

Global Climate Change Policy: The View From Here



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Global climate change

- The science
- The impacts
- The sources
- The politics
- Current action
- The Pew Center
- Next steps

Temperatures have increased...

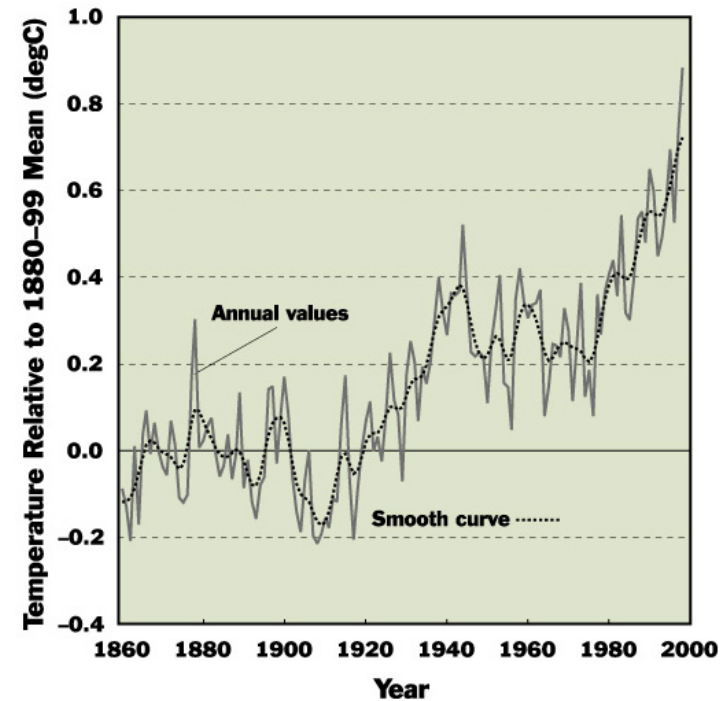
and are expected to continue to do so.

- Warming (1990-2100):
3.4°-5.2° F (1.9°-2.9° C)
- Full-range:
2.3°-7.2° F (1.3°-4.0° C)

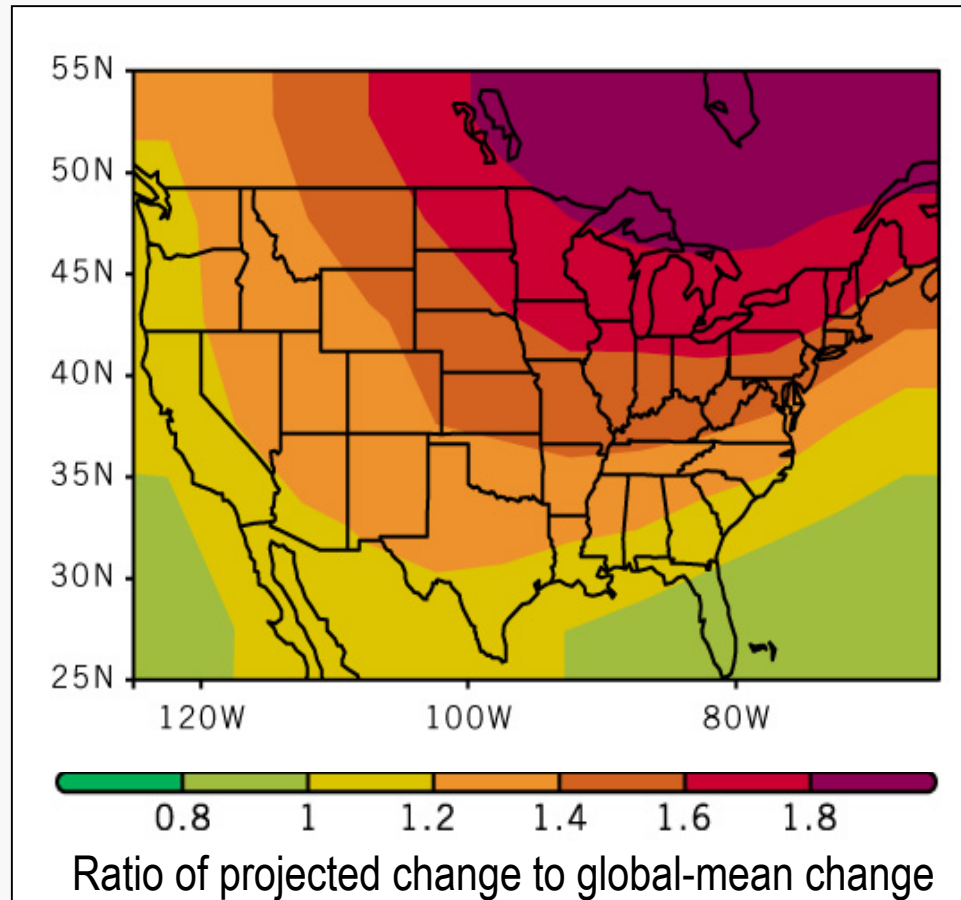
Figure 3

Global-Mean Temperatures

(1880-99 Reference Period)



Significant temperature change will be felt.



WINTER (Dec-Jan-Feb)

Multiple impacts:

- Weather
- Agriculture
- Water
- Coastal
- Health
- Ecosystems
- Forestry
- Aquatic Ecosystems



Weather

- U.S. temperature increase greater than global average
- Fewer frosts
- Increased frequency of extremely hot days
- Changes in precipitation and extreme events



“The Science of Climate Change: Global and U.S. Perspectives”
- Tom M.L. Wigley

Agriculture

- U.S. likely to continue to feed itself
- Regional impacts expected (decreased yields in south, increased in north)
- Shifts in livestock & crop production



“Agriculture & Global Climate Change: A Review of Impacts to U.S. Agricultural Resources”

- Richard M. Adams, Brian H. Hurd, John Reilly

Water resources

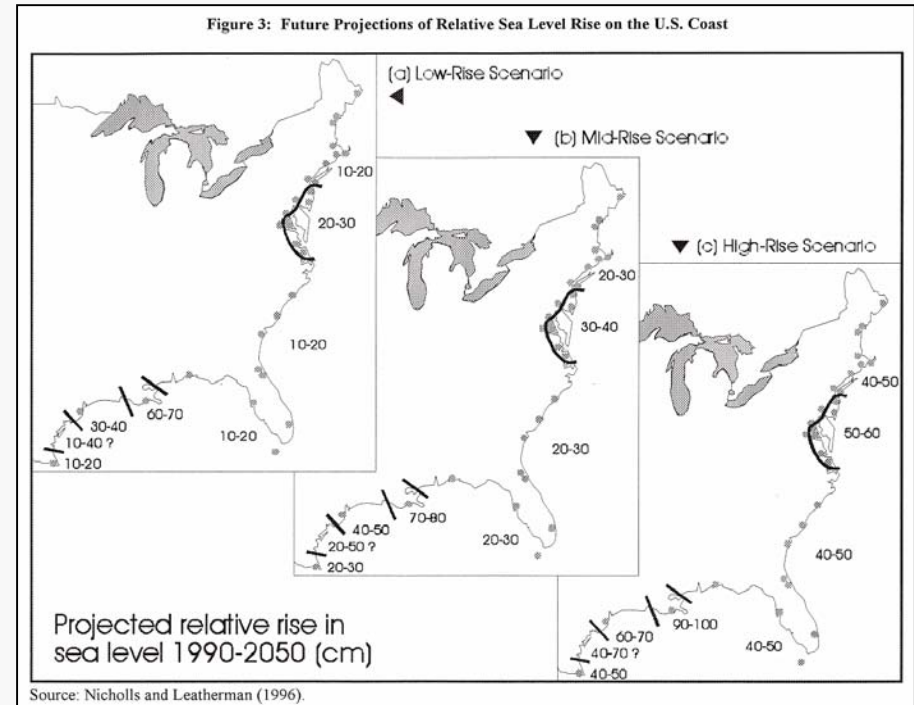
- Availability affected
- Precipitation patterns will change
- Temperatures & demand will increase
- Runoff timing shifts
- Extreme events (floods, droughts) more common/extreme
- Water quality impacts



“Water & Global Climate Change: Potential Impacts on U.S. Water Resources”
- Kenneth D. Frederick, Peter H. Gleick

Coastal/sea-level rise

- Sea-level rise: 9-42 cm by 2050;
23-96 cm by 2100
- Vulnerable areas:
mid-Atlantic,
south Atlantic,
Gulf Coast, parts of
New England &
San Francisco



“Sea-Level Rise & Global Climate Change: A Review of Impacts to U.S. Coasts”
- Jim Neumann, Gary Yohe, Robert Nicholls, Michelle Manion

Health

- Heat stress, storms, air pollution effects
- Vector-borne and water-borne diseases
- Climate variability & response of public health system important

“Human Health and Global Climate Change: A Review of Potential Impacts in the United States”

- John M. Balbus and Mark L. Wilson

To be released December 2000

Ecosystems

- Migration of plants and animals
- Loss of biodiversity and some ecosystems (cold areas, human-dominated landscape)
- Changes in ecosystem functioning (flow of material and energy, carbon storage, etc.)

“Ecosystems and Global Climate Change: A Review of Potential Impacts on U.S. Terrestrial Ecosystems and Biodiversity”

- Jay R. Malcolm and Louis F Pitelka

To be released December 2000

Factors to consider:

- Uncertainty in model predictions
- Beyond a doubling of CO₂ (change is dynamic)
- Upper end of warming range
- Possibility of non-linear/extreme events
- Low-probability/high-impact event
- Distributional & regional effects
- Adaptation/coping mechanisms
- Existing vulnerabilities
- Non-market impacts
- Domestic vs. international

Why is the temperature rising?

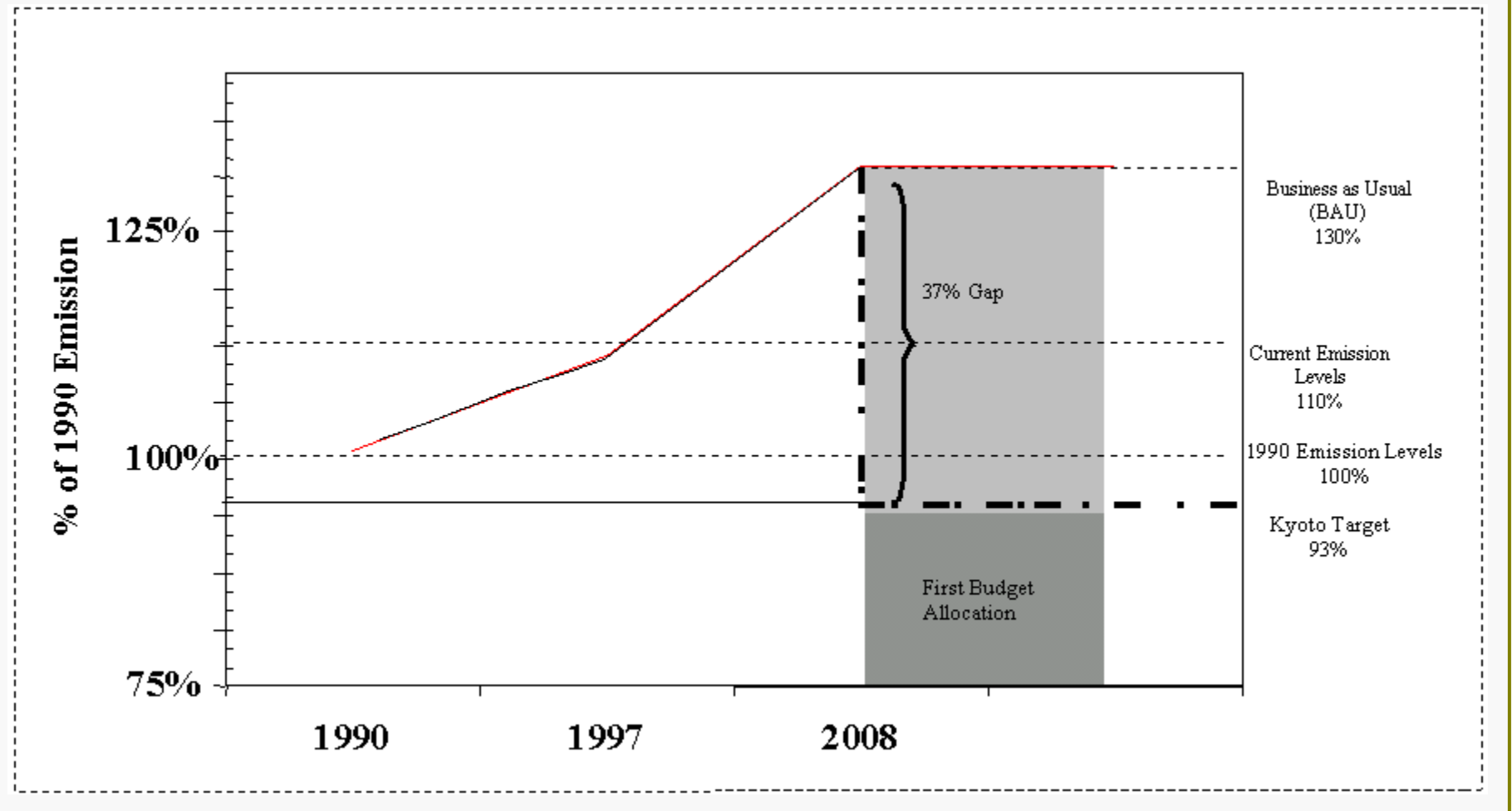
- Natural variability
- Human activities



"The balance of evidence suggests that there has been a discernible human influence on global climate."

-IPCC, 1996

U.S. GHG emissions trajectory



- Global BAU emissions from electric utilities
 - 1990—18.2 MMTCE
 - 2000—20.8 MMTCE
 - 2010—25.3 MMTCE
- Global BAU Emissions from Mg production
 - 1990—3.73 MMTCE
 - 2000—5.73 MMTCE
 - 2010—14.7 MMTCE

The groundwork for an international protocol

- **1992—UNFCCC**

- Parties (including U.S.) agree on voluntary actions to reduce GHG emissions (181 countries as of 10/00)

- **December 1997—Kyoto Protocol**

- Parties agree to binding limitations on GHGs for 38 developed countries and economies in transition
- Emissions trading, JI, CDM, basket of gases

Status of the Kyoto Protocol

- Not legally binding until ratified by 55 Parties to the Convention, including Annex I countries that account for at least 55% of the total CO₂ emissions in 1990
 - as of 10/00, 84 nations have signed, 29 ratified
- Major Issues:
 - Kyoto mechanisms
 - Compliance
 - Developing countries
 - “Sinks”

The challenges:

- How much at home?
- Who goes first?
- Skeptical scientists
- Economics
- Developing country participation
- U.S. government action stalled

Domestic policy proposals

- Legislative:
 - Early action crediting/baseline protection
 - Extending existing voluntary reporting programs
 - Restricting government action “implementing” Kyoto Protocol
 - Crediting sequestration activities
- Early carbon trading proposals

- **New Jersey:**
 - Reduce GHG emissions 3.5% below 1990 levels by 2005
- **Iowa:**
 - 10% of energy from renewable resources by 2015
- **Oregon:**
 - Passed legislation in 1997 requiring power plants to meet CO₂ emissions standards
- **ICLEI:**
 - Cities for Climate Protection—over 60 cities have joined

- **United Kingdom:**

- Switching from coal to natural gas
- 14% emissions reduction from 1990 to 2000

Germany:

- Voluntary action
- Renewable energy
- Eco-taxes
- 17% emissions reduction from 1990 to 2000

Australia:

- Energy efficiency
- Renewable energy
- Government reduction and abatement programs

The Pew Center is creating a new “center” in the debate.

- BELC
- International
- Public policy
- Analysis
 - Environment
 - Economics
 - Policy
 - Solutions



The Pew Center—BELC Members

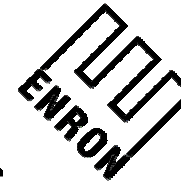


DTE Energy

Wisconsin Electric
A WISCONSIN ENERGY COMPANY



United Technologies



Shell International



What we believe...

First, we accept the views of most scientists that enough is known about the science and environmental impacts of climate change for us to take actions to address its consequences.

Second, businesses can and should take concrete steps now in the U.S. and abroad to assess opportunities for emission reductions, establish and meet emission reduction objectives, and invest in new, more efficient products, practices, and technologies.

Third, the Kyoto agreement represents a first step in the international process, but more must be done both to implement the market-based mechanisms that were adopted in principle in Kyoto and to more fully involve the rest of the world in the solution.

Fourth, we can make significant progress in addressing climate change and sustaining economic growth in the U.S. by adopting reasonable policies, programs, and transition strategies.

Company commitments

in This Race Everyone's Winner

DuPont, DuPont and Global Climate Change are a team competing to address the challenge of climate change. These companies are not just winning the race by setting and meeting aggressive climate goals, but by leading the way in creating a sustainable future.

- DuPont will have reduced greenhouse gas emissions by 15 percent by the year 2010 and will have reduced overall water consumption by 20 percent by 2010, and will have reduced energy consumption by 20 percent by 2010.
- DuPont's 1995 commitment to reduce a million tons of carbon emissions by its 2005 goal has been exceeded, with the company obtaining an additional one million tons of energy efficiency savings.
- DuPont Technologies' commitment to reduce greenhouse gas emissions by 20 percent by 2010 has been exceeded, with the company achieving a 25 percent reduction.

Climate change is serious business... acting to address it makes everyone a winner.

PEW CENTER on Global CLIMATE CHANGE
Partners in the New Climate: 2008 Climate Change
www.pewclimate.org

A Leap Forward on Climate Change

For companies like DuPont, climate change is a business challenge.

That is why DuPont voluntarily launched an initiative to reduce greenhouse gas emissions. The results have been dramatic. By the year 2010, DuPont will have reduced energy use from global operations by 45 percent and improved energy efficiency by 15 percent below 1990 levels. DuPont also has succeeded in halving energy consumption for the last ten years.

And DuPont is not resting on its accomplishments. DuPont just announced that it is going to raise the next long-term goal, setting new goals for 2010:

- Reducing global carbon dioxide emissions, gas emissions by 45 percent using 1990 as a base year.
- Halving total energy use that, using 1990 as a base year, and
- Using renewable resources for ten percent of global energy use.

DuPont's leadership shows that it is possible to address climate change and maintain economic growth.

PEW CENTER on Global CLIMATE CHANGE
DuPont is a member of the Pew Center on Global Climate Change's Business Environmental Leadership Council, the Pew Center 2008 Top 100 Greenest Corporate Contributions.

Earth Day 2008: The Race to Reduce Carbon Footprints
www.earthday.org

Some people are talking about the weather. Others are doing something about it.

Everyone talks about the weather. While many others, however, are not, there is a growing list of companies that are doing something about it.

Learn more through the Pew Center on Global Climate Change at the Business Environmental Leadership Council, these companies are voluntary addressing climate change. They are:

- ABB
- AMGEN
- AMMOX
- CHRYSLER
- DOW
- ENTEGY
- HOLLAND
- MATSUSHITA
- P&G Corporation
- TOYOTA
- United Technologies
- Volkswagen
- Wal-Mart

Climate change is serious business... acting to address it is smart business.

For more information about the voluntary actions of these change leaders, visit our website at www.pewclimate.org or contact the Center at (202) 336-4140.

Fold for by the Pew Center on Global Climate Change

PEW CENTER on Global CLIMATE CHANGE

For companies that help us lead the way, learn more about the Business Environmental Leadership Council at www.pewclimate.org.

Responding to the Challenge of Climate Change

Our generation's challenge is addressing global climate change while sustaining a growing economy—a challenge that demands a serious response from government, as well as the private industry and the public. That is why **United Technologies Corporation** is doing its part in voluntarily launching this unique, global initiative:

- **Reduced Emissions:** By 2007, United Technologies committed to 30% energy savings and water conservation for a million of units, by 20% below 1997 levels, with approximately the same reduction in its emissions that cause climate change.
- **Global Scope:** This program is one of the most ambitious of its kind, covering 219,000 sq. ft. of facilities, including 76,000 sq. ft.
- **United Technologies:** United Technologies is an active member of the Business Environmental Leadership Council, a 100+ firm coalition that leads the way.

PEW CENTER on Global CLIMATE CHANGE
Preventing climate change is serious business... for all of us.
Please visit our website at www.pewclimate.org
PEW CENTER ON GLOBAL CLIMATE CHANGE

The emergence of the BELC has changed dynamic of debate.

- Media interest
- Buenos Aires/Bonn
- Political recognition
- Moderating influence in business debate



What is needed to address the issue?

- A new industrial revolution
 - New technologies
 - New infrastructure
- Political will and leadership
 - Early action & other policy efforts
 - Transitional programs
 - Innovative approaches