

The Clean Energy Paradigm:

Balancing Consumer Demands for Greener Power with the Need for Affordability and Reliability

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Inside Clean Energy: Which State Will Be the First to Ban Natural Gas in New Buildings?

Washington state county is first in US to ban new fossil fuel infrastructure

California's new building code stops short of gas ban, here's what states are doing.

by Ian Gearino

Whatcom county's council passed measure that bans new refineries, coal-fired power plants and other related infrastructure

Real estate clashes with climate advocates over proposed fossil fuel ban

Bill would bar natural gas in new buildings, gut renovations

New York / By Kathryn Brenzel

It's unavoidable: we must ban fossil fuels to save our planet. Here's how we do it

Roland Geyer



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May 28, 2021 08:30 AM

Humanity has mitigated severe global threats. In both cases we did this not with 'caps, taxes, or offsets, but with bans

Governor Newsom Announces California Will Phase Out Gasoline-Powered Cars & Drastically Reduce Demand for Fossil Fuel in California's Fight Against Climate Change

Published: Sep 23, 2020

Executive order directs state to require that, by 2035, all new cars and passenger trucks sold in California be zero-emission vehicles

Transportation currently accounts for more than 50 percent of California's Greenhouse Gas Emissions

Zero-emission vehicles are a key part of California's clean, innovation economy – already California's second largest global export market

Order also directs the state to take more actions to tackle the dirtiest oil extraction and support workers and job retention and creation as we make a just transition away from fossil fuels

SACRAMENTO – Governor Gavin Newsom today announced that he will aggressively move the state further away from its reliance on climate change-causing fossil fuels while retaining and creating jobs and spurring economic growth – he issued an executive order requiring sales of all new passenger vehicles to be zero-emission by 2035 and additional measures to eliminate harmful emissions from the transportation sector.

The transportation sector is responsible for more than half of all of California's carbon pollution, 80 percent of smog-forming pollution and 95 percent of toxic diesel emissions – all while communities in the Los Angeles Basin and Central Valley see some of the dirtiest and most toxic air in the country

Fossil Fuels

San Francisco Becomes the Latest City to Ban Natural Gas in New Buildings, Citing Climate Effects

Forty percent of the city's greenhouse gases come from powering buildings. Nationwide, homes and buildings are responsible for 12 percent of emissions.



By Kristoffer Tigue
November 13, 2020



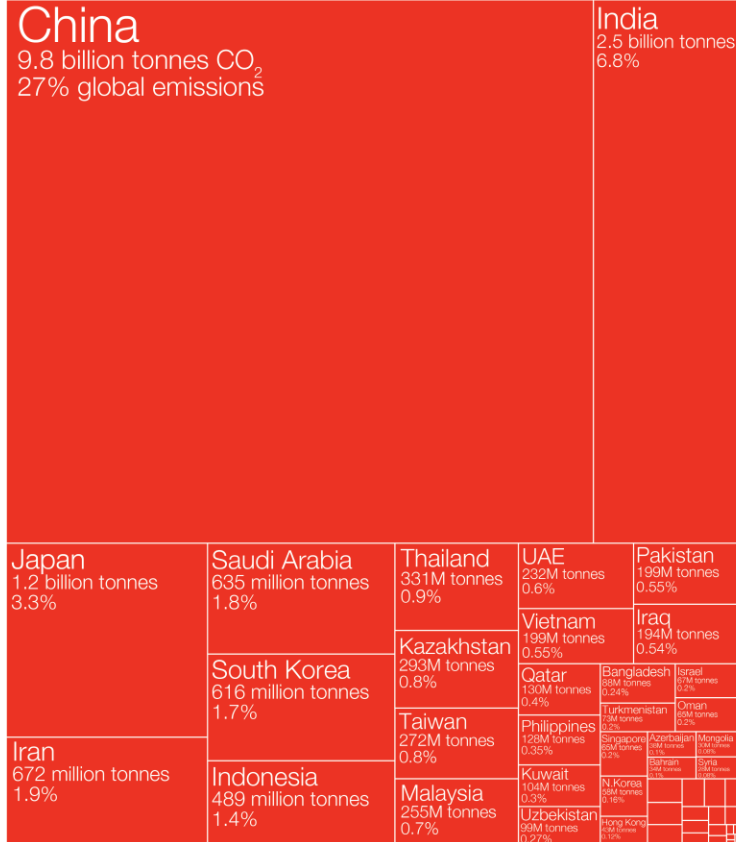
have already found! Photograph: Henry

goals of the Paris Agreement and... The 2018 special report of the... Climate Change (IPCC) "suggests a... gigatonnes (Gt) of CO2 for a two... The clock on this so-called... at the beginning of 2018. Despite... ing over 40 Gt of CO2 per year. In... re currently being used across the

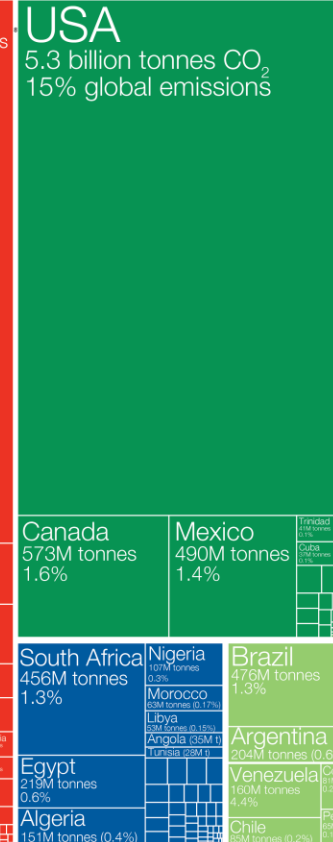
Who emits the most CO₂?

Global carbon dioxide (CO₂) emissions were 36.2 billion tonnes in 2017.

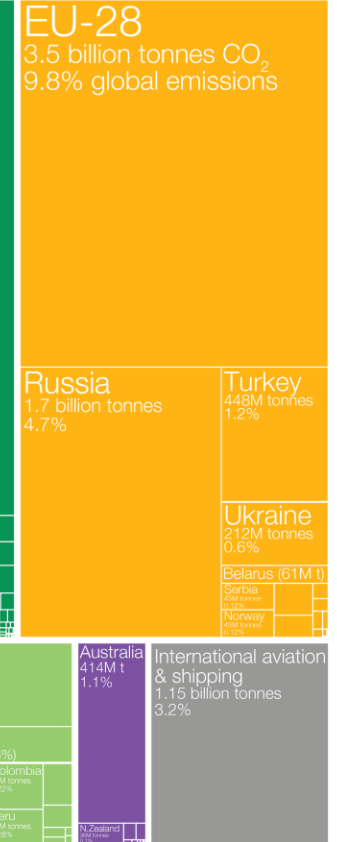
Asia
19 billion tonnes CO₂
53% global emissions



North America
6.5 billion tonnes CO₂
18% global emissions



Europe
6.1 billion tonnes CO₂
17% global emissions

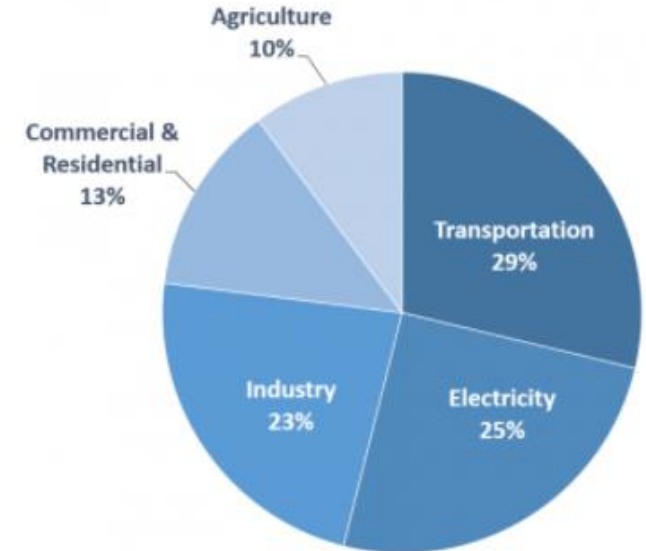


Africa
1.3 billion tonnes CO₂
3.7% global emissions

South America
1.1 billion tonnes CO₂
3.2% global emissions

Oceania
0.5 billion tonnes CO₂
1.3% global emissions

Total U.S. Greenhouse Gas Emissions by Economic Sector in 2019



Total Emissions in 2019 = 6,558 Million Metric Tons of CO₂ equivalent. Percentages may not add up to 100% due to independent rounding.

* Land Use, Land-Use Change, and Forestry in the United States is a net sink and removes approximately 12 percent of these greenhouse gas emissions, this net sink is not shown in the above diagram. All emission estimates from the [Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2019](#).

Shown are national production-based emissions in 2017. Production-based emissions measure CO₂ produced domestically from fossil fuel combustion and cement, and do not adjust for emissions embedded in trade (i.e. consumption-based).

Figures for the 28 countries in the European Union have been grouped as the 'EU-28' since international targets and negotiations are typically set as a collaborative target between EU countries. Values may not sum to 100% due to rounding.

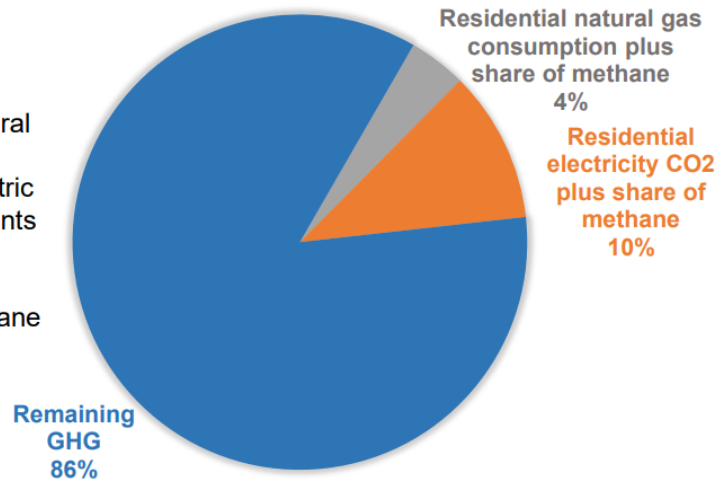
Data source: Global Carbon Project (GCP).

This is a visualization from OurWorldinData.org, where you find data and research on how the world is changing.

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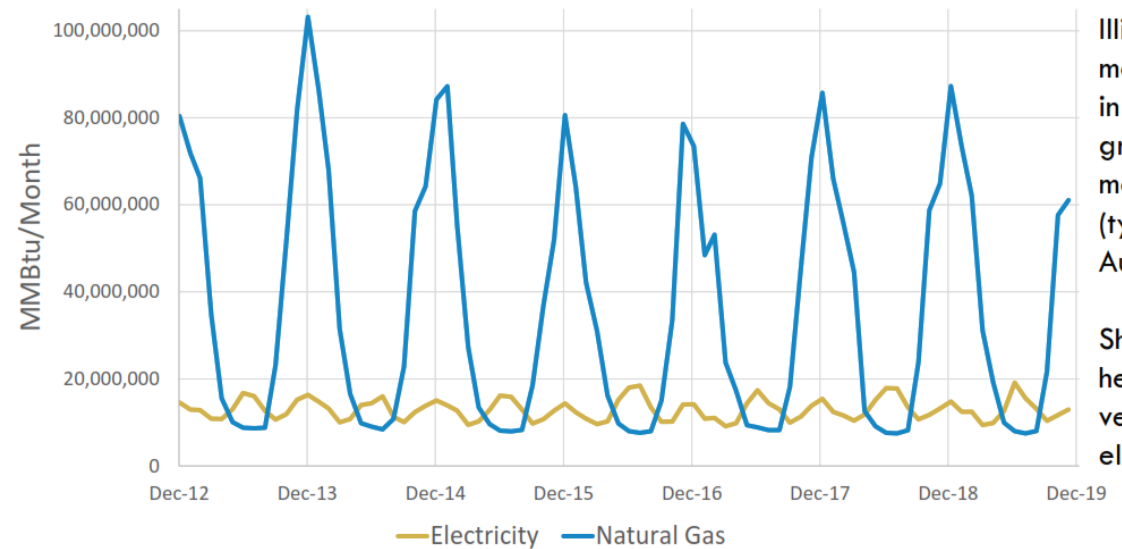
Residential natural gas use accounts for 4% of total US greenhouse gas emissions

- Commercial natural gas use is 3%
- Commercial electric power use accounts for 9%
- Residential and commercial propane and oil use is 3%



PEAK ENERGY COMPARISON

Illinois Monthly Residential Energy Use



Illinois natural gas monthly peak (typically in January) is 5.4 times greater than peak monthly electricity peak (typically July or August).

Shifting to electric heating would result in very large winter electric peaks

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DOE-EIA

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Source: EPA, Residential gas methane share based on gas consumption, Residential electricity methane share based on gas for electricity consumption & residential electricity sales, EIA

Natural Gas Bans Will Cost Americans Trillions

BY IER

AUGUST 17, 2021

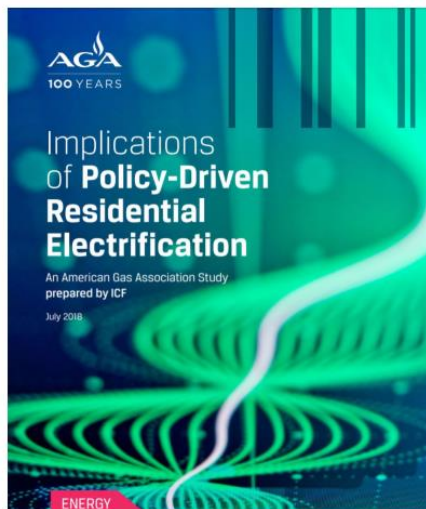


IER sounds the alarm on the quiet effort to ban the use of natural gas in our homes and small businesses.

WASHINGTON DC (August 17, 2021) – The Institute for Energy Research (IER) has released a comprehensive overview of the economic and environmental costs of a ban on natural gas.

The report catalogs the states and municipalities that have implemented or are considering natural gas hookups, an effort that protects the benefits of an efficient, affordable and clean energy source while protecting America's air quality at the same time. The report also showcases the various stages and effects of natural gas or conversely, protecting the environment. The report also compares the cost of going electric to the cost of maintaining natural gas hookups.

Key findings from an AGA study of the impacts of policy-driven residential electrification



<https://www.aga.org/research/reports/implications-of-policy-driven-residential-electrification/>

Source: Implications of Policy-Driven Electrification of Residential Gas Use, AGA, July 2018

- **Incremental generation capacity requirements and transmission system upgrade costs**
\$155 to \$426 billion
- **Overall US GHG emissions reduced by 1% to 1.5%**
- **Total cost of policy-driven residential electrification**
\$1,060 to \$1,420 per year per converted household increase in energy costs
- **Cost of carbon dioxide emissions reductions:**
\$572 to \$806 per ton

Residential Buildings

Owner Cost to Electrify: MEEA States

	Low Estimate	High Estimate
Air Source Heat Pump (36,000btu)	\$60,840,000,000	\$119,340,000,000
Heat Pump Water Heater (50 gallon)	\$18,720,000,000	\$44,460,000,000
Electric Range (non-induction)	\$7,020,000,000	\$23,400,000,000
Service Upgrade all pre-1980 homes (200 amp)	\$16,850,000,000	\$51,950,000,000
EV Infrastructure - Level 1	\$24,300,000,000	\$38,030,000,000
TOTAL	\$127,730,000,000	\$277,180,000,000

Estimated **\$128-277 Billion** in owner costs to electrify Midwest residential buildings



- Should the US be a leader in addressing global climate change?
- Key Questions:
 - Will policy-driven residential electrification actually reduce greenhouse gas emissions?
 - How will policy-driven residential electrification impact the overall energy delivery and reliability?
 - What would be the impacts on the power sector and on electric transmission infrastructure requirements?
 - What would be the overall (all-in) cost of policy-driven residential electrification?
 - How do the costs of policy-driven residential electrification compare to other approaches to reduce emissions?



Solar Power Booms in Georgia, Where It Isn't Mandated

The state has no subsidies or renewable-energy requirements, but solar farms draw support of Republican utility regulators, rural communities

has invested more than \$1 billion in rural communities in Georgia, such as this solar site in Lumpkin.

By [Elena Shao](#) / Photographs by Audra Melton for The Wall Street Journal

Aug. 22, 2021 9:00 am ET

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Georgia has no mandates requiring power companies to add renewable energy and hasn't made climate change a political priority. Solar power is booming there anyway.

The state went from having virtually no solar industry a decade ago to [ranking ninth nationwide](#) in installed solar capacity this year, according to the Solar Energy Industries Association. Solar has flourished in Georgia as tech companies such as [Facebook Inc.](#) [FB -1.09%](#) [▼](#) look to locate facilities near cheap renewable-energy sources and rural communities turn to solar farms to create tax revenues and jobs.



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