

DELAWARE'S ENERGY/CLIMATE CRISIS

Presentation to the Footprint Workgroup

Chad Tolman
August 27, 2008

Crisis

危机

Danger Opportunity

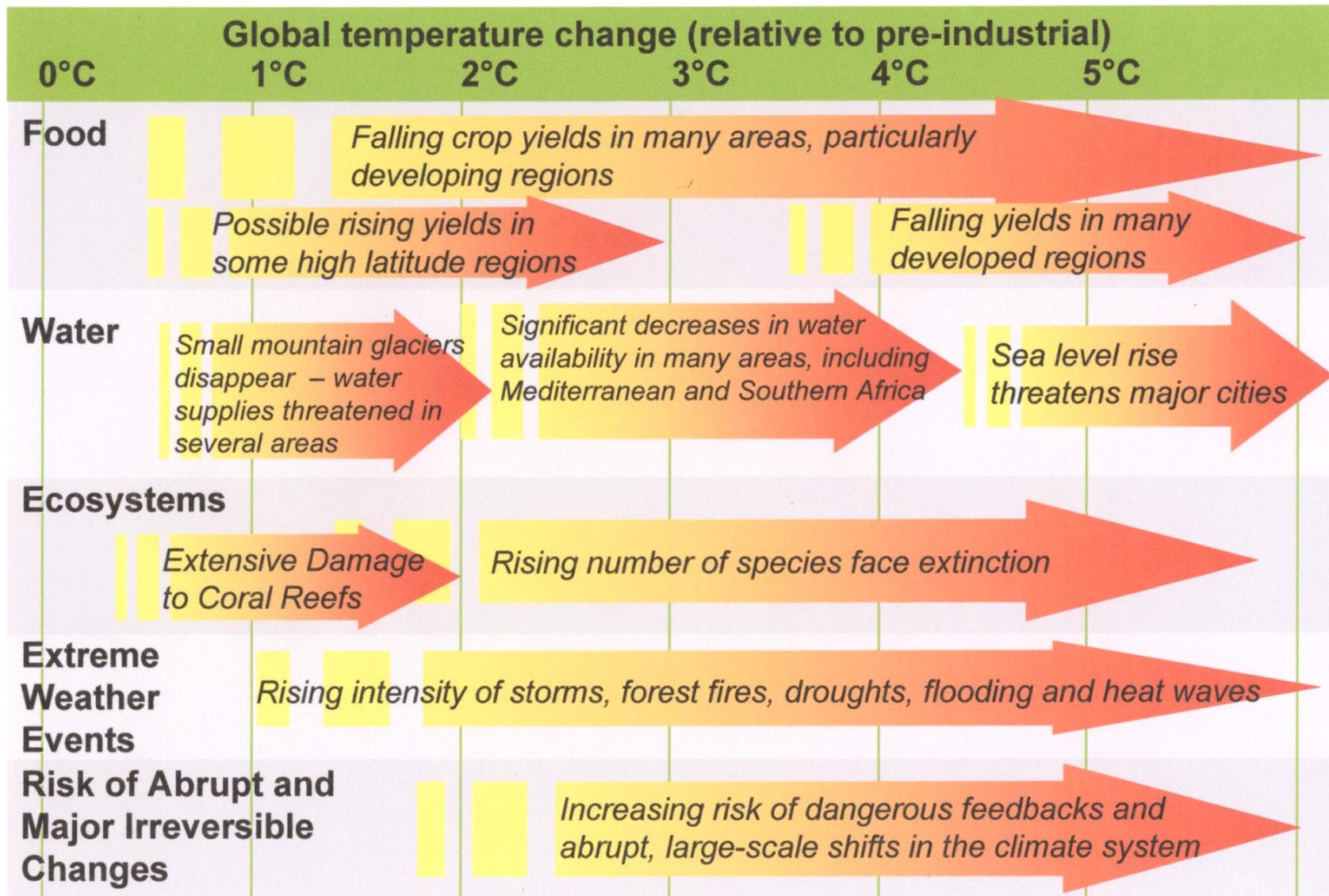
DANGER AND OPPORTUNITY

Delaware is very vulnerable

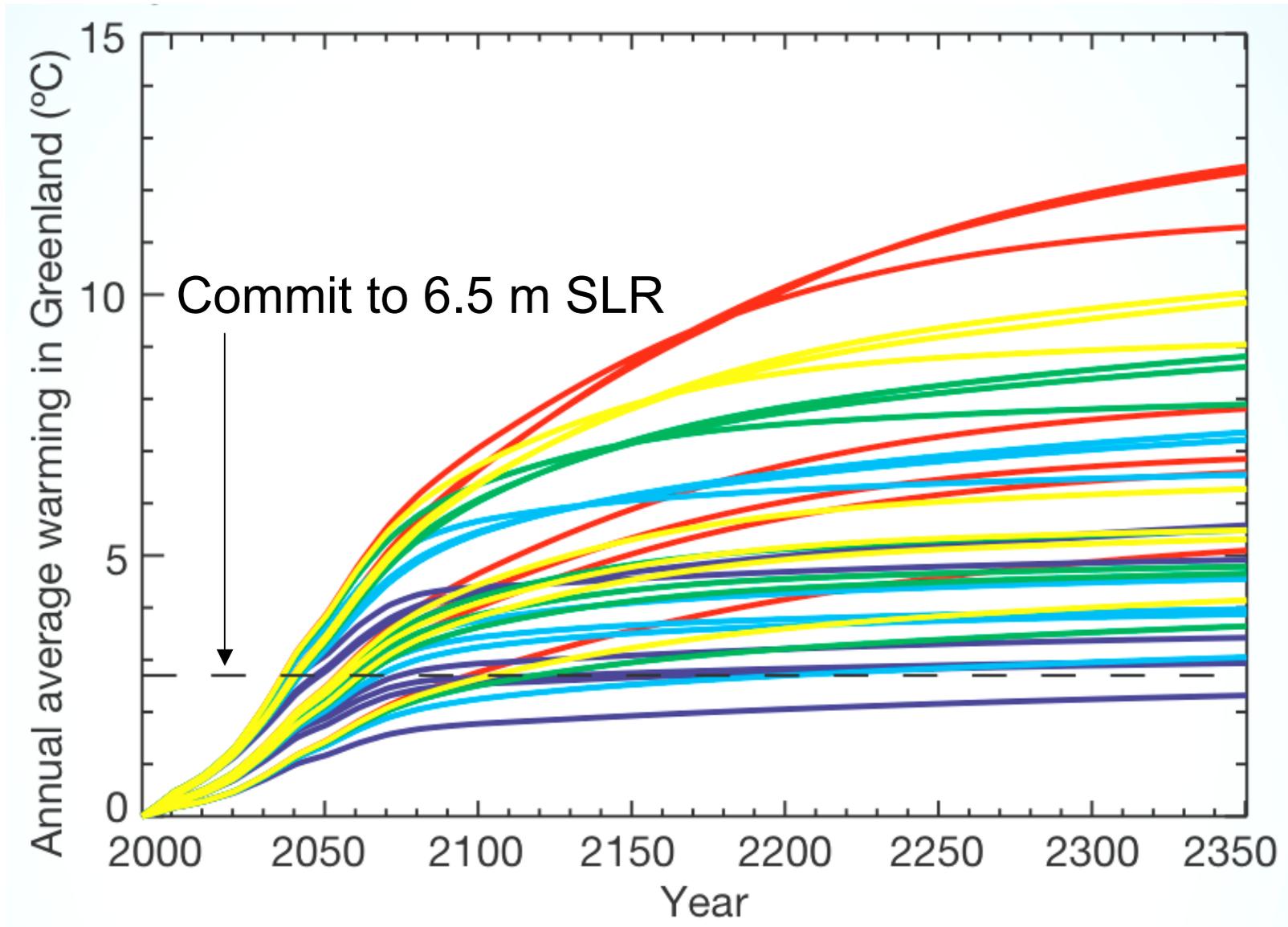
– both economically and environmentally -
to the cost of carbon and to rising sea levels.

Delaware can choose to become an international leader
and develop its economy by showing how to make the transition
to a clean energy future.

Climate Change Impacts



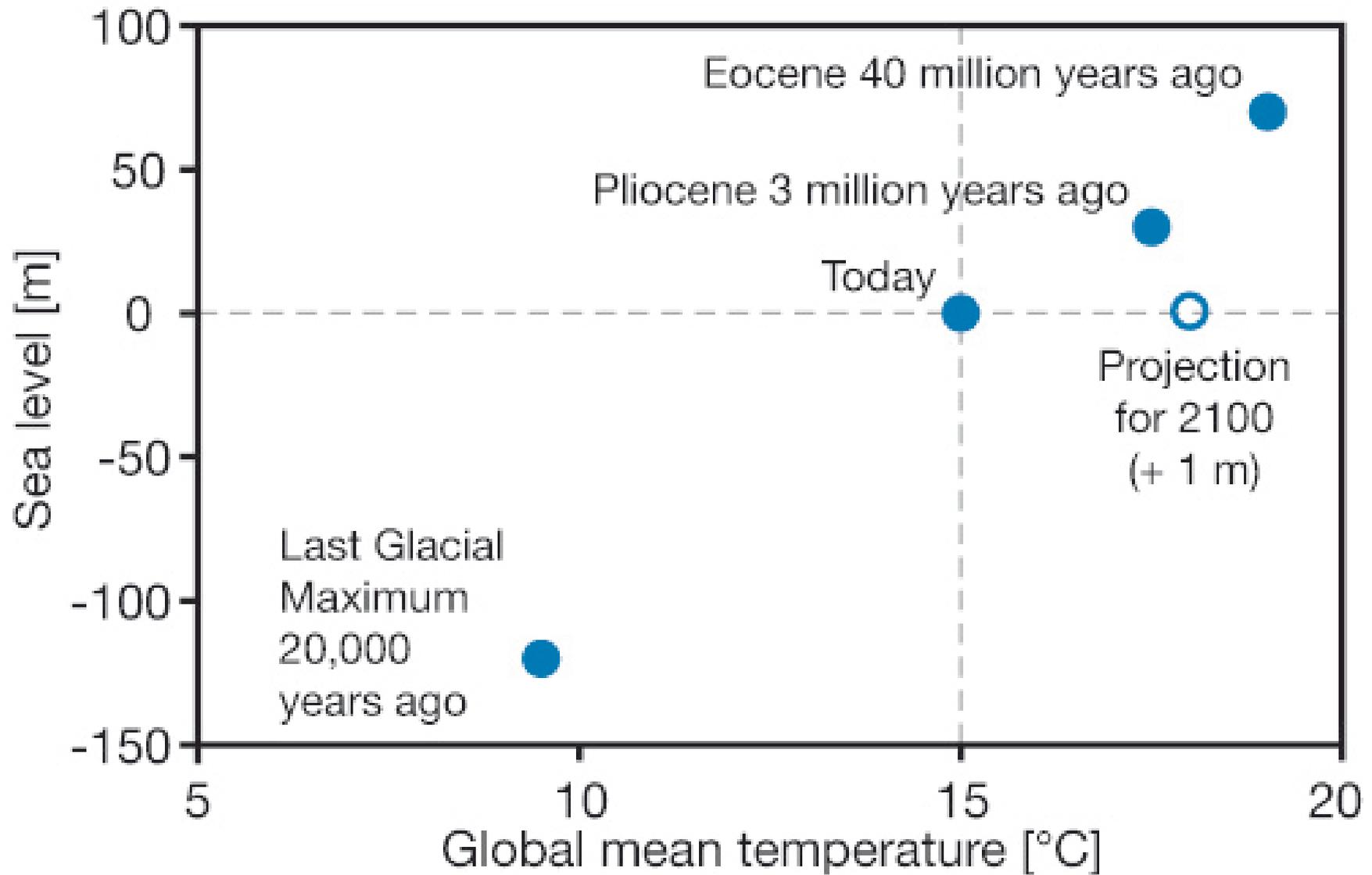
Greenland Ice



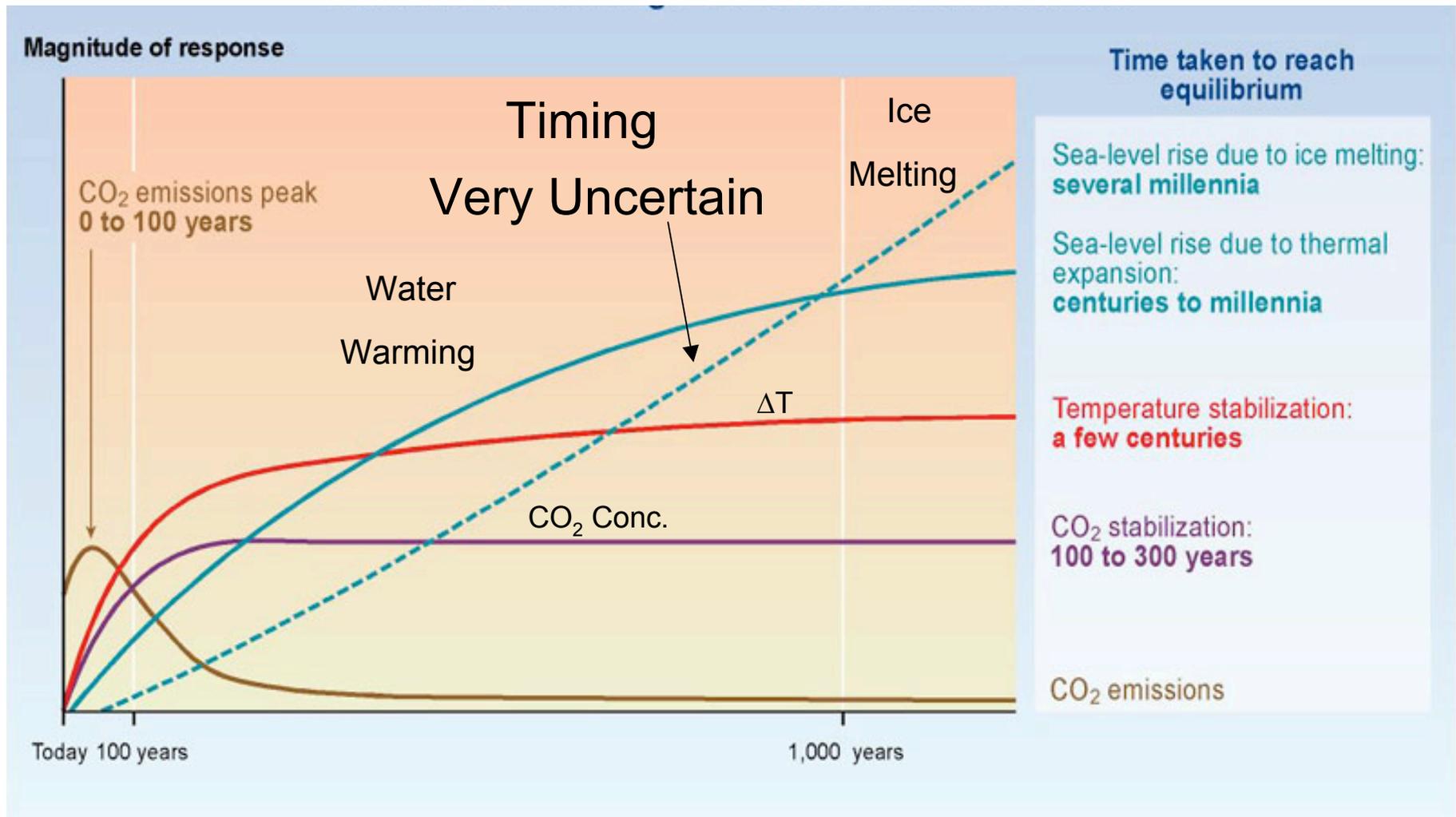
Impact of Sea Level Rise



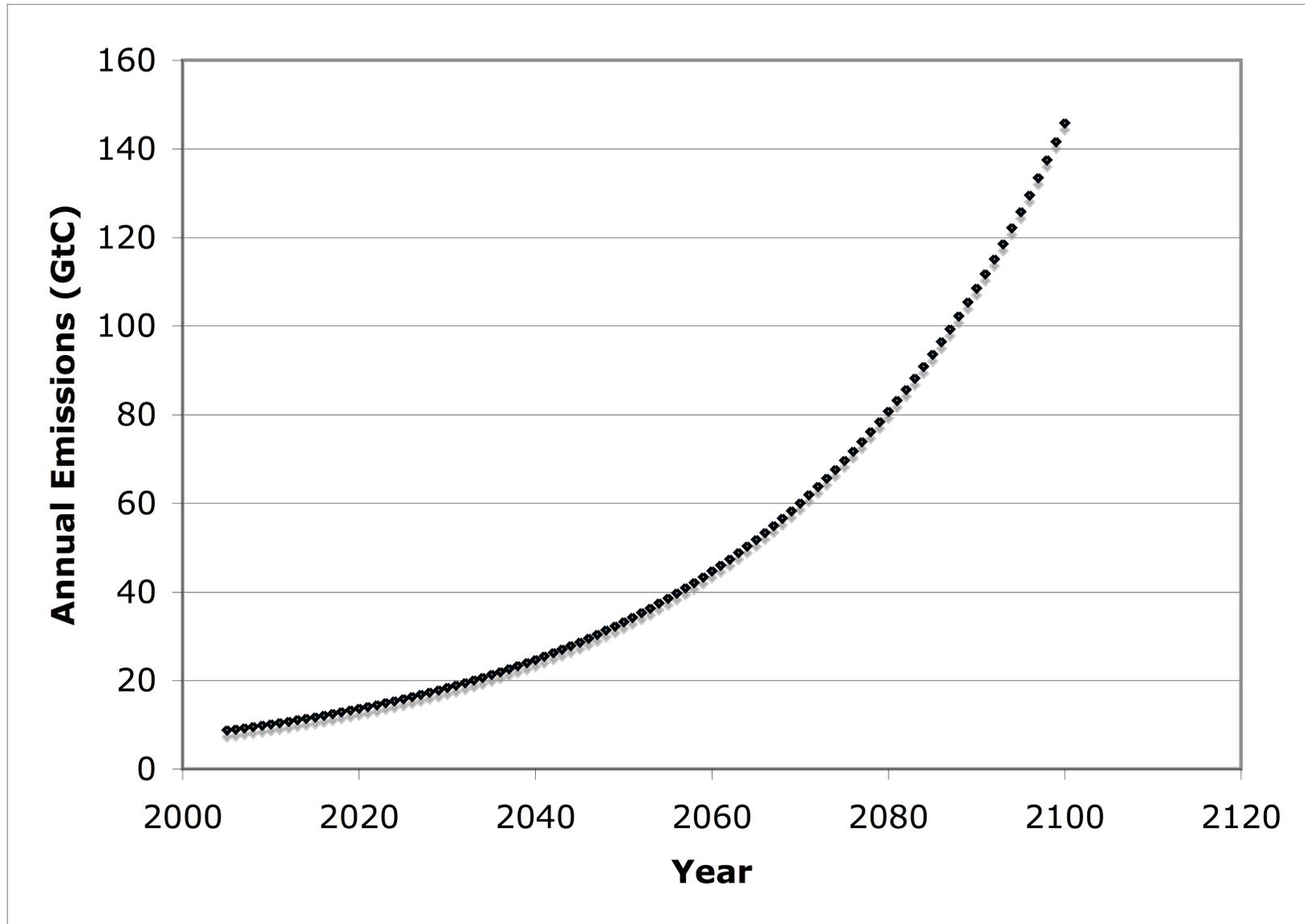
Equil. Sea Level vs Global Mean Temp.



CO₂ Emission Trajectory, Conc., ΔT and Sea Level Rise

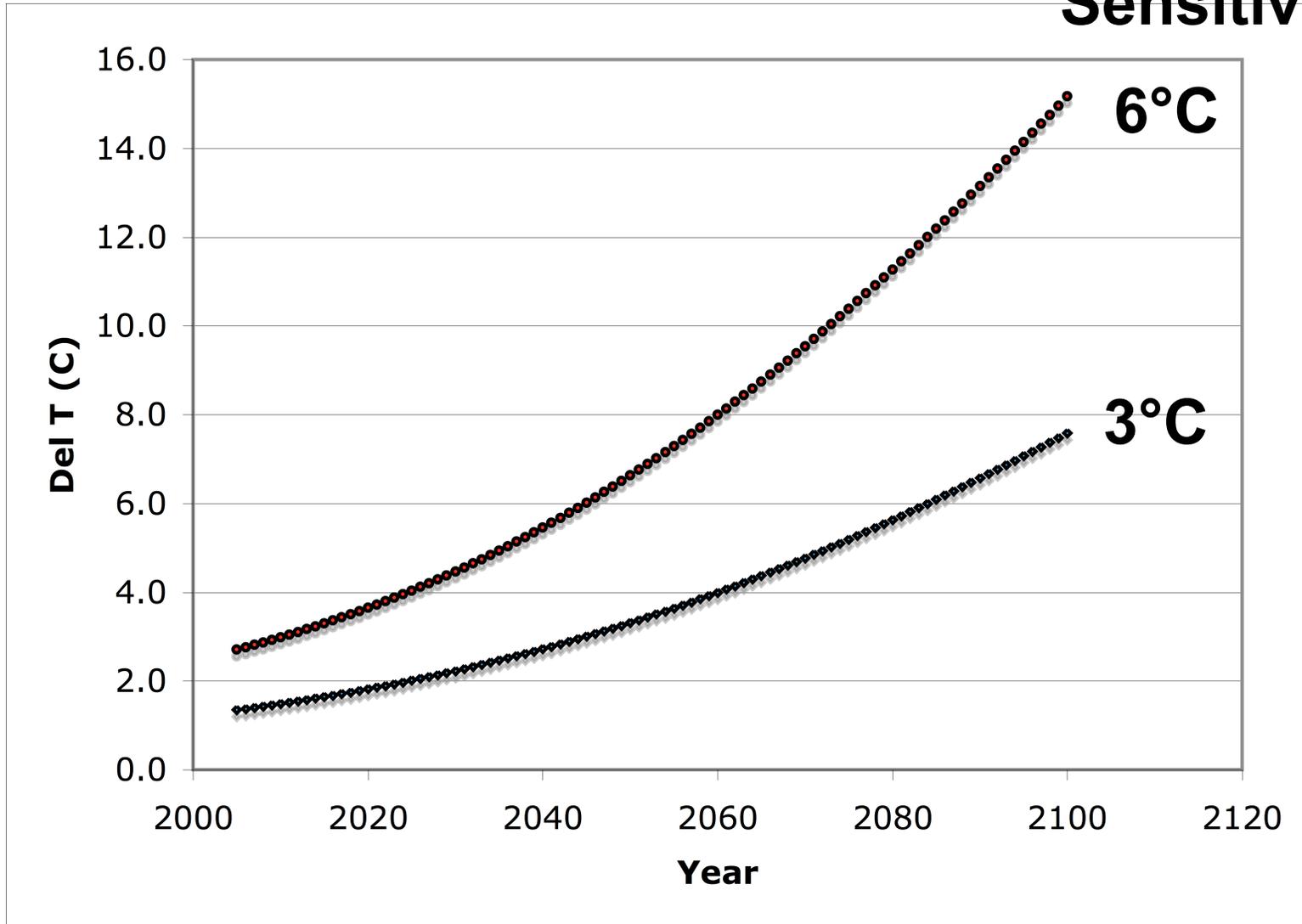


BAU Emissions Increasing 3%/Yr

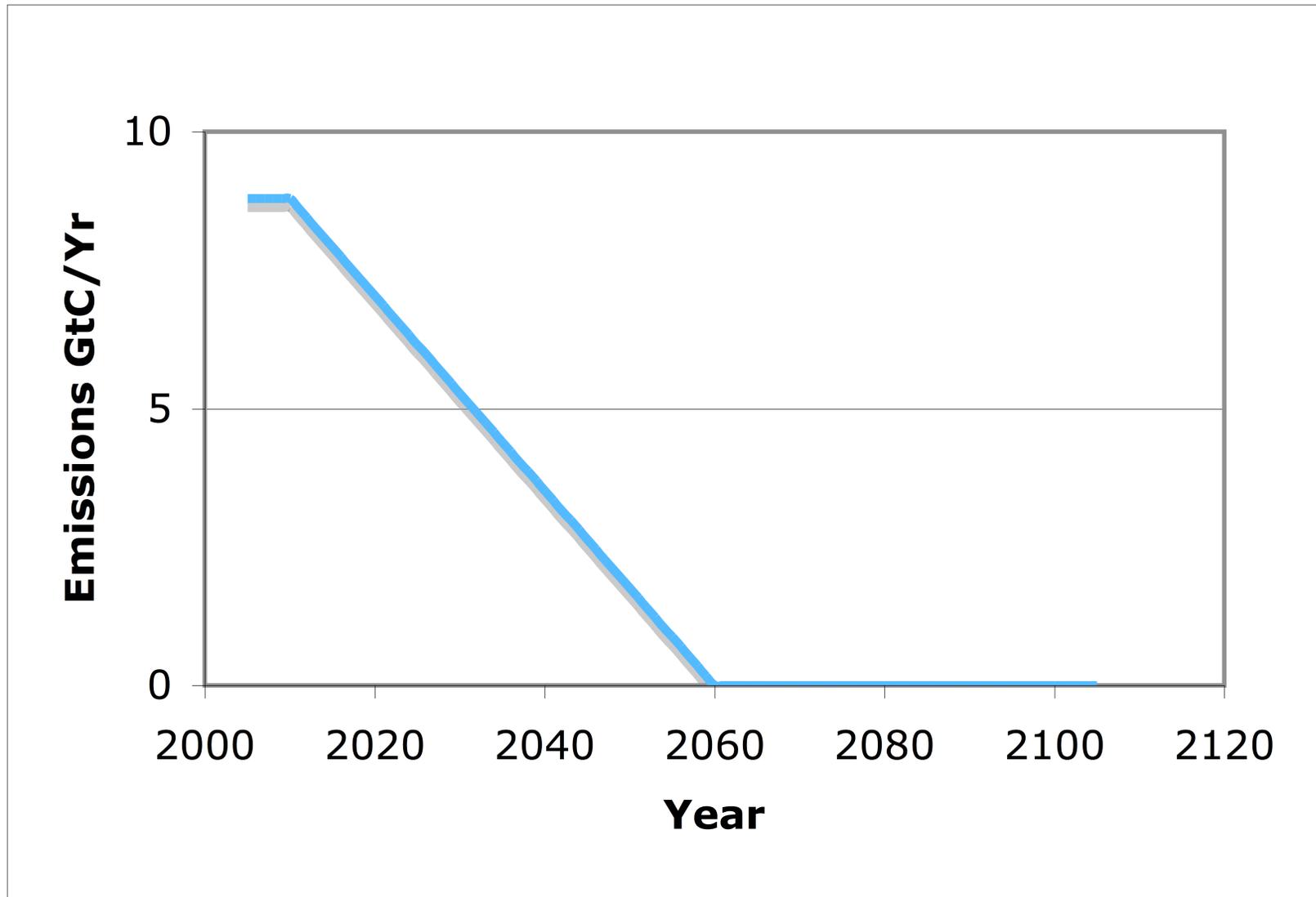


BAU Emissions Increasing 3%/Yr

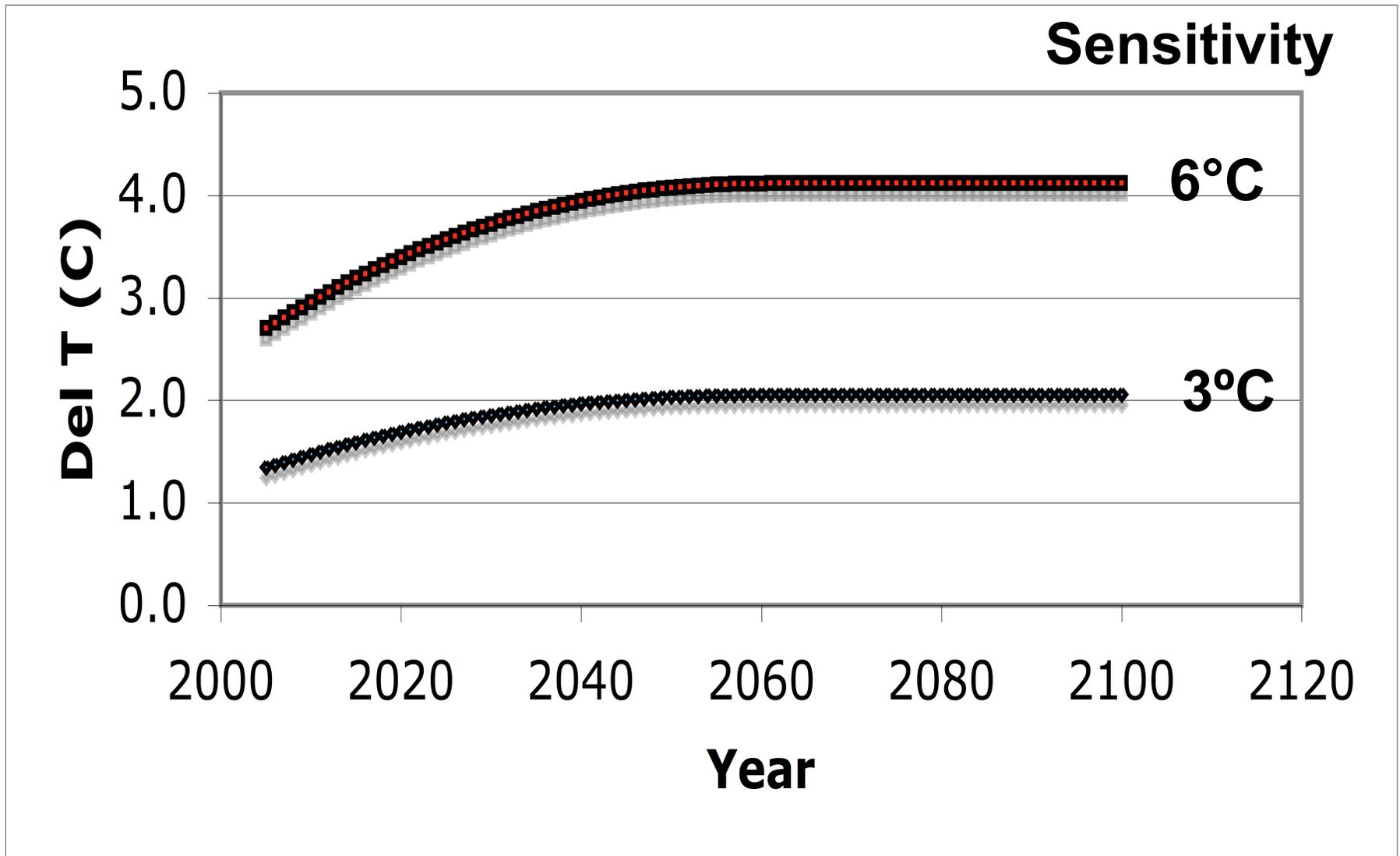
Sensitivity



Emissions Decreasing Linearly 2%/Yr after 2010



Emissions Decreasing Linearly 2%/Yr after 2010



FOOTPRINT REDUCTION POLICIES

Decrease energy use significantly.

Replace fossil fuels by renewable energy sources ASAP.

Develop and deploy clean energy technologies and industries.

Educate the public and legislators.

CONCLUSIONS

Delaware is in grave danger.

Business as usual is not a viable option.

Delaware may be able to save itself by becoming a leader in developing new clean energy industries and in reducing its own GHG footprint.

Delaware's energy plan should include a bold target emissions trajectory - >>2% annual emissions reduction - with aggressive goals in each sector of the economy.

REFERENCES FOR C. TOLMAN'S PRESENTATION TO THE FOOTPRINT WORKGROUP August 27, 2008

The Intergovernmental Panel on Climate Change (IPCC) has issued a series of assessment reports by the world's leading climate scientists. The most recent (the Fourth Assessment) appeared in 2007 and can be found at: <http://www.ipcc.ch>

James Hansen et al., **Target atmospheric CO₂: Where should humanity aim?**, April 7, 2008, used paleoclimate data to show that climate sensitivity (the change in equilibrium global average temperature for doubling CO₂ from preindustrial levels) is 6°C instead of 3°, implying that “CO₂ will need to be **reduced** from its current 385 ppm to at most 350 ppm.” At: <http://arxiv.org/abs/0804.1126v1>

German Advisory Council on Global Change, Special Report 2006, provides a detailed discussion (in English) of sea level rise in Chapter 3, including paleoclimate data. At: http://www.wbgu.de/wbgu_sn2006_en/wbgu_sn2006_en_voll_3.html

The Economics of Climate Change by Nicholas Stern, a leading British economist, predicts devastating effects on the world economy unless we rapidly reduce greenhouse gas emissions, with the poorest nations hit hardest. A 27-page executive summary can be found at: http://news.bbc.co.uk/1/shared/bsp/hi/pdfs/30_10_06_exec_sum.pdf.

McKinsey & Company and The Conference Board, **Reducing U.S. Greenhouse Gas Emissions: How Much at What Cost?**, December 2007, considers some 250 abatement technologies, ranging from some that could save about \$100 per ton of CO₂ equivalent (CO₂e) to some that would cost up to \$50 per ton CO₂e. (Using CO₂e makes it possible to consider abatement of other greenhouse gases (GHGs), such as methane.) The report concludes that aggressive deployment of these technologies could reduce CO₂e emissions about 50% from what they would otherwise be by in 2030. See: http://www.mckinsey.com/client-service/ccsi/pdf/US_ghg_final_report.pdf

Lester R. Brown, **Plan B 3.0 – Mobilizing to Save Civilization**, W.W.Norton & Co., New York, 2008, explains how to reduce GHG emissions 80% by 2020.

U.S. Climate Change Science Project and the Subcommittee on Global Change Research have issued a draft report (not to be quoted or cited), titled **GLOBAL CLIMATE CHANGE IMPACTS IN THE UNITED STATES – UNIFIED SYNTHESIS PRODUCT**. It has an excellent summary of climate science and a discussion of impacts of climate change on the U.S. by region. At: <http://downloads.climate-science.gov/sap/usp/usp-prd-all.pdf>

Climate Change News, a free monthly electronic newsletter with the latest in climate science and policy, is available on the web at: http://uuniversityforearth.org/res_warming.htm.

Look for **Climate Change News from Chad Tolman**.

Directions for how to subscribe for automatic delivery to your email can be found at the end of each issue.