



# Cap-and-Trade

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## THE CARBON PANIC

*Bob Benze*

9-24-09



# Cap-and-Trade

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- we perceive an image of the truth and possess nothing but falsehood – *Pascal*
- It is difficult to get a man to understand something when his salary depends on his not understanding it. -- *Upton Sinclair*



# Waxman-Markey Bill

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- A bill to create clean energy jobs, achieve energy independence, reduce global warming pollution and transition to a clean energy economy.



# Waxman-Markey Bill

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- 1427 page climate legislation passed in the House June 26, 2009.
- Establishes an economy-wide cap & trade program for Greenhouse Gasses (GHG).
- Creates incentives and standards for clean energy and energy efficiency.
- Establishes GHG standards for vehicles, stationary sources, and fuels.



# Waxman-Markey Bill

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- GHG 3% below 2005 levels by 2012, 17% below 2005 levels by 2020, 83% below 2005 levels by 2050
- 20% Utility electricity from renewable resources by 2020
- Provisions for GHG (CO<sub>2</sub>) standards for passenger vehicles
- Traffic reduction (VMT) reduction



# Waxman-Markey Bill

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- Lighting and appliance standards
- Residential and commercial building energy efficiency standards
- Green jobs & worker transition training
- Authority for States to establish more stringent energy and GHG controls



# Waxman-Markey Bill

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- Natural resources climate change adaptation fund
- International climate change adaptation program
- National wildlife habitat and corridors adaptation program
- And much, much more



# Cap-and-Trade basics

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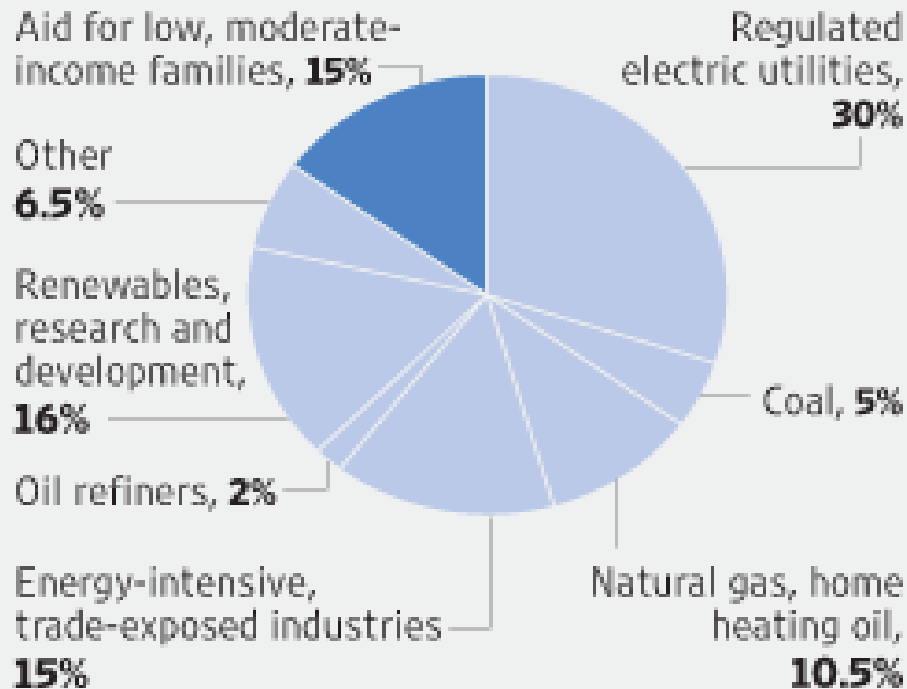
- A GHG cap, equal to the national emissions goal, is stipulated every year.
- Permits to emit GHG up to that cap are issued to various parties in the economy, with each permit allowing emissions of one ton of CO<sub>2</sub> equivalent.
- Permits are retired each year as required to meet the decreasing cap.

# Cap-and-Trade basics

## Politics of Climate Change

Proposed allocation of emission allowances under House cap-and-trade bill:

- Auction
- Give away



Source: House Energy & Commerce Committee



# Cap-and-Trade basics

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- Permits can be sold by parties emitting under their allocation to parties that need to exceed their allocation.
- EPA estimates permit values from \$13 to \$26 per ton CO<sub>2</sub> equivalents (tCO<sub>2</sub>e) in 2015 and from \$17 to \$33 in 2020.
- U.S. emitted 5,907 million metric tons of CO<sub>2</sub> in 2006 (20% world total)



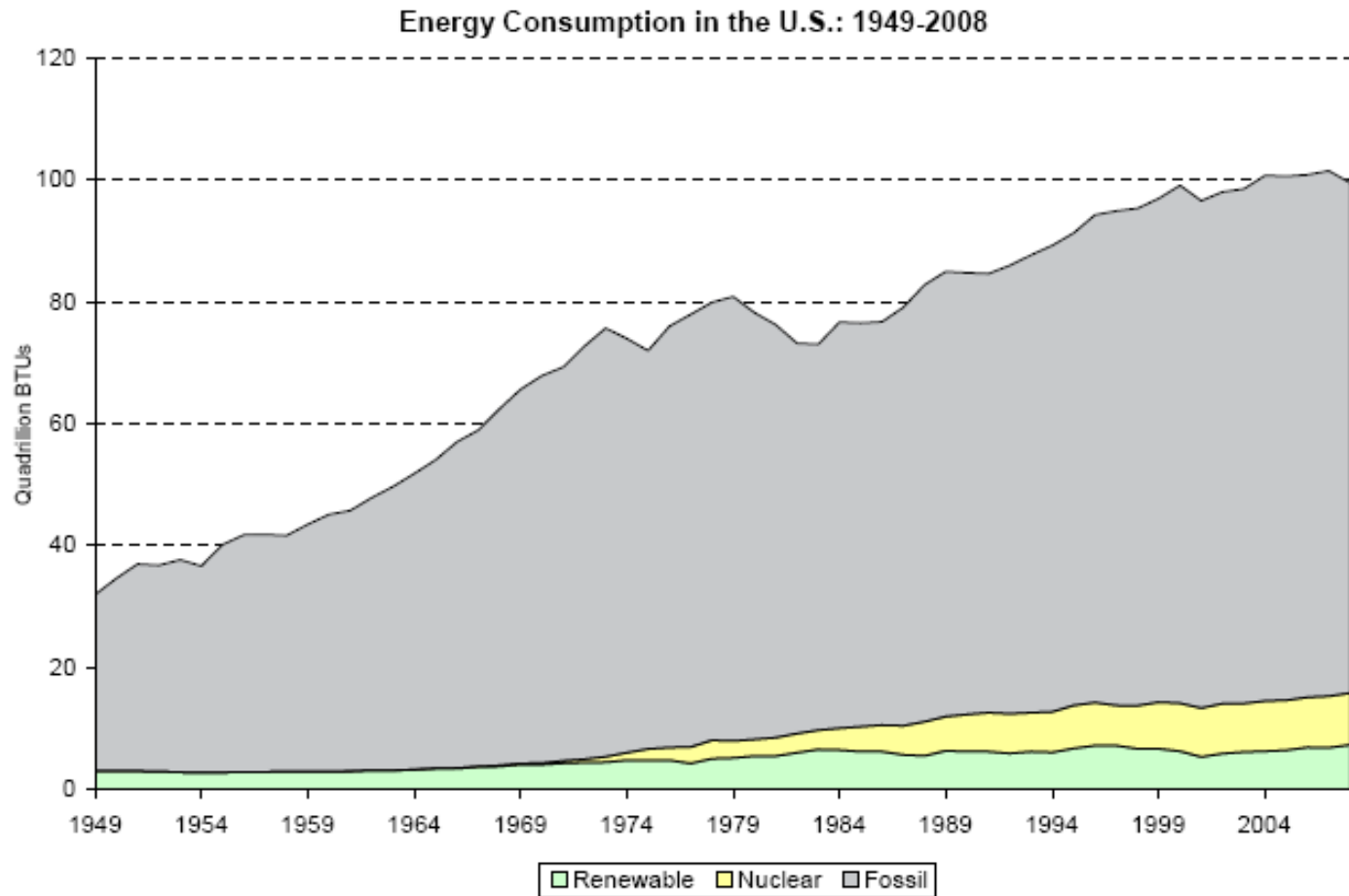
# Is there a problem? -- Yes

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- Cap & Trade radically restricts the only readily-available, large-scale source of energy in the U.S.
- Result: Supply and Demand relationship will dramatically increase the price of energy.

# U.S. Energy Consumption

## It's the carbon, stupid





# Heritage Foundation Analysis: by 2035 the bill would:

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- Destroy 1,105,000 jobs/yr on average
- Raise electricity rates 90%
- Raise gasoline price by 74%
- Raise natural gas price by 55%
- Raise average family energy bill \$1,500
- Increase federal debt 26%, or \$29,150 additional federal debt per person



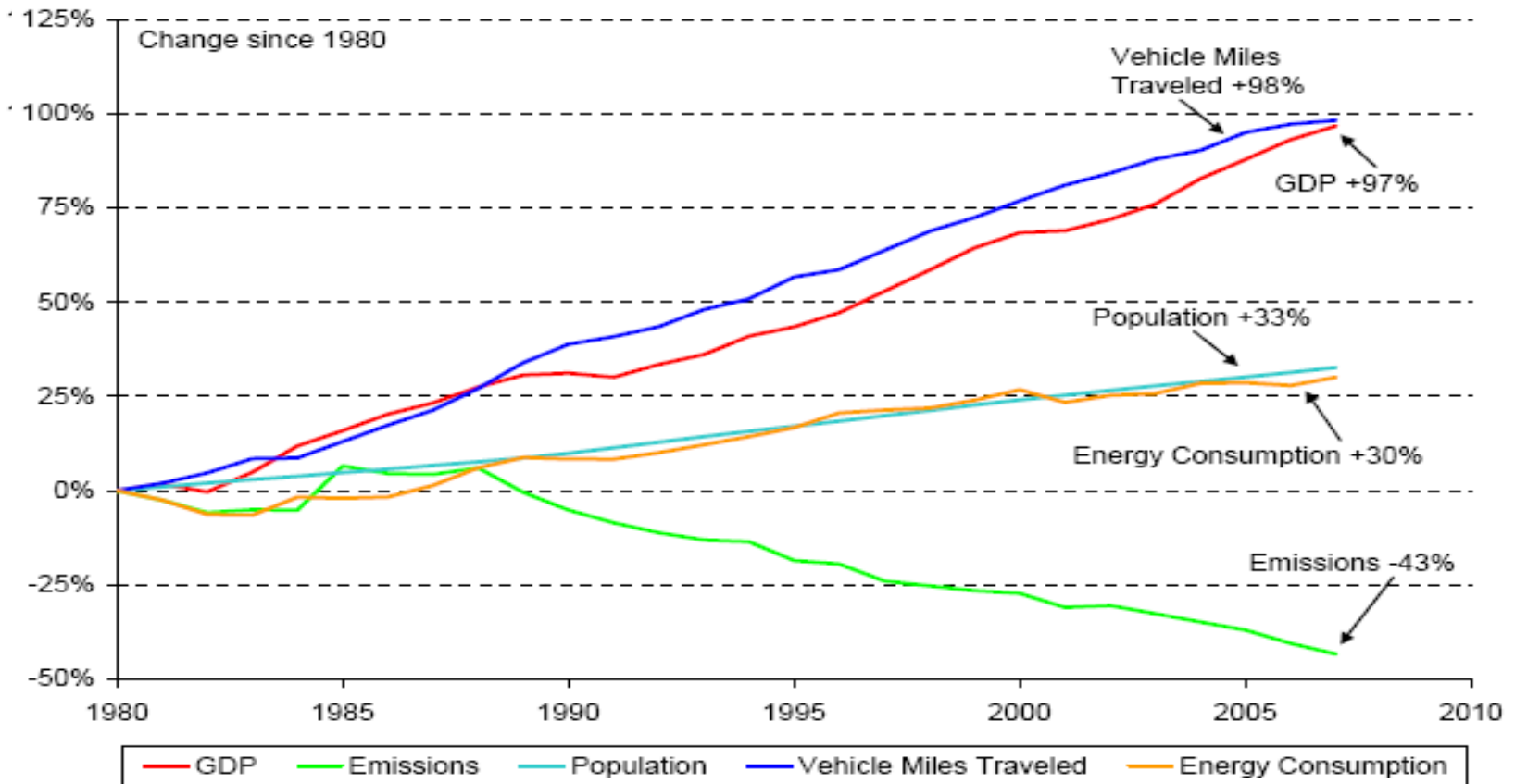
# Would the bill accomplish goal of reducing greenhouse gas?

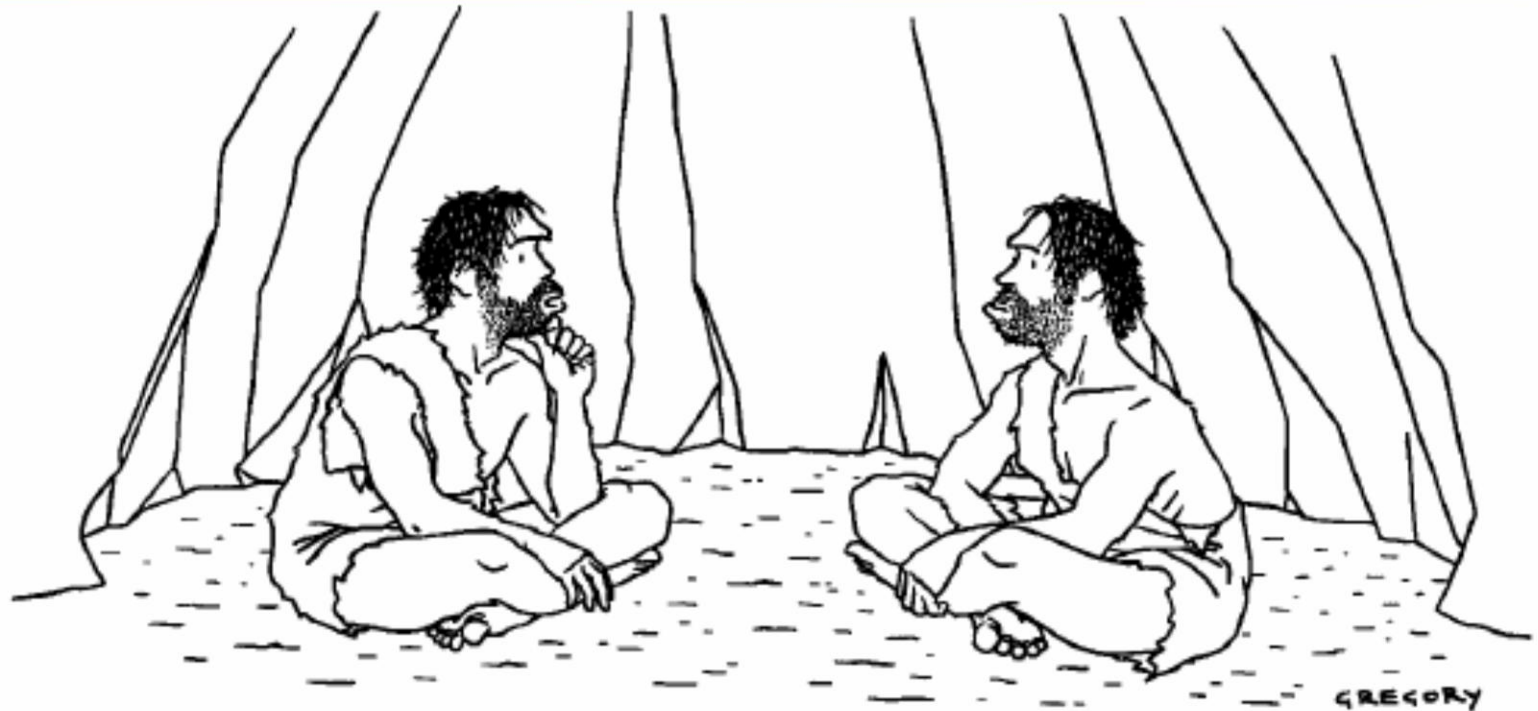
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- No. “We rich people can’t stop the world’s 5 billion poor people from burning the couple of trillion tons of cheap carbon they have within easy reach. We can’t even make any durable dent in global emissions—because emissions from the developing world are growing too fast.” Peter Huber

# And is air quality in the U.S. a problem? Not really

Trends in Aggregate Emissions, Demographics, and Economics:  
1980-2007

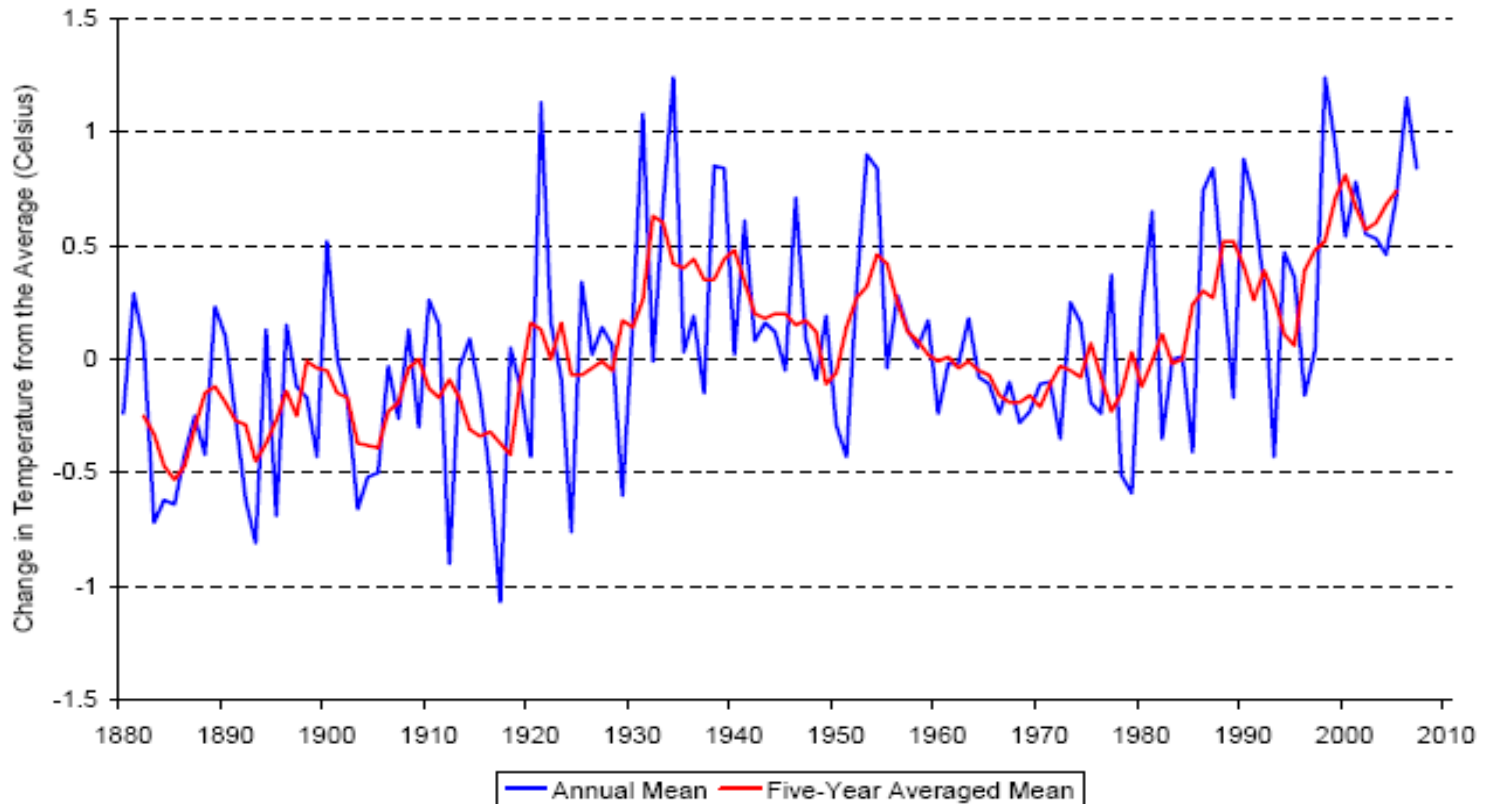




*“Something’s just not right—our air is clean, our water is pure, we all get plenty of exercise, everything we eat is organic and free-range, and yet nobody lives past thirty.”*

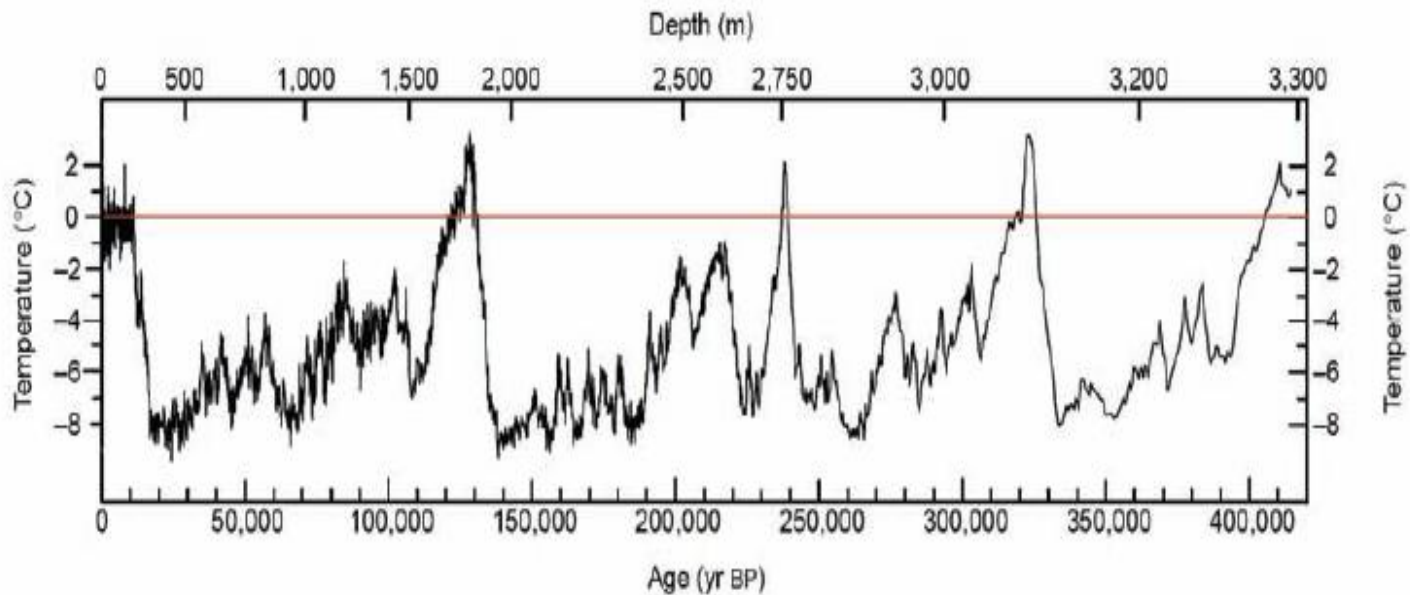
# Is the climate changing? Yes, 1.27 Degrees F in 128 years

U.S. Climate Change: Annual Means and Five-Year Averages, 1880-2007



# Has the climate changed before?

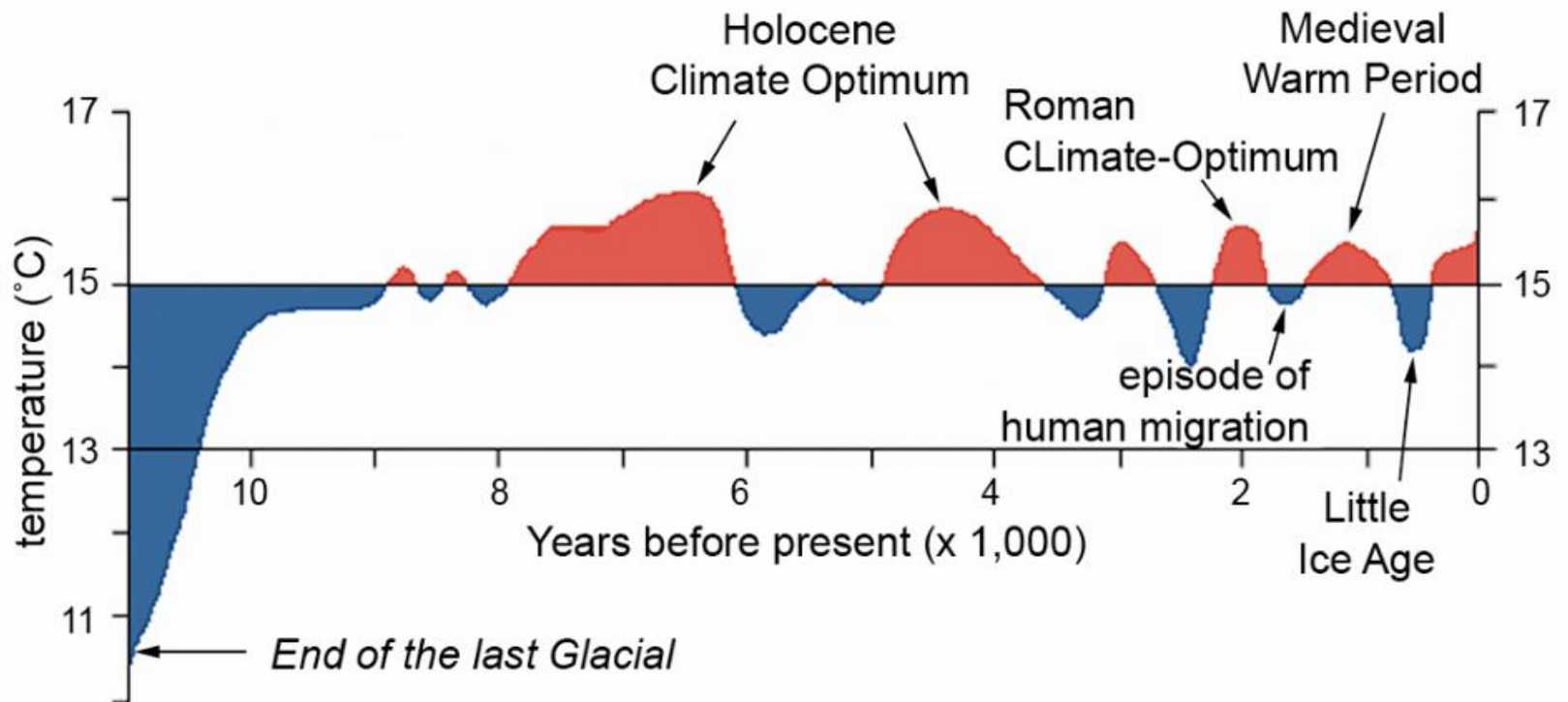
## Yes, every 100,000 years



**Figure 3.1.** Temperature history derived by Petit *et al.* (1999) from an ice core extracted from the Russian Vostok drilling station in East Antarctica.

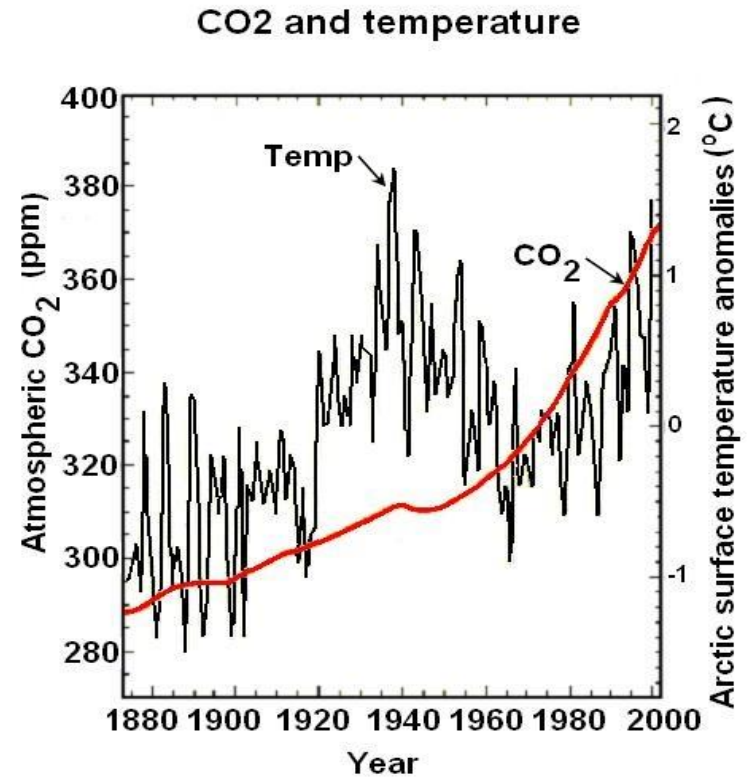
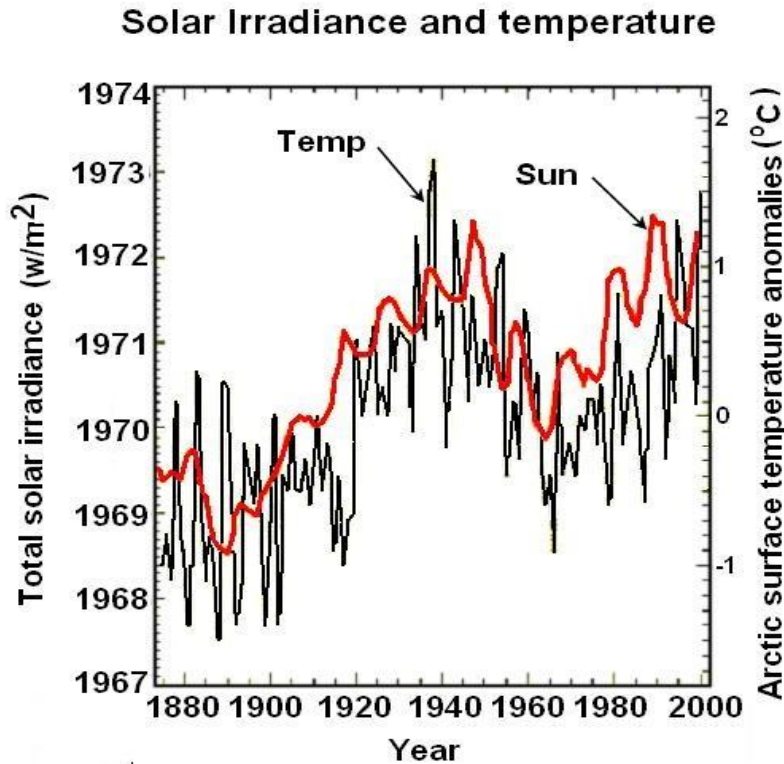
# And more recently

Northern Hemispheric temperature reconstruction for the past 10,000+ years



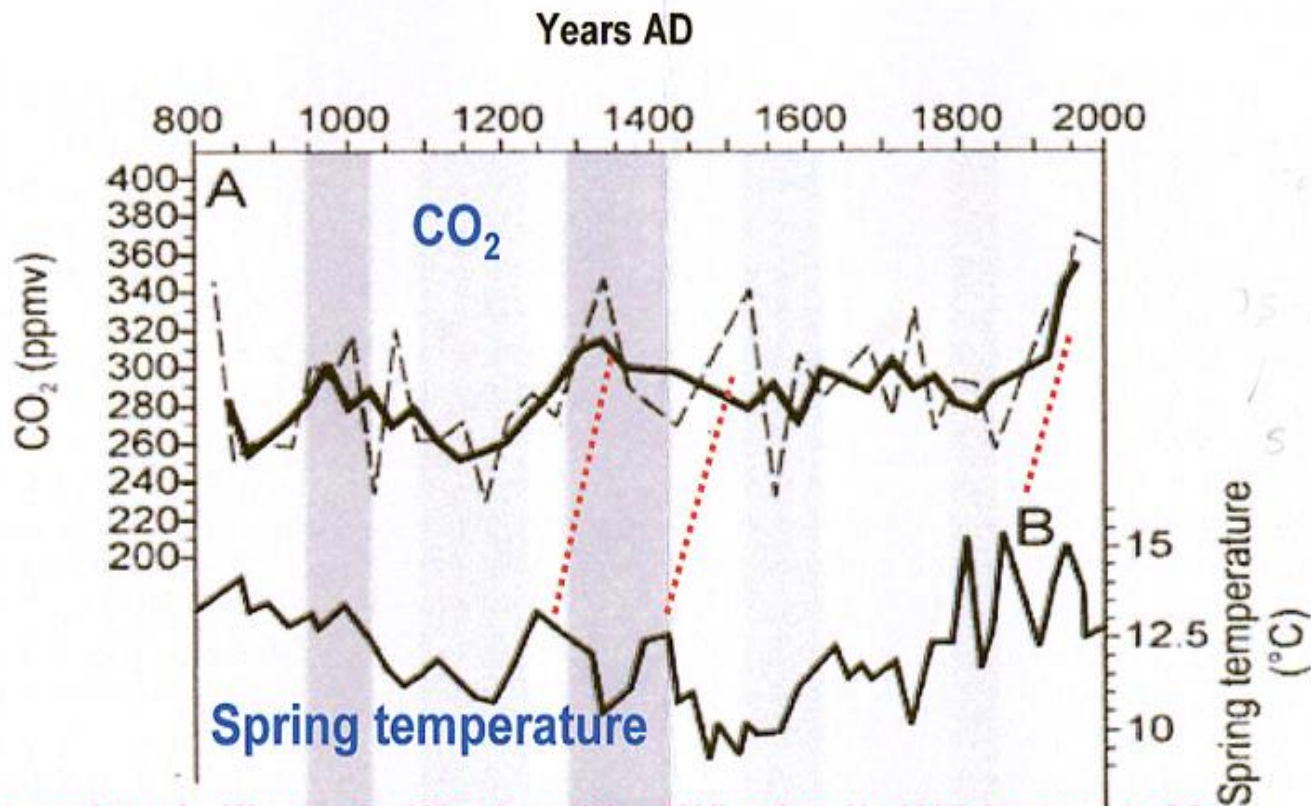
# Is it caused by CO2?

## Probably not



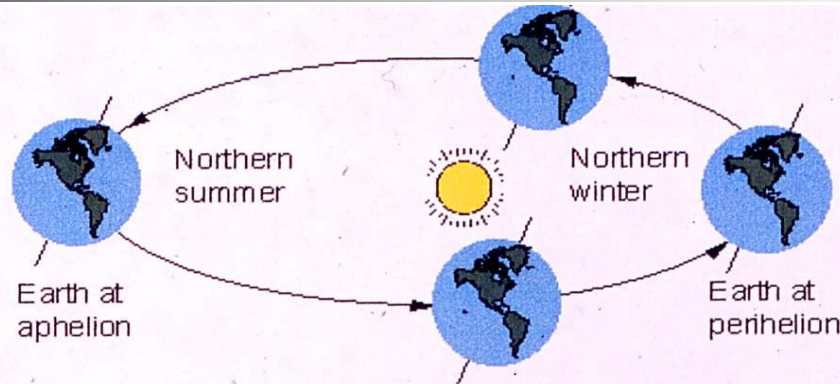
Modified from Soon, 2004

The change in temperature appears about 100 years before the change in atmospheric concentration of CO<sub>2</sub>

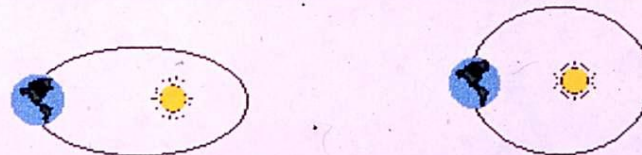
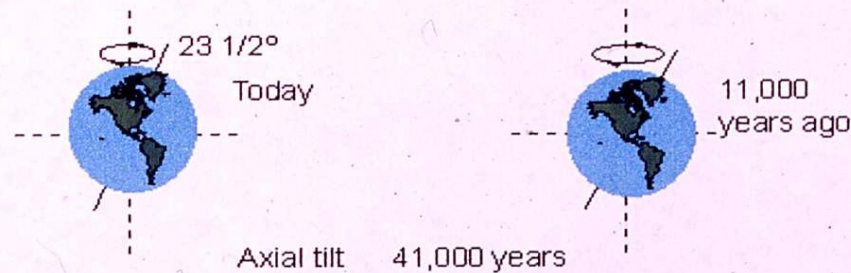


Kouwenberg, L., Wagner, R., Kürschner, W. and Visscher, H., 2005: Atmospheric CO<sub>2</sub> fluctuations during the last millennium reconstructed by stomatal frequency analysis of *Tsuga heterophylla* needles. *Geology* 33(1): 33-36.

# What might be the cause? Milankovich cycles?

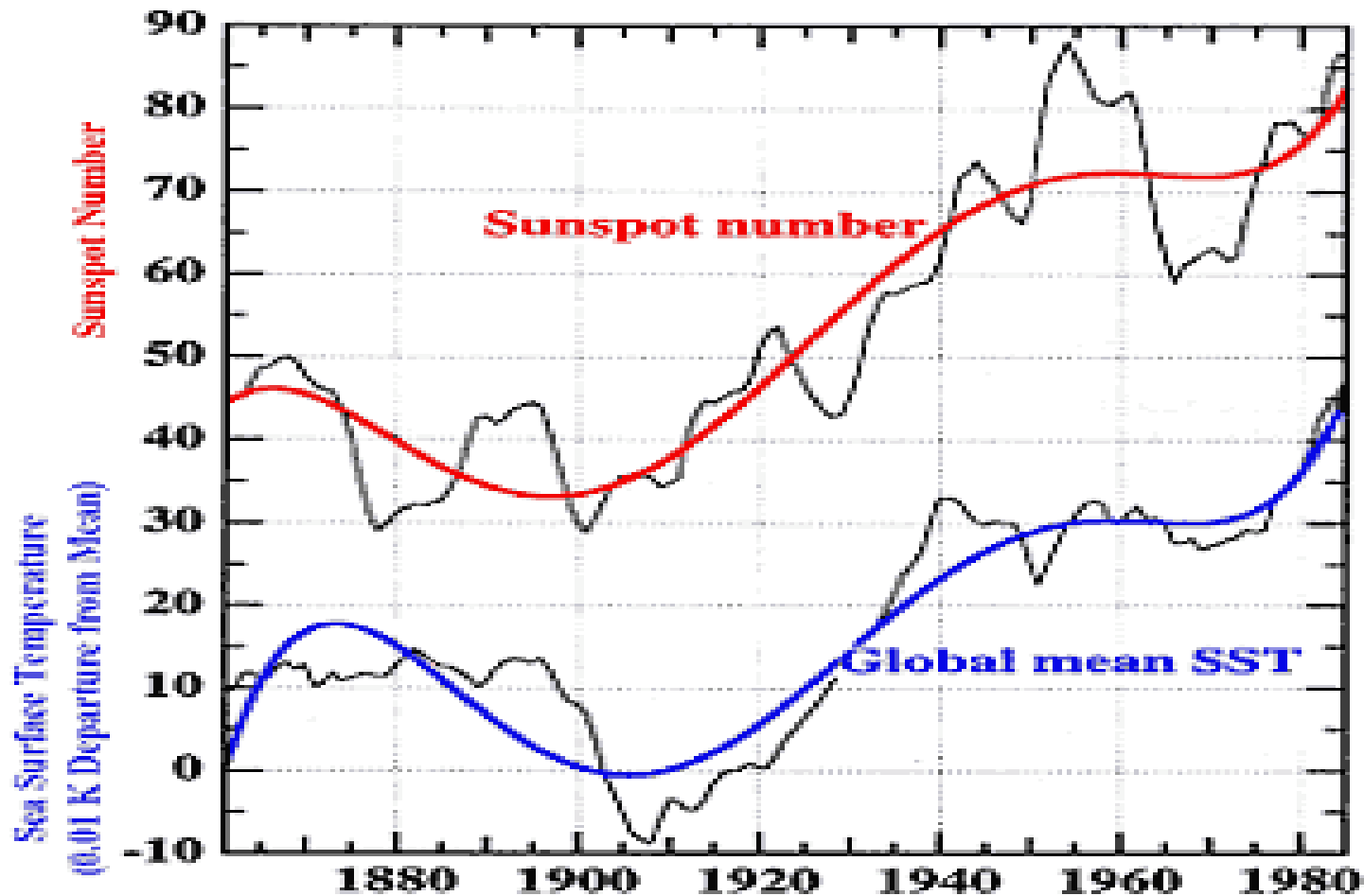


Precession of the equinoxes 19,000-23,000 years



Ellipticity of the earth's orbit 90,000-100,000 years

# And sun spots?



# And is warming bad?

## Not necessarily

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- More land to grow crops
- Warming leads to increased rainfall
- Fewer people die from heat
- People adapt easily to warmer temps.
- People adapt to sea level rise.
- Animals and other biota also adapt.
- etc., etc., etc.



# Would climate change \$ be better spent elsewhere? Yes

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- Nutrition in third world countries
- Remove trade barriers
- Disease prevention
- Education
- Women's rights
- Clean water and sanitation
- Conflict elimination



# Better solutions if carbon proves problematic (it won't)

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- France switched to nuclear power
- New technology such as nuclear fusion is being developed – ITER Project
- Interim biological CO<sub>2</sub> sequestration in new forests – already captures more CO<sub>2</sub> than emitted in North America



# Bottom line

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- We've done some really stupid things before: For example: Banning DDT and promoting Eugenics
- This time, let's all step back and take a deep breath before we break something that we may never be able to put back together again – the greatest economy in the world.

The End

