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Evolving Opinion on Nuclear Power in the United States



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Energy Secretary Dr. Steven Chu
Director, Lawrence Berkeley
National Laboratory
Professor, Stanford University
Winner, Nobel Prize in Physics



Energy Secretary Dr. Ernest Moniz
Former Undersecretary of Energy
Professor, Mass. Institute of Technology
Winner, Nobel Prize in Physics
Director, MIT Energy Initiative



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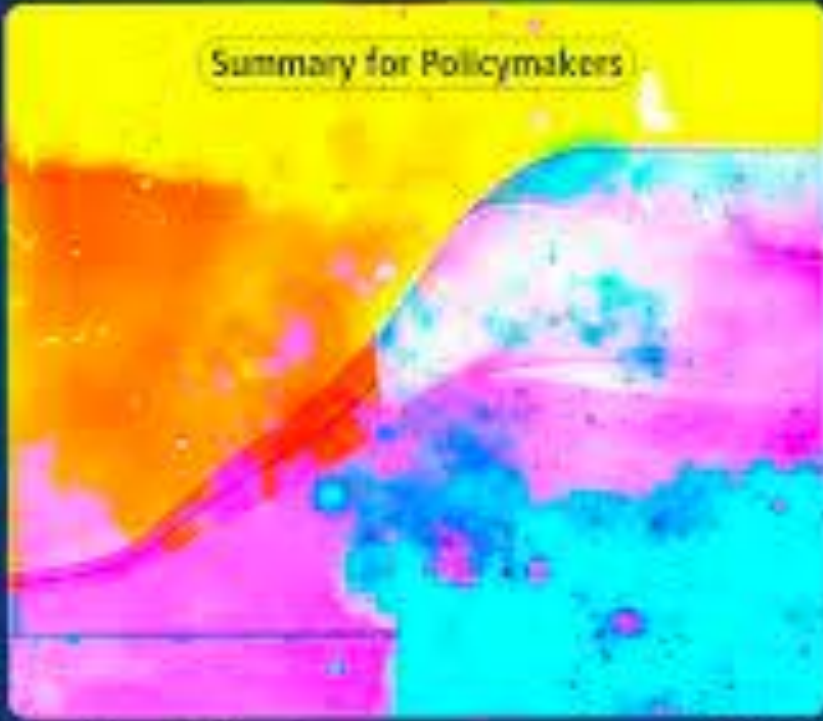
ipcc

INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE

Global Warming of 1.5°C

An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty

Summary for Policymakers



WG I WG II WG III



Journal of Concerned Scientists

EXECUTIVE SUMMARY

The Nuclear Power Dilemma

Declining Profits, Plant Closures, and the Threat of Rising Carbon Emissions

EXECUTIVE SUMMARY

Many nuclear power plants have also started to leave yards due to economic, safety, and performance challenges. Without public incentives, several nuclear power generators with low carbon energy portfolios will likely shut down or convert to natural gas and coal to fill the gap—diminishing our ability to reduce their operating emissions to the level needed to limit the worst impacts of global warming.

To keep the electricity sector meeting its emissions-reduction targets, federal and state policies must proactively reduce the lifetime breakeven of low-carbon technologies. At the same time, any financial support targeted specifically for starting nuclear plants must be coupled with strong emissions, generation, storage, safety requirements, and investments in new skills and energy efficiency.

For decades, nuclear power has provided most of the nation's carbon-free electricity. However, the owners have shut down many nuclear plants in the last few years as unmet costs to close their old plants have exceeded their operating business cases, generating a discussion among policy makers and regulators about the impact of early retirements. The primary reasons for these early closures are the economic challenges brought on by cheap natural gas, diminished demand for electricity, high fuel costs for renewable energy, rising operating costs, and safety and performance problems. The possibility that the nation will replace existing nuclear plants with natural gas and coal rather than low-carbon sources raises serious concerns about our ability to achieve the deep cuts in carbon emissions needed to limit the worst impacts of climate change.

As of the end of 2017, 94 reactors at 61 power plants provided 20 percent of U.S. electricity generation. The owners have retired six reactors at five plants since 2014, stated some reactors at two more plants to retire over the next eight years, and threatened to close five reactors at four more plants in the next few years if they do not receive new financial support.¹ In addition, Illinois, New Jersey, and New York now provide financial support to keep reactors at some plants operating for at least 20 more years.

The economic challenges facing nuclear plants are part of a historic transition in the U.S. electricity sector. Over the last decade, natural gas generation and renewable energy generation from wind and solar have grown rapidly as their prices



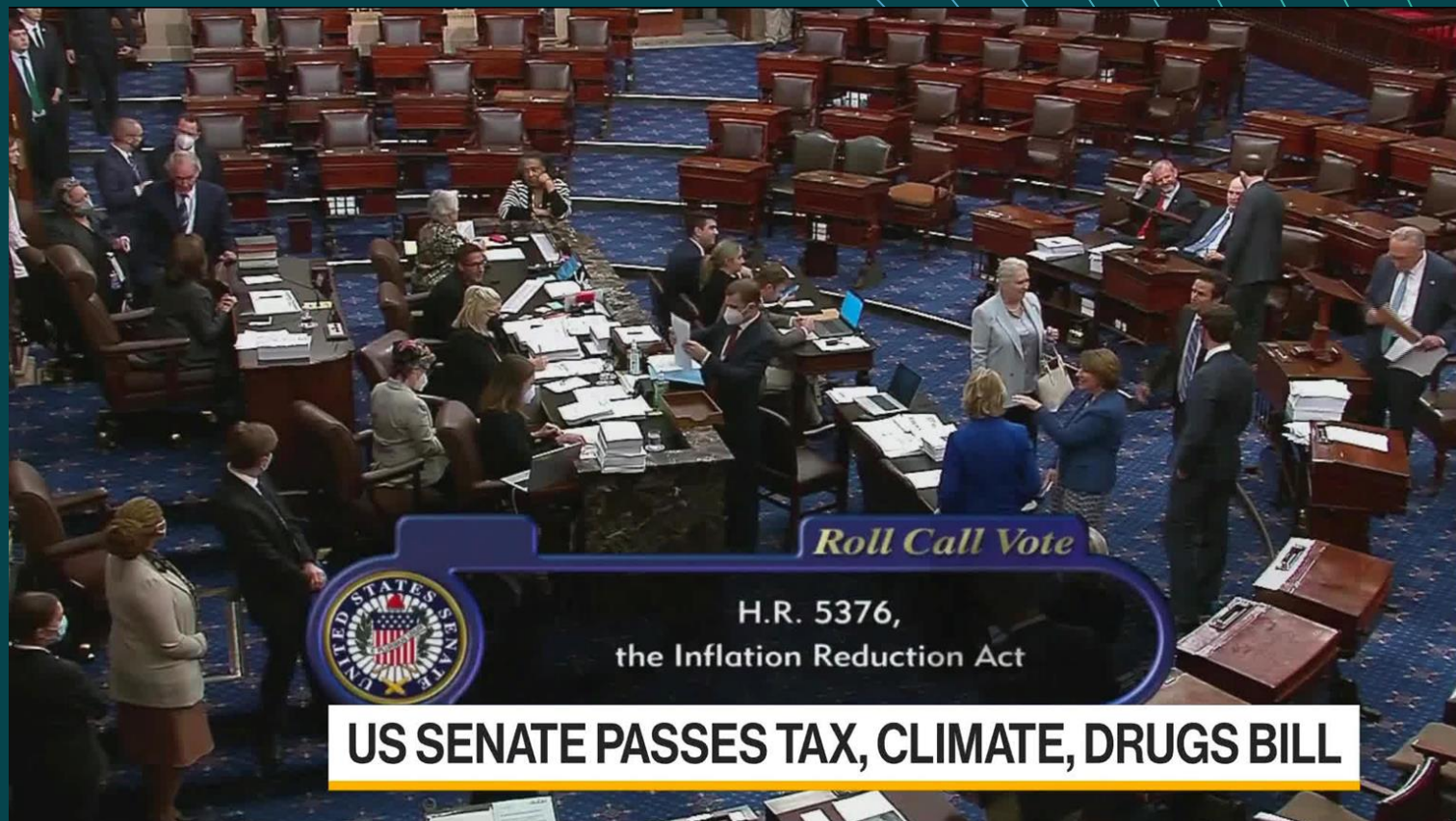
The two containment domes built to contain steam at nuclear power plants are shown in blue in 2010 and 2017. Since 2014, three additional reactors have closed or announced plans to close, and six others are expected to shut down in the coming months. New York's strong renewable energy and energy efficiency policies will help the state reach its emissions goals.



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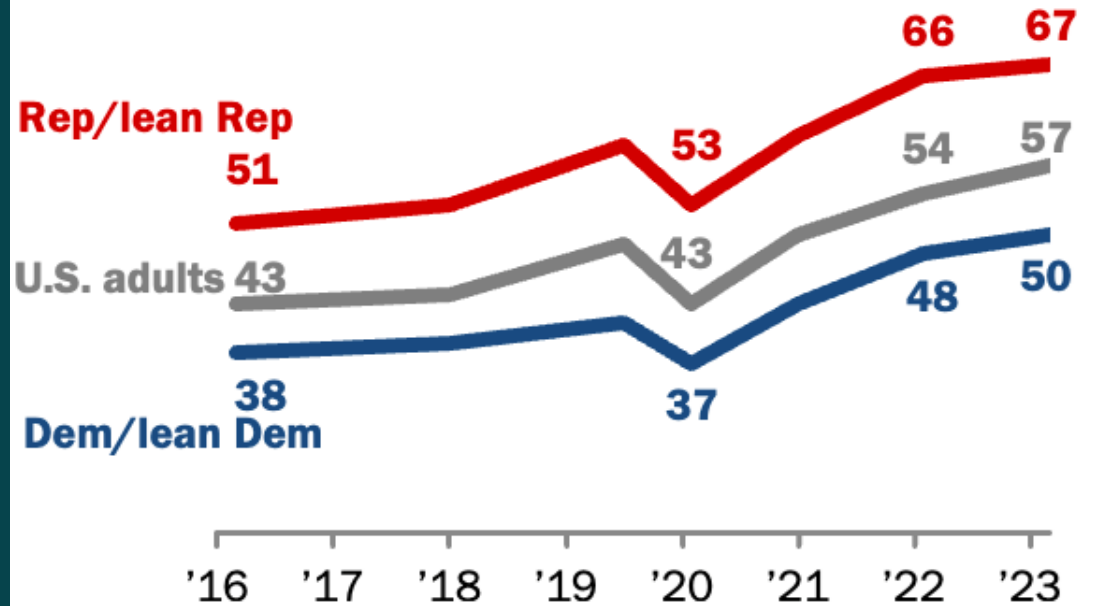


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Support for nuclear power is up among both Democrats and Republicans

% of U.S. adults who say they favor more nuclear power plants to generate electricity in the country



Note: Respondents who gave other responses or did not give an answer are not shown.

Source: Survey conducted May 30-June 4, 2023.

PEW RESEARCH CENTER



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navin@oundarystone.com
boundarystone.com

1001 PENNSYLVANIA AVE NW
WASHINGTON, DC, 20036

1608 PACIFIC AVE.
#204 VENICE, CA 90291