

Climate Disinfo, Anti-Science, & the Facts

College of Complexes – Sept. 26, 2026

Tom Coleman, Education Chair, Climate Reality Chicago Metro



Climate Belief



Climate Disinformation



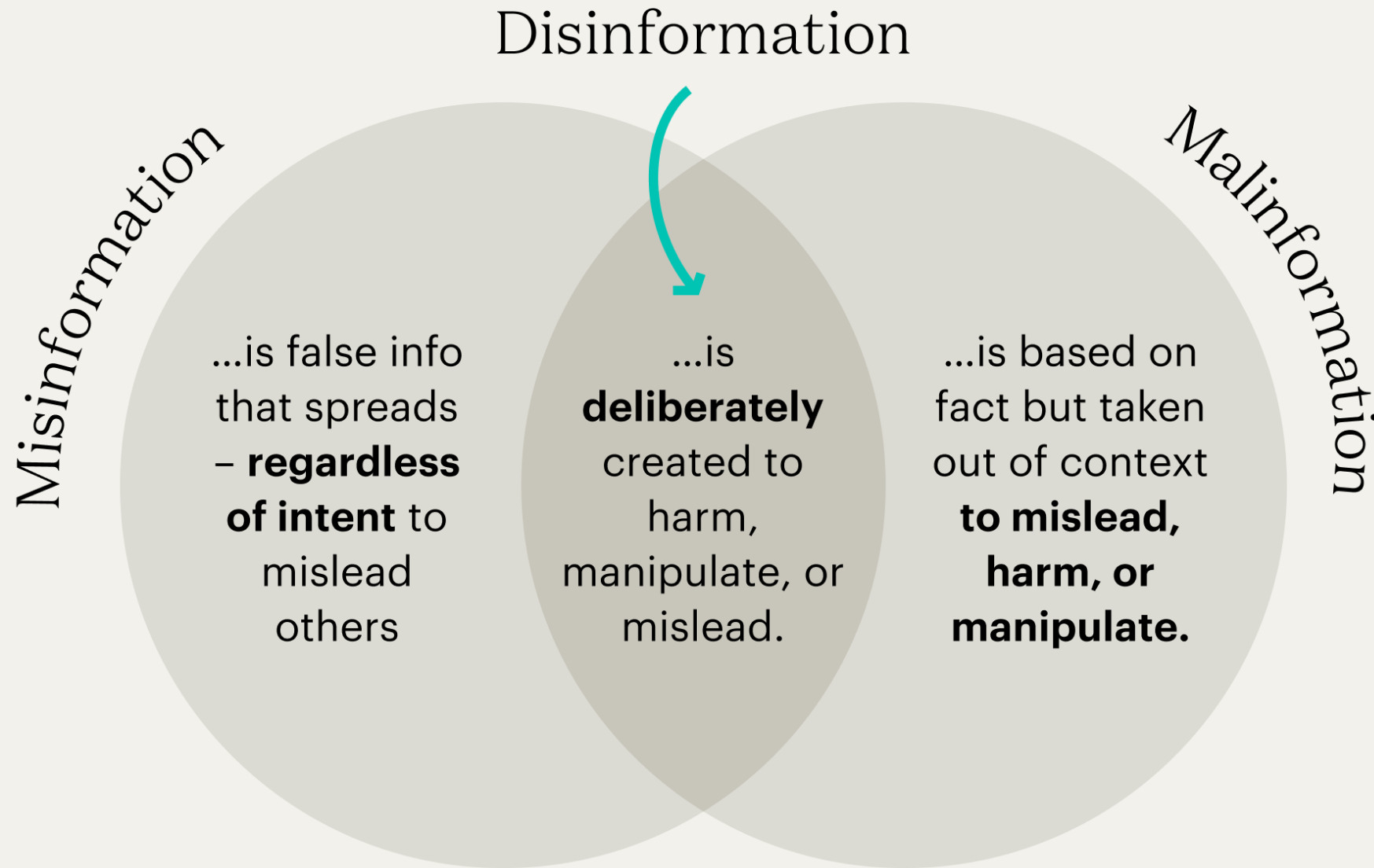
Climate Journey

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American's Belief in Climate Change

Group	Percent	Description
Alarmed	25%	Very concerned, wants strong action now
Concerned	27%	Believes climate change is real and serious, but less engaged
Cautious	17%	Think it may be happening but uncertain about details
Disengaged	10%	Rarely thinks about it
Doubtful	10%	Skeptical about severity or human causes
Dismissive	11%	Rejects climate science and often opposes action

Source: Yale/George Mason Research



Source: cisa.gov and First Draft

Climate Misinformation, Disinformation, Malinformation

Common Beliefs Leading to Misinformation or Disinformation

1. Earth's temps have always changed. Climate change is a hoax.
2. It's the sun, volcanoes, nature. People aren't causing climate change.
3. Carbon dioxide (CO₂) is NOT bad for the planet. CO₂ is needed for life.
4. Climate science is unsettled and scientists are divided on this issue.
5. It's about the money. Climate change is pushed by scientists for money and control.
6. U.S. states are not seriously producing clean energy.
7. Clean energy is expensive. It is also intermittent energy – can't depend on it!
8. Clean energy can never replace fossil fuels at the scale.
9. If climate change is real, it won't be that bad – humans will adapt!
10. Nothing the U.S. does matters – look at Chinese emissions.
11. It is too late for the U.S. and the people on Earth. We're doomed anyway!

Fossil Fuel Truth & Lies

TRUTH

- **1977 Exxon: We have 5 to 10 years to make hard decisions.**
“Present thinking holds that man has a time window of 5 to 10 years before the need for hard decisions regarding changes in energy strategies might become critical.”
- **1978 Exxon: Scientists agree that a temp rise of 3.6° F (2.0° C) to 5.4° F (3.0° C) would significantly alter the biosphere.**
“There is unanimous agreement in the scientific community that a temperature increase of this magnitude [2–3° C] would bring about significant changes in the earth’s climate, including rainfall distribution and alterations in the biosphere.”
- **1982 Exxon: Doubling CO₂ would bring 5.4° F (3.0° C). We now have a scientific consensus.**
“Our best estimate is that doubling CO₂ would cause a global temperature rise of 3.0 °C ± 1.5 °C... Over the past several years, a clear scientific consensus has emerged regarding the expected climatic effects of increased atmospheric CO₂.”

LIES

- **1989 Exxon:** “The role of greenhouse gases is not well understood.”
- **1997 Exxon:** “There is a lot we really don’t know about how climate change works...we have time.”
- **1998 API:** “Victory will be achieved when average citizens understand the uncertainties in climate science.”

Source: Harvard University Study (2023) found that Exxon’s internal climate models in the 1970s–80s were as accurate as independent academic and government predictions.

Model for Fossil Fuel Disinformation

“Doubt is our product since it is the best means of competing with the ‘body of fact’ that exists in the minds of the general public. It is also the means of establishing a controversy.”

Tobacco Executive

Attributed to Brown & Williamson 1969

“Disinformation is a plague that now threatens us all. It is the #1 threat our civilization faces in the years ahead.”

World Economic Forum



“The truth is a fog, in which one man sees the heavenly and the other sees a flying elephant.”

- Terry Pratchett

Illusory Truth Effect

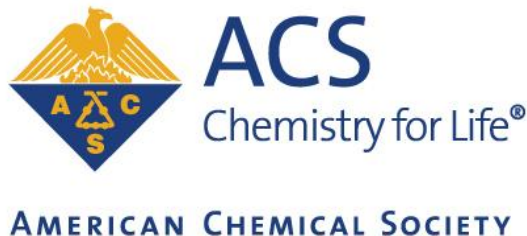
- Purveyors of disinformation turn our basic instincts against ourselves. This is called the *Illusory Truth Effect*. It says:
“The more information is repeated, even if it a lie, the more likely that people will accept it as truth, even if it is false information.”
- Lies are 70% more likely to be retweeted than true stories
- Those lies routinely reach 10+ times as many people as the truth.
- When our instincts drive us to correct the lie, this is exactly what the forces of disinformation want.
- Social media algorithms amplify this effect and feed even more of the same back to you.

What Do Scientists Say?

Year	Scientist	Finding
1824	Joseph Fourier	Earth's <u>atmosphere</u> keeps the planet warmer than it otherwise would be.
1856	Eunice Foote	Demonstrated that CO ₂ and water vapor <u>absorb heat</u> .
1859	John Tyndall	Demonstrated experimentally that CO ₂ , methane and water vapor <u>absorb infrared radiation</u> .
1956	Charles Keeling	Used precise atmospheric CO ₂ measurements showing CO ₂ <u>steadily increasing</u> . (NASA)
1960s to 1980	Climate Models	Computer models, including those from Exxon scientists, accurately <u>predict warming from rising greenhouse gases</u> ; temperature observations confirmed the trend.
2021 to 2023	IPCC scientists publish their 6 th Assessment	“It is unequivocal that human influence has warmed the atmosphere, oceans and land.” Scientific consensus is 97%.

Scientific Consensus on Climate Change

97% of actively publishing climate scientists say climate change is happening,
and it is driven by human activities.



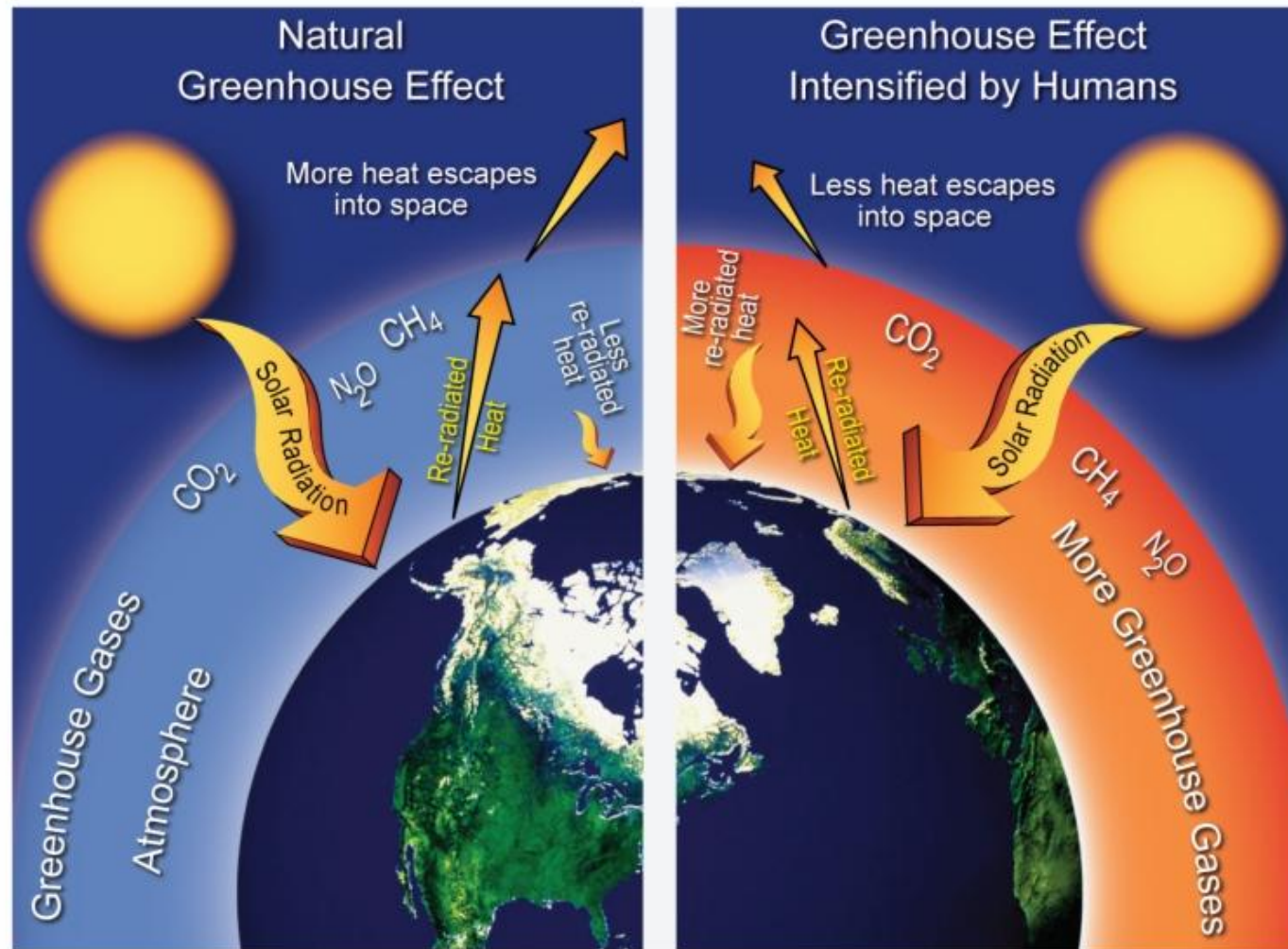
“The scientific consensus on climate change is that human activities are the primary cause of the global warming observed since the mid-20th century.”



Natural Global Warming:

1. Volcanos
2. Earth's orbit
3. Sun's output
4. Continental drift

Human Influence on the Greenhouse Effect



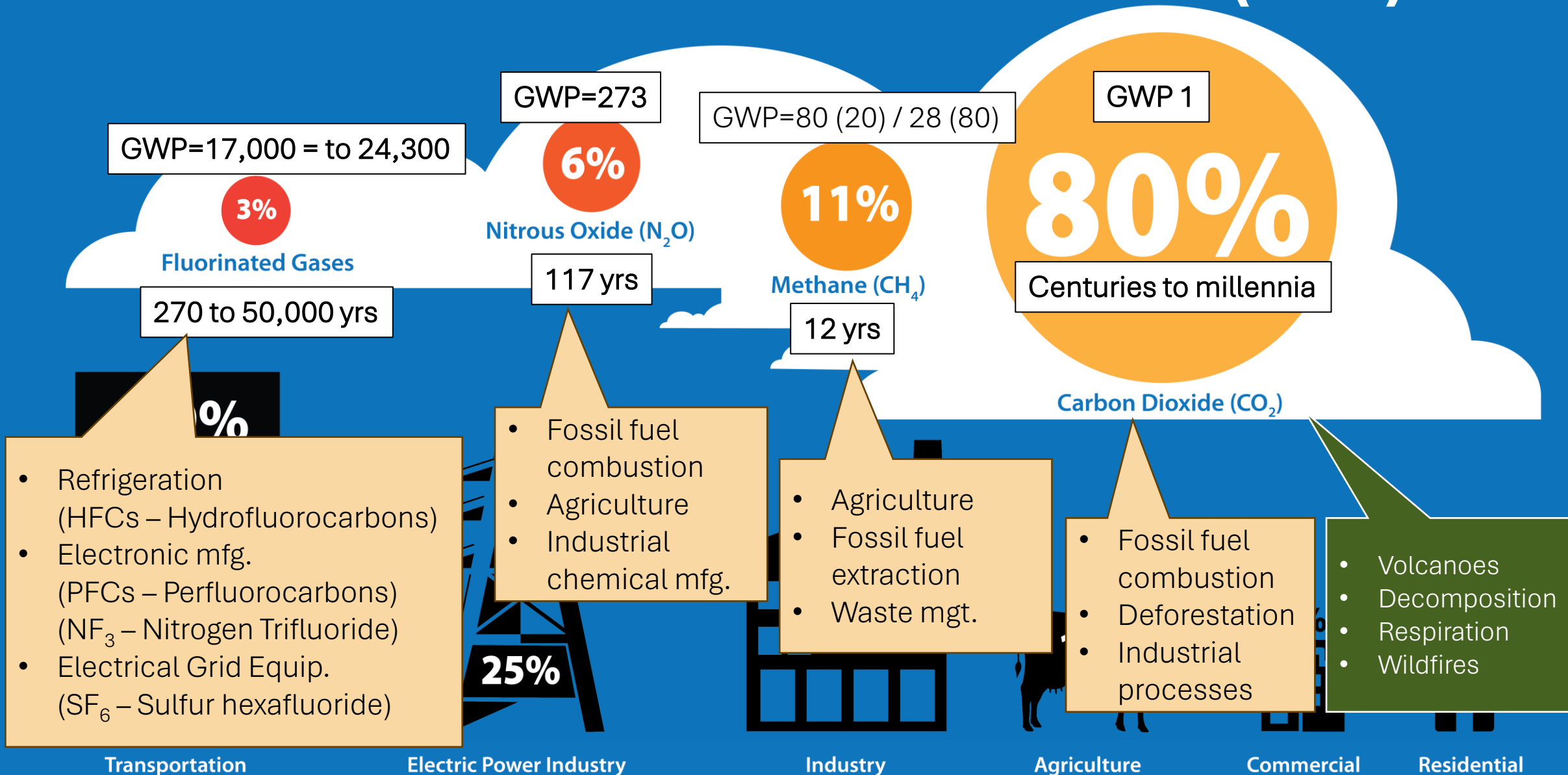
Human Global Warming:

1. Burning fossil fuels (coal, natural gas, oil, gasoline, diesel)
2. Mfg. steel, cement, chems
3. Agriculture, livestock, rice, fertilizers
4. Deforestation
5. Waste mgt.
6. Refrigeration

U.S. Greenhouse Gas Emissions (EPA)

U.S. Greenhouse Gas Emissions in 2022^a

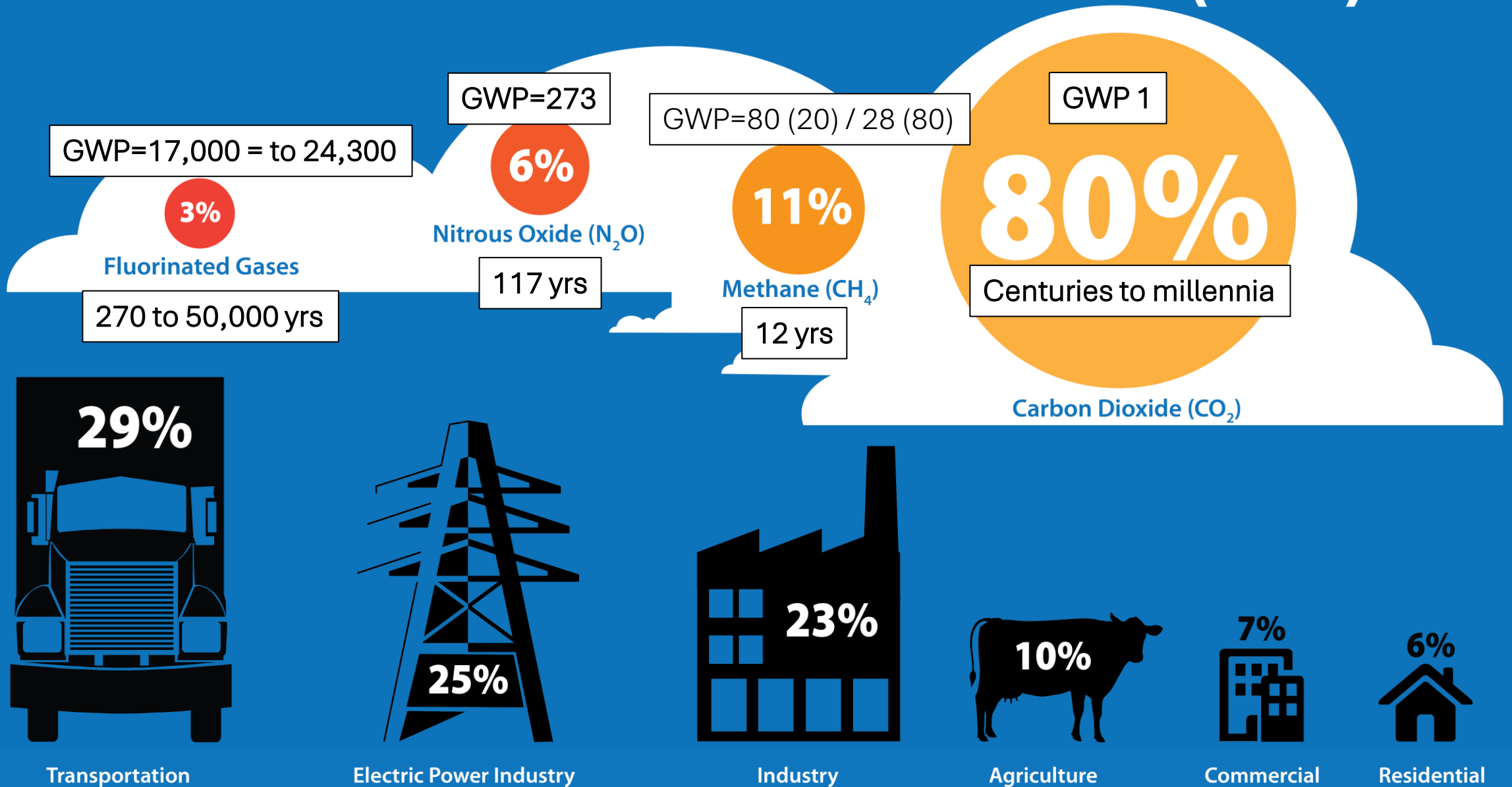
Total U.S. Greenhouse Gas Emissions by Economic Sector in 2022^{a,b}



U.S. Greenhouse Gas Emissions (EPA)

U.S. Greenhouse Gas Emissions in 2022^a

Total U.S. Greenhouse Gas Emissions by Economic Sector in 2022^{a,b}



OUR CLIMATE JOURNEY

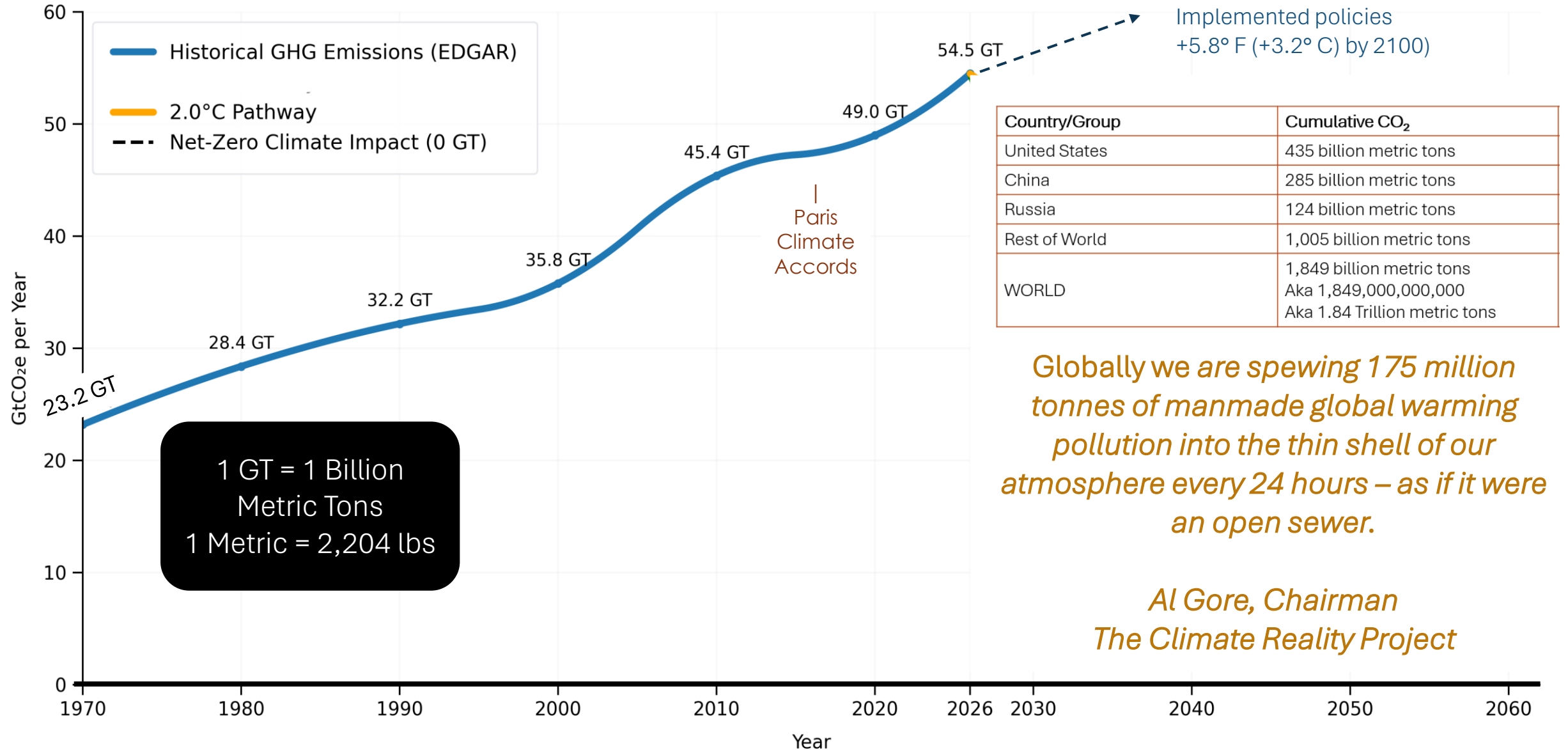
A roadmap for understanding, action, and hope.



The time is now. The choice is ours. The future is in our hands.



PROBLEM 1: HISTORIC EMISSIONS



Sources: EDGAR database to 2025, Potsdam Institute, IPCC, Boston Consulting Group Analysis

Historical values based on EDGAR. Future pathways illustrative. Residual emissions remain above zero; net-zero requires balancing removals.

We are spewing 175 million tonnes of manmade global warming pollution into the thin shell of our atmosphere every 24 hours – as if it were an open sewer



Power Plant Pollution



Industrial Pollution



Vehicle Pollution



Agricultural Pollution



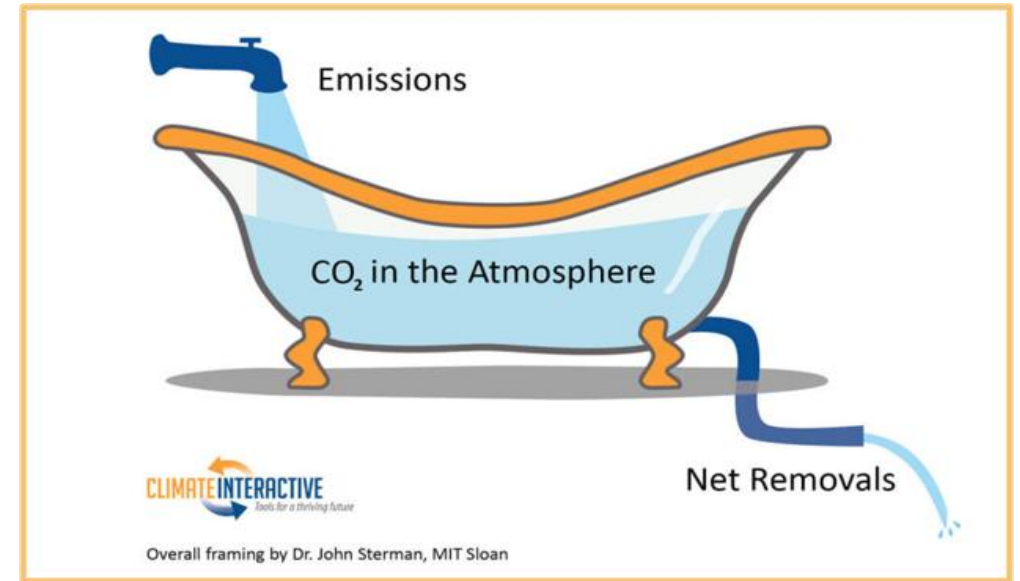
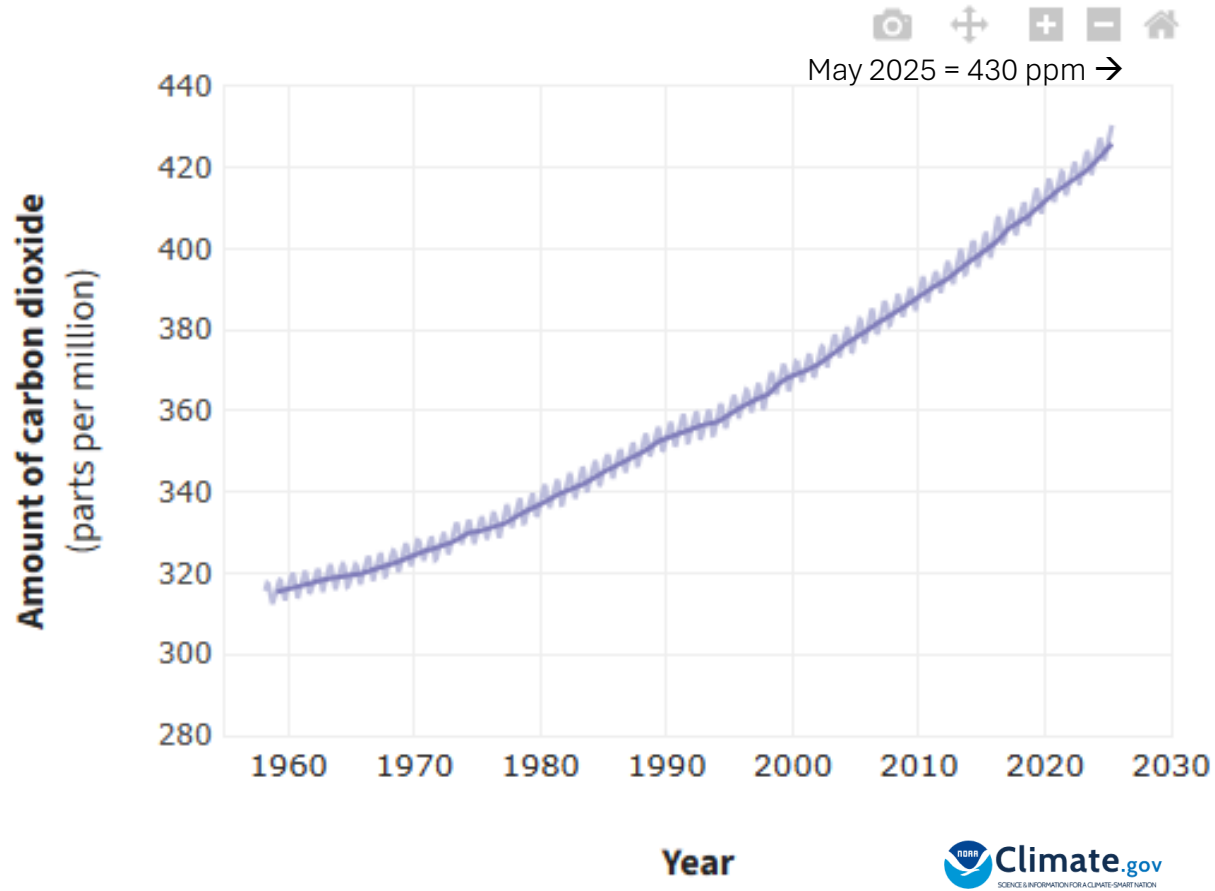
Building Pollution



Water Pollution

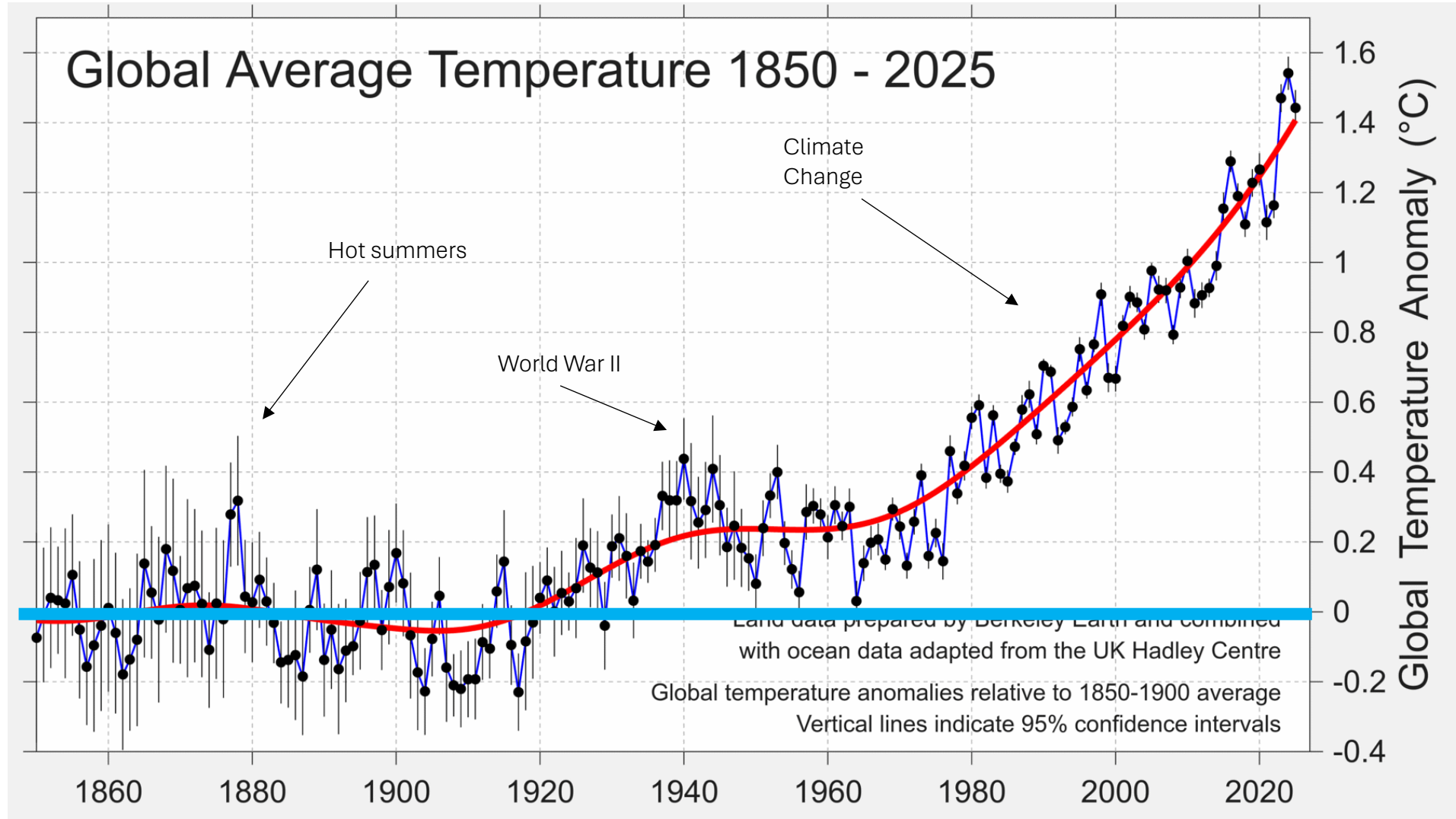
PROBLEM 2: EMISSIONS ARE BUILDING UP

ATMOSPHERIC CARBON DIOXIDE BUILD-UP



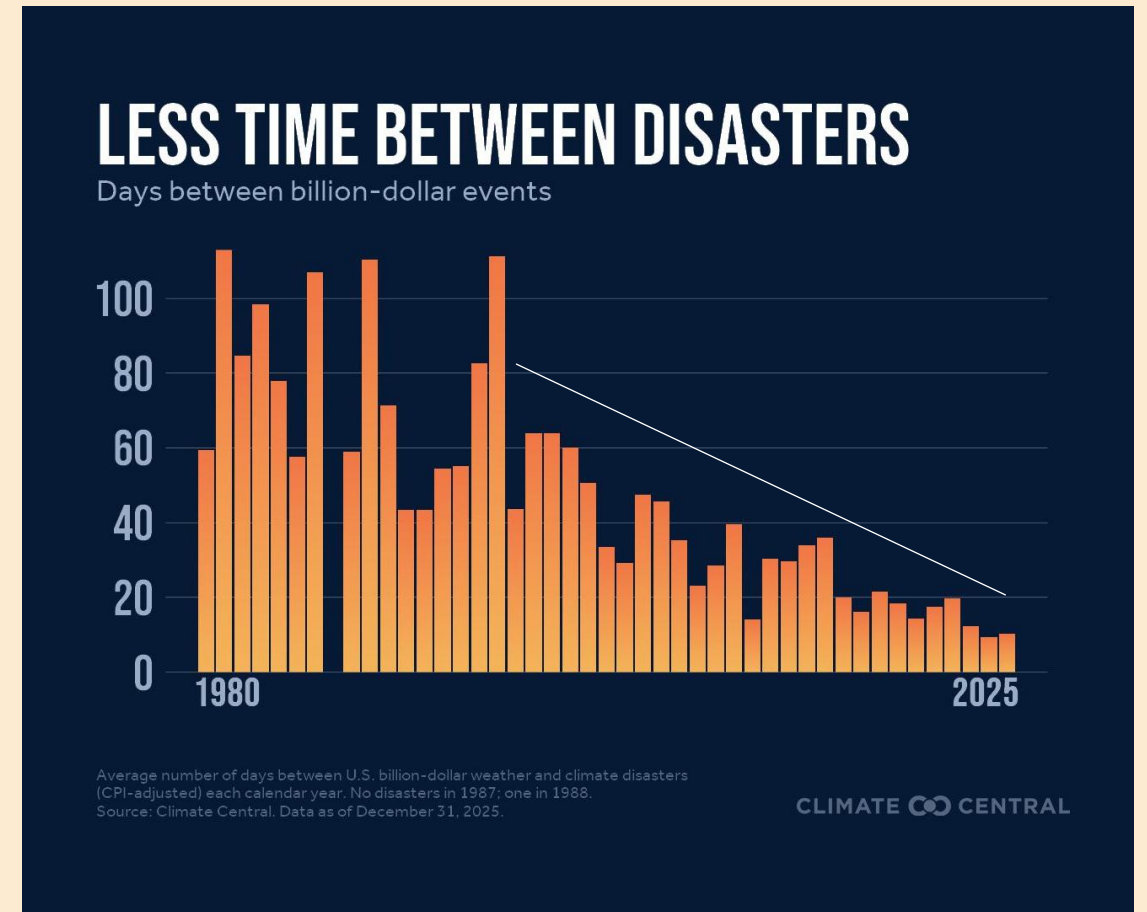
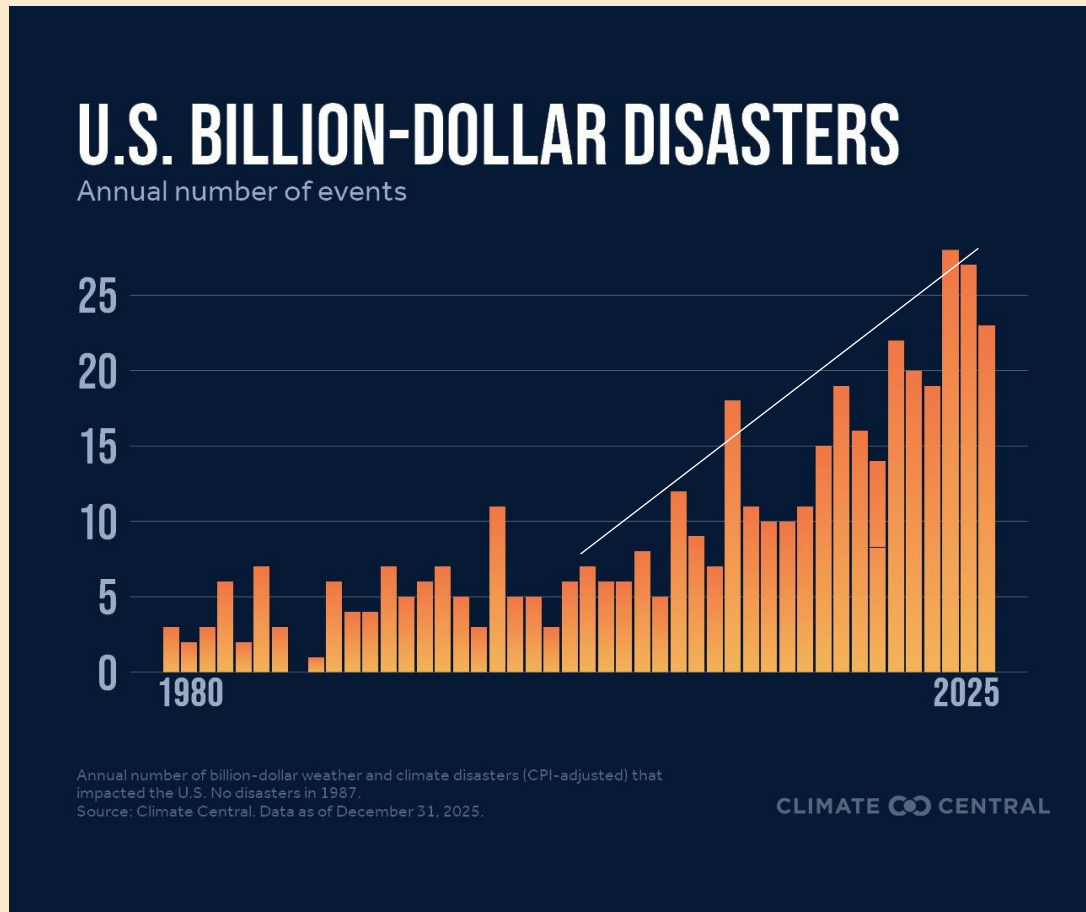
- When the tub is only 10% full, adding another gallon of water isn't very concerning.
- When the tub is 99% full, adding the same gallon may cause it to overflow.
- The gallon didn't become more powerful.
- The system became more vulnerable.

PROBLEM 3: GLOBAL TEMPERATURE INCREASES



- Number of days hotter than average doubled since 1981 (NOAA).
- Pace shows no signs of decline.
- Last 10 years have been the warmest years in history.
- Tipping Points are showing & pending.
- Net-Zero mandatory.

PROBLEM 4: GLOBAL BILLION DOLAR DISASTERS

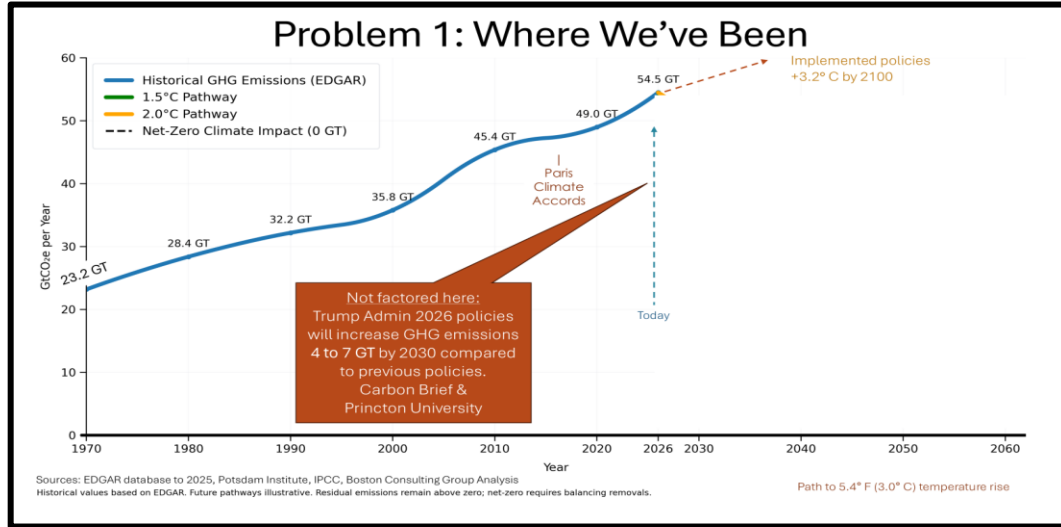


The US has sustained **438-billion-dollar** weather/climate disasters totaling over **\$3.2 trillion** in damages since 1980. [National Centers for Environmental Information & Climate Central]

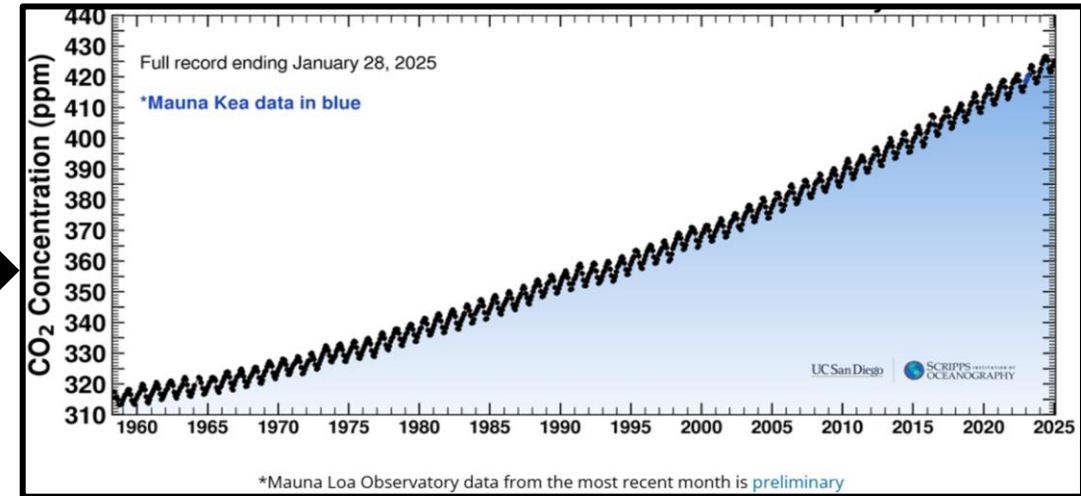
We have lost **50%** of land-based species and another **50%** loss is expected by 2100. [Nicholus Sterns]

WHERE WE'VE BEEN, WHERE WE ARE

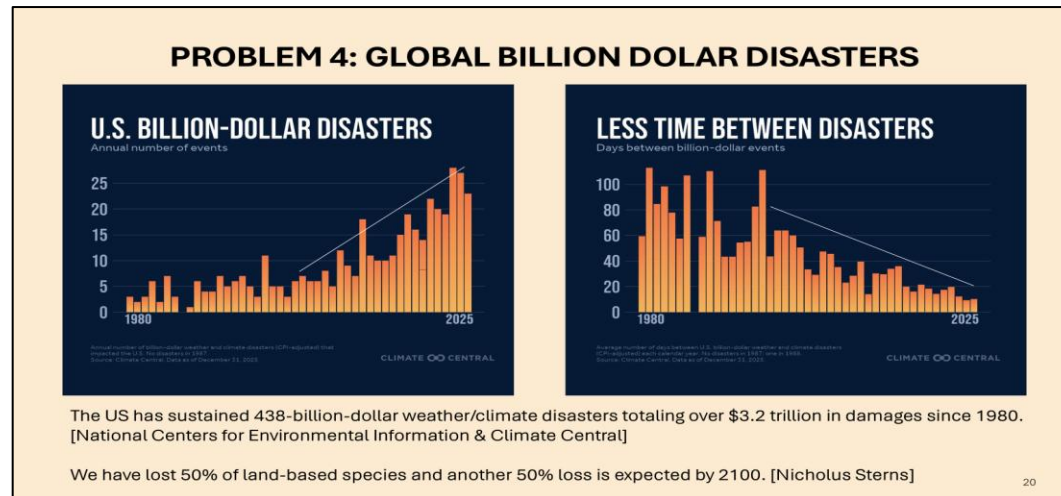
PROBLEM 1: Emissions



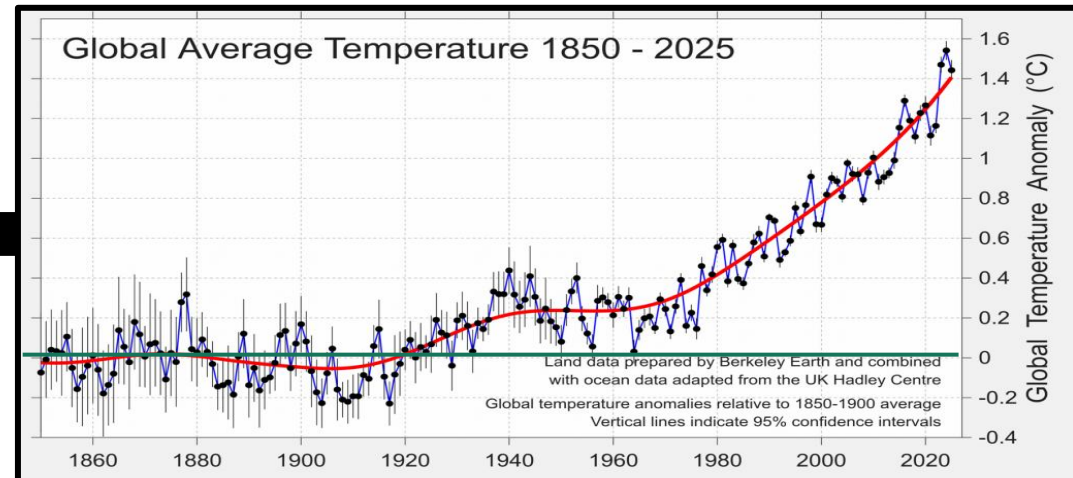
PROBLEM 2: CO₂ Accumulation



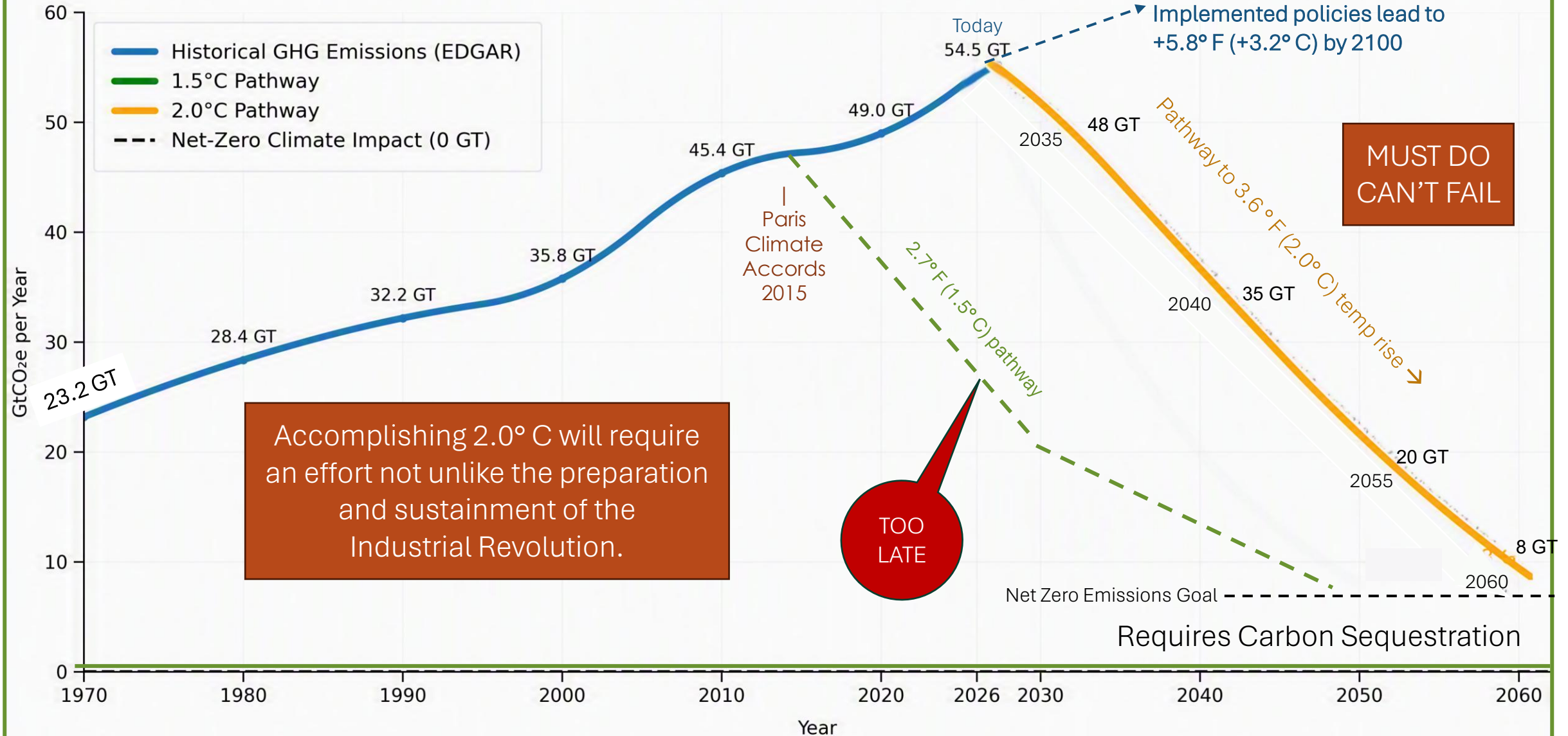
PROBLEM 4: Damage & Costs



PROBLEM 3: Temperature Impact



WHERE WE'VE BEEN, WHERE WE ARE, WHERE WE MUST GO



Sources: EDGAR database to 2025, Potsdam Institute, IPCC, Boston Consulting Group Analysis

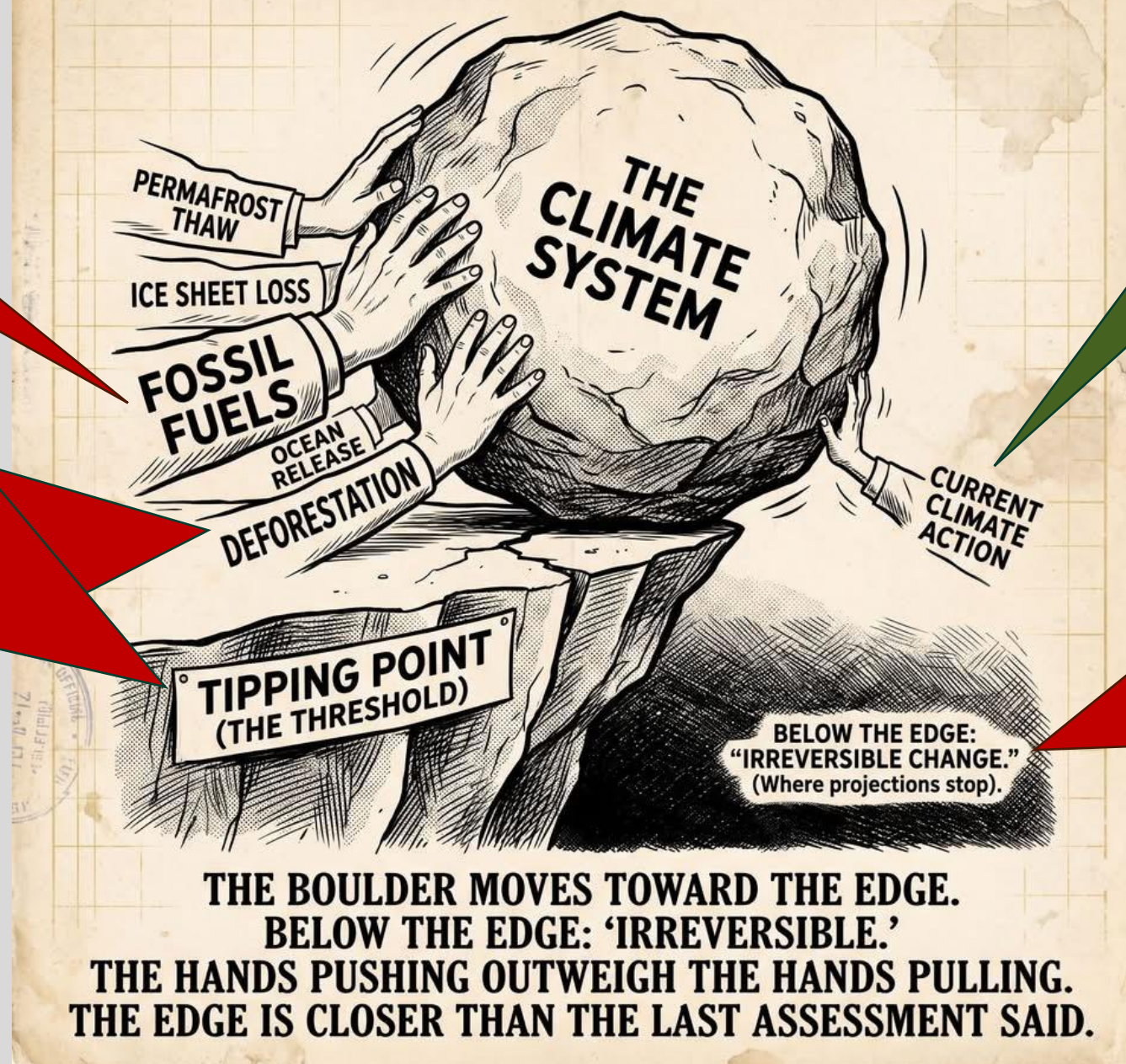
Historical values based on EDGAR. Future pathways illustrative. Residual emissions remain above zero; net-zero requires balancing removals.

Root Cause:

- Fossil Fuel Combustion
- Deforestation

Consequences:

- Global Warming
- Climate Change
- Infectious Diseases
- Glacial Melt
- Forest Fires
- Floods
- Drought
- Storm Damage
- Ocean Acidification
- Refugee Migration
- Sea Level Rise
- Famine
- Water Scarcity
- Species Extinction



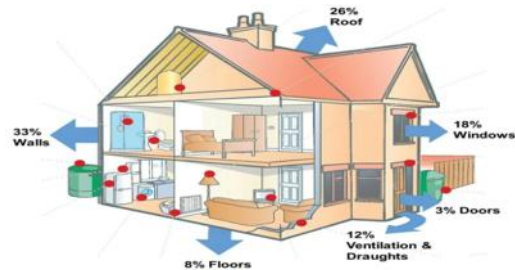
Solutions:

1. Electric Vehicles
2. Electric Buildings
3. Renewable Energy
4. Regenerative Agriculture
5. Trees & Nature-based solutions

Tipping Points:

1. Coral Reef Die-off
2. Greenland Ice Sheet Collapse
3. West Antarctic Ice Sheet Collapse
4. Permafrost Carbon Release
5. AMOC Collapse
6. Amazon Forest Dieback

Dirty Polluting to CLEAN Products



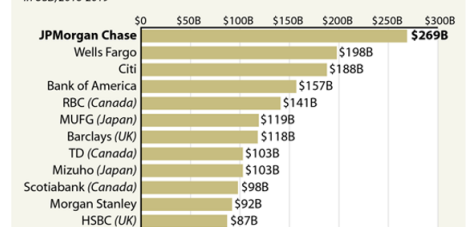
HOME INSULATION



U.S. Banks Lead Fossil Fuel Financing

Between 2016 and 2019, 35 banks doled out \$2.7 trillion for fossil fuel projects, according to a Rainforest Action Network analysis, with several U.S. banks as top financiers.

TOP BANKING INSTITUTIONS FINANCING FOSSIL FUELS



SOURCE: Banking on Climate Change 2020 report

PAUL HORN / InsideClimate News

Dirty Polluting to CLEAN Products



KEEP SOIL COVERED



REGENERATIVE AGRICULTURE



MAINTAIN LIVING ROOT YEAR ROUND



MINIMIZE SOIL DISTURBANCE



MAXIMIZE CROP DIVERSITY



INTEGRATE LIVESTOCK



2025 Fifth Third Sustainability Report

Our Corporate Responsibility Framework for Long-Term Sustainability



Enable the American Dream

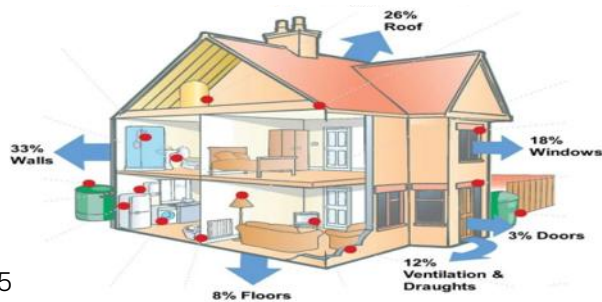


Drive Shared Growth



Build a Sustainable Future

Operate with Strong Corporate Governance

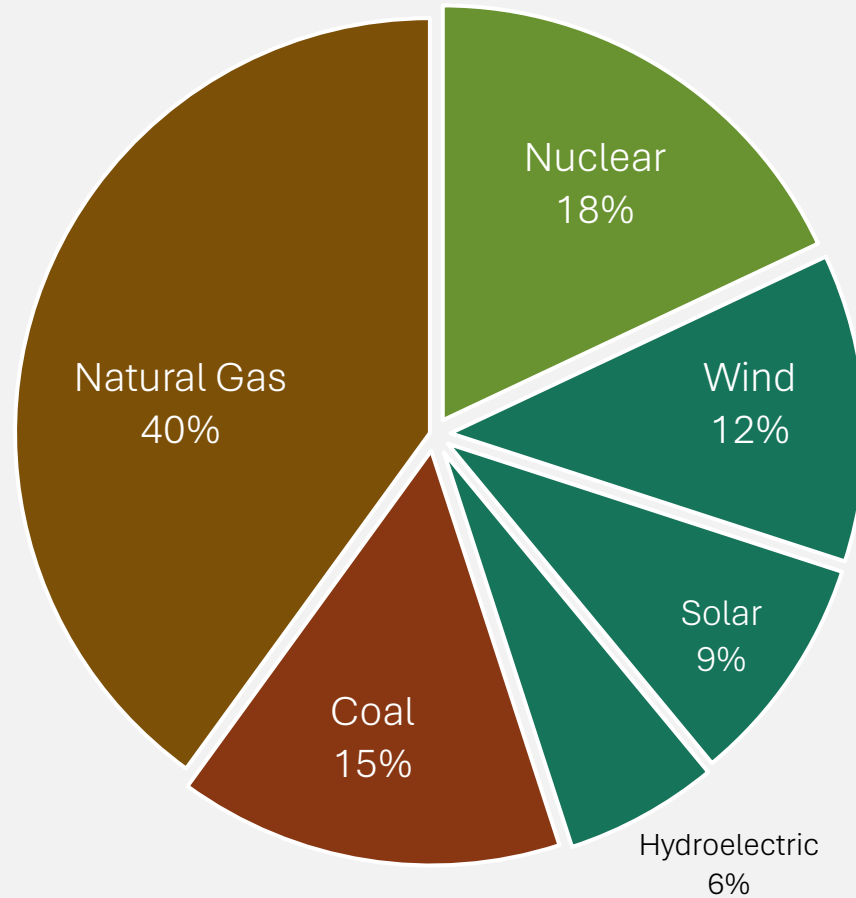


ECO HOME INSULATION

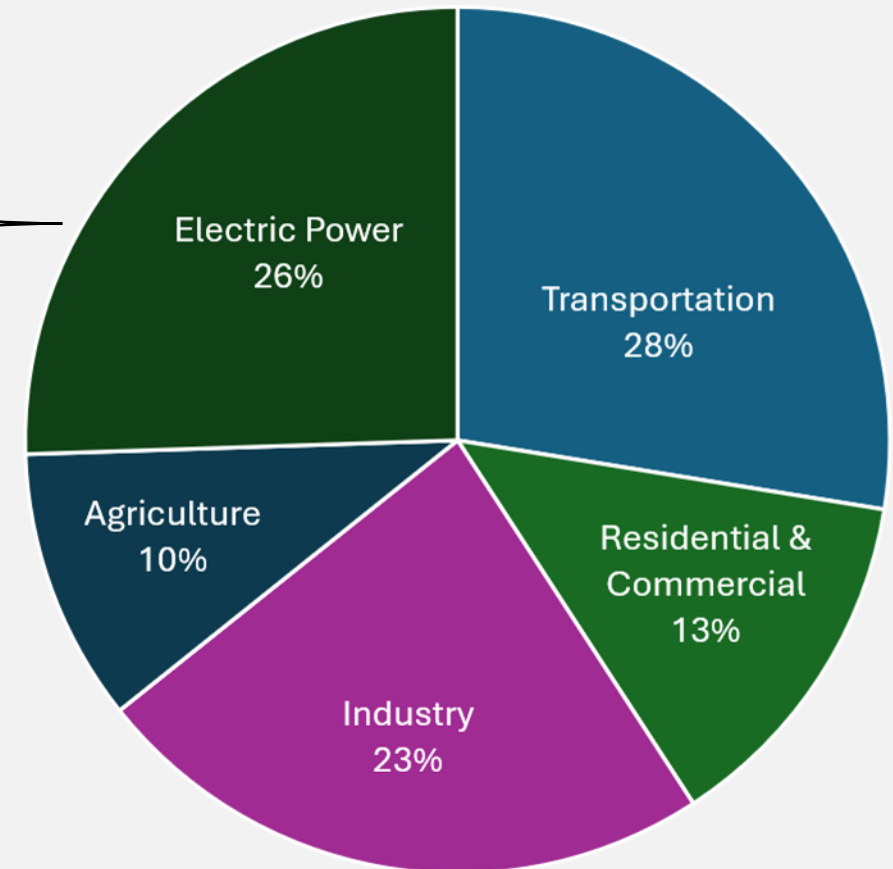


U.S. Emissions by Source

U.S. Electric Emissions by Source – 43% Clean, 27% Renewable

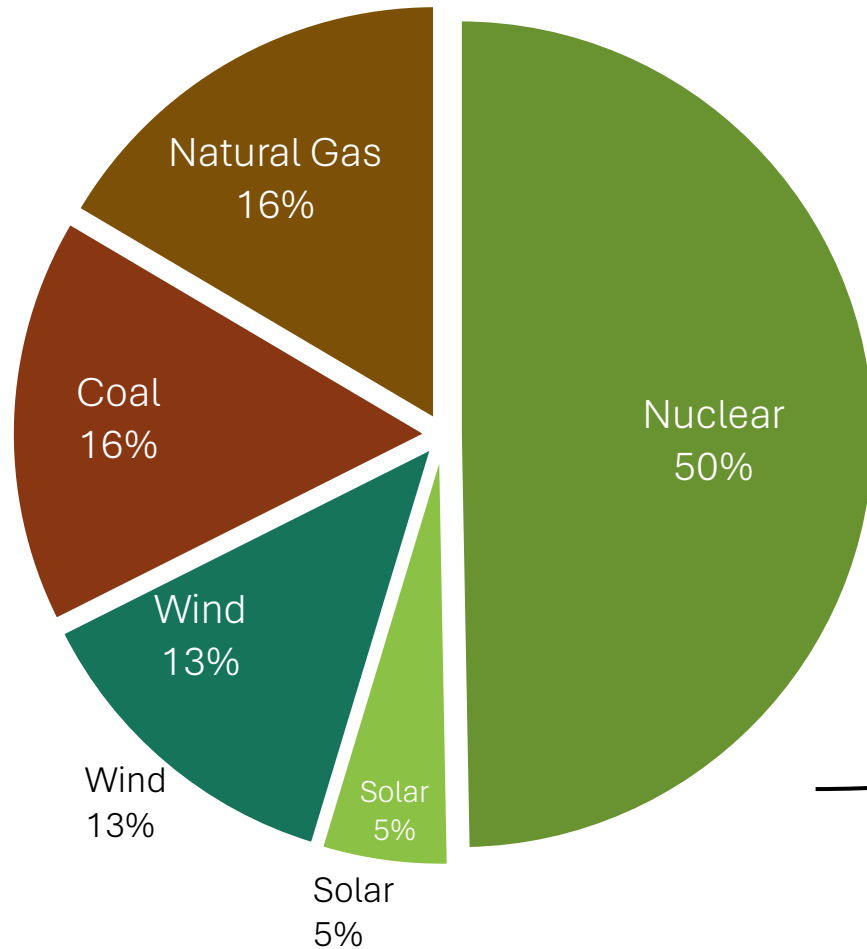


U.S. Emissions by Source

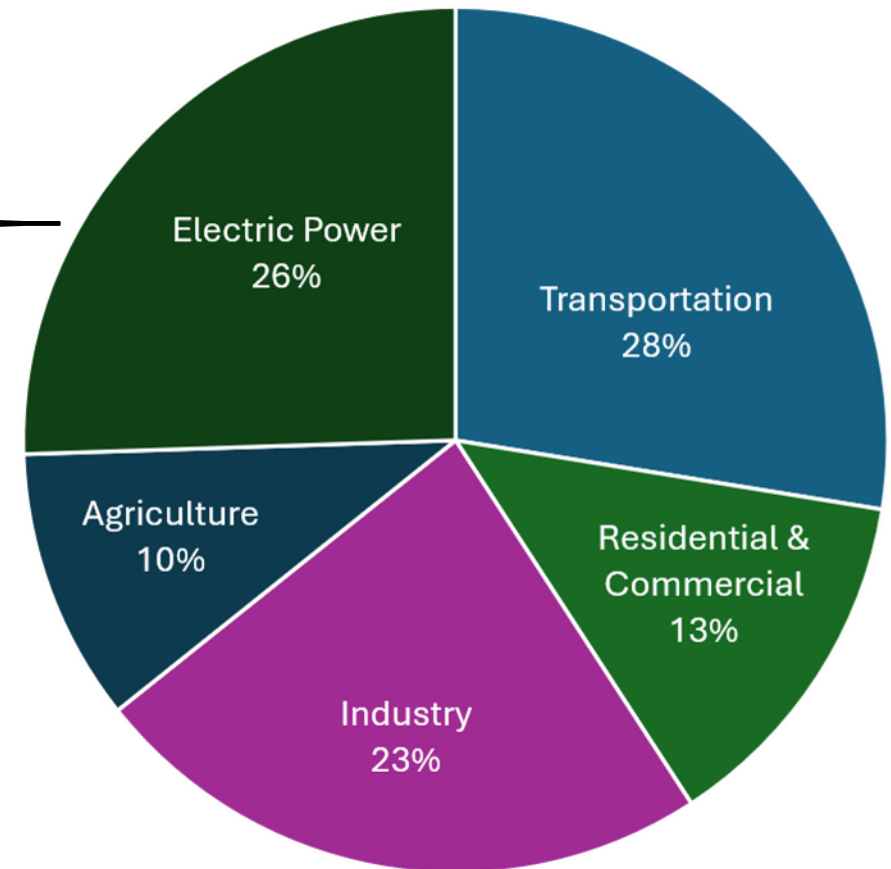


Illinois Emissions by Source

IL Electric Emissions by Source – 67% Clean, 17% Renewable



U.S. Emissions by Source

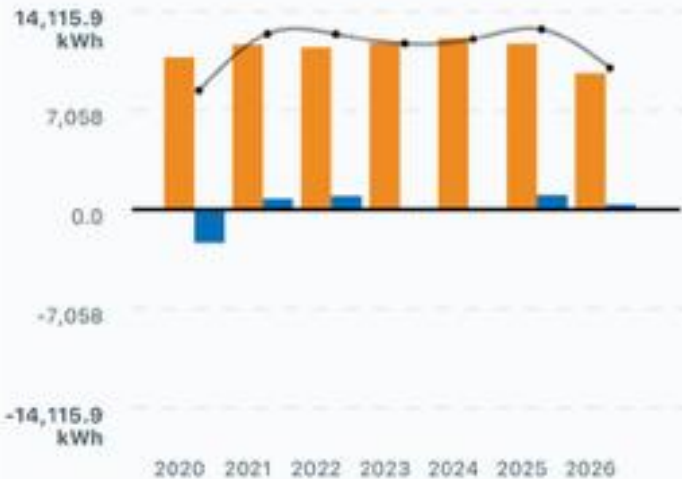


Source: Environmental Protection Agency

Coleman Family Rooftop Solar System 2020 to 2026 (09/21/26)

2020 - 2026

⚡ Home Consumption	80,306.2 kWh
☀ Solar Production	79,720.4 kWh
🔌 Net Grid Usage (Import)	585.8 kWh



Lifetime Energy Mix



☀ Solar Energy	79,720.4 kWh
🏠 Home Usage	80,306.2 kWh

Lifetime Savings



\$8083.65
estimated cost savings



62 Tons
CO2 emissions avoided



939 Trees
planted and fully grown



139857 Miles
not driven

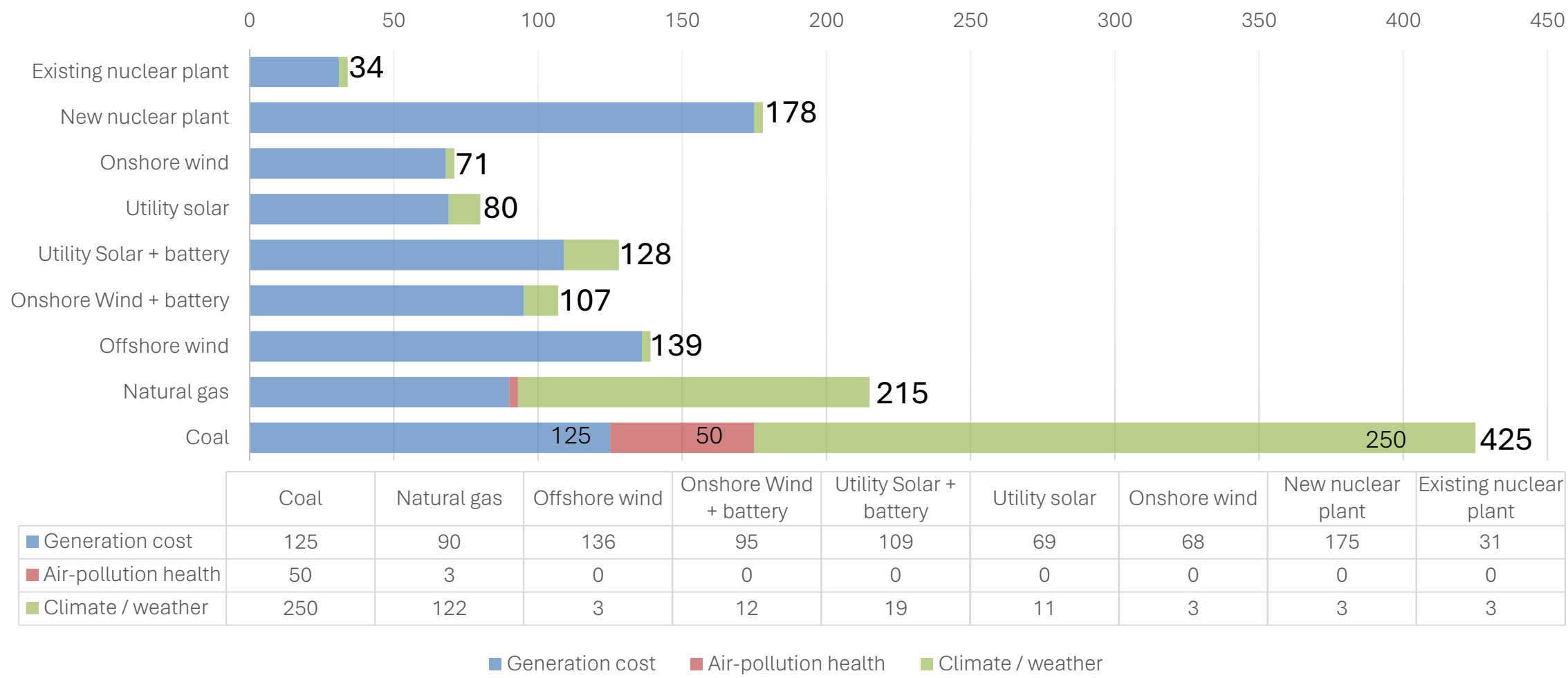


6342 Gallons
not used

We have been drive EVs since 2011 – we have two EVs

What Electricity Really Costs / MWh

Approximate cost per MWh: generation + direct air-pollution health damage + climate damage
“What does it cost society to generate one MWh of electricity from different utility-scale sources, including health and climate costs?”

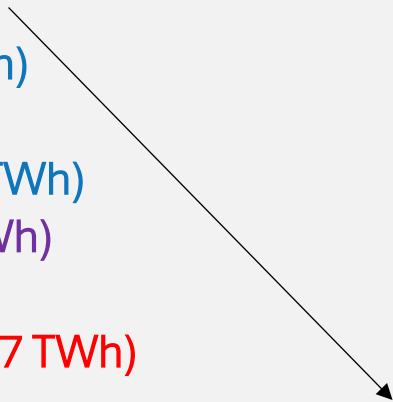


Sources: Lazard, LCOE+ v19.0 (2026): generation costs and existing nuclear; Lazard LCOE+ 2024: residential rooftop solar; NREL/NLR Life Cycle Assessment Harmonization: lifecycle GHG intensities; U.S. EPA: Social Cost of Greenhouse Gases and Benefits-per-kWh air-pollution health methodology. Health figures shown are screening-level estimates; climate damages use approximately \$250 per metric ton CO₂e.
Note: Existing nuclear is shown because it is the relevant comparison for Illinois' operating fleet; new-build nuclear is much more expensive. Battery cases include additional lifecycle emissions from storage.

Renewable Energy – Good For All States

Top 15 States by Volume of Renewable Electricity

1. Texas (166.5 TWh)
2. California (108.8 TWh)
3. Washington (71.1 TWh)
4. Iowa (46.2 TWh)
5. Oklahoma (40.1 TWh)
6. Oregon (39.7 TWh)
7. New York (38.3 TWh)
8. Kansas (30.0 TWh)
9. Illinois (28.3 TWh)
10. Colorado (24.4 TWh)
11. Florida (21.8 TWh)
12. New Mexico (19.6 TWh)
13. Minnesota (19.1 TWh)
14. Arizona (18.9 TWh)
15. North Carolina (18.7 TWh)

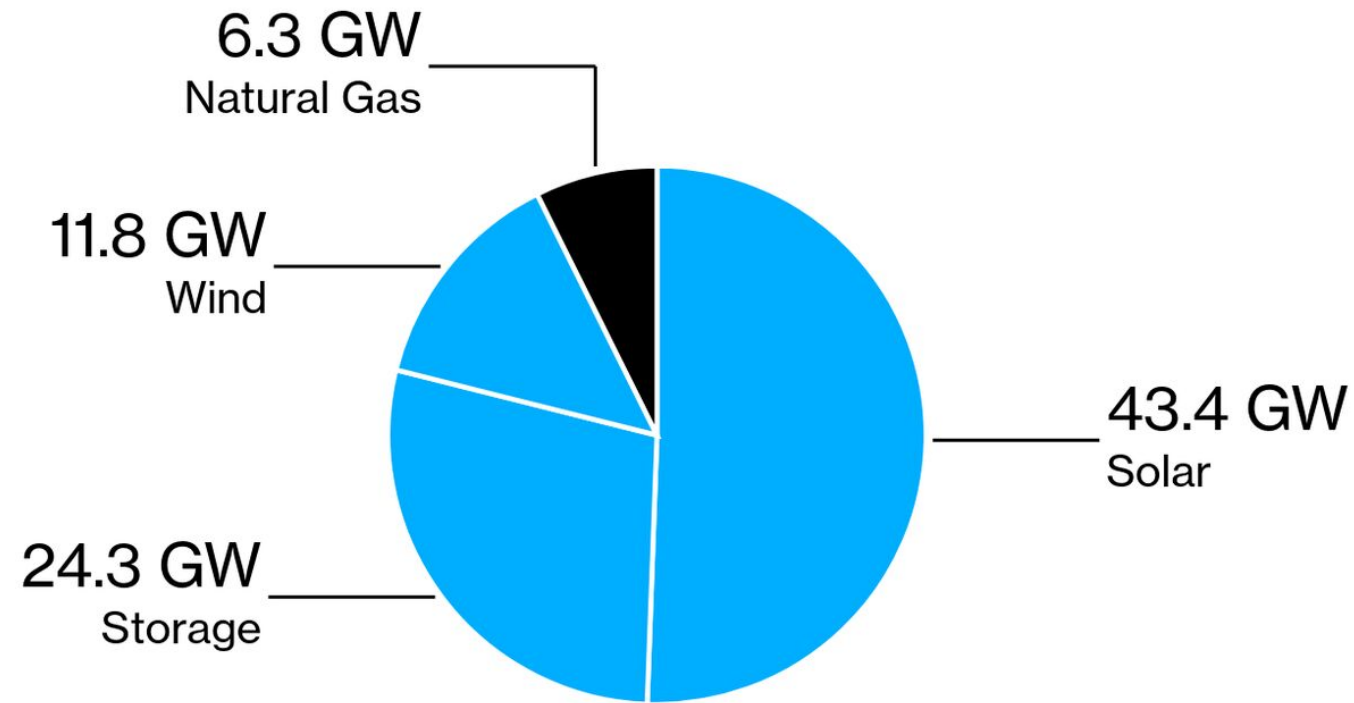


Top 15 States by Percentage of Electricity Generated

1. Vermont: 99.8% (Solar, Hydro, Biomass)
2. South Dakota: 81.6% (Wind, Hydro)
3. Washington: 69.5% (Hydro, Wind)
4. Idaho: 68.3% (Hydro, Wind, Solar)
5. Iowa: 65.5% (Wind, Solar)
6. Oregon: 61.4% (Hydro, Wind)
7. Montana: 57.4% (Hydro, Wind)
8. Maine: 53.8% (Hydro, Biomass, Wind)
9. New Mexico: 52.7% (Wind, Solar)
10. Kansas: 52.0% (Wind)
11. California: 50.8% (Hydro, Geothermal, Wind)
12. Oklahoma: 42.7% (Wind)
13. Colorado: 41.4% (Wind, Solar)
14. Nevada: 40.2% (Solar, Geothermal)
15. North Dakota: 39.5% (Wind)
- ...
27. Illinois: 18% (Wind, some Solar) – 68% w/ Nuclear

Power Plants Planned for 2026

Nearly all of the new electricity that flows to the US grid this year is expected to come from renewable sources.

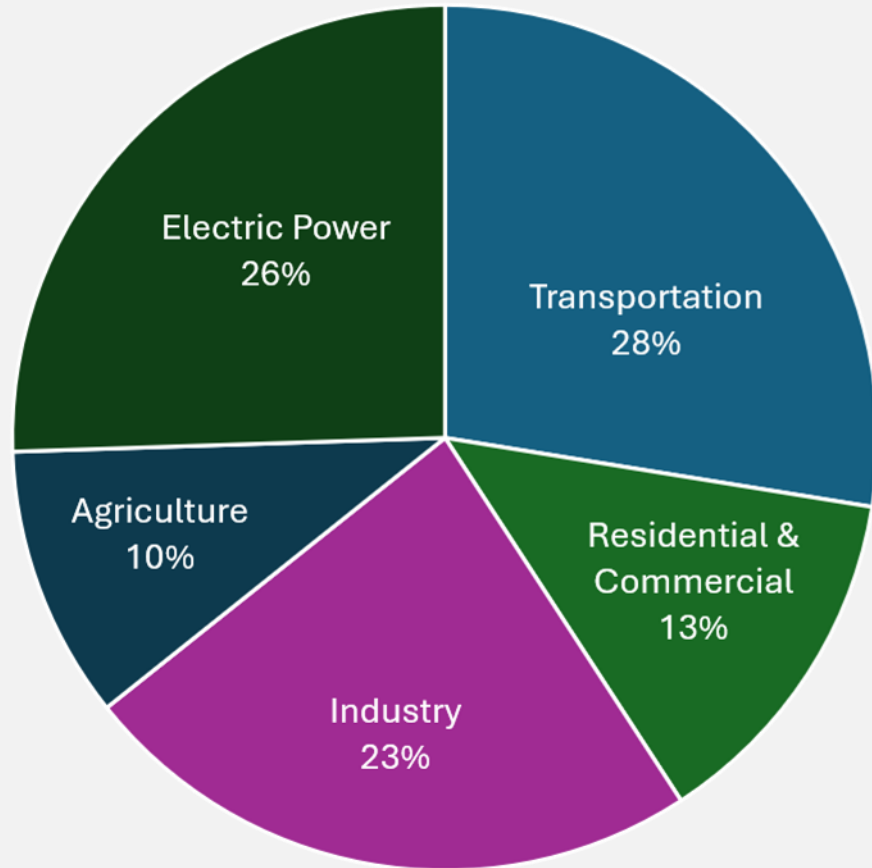


Source: Energy Information Administration

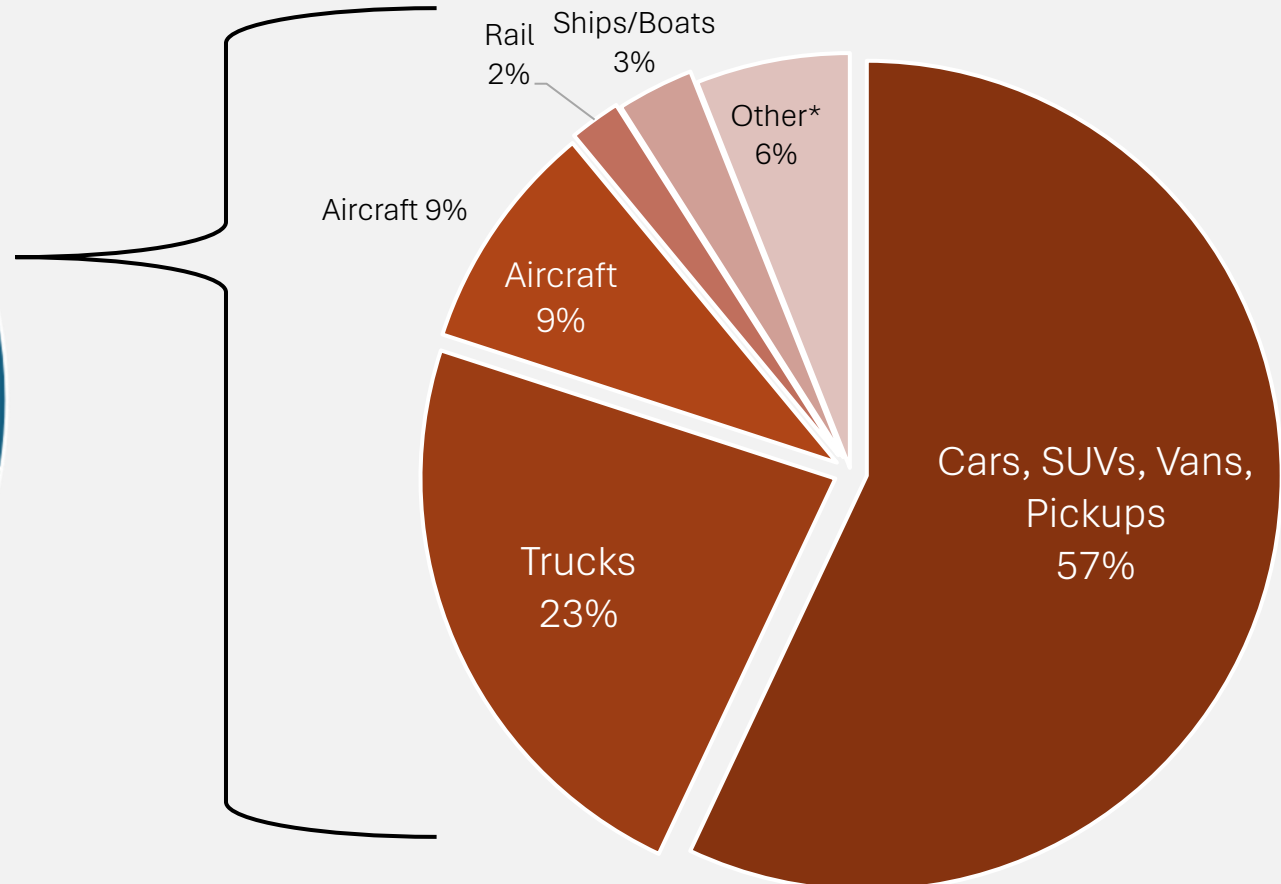
Bloomberg

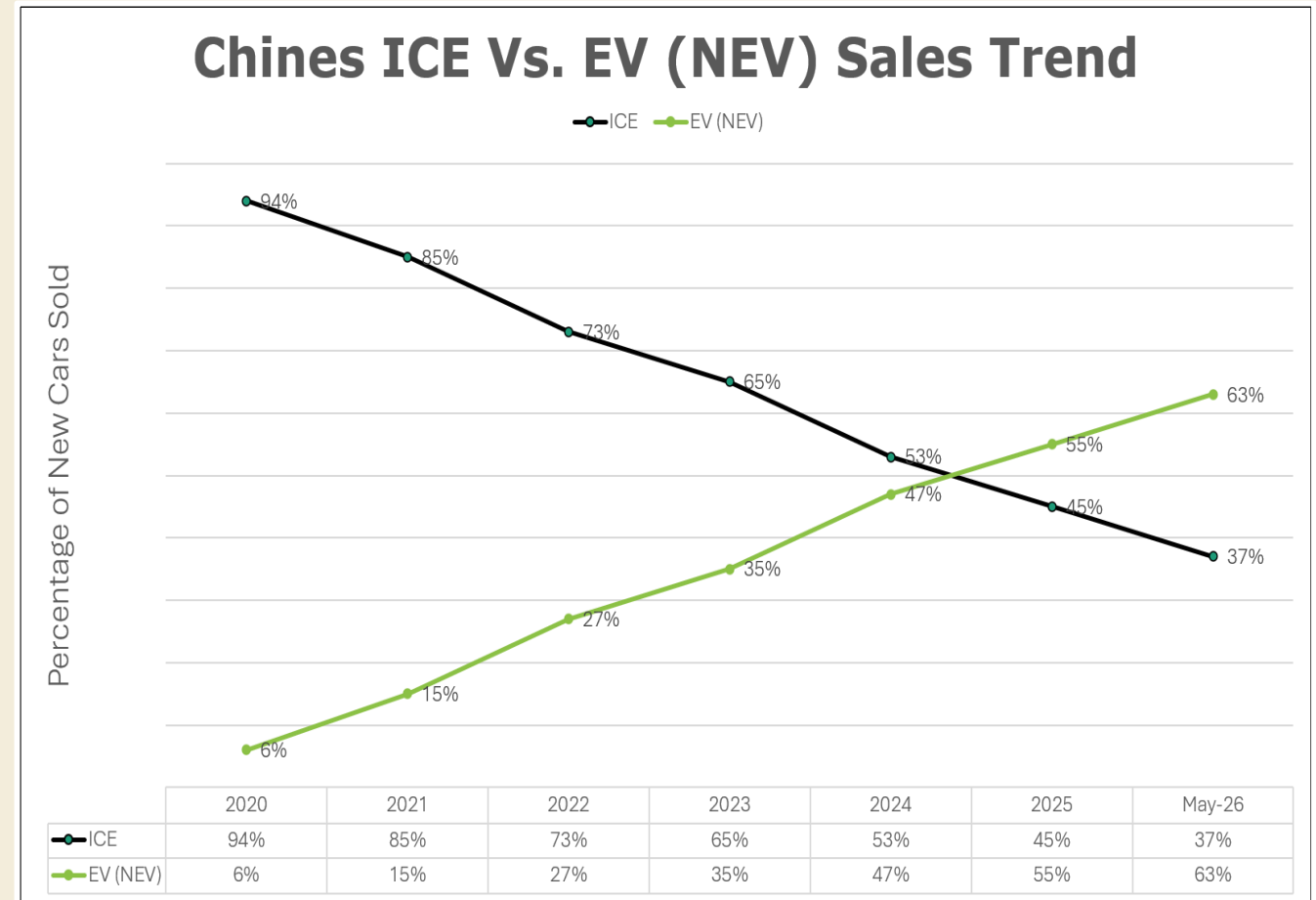
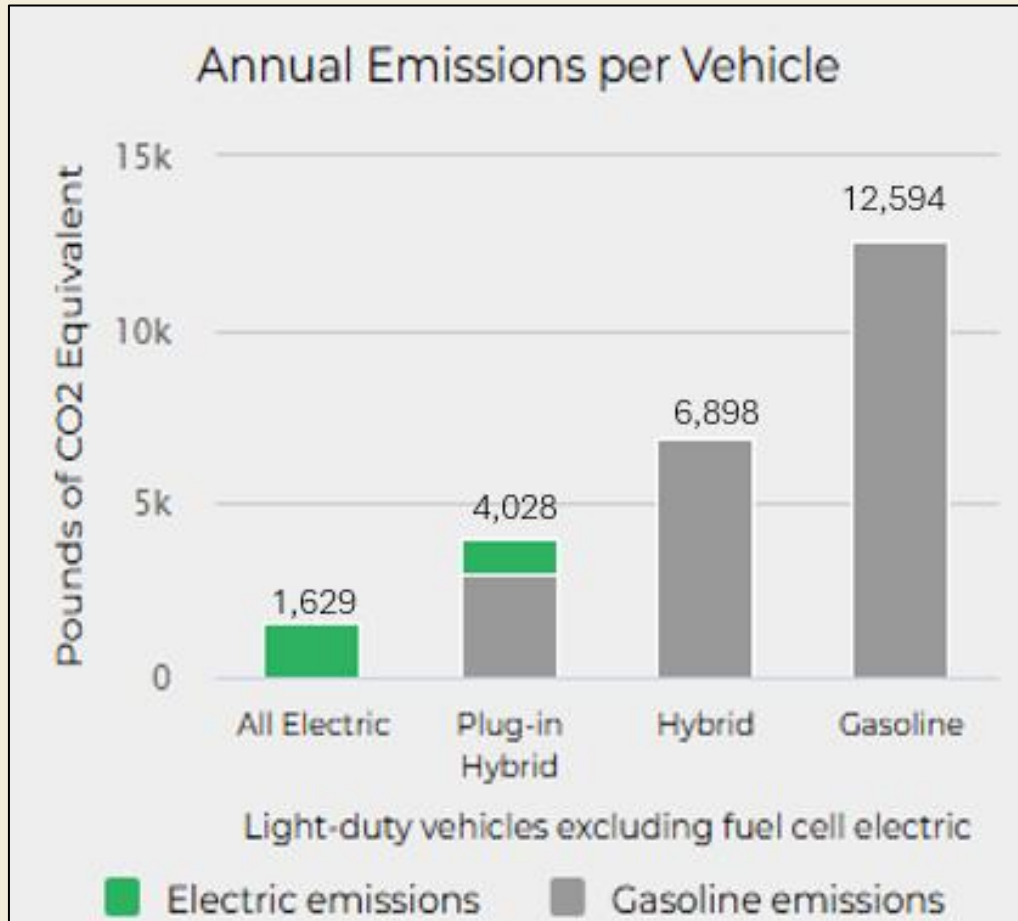
USA Transportation by Source

U.S. Electric Power by Source



Transportation Breakdown – 43% Clean, 27% Renewable

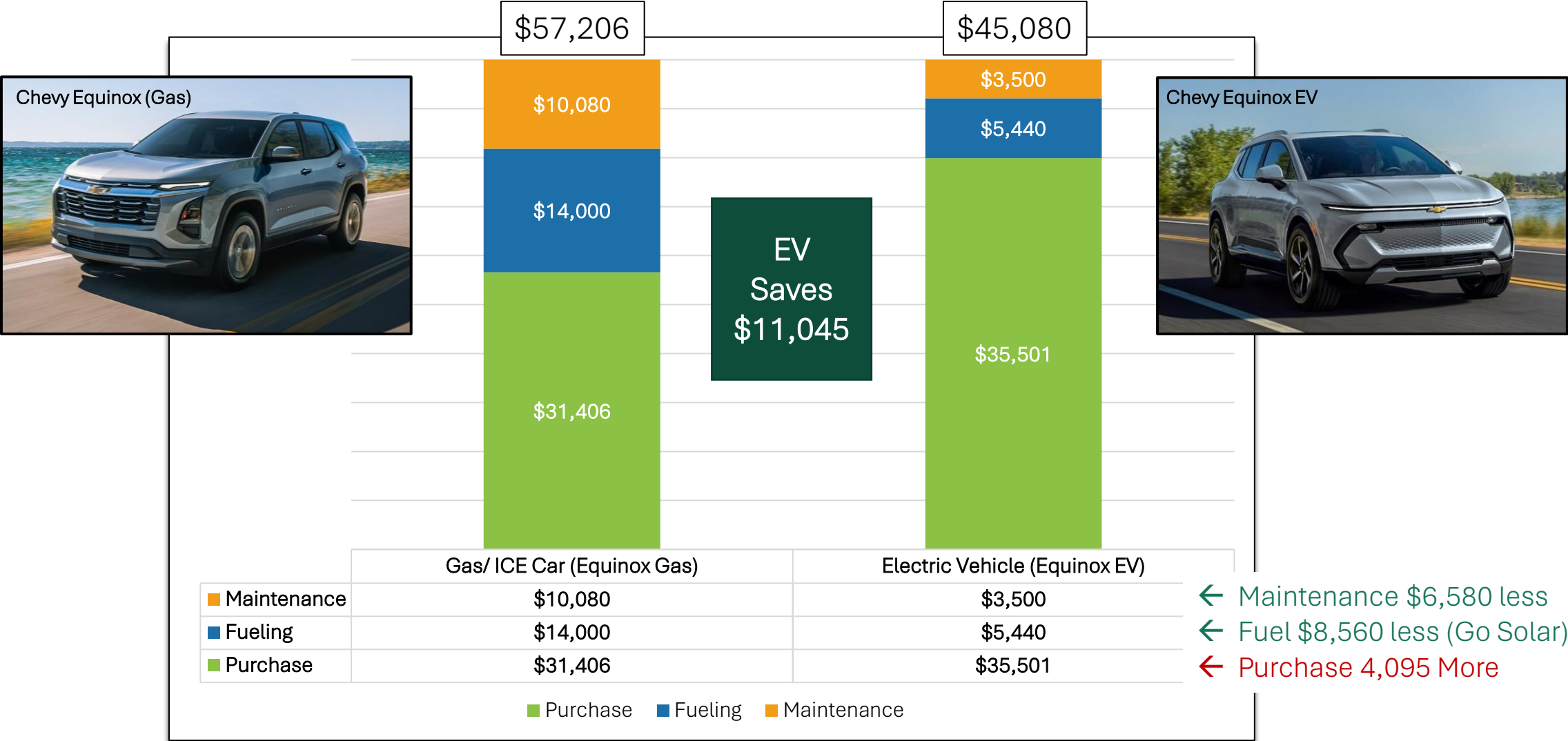




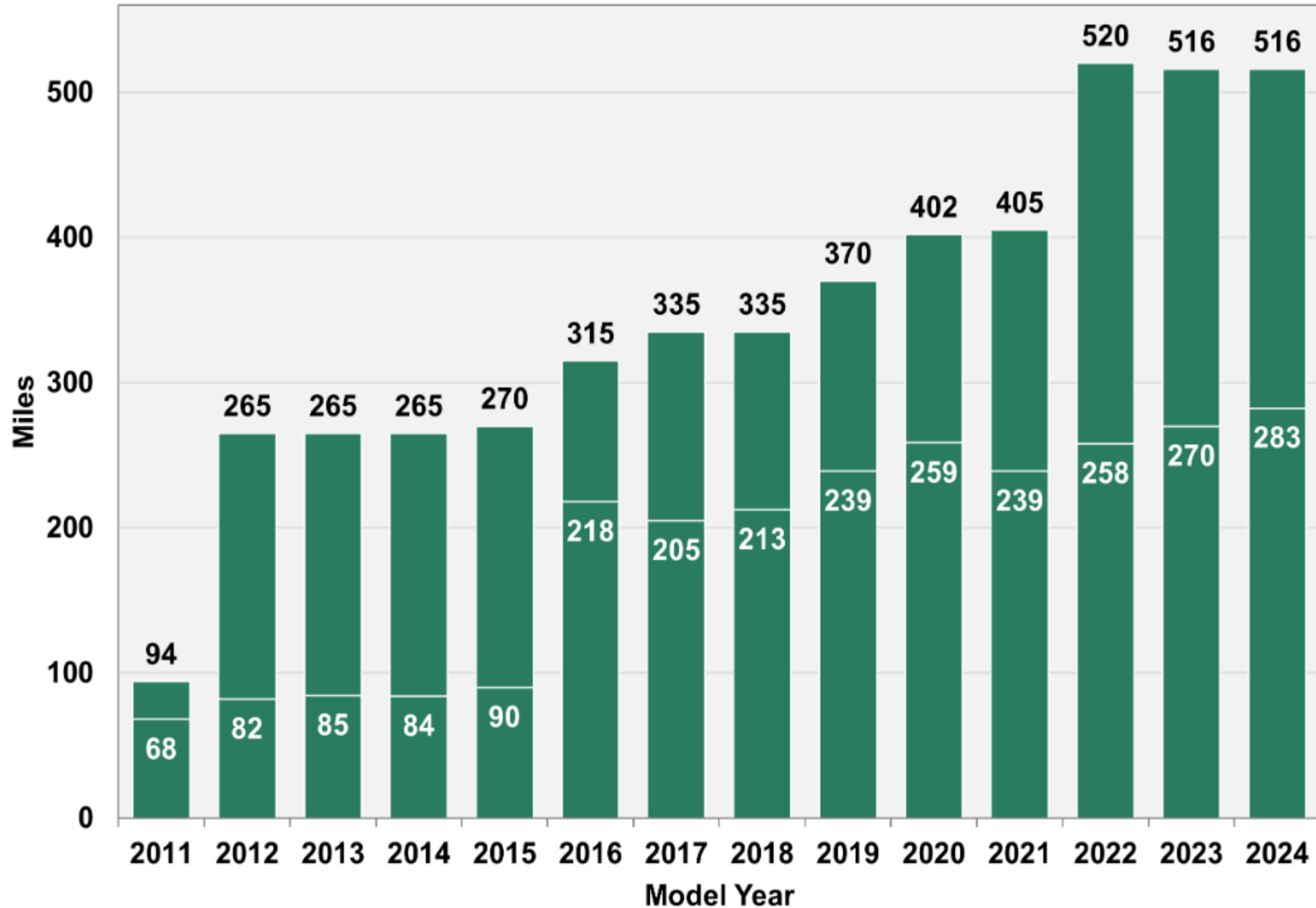
U.S.A. = 10% of new cars

- **Need 100% by 2035**
- **To achieve net-zero 2050**

Gas Car vs EV 8-Year Total Cost of Ownership



Median and Maximum Range of Electric Vehicles Offered for Sale in the United States, Model Years 2011-2024



512

310

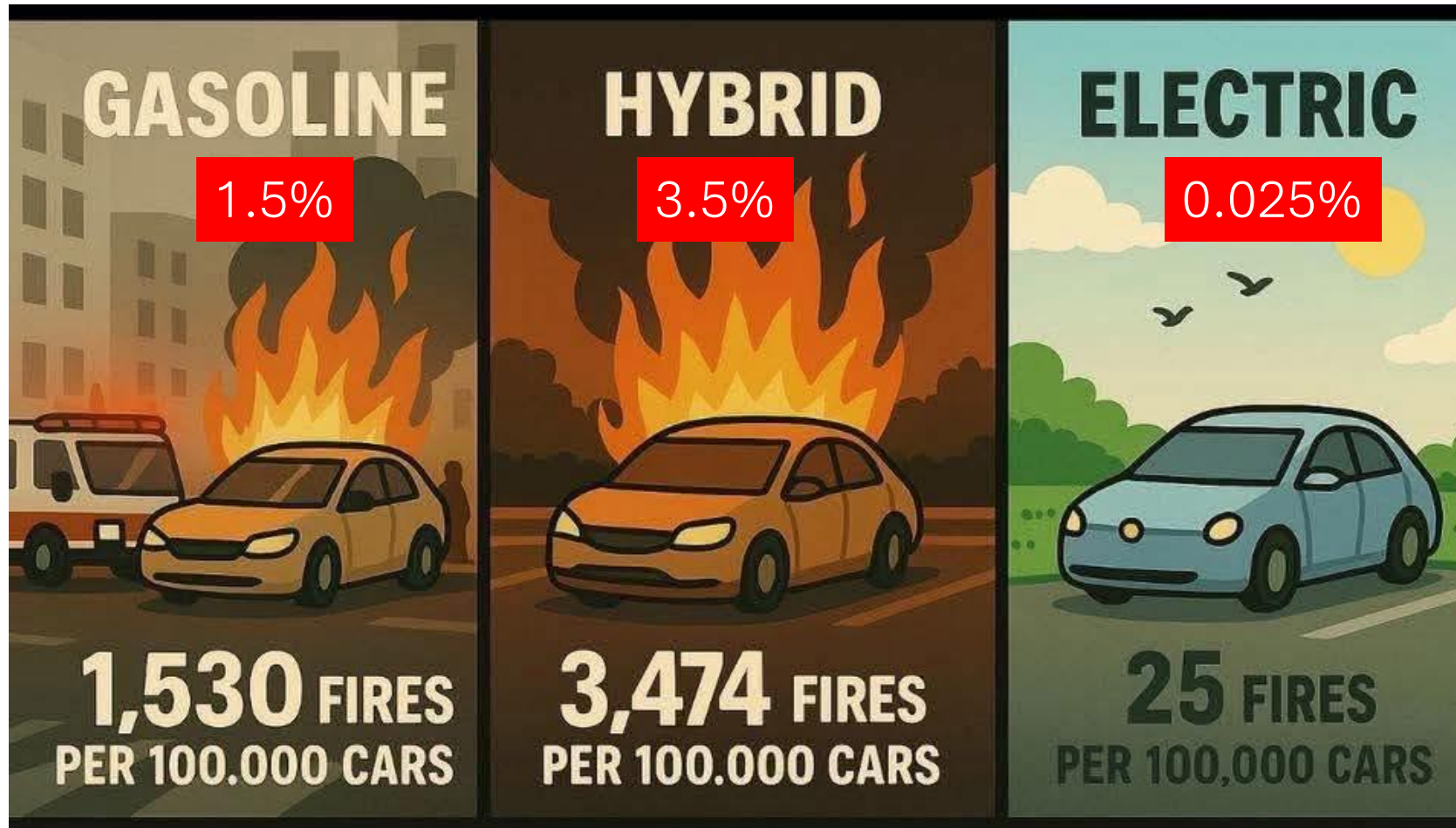
2026

EV Range:

- Chevy Bolt=262
- Chevy Equinox EV=319
- Hyundai Ioniq 5=318
- Hyundai Ioniq 6= 342
- Tesla Model 3=321/363
- Tesla Model Y=321/357
- Tesla Model S=402
- Lucid=500+
- LL EVs can fuel at home

Gas Cars Catch Fire 61 Time More Often Than EVs

Number of Car Fires per 100,000 Vehicles



Kelley Blue Book / AutoinsuraneEZ

Issues to Consider:

- Gasoline vehicles catch fire far more often overall.
- EV fires are relatively rare.
- When EV battery fires do occur, they can be more difficult to extinguish and may reignite later.

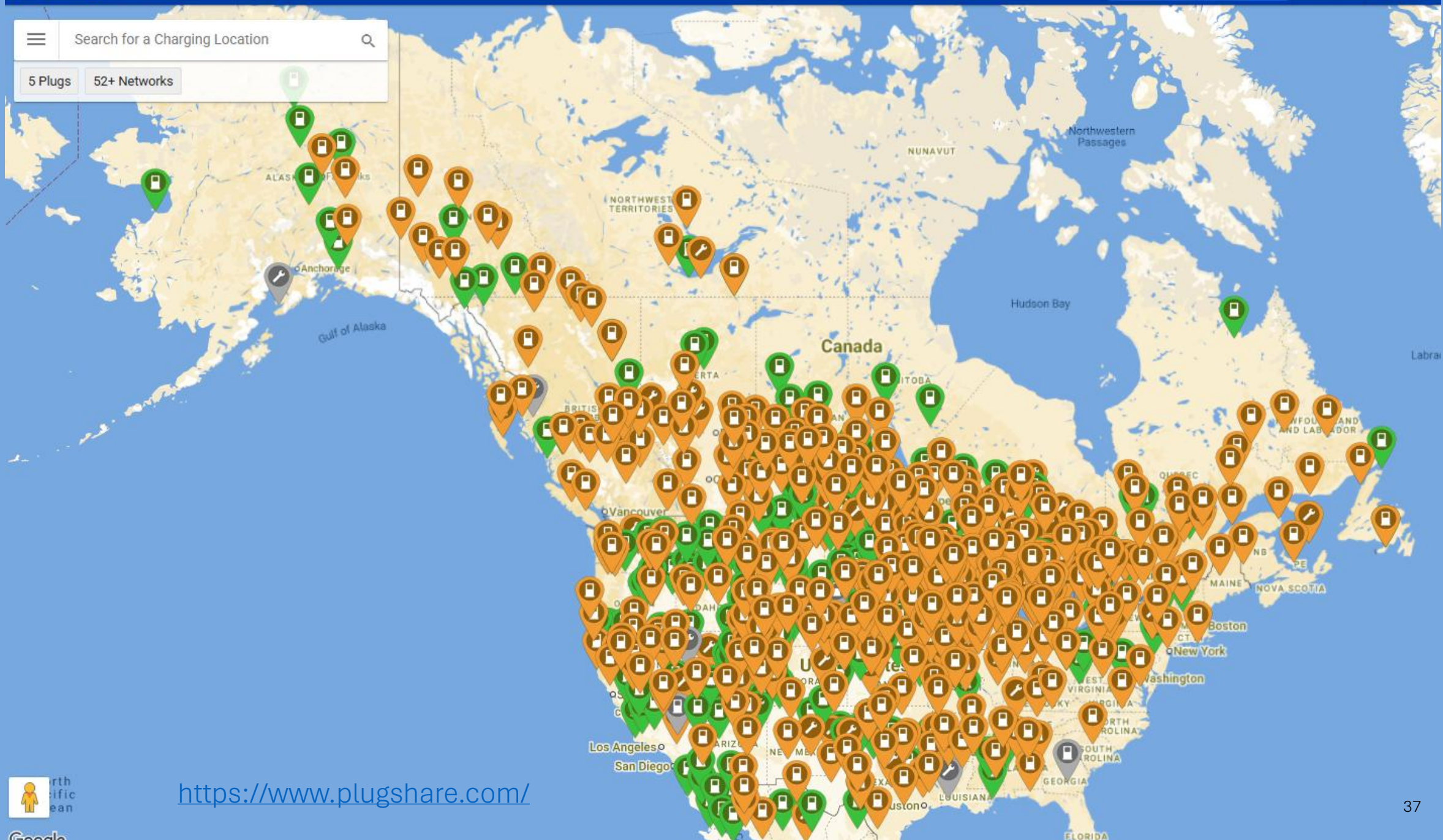


Search for a Charging Location



5 Plugs

52+ Networks



<https://www.plugshare.com/>

**THE CAR KNOWS WHERE
THE CHARGERS ARE
LOCATED
MOST PEOPLE CHARGE AT
HOME**



Implementation Approach:

The Electrification Pledge

As my home appliances and vehicles reach the end of their useful life, I pledge to be ready to replace them with electric alternatives, and to encourage my family, friends, and community to do the same.

OUR CLIMATE JOURNEY: THE PATH AHEAD

Understanding Our Past. Facing Our Present. Shaping Our Future. Acting Together.

1 WHERE WE HAVE BEEN

A legacy of emissions has built up over time.

GLOBAL CO₂ EMISSIONS
(Gigatons CO₂ per Year)



- Fossil fuels powered our growth and modern world.
- Emissions climbed for over a century.
- CO₂ has accumulated, trapping more heat.
- Impacts are increasingly visible and costly.

2 WHERE WE ARE NOW

We are at a critical moment with real and rising risks.

THE REALITY TODAY



≈1.4°C

Current warming level

1900



~42 Gt CO₂/yr
Global emissions in 2024



~425 ppm

CO₂ in the atmosphere and rising



More extreme events, sea level rise, and ecosystem loss

Temperature: WMO 2025 (1.43 ± 0.13°C); current warming level estimates ~1.4°C.



The window to act is narrowing.



Every fraction of a degree matters.



Our choices today shape the world we leave behind.

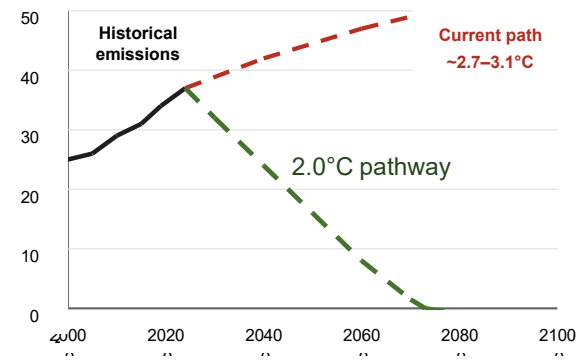


3 WHERE WE NEED TO GO

A safe, thriving, and sustainable future is possible.

THE GOAL: A 2.0°C PATHWAY

Gigatons CO₂ per year



Net Zero CO₂ around the early 2070s, with net-negative CO₂ thereafter in many pathways.



Deep emissions cuts across all sectors.



Protect and restore nature.



Remove excess CO₂ from the atmosphere.



Ensure a just and equitable transition for all.

4 HOW WE WILL GET THERE

Together, with bold action, innovation, and persistence.

OUR ROADMAP TO SUCCESS



PEOPLE & LEADERSHIP

Inspire, educate, and empower communities and leaders at every level.



CLEAN ENERGY TRANSITION

Accelerate renewable energy, efficiency, and clean technologies.



SUSTAINABLE SOLUTIONS

Transform transportation, buildings, industry, agriculture, and waste.



POLICY & INVESTMENT

Enact smart policies and mobilize the capital needed for change.



COLLABORATION & ACTION

Work together—globally, locally, and together—for a livable future.



THE FUTURE IS NOT WRITTEN—WE WRITE IT.

The time is now. The choice is ours. The future is in our hands.



Thank you!!!



Tom Coleman
Education Chair
Tom.coleman@enduretruth.com

“Be the change you wish to see in the world.”
Mahatma Gandhi