



Cover Design by Karl Smart

Nature Reports Climate Change

EDITORIAL OFFICE

News Editor: Olive Heffernan
Production Editor: Jacqueline Limb
Sub Editor: Rosalind Portman
Art Editor: Karl Smart
Web Designer: Miles Davies

MANAGEMENT OFFICE

Publishing Director: David Swinbanks
Publisher: Jason Wilde
Managing Production Editor: Donald McDonald
Web Design Manager: Glennis McGregor
Marketing: Katy Dunningham
Editor in Chief, *Nature Publications*: Philip Campbell
Advertising Manager, Physical Sciences: Simon Allardice
Sponsorship: Emma Green

Nature - www.nature.com/nature
The Macmillan Building, 4 Crinan St
London N1 9XW, UK
Tel: +44 (0) 20 7833 4000
e-mail: nature@nature.com

VISIT NATURE REPORTS
CLIMATE CHANGE ONLINE
World Wide Web
<http://www.nature.com/reports/climatechange>

SUBSCRIPTIONS AND CUSTOMER SERVICES

For UK/Europe (excluding Japan):
Nature Publishing Group, Subscriptions, Brunel
Road, Basingstoke, Hants, RG21 6XS, UK.
Tel: +44 (0) 1256 329242.
Subscriptions and customer services for
Americas – including Canada, Latin America
and the Caribbean: Nature Publishing Group,
Subscription Department, PO Box 5161,
Brentwood, TN 37024-5161.
Tel: (800) 524 2688 (US) or 615 850 5315
(outside the US).



nature publishing group

nature REPORTS climate change

the news behind the science, the science behind the news

SOFT SOLUTIONS FALL SHORT

Despite being a political success of sorts, the climate change deal agreed by world leaders in early June falls far short of the mark when it comes to committing to safe future levels of greenhouse-gas emissions.

The German Chancellor, Angela Merkel, deserves respect for negotiating a deal in which the US has agreed to address climate change within a UN framework. But without specifying targets and immediate actions for the world's largest emitters, the 'compromise deal' is a soft substitute for the hard targets that are so urgently needed.

The devil is in the details and, in the case of this agreement, details appear to be sorely lacking. Despite a push from Merkel for a mandatory 50% slash in carbon emissions by mid-century, no targets were agreed to at the G8 Summit. Former US vice president Al Gore has labelled the deal a disgrace disguised as an achievement. Wan Gang, China's Minister for Science and Technology, has criticized the outcome for failing to spell out the responsibilities of individual countries.

As world leaders dither over how to achieve aggressive reductions in CO₂ emissions, a paper highlighted in this issue shows that worldwide emissions increased more rapidly from 2000–2004 than was expected from scientists' projections based on the most fossil-fuel intensive scenarios. This trend looks set to continue, with a new report from the Netherlands Environmental Assessment Agency now confirming that China has overtaken the US as the world's biggest CO₂ producer. At the same time, carbon sinks, such as the Southern Ocean, are reaching saturation point, with the consequence that mitigating global warming could prove even more difficult than anticipated.

Despite the 'unequivocal' fact that warming is underway and the rapidly amassing observational evidence in support of the fact, the question of what to actually do about climate change remains unresolved. The outcome of G8, although a move in the right direction, simply fails to recognize the urgency of this question.

OLIVE HEFFERNAN, NEWS EDITOR

RESEARCH HIGHLIGHTS

- 18 Ocean Science:**
Southern ocean saturated
Samia Mantoura
- Anthropogenic Change:**
CO₂ rising fast
Harvey Leifert
- Extreme Events:**
Cyclonic swirling
Samia Mantoura
- Regional Climate:**
Amazonian methane bursts
Eric Smalley
- 19 Climate Impacts:**
Fish fry
Harvey Leifert
- Cryosphere:**
Sheet stability
Eric Smalley

NEWS FEATURE

- 20 Stormy weather ahead**
Amanda Leigh Haag

COMMENTARY

- 23 Quantifying climate change
– too rosy a picture?**
Stephen E. Schwartz

BOOKS & ARTS

- 26 Radical reductions**
William Connolley
- 27 Art from the Arctic**
Michael T. Bravo

NEWS & VIEWS

- 29 Climatology:**
Tempests in time
James B. Elsner