



## The Glass Won't Overflow If I Pour Slowly

by Bill Menke, April 21, 2010

The 1997 Kyoto Protocol sought to reduce the rate of emission of CO<sub>2</sub> to roughly 10% below 1990 levels. In the Kyoto scenario, CO<sub>2</sub> continues to be emitted, and its concentration in the atmosphere continues to rise – just more slowly than it otherwise would.

Unfortunately, once emitted into the atmosphere through the burning of fossil fuels, CO<sub>2</sub> dissipates only slowly by natural processes. The last thirty-percent is especially long lived, hanging around for thousands of years<sup>1</sup>. Thus from the perspective of someone living a couple of hundred years from now, the only thing that matters is the total amount of CO<sub>2</sub> that people living in our time emitted, not the details of the emission schedule.

Hopefully, we'll not to let atmospheric CO<sub>2</sub> concentration reach the level that it attained during the Thermal Maximum that occurred fifty-five million years ago, for Antarctica was ice free then and sea level was *sixty meters* higher. Unfortunately, we don't know with any certainty what that CO<sub>2</sub> level was. Today's level might be close<sup>2</sup>. Or we might have 200 years of burning yet to go<sup>3</sup>.

I believe that we will completely consume every source of fossil fuel that we are currently exploiting. We as a society never will have the willpower to walk away from an oil field or a coal mine if there's a drop of oil or a lump of coal in it. Our strategy then should be to place *off limits* potential new sources of fossil fuel, before exploitation can start. Create new National Parks around coal deposits. Ratify treaties that prohibit deep-water oil drilling. Concentrate all effort on prizing those last bits out of existing sources – and in developing alternative non-CO<sub>2</sub> emitting sources of energy and carbon sequestration technology. Sure, the production of fossil fuels will slowly decrease, but it would have done that eventually, anyway and at least we will not have melted Antarctica in the process.

Pouring slowly will not stop a glass from spilling over. Only limiting the size of the pitcher can.

<sup>1</sup>Archer, D. Fate of fossil fuel CO<sub>2</sub> in geologic time, *Journal of Geophysical Research*, Vol. 110, C09S05, doi:10.1029/2004JC002625, 2005.

<sup>2</sup>Royer, D. et al, Near Present-Day Levels of Atmospheric C O<sub>2</sub> During Part of the Tertiary, *Science* 292, 2310-2313, 2001.

<sup>3</sup>Pearson, P. and M. Palmer, Atmospheric carbon dioxide concentrations over the past 60 million years, *Nature* 406, 695-699, 2000.