Reducing Greenhouse gases (Response)

Kauppi, P.E.

American Association for the Advancement of Science
1996


http://hdl.handle.net/1975/299

Downloaded from Helda, University of Helsinki institutional repository.
This is an electronic reprint of the original article.
This reprint may differ from the original in pagination and typographic detail.
Please cite the original version.
Light and Gravity

Correspondents this week shed light on the management of national laboratories in China, the purpose and appropriate use of math and science test scores, Earth's supply of fossil fuels and global warming (at right, urban smog), NASA's research in the life sciences (which often involves microgravity) and collaboration with other institutions, and progress in the challenging field of antisense oligonucleotide research.

Reducing Greenhouse Gases

The Perspective “The United Nations climate convention: Unattainable or irrelevant” by Pekka E. Kauppi (1 Dec., p. 1454) says that the goal of stabilizing greenhouse gas concentrations at less than twice the preindustrial level is probably unattainable. Kauppi writes (p. 1454) that “reasonable emission scenarios indicate that a doubling of the greenhouse gas concentrations is inevitable in the 21st century.” Such scenarios require continued growth in rate of fossil fuel consumption. With the current rate of CO₂ emissions, well more than a century could pass before atmospheric CO₂ concentrations doubled. But fossil fuel reserves and recent estimates of undiscovered producible fossil fuels indicate that we lack the fuel resources to maintain even current fuel consumption rates beyond another half-century (1).

If these estimates are correct, it is continued growth in fossil fuel consumption rate that will be unattainable after the early decades of the coming century. In this case, decline in rate of greenhouse gas emission during the coming century is not only attainable, but inevitable.

Craig Bond Hatfield
Department of Geology,
University of Toledo,
Toledo, OH 43606, USA

References

Response: Since the year 1800, humans have released 220 to 250 pentagrams (1 pentagram = 10¹⁵ grams) of C from fossil reserves into the atmosphere. This has been the main reason for the recorded increase of atmospheric CO₂ by 30% (1). Current annual emissions of fossil C are about 6 pentagrams.

Pekka E. Kauppi
Finnish Forest Research Institute,
Unioninkatu 40 A,
00170 Helsinki, Finland
E-mail: pekka.kauppi@metla.fi

References

NASA's Life Science

In the News & Comment article “Will NASA's research reforms fly?” (17 Nov., p. 1108) Andrew Lawler does not misquote me [in saying that the National Aeronautics and Space Administration (NASA) did “some really poor research” in the life sciences (p. 1109)], but does “underquote” me. I would like to state my firm support for the “Research Institute” concept of Daniel

References