



Climate and Transportation: The Path Forward

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Natural Resources Defense Council

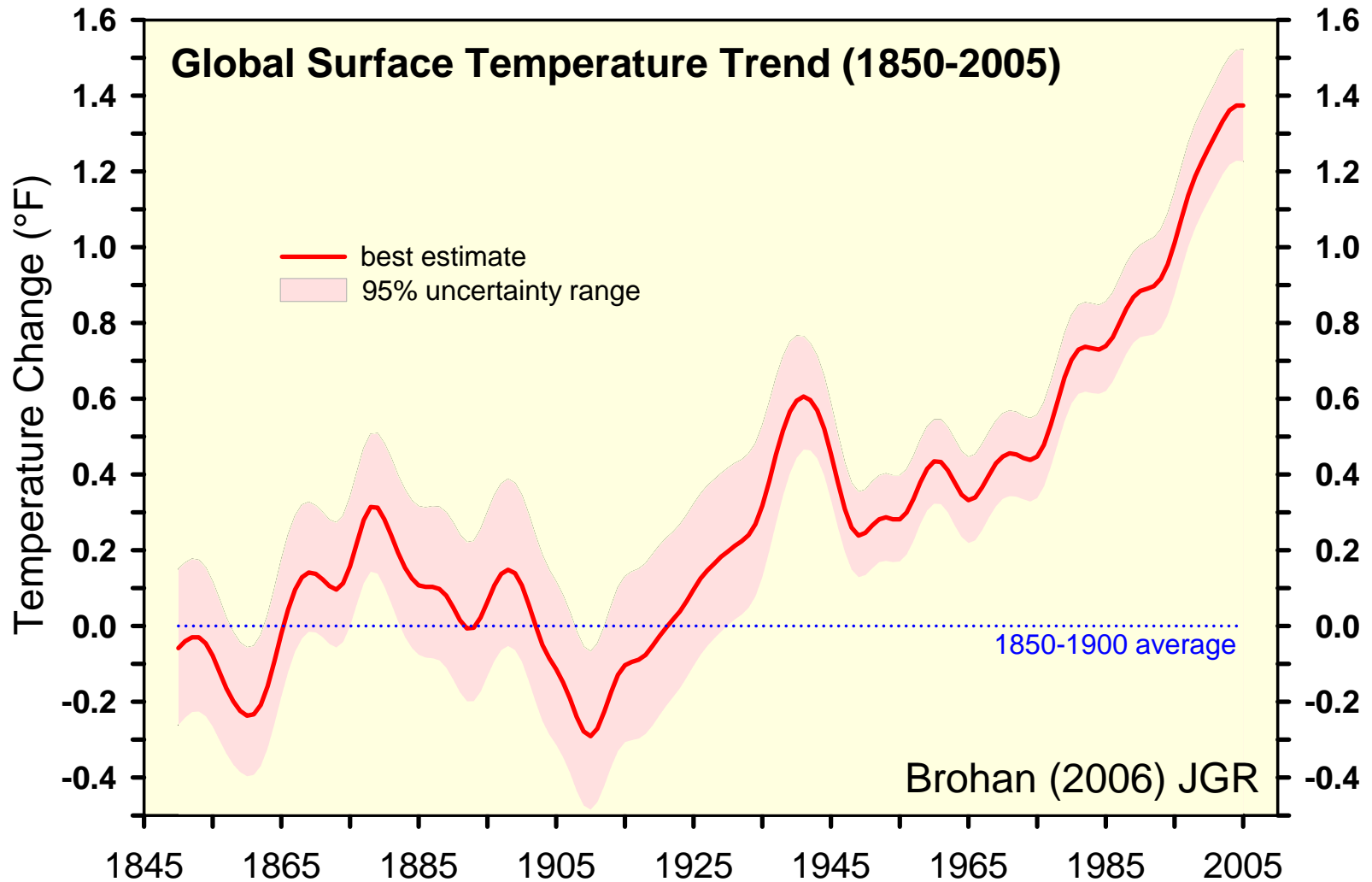
Bike Summit

March 11, 2009

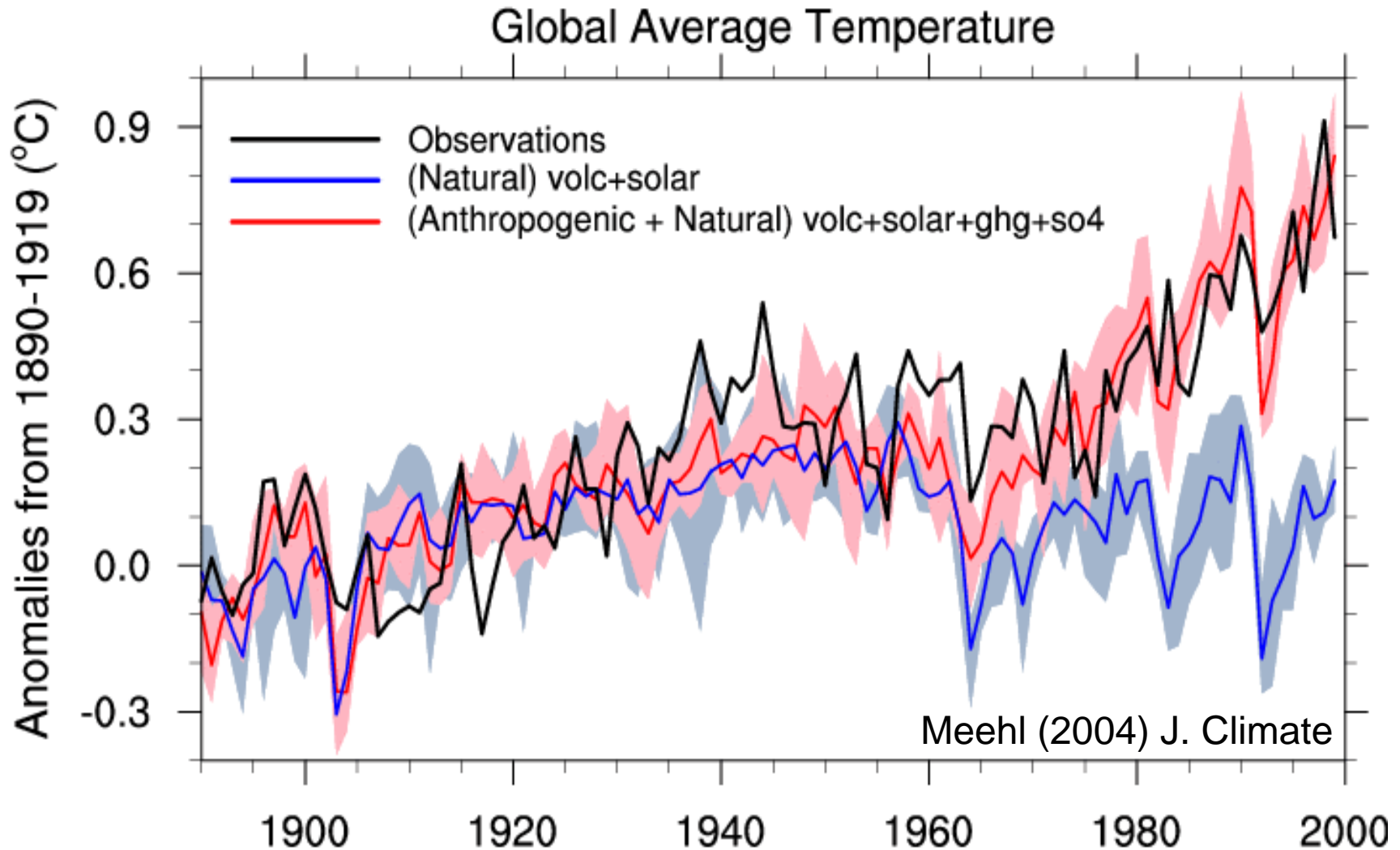
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20th Century Global Warming



Human Contribution to 20th Century Global Warming



Scientific Consensus Report



INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE

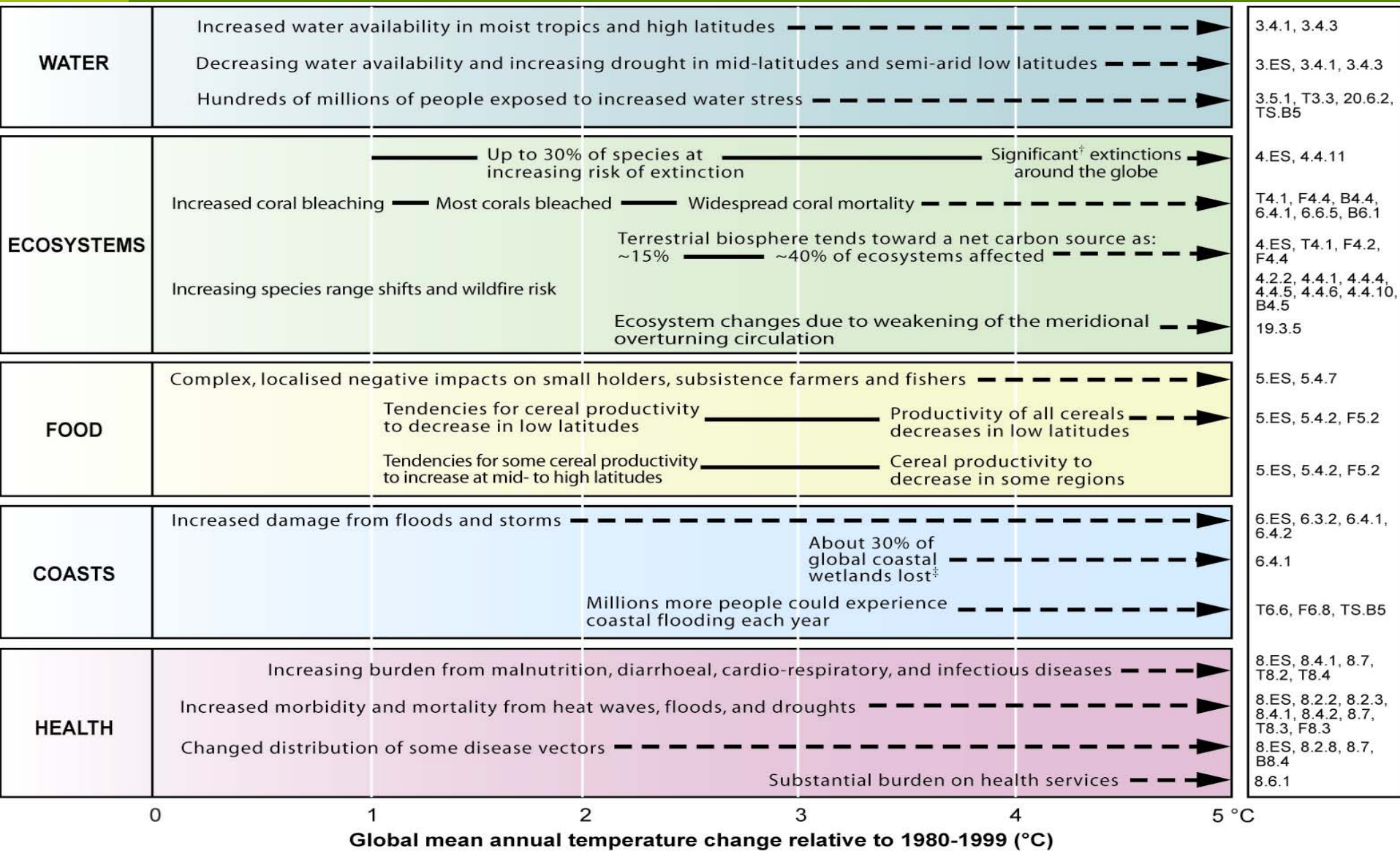


- **The Fourth Assessment by the Intergovernmental Panel on Climate Change (IPCC)**
- **Produced by 1200 scientists, reviewed by 2500 scientists.**
- **More than 100 governments signed off including USA.**

IPCC Findings

- It is very likely (at least a 90 percent chance) that **heat-trapping pollution** is the main factor in warming since 1950.
- The earth will warm by an **additional 4-11 degrees Fahrenheit** during the 21st Century if energy production is fossil fuel intensive (best estimate 7 degrees).
- Atmospheric concentrations (379 ppm) of CO₂ “**exceeds by far** natural variation for 650,000 years”

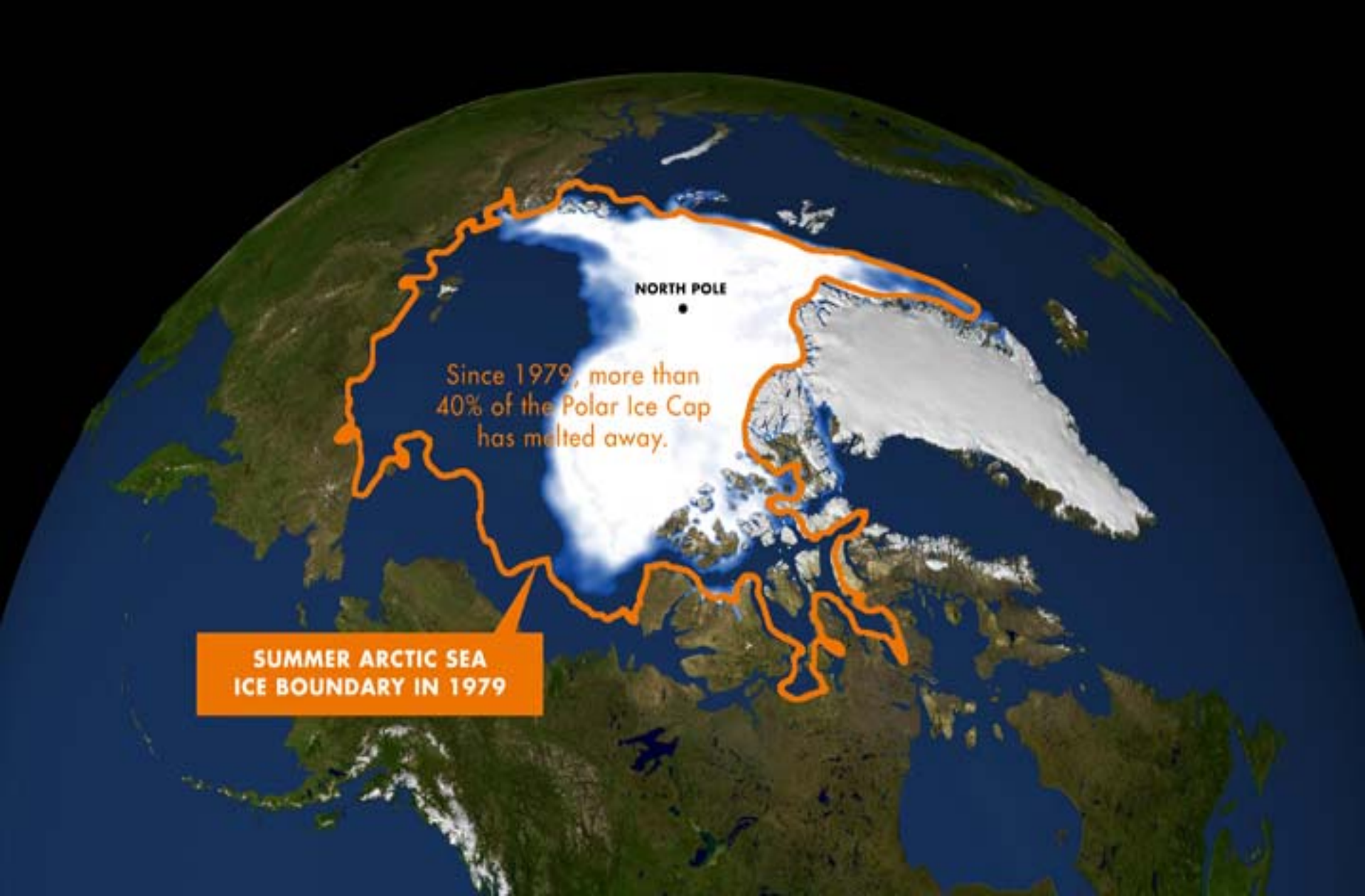
Small Average Changes Have Big Effects



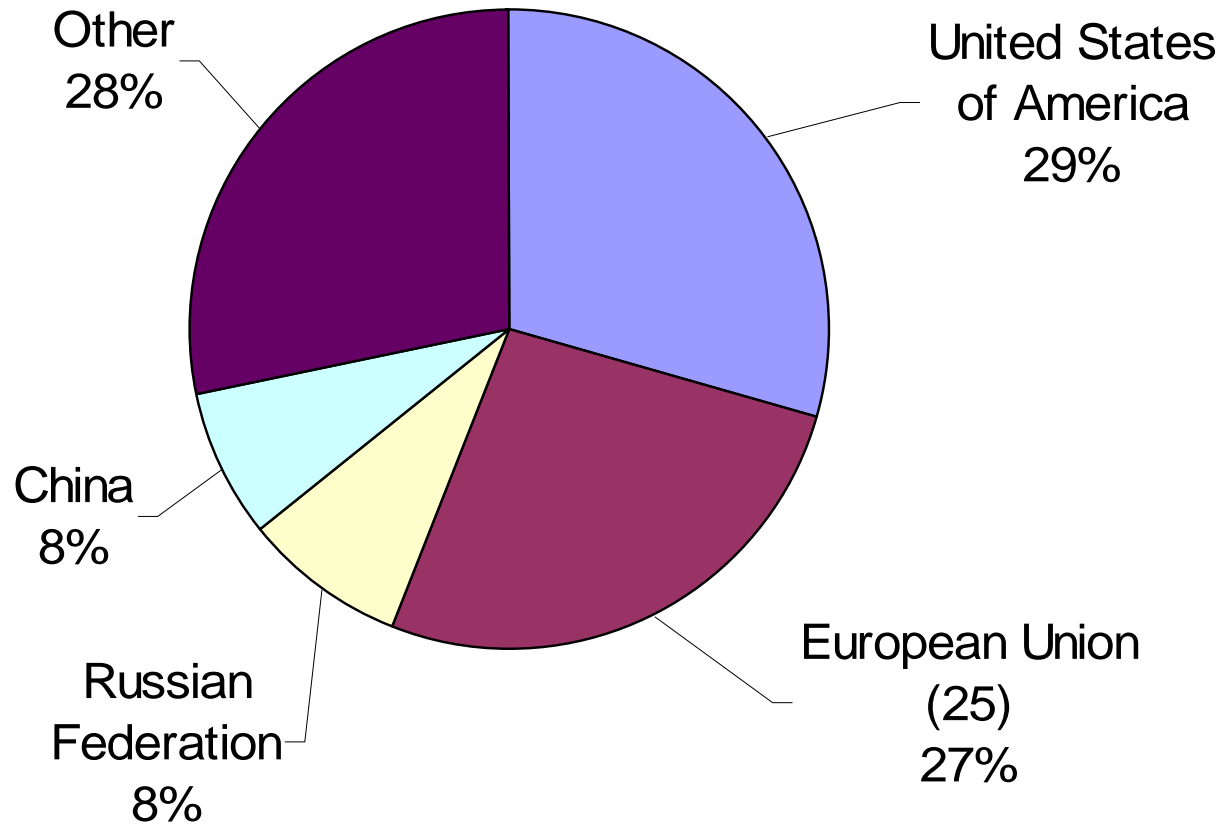
[†] Significant is defined here as more than 40%.

[‡] Based on average rate of sea level rise of 4.2 mm/year from 2000 to 2080.

Larger Temperature Changes at High Latitudes



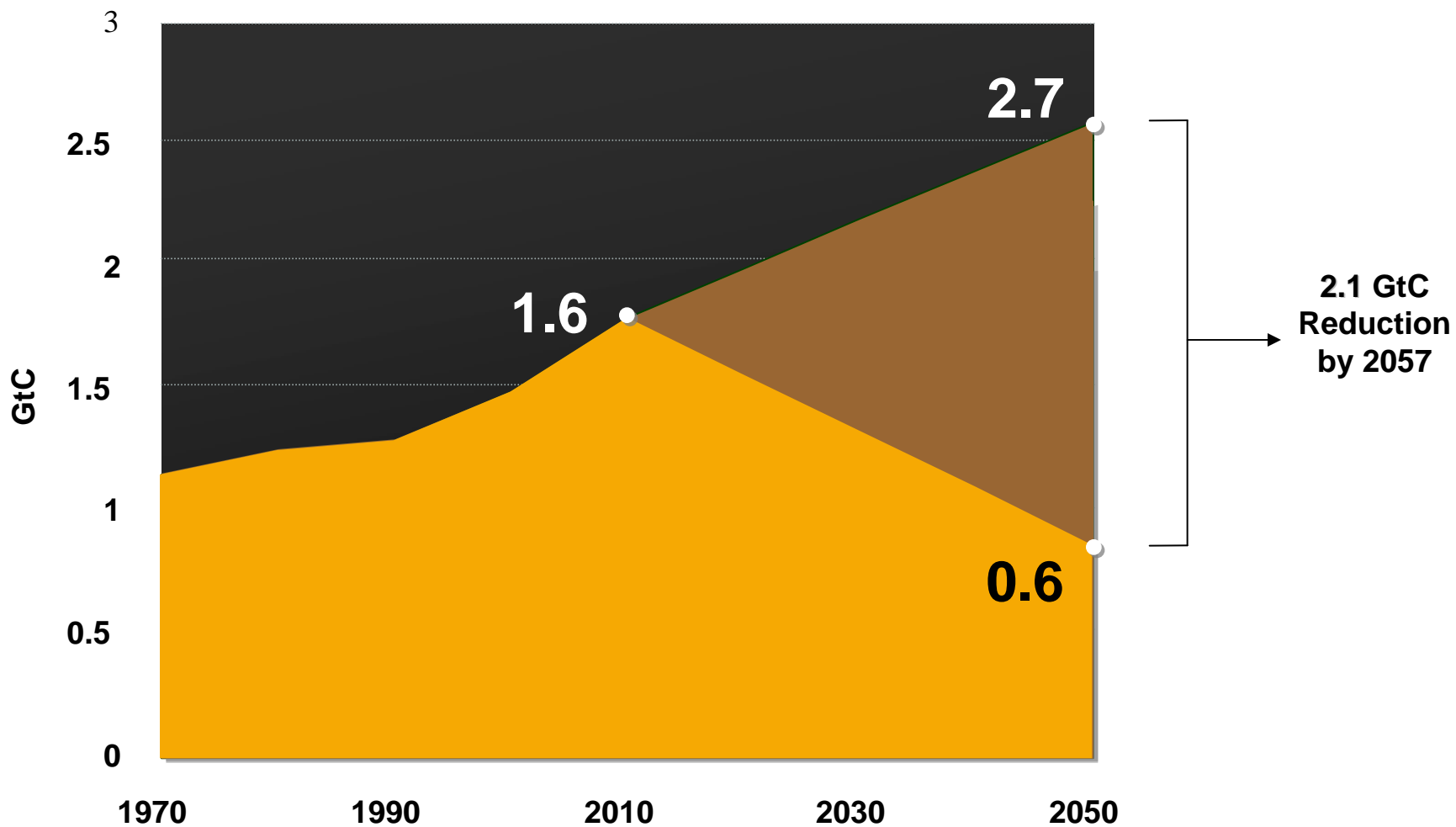
Cumulative World Emissions (1850-2002)



IPCC Policy Implications

- **Stabilize atmosphere** at 450 ppm CO₂ to avoid 2° temperature rise
- **Cut worldwide emissions** in half by mid-century
- **Cut U.S. emissions by 60-80 percent** by mid-century to avoid the worst warming

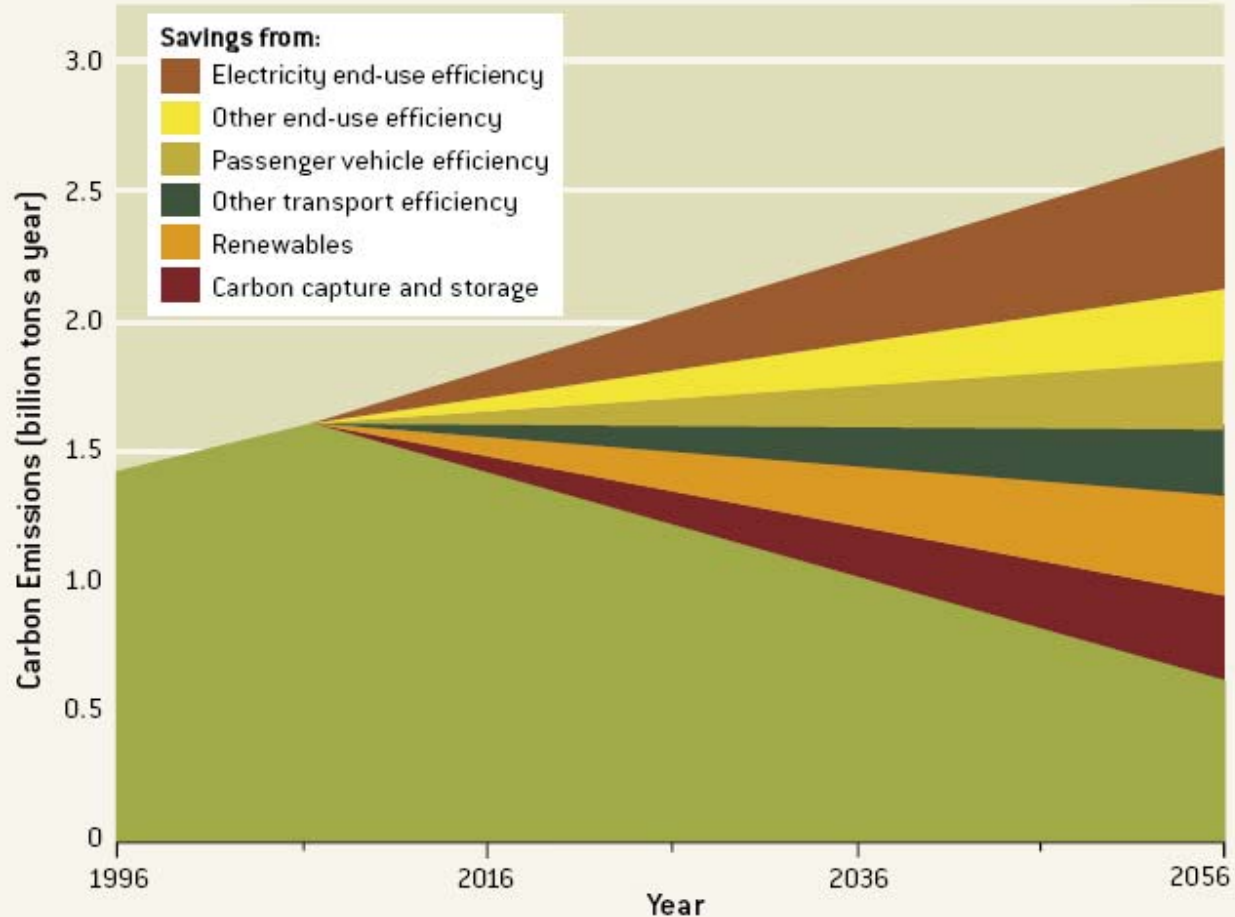
National Priority: Cut CO₂ Pollution 60%-80% by 2050





We Need an Integrated Solution

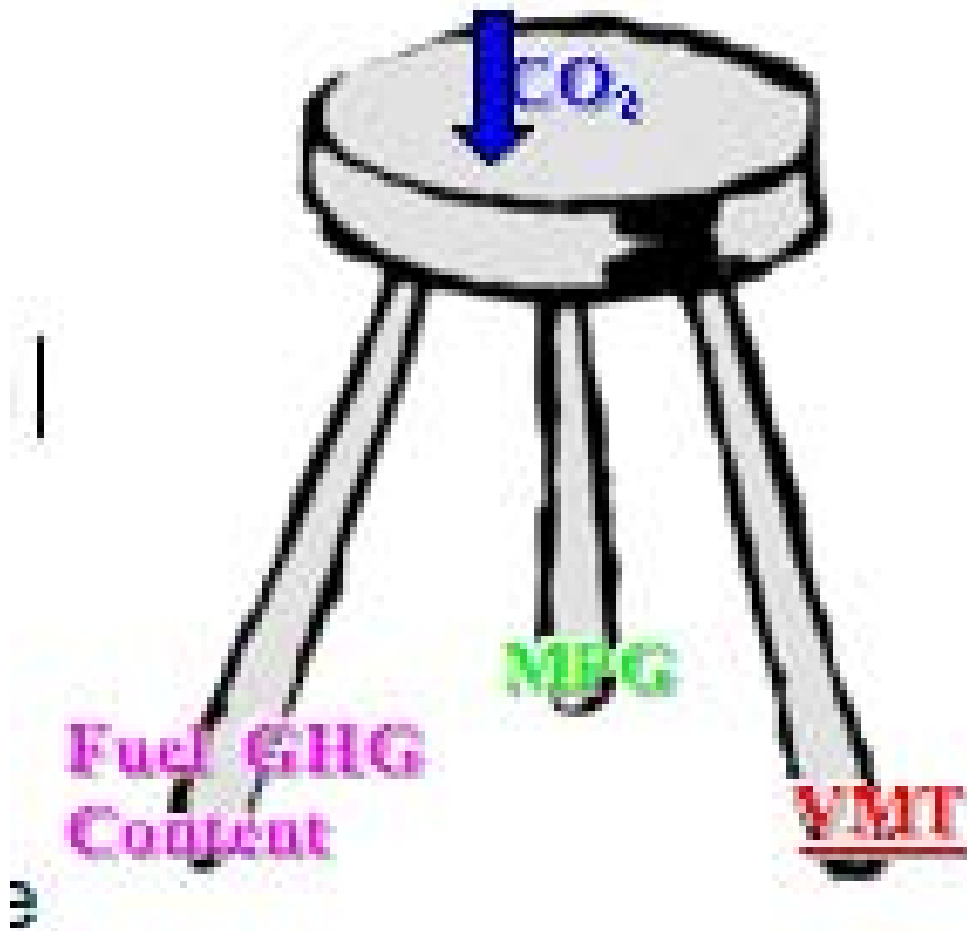
ONE PLAN FOR THE U.S.



▲ U.S. share of emissions reductions could, in this Natural Resources Defense Council scenario, be achieved by efficiency gains, renewable energy and clean coal.

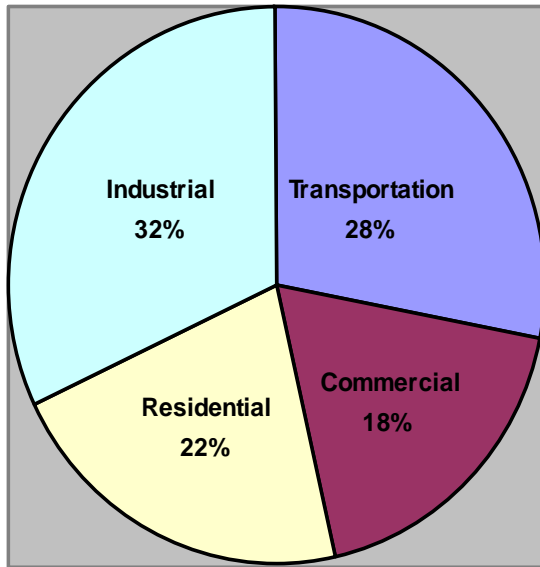
Source: Lashof and Hawkins, NRDC, in Socolow and Pacala, *Scientific American*, September 2006, p. 57

Three Factors

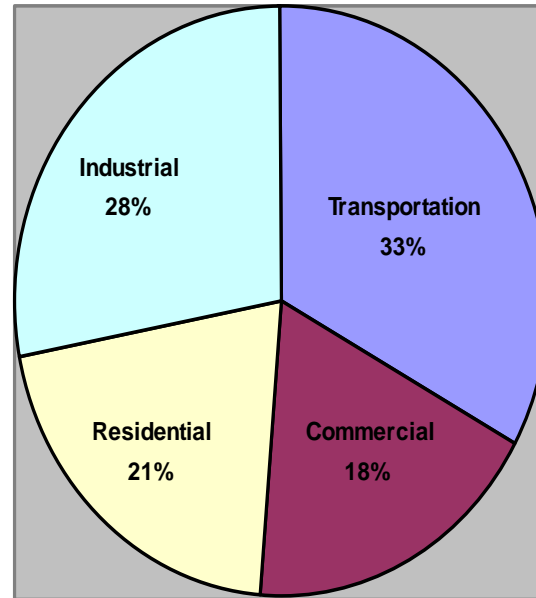


U.S. CO2 Emissions by Sector

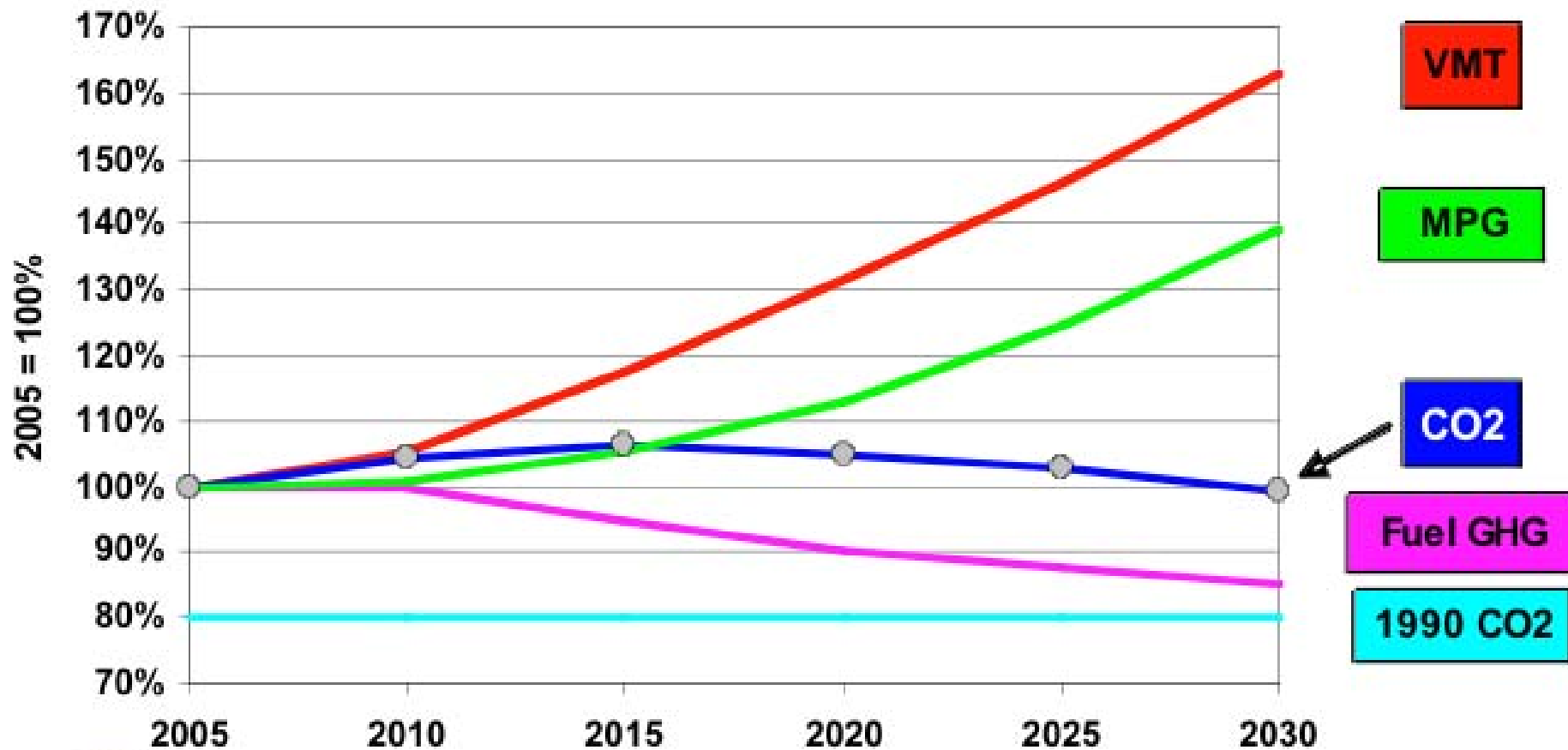
Energy Consumption by Sector



U.S. Carbon Dioxide Emissions by Sector



Pulling Out All The Stops



Sources: VMT: EIA with 10% rebound, MPG & Fuel: Trend Extrapolation



Growing Cooler: A Low-Carbon 2030 Scenario

QuickTime™ and a
TIFF (LZW) decompressor
are needed to see this picture.

Widespread Best Practices: Cut VMT 23 % by 2030 (Cowart/NRDC 2007)

- **Pay-as-you-drive** 368 B VMT
- **Smart growth, NMT** 298 B VMT
- **Speed limits & drivers training** 73 B VMT
- **Road pricing** 65 B VMT
- **Parking measures** 58 B VMT
- **Other TDM (HOV, telecommute)** 58 B VMT
- **Transit** 49 B VMT

The Technical Potential: Moving Cooler

- **Cambridge Systematics Team of Analysts**
- **Steering Committee: AASHTO, APTA, EDF, EPA, FHWA, FTA, ITS America, Rockefeller, Shell, Surdna**
- **Analyzing 47 Measures in Different Scenarios and Policy “Bundles”**
- **Carbon Abatement Potential, Cost-Effectiveness, Distributive Equity Effects**
- **Bike/ped: Modest abatement potential but exceedingly cost-effective (one recent estimate finds \$333 dollars per ton *net benefit*) and boosts effectiveness of other measures**

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Thank You!

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