

**Stiftung Energie & Klimaschutz,  
Stuttgart, 25. März 2009**

# **CCS-Technologie als Klimaretter?**

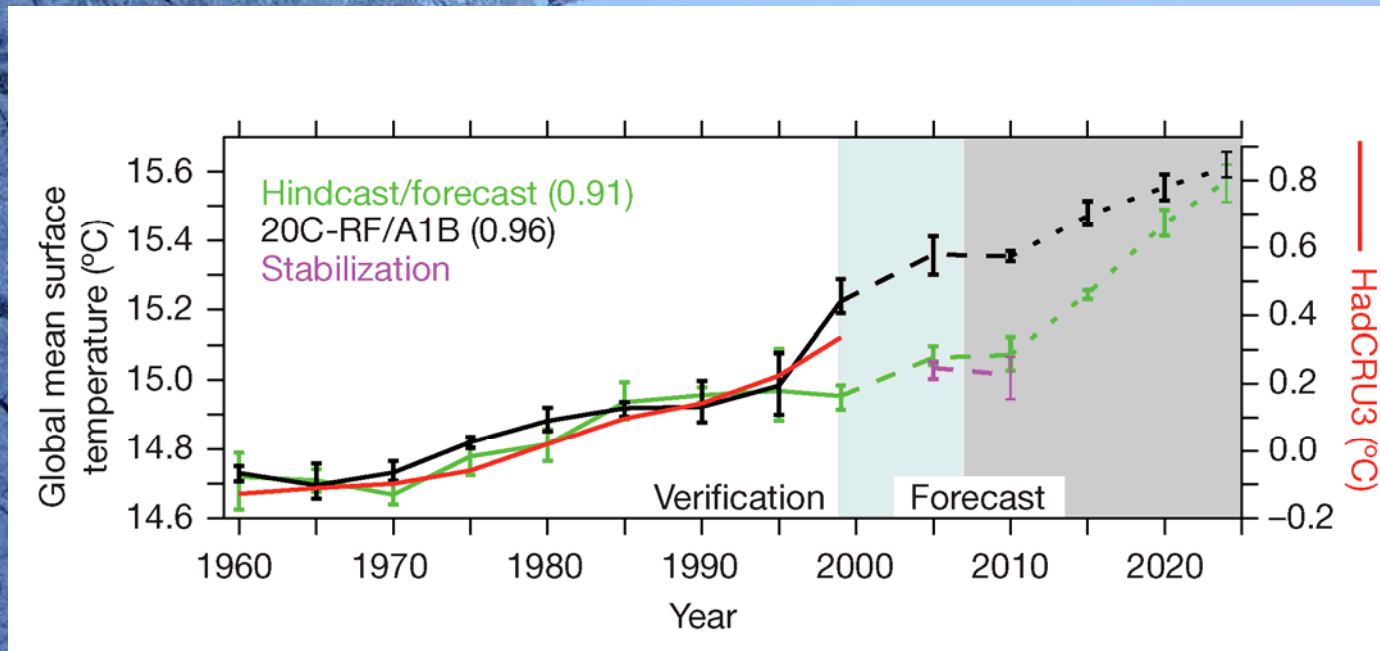
***Professor H. J. Schellnhuber CBE***

***Potsdam Institute,  
Oxford University,  
Tyndall Centre***



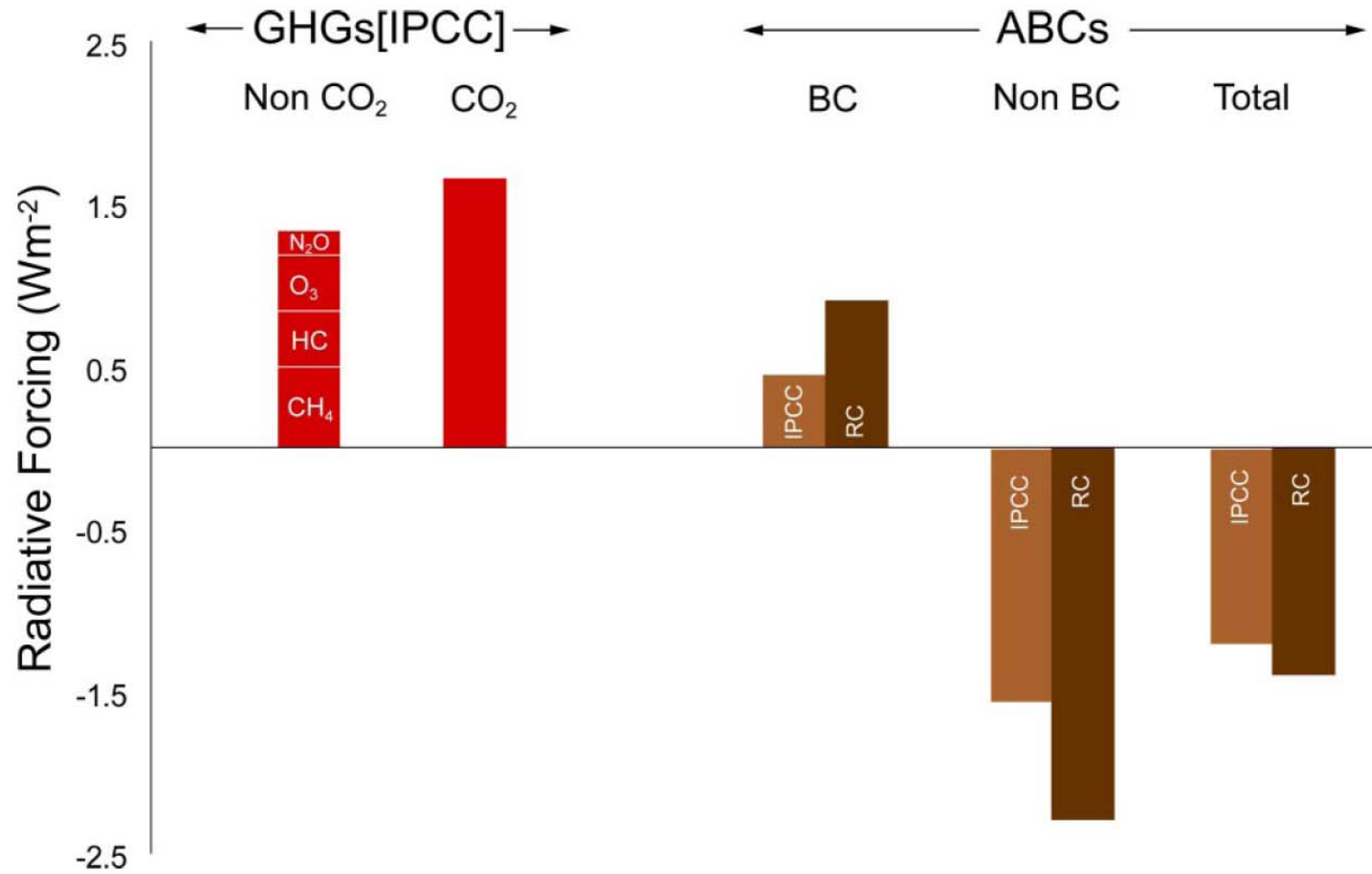
**Tyndall°Centre**  
for Climate Change Research

# Break in Global Warming?



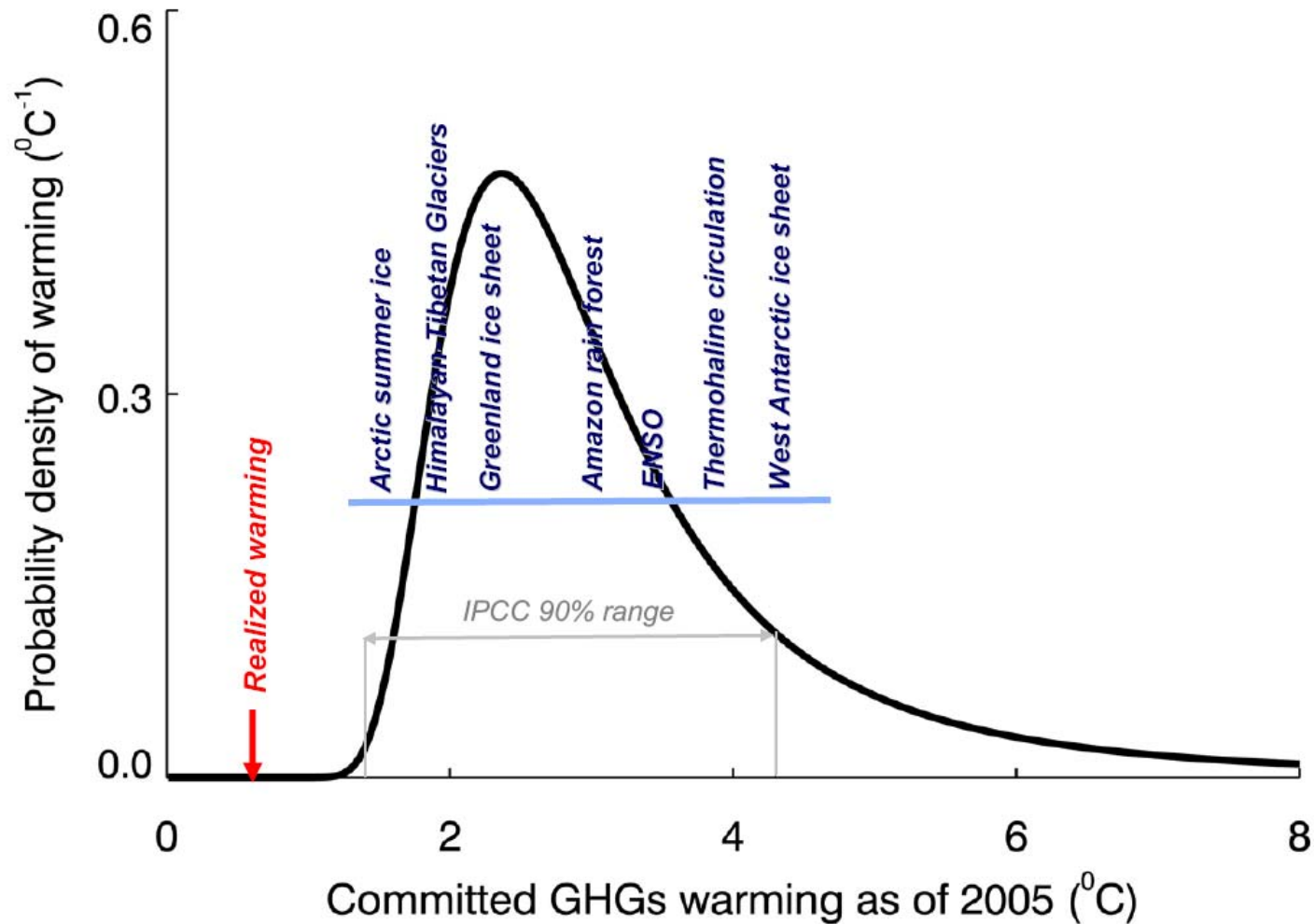
Hindcast/forecast decadal variations in global mean temperature, as compared with observations and standard climate model projections.

# Cooling Effect of Aerosols



(Ramanathan & Feng 2008 PNAS)

# Dangerous Warming Commitment



(Ramanathan & Feng 2008 PNAS)

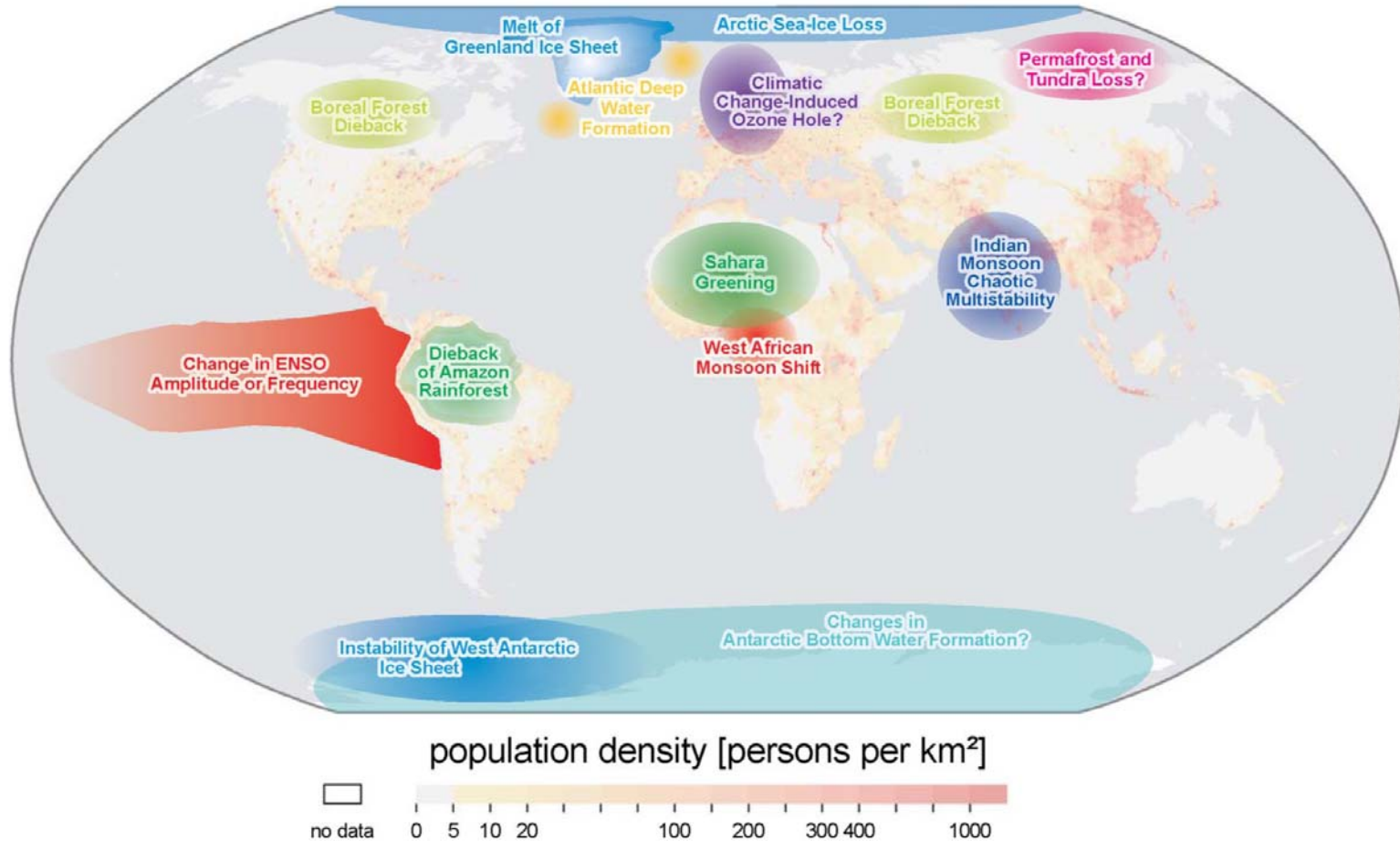
# Tipping elements in the Earth's climate system

Timothy M. Lenton<sup>\*†</sup>, Hermann Held<sup>‡</sup>, Elmar Kriegler<sup>§</sup>, Jim W. Hall<sup>¶</sup>, Wolfgang Lucht<sup>‡</sup>, Stefan Rahmstorf<sup>‡</sup>, and Hans Joachim Schellnhuber<sup>†‡||\*\*</sup>

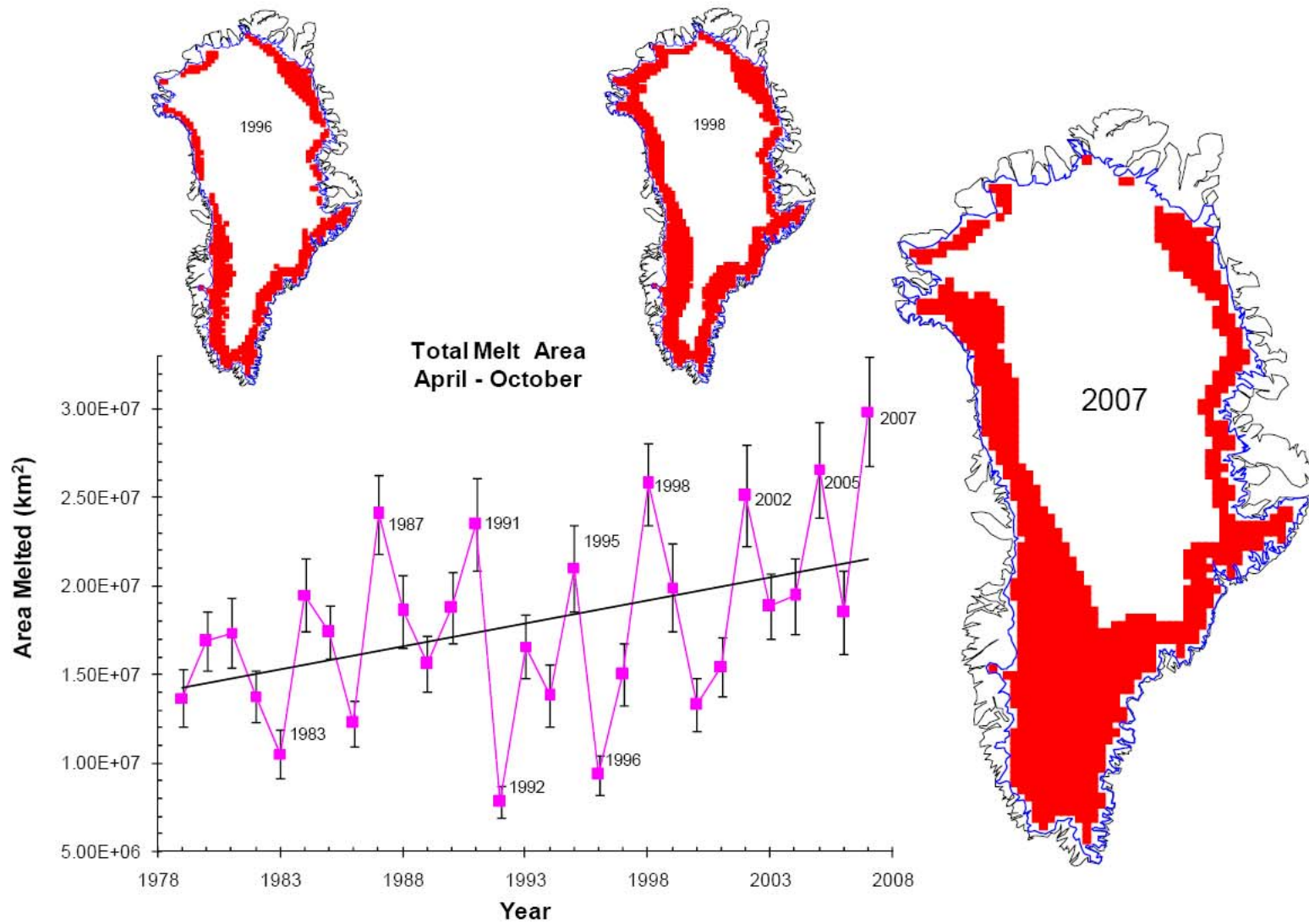
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\*\*This contribution is part of the special series of Inaugural Articles by members of the National Academy of Sciences elected on May 3, 2005.

Edited by William C. Clark, Harvard University, Cambridge, MA, and approved November 21, 2007 (received for review June 8, 2007)

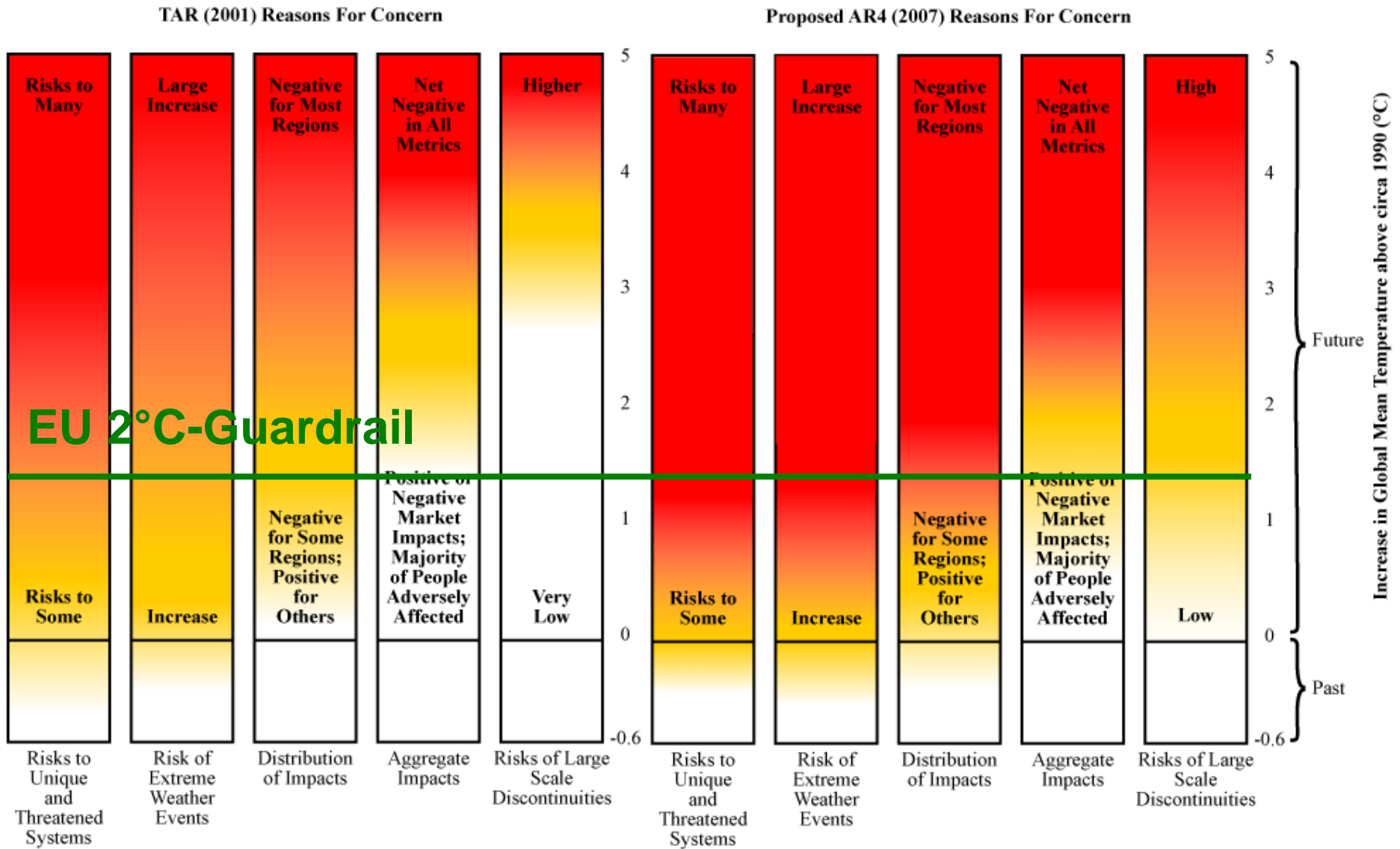


# Accelerated Greenland Melt-Down



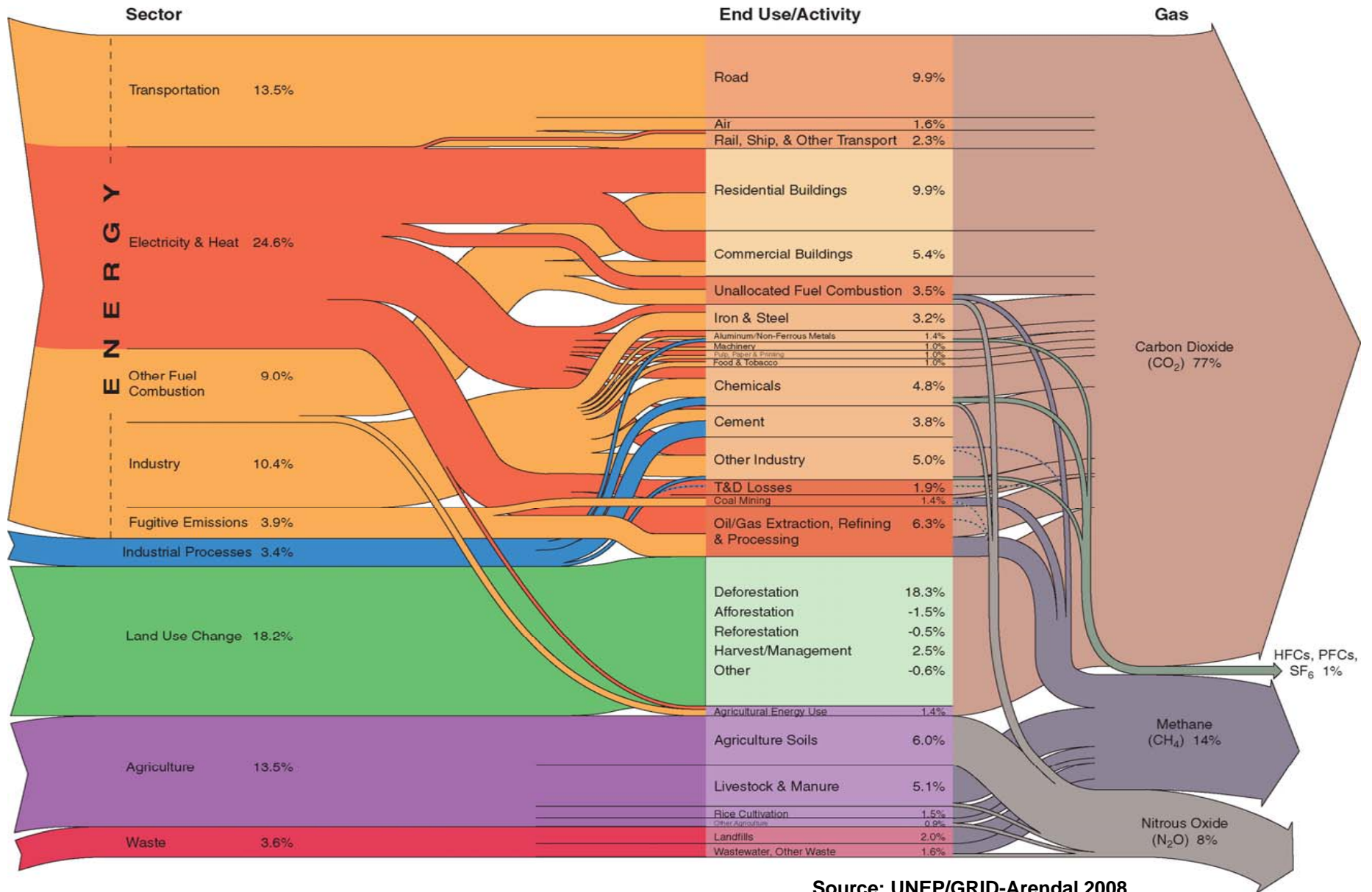
The 2007 melt extent exceeded the previous record of 2005 by 10%.

# Updated Reasons for Concern



(Smith et al. 2009 PNAS)

# Where Do the Emissions Come from?



Source: UNEP/GRID-Arendal 2008

# Bringing Forward the 3<sup>rd</sup> Industrial Revolution



1



2



3