

Energy Challenges

Puerto Rico Innovation Expo

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The 2019 Puerto Rico Energy Public Policy Act

- 40% of electricity to be made by renewables by 2025
- 60% renewable by 2040





Effect on Climate

- Net Zero Puerto Rico: 0.003 °C difference by 2100
- Net Zero United States: 0.2 °C difference by 2100

Energy Security and Tourism

- Elevators
- Heating
- Refrigeration
- Air Conditioning



Energy Security and Agriculture

- In 2021, Sri Lanka President Rajapaksa banned synthetic fertilizer and pesticide imports



Result of Poor Energy Security

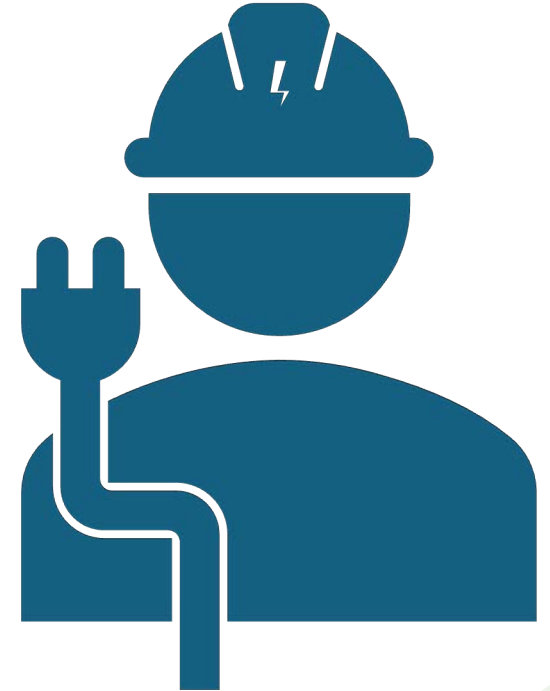
- In 2022, with inflation at 55 percent and the economy in tatters, protestors took over President Rajapaksa's home, his government fell



Our energy security, our agricultural security, and ultimately our food security, depend on fossil fuels

US Department of Energy Report, PR100

- “we assumed that the transmission and distribution networks were repaired sufficiently to support reliable operation of the electric system...”
- It does not give an estimate of the increased costs levied on residents of Puerto Rico due to switching to renewables



The PR100 Report Fails to Consider...



Costs associated with reinforcing and repairing renewable equipment such as wind turbines and solar panels, which are notably vulnerable to hurricane damages.



Financial outlays necessary for overhauling Puerto Rico's aged transmission and distribution systems




Financial strain will be on residents to adopt such a plan



More Problems with PR100 Report

- 53% increase in utility revenue requirements
- 75% increase in average retail electricity rates between 2020 and 2025
- This would jeopardize manufacturing, artisan work, rates at hotels, and restaurants



This plan will require a
fundamental re-engineering
of Puerto Rico's power grid



The report heavily relies on battery storage solutions to stabilize the grid as renewable usage increases



Puerto Rico's grid can't handle
excess customer solar



Deindustrialization of Germany

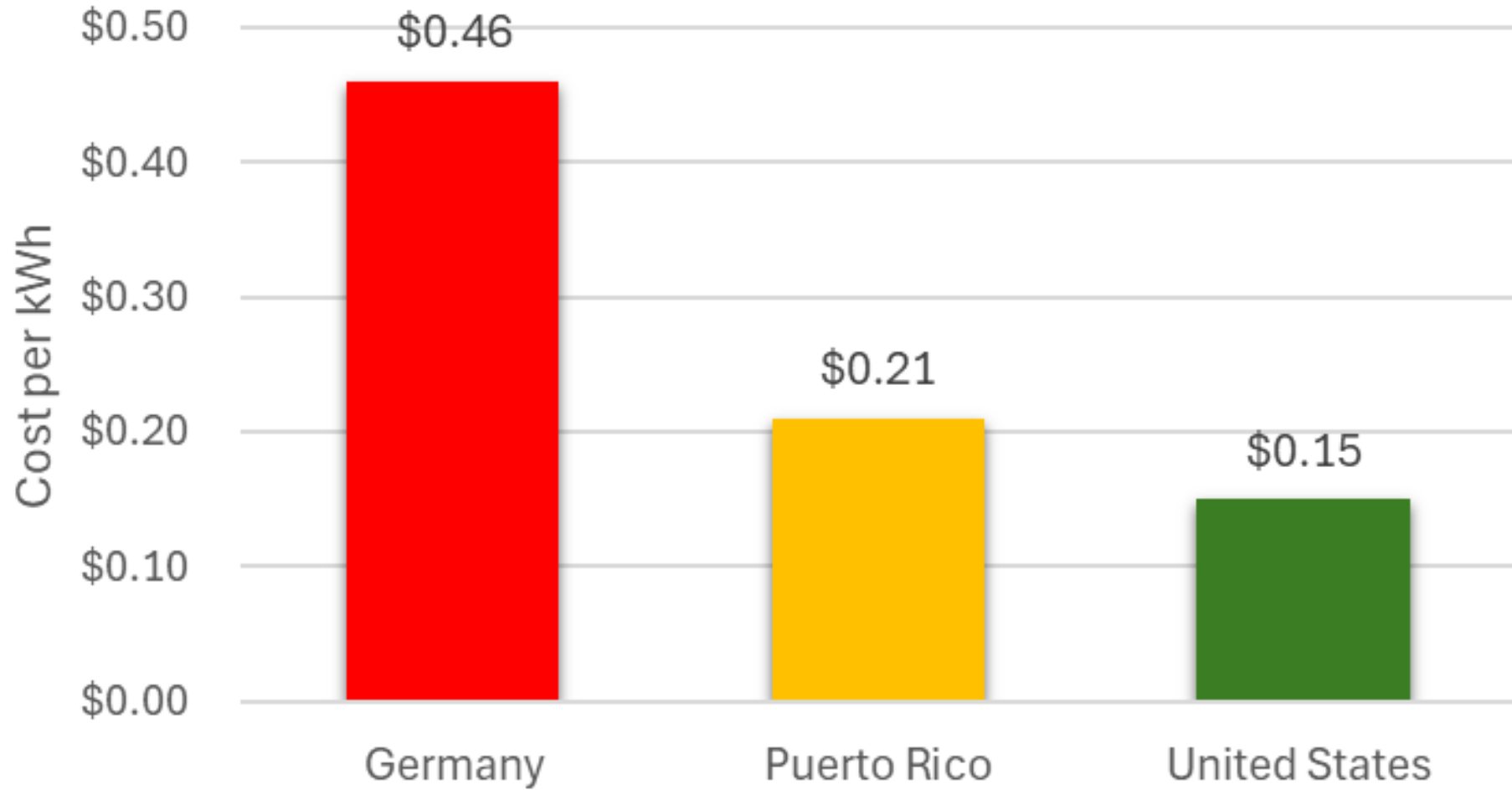
- moving from nuclear, coal, and natural gas to renewables



Germany's Energy Transition

Increase the use of renewable energy sources to
80% by 2030 and 100% by 2035

Cost of Electricity



Around 67% of German companies have moved at least some operations abroad due to high energy costs





President Trump, emphasized the need to produce more oil and gas and get rid of energy tax credits for wind and solar.

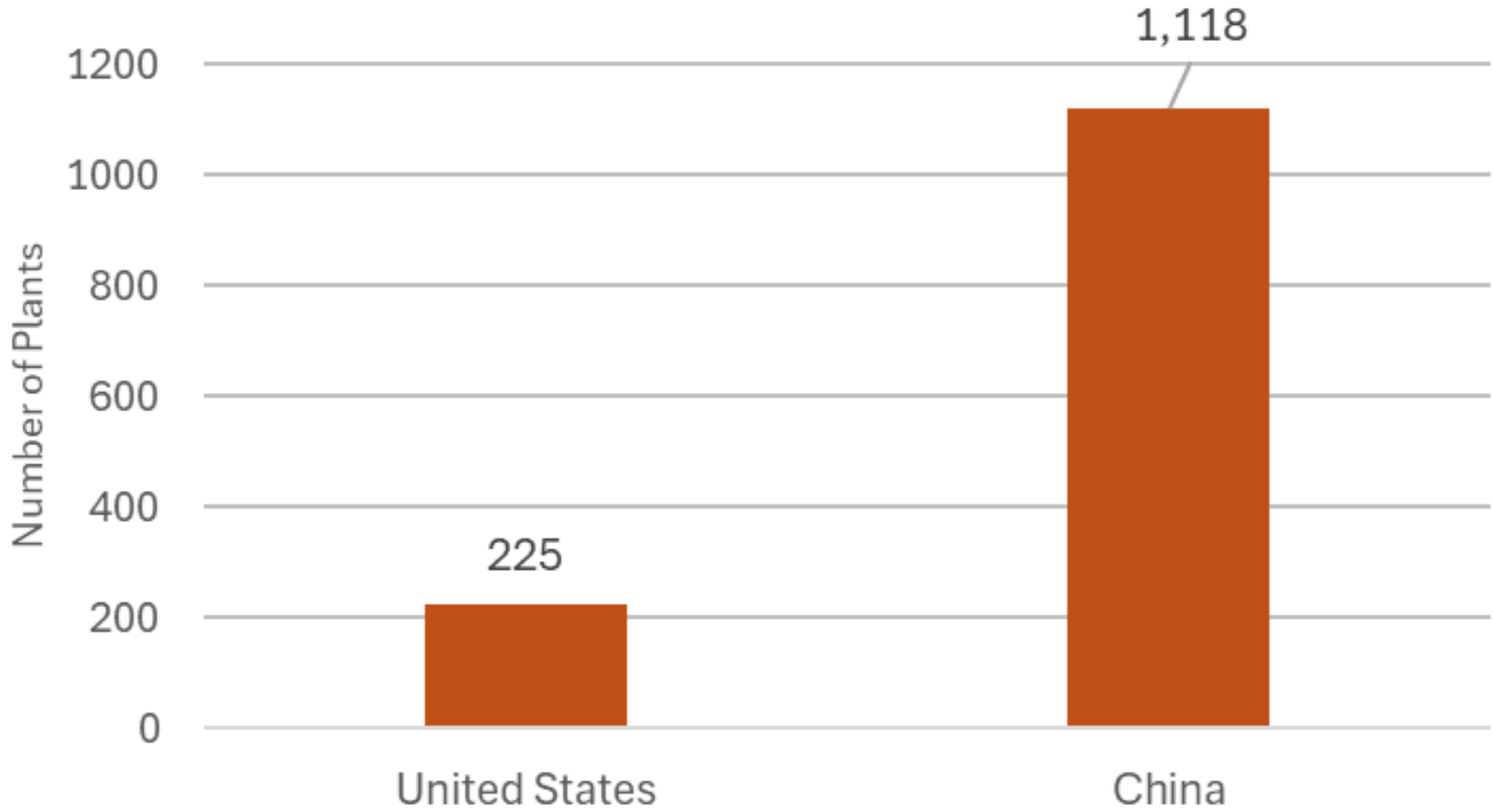


These goals help China

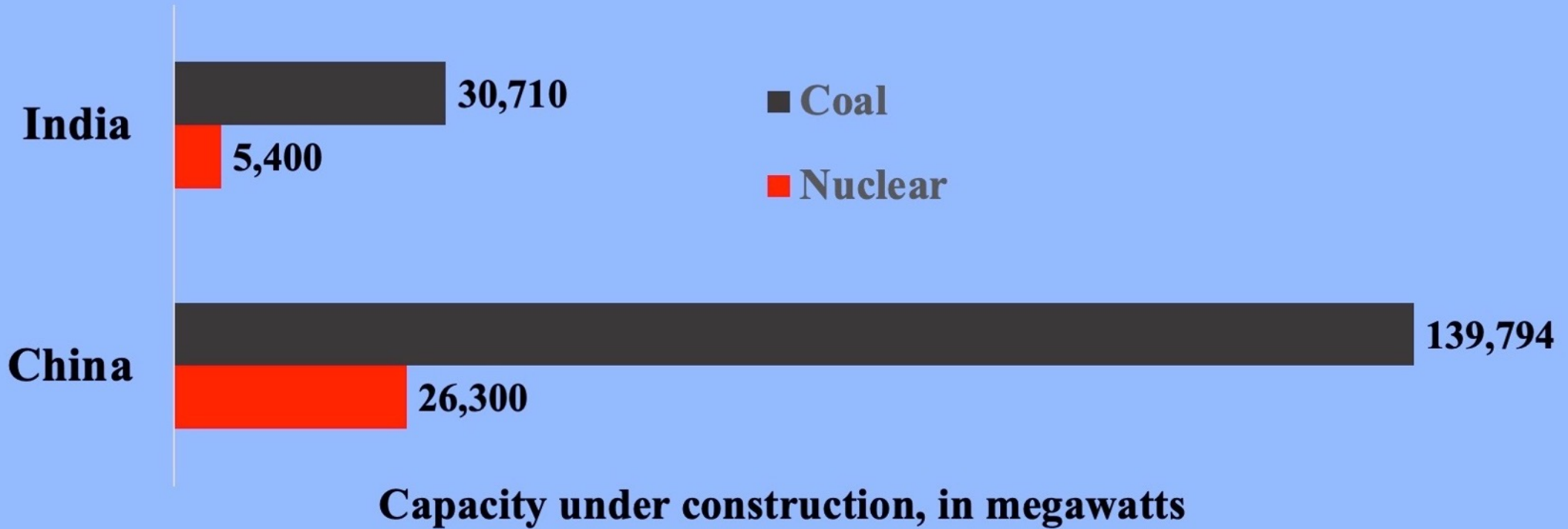
China is financing the coal-fired power plants in emerging economies that American institutions refuse to fund



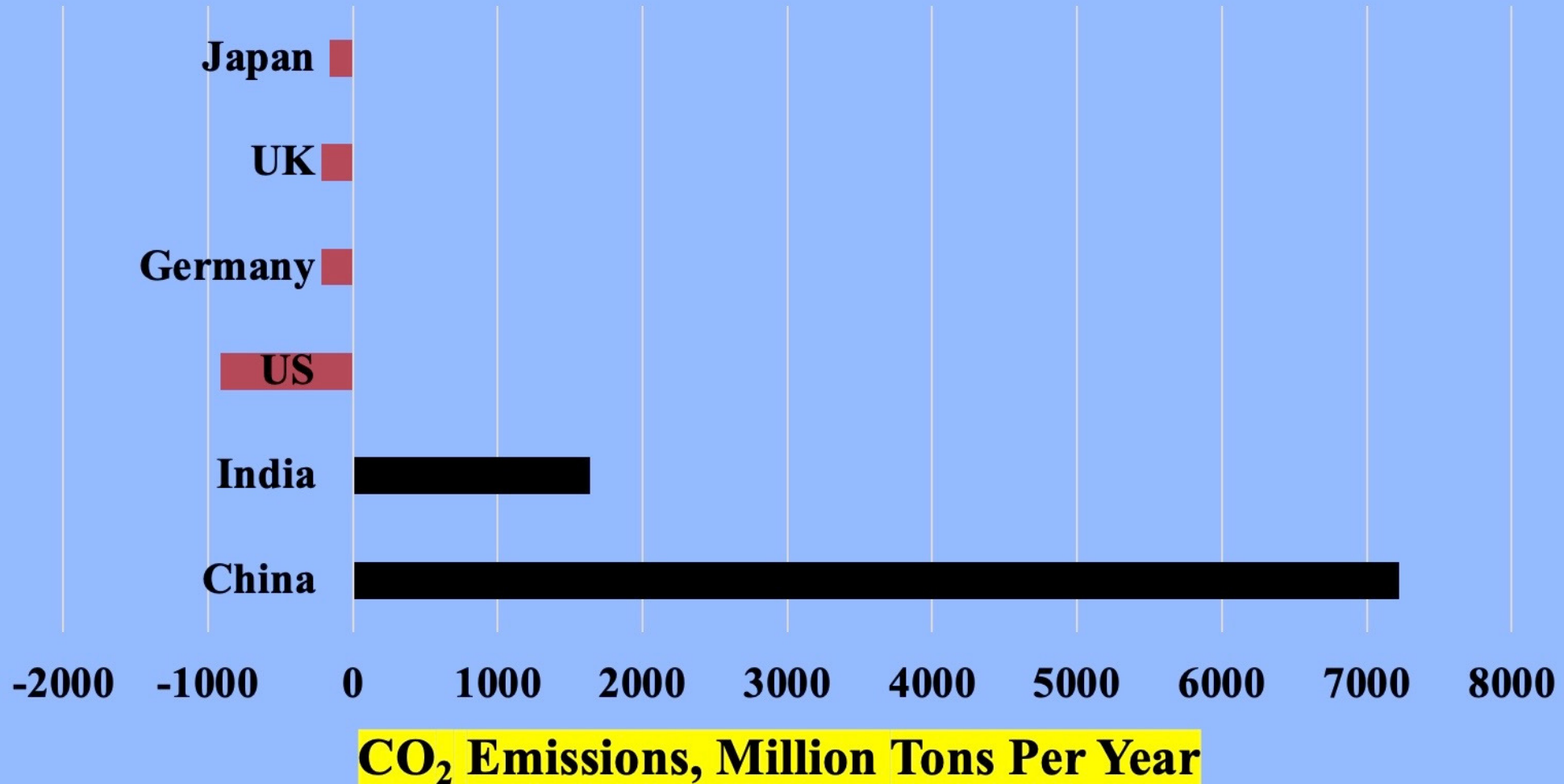
US vs China Coal Plants



More Than Half Of New Global Nuclear Capacity Is Being Built In China & India, But Their Coal-Fired Capacity Is Growing >5x Faster

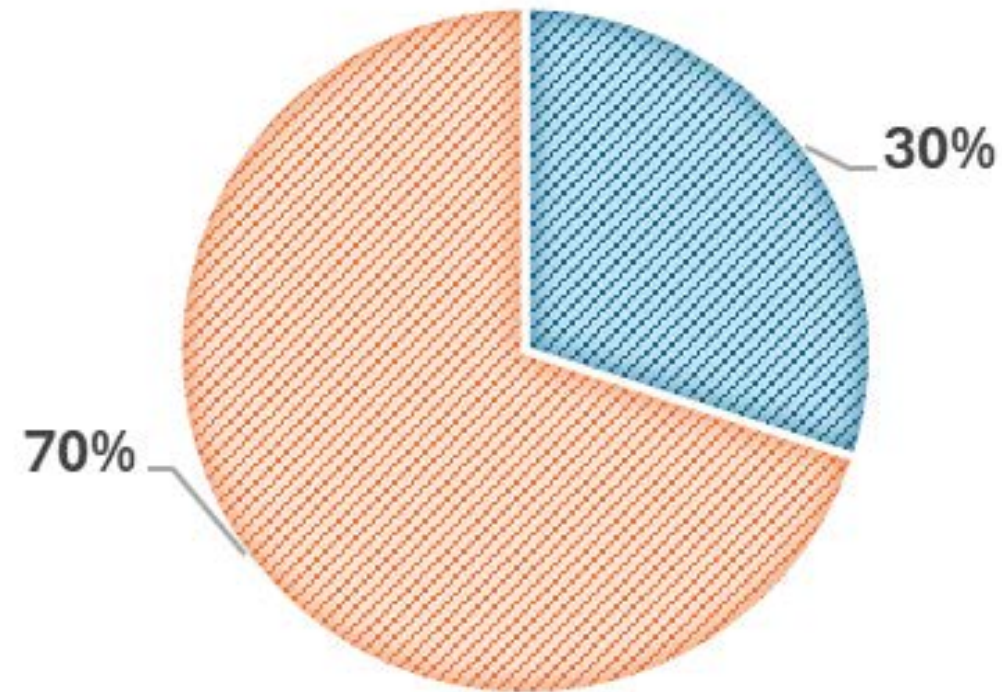


Change In CO₂ Emissions In The Six Largest Economies, 2000 to 2022

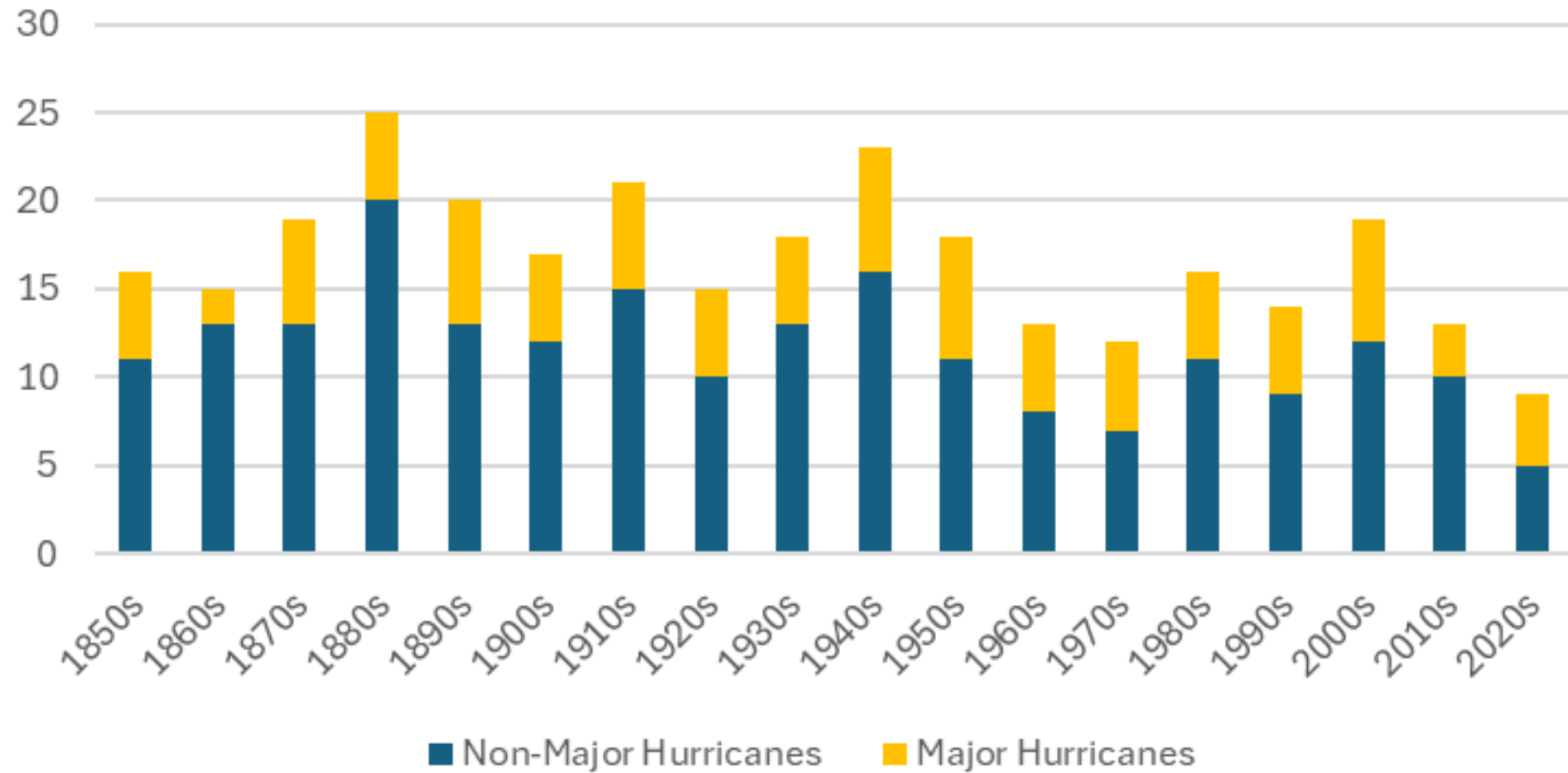


EV BATTERY MANUFACTURING

■ Not China ■ China

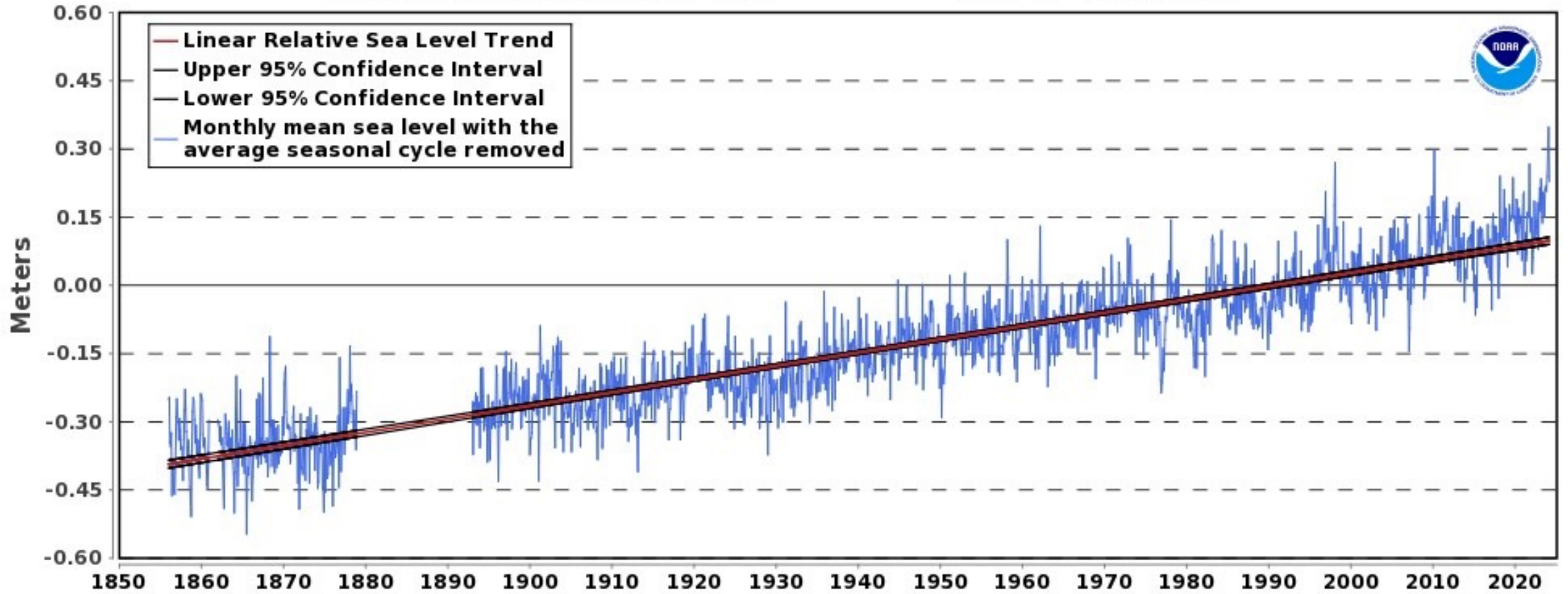


US Landfalling Hurricanes and Major Hurricanes



8518750 The Battery, New York

2.92 +/- 0.09 mm/yr





Industrialization delivers jobs





The misguided policies of Western countries to discourage energy use condemn billions of people around the world to impoverished lives and hunger



It is less expensive to adapt to increases in temperatures than to destroy an economy by banning fossil fuels.