Solving the Climate Challenge

Air and Waste Management Association Meeting

January 9, 2019

Citizens' Climate Lobby

Jerry King

BA, Physics (1973)
PhD, Earth Science (1981)

Member,
Citizens’ Climate Lobby


Citizens' Climate Lobby

Who is Citizens' Climate Lobby?

- Volunteer-driven
- 100,000+ volunteers
- Organized across the country in 485 local chapters
- We work locally towards a national solution on climate change

Our Values

Focus

Relationships

Nonpartisan

Personal Power

Integrity

Optimism

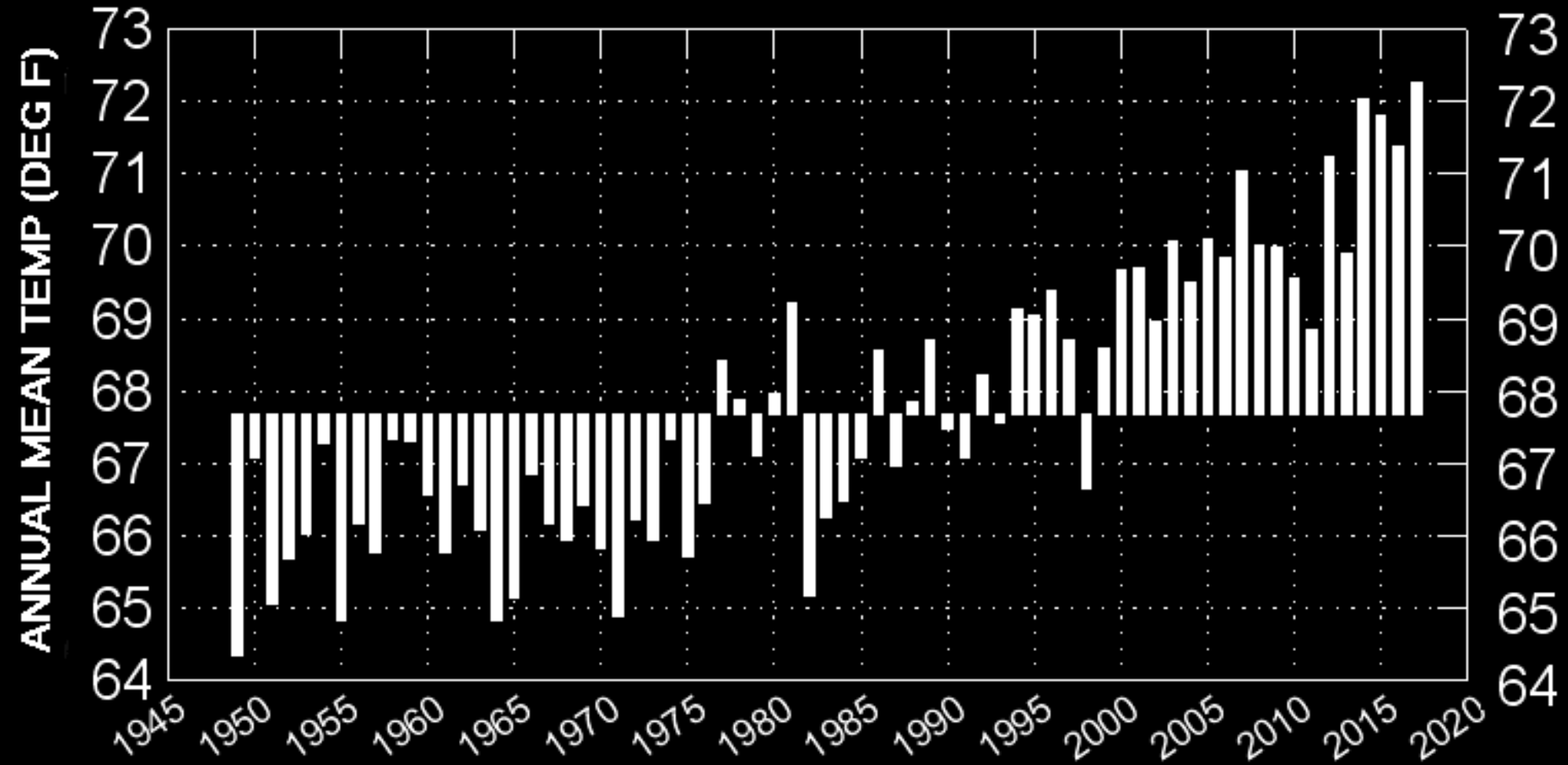
It’s about us

Climate change impacts us

We have **7B+ people** on this planet. And we have built a society based on the **assumption of a stable climate**. Yet that climate is now **changing more rapidly than ever** in human history. It’s the **pace of change** that stresses our ability to adapt.

LAS VEGAS INT'L AIRPORT ANNUAL MEAN TEMPERATURES (1949-2017)

Base: 67.8 F (1949-2017 Long-Term Average)



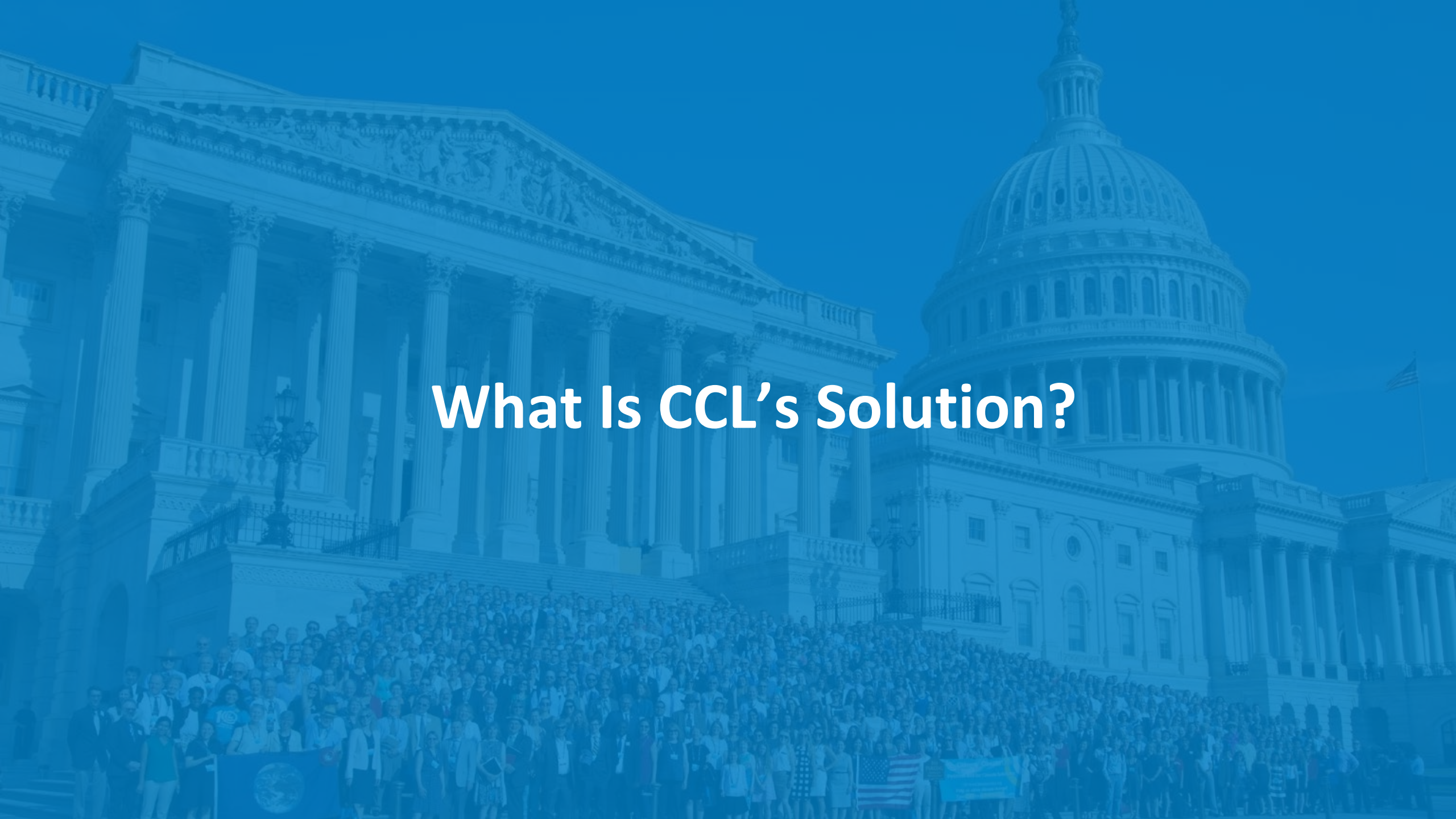
It’s also about them

Climate change impacts all life

Humans are the most adaptable, most mobile species on the planet. Other species are not so lucky. If their habitat disappears, so will they.

Our Window For Action is Today

- We have **twelve years** to cut our global emissions in **half**



What Is CCL's Solution?

We Know How To Solve This:

If we want fewer emissions…

…make them more expensive

What's our Solution?

The Energy Innovation and Carbon Dividend Act

Citizens' Climate Lobby

Energy Innovation Carbon Dividend Act

H.R. 7173 is sponsored by:

Republicans

Francis Rooney (FL-19)
Original Cosponsor

Brian Fitzpatrick (PA-08)
Original Cosponsor

Dave Trott (MI-11)
Cosponsor

Democrats

Ted Deutch (FL-22)
Original Sponsor

Charlie Crist (FL-13)
Original Cosponsor

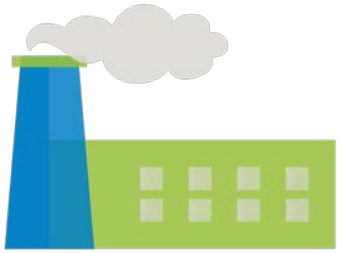
John Delaney (MD-06)
Original Cosponsor

Anna Eshoo (CA-18)
Cosponsor

Judy Chu (CA-27)
Cosponsor

Energy Innovation Carbon Dividend Act

How It Works



Carbon Fee

Carbon Dividend

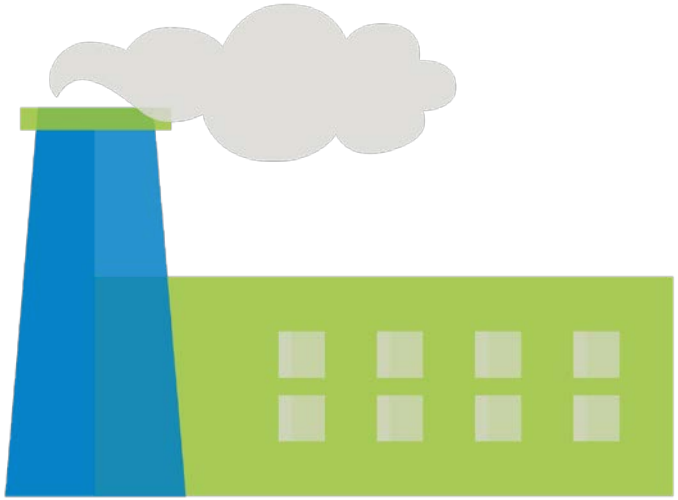
Carbon Border Adjustment

Limited Regulatory Adjustment

Energy Innovation and Carbon Dividend Act

1. Carbon Fee

Places a fee on coal, oil, and gas. It starts low, and grows over time.



Energy Innovation Carbon Dividend Act

2. Carbon Dividend

The net revenue collected from the carbon fee is allocated in equal shares every month to the American people.

Energy Innovation & Carbon Dividend Act

3. Border Carbon Adjustment

Imported goods will pay a border carbon adjustment, and goods exported from the United States will receive a refund.

Energy Innovation & Carbon Dividend Act

4. Limited Regulatory Adjustment

Prevents additional regulations on CO_2 emissions as long as emission targets are being met. Regulations based on other pollutants, auto mileage standards, water quality, and more won't be affected.

Energy Innovation Carbon Dividend Act

What Will It Do?

Effective

Creates Jobs

Good for People

Bipartisan

Revenue Neutral

Energy Innovation Carbon Dividend Act

Effective

- This policy will reduce America's emissions by at least 40% within 12 years.
- It's supported by economists and scientists as simple, comprehensive, and effective.

Energy Innovation Carbon Dividend Act

Good for People

- This policy will improve health and save lives by reducing pollution that Americans breathe.
- The carbon dividend puts money into people's pockets every month to spend as they see fit, helping low and middle income Americans.

Energy Innovation Carbon Dividend Act

Creates Jobs

- This policy will generate hundreds of thousands of additional jobs over the next 10 years as the dividend helps families across America thereby stimulating the economy.

Energy Innovation NPC Carbon Dividend Act

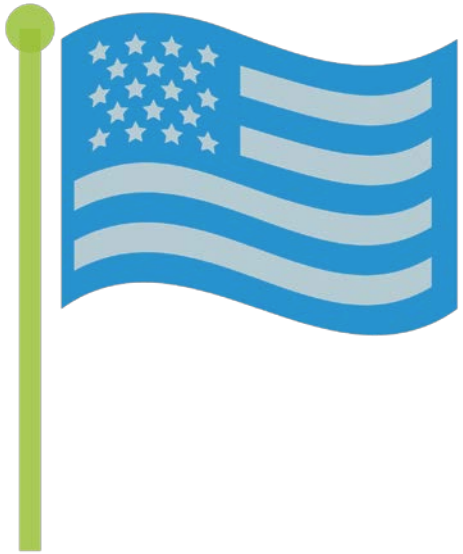
Revenue Neutral

- The fees collected on carbon emissions will be allocated to all Americans to spend how they choose.
- The government will not keep any of the fees collected, so the size of the government will not grow.

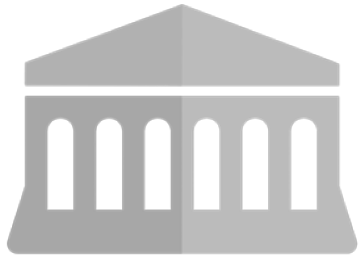
Energy Innovation NP Carbon Dividend Act

Bipartisan Support

- Republicans and Democrats are both on board, cosponsoring together.
- The majority of Americans support Congress taking action on climate change.
- Solving climate change is too urgent to get caught up in partisan politics.



Moving Forward in Congress



1. Re-introduce in 116th Congress
2. Companion legislation in Senate
3. Move through committees and floor vote
4. Conference agreement between House & Senate
5. Signed into law

Bipartisan Climate Solutions Caucus

Who supports a carbon fee and dividend policy?

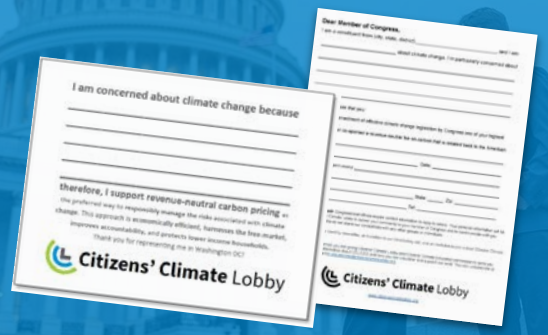
Notable U.S. organizations

“Starting next year, it will no longer be free to pollute anywhere in Canada. We are going to place a price on the pollution that causes climate change from coast to coast to coast. We’re also going to help Canadians adjust to this new reality.”

- *Canadian Prime Minister Justin Trudeau*

Take action right now!

Write to Congress!



Are you a community leader?

energyinnovationact.org/endorse/

Join Us!

Text "Join" to 619-675-7507

Sign up for Wednesday on-line info sessions at cclusa.org/intro

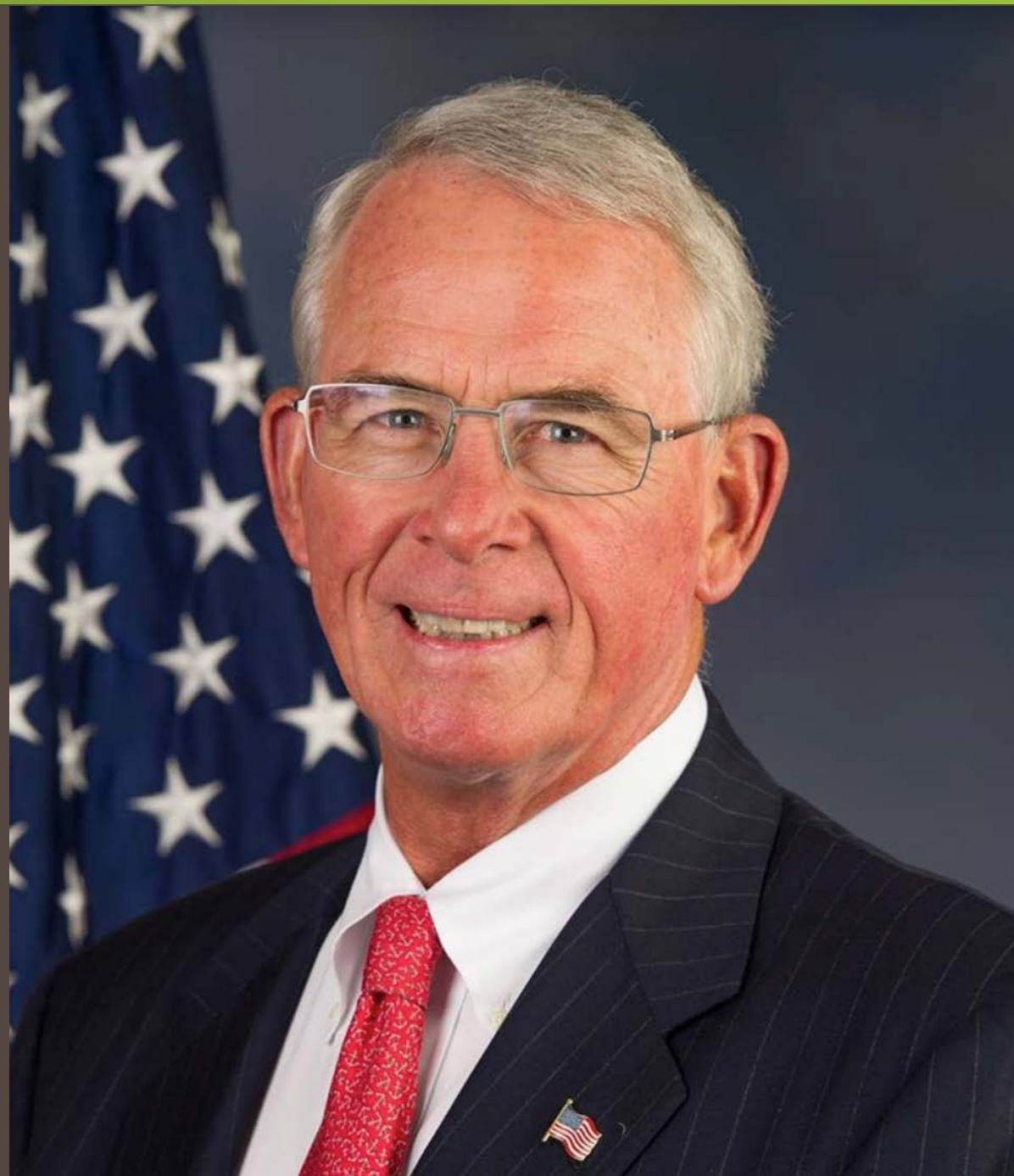

Q & A

Our work so far and our plans to make climate solutions a priority in Congress are wholly dependent on [CCL volunteers'] energy, passion, and commitment.

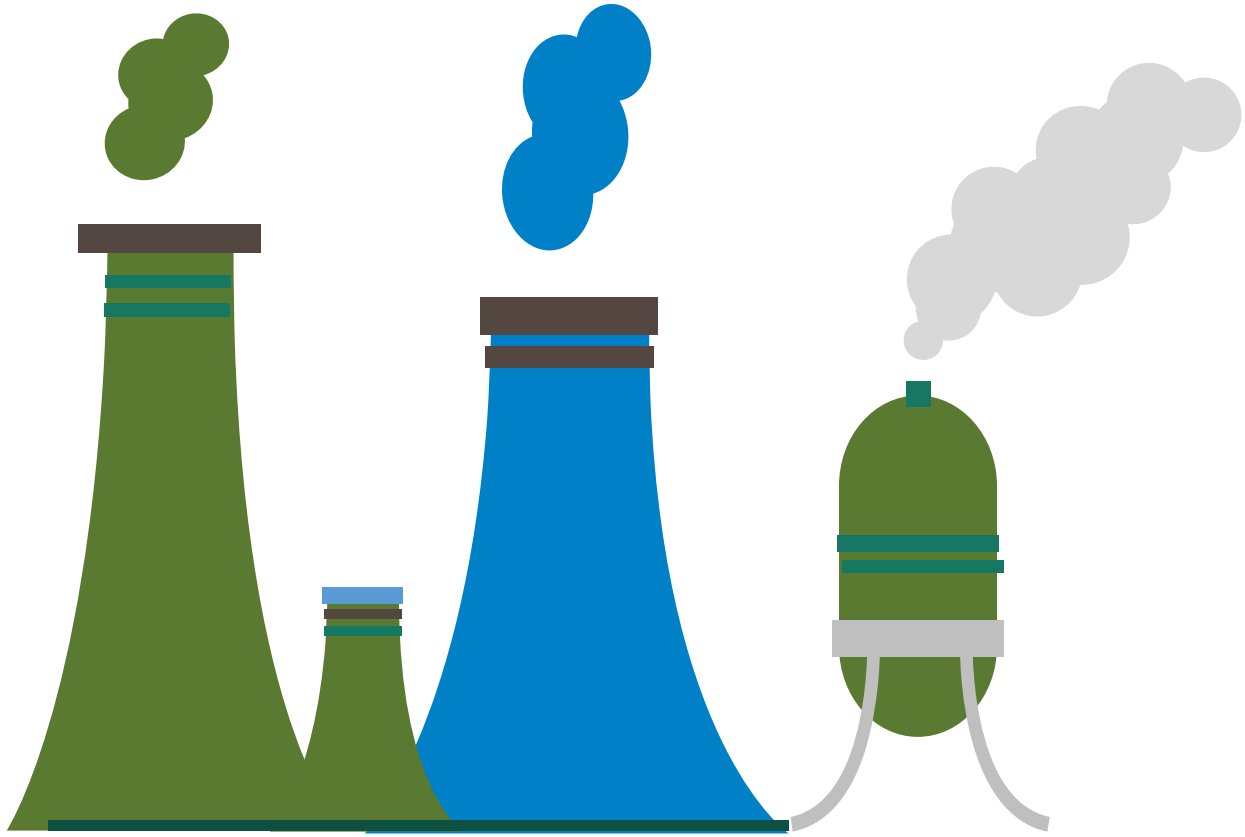
- *Rep. Ted Deutch (FL -22)*
  Energy Innovation Act Sponsor
-

“To let the free market price out coal we should consider value pricing carbon. A revenue-neutral carbon fee is an efficient, market-driven incentive to move toward natural gas and away from coal, and to support emerging alternate sources of energy.”

Rep. Francis Rooney (FL - 19)
Energy Innovation Act Cosponsor



Emissions Reductions



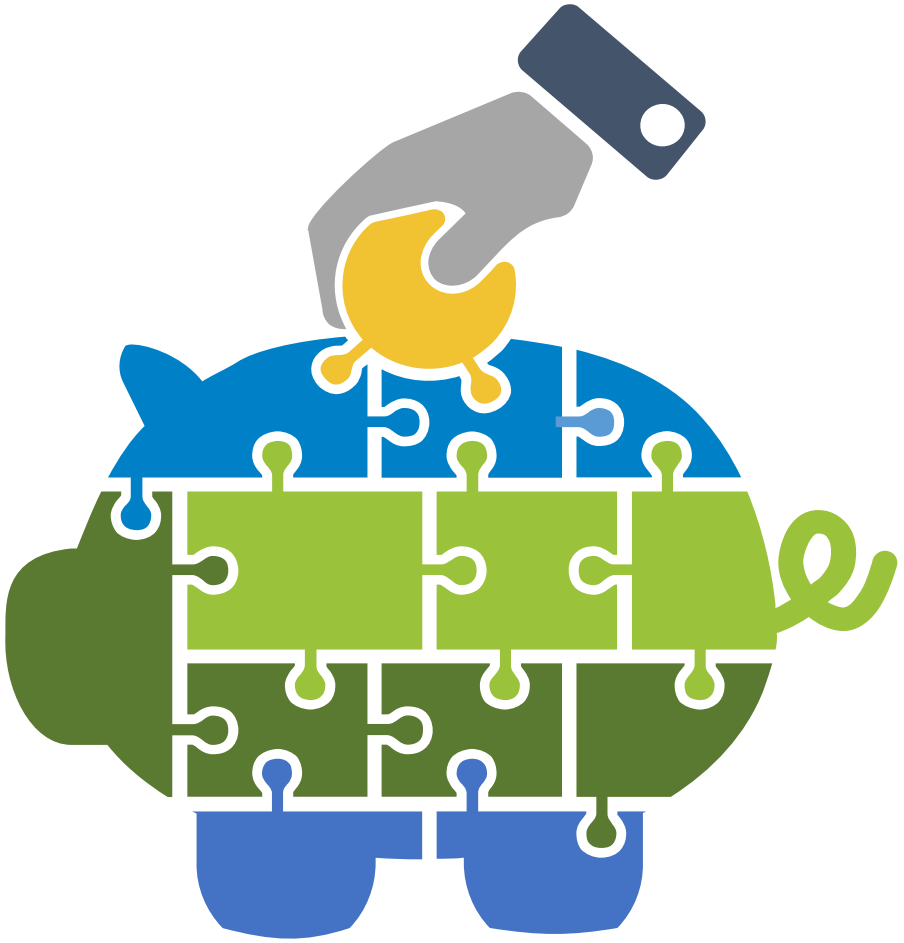
Under Carbon Fee and Dividend

31% ↓ **Within 10 years***

50% ↓ **Within 20 years***

***Below 1990 levels**

Household Dividend



Under Carbon Fee and Dividend

$288/month*	10 years
$396/month*	20 years

*For a family of four

Jobs Created

Under Carbon Fee and Dividend

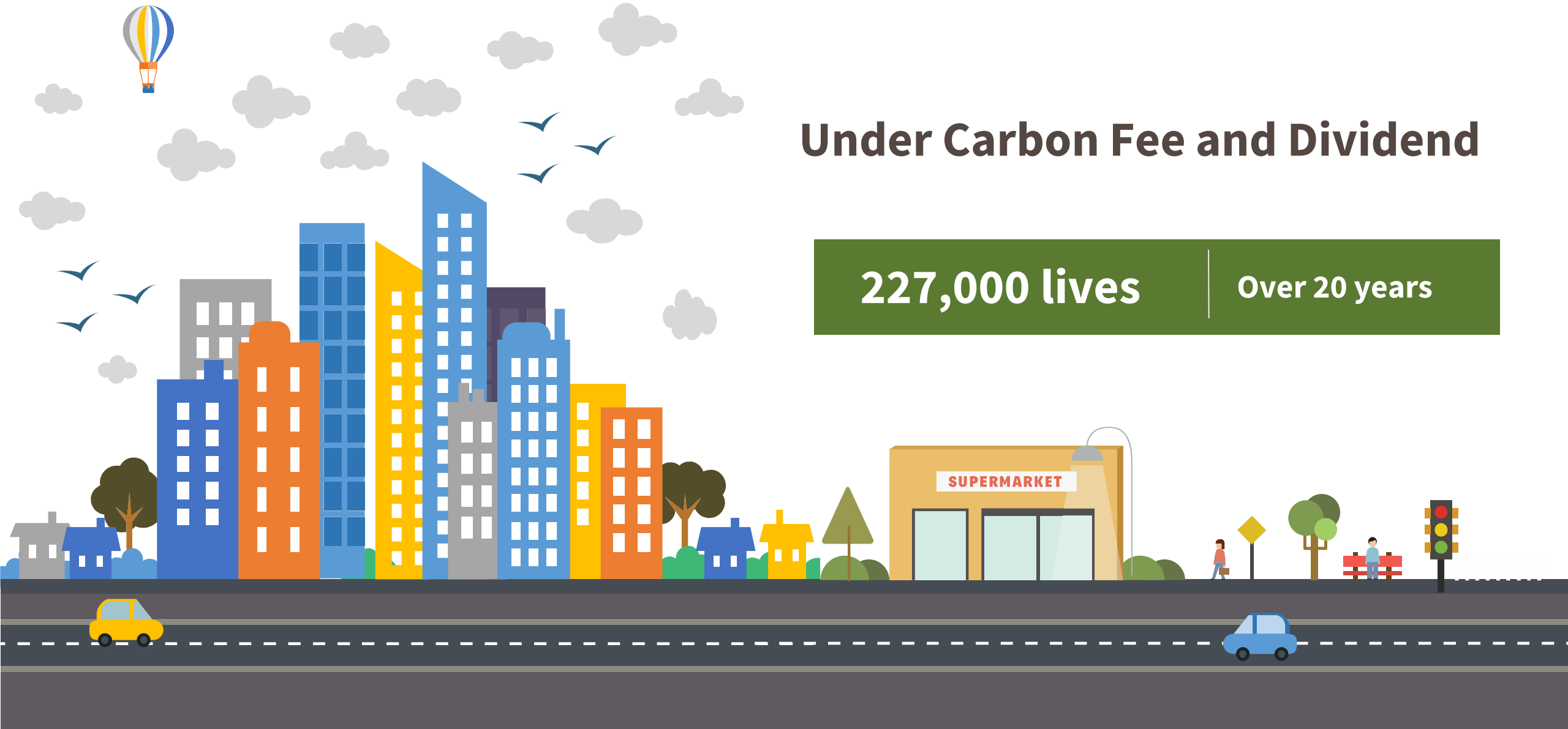
2.1M New Jobs	10 years
2.8M New Jobs	20 years

GDP Growth

Under Carbon Fee and Dividend

$70 - $85B/year	Average
$1.375 T	20 years

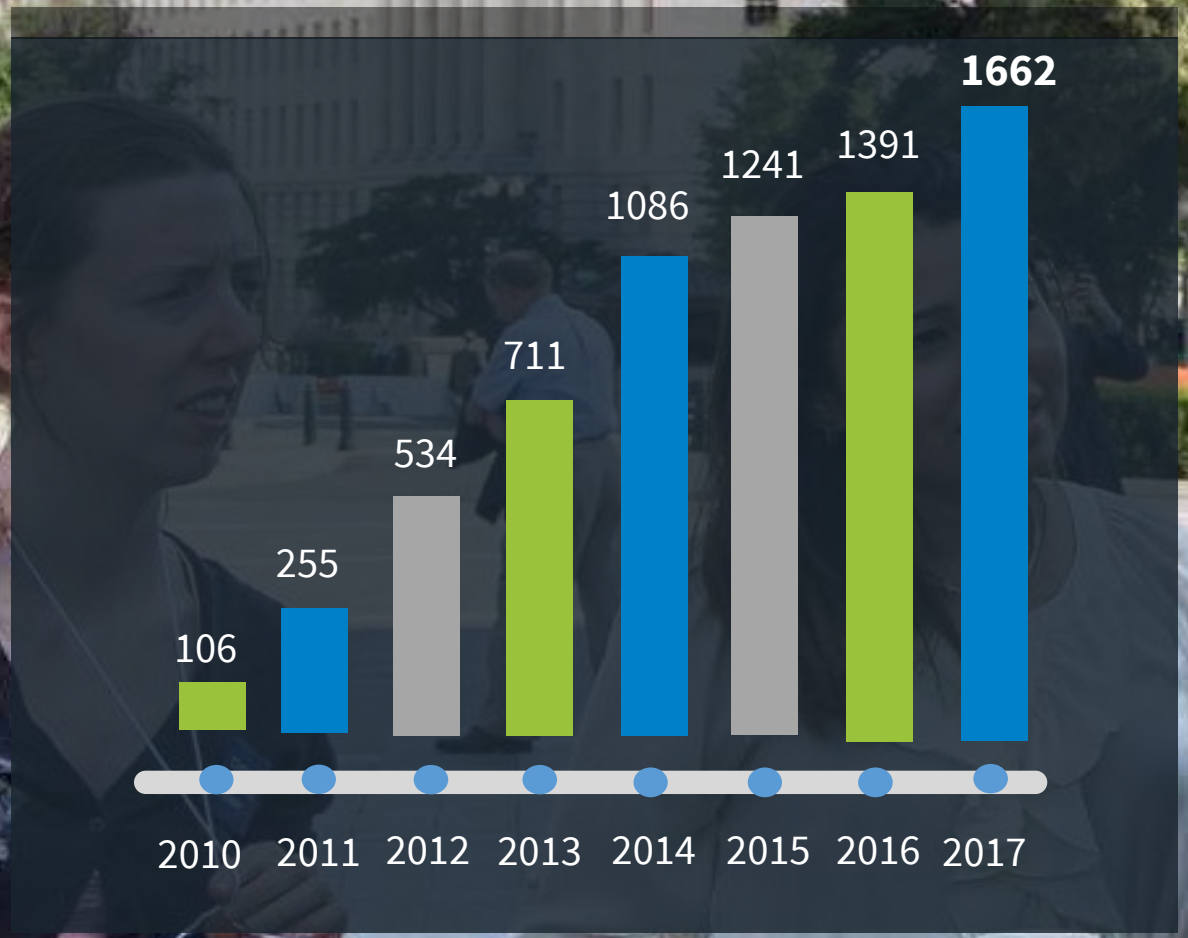
Lives Saved



Under Carbon Fee and Dividend

227,000 lives | **Over 20 years**

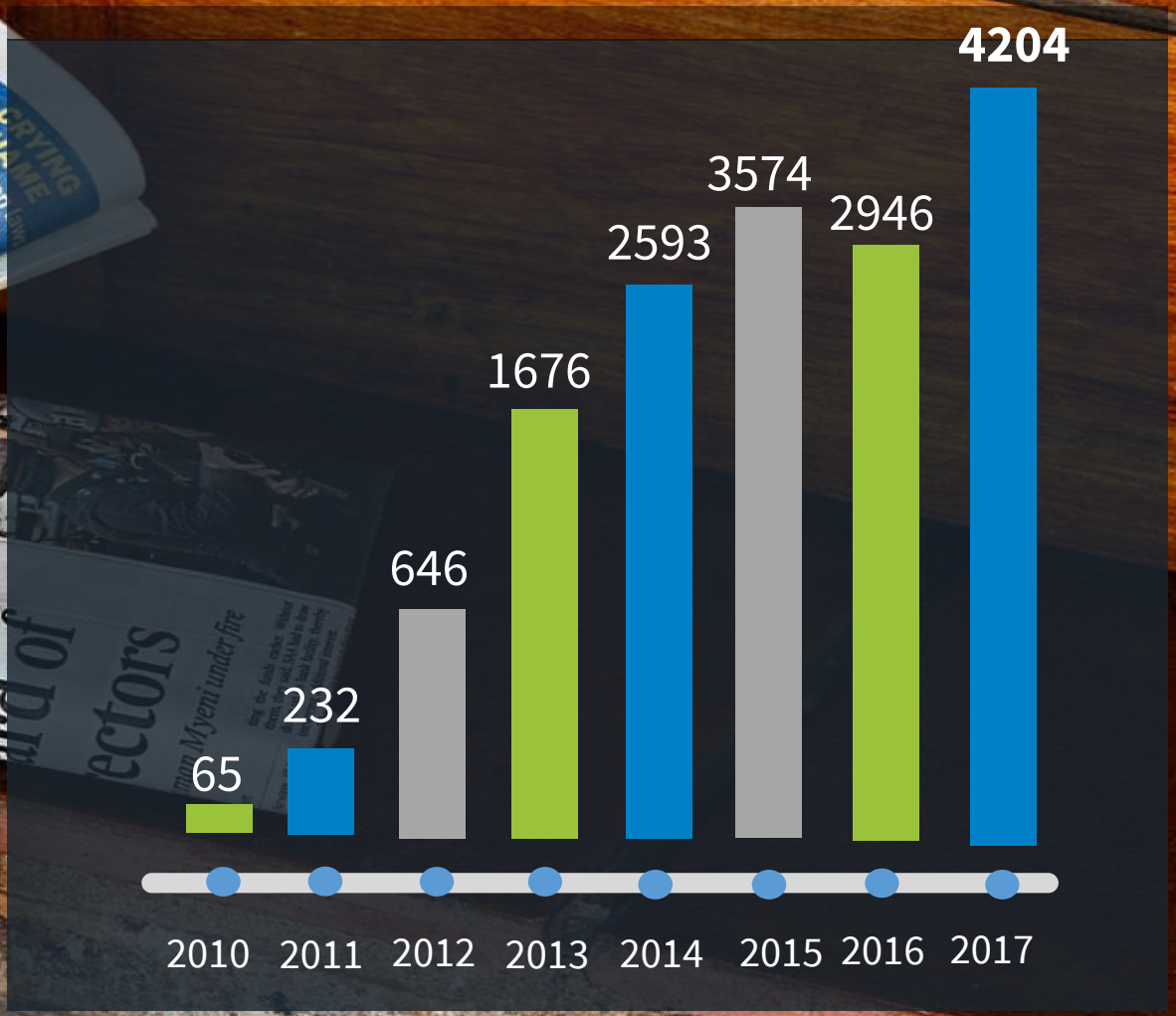
Meeting with Congress



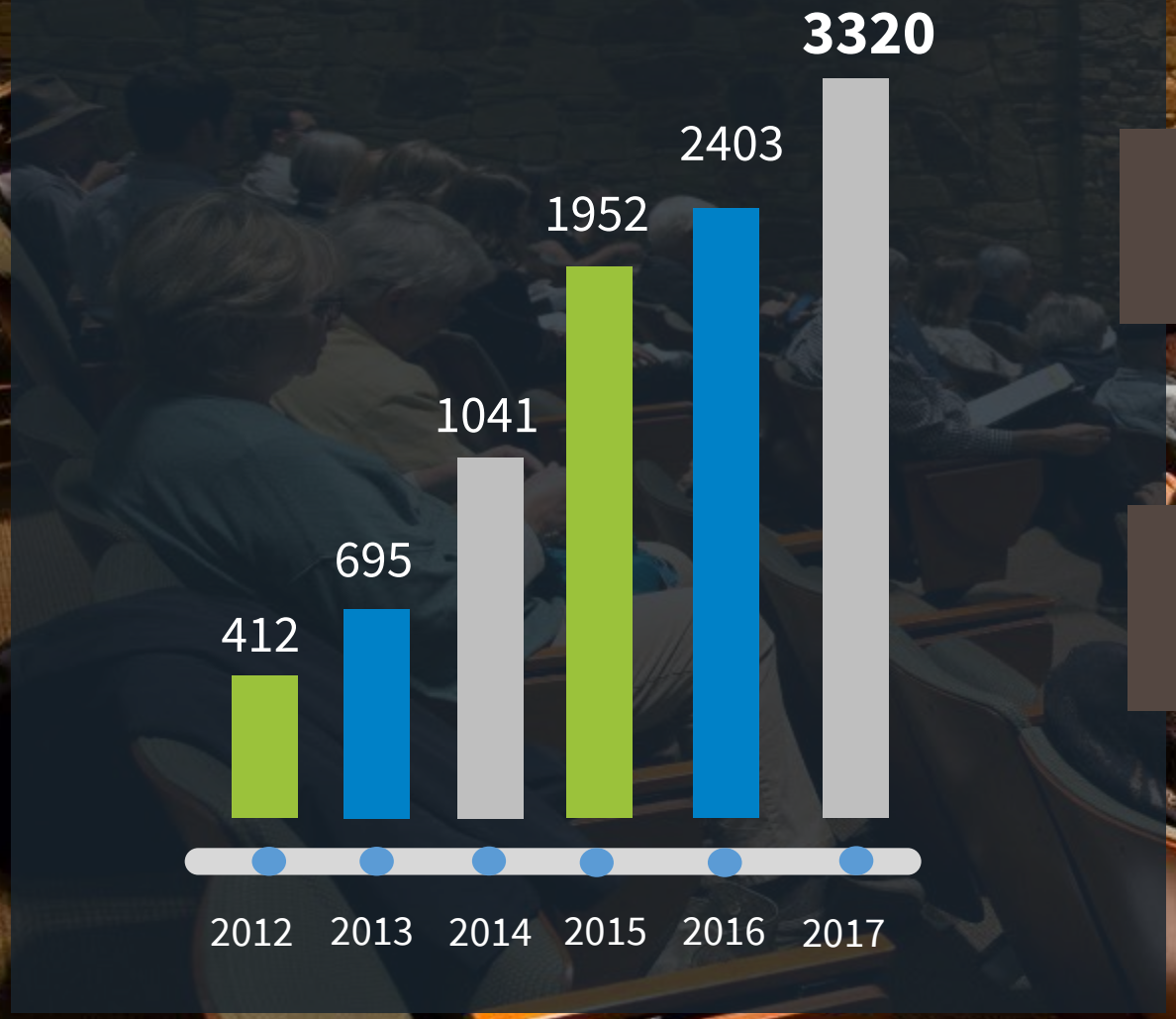
2017 | **73,988 personal letters to members of Congress**

Published Media

- Letters to the Editor
- Op-eds
- Radio/TV
- Online



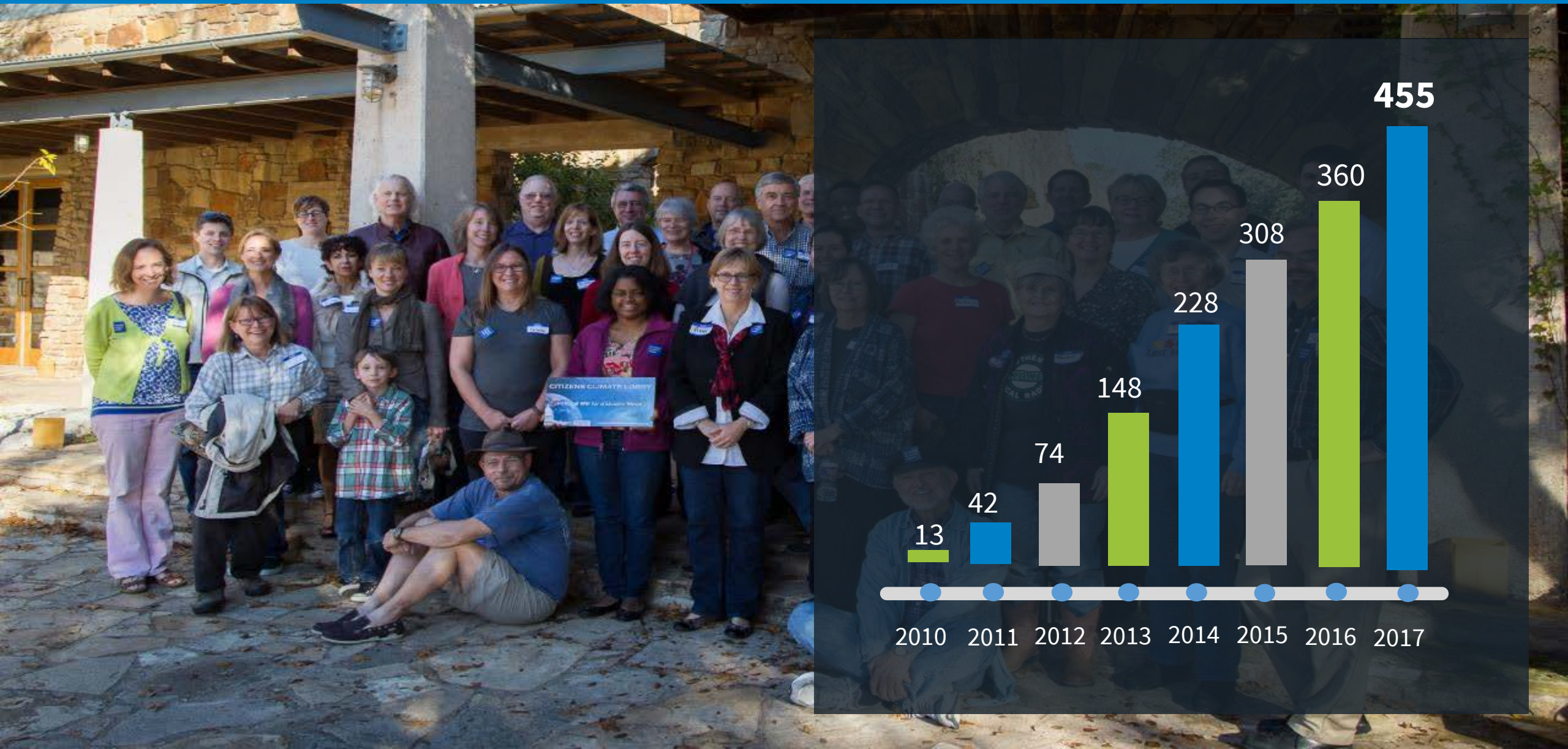
Outreach



Public Speaking

Tabling

Chapters


455
360
308
228
148
74
42
13
2010
2011
2012
2013
2014
2015
2016
2017

CCL'S Approach Works!

- CCL volunteers in Canada spent 8 years lobbying the Canadian parliament.

- Three weeks ago Canada announced it will implement a national Carbon Fee and Dividend program in 2019!

Join our informational session

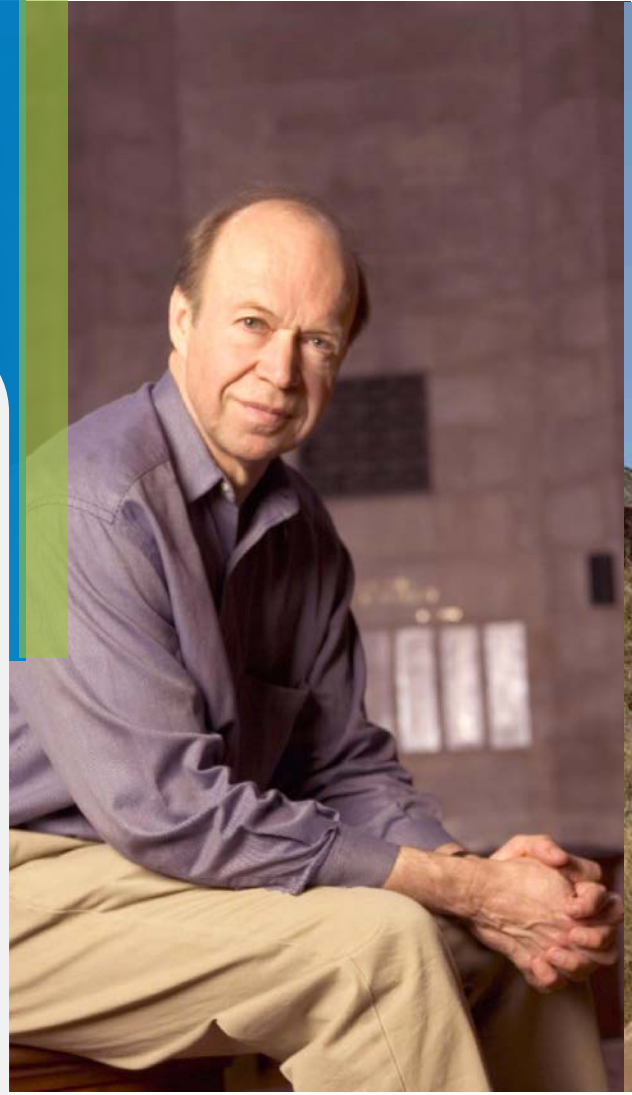
Wednesday nights at 8 ET / 5PT

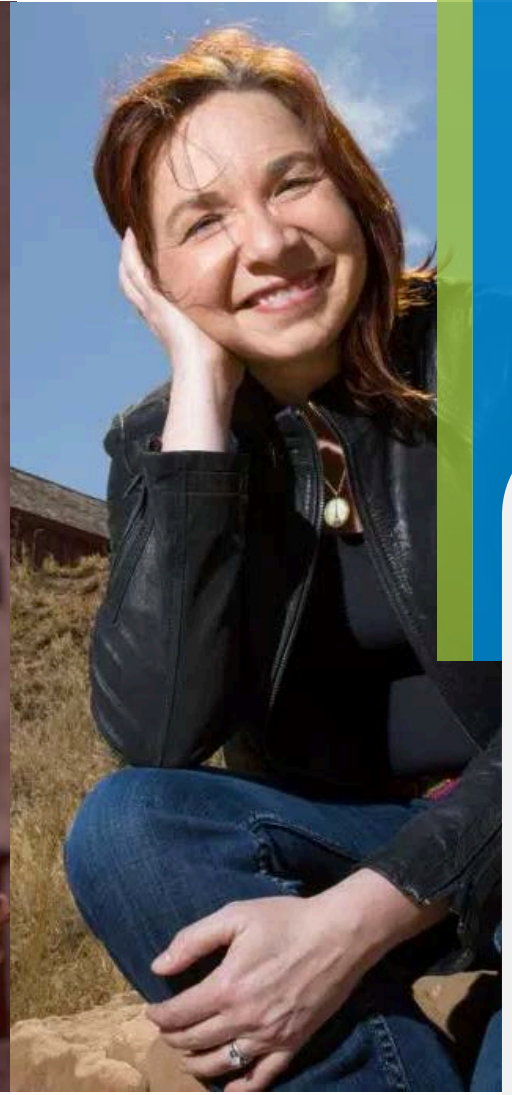
Register at: cclusa.org/intro

James Hansen

Climate Scientist

“…the backbone of a solution to the climate problem is a flat carbon emissions price... This carbon price must rise continually at a rate that is economically sound. The funds must be distributed back to the citizens, not to special interests.”





CCL’s Advisory Board

Katharine Hayhoe

Climate Scientist

“I don’t believe in climate change. Belief doesn’t come into it; scientific verification does. Gravity doesn’t care whether you believe in it or not, but if you step off a cliff, you’re going to go down.”

CCL's Advisory Board

George Shultz

Former Secretary of State, Treasury, and Labor

"We argue for revenue neutrality on the grounds that this tax should be exclusively for the purpose of leveling the playing field, not for financing some other government programs or for expanding the government sector."

Steven Chu

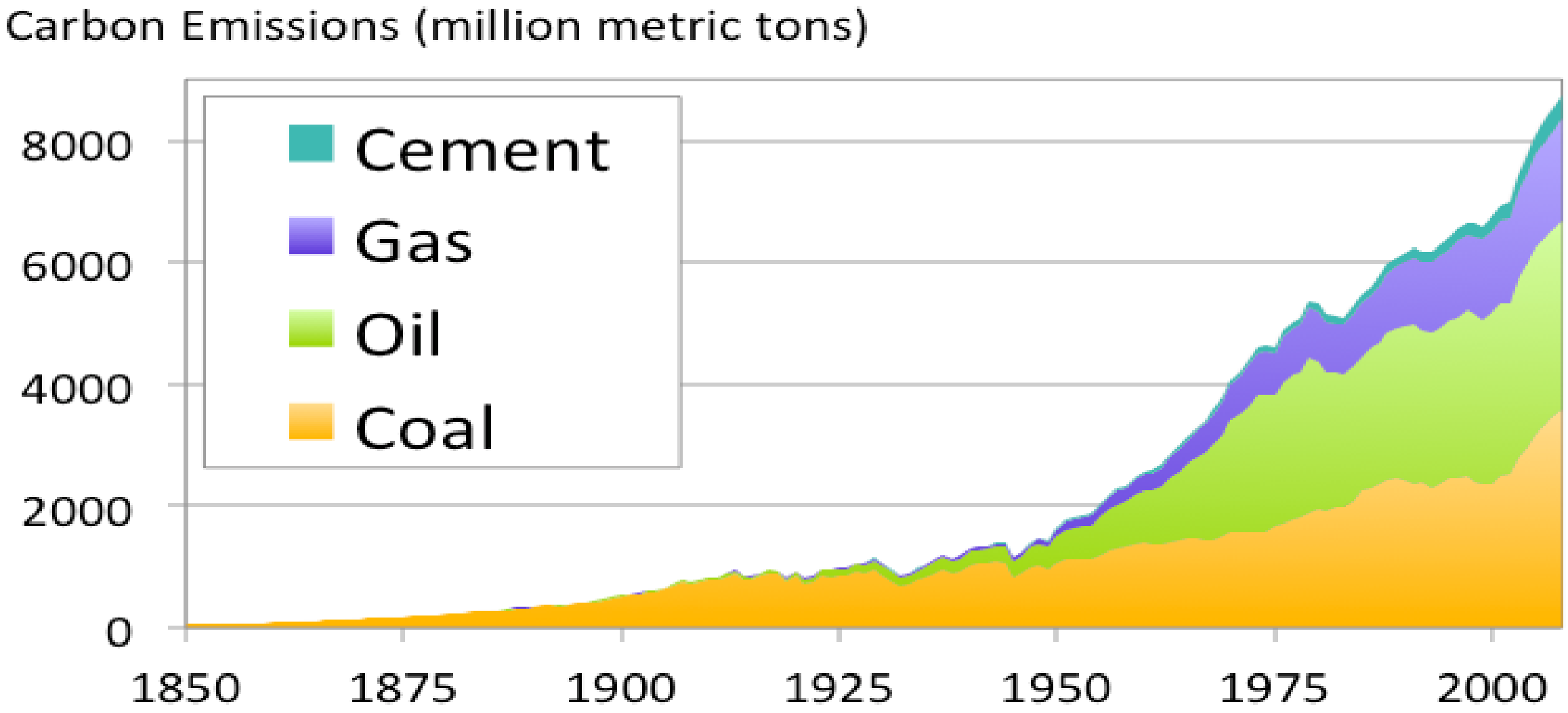
Secretary of Energy, Noble Prize Recipient

"A simple carbon tax maximizes transparency, minimizes market manipulation and regulatory complexity, and provides investment certainty."

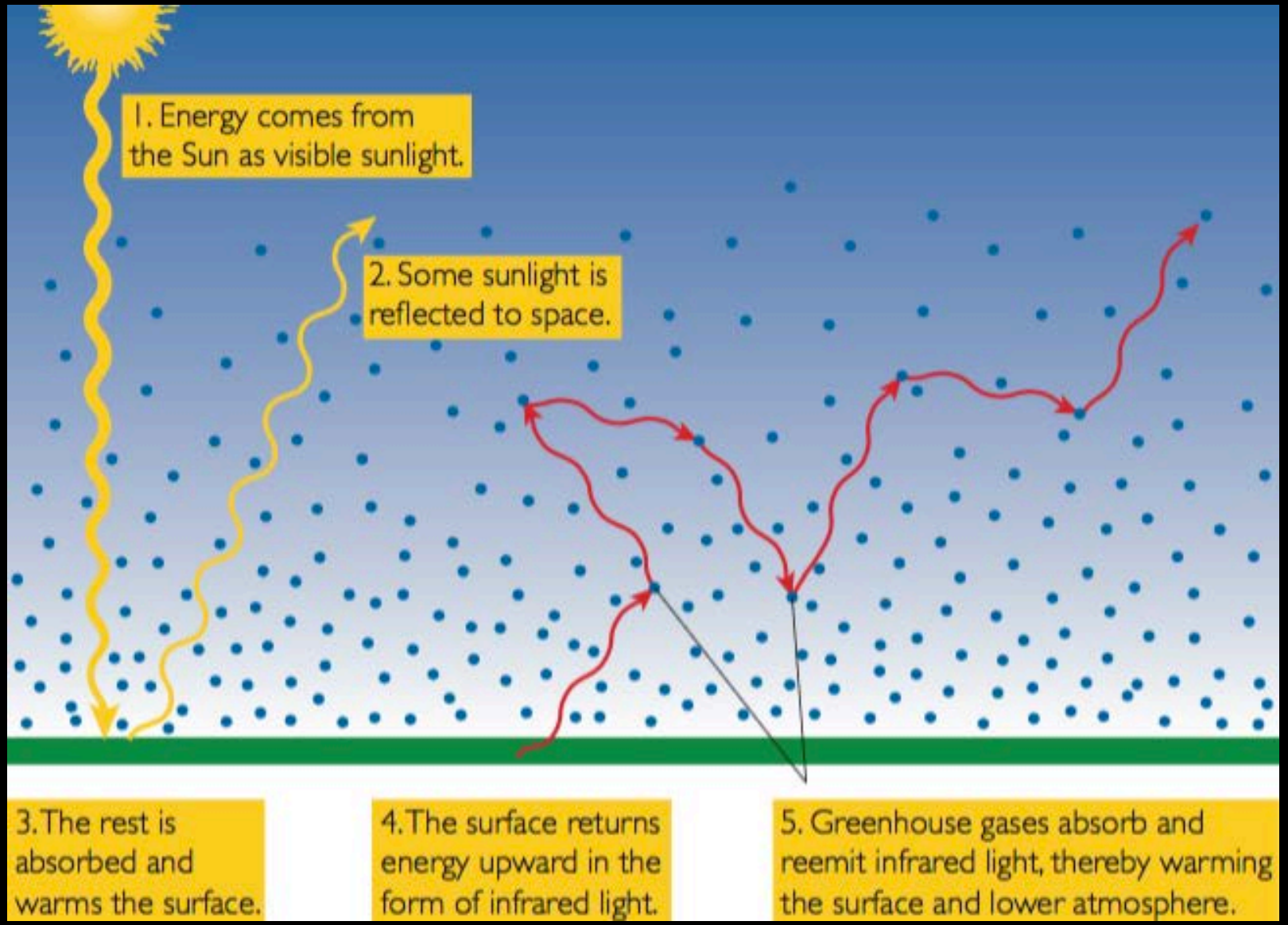
What we know about climate change

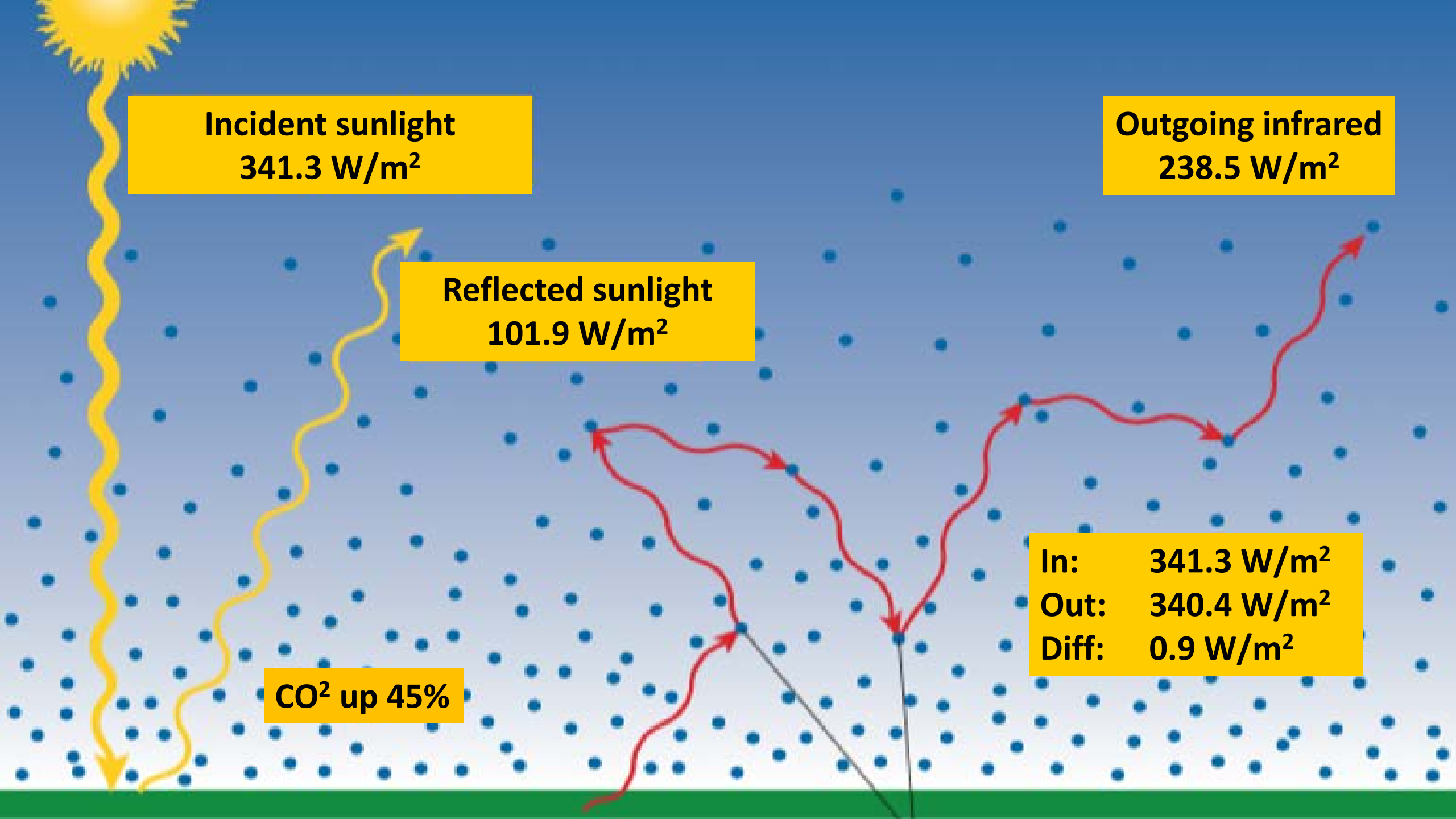
Burning coal, gas and oil produces CO^2

…and we've been burning lots of it

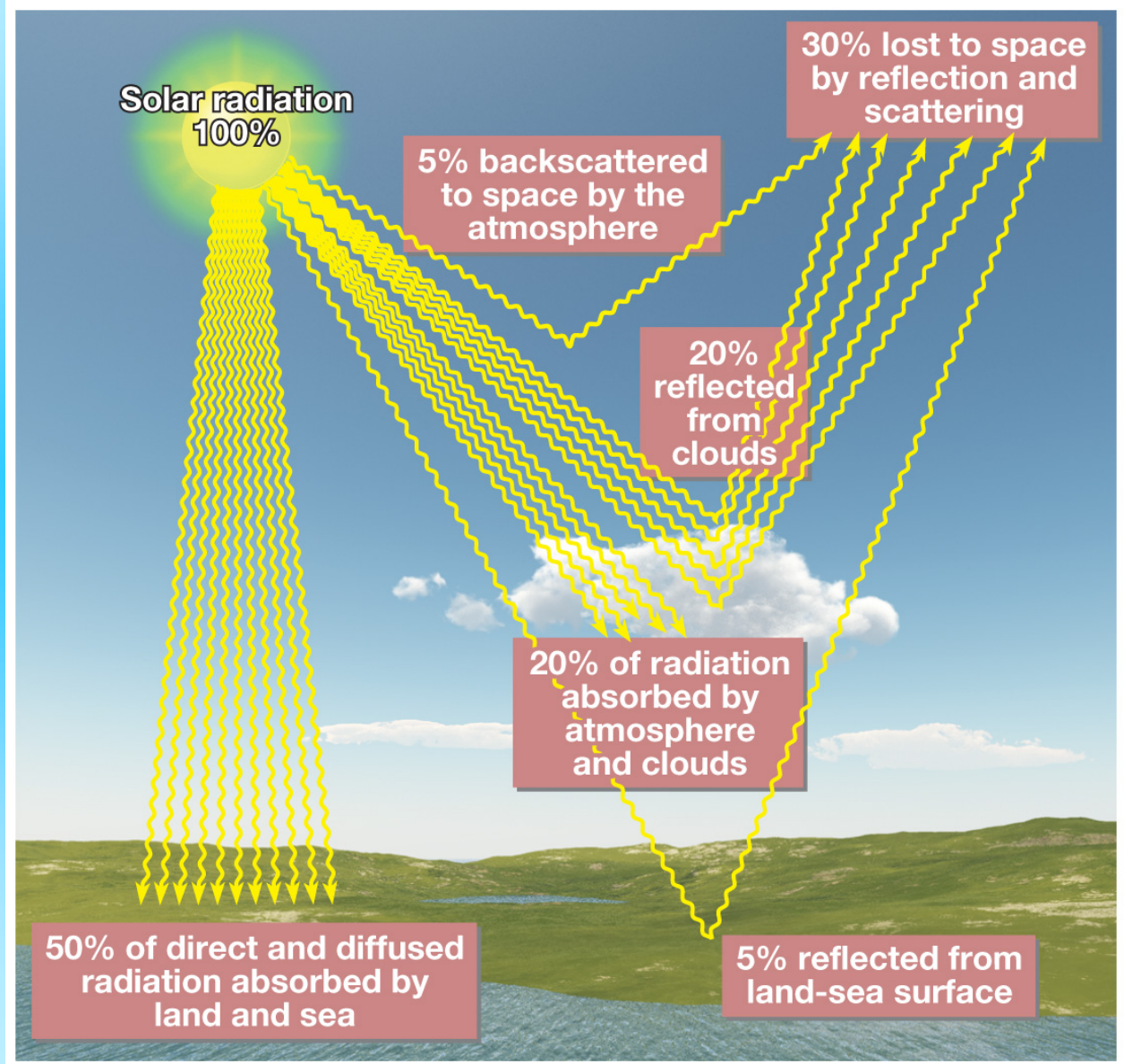


The Greenhouse Effect




Incident sunlight
341.3 W/m²
Reflected sunlight
101.9 W/m²
Outgoing infrared
238.5 W/m²
In: 341.3 W/m²
Out: 340.4 W/m²
Diff: 0.9 W/m²
CO² up 45%

What happens to Solar Radiation?



“Global Warming 1-2-3”

1. **FACT**: Carbon dioxide (a “greenhouse gas”) makes Earth warmer than it would be otherwise.

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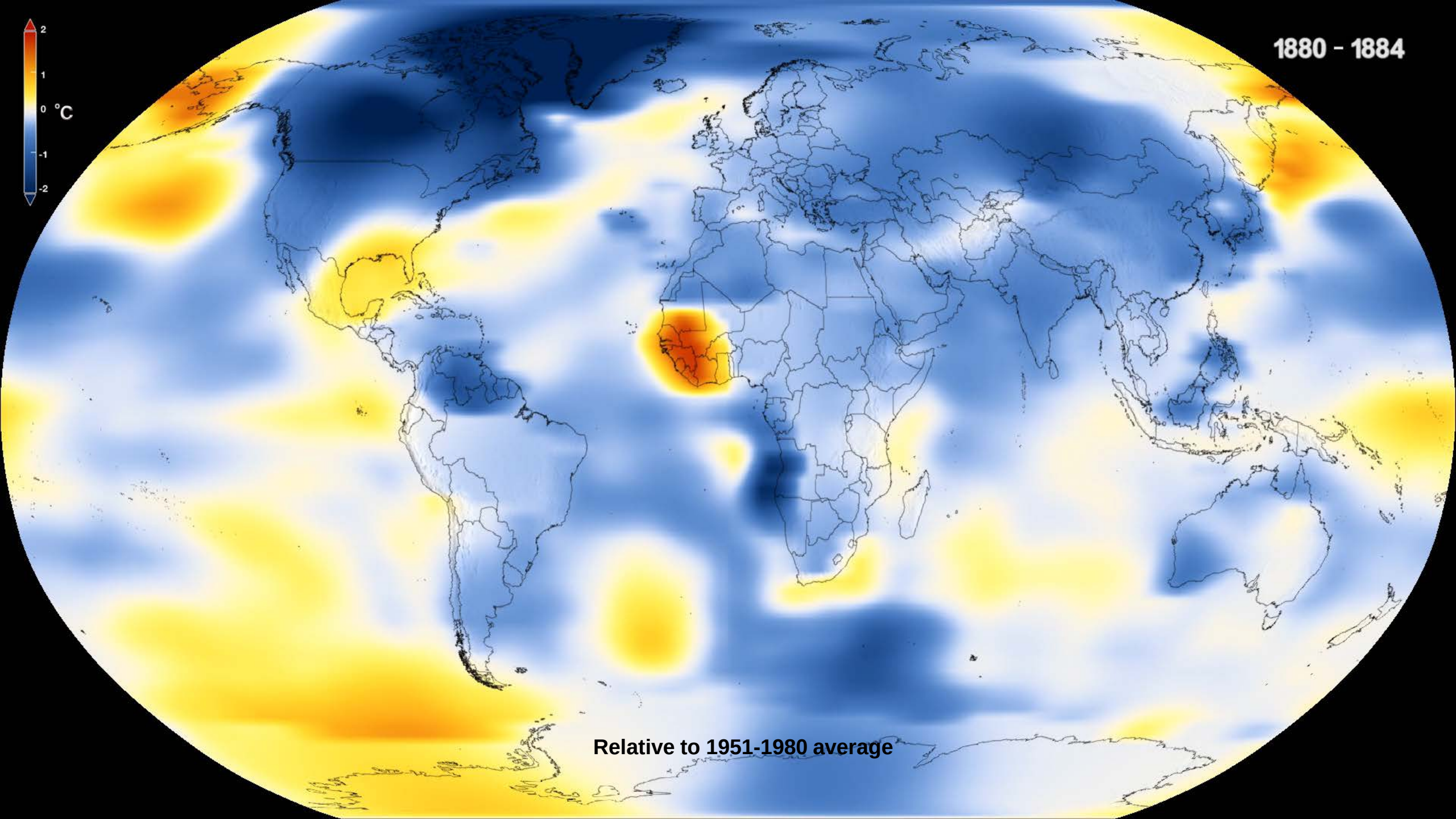
2. **FACT**: Use of fossil fuels (coal/oil/gas) is adding carbon dioxide to the atmosphere.

“Global Warming 1-2-3”

1. **FACT**: Carbon dioxide (a “greenhouse gas”) makes Earth warmer than it would be otherwise.

2. **FACT**: Use of fossil fuels (coal/oil/gas) is adding carbon dioxide to the atmosphere.

3. **CONCLUSION**: We *expect* global warming to occur.


2
1
0 °C
-1
-2
1880 - 1884
Relative to 1951-1980 average

Frederick Wilhelm Herschel
1738-1822

Discovered

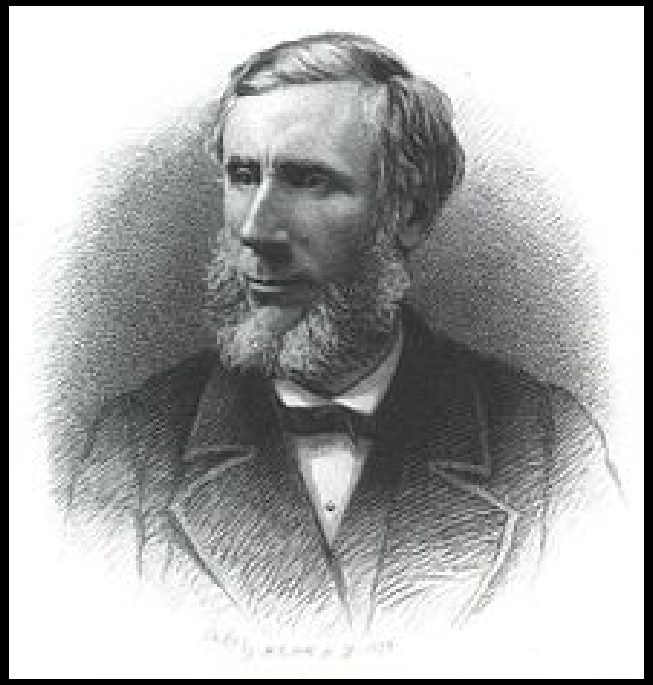
- Uranus
- Moons of Uranus and Saturn
- Infrared radiation

Jean-Baptiste Joseph Fourier
1768-1830

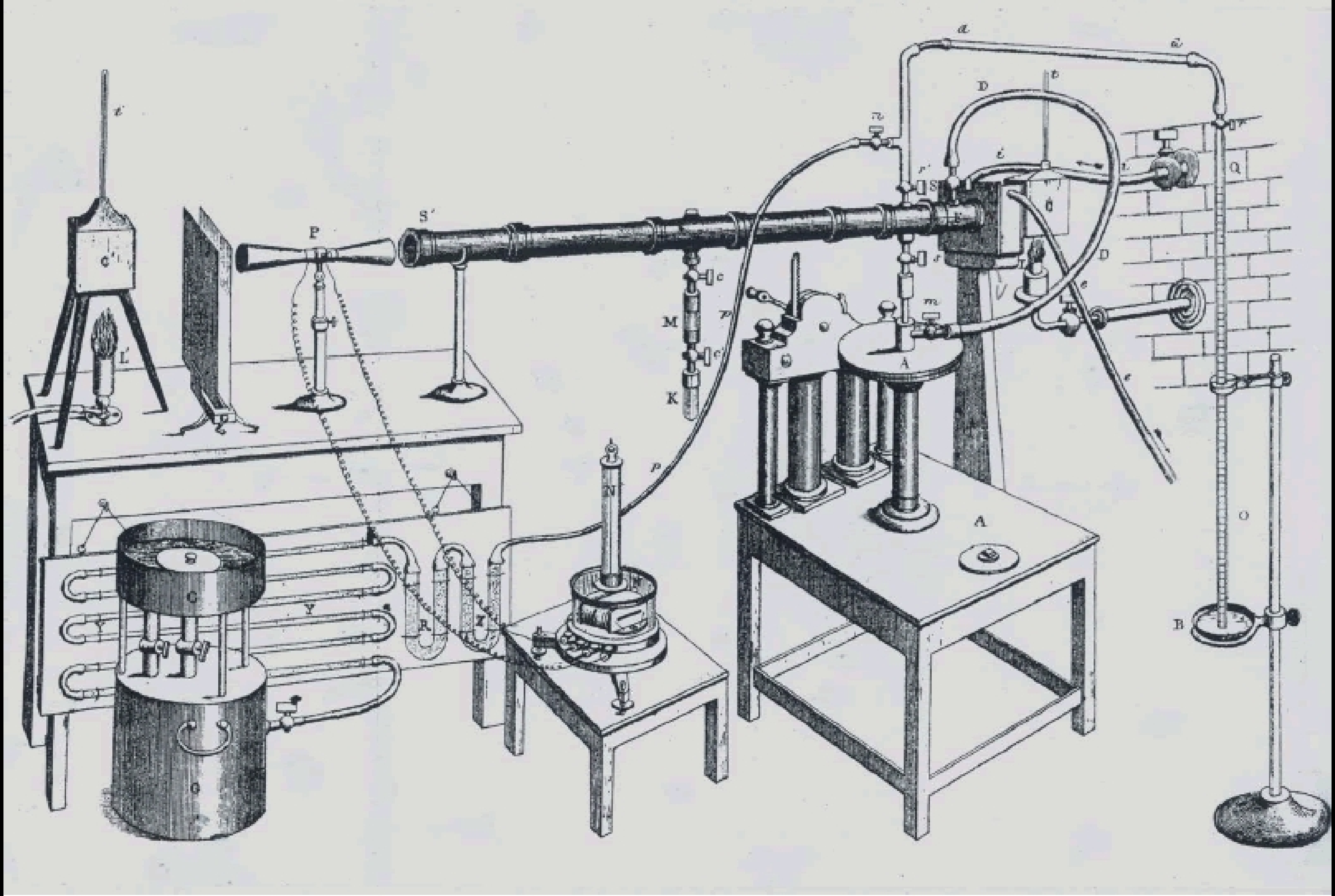
Deduced the existence of the "greenhouse effect"

- The Earth must radiate infrared radiation, otherwise it would get hotter and hotter.
- The temperature needed to radiate the necessary infrared radiation is less than the actual temperature of the Earth—the atmosphere must be blocking heat transfer.

John Tyndall
1820-1893



- Proved greenhouse effect is caused by atmospheric gases absorbing infrared radiation
- Concluded water vapor is primary absorber
- Demonstrated visually transparent gases emit infrared


S′
P
M
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D
D
Q
O
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Y
R

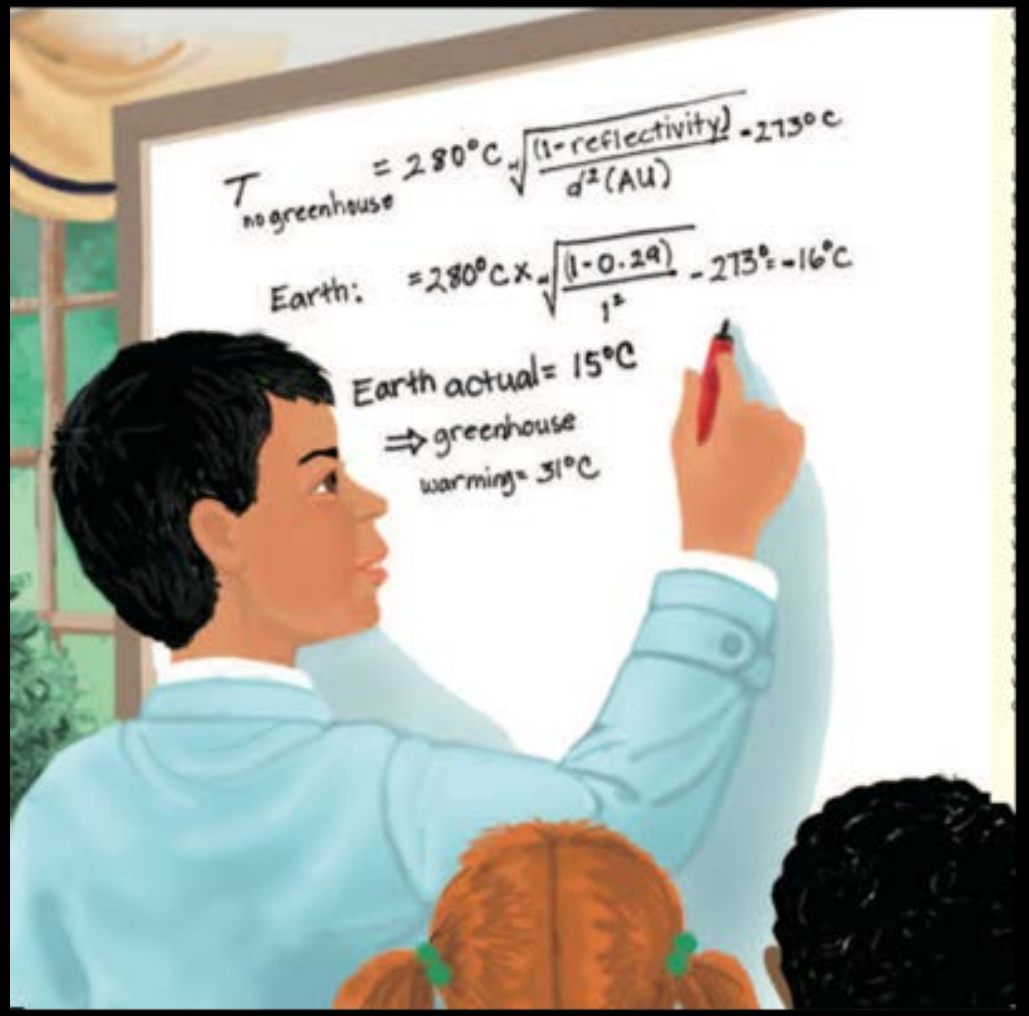
Svante Arrhenius
1859-1927

First scientist to predict that the burning of coal would increase the carbon dioxide content of the atmosphere and lead to global warming

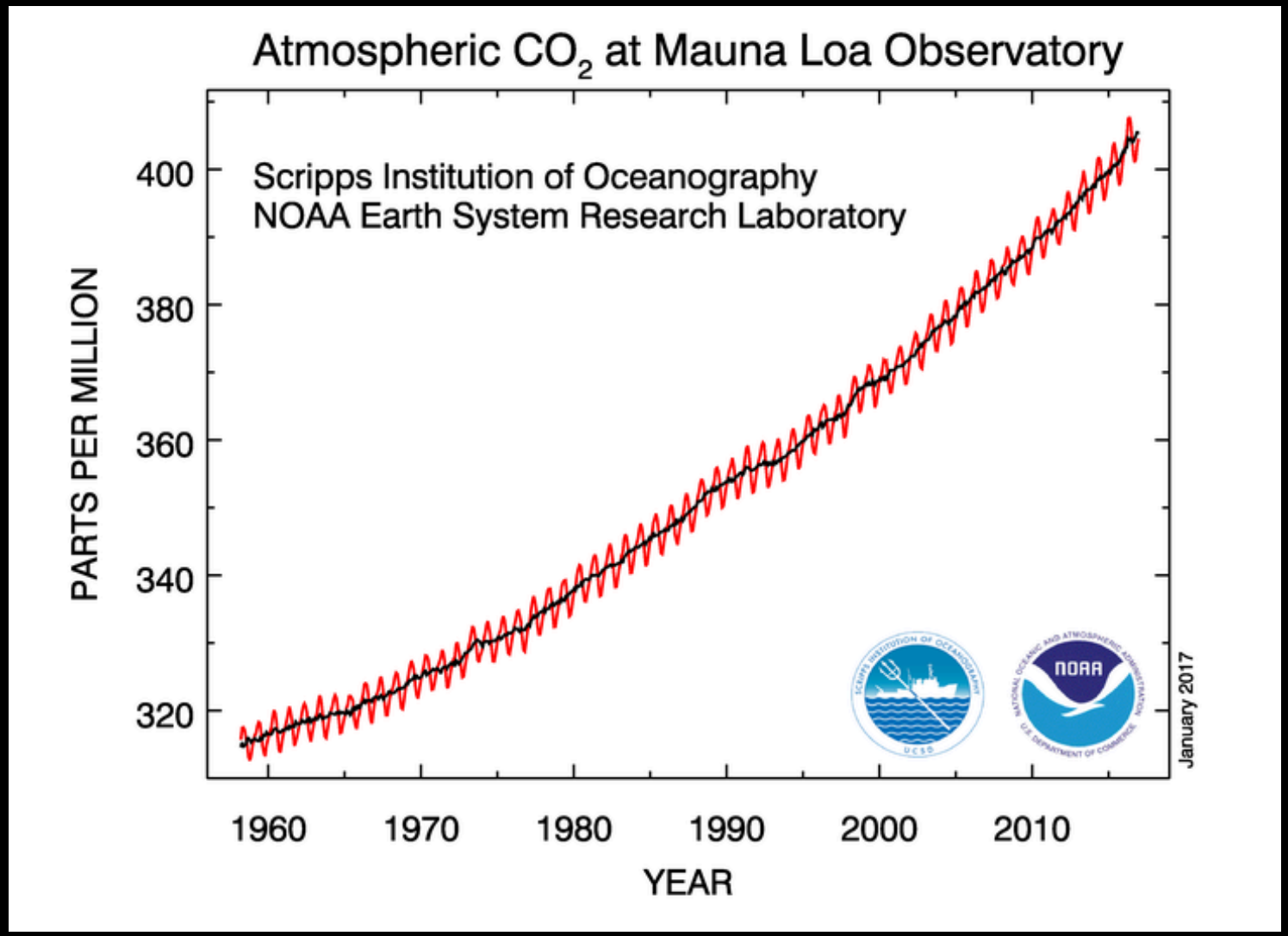
Test 1: Laboratory measurements

Test 2: Compare predicted and actual planetary temperatures

Without the greenhouse effect, Earth would be too cold for life!

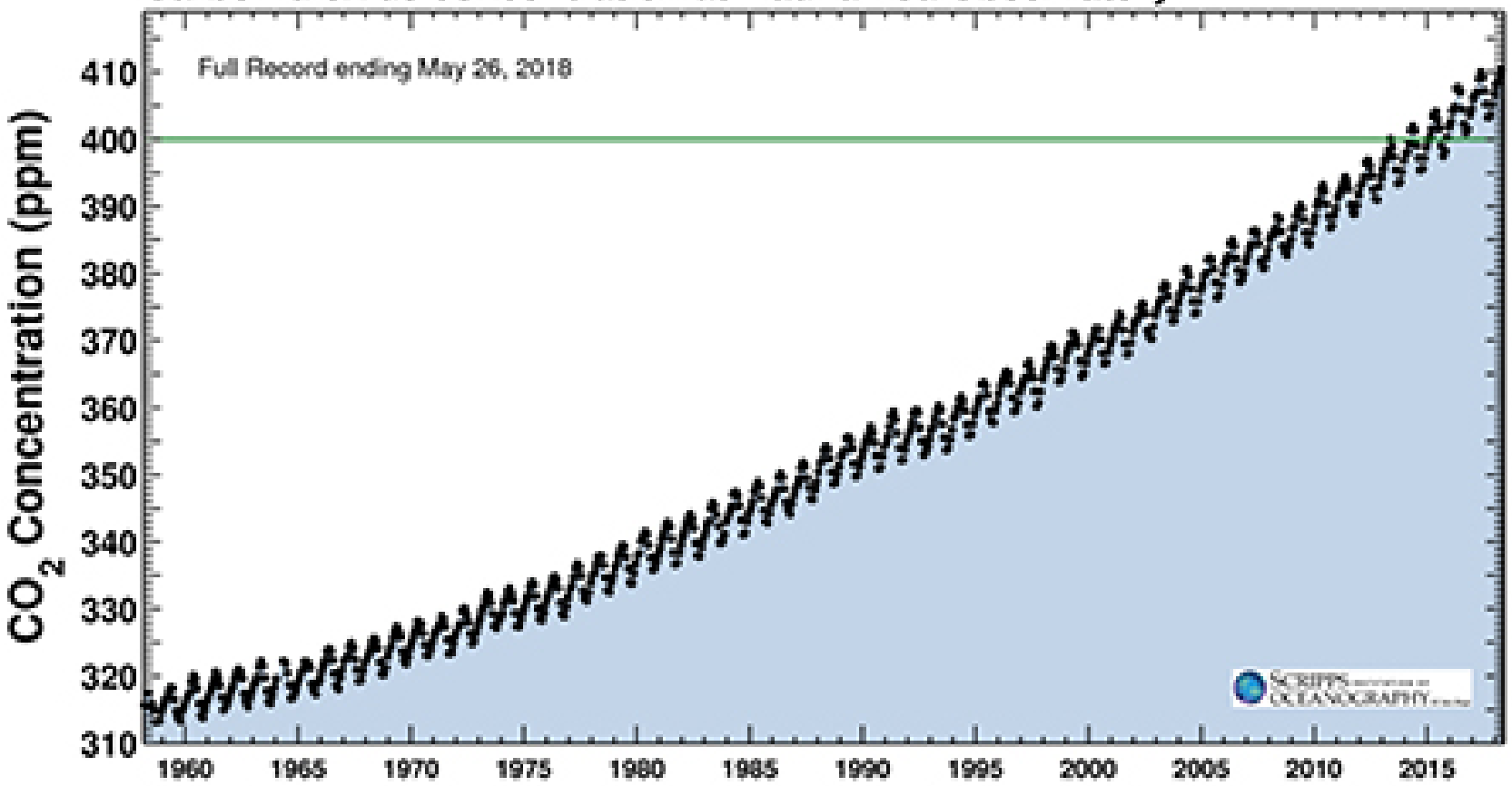


The Rising CO_2 Concentration



Latest CO_2 reading
May 26, 2018

411.89 ppm

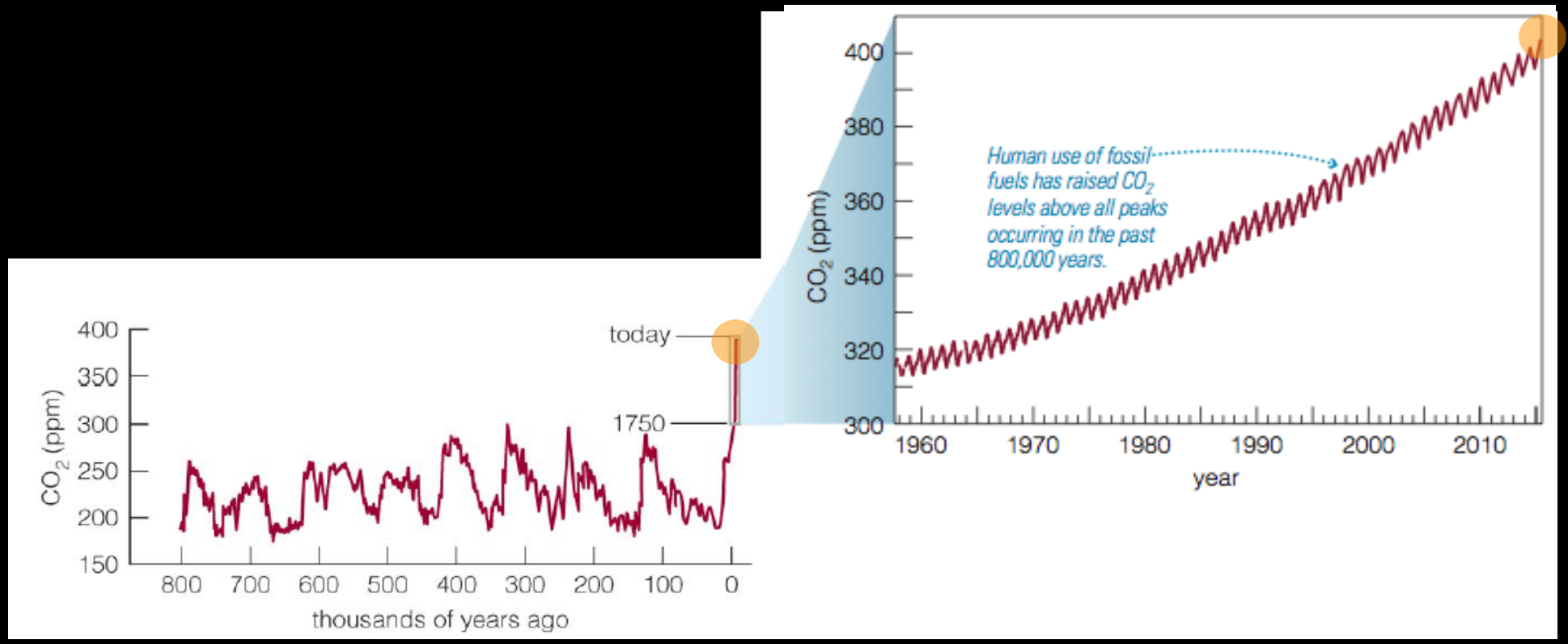


What about before 1958?

Photo source: http://earthobservatory.nasa.gov/Features/Paleoclimatology_IceCores/

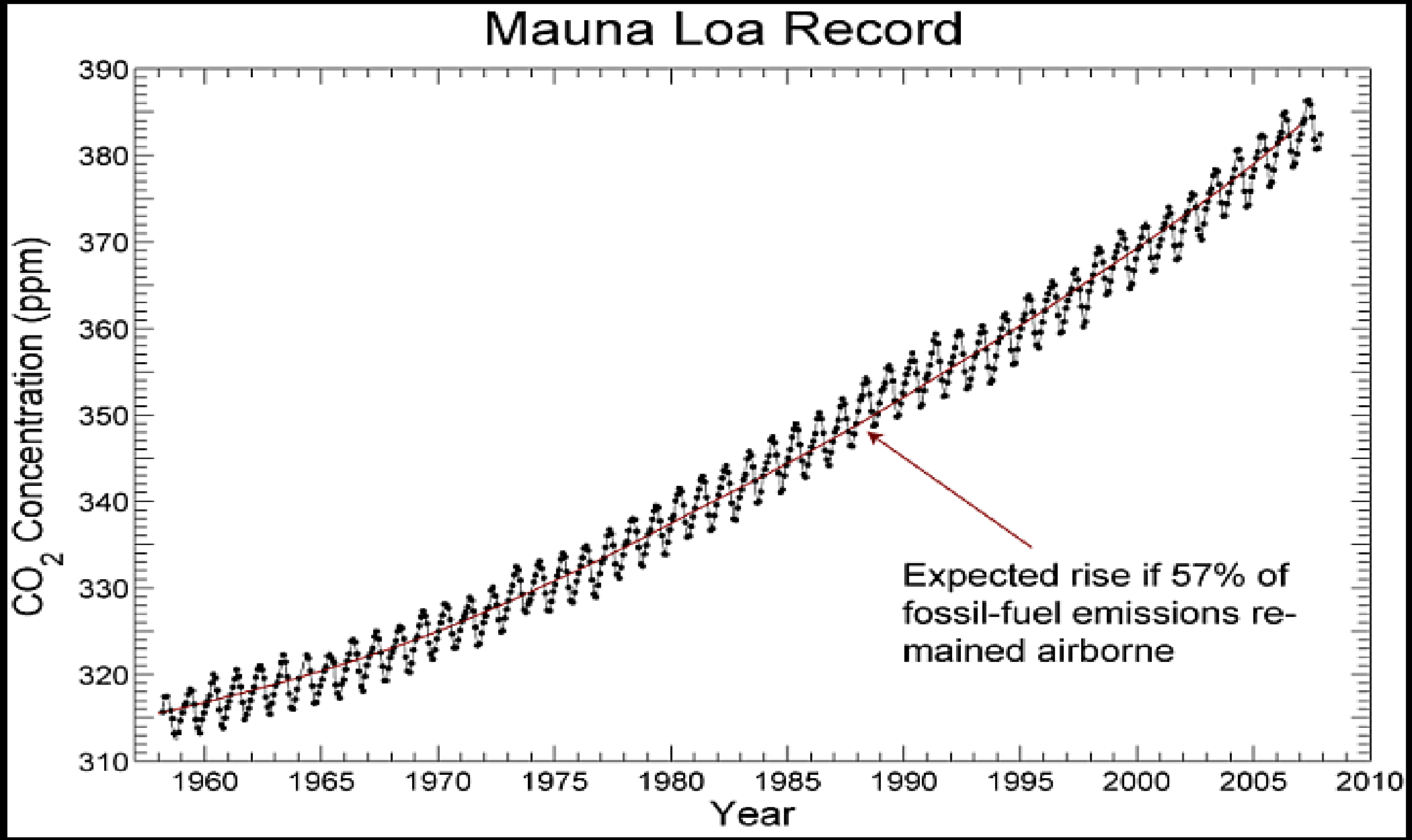
Ice core studies

800,000 Years of CO_2

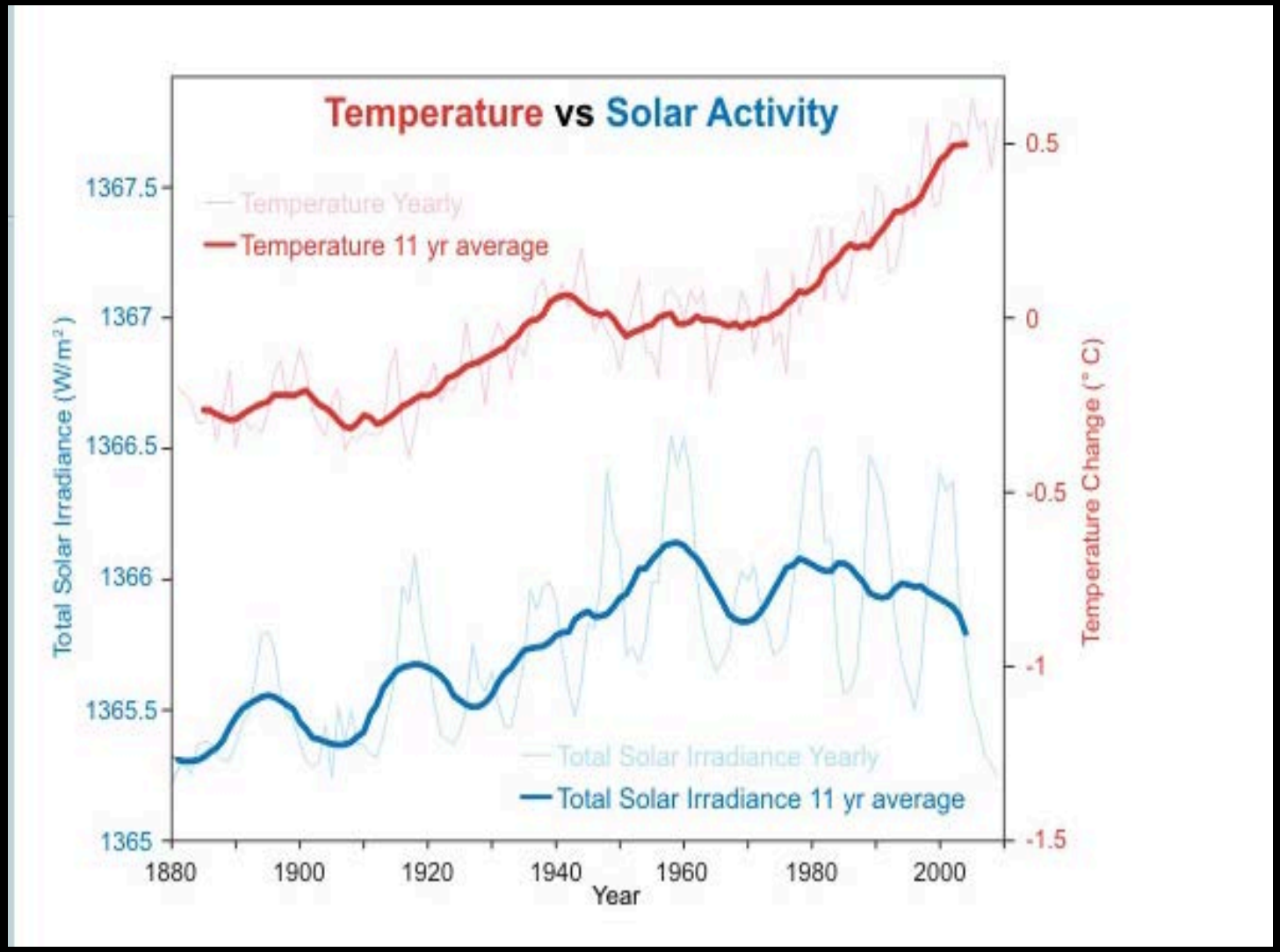


- CO_2 today: ~45% higher than in past 800,000 years

- On track to: *double* pre-industrial value in 50 to 60 years…
- *triple* that value by mid next century…


Mauna Loa Record
390
380
370
360
350
340
330
320
310
CO_2 Concentration (ppm)
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010
Year
Expected rise if 57% of fossil-fuel emissions remained airborne

It’s not the Sun…

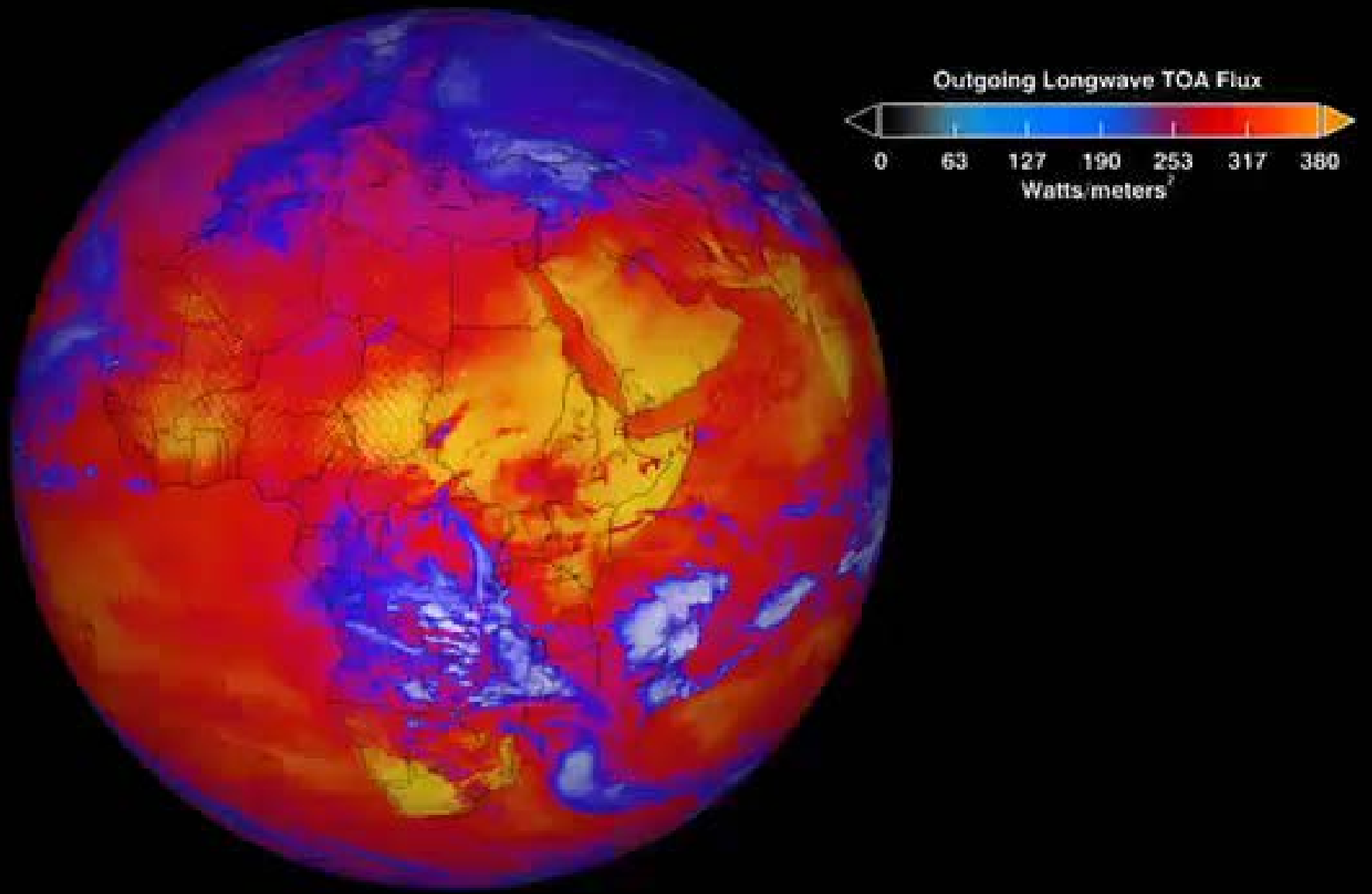


The Rodney & Otamatea Times
WAITEMATA & KAIPARA GAZETTE.
PRICE—10s per annum in advance
WARKWORTH, WEDNESDAY, AUGUST 14, 1912.
3d per Copy.

Science Notes and News.

COAL CONSUMPTION AFFECTING CLIMATE.

The furnaces of the world are now burning about 2,000,000,000 tons of coal a year. When this is burned, uniting with oxygen, it adds about 7,000,000,000 tons of carbon dioxide to the atmosphere yearly. This tends to make the air a more effective blanket for the earth and to raise its temperature. The effect may be considerable in a few centuries.


Outgoing Longwave TOA Flux
0
63
127
190
253
317
380
Watts/meters²