A CITIZEN'S PERSPECTIVE ON CLIMATE CHANGE

Dick Smith
Citizens' Climate Lobby (CCL)

One yardstick for measuring success

"Dick, I want to help."

Help on what?

- There are a lot of things we can do...and should do...to preserve a stable climate.
- But, the one essential thing we MUST do is put a federal price on carbon that reflects it's true social costs.
- There are smart ways and dumb ways to do that.
- Let me show you a smart way.

The case for federal action on climate change starts with..."it's a market failure"

"Global warming is the biggest market failure in history."

Sir Nicholas Stern, former chief economist, World Bank

"No other industry dumps its garbage for free."

Bill McKibben, Rolling Stone

"Markets fail...sometimes spectacularly. When markets fail governments intervene."

Naomi Orestes and Eric Conway

When markets fail...governments intervene.

R&D Good, but not sufficient.

Taxes

Subsidies We can't afford it. And, it's not politically viable.

Regulation Obama. Fuel efficiency, power plants, methane.

Pigou. "If you want less [carbon]...tax it."

But, how can we tax it? The CBO says a carbon tax is a drag on the economy.

- Assume a \$10/ton tax on CO2—one time—at first point of sale.
 - \$55 billion in annual federal revenue
 - 10 cents/gallon at the pump
 - 1.2 cents/kWh at the meter

Jobs. Negative. Slower job growth.

GDP. Negative. Slower GDP growth.

CO2 emissions. Modest reductions. We won't avoid 2C.

CCL makes 3 changes to that \$10/ton tax

- 1. Add aggressive annual tax increases.
 - Increase the tax by \$10/ton each year for 20 years.
- 2. Make it 100% "revenue neutral".
 - Government doesn't keep a nickel.
 - All tax revenue is returned to American households.
 - All the revenue stays in the economy.
- 3. Include border taxes on imports to protect American businesses from unfair foreign competition from countries that don't have a comparable system for reducing emissions.

Regional Economic Models, Inc. (REMI)

- Jobs. Go from negative to positive.
 - 2025. 2.1 million extra jobs in 10 years.
 - 2035. 2.8 million extra jobs in 20 years. The tax adds over 1% to jobs.
- GDP. The effect on GDP goes from negative to positive.
 - 2020. GDP Increases \$70-\$85 billion annually after 2020.
 - 2035. Cumulative GDP increase is \$1.375 trillion by 2035.
- CO2 emissions.
 - 2025. 31% below 1990 levels in 10 years.
 - 2035. 50% below 1990 levels in 20 years.
 - [2050. 80% is the target to under 2C. We're on the right trajectory.]

Mark Twain

"The difference between the right word – and <u>almost</u> the right word – is the difference between lightning and a lightning bug."

That's the difference between a carbon tax – and a carbon tax that's "revenue neutral."

An early lesson I learned

If you're really concerned about climate change...

...you need a climate group...

...more than any climate group needs you.

Close Encounters of the 3rd Kind



Before



After



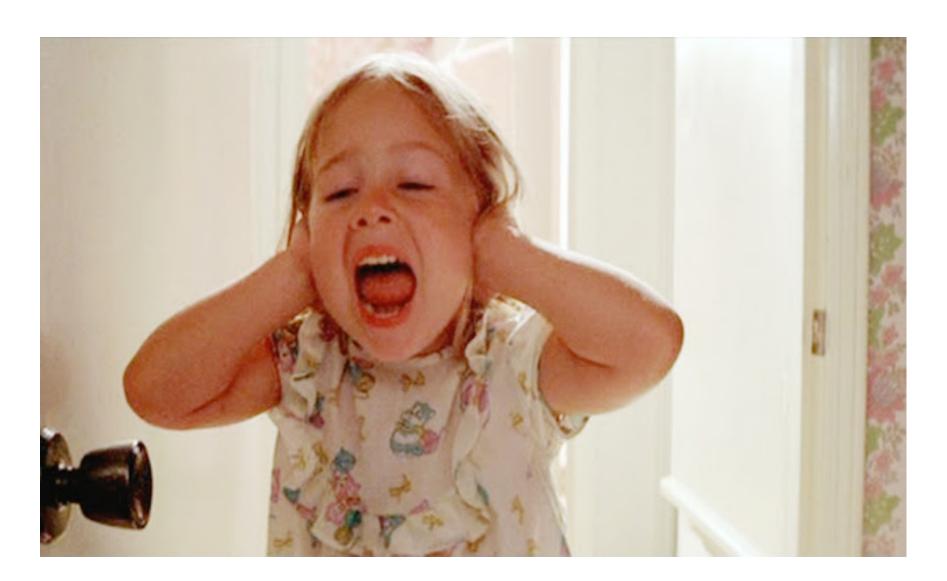
And, maybe a wee bit...obsessed.



My family and friends were...puzzled



In fact....



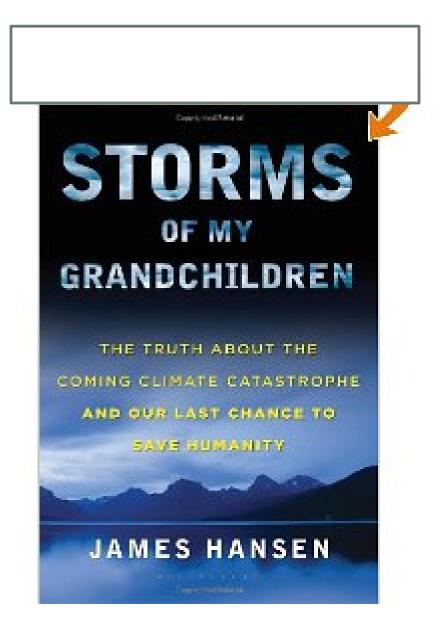
So, I tried the Madison link to...



Suddenly, I didn't have to explain.

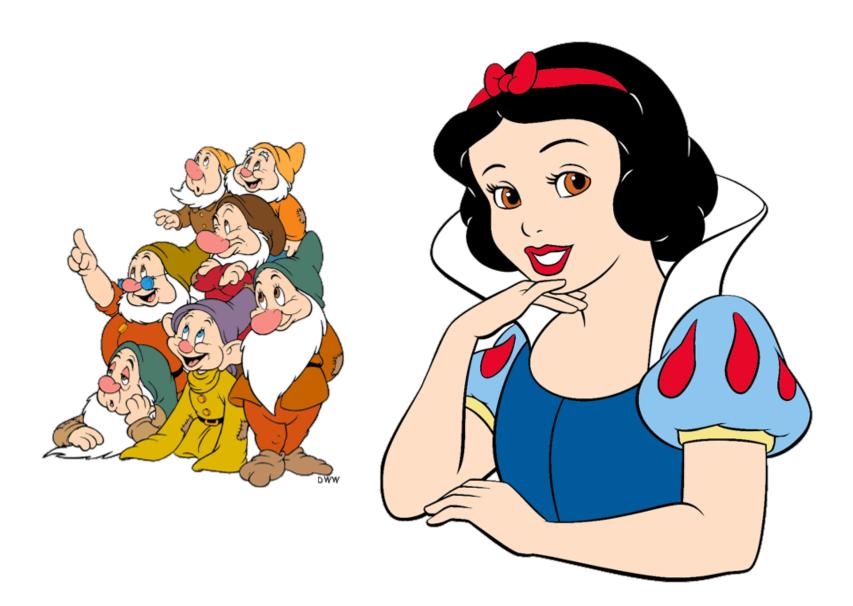


We'd read the same books



We shared the same vision.





How I "discovered" climate change in 2010?

There's no warming. But if there is, it's the sun.

August 2010

(now) U.S. Senator Ron Johnson (then) Wisconsin Candidate

350.Org

350 Madison Organizing and Steering Committees.

Keystone XL and Enbridge Pipelines.

- D.C. KXL Rally with 40,000 people in February 2012.
- Nebraska Testified at the State Department's only KXL hearing.
- Minnesota PUC hearing on Enbridge

Divestment.

- memo To McKibben
- UW Co-leader. Drafted Faculty Senate resolution.
- County Led the successful divestment effort (unanimous)
- State Lunch with Exec. Director of state pension fund (SWIB)

Citizens' Climate Lobby

Concept The world does not need one more angry group.

Rules Respect and appreciate Members of Congress.

Goal Enact a revenue-neutral carbon tax.

Dues
 None. We need your time and talent.

Activity 95% in local Congressional Districts. 5% in D.C.

I'm in good company in CCL. Over 800 Citizens. Over 500 meetings.

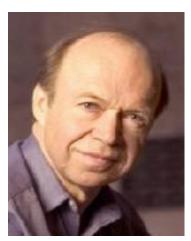


June 2015 lobby takeaway

- Over 500 meetings...and almost no one mentioned "climate science".
- We focused on solutions and finding common ground.
- That is a real change from 4 years ago.

Our nation's best known climate scientist

"Most impressive is the work of Citizens Climate Lobby. If you want to join the fight to save the planet, to save creation for your grandchildren, there is no more effective step you could take than becoming an active member of this group."



CCL's Advisory Board

Dr. James Hansen

Former Director
Goddard Institute for Space Studies
NASA

A Republican icon

"Clearly, a revenue-neutral carbon tax would benefit all Americans by eliminating the need for costly energy subsidies while promoting a level playing field for energy producers."



CCL's Advisory Board

George Schultz

Former Secretary of State Secretary of Treasury Director, OMB Secretary of Labor

Former Republican Member of Congress

For 12 years, "I represented the *reddest* district...in the *reddest* state in the country."



CCL's Advisory Board

Bob Inglis

Former South Carolina Republican
Director, Energy and Enterprise Initiative
George Mason University

Economic Advisors Supporting a Carbon Tax

Jimmy Carter Paul Voelker

Ronald Reagan Arthur Laffer, Martin Feldstein, Paul Voelker

George H. W. Bush Michael Boskin

Bill Clinton Joseph Stiglitz, Rob Shapiro

George W. Bush Greg Mankiw, Douglas Holtz-Eakin, Larry Lindsey

(Candidate) John McCain Douglas Holtz-Eakin

(Candidate) Mitt Romney Glenn Hubbard, Greg Mankiw

Barack Obama Larry Summers, Peter Orzag, Paul Voelker

4 Former Republican EPA Administrators

"A market-based approach, like a carbon tax, would be the best path to reducing greenhouse-gas emissions...."

N.Y. Times Op Ed, August 1, 2013

Nixon William Ruckelshaus

Reagan Ruckelshaus and Lee Thomas

George H.W. Bush William Reilly

George W. Bush Christine Todd Whitman

Why Republicans support a carbon tax

A revenue-neutral carbon tax "is the closest thing to a free lunch that economics has to offer."

Greg Mankiw, Chief Economic Advisor, to President George W. Bush

"My concern is that every day that we delay trying to find a price for carbon is a day that China uses to dominate the green economy."

Lindsey Graham (R-South Carolina)

December 30, 2010

Time Magazine's "100 Most Influential People in the World"

Featured in Showtime's "Years of Living Dangerously". Evangelical Christian married to an evangelical minister.



CCL's Advisory Board

Dr. Katherine HayhoeClimate Scientist, Texas Tech

Our nation's best known climate activist

"I love working with Citizens Climate Lobby. Their relentless focus on the need for a fee-and-dividend solution is helping drive the debate in precisely the right direction. I'm enormously grateful for their persistence and creativity."



Bill McKibben, Founder, 350.org

March 2015, Yale: "Six America's of Climate"

The nation. This audience. Republican MOCs.

Alarmed	13%
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Concerned 31

Cautious 23

Disengaged 7

Doubtful 13

Dismissive 13

2014 Gallup: What adults "worry about" most.

	Great deal	Fair amount	A little/ not at all
	%	%	%
The economy	59	29	11
Federal spending and the budget deficit	58	22	20
The availability and affordability of healthcare	57	20	23
Unemployment	49	28	23
The size and power of the federal government	48	20	31
The Social Security system	46	29	24
Hunger and homelessness	43	33	23
Crime and violence	39	31	29
The possibility of future terrorist attacks in the U.S.	39	24	37
The availability and affordability of energy	37	30	33
Drug use	34	29	37
Illegal immigration	33	24	42
The quality of the environment	31	35	34
Climate change	24	25	51
Race relations	17	26	56

Lots of issues. Why climate change?

What makes climate change a unique social problem?

Global Warming – the basics in 10 words

- 1. It's real.
- 2. It's us.
- 3. It's dangerous.
- 4. Scientists agree.

5. Solutions exist.

There's no scientific debate

Technically feasible **Economically** affordable **Politically** viable

The "gateway belief" to political action

The scientific consensus is overwhelming.

Google "scientific consensus on GW." Wikipedia

National Academies of Science. 38 - 0

Scientific organizations (AMS) 100's - 0

Peer-reviewed articles for 20 years. 500 to 1

Authors of those peer-reviewed studies. 1,000 to 1

Scientific consensus (and peer review)

Francis Bacon's *Novo Organum Scientiarum*, *The New Instrument of Science* (1620). Start of scientific method for understanding the world.

- Facts define what's real, not superstition or revealed truths.
- Science is a collective enterprise. The first National Academies. Italy (1609) Britain (1660) and France (1666)
- Scientific knowledge gives us a consensus experts—never certainty or absolute proof.
- Scientific ideas need supporting evidence.
- Both the ideas and evidence must be judged by a jury of one's peers.
 Until it's peer-reviewed, it's just a claim.

"Climate Risks as Conclusive as Link between Smoking and Lung Cancer"

"The science linking human activities to climate change is analogous to the science linking smoking to lung and cardiovascular diseases.....And this **consensus** among the health community has convinced most Americans that the health risks from smoking are real. A similar consensus now exists among climate scientists, a consensus that maintains climate change is happening, and human activity is the cause."

American Association for the Advancement of Science "What We Know"

March 2014

"The significance of Tuesday's report lies not in its findings, which cover familiar ground, but in who is saying it: the world's largest general scientific body, and one of its most respected."

Scientific American March 19, 2014

Global Warming – review the basics

- 1. It's real.
- 2. It's us.
- 3. It's dangerous.
- 4. Scientists agree.
- 5. Solutions exist.

Technically feasible
Economically affordable
Politically viable

But, what makes climate change a unique social problem?

"We're the first generation to see the effects of climate change, and the last generation who can do anything about it."

Seattle Mayor Mike McGinn, 2013

TIMING – makes climate change a unique social problem.

10-year problem.

1,000-year problem.

100-year problem.



The 10-year problem.

Global CO2 emissions need to peak by 2022

...then drop significantly (>80%) by 2050

...or we will cross the 2C threshold for dangerous warming.

TAKEAWAY: Climate change comes with a time limit... and we're running out of time.

1,000-year problem

A 2009 study led by NOAA climate scientist, Susan Solomon, found that once we stop ALL CO2 emissions, temperatures will not drop significantly for at least 1,000 years.

Other similar "irreversible" impacts go from "A" (acidified oceans) to "Z" (zoological extinction).

TAKEAWAY: Global warming is irreversible – at least on any human time scale.

The 100-year problem (The "game-over" scenario)

- We're driving a car... with your kids in it. We're heading toward a cliff...but we're still speeding up.
- It's foggy...we can't see the cliff...but we know it's there.
- We need to hit the brakes (on GHG emissions)—hard—now.
- Once we're over the cliff...the brakes don't work (going immediately to zero human emissions has no effect).
- TAKEAWAY: "Game over" means human actions are irrelevant.
 The earth's physics and chemistry keep warming us.

When do we go over the climate cliff?

There's a legitimate debate about that.

1C We've already warmed almost 1C.

WAIS. In 2014, we learned humans can't stop the West Antarctic Ice Sheet from melting. We're over that cliff. WAIS will melt. Sea levels will rise about 10 feet.

2C At 2C, the game-over scenario is possible, but not likely.

4-7C At 4-7C, the game-over scenario almost a certainty.

Reports predicting 4C to 7C warming **by 2100** if we continue "business as usual"

- World Bank, 2012
- Pricewaterhouse Coopers, 2012
- International Energy Agency, 2012
- International Panel Climate Change (IPCC), 2014
- American Association for Advancement of Science (AAAS), 2014

So, what do we do about it?



It's a two-step process

Get educated.

Get political.

Educated on what?

- The science...of global warming.
- The impacts...a litany of "horribles" (SLR to social justice)
- The <u>technology</u>...feasibility. Scale. Timing.
- The economics...affordability. Estimate costs and benefits.
- The politics...allocate costs/benefits among individuals, states, sectors, nations, generations. ...legislative and electoral. Local, state, fed, int'l.
- The media...referees. Blow the whistle. Call the fouls.

Two kinds of people here today

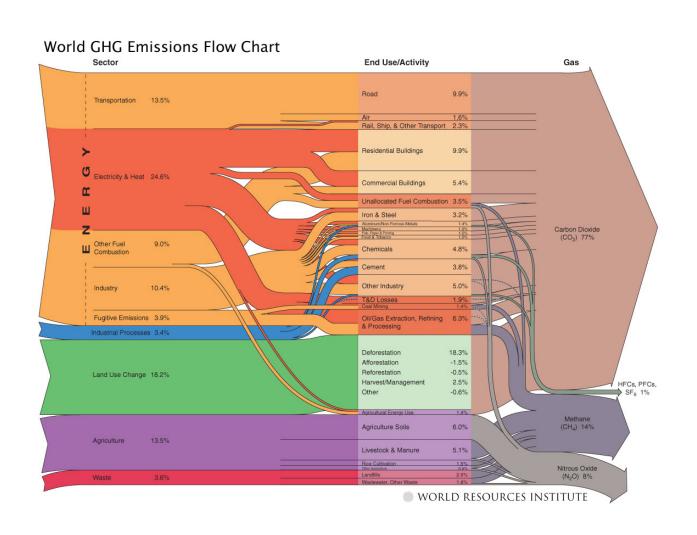
KISS.

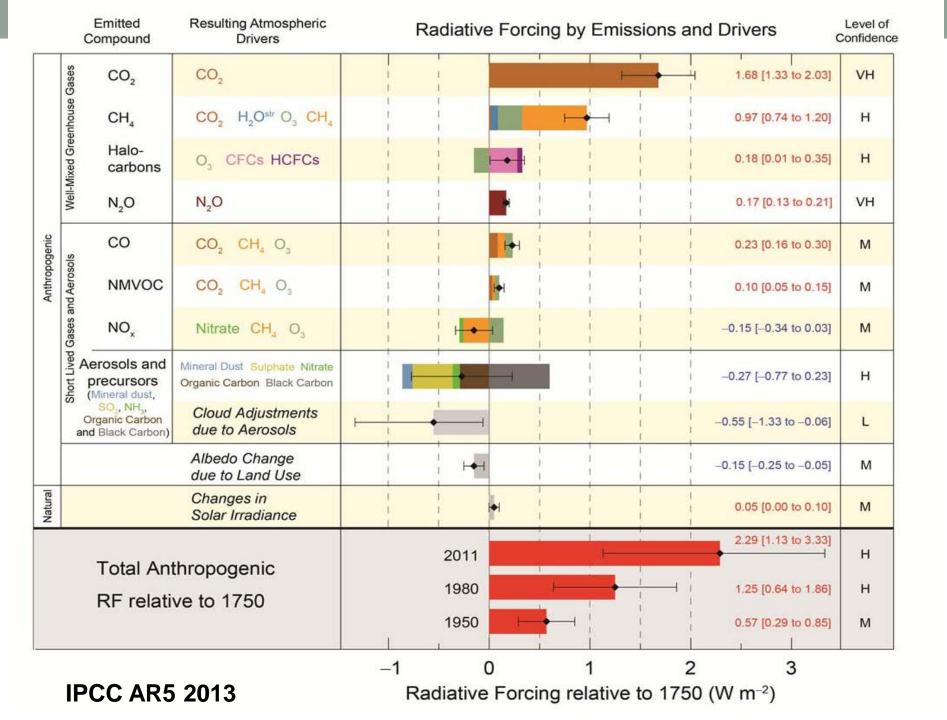
"Keep it Simple Stupid." Big picture.

Puzzle people.

They love complexity. Show me details.

Human "Kyoto" GHG Emissions





KISS Version - science

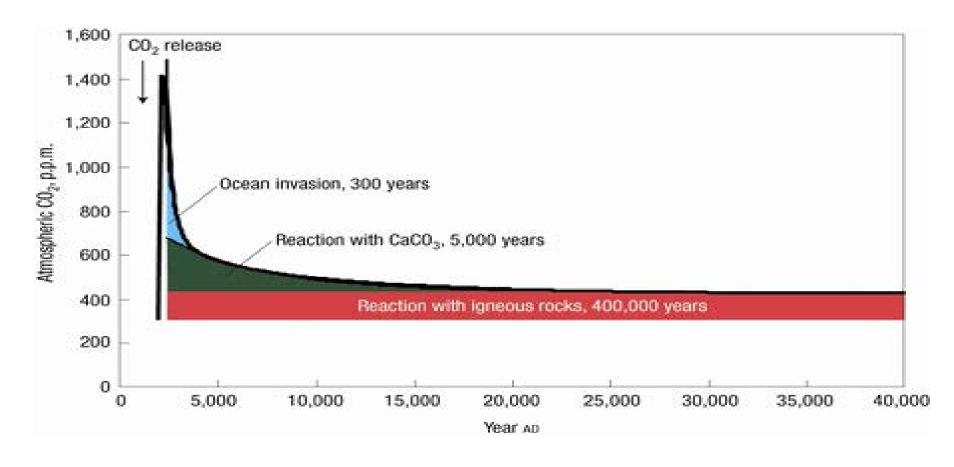
It's CO2.

• It's fossil fuels. Coal, oil and natural gas.

Takeaway point. Too much CO2 stays up there for too long.

How Long?

The climate impacts of today's CO2 emissions will last longer than radiation from today's nuclear waste.



KISS version – Impacts

Literally, "A" to "Z"

Acidified Oceans to

Zoological Extinction.

2C is doable – it's technically feasible.

"Delay and pray" (for a miracle technology) is not a strategy.

Deploy...deploy...deploy.

1. Cut energy demand

Conservation

Efficiency innovations

2. Increase alternative-energy supply

Wind

Water

Solar

Nuclear

2C is doable – it's economically affordable.

2C will slow global GDP growth by 0.06% per year.

If GDP grows 1% annually, in 2050 we'll be 42% richer.

If GDP grows 0.94% annually, in 2050 we'll be 39% richer.

Climate politics - Audience Shout Out

Joined a climate group?

Participated in a climate event or campaign?

Involved in other climate activities?

Politics -- Citizen involvement

Personal change.

- Take personal responsibility.
 - Al Gore's Climate Reality Project.
- Not big enough or fast enough to avoid dangerous warming.

Legal action.

- Participate in local, state and federal regulatory hearings.
 - Sierra Club's "Beyond Coal".
 - 350.org's Keystone XL and Enbridge pipeline
- Go to court.
 - Our Children's Trust. Atmospheric Trust Doctrine.
 - National Resources Defense Council (NRDC). Enforce federal regulations.

Politics - Citizen involvement

Demonstrate. (From street theater to civil disobedience)

- Senator Barbara Boxer. "We need 1 million people in the street in D.C."
- 350.org. Washington. 1250 arrested at the White House in August 2011. Washington. 40,000 rallied in February 2012.
 - N.Y. People's Climate March. 400,000 rallied in Sept. 2014.
- Greenpeace. Arctic drilling.

Policy change.

- Election campaigns.
 - League of Conservation Voters
- Climate campaigns.
 - 350.org's Divestment.
 - Pathways to Paris. COP 21—Paris 2015.
- Lobby for new rules or legislation.
 - Citizens Climate Lobby

Political progress

There's no warming. But if there is, it's the sun.

August 2010

(now) U.S. Senator Ron Johnson (then) Wisconsin Candidate

Warming's real. But, humans don't contribute to it.

Sen. Johnson's votes on Keystone XL pipeline

February 2015

Audience Shout Out

Why are people reluctant to get involved?

Why people will tell you it's politically hopeless

1. Fossil-fuel money.

2. Republicans.

America's Richest Companies

Rank 6	Company	Revenues (\$ millions)	Profits (\$ millions)
1	Exxon Mobil	452,926.0	41,060.0
2	Wal-Mart Stores	446,950.0	15,699.0
3	<u>Chevron</u>	245,621.0	26,895.0
4	<u>ConocoPhillips</u>	237,272.0	12,436.0
5	General Motors	150,276.0	9,190.0
6	General Electric	147,616.0	14,151.0
7	Berkshire Hathaway	143,688.0	10,254.0
8	Fannie Mae	137,451.0	-16,855.0
9	Ford Motor	136,264.0	20,213.0
10	Hewlett-Packard	127,245.0	7,074.0

World's Richest Companies

Rank 6	Company	Revenues (\$ millions)	Profits (\$ millions)
1	Royal Dutch Shell	484,489	30,918
2	Exxon Mobil	452,926	41,060
3	Wal-Mart Stores	446,950	15,699
4	<u>BP</u>	386,463	25,700
5	Sinopec Group	375,214	9,453
6	China National Petroleum	352,338	16,317
7	State Grid	259,142	5,678
8	Chevron	245,621	26,895
9	ConocoPhillips	237,272	12,436
10	Toyota Motor	235,364	3,591

In politics, the antidote to money is people

Politicians don't create political will. They respond to it.

Our job as citizens is to create the political will on climate.

If people like you leave all the heavy lifting to people like me...

2012 LCV: Republicans – Under 35

53% described "climate deniers" as:

- Ignorant
- Out of touch
- Crazy

Have climate deniers really captured a major political party?

Not really.

- Most Republicans under 35 say deniers are "out-of-touch, ignorant or crazy."
- Most Republican voters support action on climate change (2:1 margin)
- Most Republican Members of Congress (MOCs) aren't deniers.

All Republican MOCs are "cautious" about climate change.

- Most are also "concerned".
- Most know the fringe of their party has captured the center on climate.

Let's be clear. We desperately need Republican leadership.

- They've led on climate before, and they'll be there again...
- And, when they do, IMO it will almost certainly be some form of RNCT.

"Dick, I want to help."

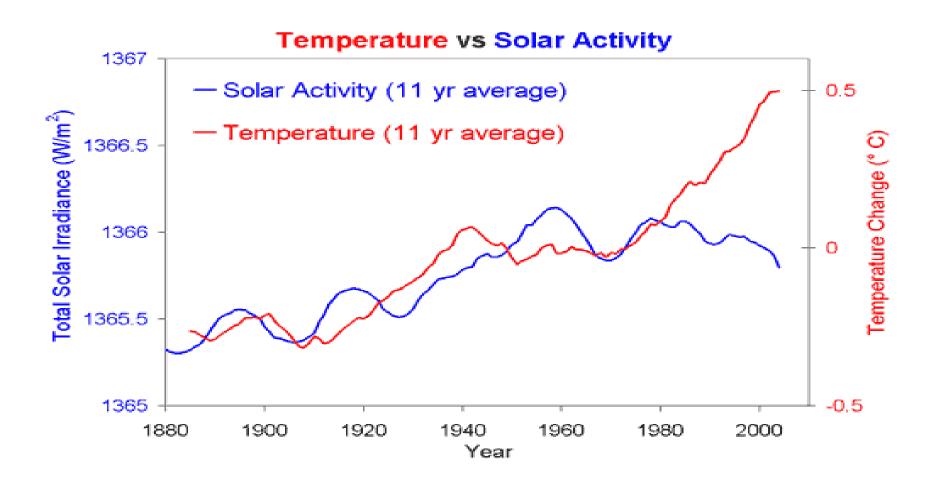
The End

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You be the judge (you don't need to be a climate scientist)

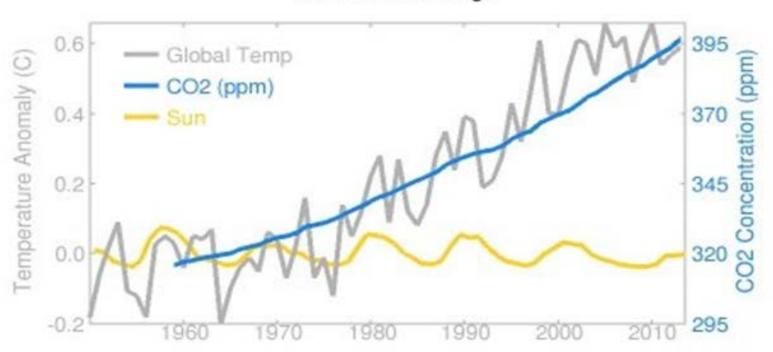
- Judges decide people's freedom and fortunes.
- The evidence is always incomplete and contradictory.
- Judges look at the weight of the evidence (e.g. 97%) and credibility (expert bias) of the evidence.

Since 1979 global temperature and solar activity have moved in opposite directions



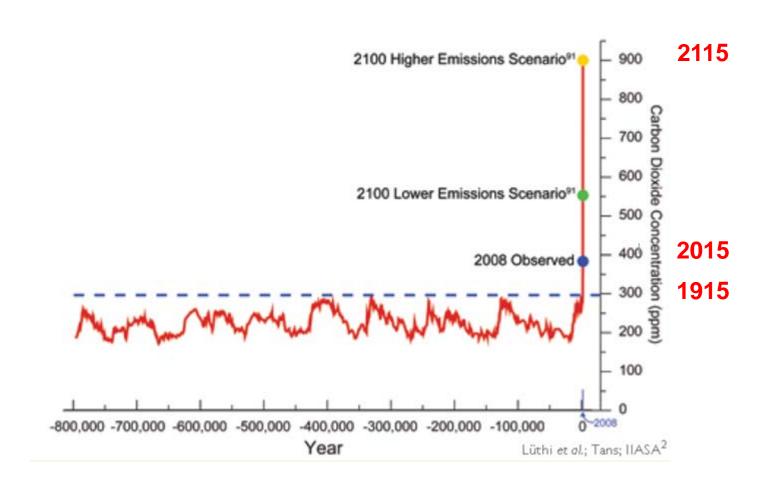
Temperature...CO2...Sun

World climate Widget

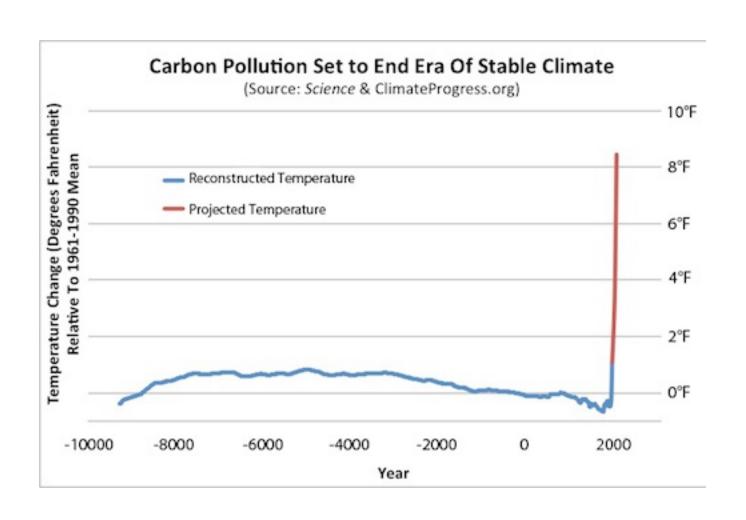


http://dotearth.blogs.nytimes.com/2014/12/08/warming-trend-and-variations-on-a-greenhouse-heated-lanet/?emc=edit_tnt_20141208&nlid=67727882&tntemail0=y&_r=0

At 1,910 ppm, the IPCC's 2013 worst-case scenario for the end of the century was twice as high as in 2007

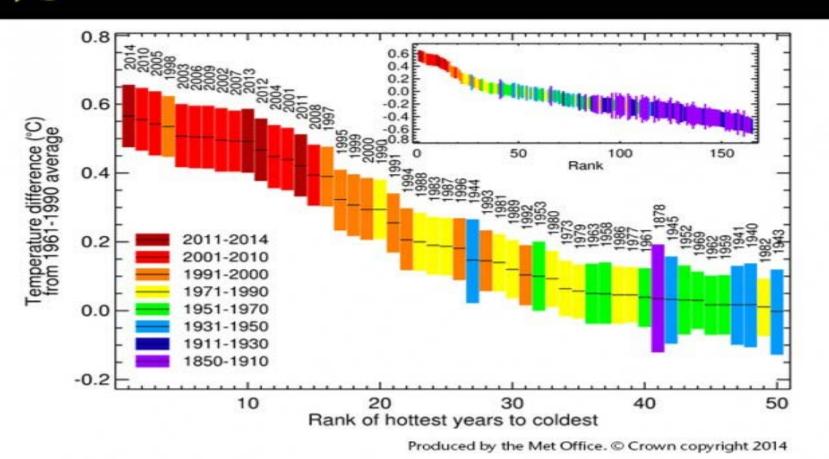


Global warming is real. Civilization as we know it v. the next 100 years



2014 is the hottest year on record

Met Office

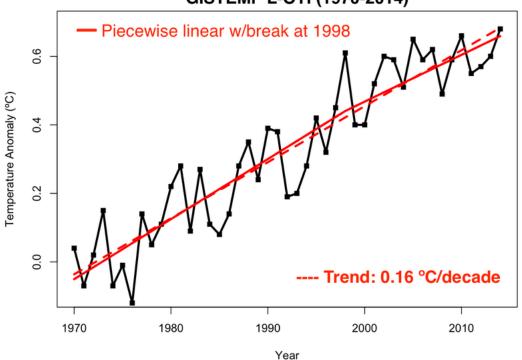


Path of a man walking a dog on a leash for the last 45 years



No significant change in trend from 1998

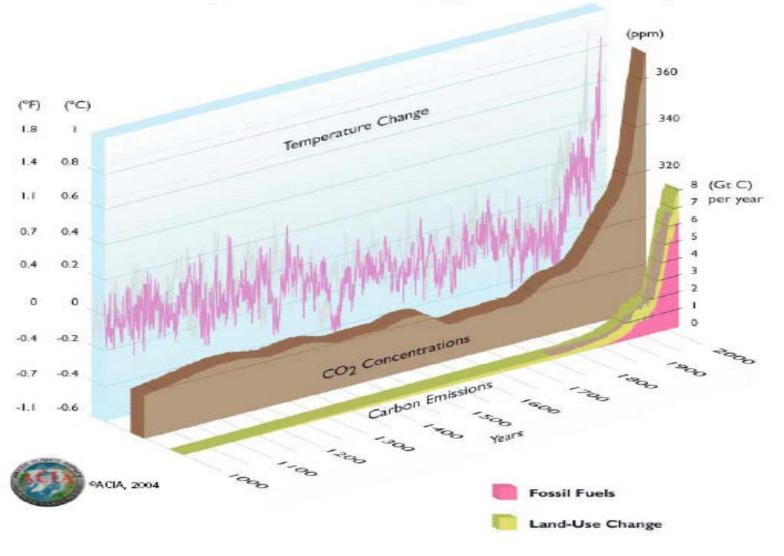




2014 is almost exactly on trend extrapolating from 1970-2013 or 1970-1998.

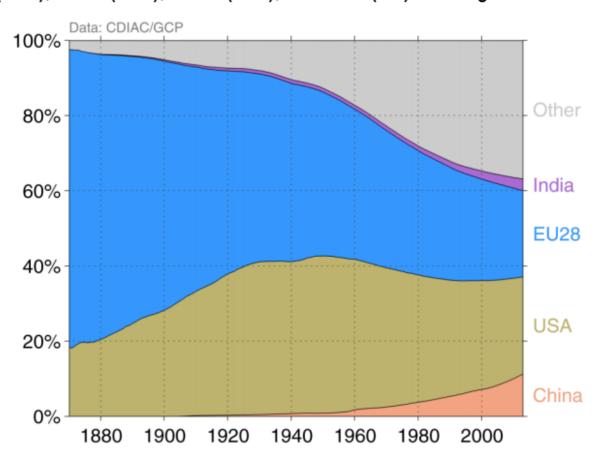
This time...we humans did it. It's us.

1000 Years of Changes in Carbon Emissions, CO2 Concentrations and Temperature



Cumulative emissions (1870 – 2013)

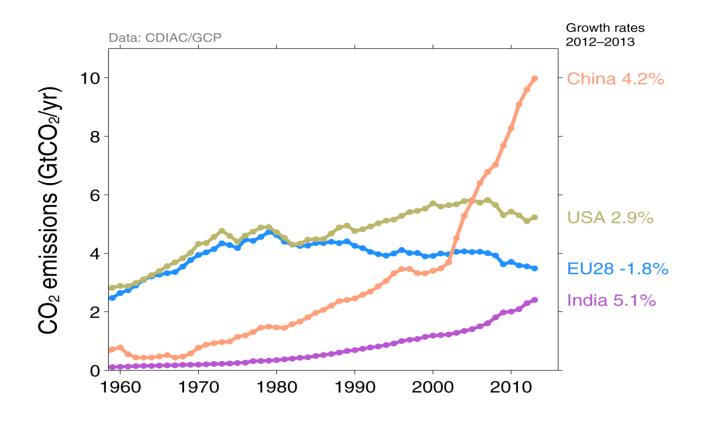
Cumulative emissions from fossil-fuel and cement were distributed (1870–2013): USA (26%), EU28 (23%), China (11%), and India (3%) covering 63% of the total share





2013 - Top Fossil Fuel Emitters (Absolute)

The top four emitters in 2013 covered 58% of global emissions China (28%), United States (14%), EU28 (10%), India (7%)



Bunkers fuel used for international transport is 3% of global emissions

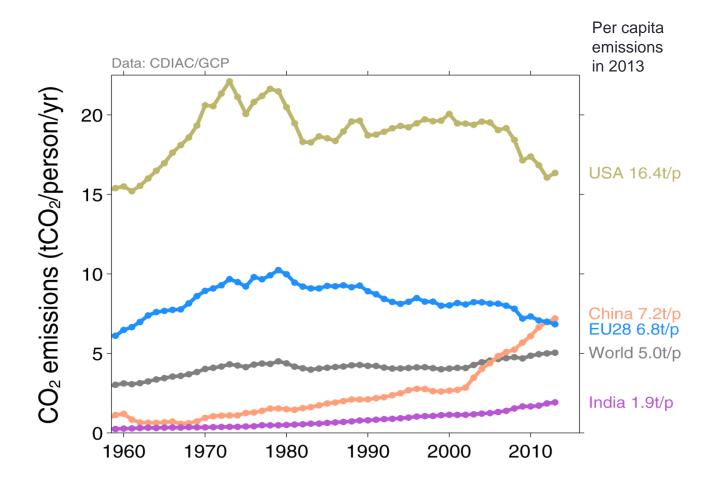
Statistical differences between the global estimates and sum of national totals is 3% of global emissions

Source: CDIAC; Le Quéré et al 2014; Global Carbon Budget 2014



2013 - Top Fossil Fuel Emitters (Per Capita)

China and the EU are less than 45% above the global average. The U.S. is more than 300% above the global average.



Source: CDIAC; Le Quéré et al 2014; Global Carbon Budget 2014

Regional Economic Models, Inc. (REMI)

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 - 2025. 31% below 1990 levels in 10 years.
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 - [2050. 80% is the target to under 2C. We're on the right trajectory.]

9 Census Regions



Figure 1.2 – This map shows the nine regions in the PI+ model simulations for this work.²⁶ The colors above are consistent with the coloration of the results tables and appendices. The states of Alaska and Hawaii are part of the PAC region with California, Oregon, and Washington. Each region has its own reaction to the FAD carbon tax before becoming part of the national whole through simple addition. For instance, the heavy concentration of coal-fired power plants in ENC and WNC (the Great Lakes and Great Plains states, respectively) make their economies more susceptible to switching from coal power to nuclear power than NE or PAC, neither of which have comparably much in terms of coal. On the other hand, ENC and WNC have potential for wind power given all their cheap, open land. These regions have their idiosyncrasies—these models specifically exist to take account of them.

JOBS – National (1%) – ENC (1.75%)

Total Employment (percentage change)

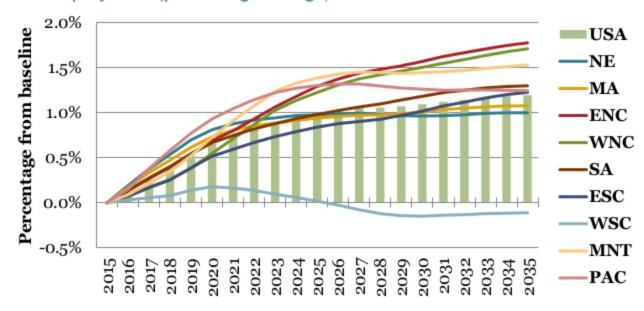


Figure 3.6 – The above displays the percentage change from the baseline implied by the results in Figure 3.2 and Figure 3.3. The F&D carbon tax has a positive effect on employment in most regions, although over the scope and scale of the United States economy the impact in even the "best" region (PAC, MNT, or ENC) is still less than a 2% difference from the baseline.

GDP – Over \$70 billion/year after 2020

Gross Domestic Product (GDP)

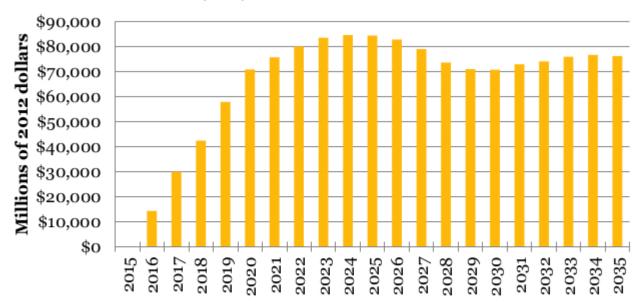


Figure 3.5 – This is the sum of the regions' GRP, which equals the United States' GDP. The impact is still a net positive, although less so than the impact to employment in percentage terms—the above is a difference of 0.35% to 0.65% from baseline GDP. The difference in the scale of the impact between the two again comes down to the industry mixture.

CO2 emissions – 52% below baseline by 2035

Carbon Dioxide Emissions (annual forecast, national level)

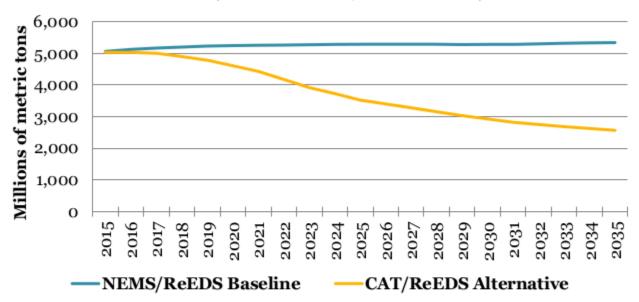


Figure 3.14 – These lines illustrate a baseline for emissions without the tax from the Reference Case in the AEO and ReEDS (blue). The alternative (gold) after a \$10 per year tax, price elasticity of demand in CAT, and grid optimization in ReEDS represents a significant reduction in emissions—of 52% by 2035. The baseline is not exactly the same as the one in the AEO because this projection uses ReEDS for the power generation portion of the emissions forecast. They are rather close, however. AEO 2013 projects a 2.4% increase in national emissions from 2015 to 2035 while the blue line above projects a 5.5% total increase.

And...there are other secondary benefits.

- Health
 - 2025. 13,000 lives are saved annually after 10 years.
 - 2035. 227,000 American lives saved over 20 years.
- For most American families the dividend exceeds new taxes.
 - 2025. Monthly dividend. Family of four. \$288 (\$3,500 per year)
 - 2035. Monthly dividend. Family of four. \$396 (\$5,000 per year)
- Wisconsin's 5-state region is...by far... the biggest winner in job creation and health benefits!

Saved premature deaths annually

Saved Premature Deaths (annual, regional level)

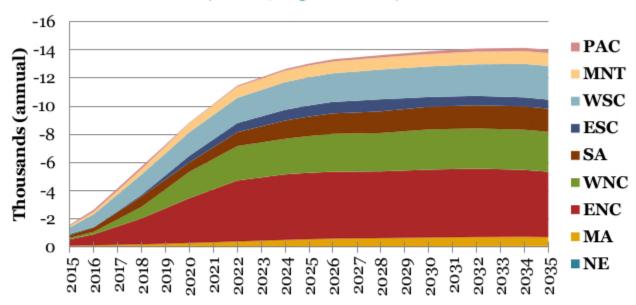


Figure 3.32 – In continuation of the benefit-cost, the above is Figure 3.31 divided by \$6.2 million for the average social cost of a premature death for air quality-related conditions or reduced quality of life. The exact figure for this calculation varies between federal sources; 55 the \$6.2 million is the "unadventurous" figure usually required by the U.S. Department of Transportation (USDOT) in accounting for air quality benefits.

For most Americans, the dividend **exceeds** rising energy costs

Monthly Dividend by Family

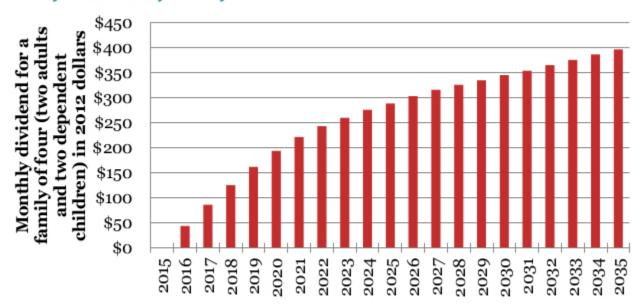


Figure 3.18 – This divides the "blue" general carbon tax revenue in Figure 3.17 across all American households for their projected share of the monthly carbon tax dividend.

So...quick review. CCL's carbon tax has 3 elements

- 1. FEE. On CO2. Only at the first point of sale.
- 2. DIVIDEND. A monthly check to all American taxpayers.

You and I and Bill Gates get the same dollar amount.

3. BORDER TAX on imports to protect business.

Key Principles

CCL is "betting the farm" on free-market capitalism

1. Reduce emissions

6. Capital neutral

2. Revenue neutral

7. Start small on fees.

3. Progressive

8. Gradual, predictable price increases

4. Comprehensive

9. Domestic ease of administration

5. Protects American businesses 10. International cooperation

Faith-Based Statements On Climate Change June 2012

Anglican and Episcopal Greek Orthodox Muslim

Baptist Hindu Presbyterian

Buddhist Hopi Quaker

Catholic Indigenous Peoples Shinto

Church of the Brethren Jain Unitarian Universalist

Daoist Jewish United Church of Christ

Episcopal Lutheran National Council of Churches

Evangelical Methodist World Council of Churches

Defense...Development...Diplomacy

- The latest <u>Quadrennial Defense Review</u> recognized climate change as an "accelerant of instability or conflict" and emphasized the challenges U.S. and partner militaries will face in light of rising sea levels, more frequent extreme weather events, desertification and water scarcity.
- <u>USAID</u> is working to integrate climate change into its development efforts, particularly in their agriculture and technology programs.
- The State Department. John Kerry is trying to work out a deal with China.

The End

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