



Klimaänderung I

Vorlesung SS 2007

Robert Sausen

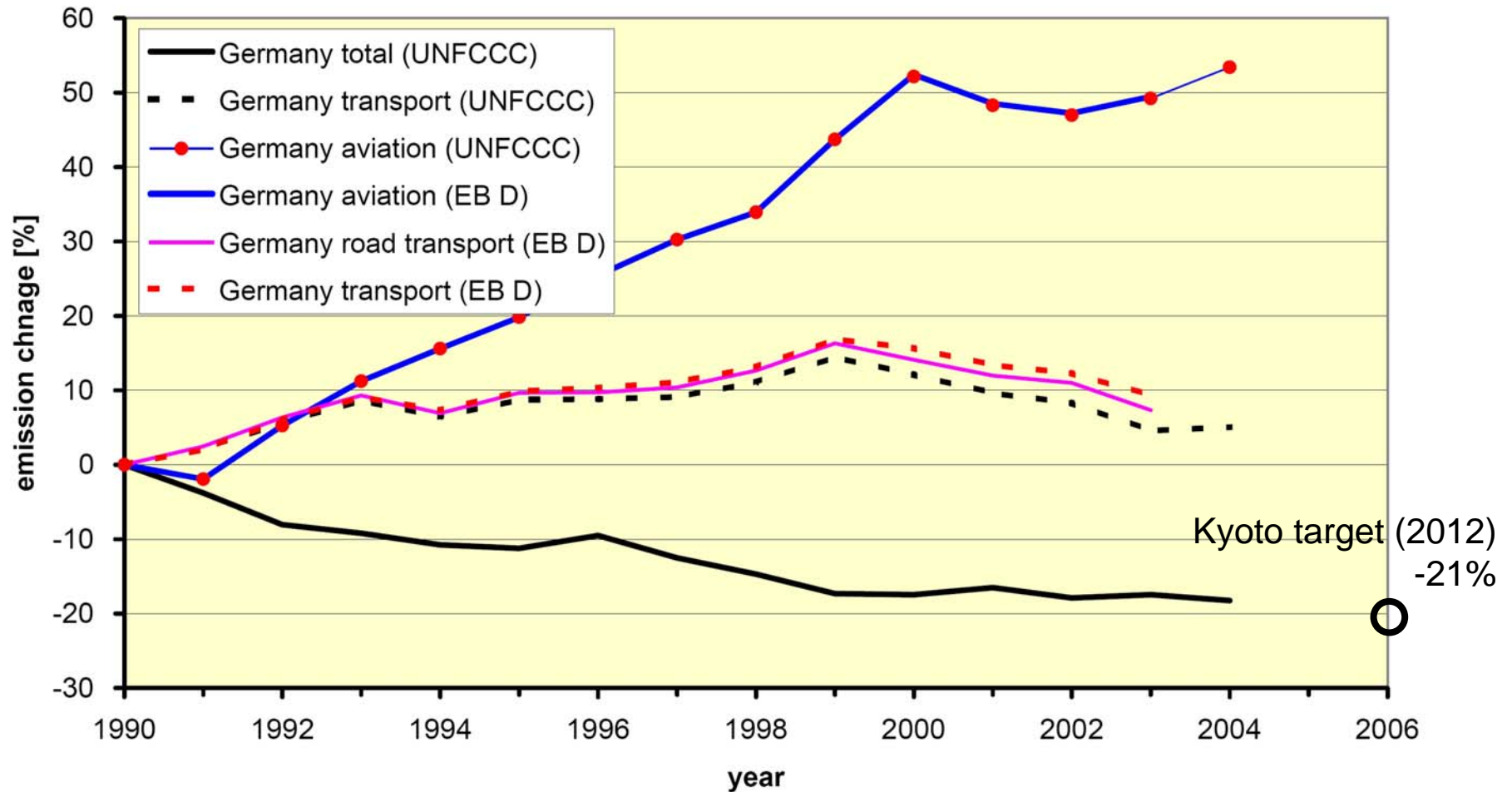
DLR-Institut für Physik der Atmosphäre

Oberpfaffenhofen



Deutsches Zentrum
für Luft- und Raumfahrt e.V.
in der Helmholtz-Gemeinschaft

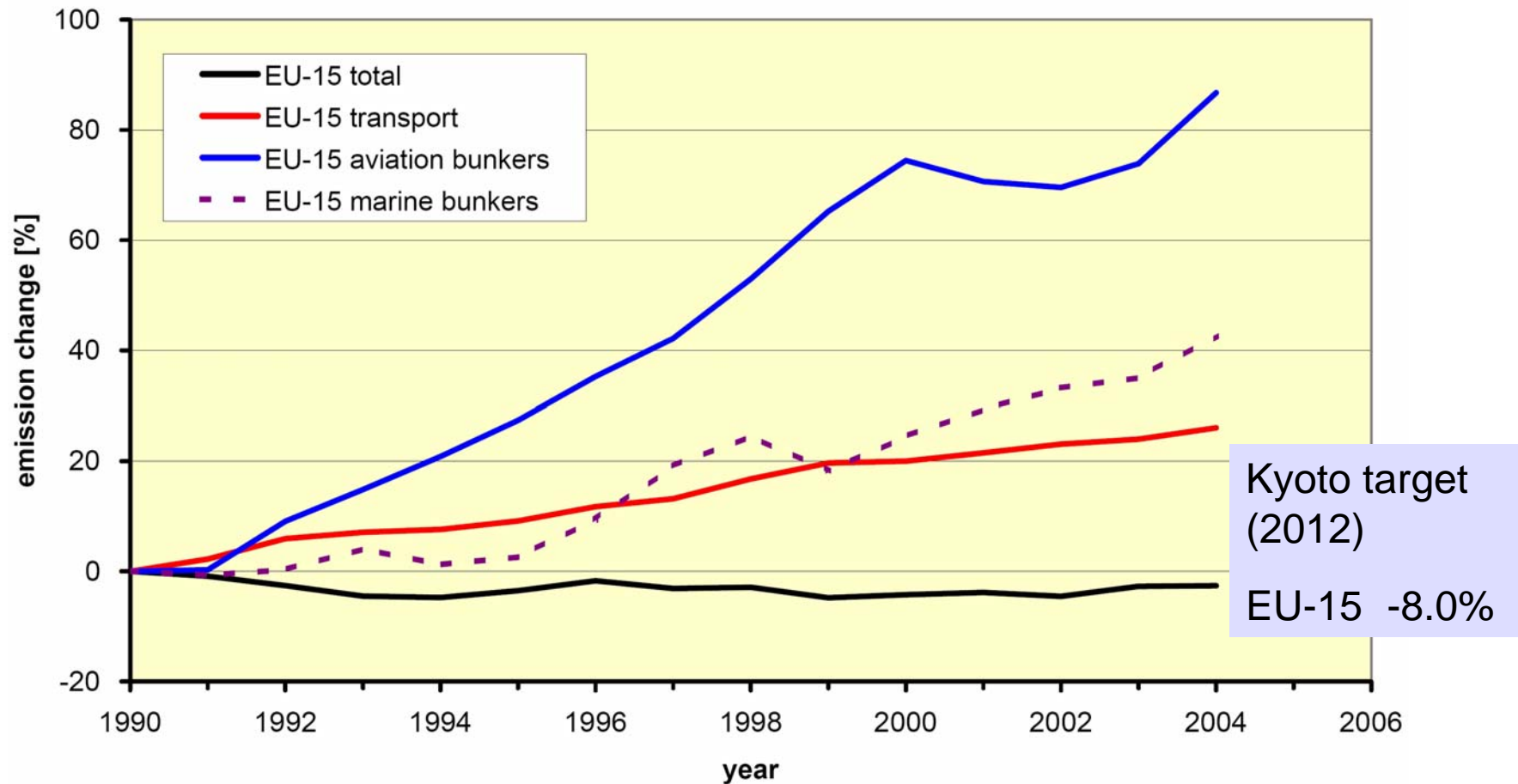
Change of German equivalent CO₂ emissions relative to 1990



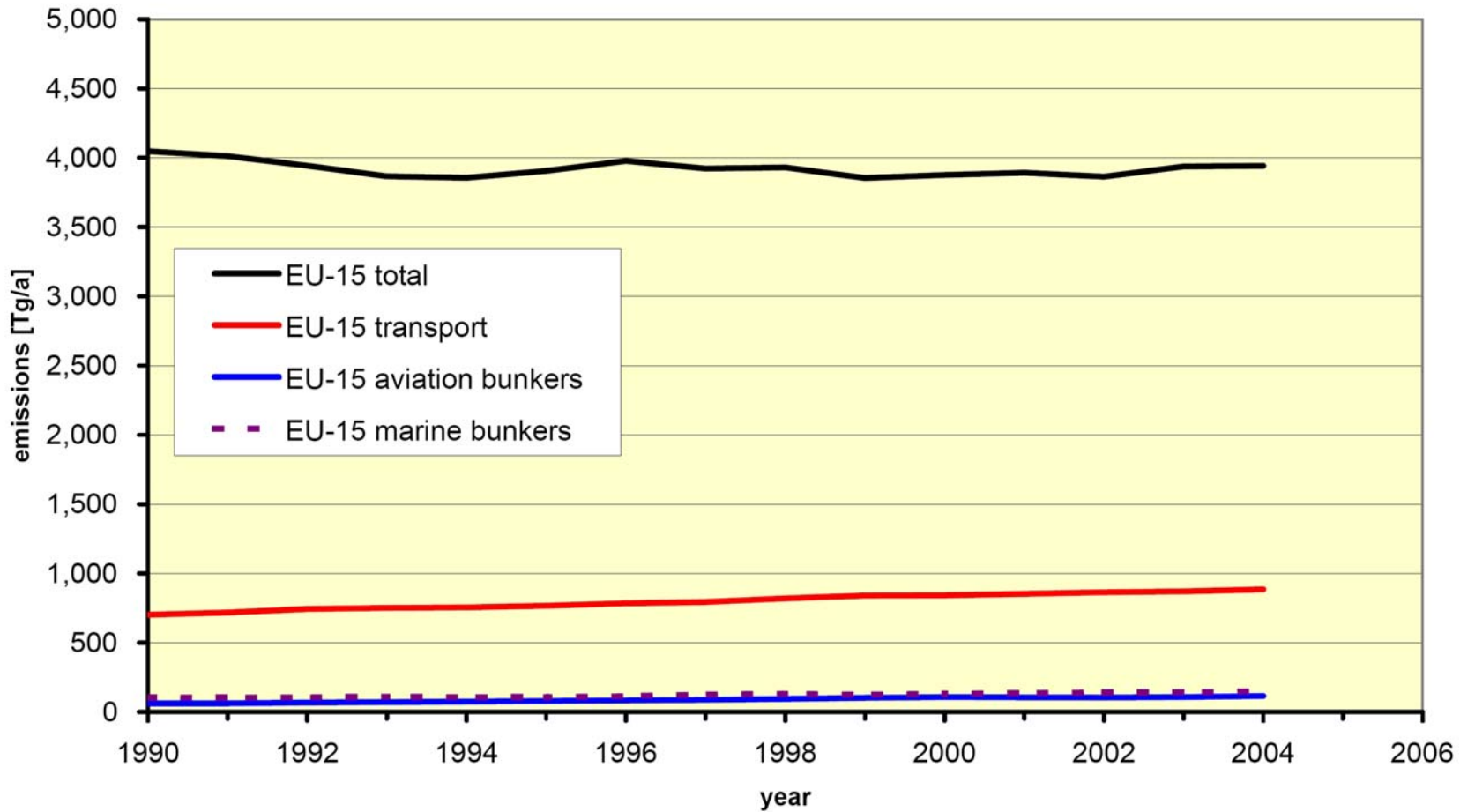
data: <http://unfccc.int>
<http://www.ag-energiebilanzen.de/>

Does EU-15 comply with the Kyoto Protocol ?

Equivalent CO₂ emissions relative to 1990

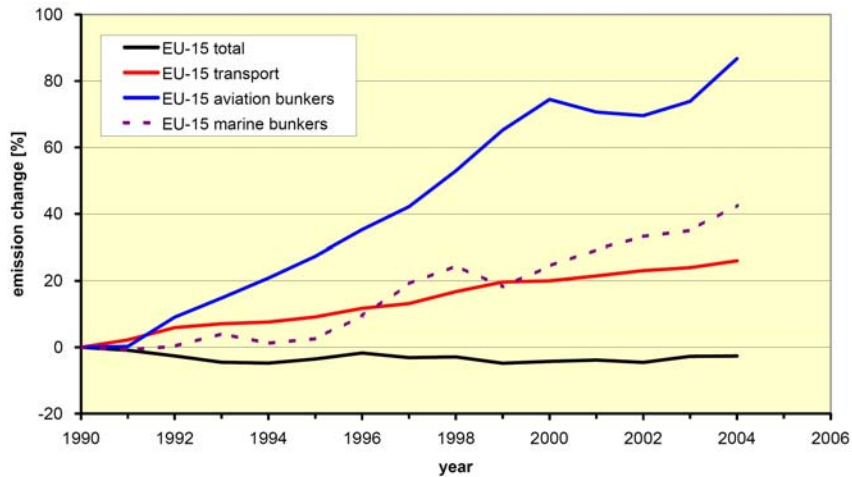


Absolute equivalent CO₂ emissions since 1990

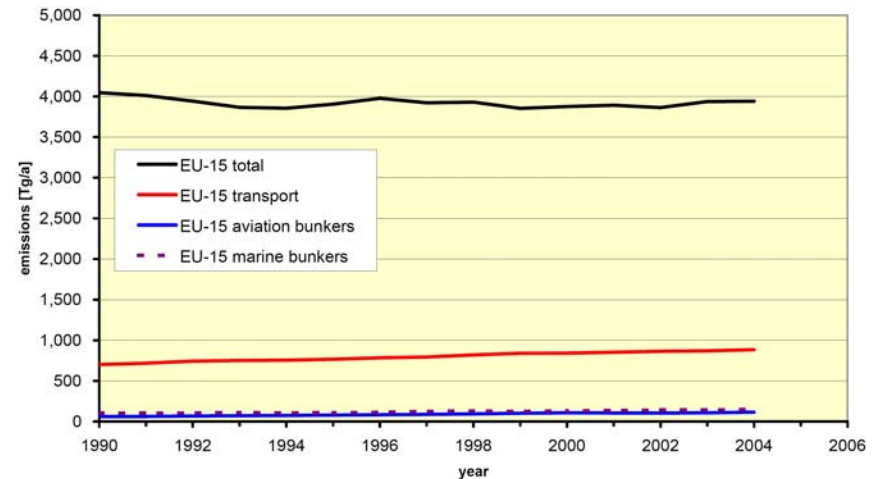


Aviation and shipping emissions grow fast but still are only a minor fraction of the total emissions

Equivalent CO₂ emissions relative to 1990



Absolute equivalent CO₂ emissions since 1990



IPCC

Intergovernmental Panel on Climate Change

The Intergovernmental Panel on Climate Change (IPCC) has been established by WMO and UNEP to assess scientific, technical and socio-economic information relevant for the understanding of climate change, its potential impacts and options for adaptation and mitigation. It is currently finalizing its Fourth Assessment Report "Climate Change 2007", also referred to as AR4. The reports by the three Working Groups provide a comprehensive and up-to-date assessment of the current state of knowledge on climate change. The Synthesis Report integrates the information around six topic areas.

www.ipcc.ch
May 2007

IPCC Assessment Reports (1)

IPCC First Assessment Report.1990

Scientific Assessment of Climate change – Report of Working Group I

JT Houghton, GJ Jenkins and JJ Ephraums (Eds)

Cambridge University Press, UK. pp 365

(Summary for Policymakers)

Impacts Assessment of Climate Change – Report of Working Group II

W.J.McG Tegart, G.W.Sheldon, D.C.Griffiths (Eds)

Australian Government Publishing Service , Australia

(Summary for Policymakers)

The IPCC Response Strategies – Report of Working Group III

Island Press, USA. pp 270

IPCC Assessment Reports (2)

IPCC Second Assessment Report: Climate Change 1995

Climate Change 1995: The Science of Climate Change

Contribution of Working Group I to the Second Assessment of the Intergovernmental Panel on Climate Change
JT Houghton, LG Meira Filho, BA Callender, N Harris, A Kattenberg and
K Maskell (Eds)

Climate Change 1995: Impacts, Adaptations and Mitigation of Climate Change: Scientific-Technical Analyses

Contribution of Working Group II to the Second Assessment of the Intergovernmental Panel on Climate Change
R.T.Watson, M.C.Zinyowera, R.H.Moss (Eds)

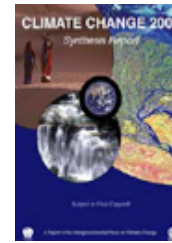
Climate Change 1995: Economic and Social Dimensions of Climate Change

Contribution of Working Group III to the Second Assessment of the Intergovernmental Panel on Climate Change
J.P.Bruce, H.Lee, E.F.Haites (Eds)

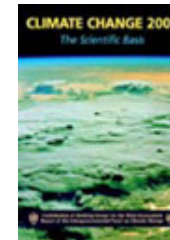
IPCC Assessment Reports (3)

IPCC Third Assessment Report: Climate Change 2001

Climate Change 2001: Synthesis Report



Climate Change 2001: The Scientific Basis



Climate Change 2001: Impacts, Adaptation & Vulnerability

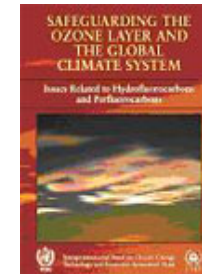


Climate Change 2001: Mitigation

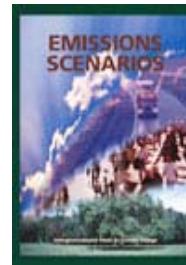


IPCC Special Reports (Beispiele)

Special Report on Safeguarding the Ozone Layer and the Global Climate System: Issues Related to Hydrofluorocarbons and Perfluorocarbons. 2005



Emissions Scenarios. 2000



Aviation and the Global Atmosphere.1999



IPCC Fourth Assessment Report (AR4) 2007

Climate Change 2007: The Physical Science Basis

Climate Change 2007: Impacts, Adaptation and Vulnerability

Climate Change 2007: Mitigation of Climate Change

AR4 Synthesis Report

IPCC web site: www.ipcc.ch

Intergovernmental Panel on Climate Change



INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE



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مرحبا *Bienvenue*

User Guide to the IPCC Website
How do I find information about climate change on the IPCC website?

The Intergovernmental Panel on Climate Change (IPCC) has been established by WMO and UNEP to assess scientific, technical and socio-economic information relevant for the understanding of climate change, its potential impacts and options for adaptation and mitigation. It is currently finalizing its Fourth Assessment Report "Climate Change 2007", also referred to as AR4. The reports by the three Working Groups provide a comprehensive and up-to-date assessment of the current state of knowledge on climate change. The Synthesis Report integrates the information around six topic areas. [More](#)

The AR4 Synthesis Report (SYR)

- > See topics outline
- > Review by governments and experts 21 May - 12 July 2007
- > Adoption and approval at the 27th Session of the IPCC, 12-16 November 2007, Valencia, Spain

The Third Assessment Report and other recent IPCC Special Reports

- 
Third Assessment Report (TAR) "Climate Change 2001"
 - > The Scientific Basis
 - > Impacts, Adaptation and Vulnerability
 - > Mitigation
 - > Synthesis Report Full report and Summaries in UN languages
 - > Graphics and figures
- 
Carbon Dioxide Capture and Storage
 - > Full report and Summary for policymakers in UN languages
 - > Graphics and figures
 - > Webcast of press conference
- 
Safeguarding the ozone layer
 - > Full report and Summary for policymakers in UN languages
 - > Graphics and figures

Other IPCC Special Reports and Technical Papers

- 
Working Group III Report "Mitigation of Climate Change"
 Release on 4 May 07 in Bangkok
 - > Download the webcast of the press conference **New**
 - > SUMMARY FOR POLICYMAKERS **New**
- 
Working Group II Report "Impacts, Adaptation and Vulnerability"
 - > SUMMARY FOR POLICYMAKERS
 - > SPM figures and tables (high resolution)
 - > Webcast of the press conference - Brussels, 6 April 2007 full video / audio only
- 
Working Group I Report "The Physical Science Basis"
 - > Full report now available online **New**
 - > SUMMARY FOR POLICYMAKERS
 - > Webcast of the Press Conference - Paris 2 Febr 2007
- Presentations of the AR4**
 - > Presentation of the WG 3 report at the press conference - 4 May Bangkok **New**
 - > Presentation of the WG 2 report at the press conference - 6 April Brussels
 - > WG2 Presentations at regional briefings
 - > Presentation of the WG I Report at the GMFF and UNEP GC-24 Nairobi, 6 Feb. 2007
- More info for the press**
- 
2006 IPCC Guidelines for National Greenhouse Gas Inventories
- Other IPCC Methodology Reports**





IPCC Fourth Assessment Report (AR4) 2007

Climate Change 2007: The Physical Science Basis

Climate Change 2007: Impacts, Adaptation and Vulnerability

Climate Change 2007: Mitigation of Climate Change

AR4 Synthesis Report



IPCC AR4: Climate Change 2007: The Physical Science Basis

Summary for Policymakers

Technical Summary

Frequently Asked Questions

- 1. Historical Overview of Climate Change Science**
- 2. Changes in Atmospheric Constituents and in Radiative Forcing**
- 3. Observations: Surface and Atmospheric Climate Change**
- 4. Observations: Changes in Snow, Ice and Frozen Ground**
- 5. Observations: Oceanic Climate Change and Sea Level**
- 6. Paleoclimate**
- 7. Couplings Between Changes in the Climate System and Biogeochemistry**
- 8. Climate Models and their Evaluation**
- 9. Understanding and Attributing Climate Change**
- 10. Global Climate Projections**
- 11. Regional Climate Projections**

Annexes: (1)Glossary, (2)Authors, (3)Reviewers, (4)Acronyms

Index

Uncertainty Guidance Note for the Fourth Assessment Report

IPCC Fourth Assessment Report (AR4) 2007

Climate Change 2007: The Physical Science Basis

Summary for Policymakers

Climate Change 2007: Impacts, Adaptation and Vulnerability

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Summary for Policymakers

AR4 Synthesis Report

