

Roadmap to the Future

2023 S-2.0 Conference

Sustainable Economy Update

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BeyondMU
LIFELONG LEARNING

TIME TO RISE

THE MARQUETTE PROMISE TO BE THE DIFFERENCE

MARQUETTE S-LAB

1) Events

2) Research

3) Education

- Exec. Ed.
- AIM Program
- MBA/M.S. Finance

Marquette.edu // Business // SUSTAINABILITY LAB @ MARQUETTE BUSINESS

Upcoming events:

- Beyond MU: Clean Energy Investments under the Inflation Reduction Act
- Sustainability 2.0 Conference

The Marquette University Sustainability Lab is a cross-disciplinary project that aims to research and disseminate knowledge, foster and develop managers around effective sustainability and stewardship practices increasingly demanded across industries globally. Our lab aligns with the university's commitment to the **Laudato Si' papal encyclical** and furthers our Catholic, Jesuit mission to care for our common home. Through instructional opportunities that span business, the STEM fields, the humanities and more, the Sustainability Lab provides students with the knowledge they need to Be the Difference.

Marquette has long been recognized as a leader in sustainability. The university hosts the "Sustainability 2.0" Conference every fall, bringing together business leaders and executives from

ANNUAL REPORT

- Our 2023 Annual State of the Sustainable Economy and Policy Recommendations report is now out!

DR. MERKER'S SUSTAINABLE FINANCE BLOG

Sustainable Finance

Gas Continues to Fill the Power Gap (Reuters)
U.S. power producers increased output of electricity from natural gas by more than from clean power sources in the openi...

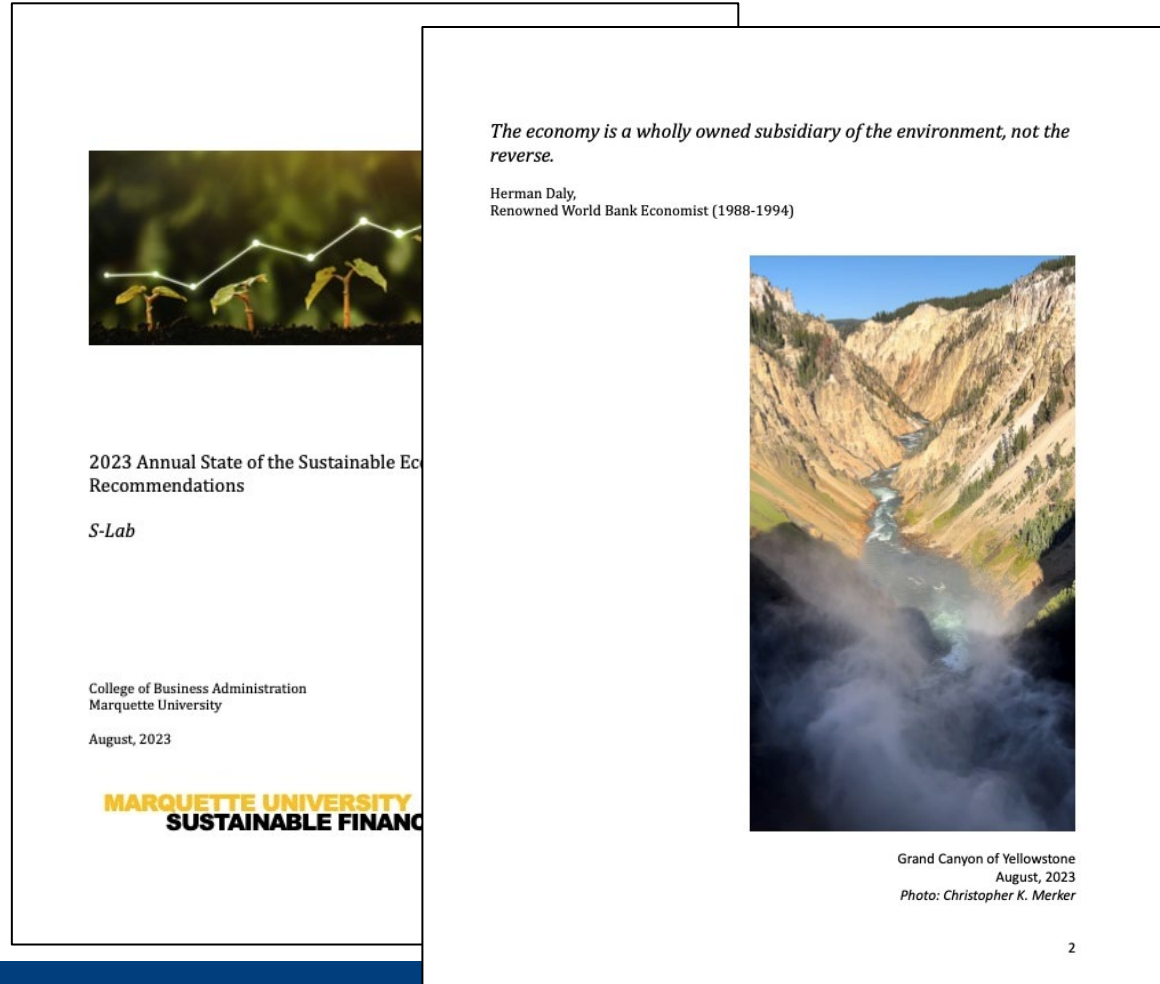
Global Boiling (Phenomenal World)
"Take always: 1) Global Warming should be more aptly renamed Global Climate Disruption 2) This year's heat is a 4 standar..."



S-LAB: STATE OF THE SUSTAINABLE ECONOMY REPORT

Now Available!

<https://www.marquette.edu/business/sustainability-lab/annual-report-download.php>



Risks

- Sustainable Economies face five main risks:
 - Climate change
 - Water stress
 - Species destruction
 - Growing inequality
 - War and geopolitical conflict

Hurdles

- Sustainable Economies face five main hurdles:

- Technology (technical)
- Capital (financial)
- Policy (legal and regulatory)
- Coordination (market/cultural/geopolitical)
- Time (speed/efficiency)

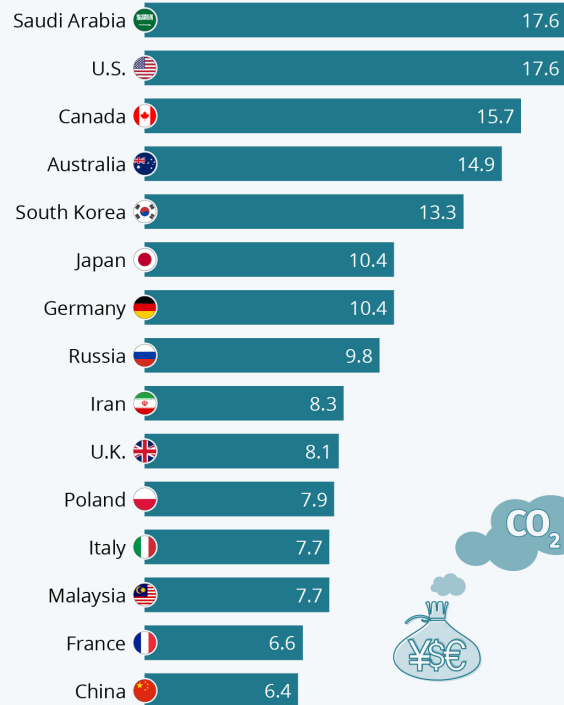
Strategies

- Mitigation
- Adaptation

The United States is uniquely responsible for leadership

Wealthy Nations Lead Per-Capita Emissions

Countries with highest per-capita emissions, in metric tons CO₂



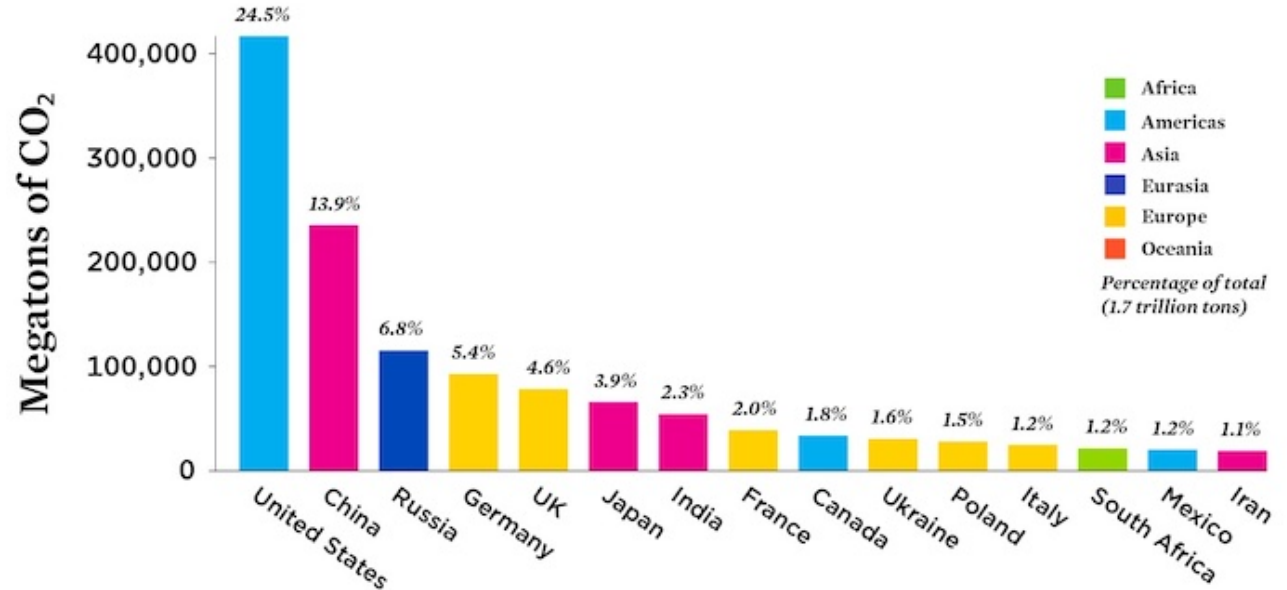
Source: World Bank



statista

Top CO₂ Emitting Countries, 1750-2020

(from fossil fuels and cement)



© 2021 Union of Concerned Scientists
Data: Global Carbon Project via Our World in Data

U.S. Sustainable Economy Dashboard – through October 2023

Cluster	Positive / Negative	Comment
Geopolitical	Negative	Two major regional conflicts: Ongoing Ukraine War and new Israeli-Hamas War. China is a growing threat, and North Korea remains a potential risk.
Governance	Negative	Loss of House speakership. Nov. gov't shutdown looming. Presidential election next year a complete wildcard.
Fiscal / Monetary	Negative	Debt increased 43% since Covid. Deficit forecast to leap from 3.7% to 6.4% of GDP in 2023. Interest cost approaching 14% of tax revenue. Too much debt can crowd out investment and cause stagflation. Inflation picture gradually improving, although long-term yields recently spiked.
Social	Neutral	Inflation eroding middle class offset by strong job market. Disparity in income remains across races and gender; however, some improvement among younger workers.
Climate and Nature Policy	Positive	California may push SEC over the line on climate disclosure. Release of TNFD guidance; recent commitment of 193 countries to rewild the planet. Inflation Reduction Act may stimulate upwards of \$3 trillion in green investment, but outcomes remain uncertain.
Climate Change	Negative	<ul style="list-style-type: none"> • 15 confirmed weather and climate disasters with losses exceeding \$1 billion • Only one other year (2017) had more billion-dollar disasters in the first six months. • Combined total of these 2023 disasters is \$32.7 billion—second only to 2021 for total damage costs through the first half of the year since 1980. (Office for Coastal Management)

U.S. on an unsustainable fiscal path

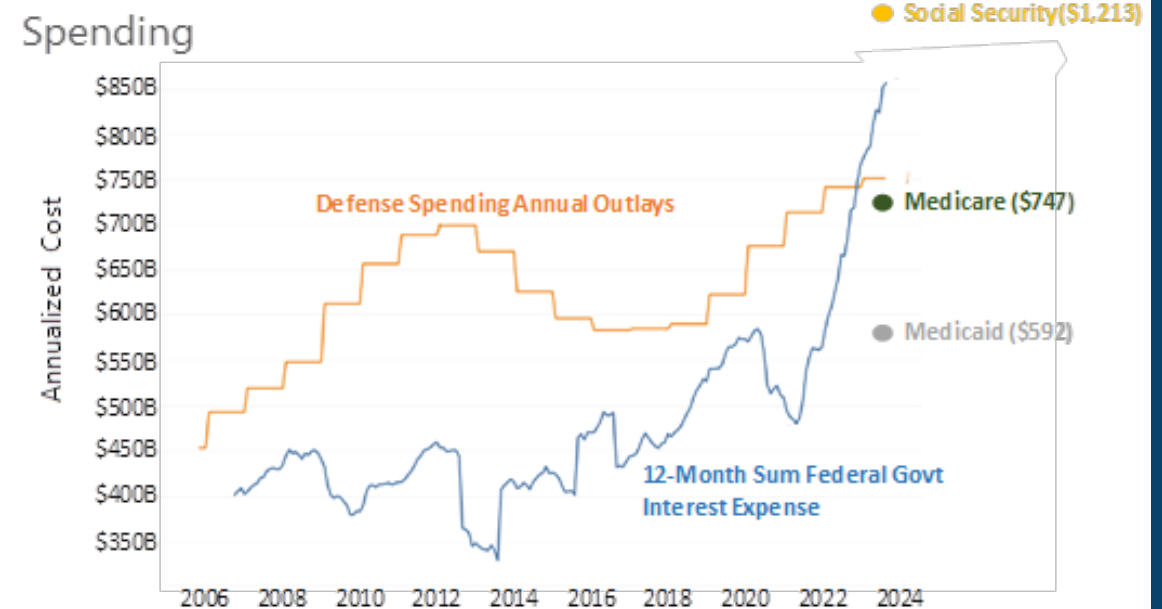
Federal deficit on the rise again

The deficit dipped after a surge in spending at the height of the Covid-19 pandemic, but this year's imbalance could be double that of last year's deficit.



Note: 2023 deficit figure is an estimate. Fiscal year 2023 ends on Sept. 30. Excludes impact of student debt cancellation plan.

Source: Committee for a Responsible Federal Budget
Graphic: Tami Luhby, CNN



Bianco Research LLC, 7/31/2023. Social Security, Medicare, Medicaid represent 2022 spending totals according to the Congressional Budget Office As of 3/28/2023.

- Leverage and default risks increasing despite full employment
- Will demand meet supply?
- Tightening credit fundamentals
- Deleveraging cycles slow economy

Climate change [+ Add to myFT](#)

UN climate fund fails to secure funding pledge from US

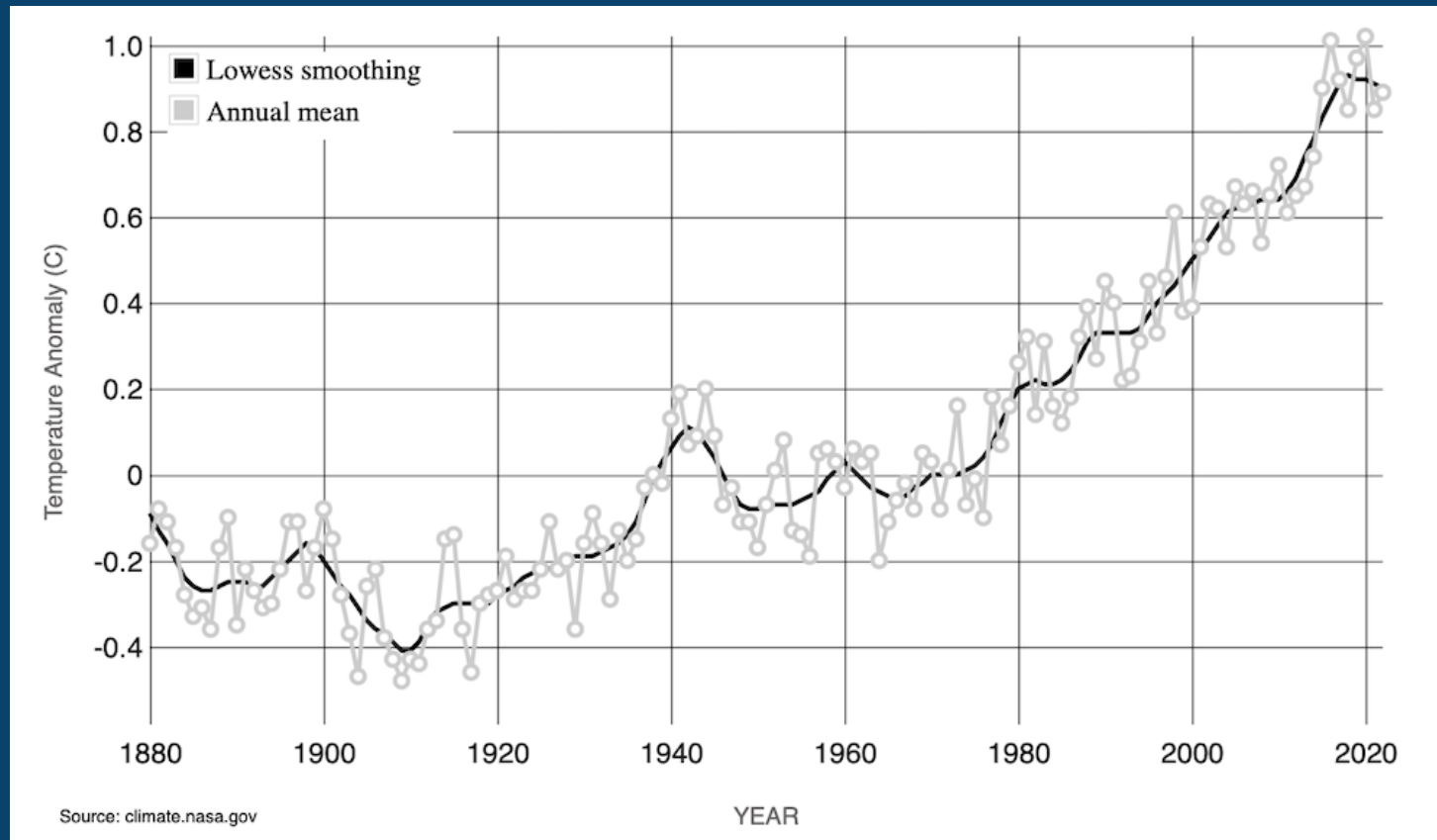
Lack of support from Washington means commitments from wealthy countries fall short of previous financing rounds

Climate – a warming world

The average global temperature has increased by a little more than 1° Celsius (2° Fahrenheit) since 1880.

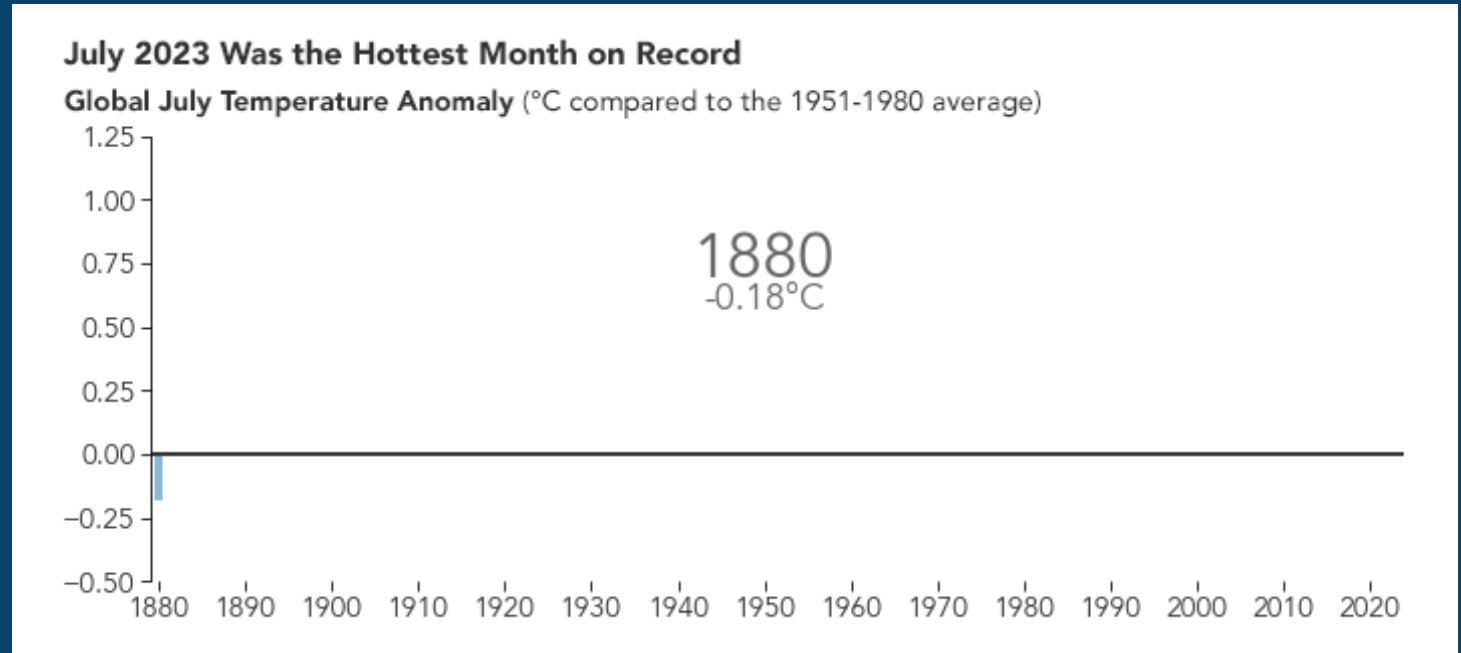
Two-thirds of the warming has occurred since 1975.

Land-Ocean Temperature Index

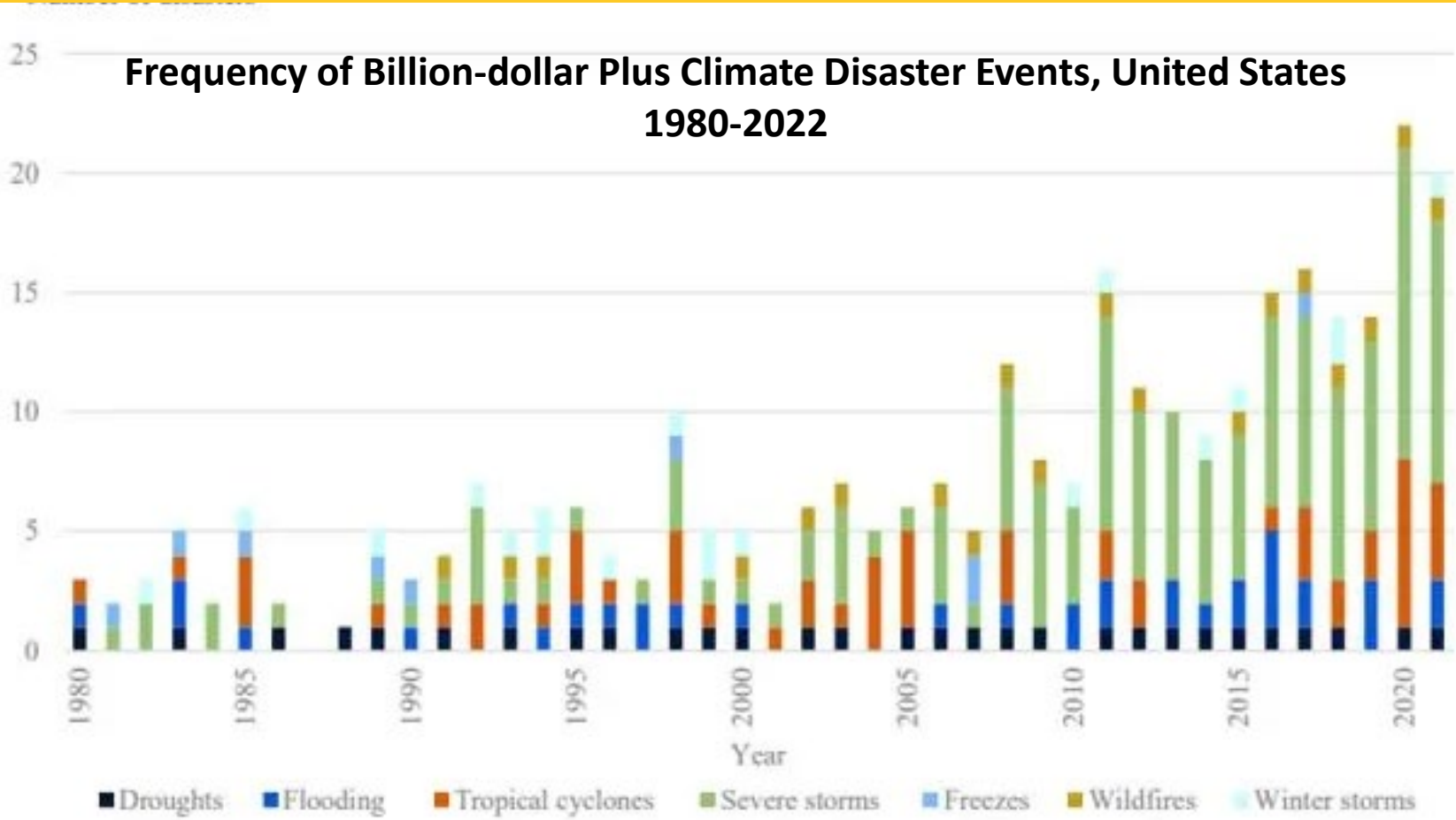


July 2023 was the hottest month on record

- 2023 3rd-hottest year on record through July,
- Global temperatures through July 2023 were 1.29°C (2.32°F) above the 1881-1910 baseline, approaching record levels from 2016.
- 2023 - 99% chance of finishing among the top five on record.
- Warming will continue as long as carbon pollution continues. We have many options to cut carbon pollution from energy, transportation, agriculture, and more.



The growing cost of climate disasters



Sources: NCEI (2021, 2022).

Note: Disaster costs are adjusted for inflation using the Consumer Price Index for All Urban Consumers.

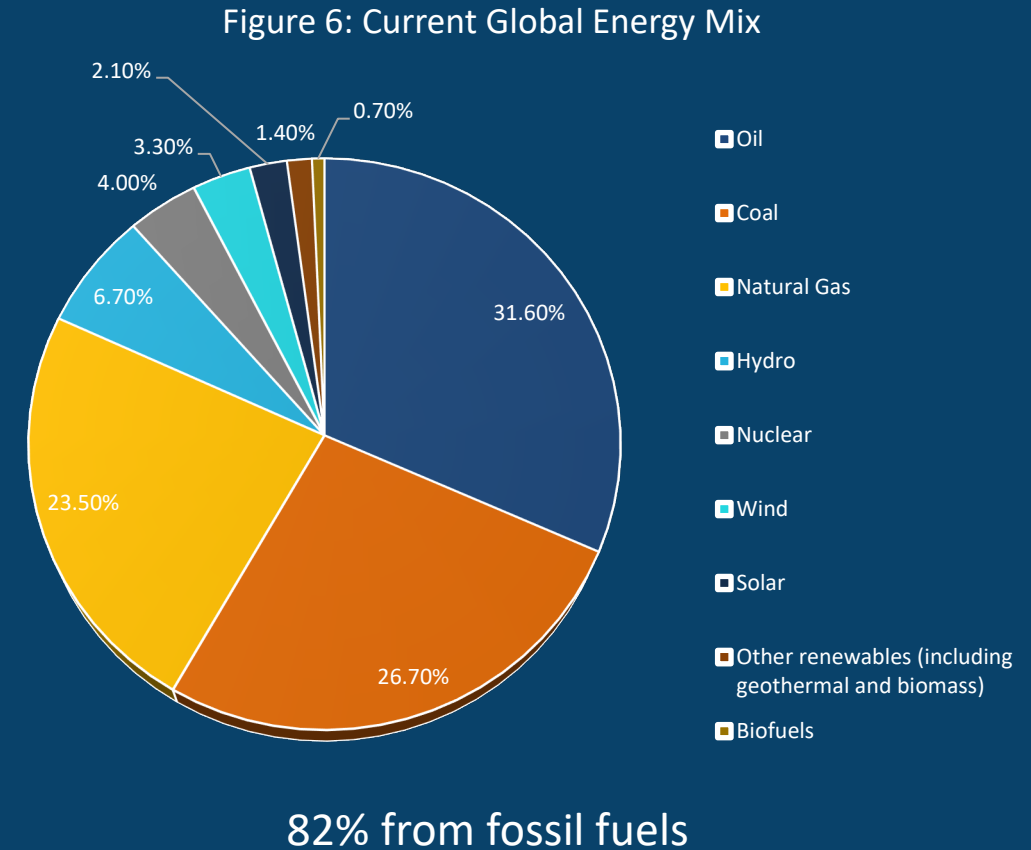
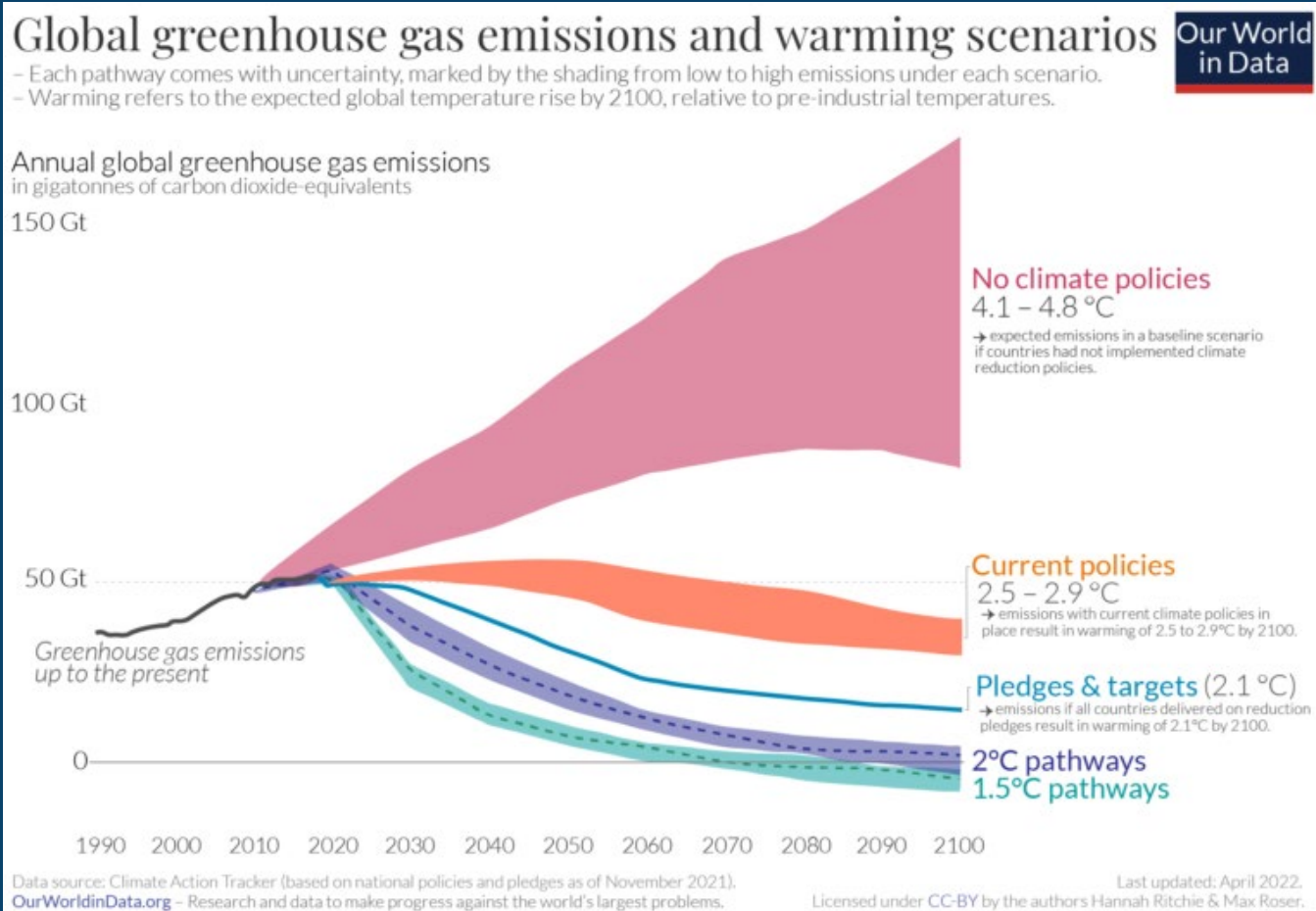
Multiple insurance companies have stopped writing homeowners policies in California or have limited how many customers they will have on their books. They include giants Allstate, State Farm, Farmers, and AIG, as well as AmGUARD Insurance, Falls Lake Insurance and Chubb Ltd.

*North Bay Business Journal
 September 1, 2023*

A combination of extreme weather events, higher costs to rebuild and a rise in litigation has put the state's (FL) insurance industry into crisis. Multiple insurers have pulled out of the state altogether...The surge in insurance premiums has led many people who own their homes outright to drop insurance...others who can't are selling.

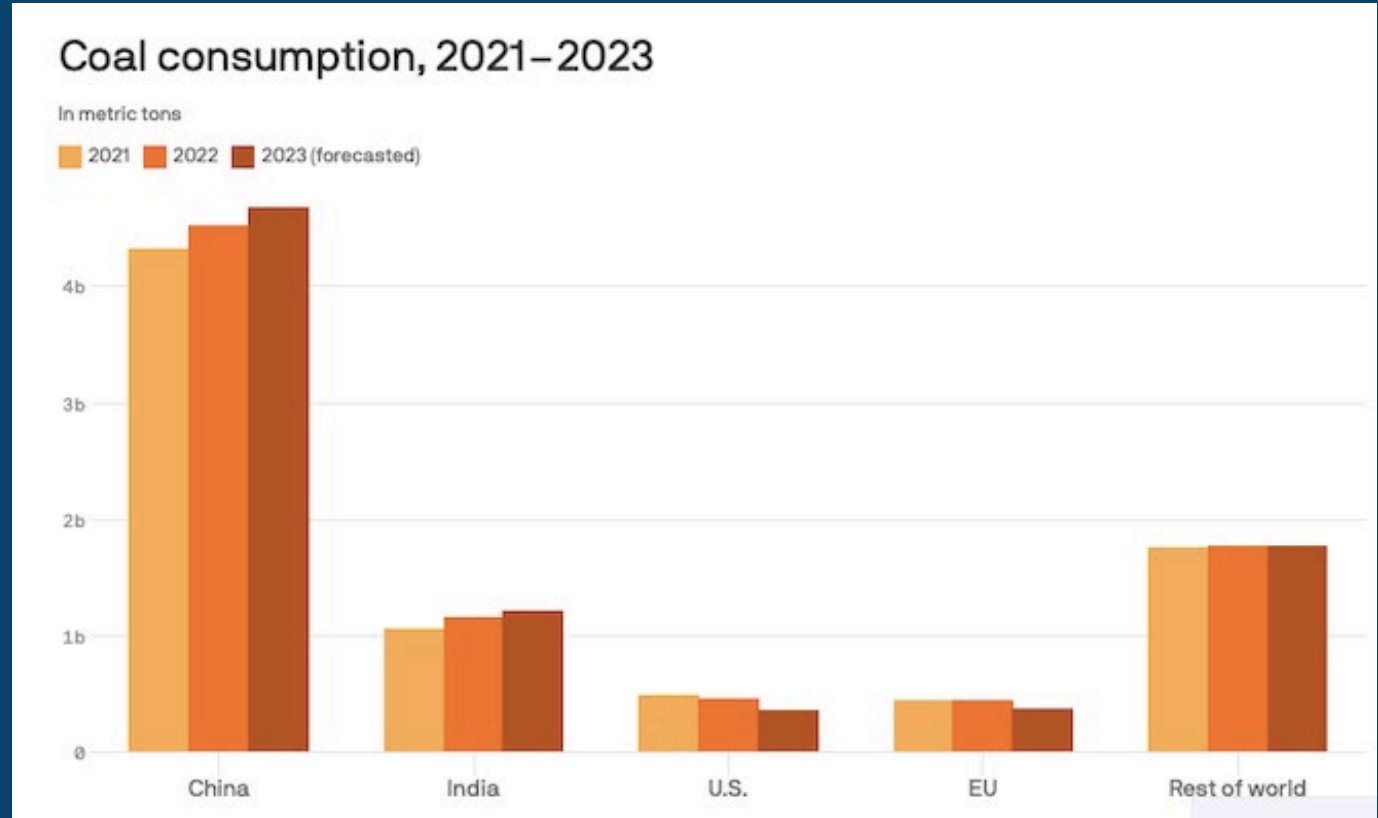
-Wall Street Journal, October 17, 2023

Bending the curve – policy scenarios



Coal, the 20% problem

A 2021 IEA report estimates 20 percent of global GHG emissions come from coal, the largest single source. Ending coal by switching to natural gas, or by scrubbing or capturing emissions, could contribute significantly to emissions reduction. While China and India stand out among the world's largest consumers of coal (see Figure 2), high intensity (i.e., high per capita) countries such as Australia, Poland and South Africa are also significant consumers.

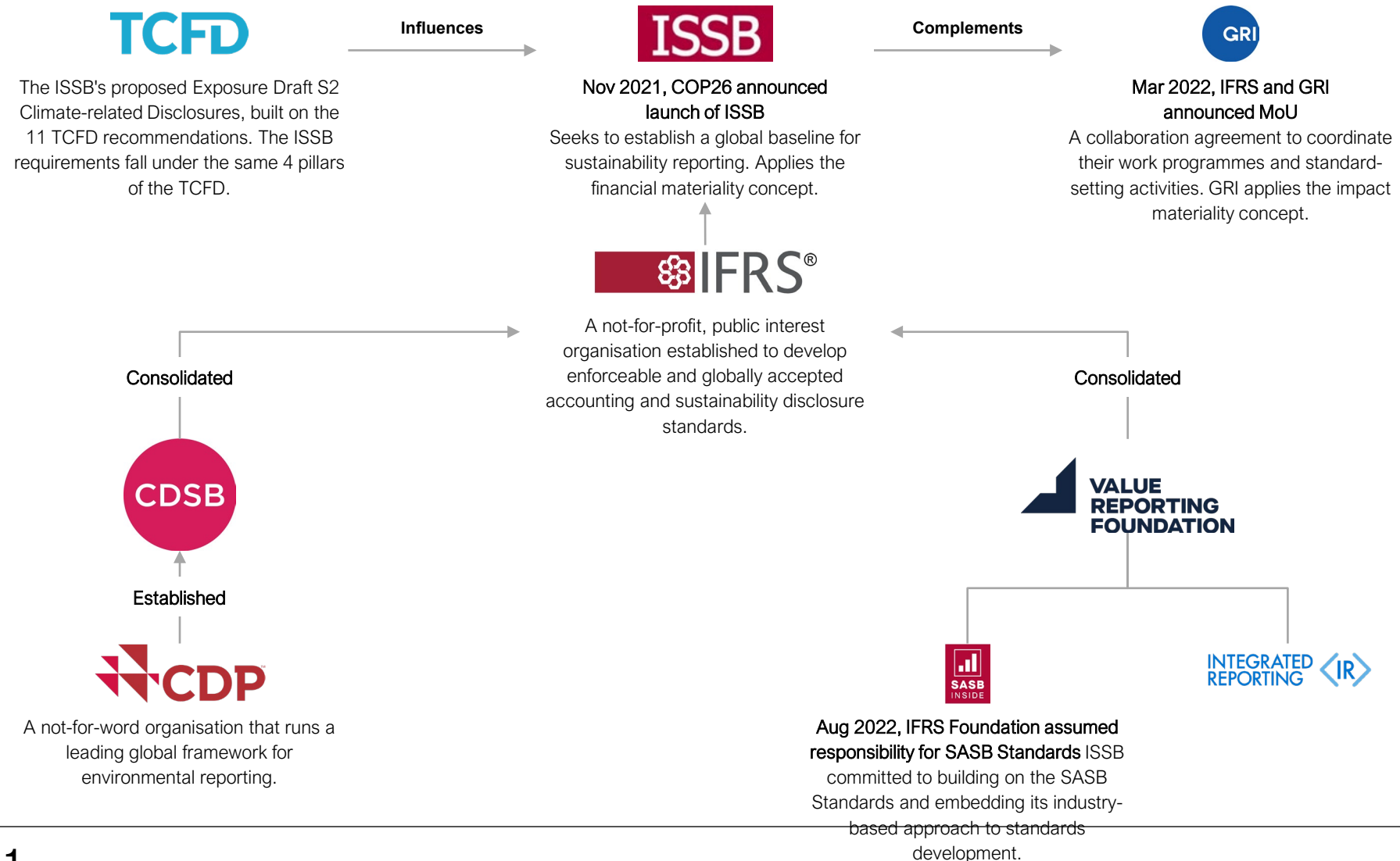


<https://www.iea.org/commentaries/it-s-critical-to-tackle-coal-emissions>

<https://www.worldometers.info/coal/coal-consumption-by-country/>

Source: International Energy Agency, Axios

Frameworks and Standards are Rationalizing



The SEC climate rule (2022)

Three categories of disclosure:

- 1) Material climate impacts
- 2) Greenhouse Gas Emissions
- 3) Targets & transition plans (e.g., internal carbon price)

Focuses on:

Transition risk and physical risk

Threshold for reporting:

1% of revenue (absolute materiality threshold)

Reports in:

10K

The proposed rules would require disclosures on Form 10-K about a company's governance, risk management, and strategy with respect to climate-related risks. Moreover, the proposal would require disclosure of any targets or commitments made by a company, as well as its plan to achieve those targets and its transition plan, if it has them. (Gensler)

Timing:

FY23 – Large Accelerated Filers

FY24 – Limited assurance (and everyone else)

FY26 – Reasonable assurance

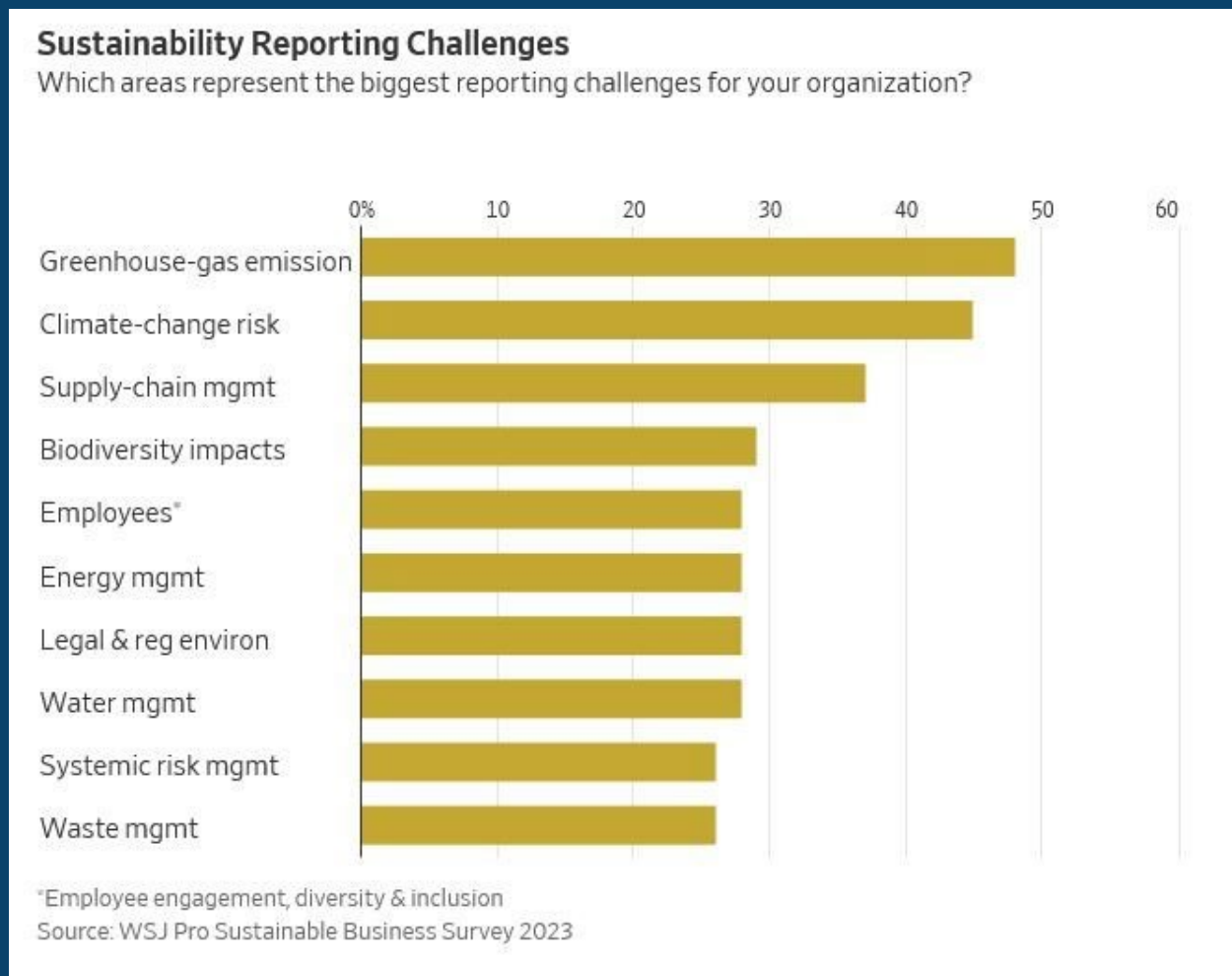
California – leapfrogging the SEC (2023)

- Most extensive emissions- and climate-disclosure law in the U.S.
- SB 253 requires companies with greater than \$1 billion in annual revenues to publicly file annual reports
- Direct, indirect, and supply chain greenhouse gas (GHG) emissions, verified by an independent and experienced third-party provider
- SB 261 requires companies with \$500 million in annual revenues to prepare biennial reports
- Disclosing climate-related financial risk and measures to reduce and adapt to that risk
- First reports are due by January 1, 2026.

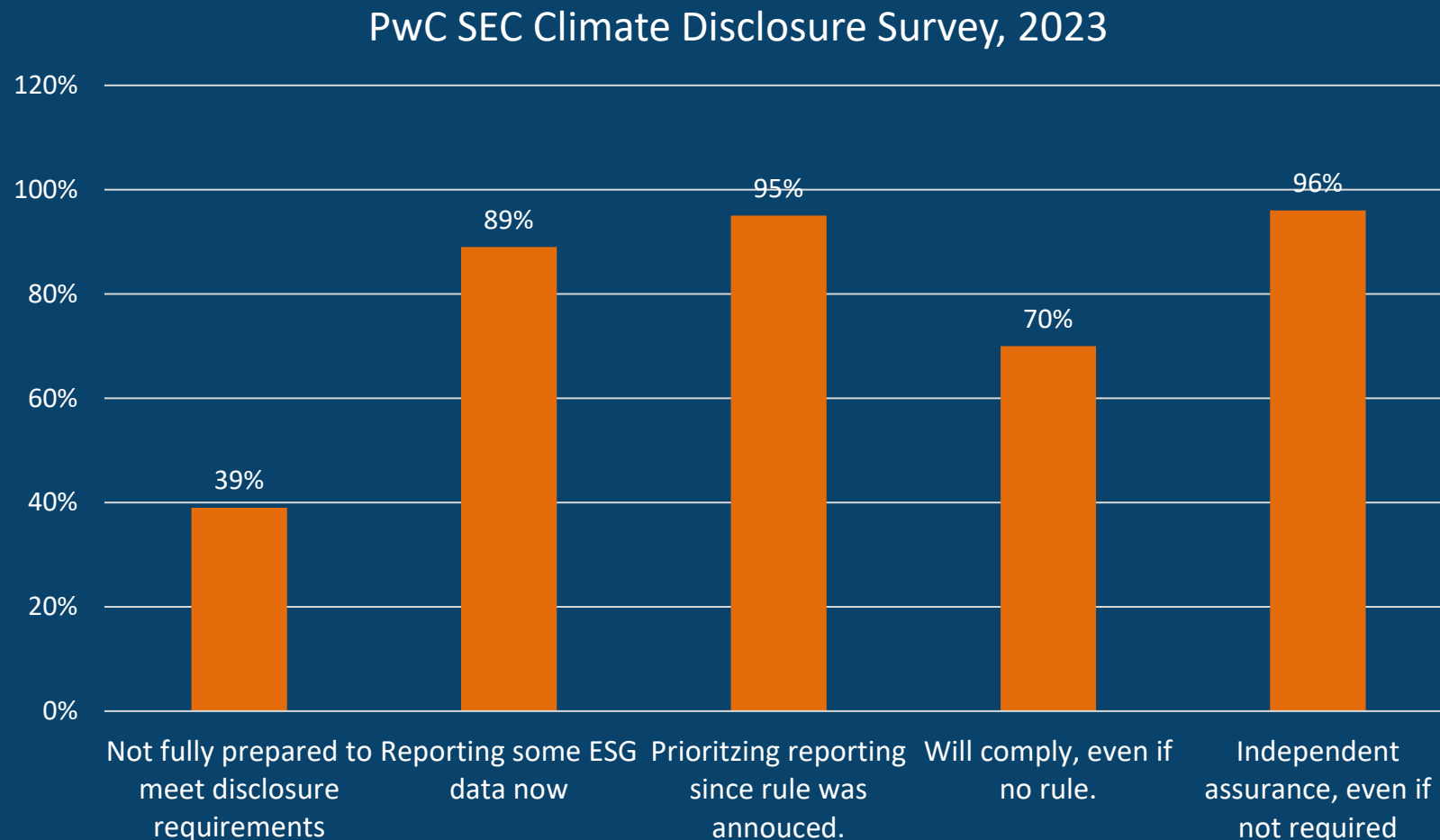
- Public *and* private companies with operations in California
- Up to 10,000 companies
- Scope 3 is required!

<https://www.insideenergyandenvironment.com/2023/09/california-legislature-passes-landmark-climate-disclosure-laws-spotlight-on-sb-261/#:~:text=SB%20261%20requires%20companies%20with,due%20by%20January%201%2C%202026.>

Biggest reporting challenges facing companies



Most intend to comply, even if the SEC climate rule fails



<https://www.pwc.com/us/en/services/esg/library/sec-climate-disclosure-survey.html>

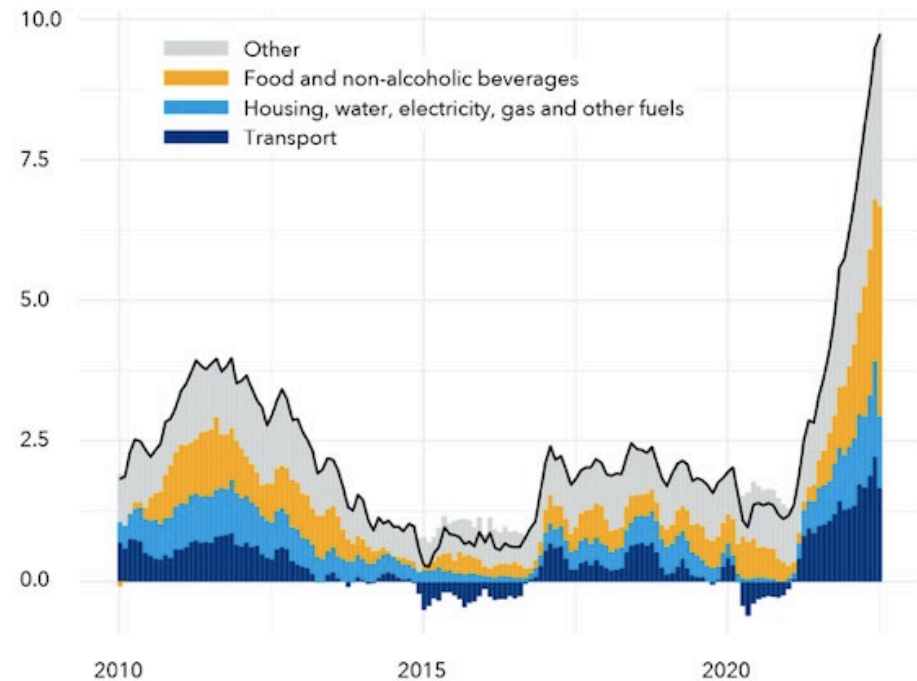
Inflation eroding the middle class, but job market resilient

The share of adults who live in middle-class households is shrinking. Now, 50% of the population falls in this group as of 2021, down from 61% 50 years earlier, according to Pew.

Nearly three-quarters, or 72%, of middle-income families say their earnings are falling behind the cost of living, up from 68% a year ago, according to a separate report by [Primerica](#) based on a survey of households with incomes between \$30,000 and \$100,000. A similar share, 74%, said they are unable to save for their future, up from 66% a year ago.

Inflation drivers

Food and energy prices continue to drive the global inflation surge.
(percent, median inflation rate)



Source: IMF CPI database and IMF staff calculations.
Note: Chart shows median total inflation and in select categories across 88 countries, including 28 advanced economies and 60 emerging and developing economies.

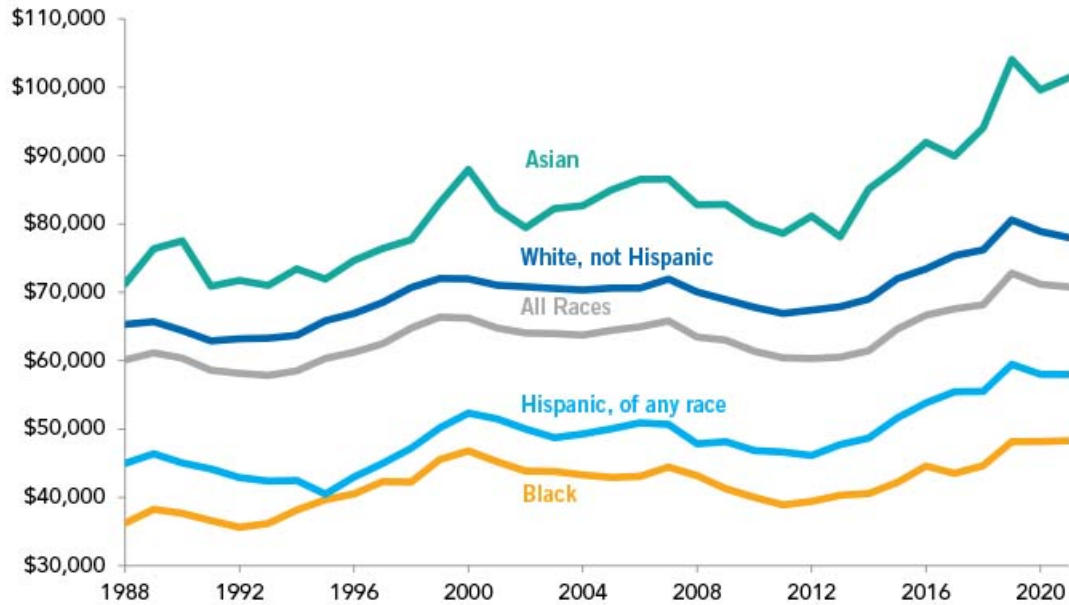
IMF

State of DEI



Income varies widely across racial and ethnic groups in the United States

MEDIAN HOUSEHOLD INCOME BY RACE/ETHNICITY OF HOUSEHOLD HEAD (2021 DOLLARS)



SOURCE: United States Census Bureau, Current Population Survey, 1967 to 2021 Annual Social and Economic Supplements, August 2022.

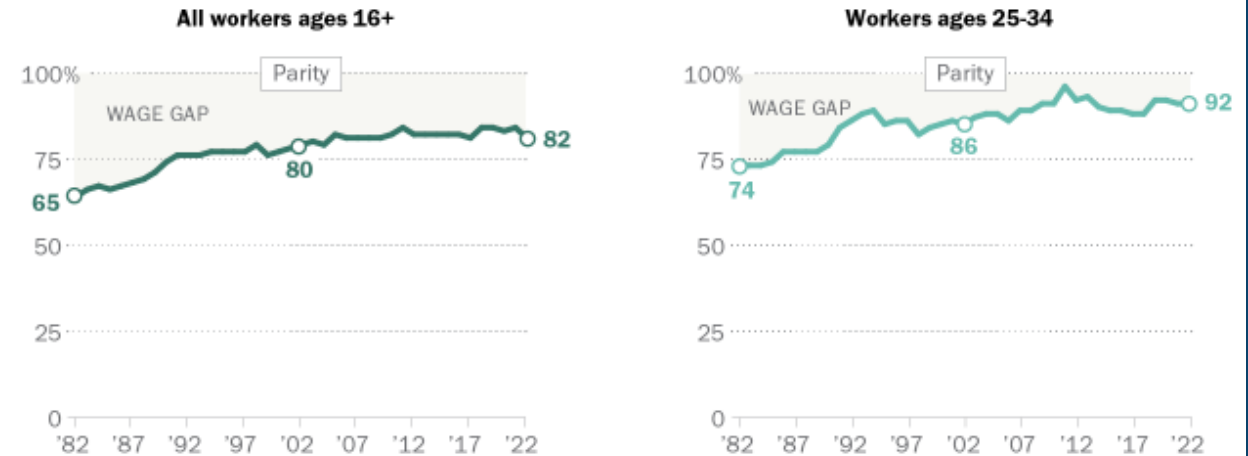
© 2022 Peter G. Peterson Foundation

PGPF.ORG

<https://www.pgpf.org/blog/2023/02/income-and-wealth-in-the-united-states-an-overview-of-recent-data>

Gender pay gap in U.S. has not closed in recent years, but is narrower among young workers

Median hourly earnings of U.S. women as percentage of men's median earnings among ...



Note: Estimates are for civilian, non-institutionalized, full- or part-time employed workers with positive earnings. Samples include employed workers with positive earnings, working full time or part time, excluding the self-employed.

Source: Pew Research Center analysis of the Current Population Survey outgoing rotation group files (IPUMS).

PEW RESEARCH CENTER

<https://www.pewresearch.org/short-reads/2023/03/01/gender-pay-gap-facts/>

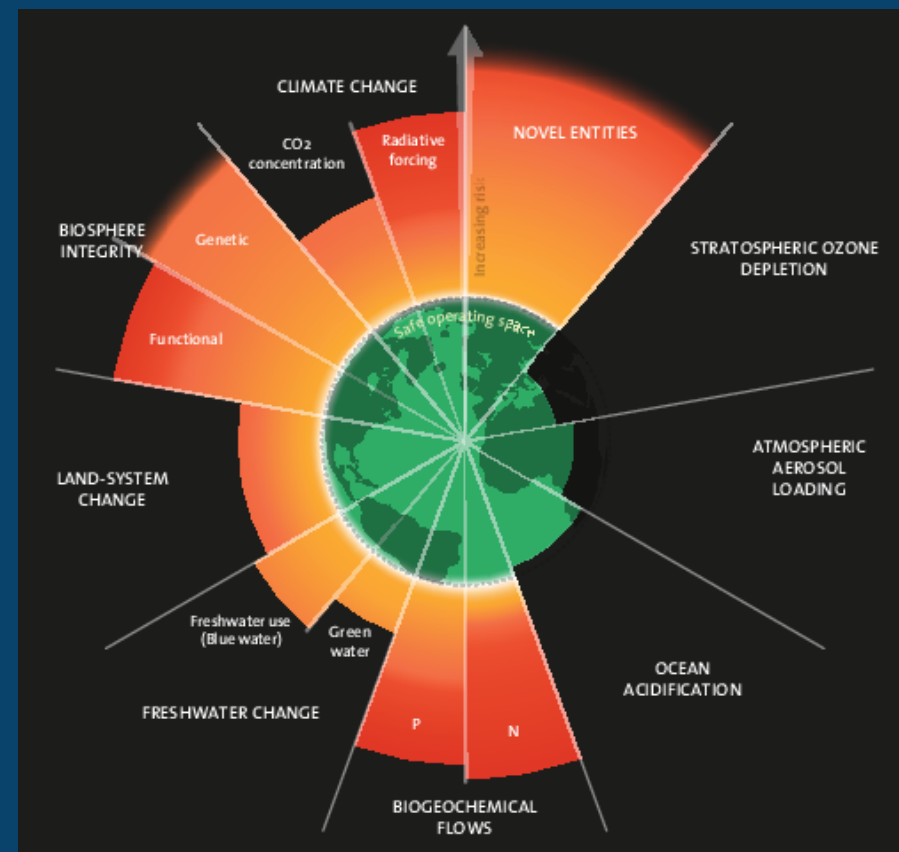
Effect of SCOTUS ruling?

2023 S-Lab policy recommendations summary

Policy Recommendations

1. Expand natural gas supplies to replace coal.
2. Build capacity in renewables.
3. Emphasize geothermal and nuclear over solar and wind.
4. Speed the regulatory approval process for energy projects.
5. Emphasize hybrids over electrics in transport.
6. Measure and disclose carbon emissions.
7. Expand Carbon Capture technology.
8. De-emphasize hydro-electric and biofuels.
9. Improve water measurement and management practices.
10. Re-naturalize the environment and manage for biodiversity effects.
11. Reduce food waste and improve sustainable food production practices.
12. Apply sustainable practices and materials in road and building construction.
13. Assess and manage supply chain impacts on human rights.
14. Put the governance infrastructure in place to manage the business more sustainably.

Planetary Boundaries



<https://www.stockholmresilience.org/research/research-news/2023-09-13-all-planetary-boundaries-mapped-out-for-the-first-time-six-of-nine-crossed.html>

MARQUETTE UNIVERSITY SUSTAINABLE FINANCE & BUSINESS

A big thank you to our speakers and sponsors!



APPENDIX

Sustainability is Core for Marquette

The MarquetteUGreen Sustainability Vision

Marquette in the future is a university that reaches beyond boundaries to transform our social, environmental, and economic influence today and for future generations. Everyone at Marquette will seek opportunities to innovate, collaborate and advance sustainability as it relates to academic, engagement, operations, students, dining, transportation, and community. We do this in pursuit of our Jesuit mission to discover knowledge, develop excellence, and cultivate faithful leadership in service to others.

Guiding Principles

Four fundamental actions or behaviors will inspire and guide sustainability at Marquette:

- **Care** - Social and environmental responsibility, including care for creation and climate justice.
- **Enhance** - Health and well-being of students, employees, communities and ecosystems.
- **Protect** - Environmental welfare and ecosystem resilience.
- **Secure** - Economic security and resource conservation.

<https://www.marquette.edu/sustainability/>

Sustainability and its Importance

The most commonly used definition of sustainable development is from the Brundtland Report.

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

Sustainability is not a fixed state but a process of change that seeks to harmonize environmental protection, social equity, and economic viability.

Sustainability is the foundation for the United Nation's global framework for international cooperation on the 17 Sustainable Development Goals (SDG's).

St. Francis / Laudato Si Pledge

The Pledge affirms:

PRAY and reflect on the duty to care for God's Creation and protect the poor and vulnerable.

LEARN about and educate others on the causes and moral dimensions of climate change.

ASSESS how we, as an institution, contribute to climate change by our own energy use, consumption and waste.

ACT to change our choices and behaviors to reduce the ways we contribute to climate change.

ADVOCATE for Catholic principles and priorities in climate change discussions, especially as they impact those who are poor and vulnerable.

MARQUETTE UNIVERSITY SUSTAINABLE FINANCE & BUSINESS

Executive Education - Sustainability Management

COMING SOON

FOUR MODULES – SUSTAINABILITY MANAGEMENT

<p>Fundamentals of Sustainability Accounting I</p> <p>The FSA Credential is designed to understand the link between material sustainability information and a company's financial performance.</p> <p>Part I: The Need for Sustainability Accounting Standards</p> <p>Part II: Understanding SASB Sustainability Accounting Standards</p> <p>Part III: Using SASB Standards</p>	<p>Fundamentals of Sustainability Accounting II</p> <p>Level II expands on the fundamentals of sustainability and materiality.</p> <p>Part I: Identifying the Material Financial Impacts of Sustainability Factors</p> <p>Part II: Evaluating the comparability of sustainability information</p> <p>Part III: Understanding the connection between sustainability performance and valuation</p>	<p>ESG Investing</p> <p>ESG analysis is an increasingly important part of the investment process. Investors are incorporating ESG data to gain a broader understanding of the companies in which they invest. This course covers diverse aspects of sustainable investments and offers tools for effective financial valuation, opportunity, and risk assessment</p>	<p>Strategic Sustainability</p> <p>This capstone course provides a systems approach for businesses to integrate sustainability into strategic planning. The course addresses strategy, goal setting, monitoring, and reporting, as well as investor, customer, and stakeholder communication of sustainability programs.</p>
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 <p>SASB STANDARDS Now part of IFRS Foundation</p>	
 <p>CFA Institute</p>	

LEARN MORE AT: marquette.edu/ESG



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