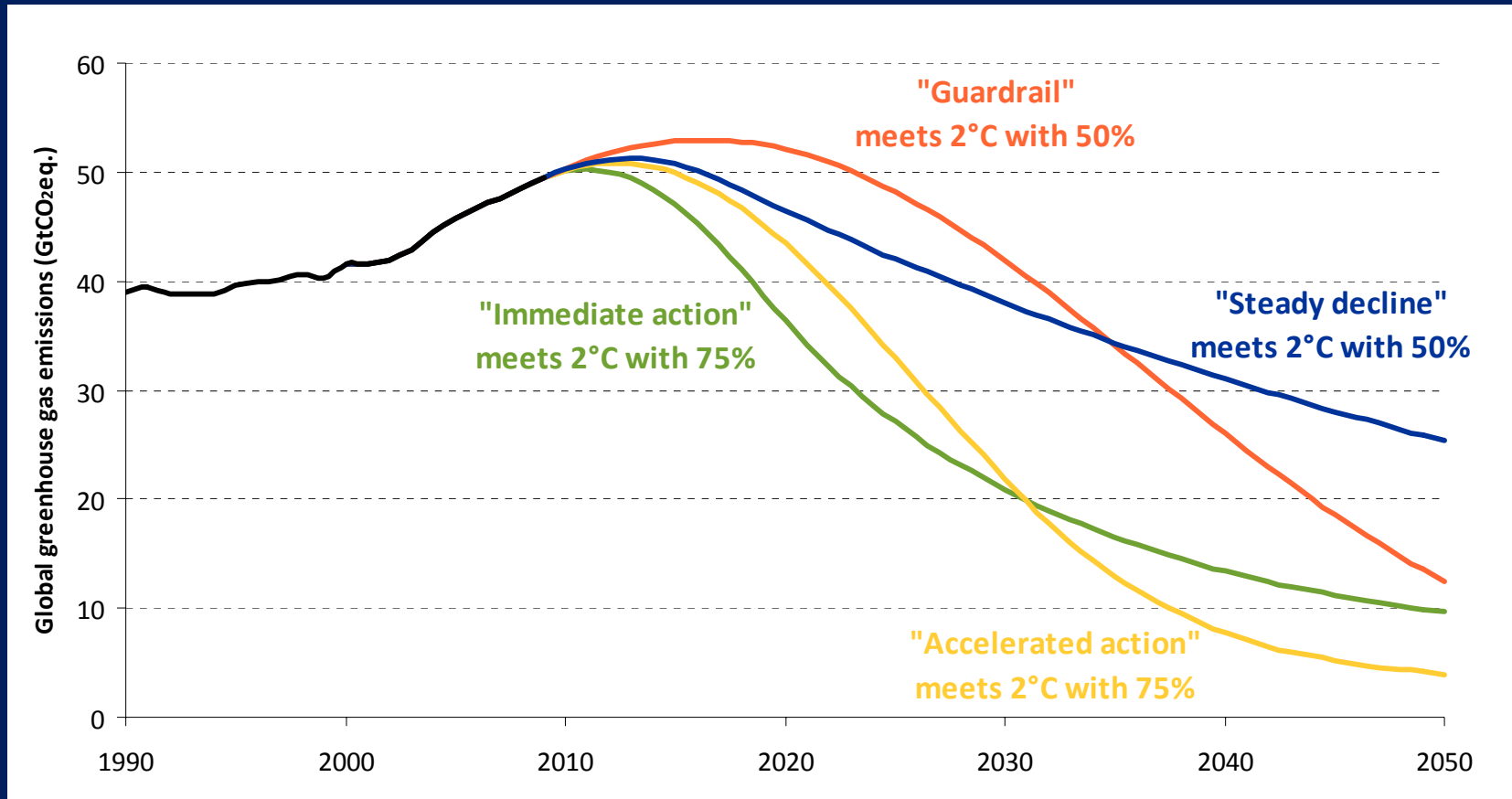
- Anstieg des Meeresspiegels
- Wassermangel
- Nahrungsmittelknappheit
- Weitere Verbreitung von Krankheiten
- Auswirkungen auf Ökosysteme
- Vermehrtes Auftreten von extremen Wetterereignissen

"Millionen in Gefahr"

→ Temperaturanstieg sollte auf maximal 2 °C begrenzt werden



Erforderliche Reduktion der Emission von Treibhausgasen um den Temperaturanstieg auf 2 °C zu begrenzen



Was kann man machen?

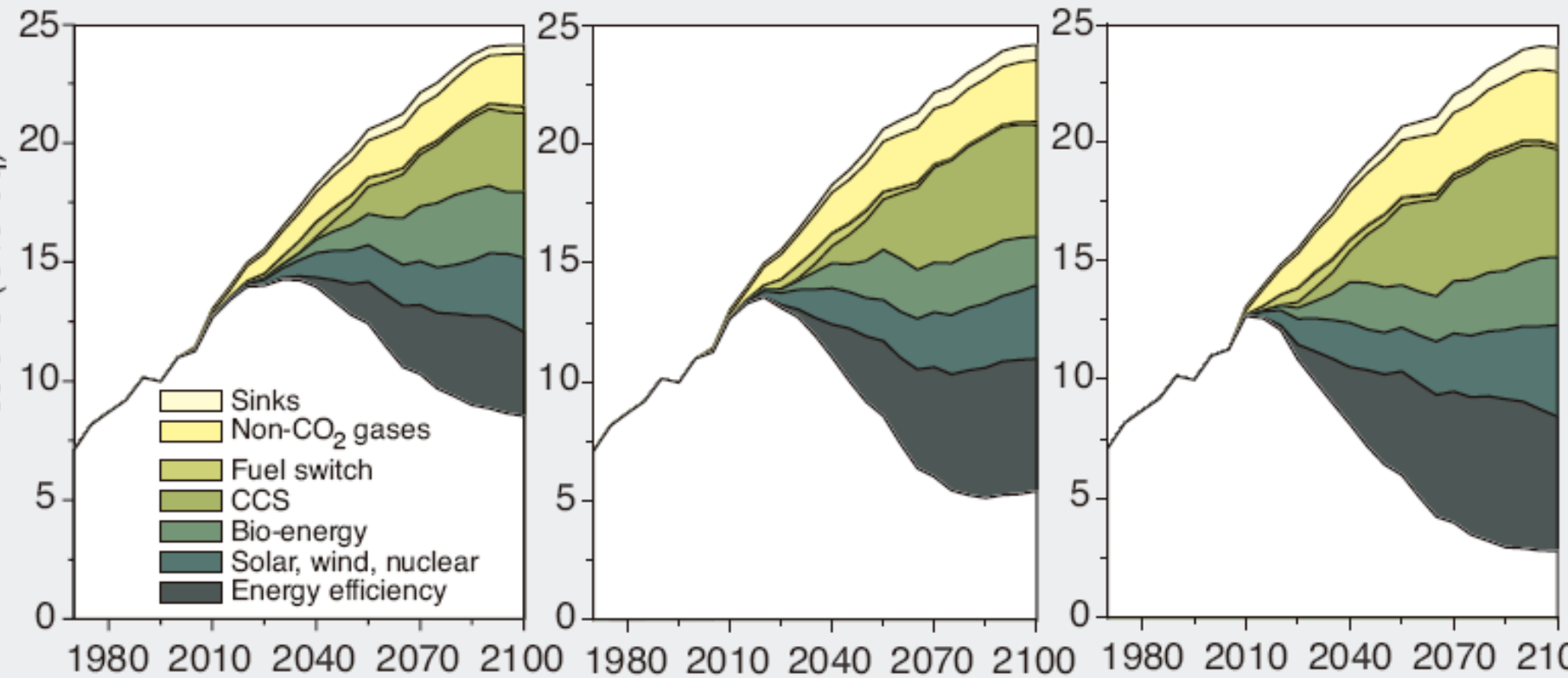


Stabilisierung auf verschiedenen Ebenen

650 ppm CO₂-eq

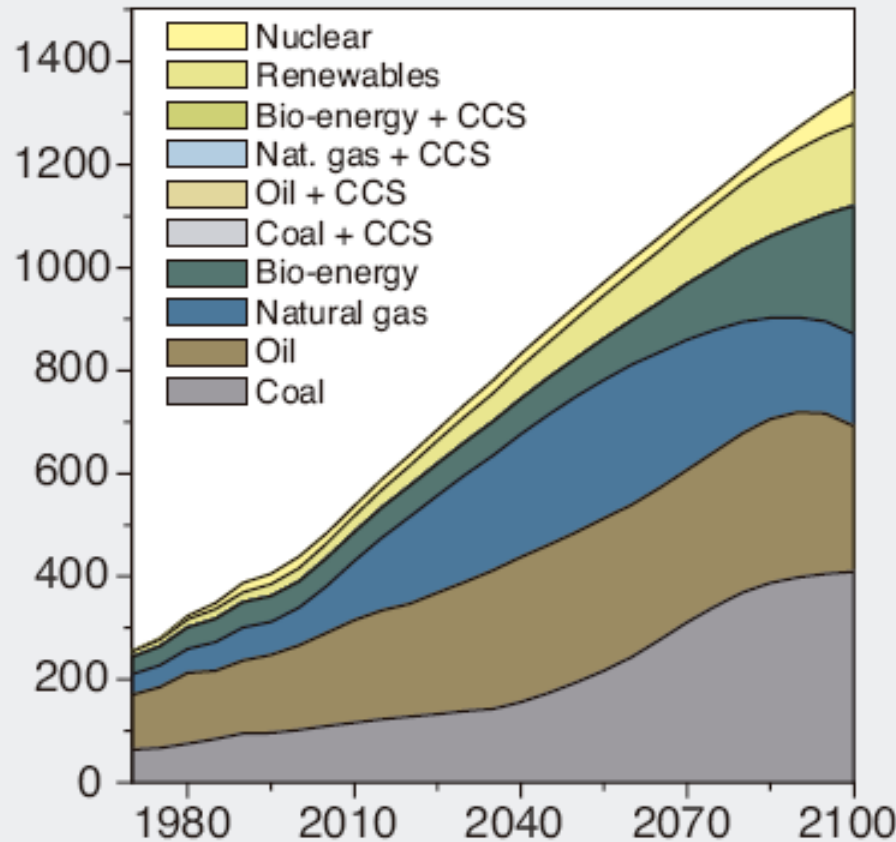
550 ppm CO₂-eq

450 ppm CO₂-eq

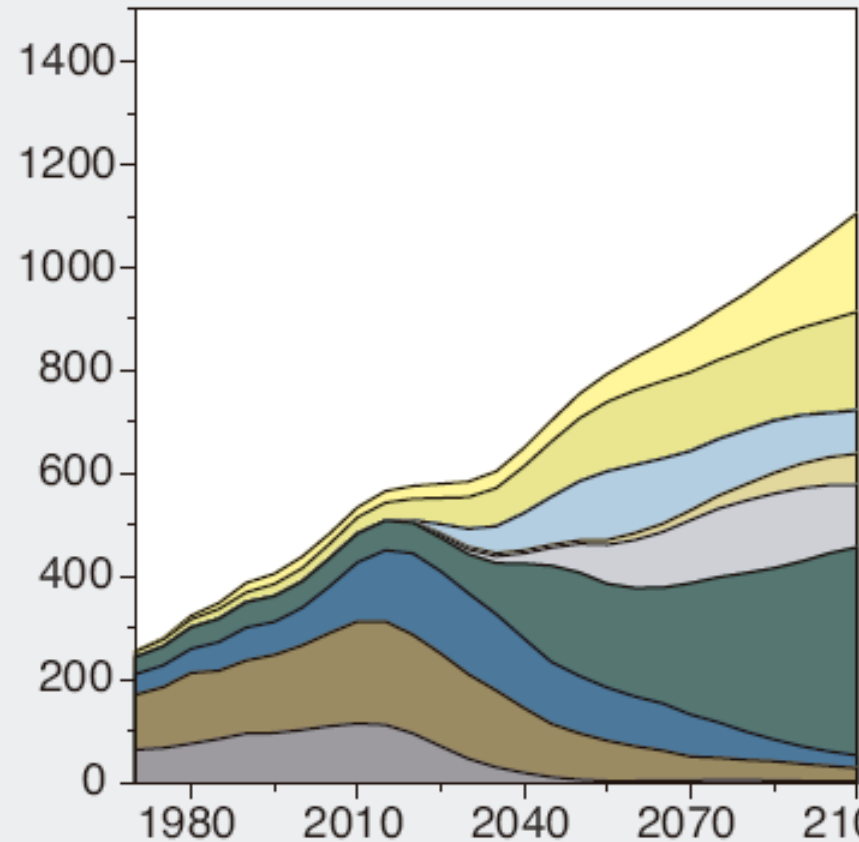


Der Energieverbrauch in einem 450 ppm CO₂-eq. Stabilisierungs-Szenario

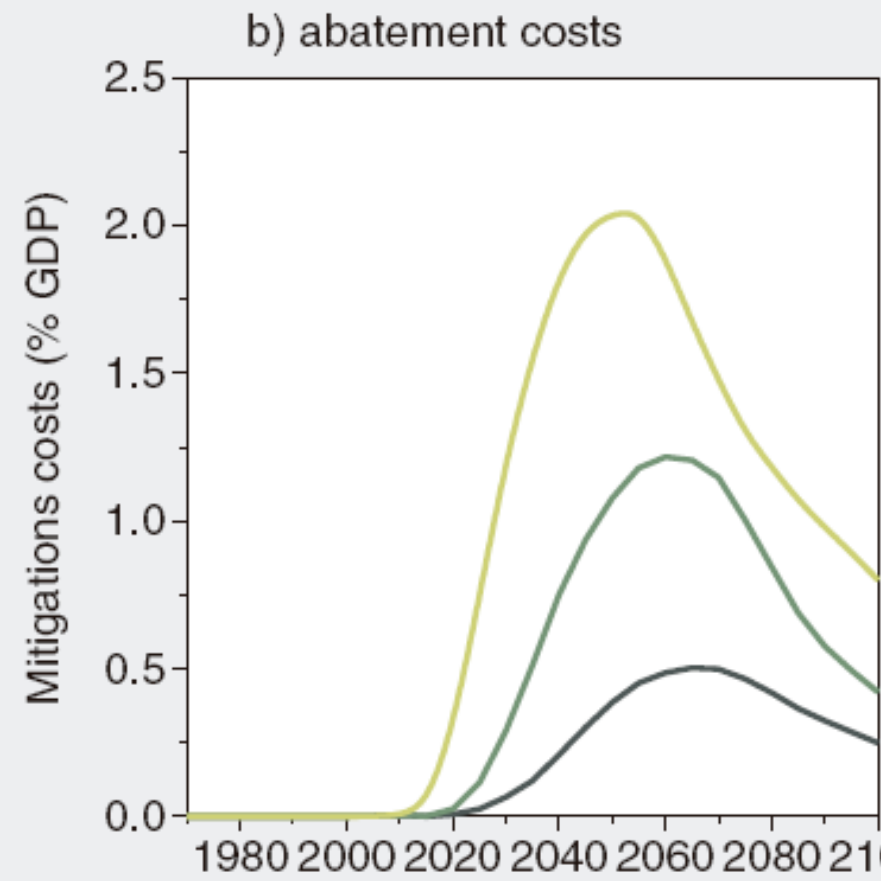
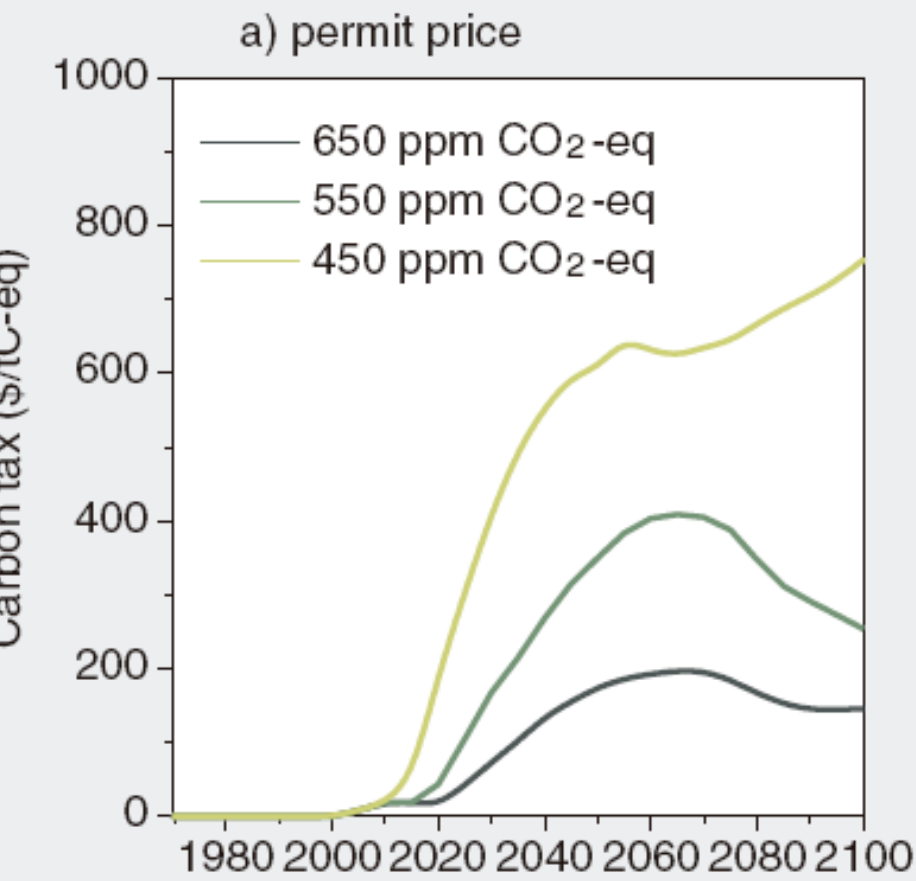
a) B2 baseline



b) 450 ppm CO₂ -eq



Die Kosten des Klimaschutzes



Die Klimaschutzverhandlungen



Geschichte der Klimaschutzverhandlungen

1992: Rio de Janeiro: UNFCCC

1997: Kyoto Protocol (2008-2012)

2001: Marrakech Final Agreement

2005: Kyoto Protocol in Betrieb

2007: Bali Action Plan

2009: Copenhagen Accord

1992 Rio de Janeiro

United Nations Framework Convention
on Climate Change (UN-FCCC)

... prevent dangerous human interference with the
atmosphere

(gefährliche Eingriffe des Menschen in die Atmosphäre sollten verhindert
werden)

...common but differentiated responsibilities ...

(gemeinsame, aber differenzierte Verantwortung)

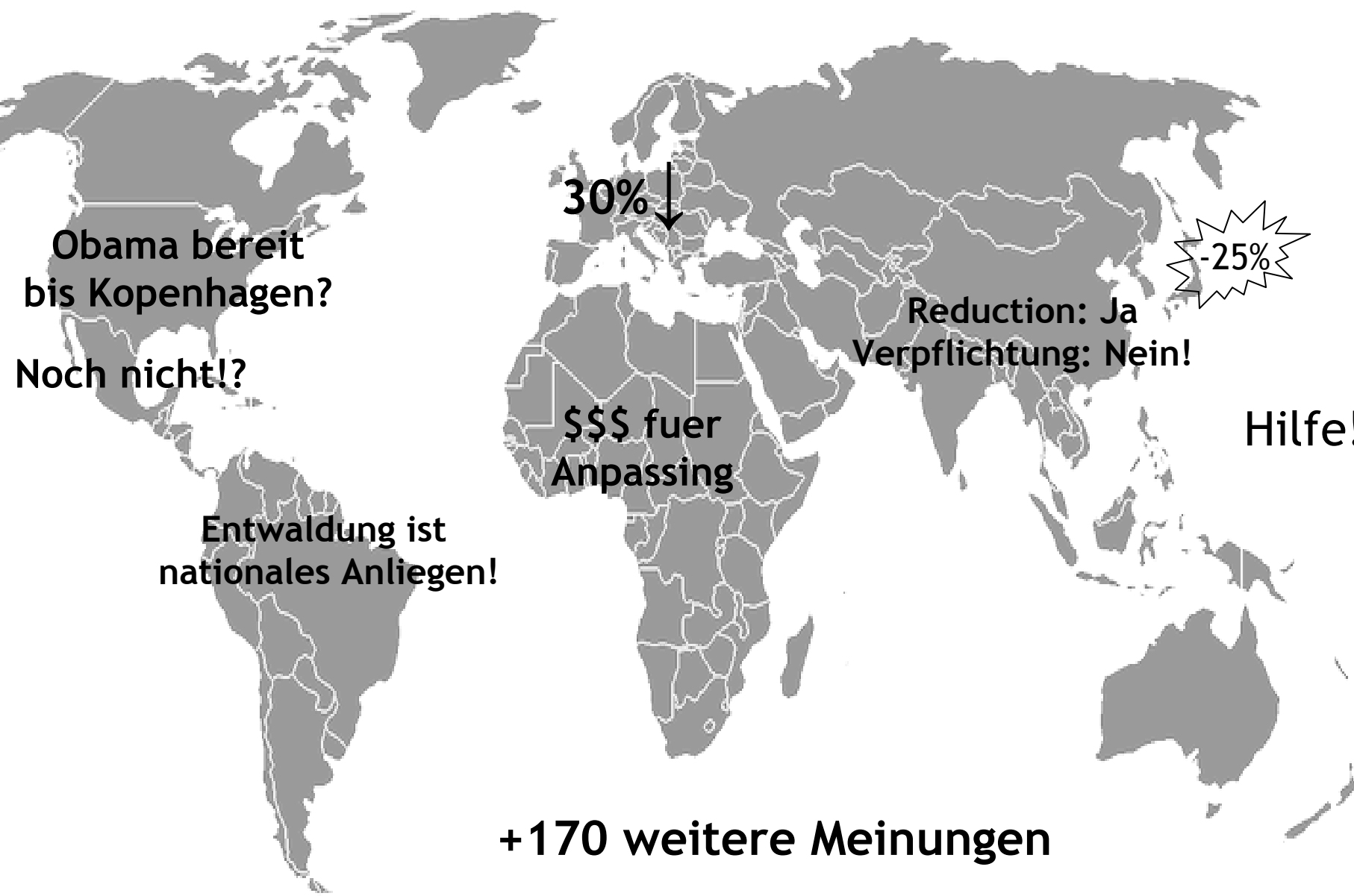
1997 Kyoto Protocol

- Abkommen zu Emissionsreduktionen durch die industrialisierten Länder in 2008-2012: bis zu 8% im Vergleich zu 1990
- Handel in Emissionen von Kohlendioxid, einschließlich des Clean Development Mechanism

2007 Bali

Bali Action Plan:
“agree to agree” in 2009 in Copenhagen





Obama bereit bis Kopenhagen?
Noch nicht!?

Entwaldung ist nationales Anliegen!

30% ↓

\$\$\$ fuer Anpassung

Reduction: Ja
Verpflichtung: Nein!

-25%

Hilfe!

+170 weitere Meinungen

Wer war da?

- 11 500 Delegierte
- 23 000 Teilnehmer aus NGOs
- 3 500 Reporter und Fotografen
- 7 400 Konferenzmitarbeiter



Advance unedited version

Decision -/CP.15

The Conference of the Parties,

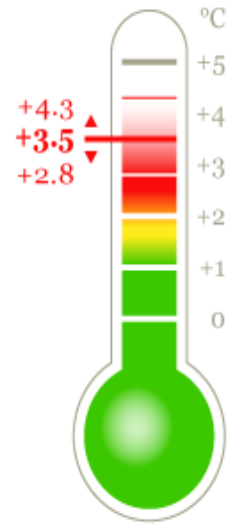
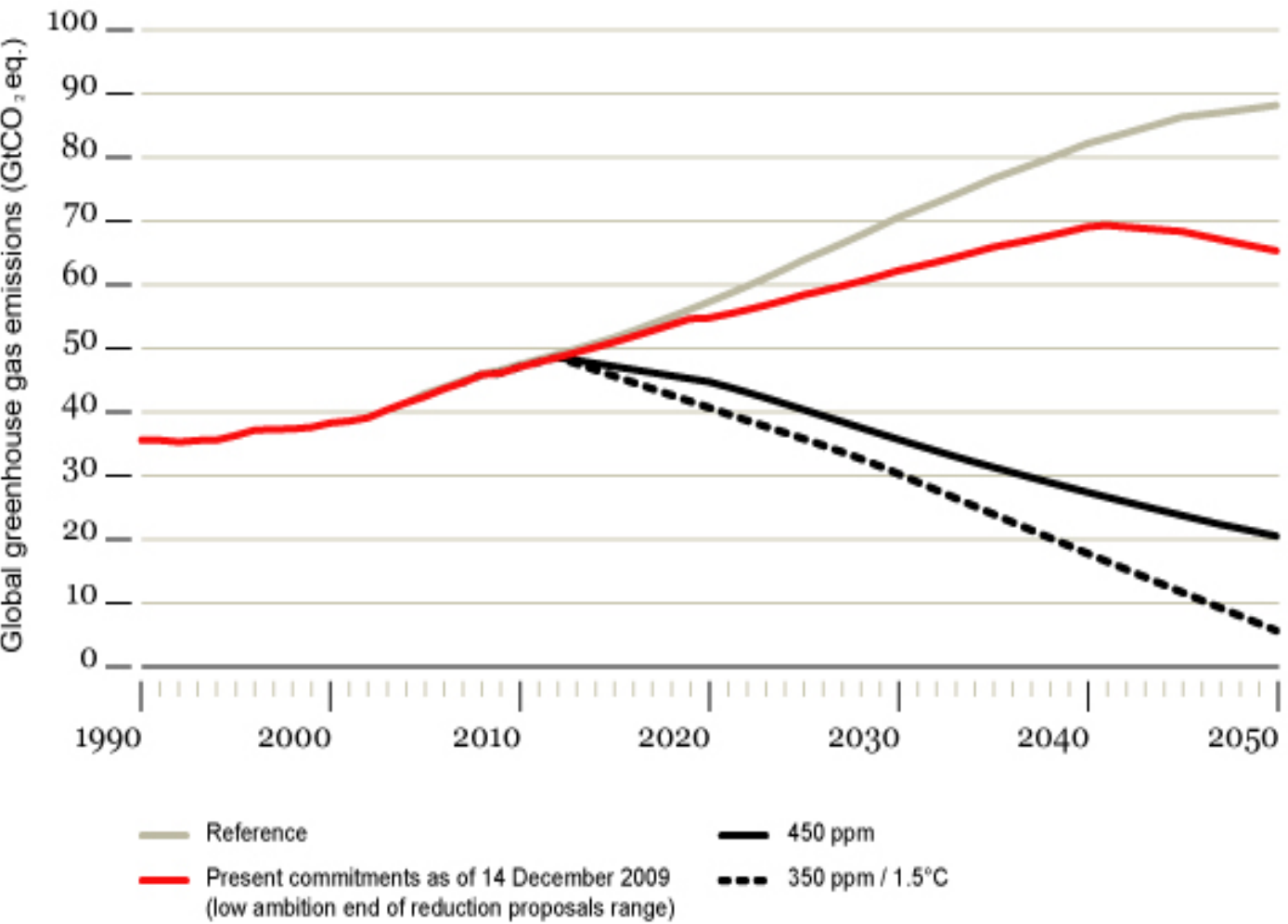
Takes note of the Copenhagen Accord of 18 December 2009.



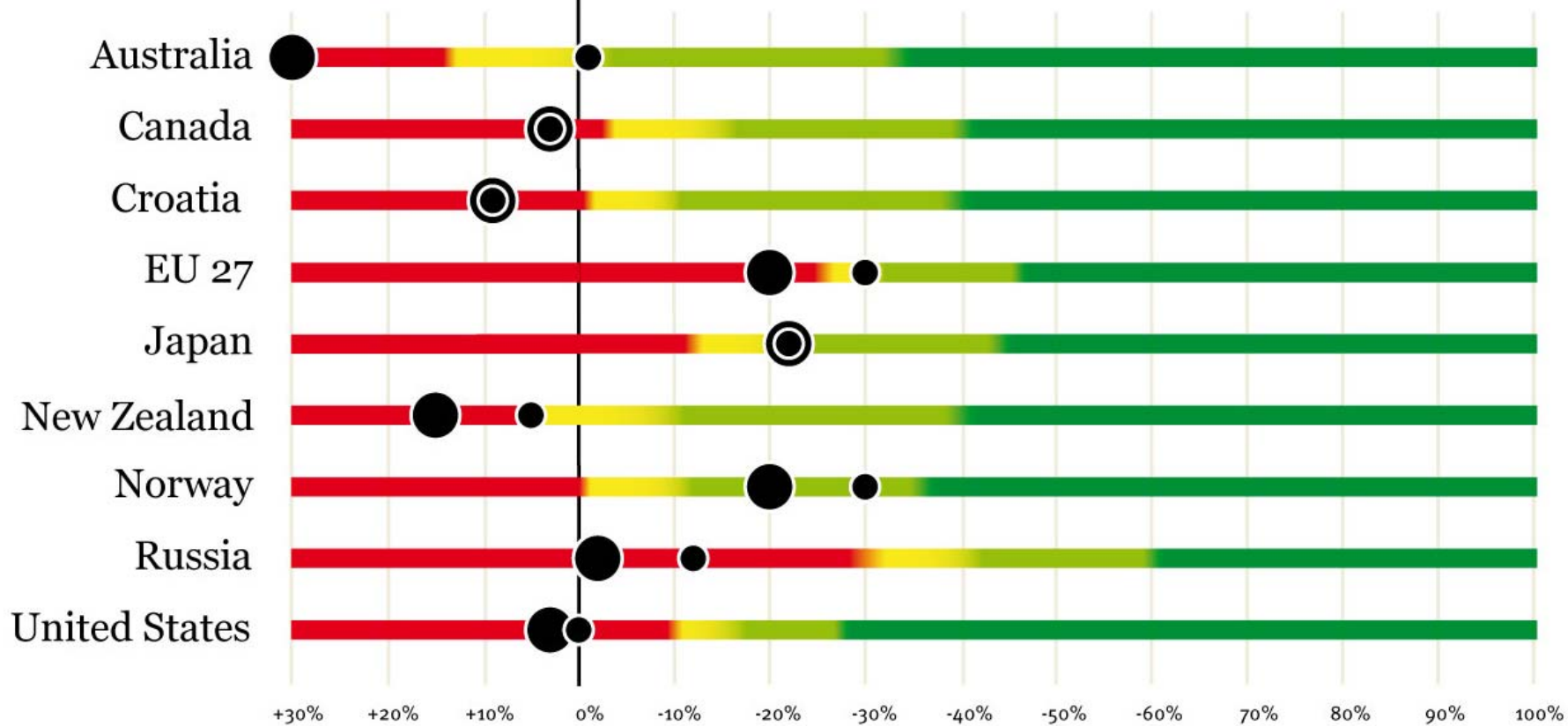
2. We agree that deep cuts in global emissions are required according to science, and as documented by the IPCC Fourth Assessment Report with a view to reduce global emissions so as to hold the increase in global temperature below 2 degrees Celsius, and take action to meet this objective consistent with science and on the basis of equity. We should cooperate in achieving the peaking of global and national emissions as soon as possible, recognizing that the time frame for peaking will be longer in developing countries and bearing in mind that social and economic development and poverty eradication are the first and overriding priorities of developing countries and that a low-emission development strategy is indispensable to sustainable development.

12. We call for an assessment of the implementation of this Accord to be completed by 2015, including in light of the Convention's ultimate objective. This would include consideration of strengthening the long-term goal referencing various matters presented by the science, including in relation to temperature rises of 1.5 degrees Celsius.

Ist es genug?

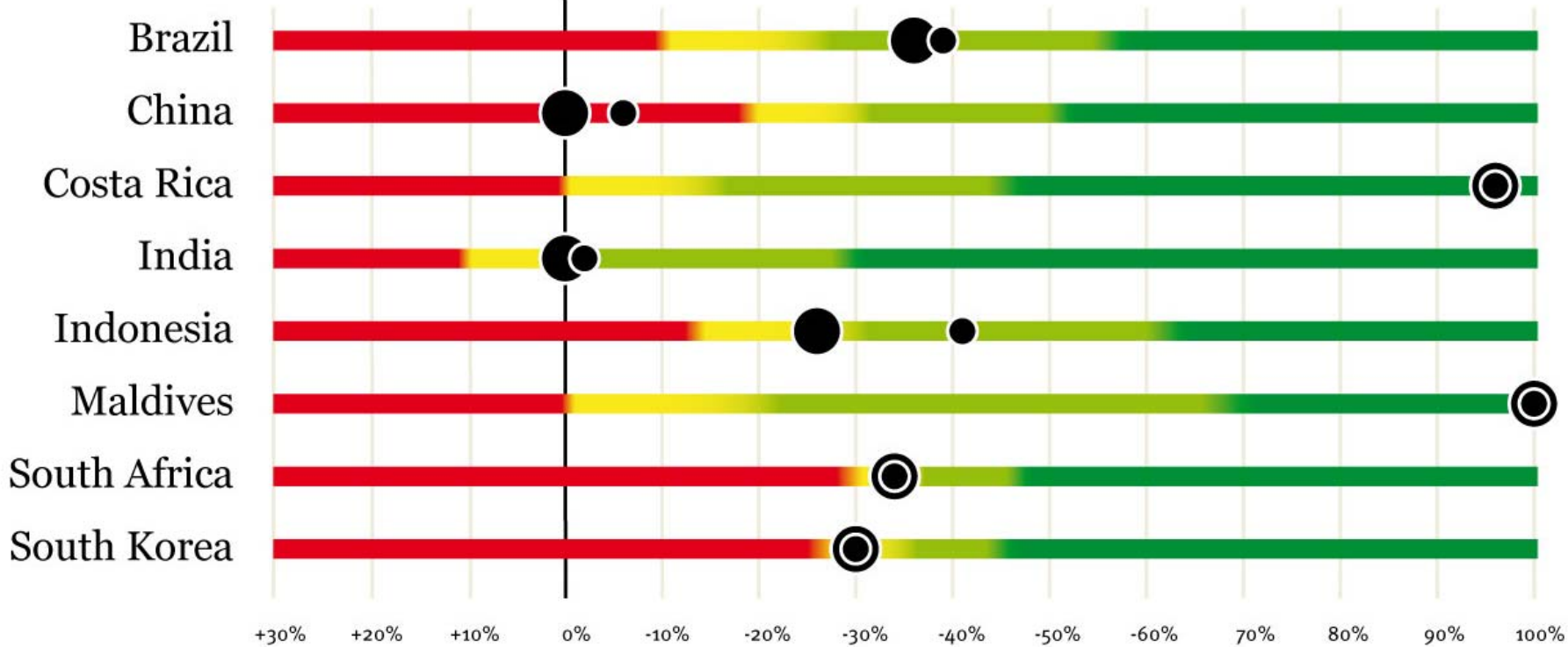


Developed countries Effective emission limit compared to 1990 (including credits and debits from forestry)



Developing countries

Emission reductions compared to business as usual



8. Scaled up, new and additional, predictable and adequate funding as well as improved access shall be provided to developing countries, in accordance with the relevant provisions of the Convention, to enable and support enhanced action on mitigation, including substantial finance to reduce emissions from deforestation and forest degradation (REDD-plus), adaptation, technology development and transfer and capacity-building, for enhanced implementation of the Convention. The collective commitment by developed countries is to provide new and additional resources, including forestry and investments through international institutions, approaching USD 30 billion for the period 2010 – 2012 with balanced allocation between adaptation and mitigation. Funding for adaptation will be prioritized for the most vulnerable developing countries, such as the least developed countries, small island developing States and Africa. In the context of meaningful mitigation actions and transparency on implementation, developed countries commit to a goal of mobilizing jointly USD 100 billion dollars a year by 2020 to address the needs of developing countries. This funding will come from a wide variety of sources, public and private, bilateral and multilateral, including alternative sources of finance. New multilateral funding for adaptation will be delivered through effective and efficient fund arrangements, with a governance structure providing for equal representation of developed and developing countries. A significant portion of such funding should flow through the Copenhagen Green Climate Fund.

Warum hat es nicht funktioniert?

- USA nicht bereit, aufgrund nationaler Entscheidungen
- EU keine führende Rolle, z. B. 20% bis 30%-Ziele
- China gegen äußere Kontrolle seiner Ziele
- Einige Länder verbargen ihre wahren Absichten durch geringe Transparenz und mangelnde Demokratie
- Dänische Präsidentschaft nicht führend



Was nun?

- Weiter arbeiten bis Mexico, Dezember 2010
- Weitere Treffen, z. B. G20
- Vereinbarungen über Technologie, sektorale Abkommen
- Größere Rolle von Unternehmen

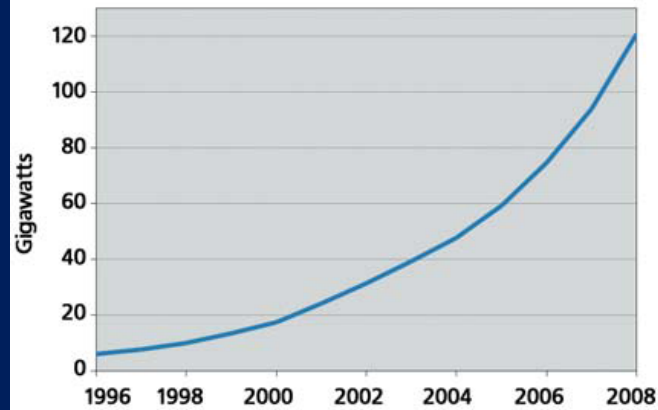
Schlussbemerkungen

Was bedeutet das für die Europäische Union?

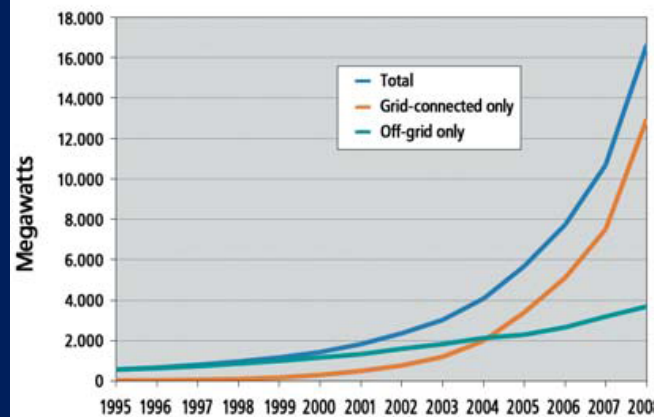
- In 2050: 80-95% Emissionsminderung (im Vergleich zu 1990)
- 25-40% in 2020
- Mindestens: 20% Reduktion in 2020
 - 20% erneuerbare Energien
 - 20% zusätzliche Steigerung der Energie-Effizienz

Erneuerbare Energie wächst schnell

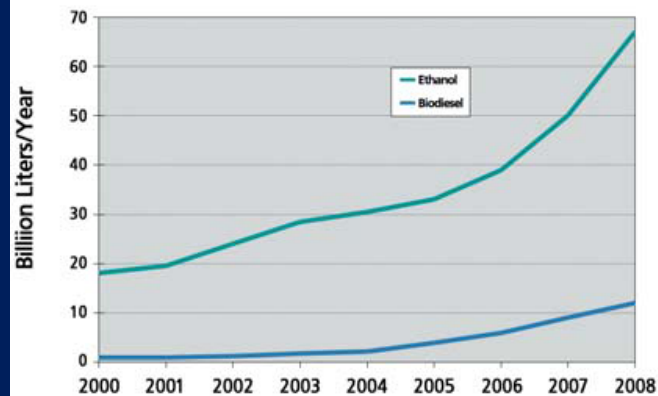
Wind Power, Existing World Capacity, 1996–2008



Solar PV, Existing World Capacity, 1995–2008



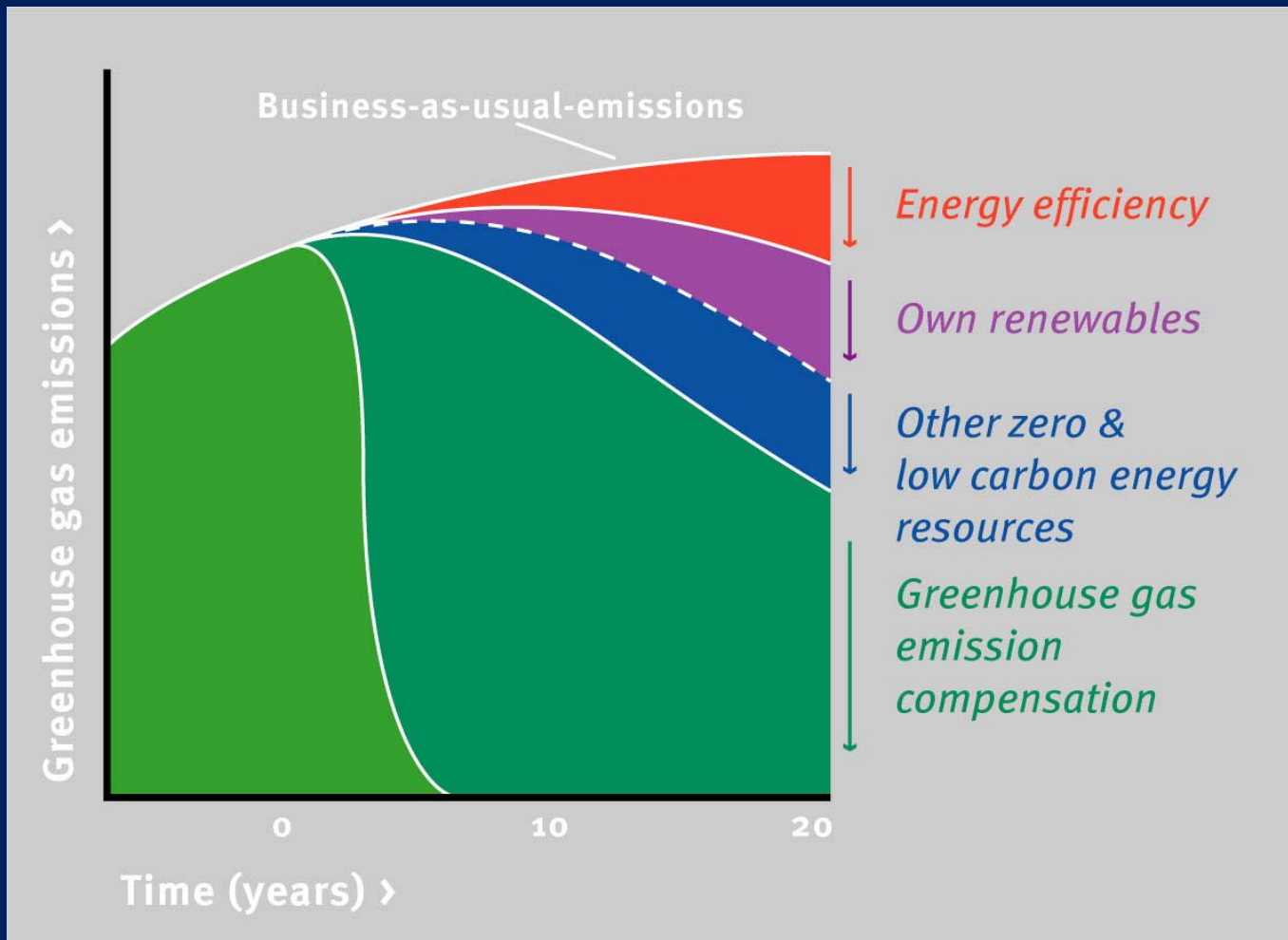
Ethanol and Biodiesel Production, 2000–2008



- Weltweite Investitionen in erneuerbare Energie: 120 Mrd. (2008)

Source: Renewables Global Status Report 2009 Update, REN21

Was können wir machen: Klimaneutralität



Nochmals: Die Herausforderungen

- Klimawandel
- Sicherung der Energieversorgung
- Zugang zu Energie für die Entwicklungsländer

