

A Viable Global Framework for Preventing Dangerous Climate Change

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Article 2: What it says

Ultimate objective to prevent dangerous anthropogenic **interference with the climate system** ... within a time frame sufficient to:

- » allow ecosystems to adapt naturally to climate change
- » ensure that food production is not threatened
- » enable economic development to proceed in a sustainable manner





What is dangerous
Global framework proposal step by step
Latest modeling



THE HUMAN INFLUENCE ON ATMOSPHERE & CLIMATE

(IPCC/WG1: Climate Change 2001, SPM & Chapters 2, 3, 4, 5, 9)



The climate system is now in an unprecedented state when viewed over last 400-800,000 years and maybe longer.

IPCC TAR Risk vs Temperature



Ecosystems impacts



Impacts on coastal wetlands

Australia, Kakadu region: Loss of, or serious damage to, Kakadu World Heritage listed wetlands (30 cm, uncertain) (9) Bangladesh, Sundarbans: Progress ive loss of mangrove forest and wetlands, including habitat of Bengal tiger (75% loss at 2.5oC) (8) European wetlands: Mediterranean coast (31-100% loss for 1.5-4.2oC warming in 2080s) (7) European wetlands: Baltic coast (84-98% for 1.5-4.2oC warming in 2080s) (6) European wetlands: Atlantic coast (0 to 17% loss for 1.5-4.20C warming in 2080s) (5) USA, Delaware: (loss of 21% ca. 3.4oC warming - 100 year floods occurring 3-4 times more frequently) (4) USA: Loss of important foraging, migratory and wintering bird habitat at five sites (20-70% loss for ca. 2.6oC warming) (3) USA, southern New England: extensive loss of wetlands local sea level rise greater than 6 mm/yr (2) Global assessment: progres sive coastal wetland loss with increasing warming (5.7% for ca. 3.4oC warming) (1b) Global assessment: progressive coastal wetland loss with increasing warming (22.2% for ca. 3.4oC warming) (1a)



Impacts on animal species



Rainforests in North Queensland, Australia: "Impending environmental catastrophe"



Figure 1. Geographical pattern of species richness of regionally endemic rainforest vertebrates at each temperature scenario. Species richness is produced by overlaying all species-distribution models at each temperature scenario. Williams et al 2003















- Equity equal access to the atmospheric commons
 - Give increasing weight to the aim of per capita emissions convergence over the course of the 21st century
 - Intergenerational equity
- Historical responsibility
- Ability to pay and the capacity to act

Basic Principles

Not harm ability of countries to achieve sustainable development objectives
 Rio principles – provision by developed countries of resources and funding for development



Track Three: Adaptation Track for the most vulnerable regions

Track Two: **Greening (decarbonisation) Track** for the developing countries not in the Kyoto Track

Track One: **Kyoto Track** with legally binding emission reduction in subsequent commitment periods

The Kyoto Track

Legally binding, tradable emission limitations and reduction obligations Deep cuts by industrialised countries Very small set of developing countries according to a set of criteria - Relative per capita emissions – Per capita income – Historical responsibility

Voluntary Pledge and review Intensity targets for industrialised countries Binding sectoral targets for industrialised countries

Kyoto Track is not...



It builds on the heart of the Kyoto Protocol, binding absolute caps on emissions for developed countries

- Recognised in Berlin that voluntary had not worked
- Assessed emissions trends then
- Current trends in the US reinforce the fact that voluntary,

Greening (Decarbonisation) Track

Majority of developing countries
Designed to enable developing countries to follow a low carbon path to development
Actions and policies should rapidly accelerate the introduction of new, sustainable technologies (already tested in Track One countries)

Decarbonisation Track acc. to...

- Availability of resources and technology from industrialised countries
- Level of emission reductions undertaken by Kyoto track countries
- Adoption of no regrets measures by all as a base

Decarb Track commitment development could be guided by: Sustainable Development Policies and Measures Sectoral carbon intensity targets Triptych approach - Domestic Internationally exposed industry – Power sector

Adaptation Track

Meet the needs of key vulnerable regions to assist with adaptation measures Funded by industrialised countries Compensation for the unavoidable impacts Current Kyoto elements as base Adaptation Fund - Special Climate Change Fund – LDC Fund

How to decide level of action? Must be fair

Three mitigation stages for the Decarbonisation Track

Stage One; All but LDCs involved

Stage Two: Countries move from Decarb to Kyoto Track and switch from limited growth of emissions to reductions of emissions (binding obligation to stabilise)

Stage Three: Main Reduction stage for developing countries, but all Annex B should already be here by the second commitment period

Criteria for moving between stages

From Adaptation to Decarb stage

 According to criteria which would also be used to determine the level of effort in the Decarb stage involving a combination of:

» Relative per capita emissions (equity)

» Ability/capacity to act (eg per capita income)

» Responsibility

From Decarb to Kyoto stage –
 Automatically after five years

Emission Reduction Targets

- Set in Kyoto Track
 Set every five years, 6 gases, bunker fuels
 60-80% by 2050 for Annex B to stay within 2 degrees C
 - Global emissions peak by the 2020s at the latest with substantial global reductions by the 2050s
 - Some developing countries would continue to increase for sometime after the 2020s before the stabilisation stage

Analysis of emissions reductions required for staying below 2°C?

Malte Meinshausen malte.meinshausen@ diala.greenpeace.org February, 2004



The fine print (decisive default assumptions)

Emission profiles consistent with staying below 2° C

- Climate calculations consistent with TAR science (MAGICC 4.1; Wigley et al.) – using ensemble means over fits to 7 AOGCMs (climate sensitivity about 2.8° C/2xCO2)
- Multi-gas emission profiles taking into account a pluralism of approaches and reduction potentials within the existing set of SRES / Post-SRES scenarios. Used model: SiMCaP. More details on this methodology in Meinshausen et al., in preparation, and www.simcap.org.
- Annex-I countries start reduction efforts in 2010. Non-Annex I countries start in 2015.
- No further assumptions on burden sharing differentiation (Multi-Stage etc...). The presented differentiation between Annex I and Non-Annex I is solely based on the projected emission shares for AI and NAI in the set of existing SRES / Post-SRES emission scenarios.





Inventory data (orange; solid) and projections (orange; dashed/dotted) for Annex A gases and sources. If available. Kyoto targets and future pledges (blue bars), and fossil & landuse 6-GHG emissions for Annex I consistent with climat target of peaking below 2°C (green solid)









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United Kingdom







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European Union EU15





Netherlands



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Germany



Framework is Necessary

- Need a short, medium and long-term framework to ensure we stay in the tolerable window
- Other approaches such as intensity targets, fragmented approach, global sector will not ensure stay within the tolerable window
- Contraction and convergence while providing a framework – is not a viable basis for a negotiable and practicable regime

Building blocks are there

- Adaptation tools exist, funds are lacking, need is extreme
- Decarbonisation links in with bringing climate into development pathways and ensuring a multi-beneficial approach
- Kyoto builds on previous knowledge and proof that if want to reduce emissions, binding, absolute caps are the only way

forward





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