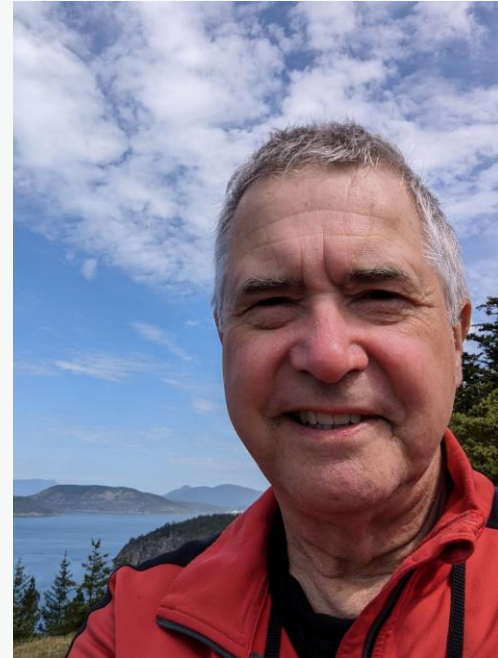


Climate Commitment Act: What's next after surviving I-2117?



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Principal, Maul Foster & Alongi Inc

Washington's Mandatory GHG Reporting Programs

Two Levels of Reporting

- Initial Threshold Reporting -
10,000 metric tons of CO₂e
- Climate Commitment Act –
25,000 metric tons of CO₂e



Initial Threshold Reporting

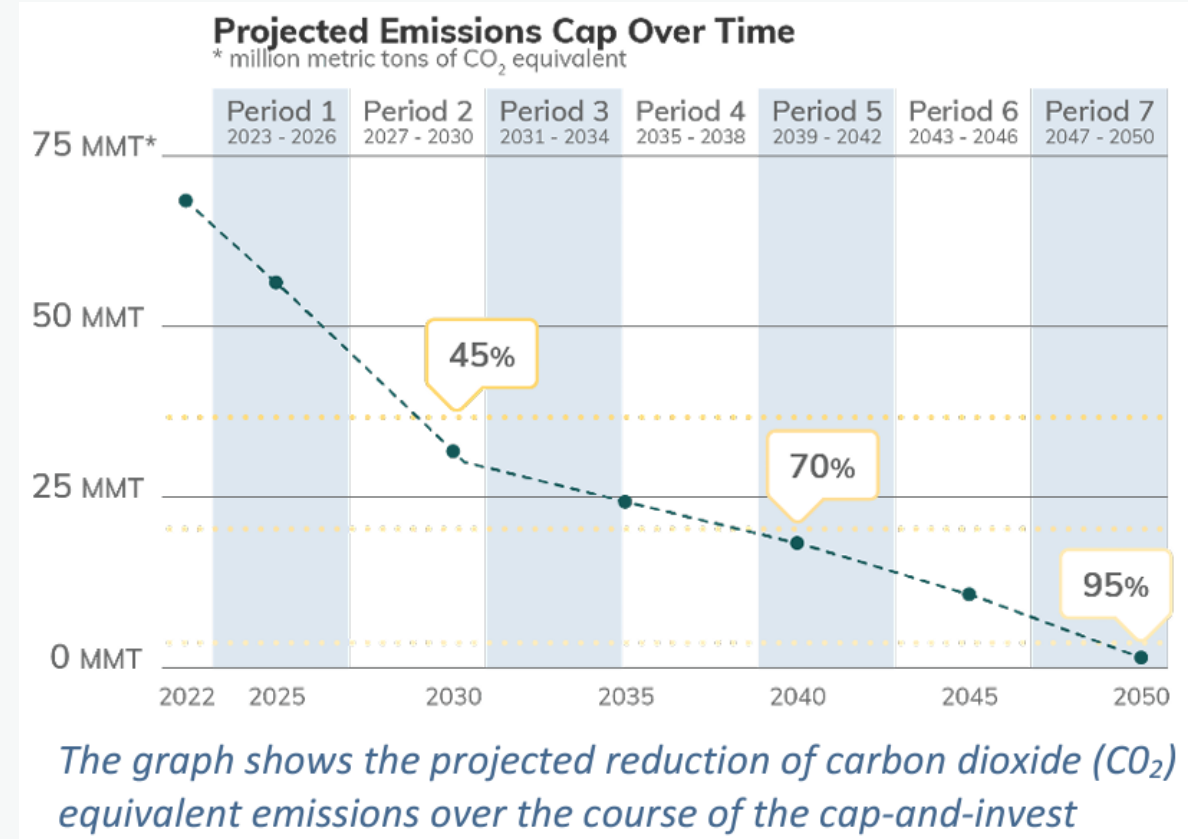
Who is required to report?

- Facilities that emit at least 10,000 metric tons of CO₂e per year of total GHG emissions in Washington.
- Fuel suppliers that produce, import, or deliver products equivalent to 10,000 metric tons of CO₂e of total GHG emissions per year in Washington
- Electric power entities (EPEs) that import or deliver electricity equivalent to 10,000 MT CO₂e or more per year of total GHG emissions in Washington.

Climate Commitment Act

Washington's Cap & Invest Program

- Ecology sets an emission limit – the cap – and then lowers that cap over time.
- Requires businesses to obtain allowances equal to their GHG emissions.
- The cap is reduced over time, which means Ecology will issue fewer and fewer allowances.



Climate Commitment Act

How do businesses comply with the Act?

- Annual Reporting - Covered businesses must comply if they emit over 25,000 metric tons of CO₂e per year.
- Compliance instruments (allowances and offset credits) to cover 30% of the prior year's emissions.
- Allowances – Ecology auctions vs. secondary markets
- Offset credits

Climate Commitment Act

How do auctions work?

- Four quarterly auctions each year
- Ecology publishes an Auction Notice at least 60 days before the auction date
- Purchase limits & holding limits

Climate Commitment Act

Are any emissions exempt?

- Complex reporting requirements
- General categories:
 - Aviation fuels
 - Marine fuels combusted outside WA
 - Fuels used for agricultural purposes
 - Fuels not combusted/oxidized



Concrete Production and Greenhouse Gases

Overview

Worldwide context

US context

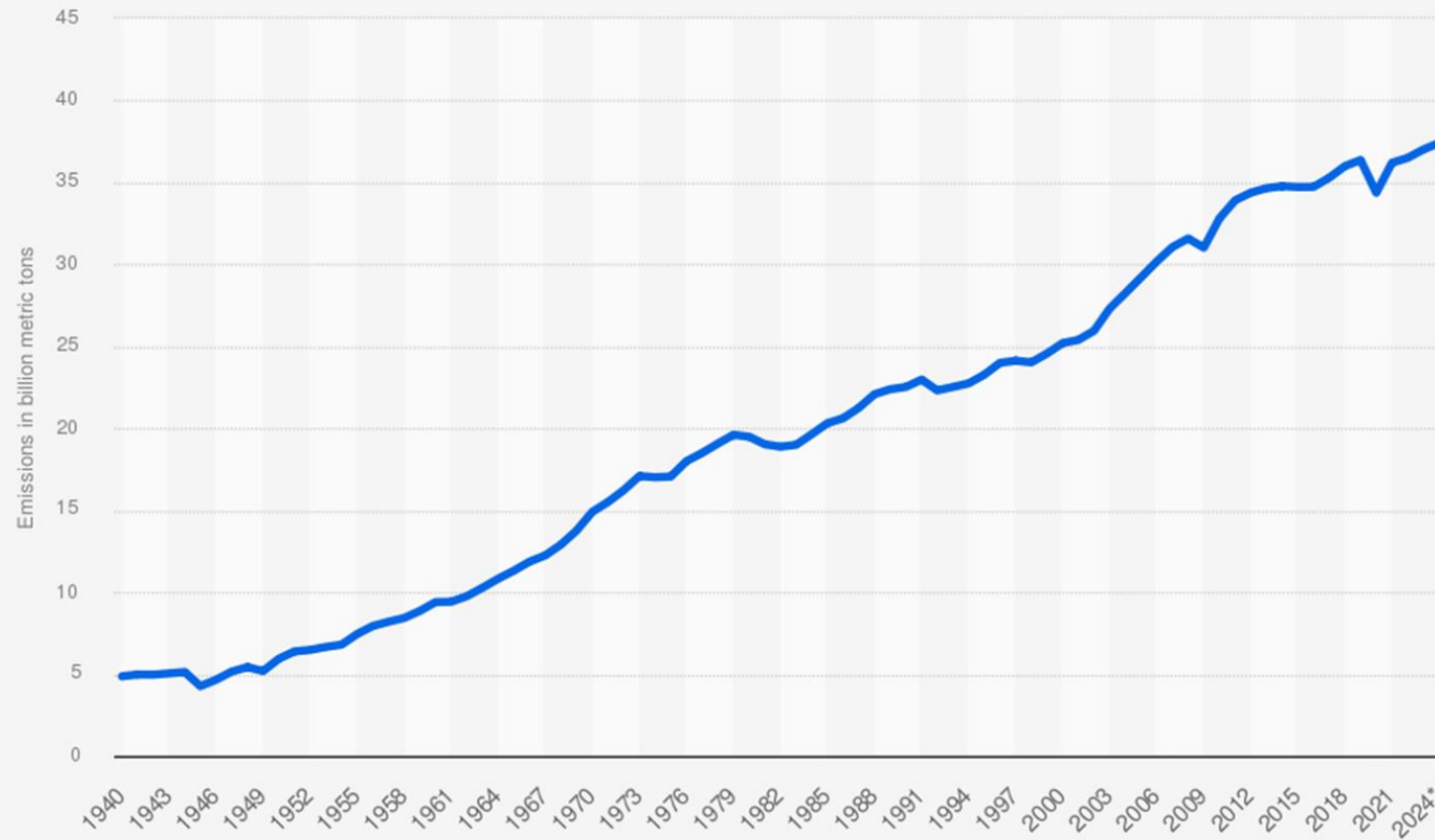
WA State context

Methods to reduce CO₂ in concrete

CCA and carbon credits



Annual carbon dioxide (CO) emissions worldwide from 1940 to 2024 (in billion metric tons)



Sources

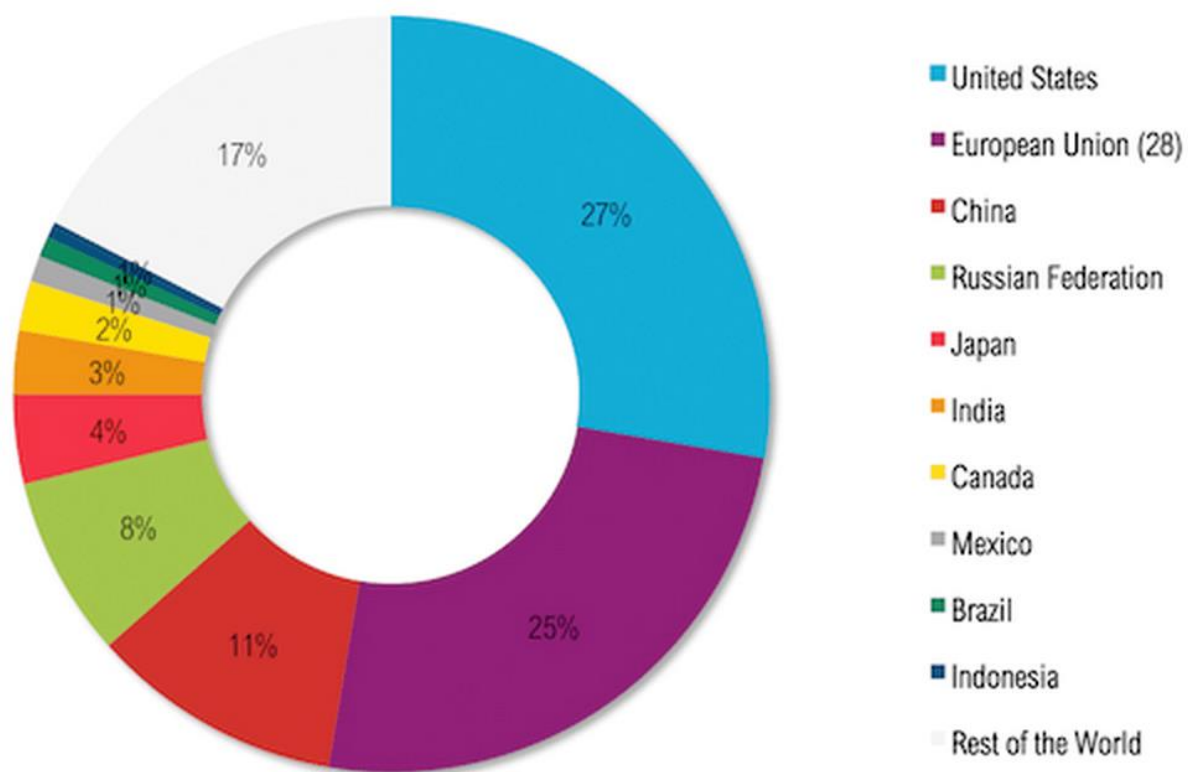
Global Carbon Project; Expert(s) (Robbie Andrew; Friedlingstein et al.); Global Carbon Budget
© Statista 2025

Additional Information:

Worldwide; Global Carbon Project; Expert(s) (Robbie Andrew; Friedlingstein et al.); Statista; Global Carbon Budget; 1940 to 2024;
*Projection

statista

Cumulative CO₂ Emissions 1850–2011 (% of World Total)



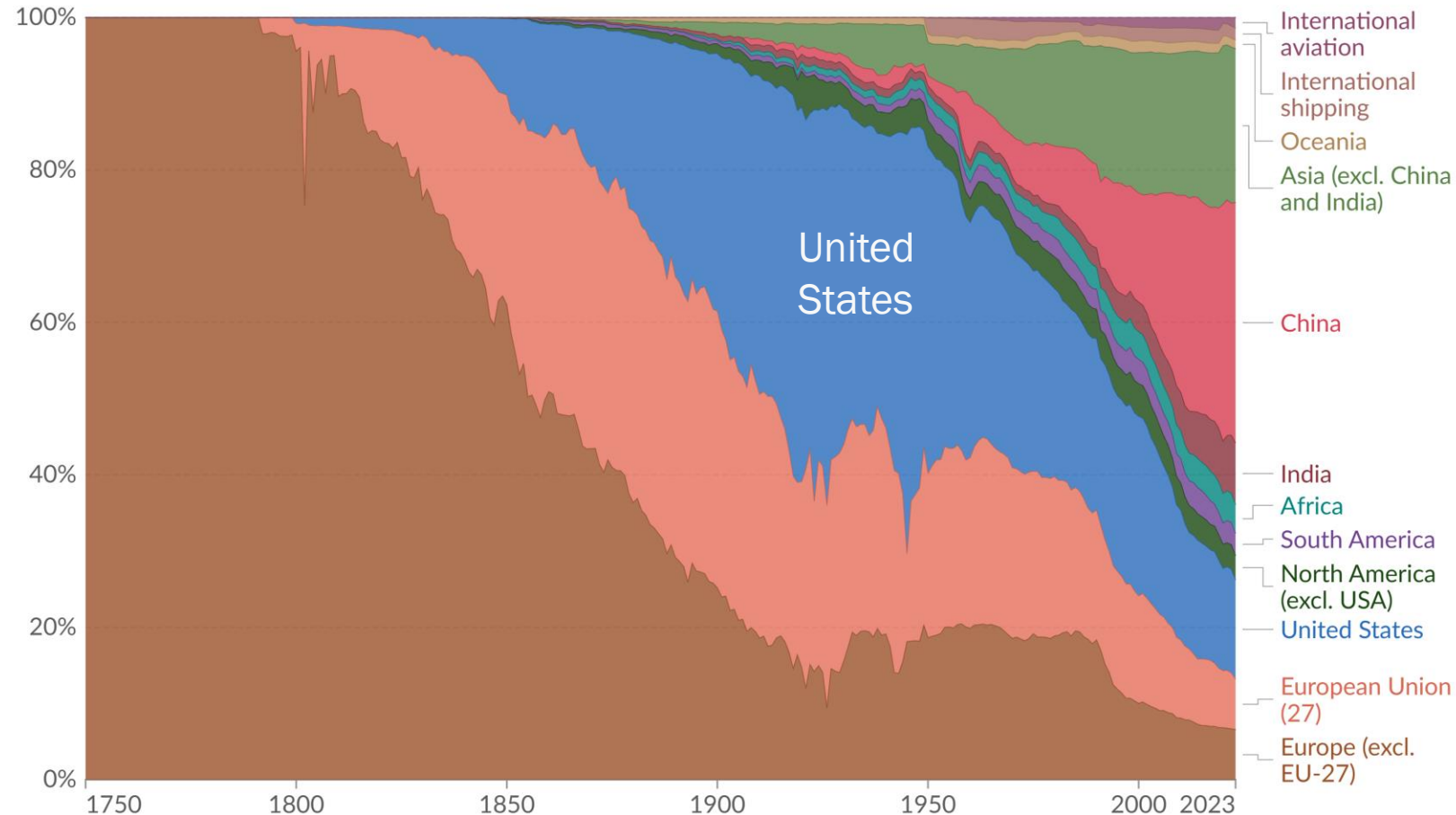
<http://bit.ly/11SMpjA>

 WORLD RESOURCES INSTITUTE

Annual CO₂ emissions by world region

Our World
in Data

Emissions from fossil fuels and industry¹ are included, but not land-use change emissions. International aviation and shipping are included as separate entities, as they are not included in any country's emissions.

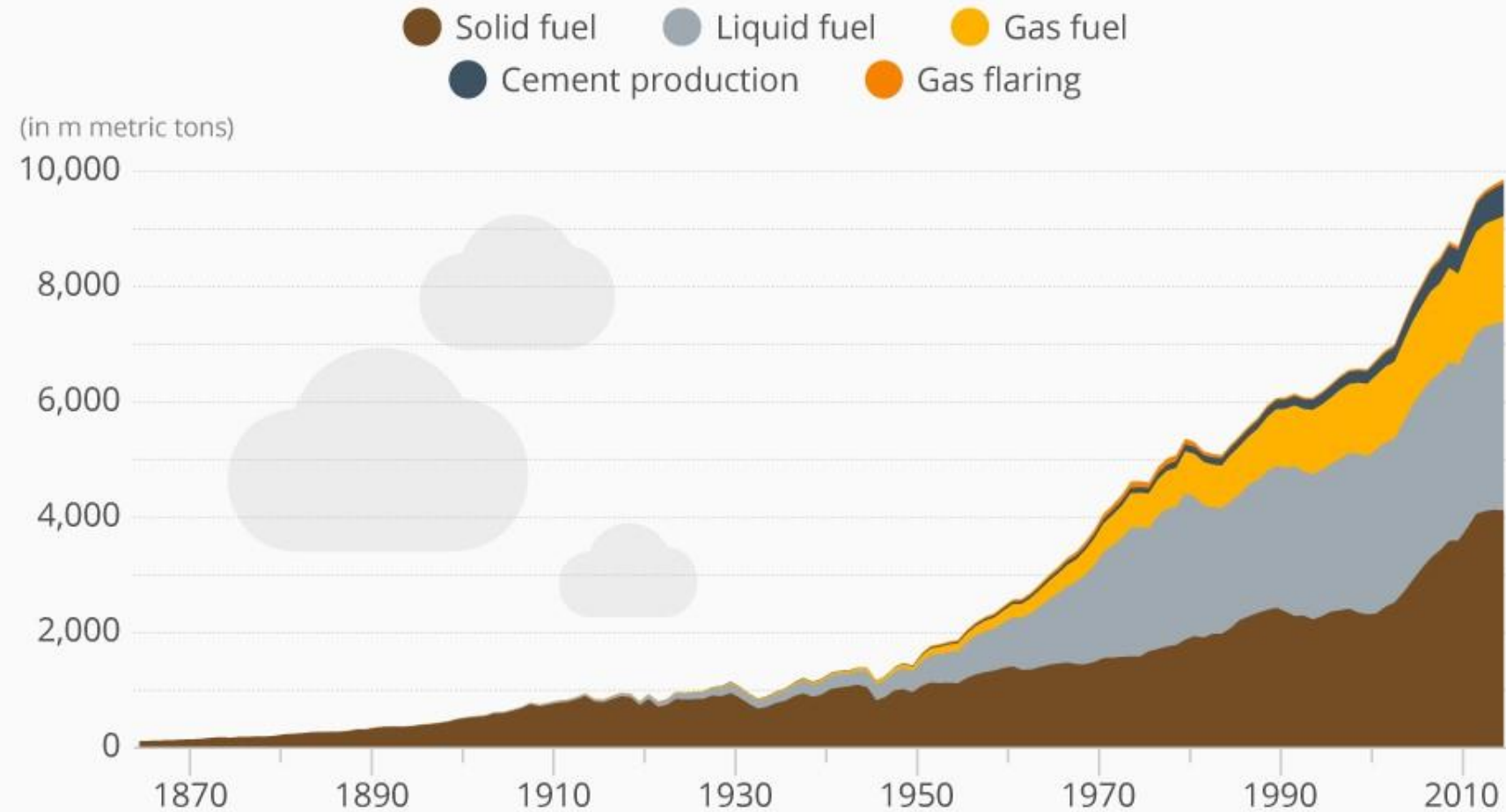


Data source: Global Carbon Budget (2024)

OurWorldinData.org/co2-and-greenhouse-gas-emissions | CC BY

The Carbon Age: 150 Years of CO₂ Emissions

Worldwide carbon emissions from fossil fuel consumption and cement production



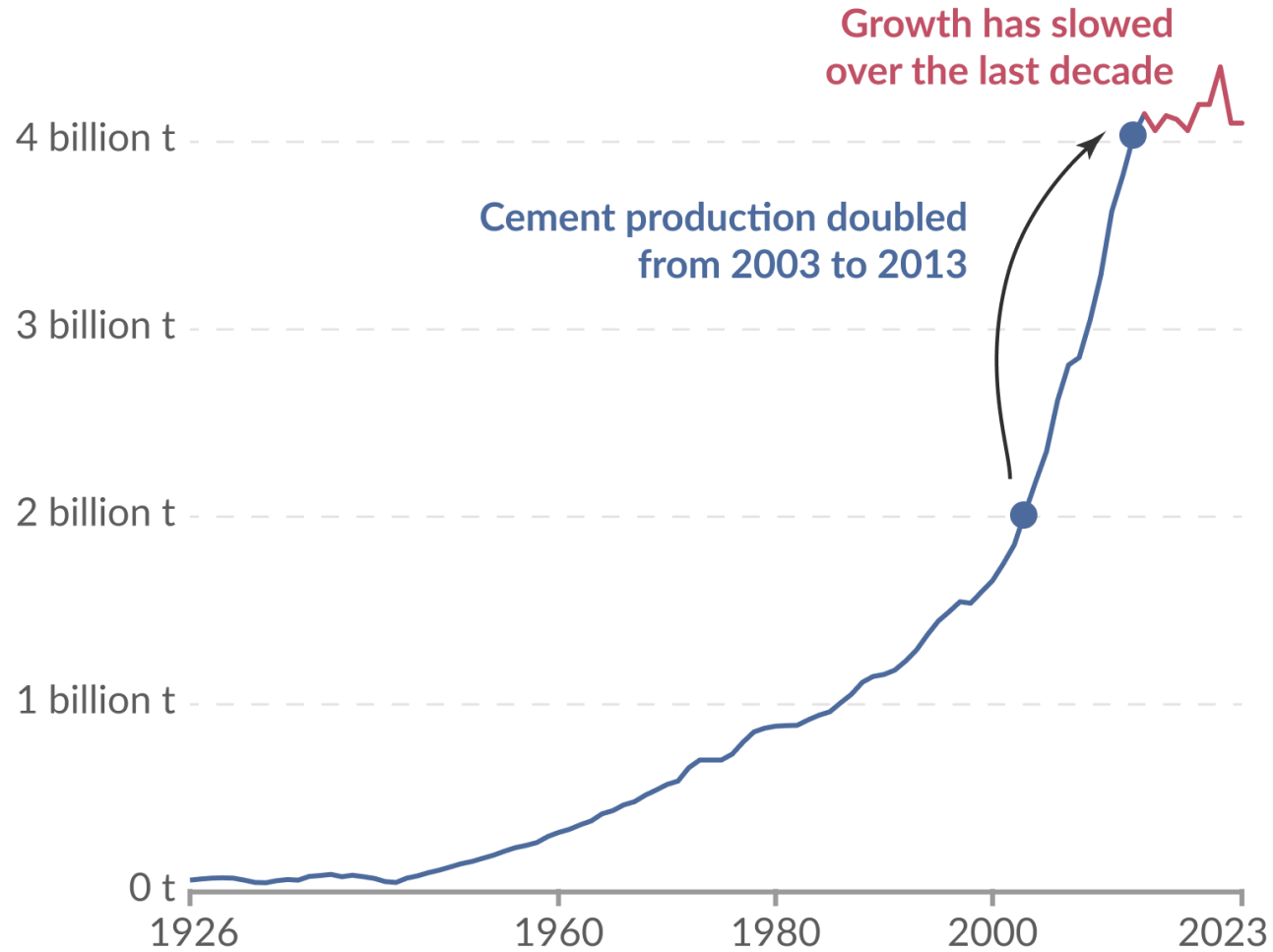
@StatistaCharts Source: CDIAC

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Global cement production

Our World
in Data

The growth in global cement production has slowed over the last decade after rapid growth in the 1990s and early 2000s.



Data source: United States Geological Survey (USGS)

CC BY

CEMENT PRODUCTION AND CO2

Cement production 2023:

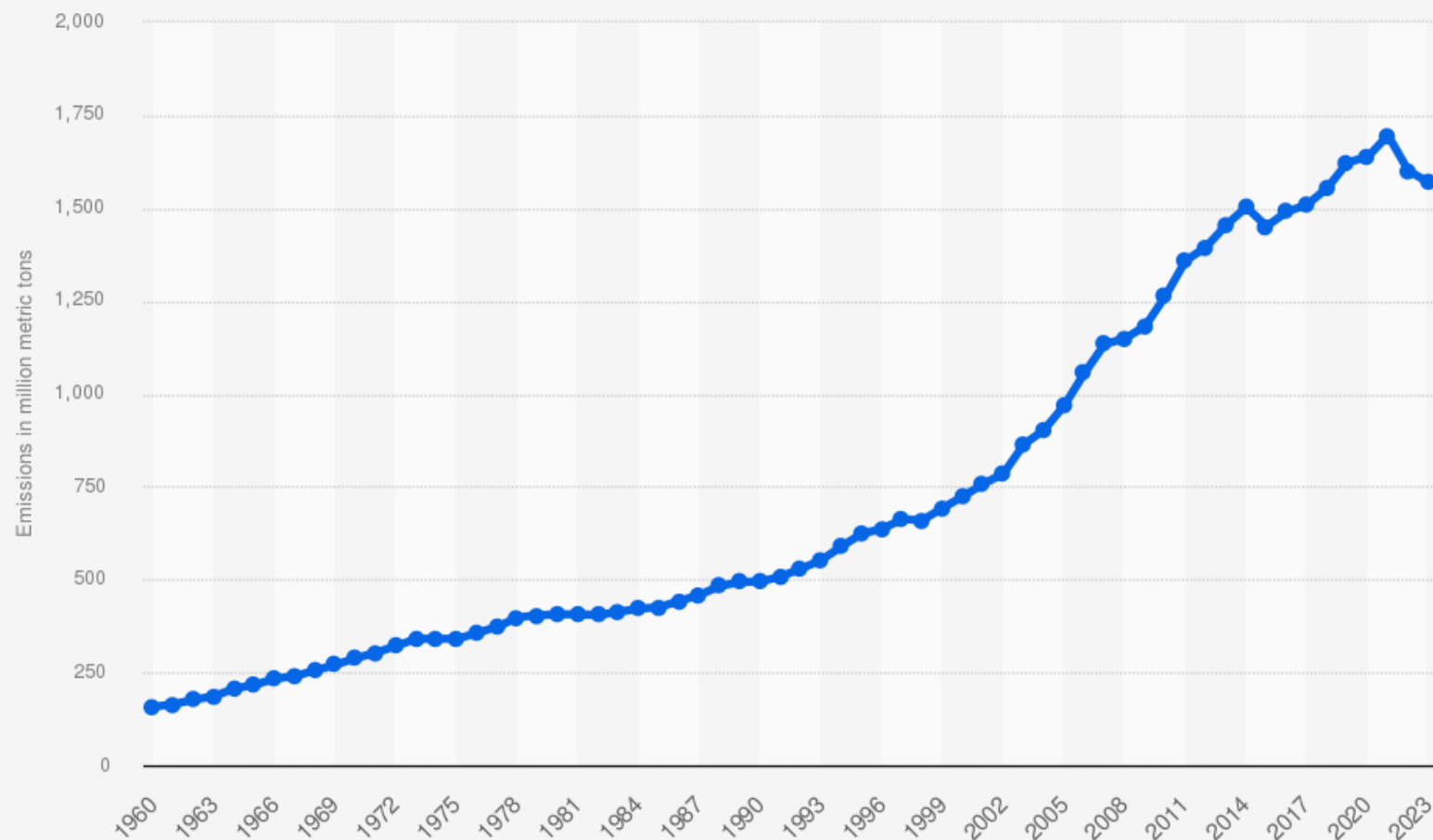
- Worldwide ~4.1 BMt
- China prod ~2.1 BMt
- India ~0.4 BMt
- Viet Nam, US and Turkey

Global CO2 from cement production:

- ~1.56 BMt
- 8% of total global emissions
- 0.1 to 0.2 tons of CO2/ton of concrete
- >95% from cement production



Carbon dioxide emissions from the manufacture of cement worldwide from 1960 to 2023 (in million metric tons)



Sources

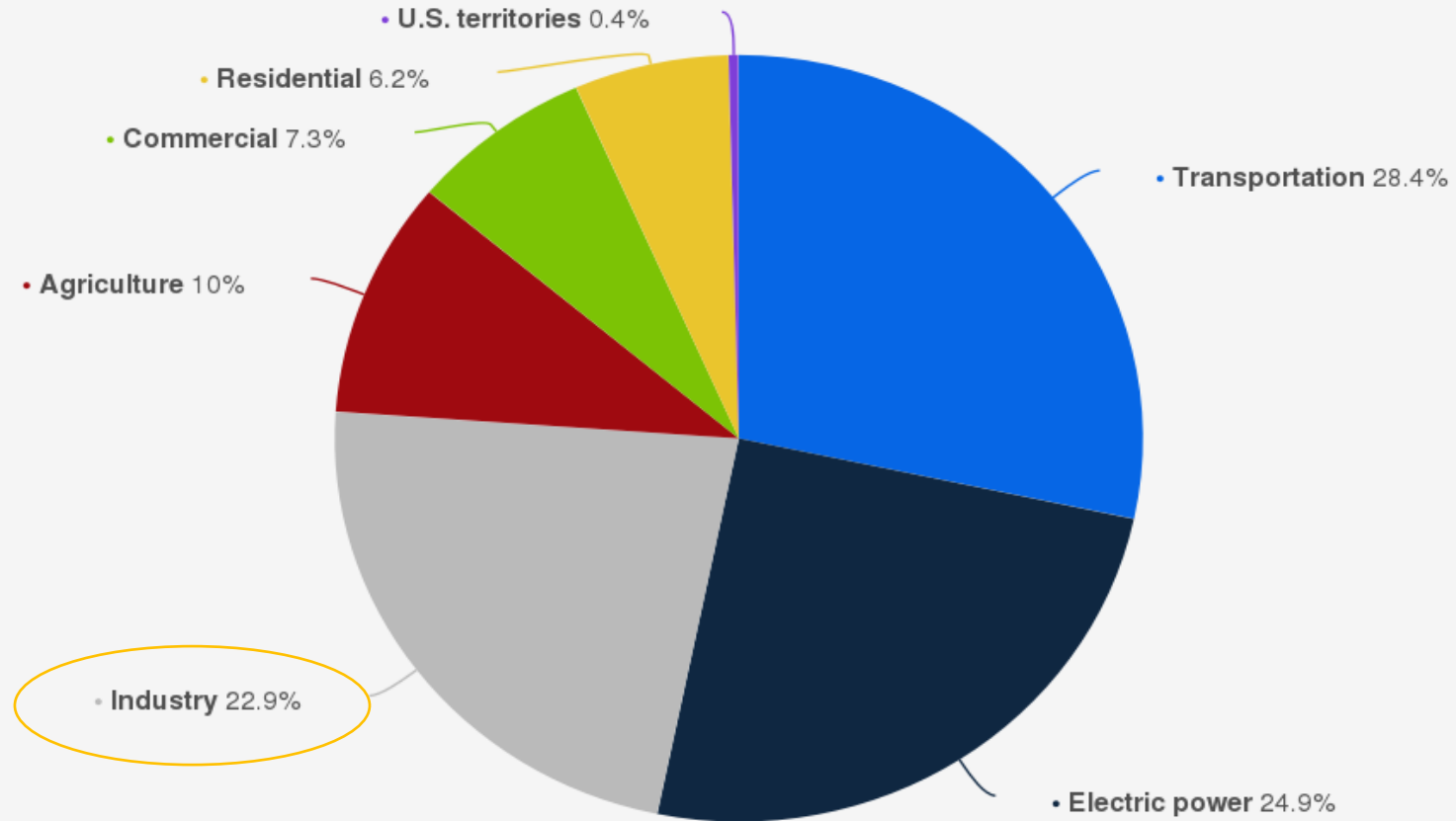
Global Carbon Project; Expert(s) (Friedlingstein et al. (2023), al. (2023), Andrew and Peters (2023).); 1960 to 2023
© Statista 2024

Additional Information:

Worldwide; Global Carbon Project; Expert(s) (Friedlingstein et al. (2023), Andrew and Peters (2023).); 1960 to 2023

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Distribution of greenhouse gas emissions in the United States in 2022, by economic sector

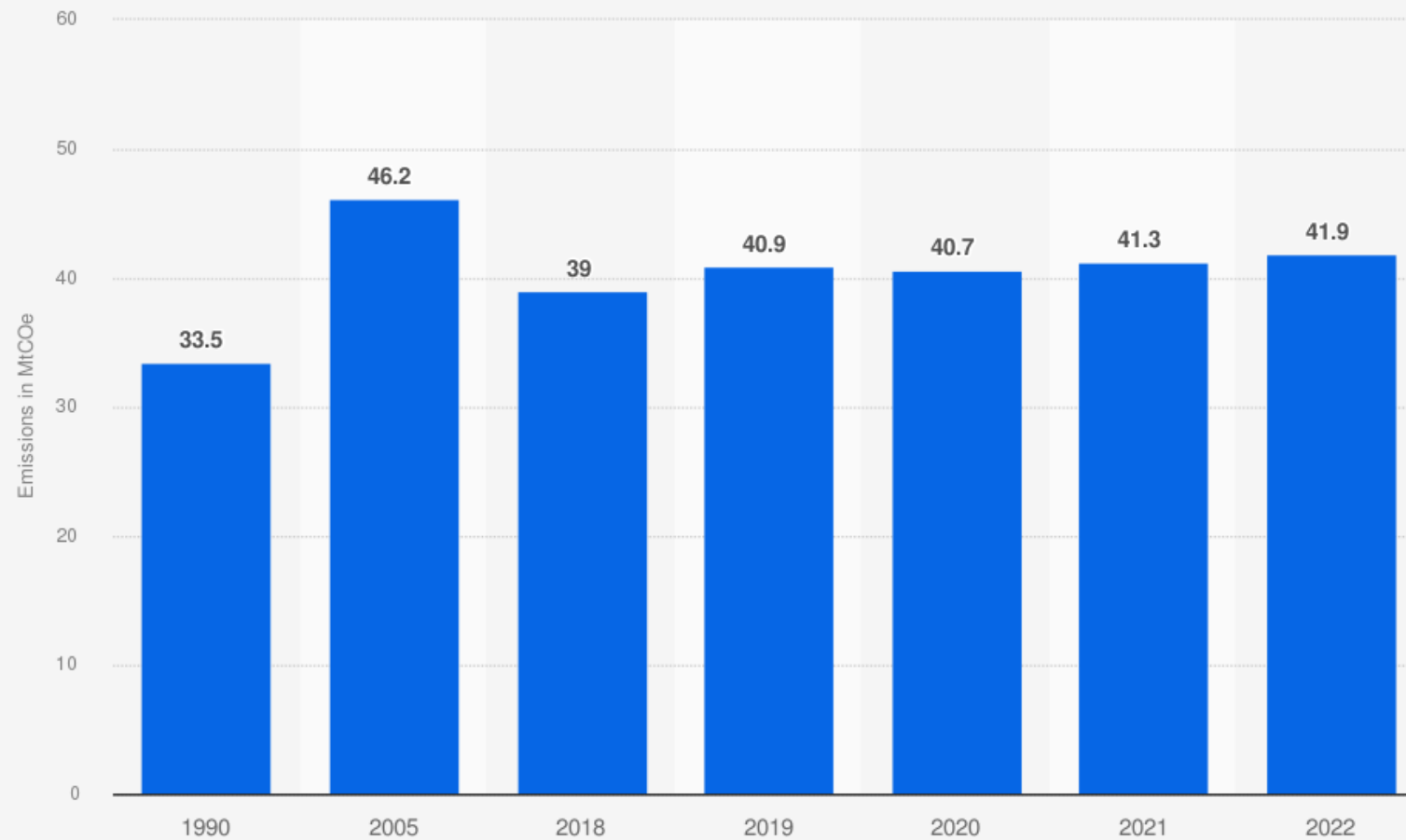


Source
Environmental Protection Agency
© Statista 2024

Additional Information:
2022; Based on total gross emissions of 6,343.2 MtCO₂e. Figures may not total 100% due to rounding.

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Greenhouse gas emissions from cement production in the United States from 1990 to 2022 (in million metric tons of CO equivalent)

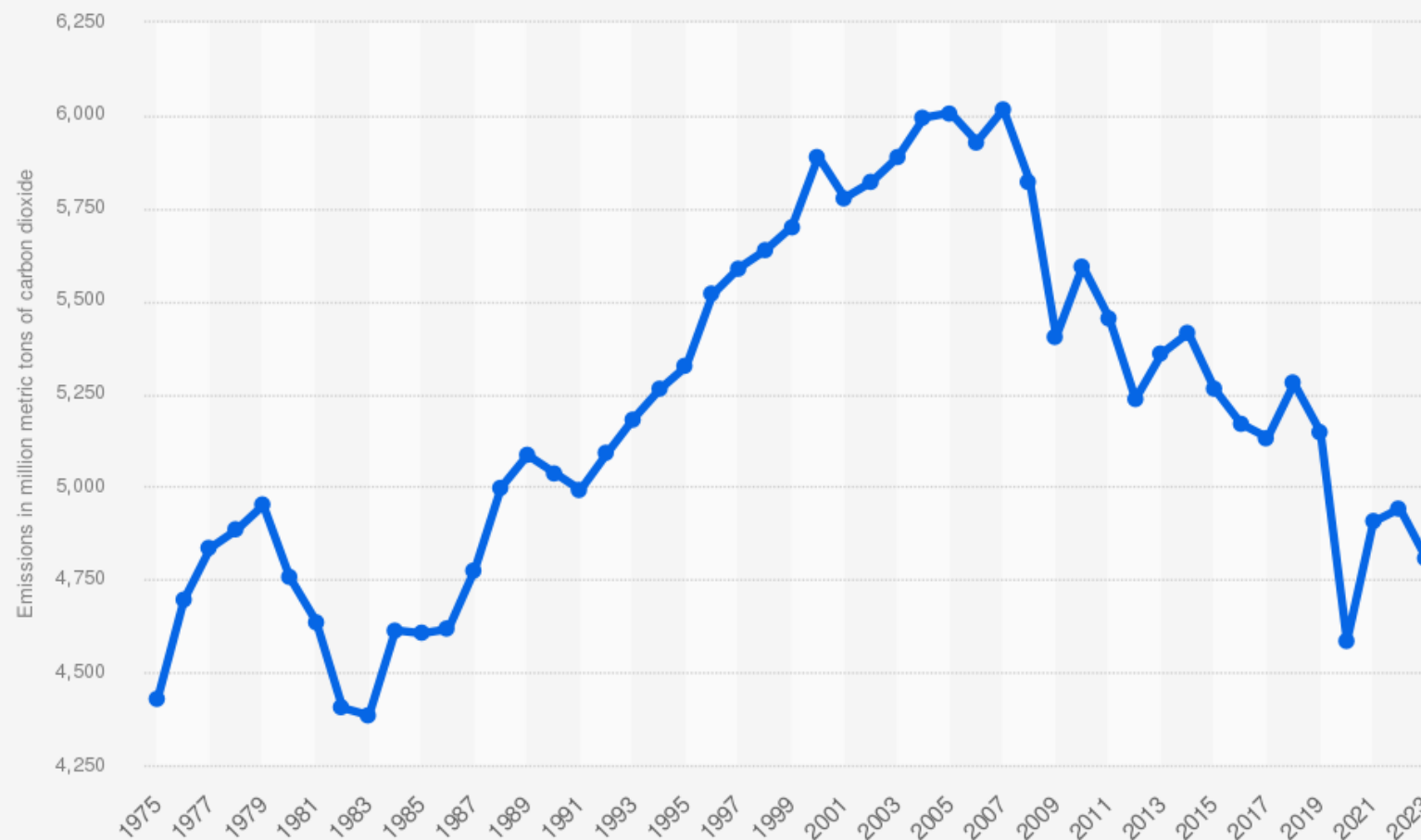


Source
Environmental Protection Agency
© Statista 2024

Additional Information:
United States; 1990 to 2022

statista

Carbon dioxide emissions from energy consumption in the United States from 1975 to 2023 (in million metric tons of carbon dioxide)



Source

EIA

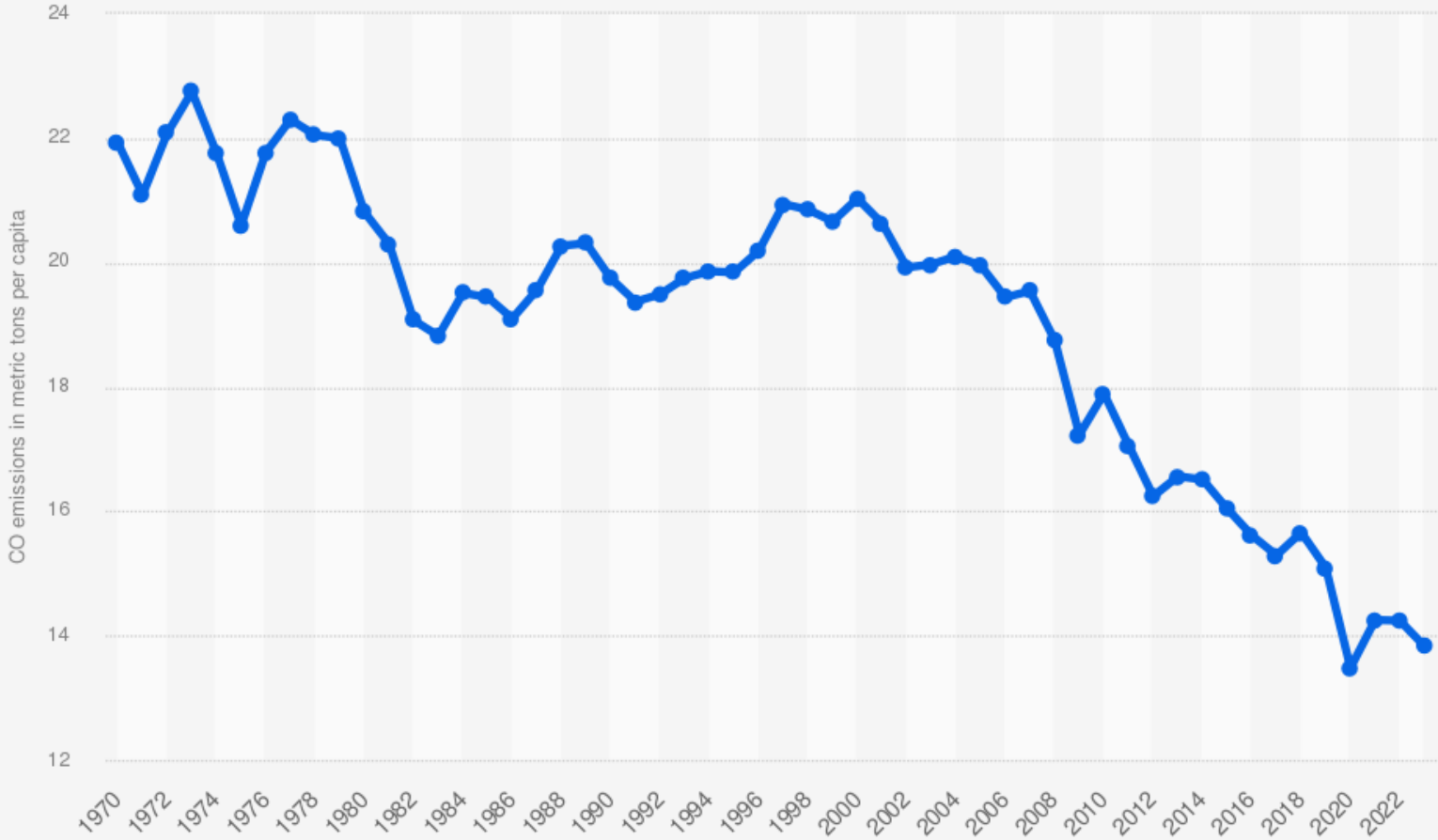
© Statista 2024

Additional Information:

United States; 1975 to 2023; Figures have been rounded

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Per capita carbon dioxide (CO) emissions from fossil fuels in the United States
from 1970 to 2023 (in metric tons)



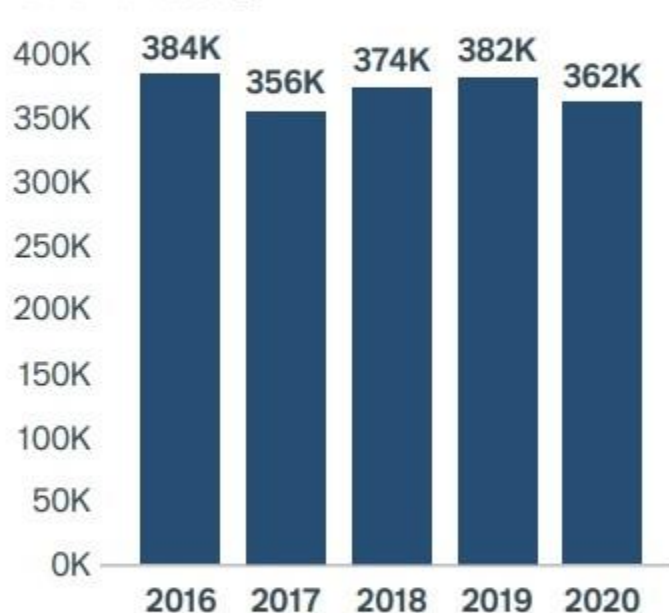
Sources
Expert(s) (Crippa et al. (2024)); EDGAR/JRC;
European Commission; IEA
© Statista 2024

Additional Information:
United States; Expert(s) (Crippa et al. (2024)); EDGAR/JRC; European
Commission; IEA; 1970 to 2023; Emissions from fossil fuel use and
industrial processes.

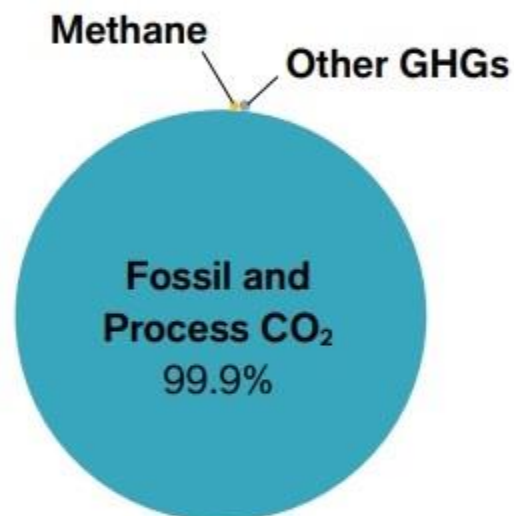
Figure 1. Washington concrete and cement manufacturing direct reported emissions, 2016–2020

Annual Emissions

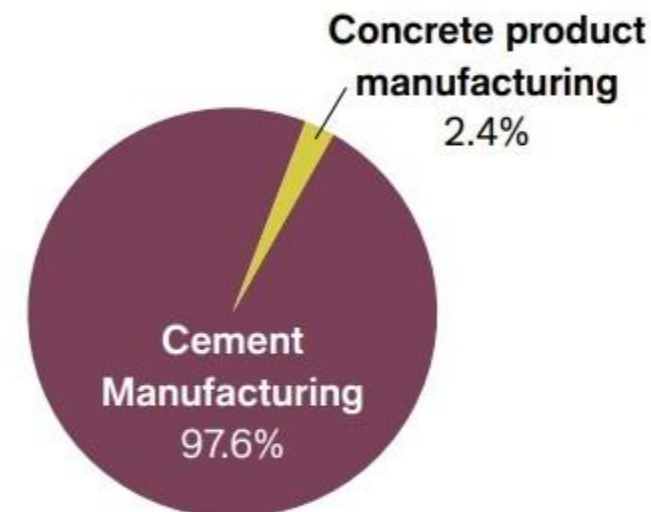
Metric Tons CO₂e



Emissions by Greenhouse Gas



Emissions by Subsector



Data Source: Washington State Department of Ecology. "Facility Greenhouse Gas Reports." Accessed April 11, 2022. <https://ecology.wa.gov/Air-Climate/Climate-change/Tracking-greenhouse-gases/Greenhouse-gas-reporting/Facility-greenhouse-gas-reports>; NAICS codes for reporting facilities: 327310 (Cement manufacturing); 327390 (Other concrete product manufacturing)

Note: This figure shows direct reported emissions from facilities with over 10,000 metric tons CO₂e in annual emissions. Direct reported emissions do not include electricity use.

WA production of CO₂e from cement and concrete production was **<1%** of the US total in 2020.

Effective methods to reduce CO₂ emissions in concrete production:

1. Use of Supplementary Cementitious Materials (SCMs)
2. Carbon Capture and Storage (CCS)
3. Alternative Binders
4. Improved Energy Efficiency
5. Recycling and Reuse
6. Optimized Mix Designs
7. CarbonCure Technology
8. Fuel switching
 - a. H2 replacing natural gas
 - b. H2 reducing clinker production



CARBON OFFSET CREDITS

One credit = one ton of carbon dioxide equivalent not emitted into the atmosphere.

A portion of a business's emissions allowance may be met through purchase of offset credits.

Available through projects producing permanent and verifiable greenhouse gas reductions or removals.



Limitations

Annual limits on offsets ensure businesses are working to reduce emissions and decarbonizing operations over time.

2023-2026: up to **8%** of the emissions with general offset credits and/or credits from projects on federally recognized Tribal lands.

2027-2049: up to **6%** of emissions...



Washington's four offset protocols

- a) Ozone Depleting Substance Protocol - Destroys CFCs from old refrigeration systems, warehouses, and industrial sites
- b) U.S Forestry Protocol - sequestration of carbon in forests through reforestation, conserving forests under threat, and improved forest management.
- c) Urban Forestry Protocol - planting and maintaining trees in urban areas.
- d) Livestock Projects - anaerobic manure treatment at dairy cattle or swine farms with “digester” tanks. Methane or biogas used for heat or fuel.



QUESTIONS?