Growing threats to climate

The paper by Canadell and colleagues in PNAS recently raises some very important issues that the public should be aware of: Namely that concentrations of CO_2 are increasing at much higher rates than previously expected and this is in spite of the Kyoto Protocol that is designed to hold them down in western countries. Carbon dioxide is not the whole story — methane emissions have declined, so total greenhouse gases are not increasing as much as carbon dioxide alone. Also, other pollution plays a role by cooling. The theory suggests increases in the atmospheric fraction, as is claimed in the paper, but the evidence is not strong.

Of course a major contributor to these observed carbon dioxide increases are the coal fired power stations that have been brought on line at a rate of 2 per week over the past 5 years. China leads with one every 3 days or so (560 new plants from 2002 to 2006 and 113 GigaWatts of coal fired power). In 2030 global emissions will likely be up by 59% relative to 2004 according to the U.S. Energy Information Administration in its annual International Energy Outlook in May 2007. In the United States, the Kyoto Protocol called for a 7% reduction in emissions of greenhouse gases by 2012 relative to 1990, but in 2004 emissions were up by 20% for carbon dioxide, although the value is 16% for all greenhouse gases. The US has not ratified the Kyoto Protocol, but it shows that voluntary approaches to limiting emissions are not coming close to meeting goals.

The prospects then are for even faster global warming in the future and an imperative to pay more attention to both slowing the emissions down and planning for the climate change that is coming: ready or not. [See my presentation for climate change issues more generally: http://www.cgd.ucar.edu/cas/presentations/CC07_NCARoct07.ppt]

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http://www.cgd.ucar.edu/cas/trenbert.html