The Dog That Caught The Car

Life After Mandated Climate Solutions

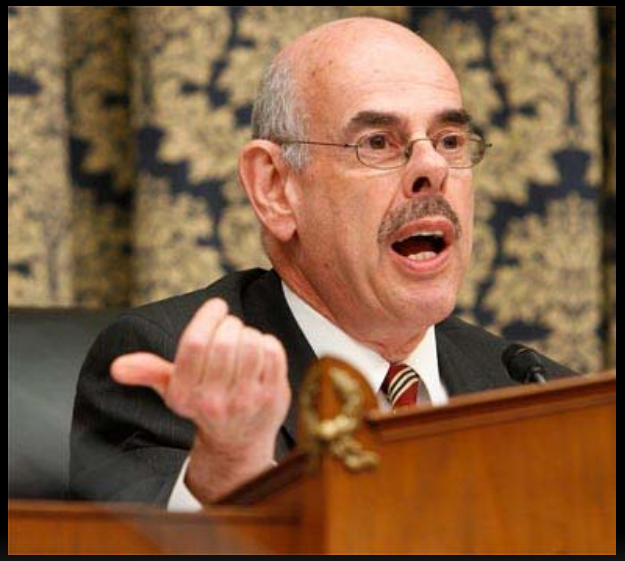
Jim Sims, CEO
Western Business Roundtable

What We'll Cover

1. Latest intel on federal cap-and-trade
2. Predictions on the final outcome
3. The dog caught the car: now what do we do?
   - Do we really want a Clean-Air-Act-on-steroids?
   - Renewables: the coming reality check
   - Green Jobs versus Net Jobs
   - Transmission: the crazy uncle in the closet
   - Gas: will we burn the bridge to our clean future?
   - Cost-versus-benefit: a coming uprising?
4. Who Has The Final Say?
5. The Good News!

Latest Intel On Waxman

- 17% of 2005 levels by 2020; 83% by 2050
- 35% free allocations to distribution utilities
- 15% to steel, aluminum, chemical and glass
- Possible 1-5% to refiners
- In 2025, POTUS can impose tariffs on carbon-intensive goods from developing countries.



Latest Intel On Waxman

- RPS: 20% by 2020, with 5% thru efficiency
  - Gov objects, adds 3% to efficiency → 12% RPS
  - Efficiency standard for utilities dropped
  - More biomass and waste-to-energy
  - New nukes and CCS coal are not to be included in the renewables baseline
- No nuke incentives
- Low-carbon fuel mandate still up in air

Other Options

- Hybrid cap-and-trade
- Hybrid carbon tax
- Tax PLUS cap-and-trade
- E^3 + RPS: efficiency improvements in energy, industrial processes and building PLUS renewable mandates

Is There A Third Way?

"[O]vercoming global warming demands something qualitatively different from limiting our contamination of nature. It demands unleashing human power, creating a new economy, and remaking nature as we prepare for the future. And to accomplish all that, the right models come not from raw sewage, acid rain, or the ozone hole but instead from the very thing environmentalists have long imagined to be the driver of pollution in the first place: economic development."

-- Environmentalists Ted Nordhaus and Michael Shellenberger

The Third Way

"The morning you provide the incentives, it'll be 50,000 entrepreneurs figuring out how to get the money. The morning you try to do it by regulation, there'll be 50,000 entrepreneurs hiring a lawyer to fight you. It's a fundamentally different model."

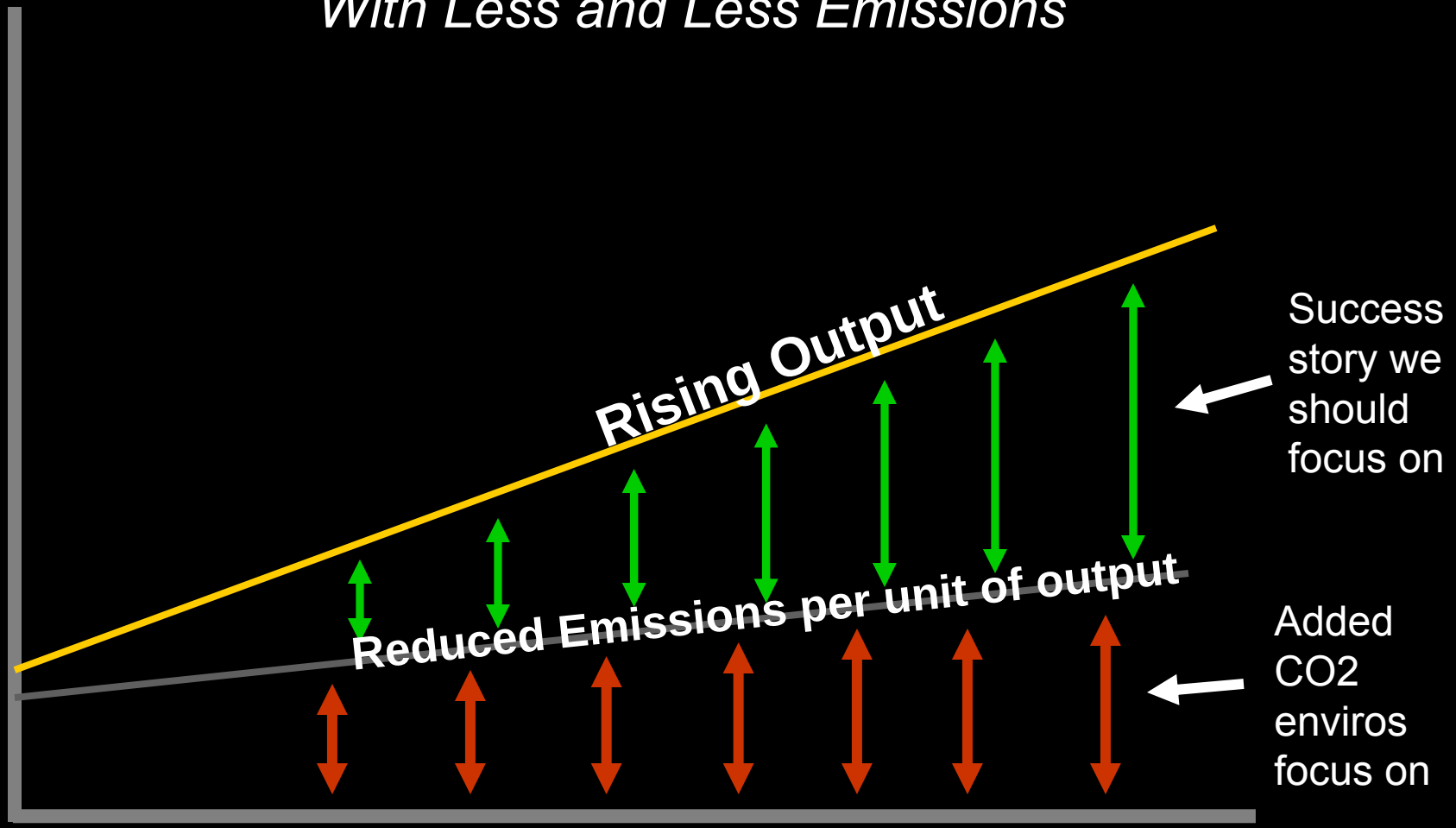
-- Newt Gingrich

The Third Way

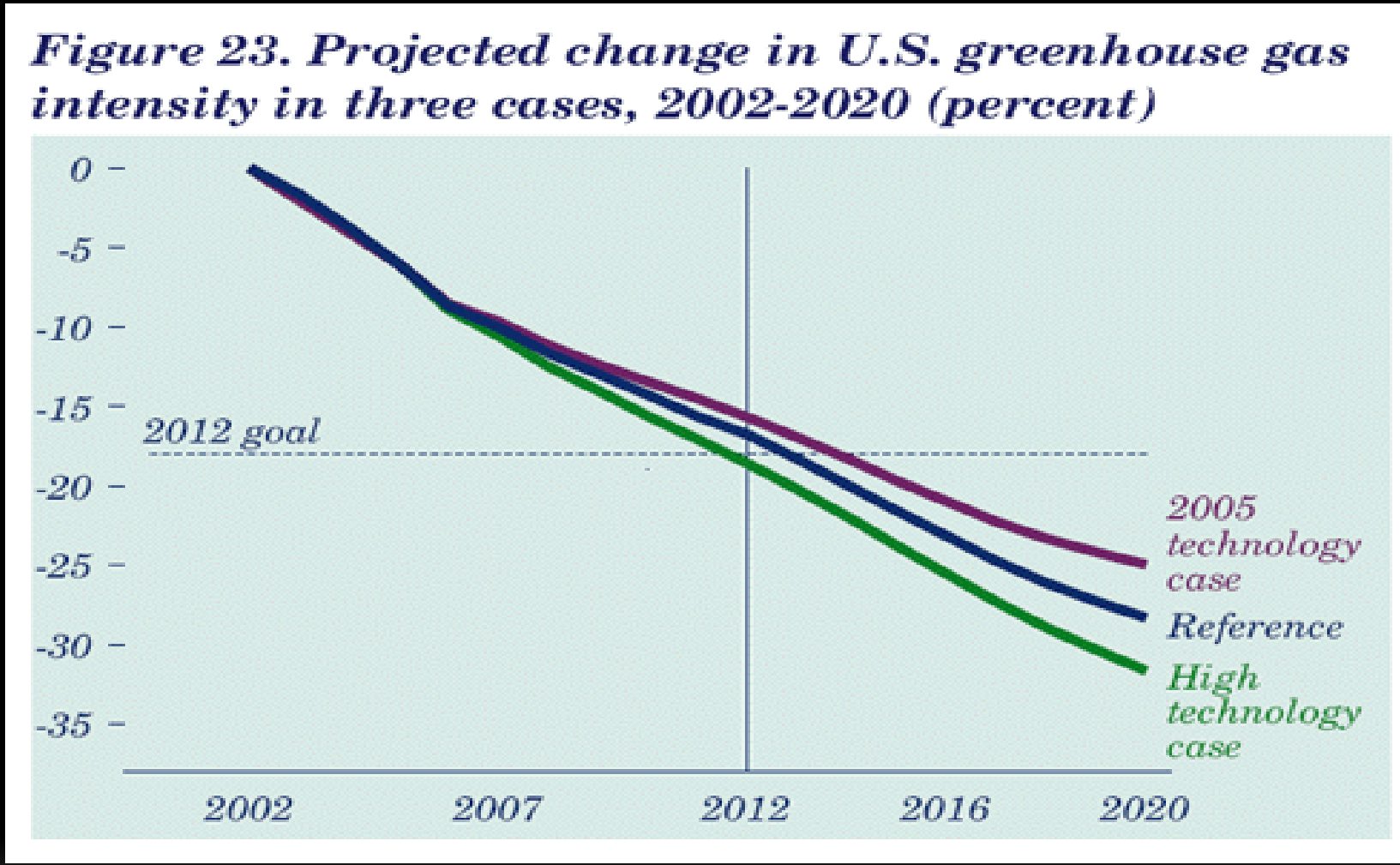
- National GHG registry system.
- Emissions caps that don't start for a decade – or after commercially available CCS technologies come out.
- Reasonable emissions glide-path.
- Massive loan guarantees and government-funded RD&D assistance for CCS technologies.
- Massive tax incentives for early action that increase the earlier that emitters reach targets;
- Aggressive technology export program.
- Backstop government regs that phase in in case incentives don't achieve reductions along the glide-path.

Reducing Our GHG Intensity

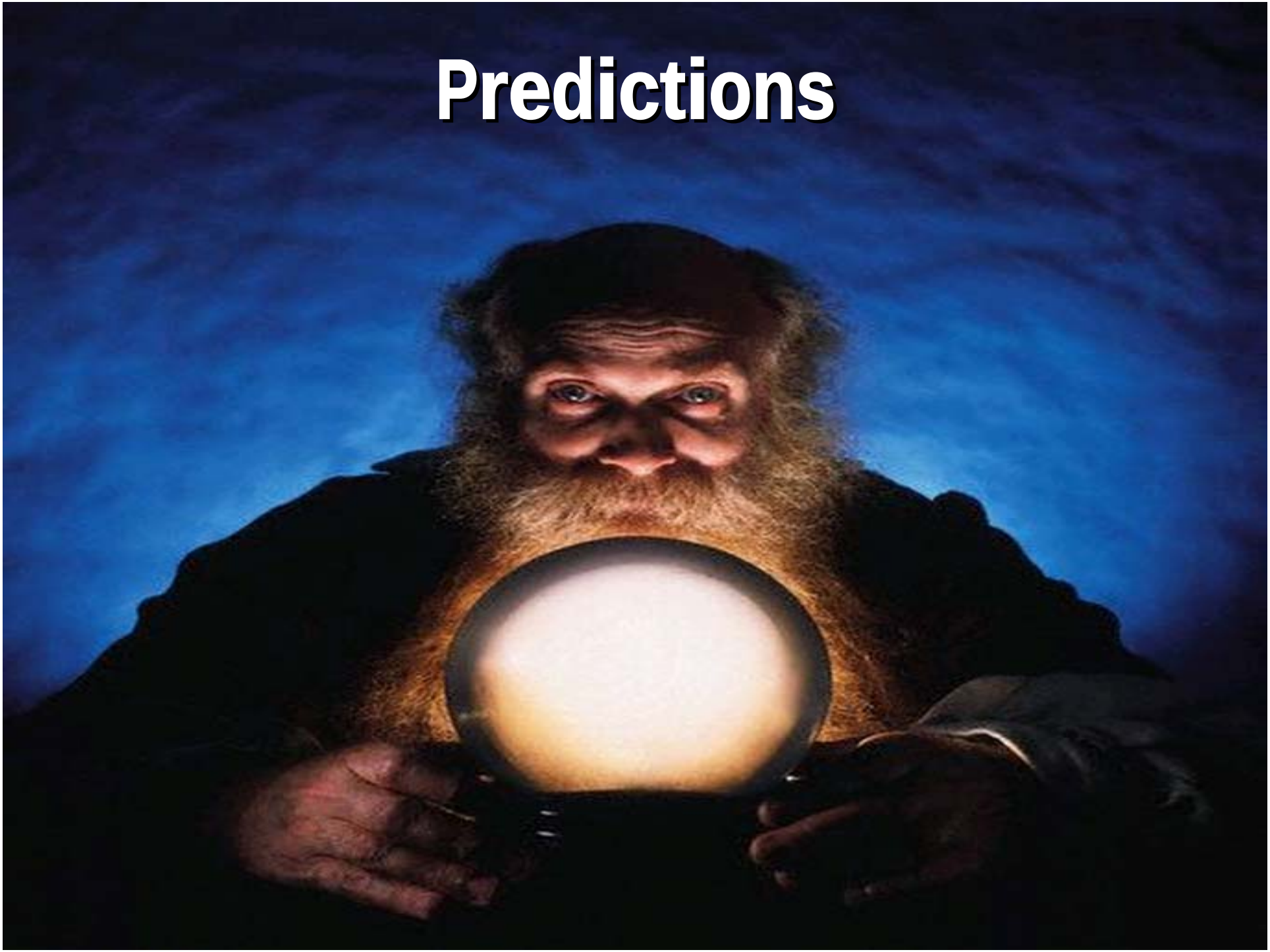
Producing More Output
With Less and Less Emissions



Reducing Our GHG Intensity



Predictions



Obstacles To Cap-and-Trade Passage

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Political Landscape

Proponents of climate regs have the:

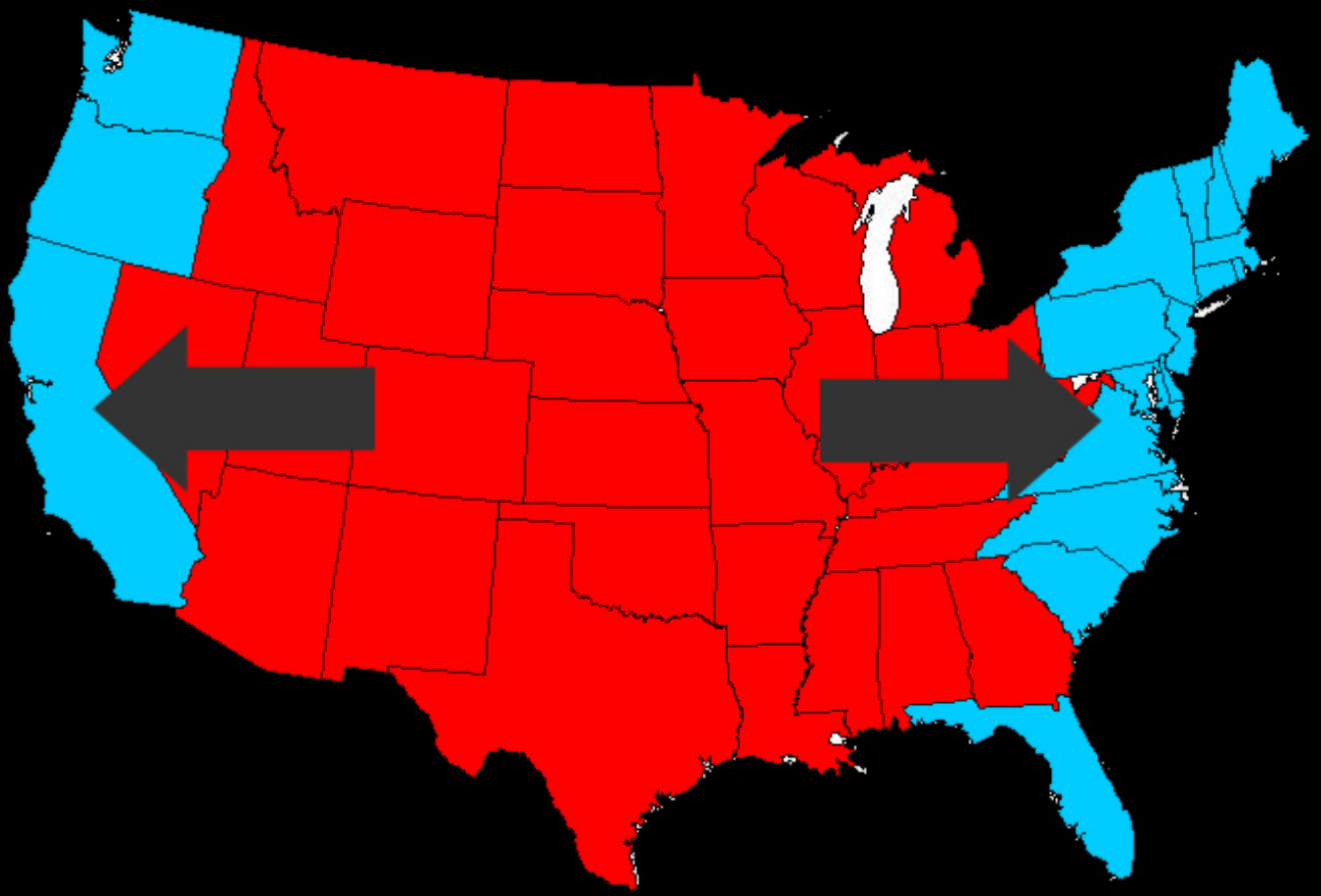
- Votes in Congress
- Support at the White House
- Support at federal agencies
- Support from majority of governors
- Support from powerful interest groups
- Support from many Fortune 100 companies
- Support from news media
- Support from the public for doing “something”

Political Landscape

Proponents do not yet have:

- Bullet-proof economic analyses showing policies will not raise costs on consumers.
- Plans for ensuring that massive renewable build-out will not de-stabilize the electric grid.
- Plans for ensuring that cost increases won't hurt disproportionately hurt poor.
- Plans showing why regs won't hurt U.S. competiveness and export jobs.
- Bullet-proof science showing that regs will deliver actual, measurable climate benefits.

1. Regional Fracture



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"It is a clear transfer from the middle part of the country's wealth to the two coasts.“

Michael G. Morris
CEO of AEP

2. Scientific Fracture

The scientific consensus for "radical" action is splintering

3. Enviro Fracture

Many have set conditions that allow for virtually no compromise.

4. Political Fracture

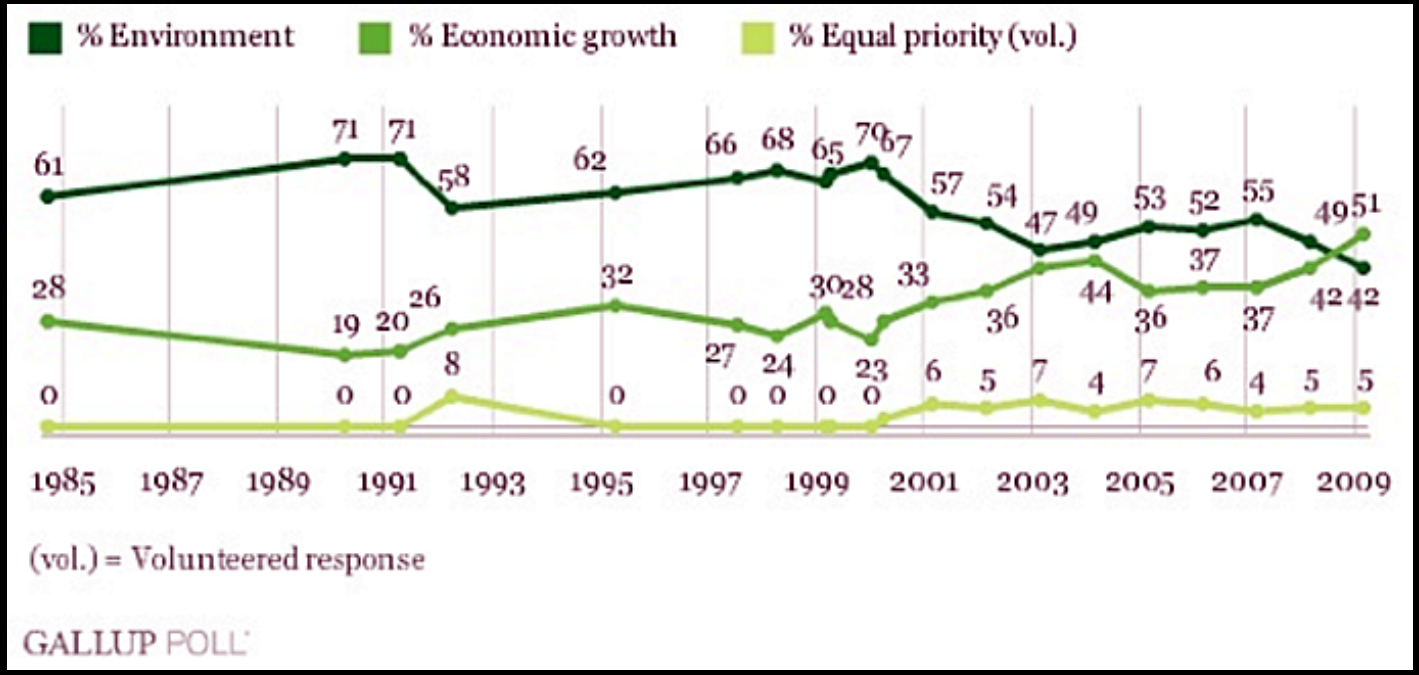
White House OMB Memo:

Regulating greenhouse gases under the Clean Air Act "is likely to have serious economic consequences for regulated entities throughout the U.S. economy, including small businesses and small communities."

5. Consumer Fracture

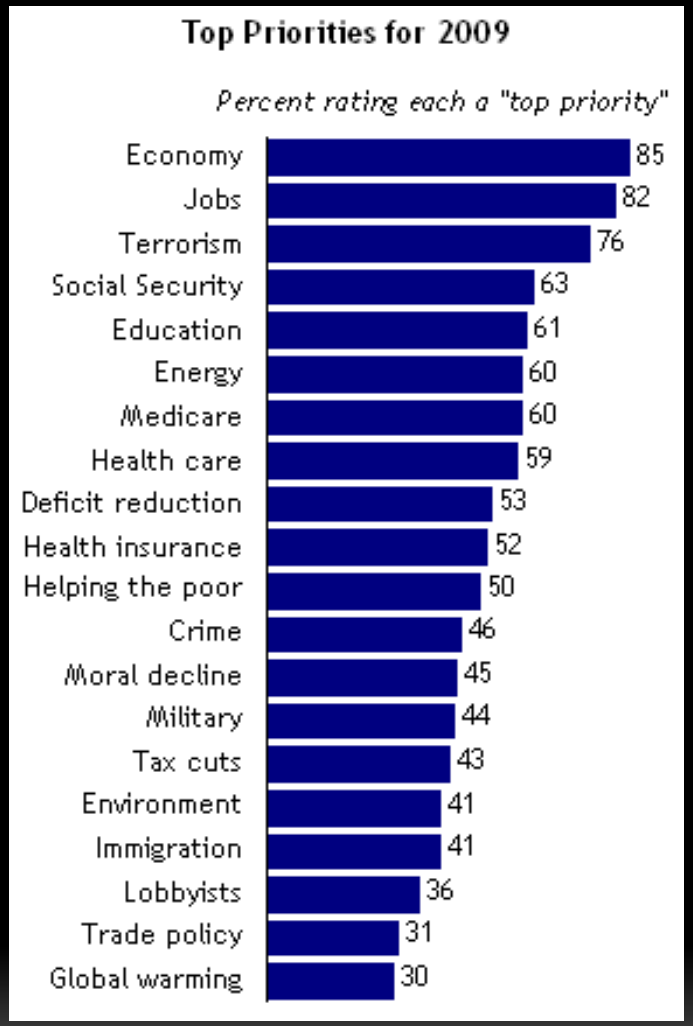
More information on cap-and-trade leads to more opposition on costs.

Silent Majority Now Stirring?



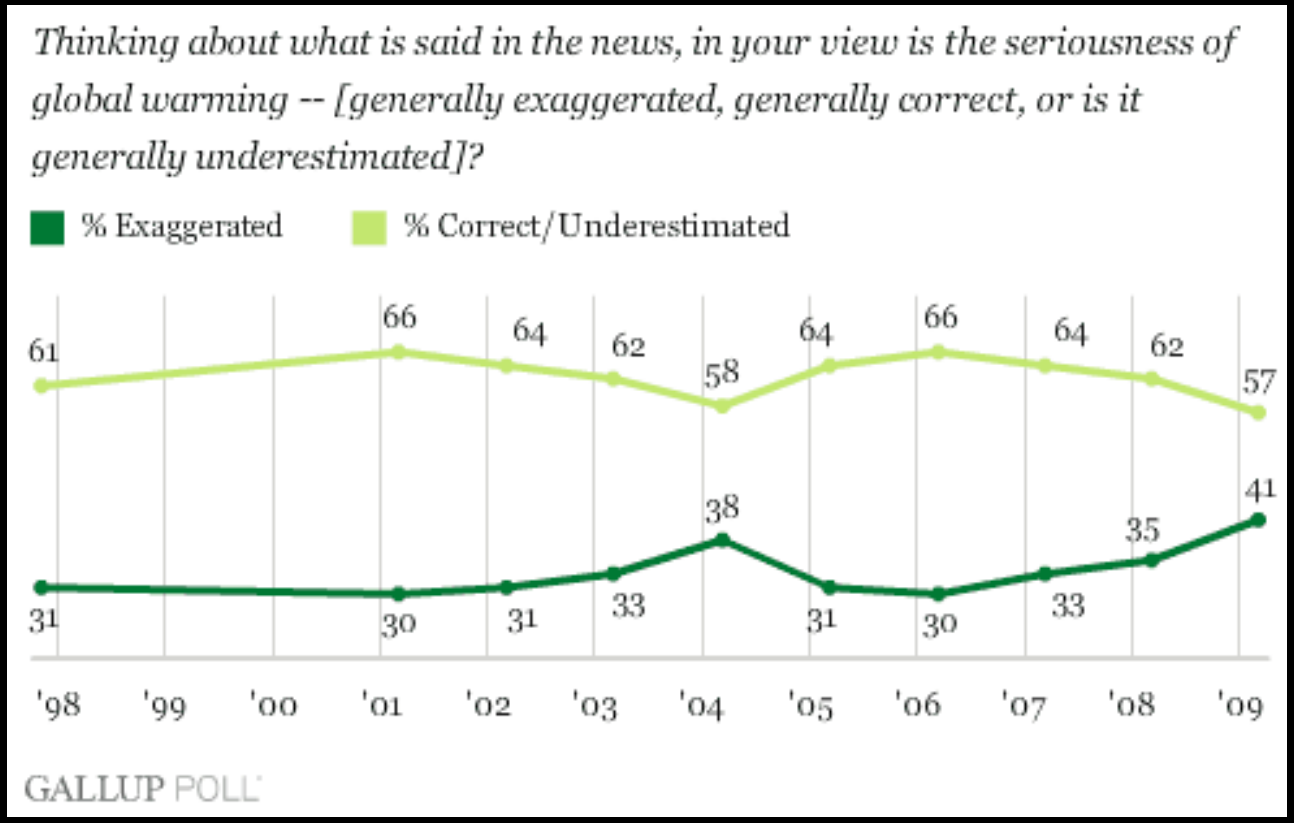
First time in 25 years, a majority gives economic growth priority over environment

Silent Majority Now Stirring?



Concerns over "global warming" now rank **dead last** on the list of voter concerns, according to a recent Pew Center poll

Silent Majority Now Stirring?



Gallup: record numbers now believe climate threats exaggerated

Doing The Numbers

What Does 80 x 50 Really Mean?

A reduction in America's carbon footprint from 20 tons/person to < 2 tons per person.

Question:
When was our carbon footprint that small in size?

Answer:

When the Pilgrims arrived at Plymouth Rock in 1620.

Clean Air Act on Steroids

250 TPY of CO_2 ($70K/year in oil / gas)

- 1/5 of all food service businesses
- 1/3 of all health care businesses
- ½ of lodging industry businesses
- 10 percent of buildings used for religious worship.

Clean Air Act on Steroids

- 260,000 office buildings
- 200,000 manufacturing operations
- 20,000 ag operations (greenhouses and nurseries, poultry and egg production, vegetable and melon farms, pig and dairy farms)
- 100,000 educational facilities
- 1.2 MILLION TOTAL SMALL- AND MID-SIZED BUSINESSES

Clean Air Act on Steroids

Utah Farm Bureau

CAA regulation of Utah farm sector –

what they are calling the flatulence tax –

would pull $99M / year
out of $200M / year
of total farm income in Utah

Renewables

- Enviros are setting us up to fail
- Expectations set at unachievable levels
- No fossil fuels within 10 years?

Is this feasible???

Renewables

10 Year Consumption in MWh

Coal	2,020,572,000
Gas	893,211,000
Oil	65,708,000
Growth	760,739,910
10 Year Goal	**3,740,230,910**

Analysis conducted by K. Rasmussen, CEO, Deseret Power

Renewables

- U.S. total wind 2007 = 16,900 MW
- Need an additional 16,900 MW
  - ► Installed per month
  - ► *for each of the next 10 years!*

Newest solar facility – Nellis AFB

Renewables

Using the "Nellis AFB" sized Project

- Largest PV solar output in North America
- 3rd largest PV solar output in the world
- Occupies 140 acres
- State-of-the-art solar tracking
- 25,000,000 – 30,000,000 kWh output

Renewables

How many of these could we install?

→ *10?*

→ *100?*

→ *1000?*

Renewables

How many would we need to install?

*Need to install **1,039** comparable facilities*

→ *Per month*

→ *For the next ten years*

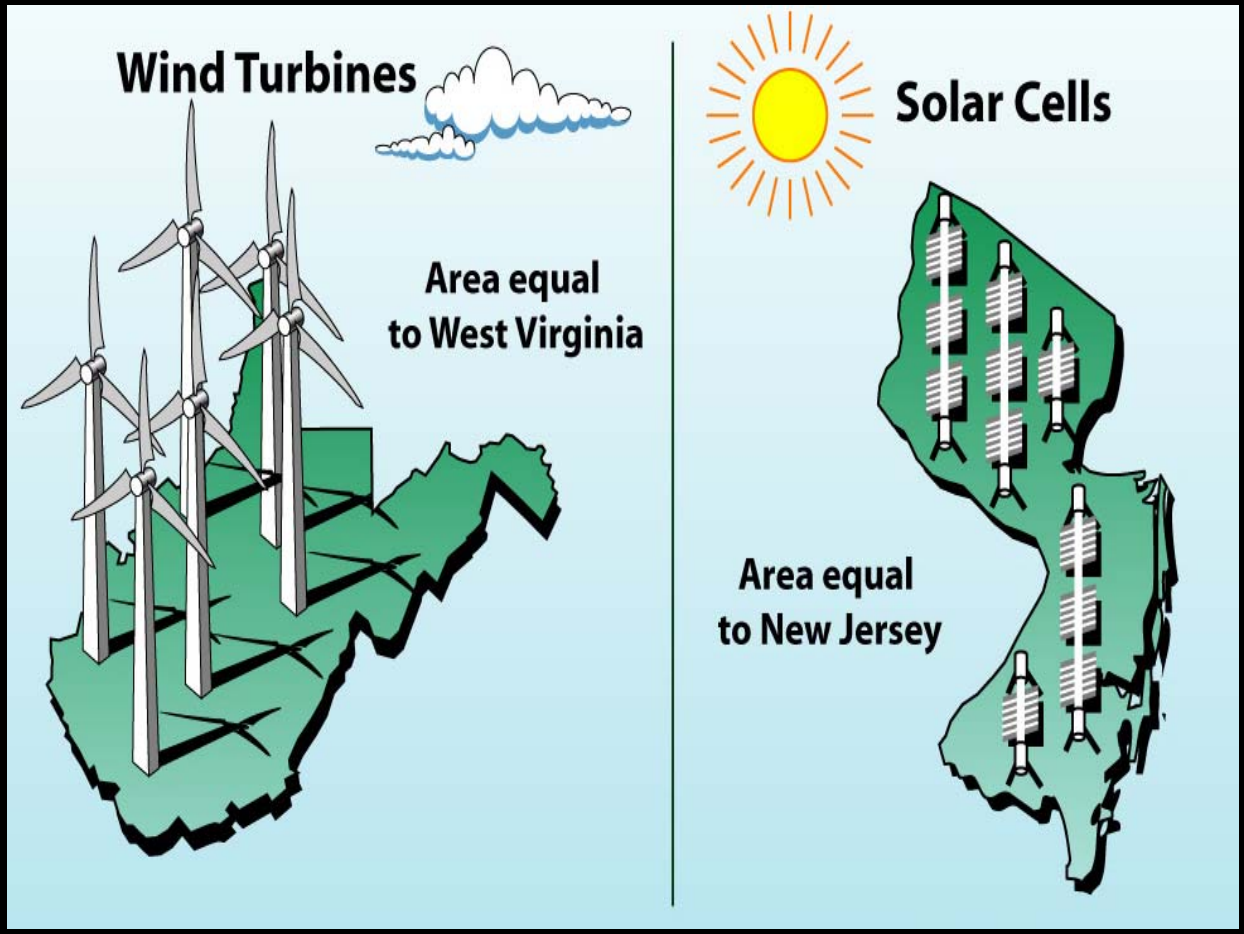
Renewables

How much will this cost?

- Cost = 28¢ per kWh (G&T avg. 5¢)
- Total capital cost $12.5 trillion
- The national debt is $10 trillion

Renewables

20% of U.S. Electricity



Renewables and Emissions

- Wind in Colorado has **increased** CO_2 emissions versus same amount of natgas in baseload combined cycle plants.
- There has been **no net reduction of CO2** emissions in Colorado as a result of integrating wind energy into our generation and transmission grid.

Renewables

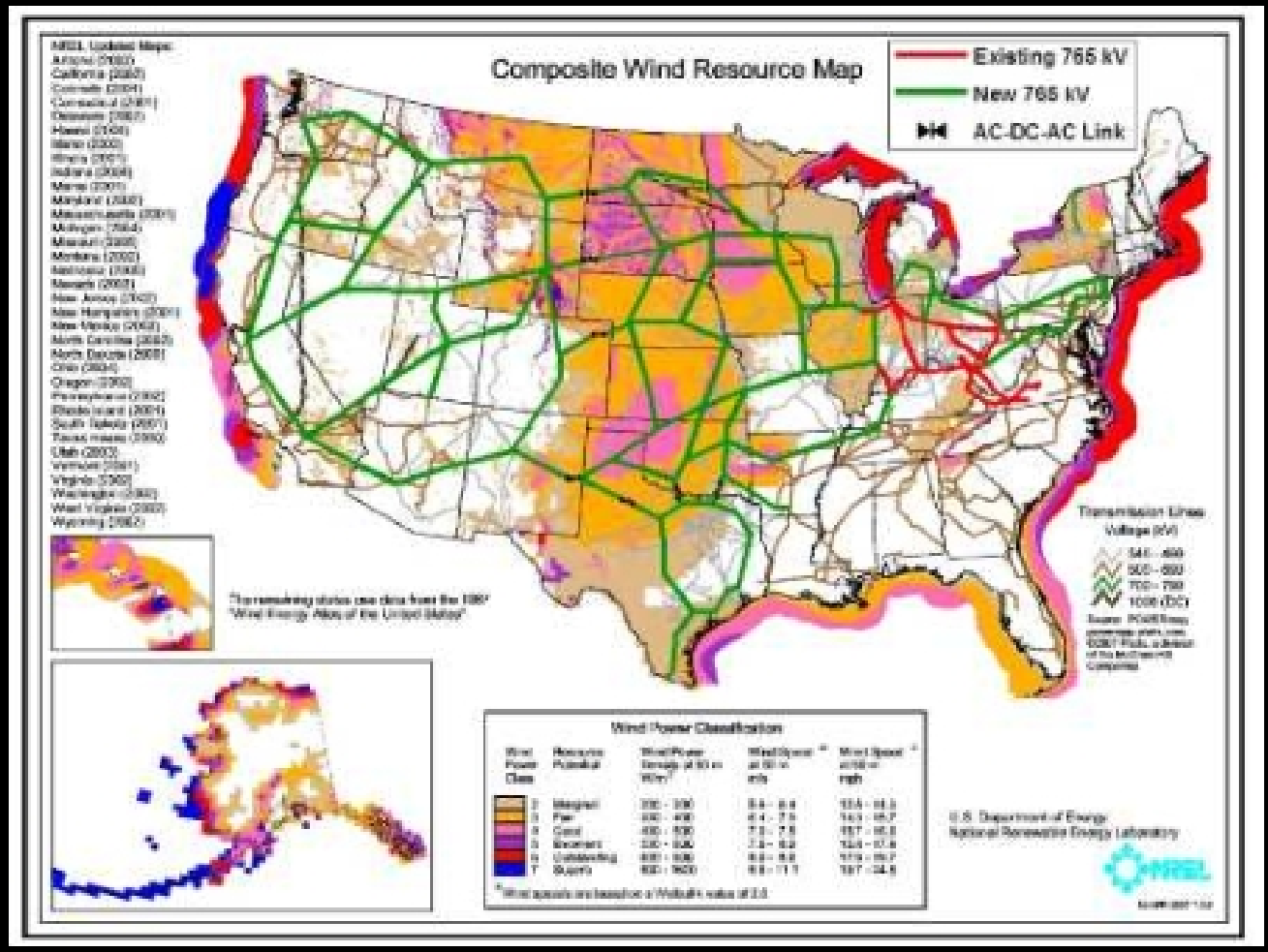
- Should that “externality” and the higher costs of peaking natural gas be considered and accounted for when calculating the ‘life-cycle’ cost of wind energy?

Is the political left setting renewables up for a massive vote of no confidence by the public?

GLOBAL WARMING

Some remedies are easier than others.

Transmission



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Green Jobs Versus Net Jobs

- 2.2 jobs will be destroyed for every green job the government creates
- Spain spent $USD1.3 million in subsidies for each wind industry job
- High-cost electricity from green policies drive energy-intensive manufacturing to lower cost areas
- Solar photovoltaic power bills cost seven times more than the average electricity rate

Burning the Bridge to the Future?

- Intermittents need natgas, but virtually every drilling project on public lands is now being challenged
- Natgas plants are increasingly opposed by activists because of their CO2 emissions
- Renewables need large amounts of metal and concrete, but enviros are seeking to block virtually every new mine in the U.S.

Power Sector Not The Problem

US electric CO_2 person

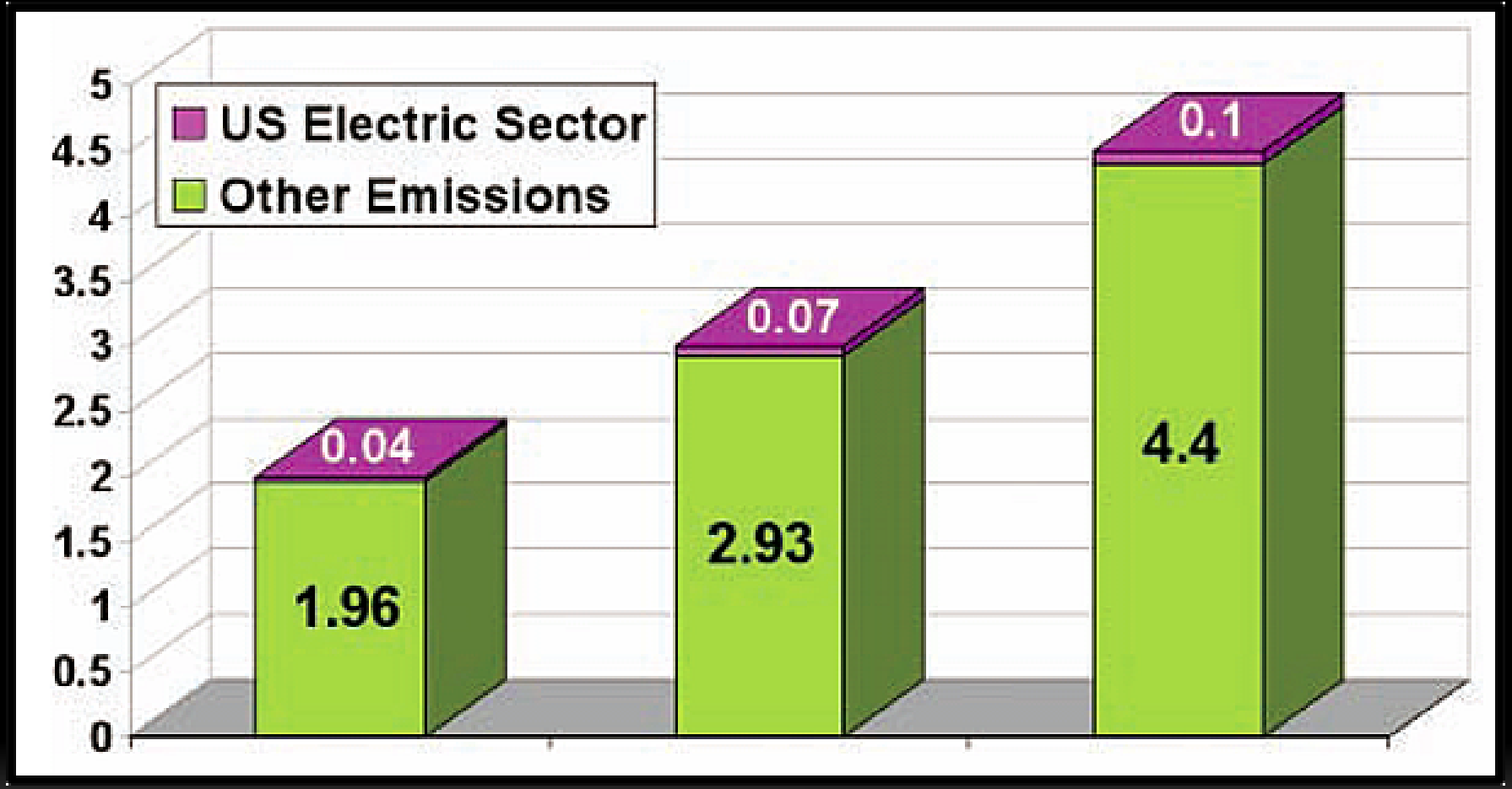
Analysis conducted by K. Rasmussen, CEO, Deseret Power

Where Are The Costs?

Summary of Projected Economic Impacts
(Change from Projected Baseline)

	2015	2020	2025	2030
U.S. Job Losses (Millions)	0.8	1.9	3..2	3.2
Change in U.S. Household Purchasing Power ($2008 per Household)	-$1020	-$1,381	-$1,823	-$2127
Percent Change in U.S. GDP	-0.3%	-0.4%	-0.7%	-0.2%
Percent Change in U.S. Investment	-1.3%	+0.6%	+0.3%	+5.6%
Percent Change in Natural Gas Cost	16% ($1.90 /MMBtu)	39% ($4.70 /MMBtu)	56% ($7.2 0/MMBtu)	53% ($7.70 /MMBtu)
Percent Change in Motor Fuel Cost	6% (21 Cents/Gallon)	13% (48 Cents/Gallon)	19% (74 Cents/Gallon)	20% (78 Cents/Gallon)
Percent Change in Electricity Cost	15% (2 Cents/ kWh)	27% (3.6 Cents/ kWh)	44% (5.8 Cents/ kWh)	51% (6.6 Cents/ kWh)

Where Are The Benefits?



Where Are The Benefits?

UN Assumptions

1. CO_2 doubles by 2100
2. Radiative forcing of C02:
   1.8 W/m2
3. Climate sensitivity:
   0.81 °C / (W/ m2)
4. U.S. output remains constant relative to global emissions
5. Climate sensitivity of “mid” value

Where Are The Benefits?

- 1.8 W/m2 X 0.81°C/(W/m2)
- Delta T for doubling of CO2 = 0.81°C/(W/m2) * 5.35 * ln (550ppm/385ppm) = 1.54ºC
- Delta T without USA Coal = 0.81°C/(W/m2) * 5.35 * ln (541/385) = 1.47ºC
- Temperature reduction = 1.54ºC – 1.47ºC = <u>0.07ºC</u>

Where Are The Benefits?

Capping all GHG emissions from all fossil-fueled U.S. power plants right now will achieve only a temperature reduction of seven-one-hundredths of a degree Celsius over the next 100 years.

Cost-Benefit

Final Thoughts

We have the technology.

We can re-build him (it).

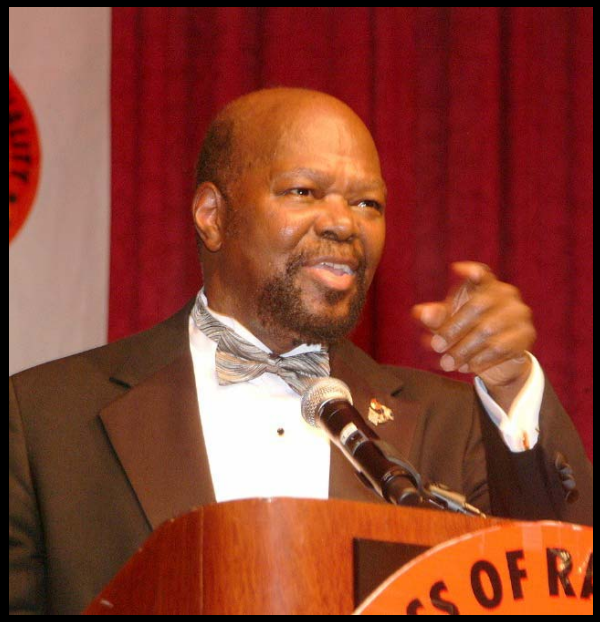
Final Thoughts

Who's gonna decide?

Consumers

(aka voters)

Final Thoughts



You have the moral high ground.

Discussion