

Climate Science, Technology and Politics A Tangled Web

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50 Years of Science

- ❖ 1957 Revelle and Suess
- ❖ CO₂ increased by approx. 40% in the 20th Century
- ❖ Surface temperature increased by 0.6C
- ❖ Sea level rise 10 – 20 cm
- ❖ Model calculations +3.0C by 2100
- ❖ IPCC 2001 +1.5C – +5.8C
- ❖ Projected sea level increase 20 cm

30 Years of International Conferences

- ❖ 1972 UN Conference on Environment and Man -- Stockholm
- ❖ 1979 WMO first World Climate Conference -- Geneva
- ❖ 1992 UN Conference on Environment and Development
- ❖ 1992 Framework Convention on Climate Change -- FCCC
- ❖ 1997 Kyoto Protocols

Emerging Energy Issue

- ❖ Climate emerges as energy issue
 - De-carbonize fossil fuels
- ❖ Non carbon sources
 - wind
 - photovoltaics
 - nuclear
 - solar
 - biomass
 - hydrogen

The U.S. National Assessment

- ❖ 1990 Congress Legislates National Assessment
- ❖ 2001 Report Issued:
 - 16 Regions & Sectors
 - Stakeholders and Scientists
 - Impacts – permafrost, water supply, island inundation, coral reef bleaching
- ❖ An Excellent Report – Little Impact
 - Models yield divergent results
 - Little impact but treasure house of climate information

Unknowable Factors

- ❖ Economic, technological, population scenarios
 - Economic – wars, political upheavals
 - Technology – 50 years of transformation
 - jet travel
 - space technology
 - communications
 - biotechnology
 - Population – UN estimates

Politics – Kyoto Withdrawal

- ❖ Vice President Gore - Kyoto
- ❖ U.S. agrees to emissions 7% below 1990 by 2012
- ❖ Senate votes 95-0 against Kyoto – not universal
- ❖ President withdraws from Kyoto
 - Science uncertain
 - Economic impact of mandatory controls
 - Proposed new climate effort
 - Reduction of carbon intensity

Politics – The Congress

- ❖ Senator Imhofe – Chair, Committee on Public Works and Environment
 - “Scientists vigorously disagree over whether human activities are responsible for global warming or whether these activities precipitate natural disasters”
- ❖ Senators McCain and Lieberman
 - Introduce legislation mandating controls on CO₂ emissions

Political Actions

- ❖ California, nine states, environmental organizations sue EPA
- ❖ Moscow World Climate Conference
 - President Putin delays decision on ratifying Kyoto
- ❖ Bush Administration – new Climate Change Science Program
- ❖ Maine sets goals and timelines
- ❖ Prime Minister of U.K. announces 60% reduction in greenhouse gases by 2050
- ❖ European heat wave – Pachauri warns of global warming

Scientific and Technological Actions

- ❖ Bush Administration establishes
 - cabinet committee on climate change science and technology
 - issues: new strategic science plan for U.S. climate change science program
- ❖ Industry contribute \$200 million to Stanford University for climate/energy issues
- ❖ Energy Futures Coalition issues report “Charting a new Energy Future”