



NARUC

National Association of Regulatory Utility Commissioners

Nuclear Energy: What does the Public Think?

December 16, 2022, 1-2 PM ET

Moderator: Hon. Tony O'Donnell, Maryland Public Service Commission

Panelists:

- Dr. Kuhika Gupta**, University of Oklahoma's Institute for Public Policy Research and Analysis
- John Marshall**, Potential Energy Coalition
- Jackie Toth**, Good Energy Collective
- Hank Jenkins-Smith**, University of Oklahoma's Institute for Public Policy Research and Analysis

Opening Remarks

Hon. Tony O'Donnell,
Maryland



Moderator

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Panelists

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Upcoming

- NARUC Winter Policy Summit
February 12-15, 2023
- Check www.naruc.org/cpi for
information on upcoming
activities



Thank you!

Visit www.naruc.org/cpi for additional resources

Contact Kiera Zitelman (kzitelman@naruc.org) and Kathryn Kline (kkline@naruc.org) with questions



Understanding Public Views About Nuclear Energy Technology: What Matters?

Institute for Public Policy Research and Analysis
University of Oklahoma

*Prepared for NARUC “Nuclear Energy: What Does The Public Think?” (December 2022)

Outline of Today's Discussion

Public views about nuclear energy shift over time. What are some broad frameworks that can help us better understand the dynamics of opinion change?

Public support for existing nuclear energy technology: What are the primary drivers of support/opposition?

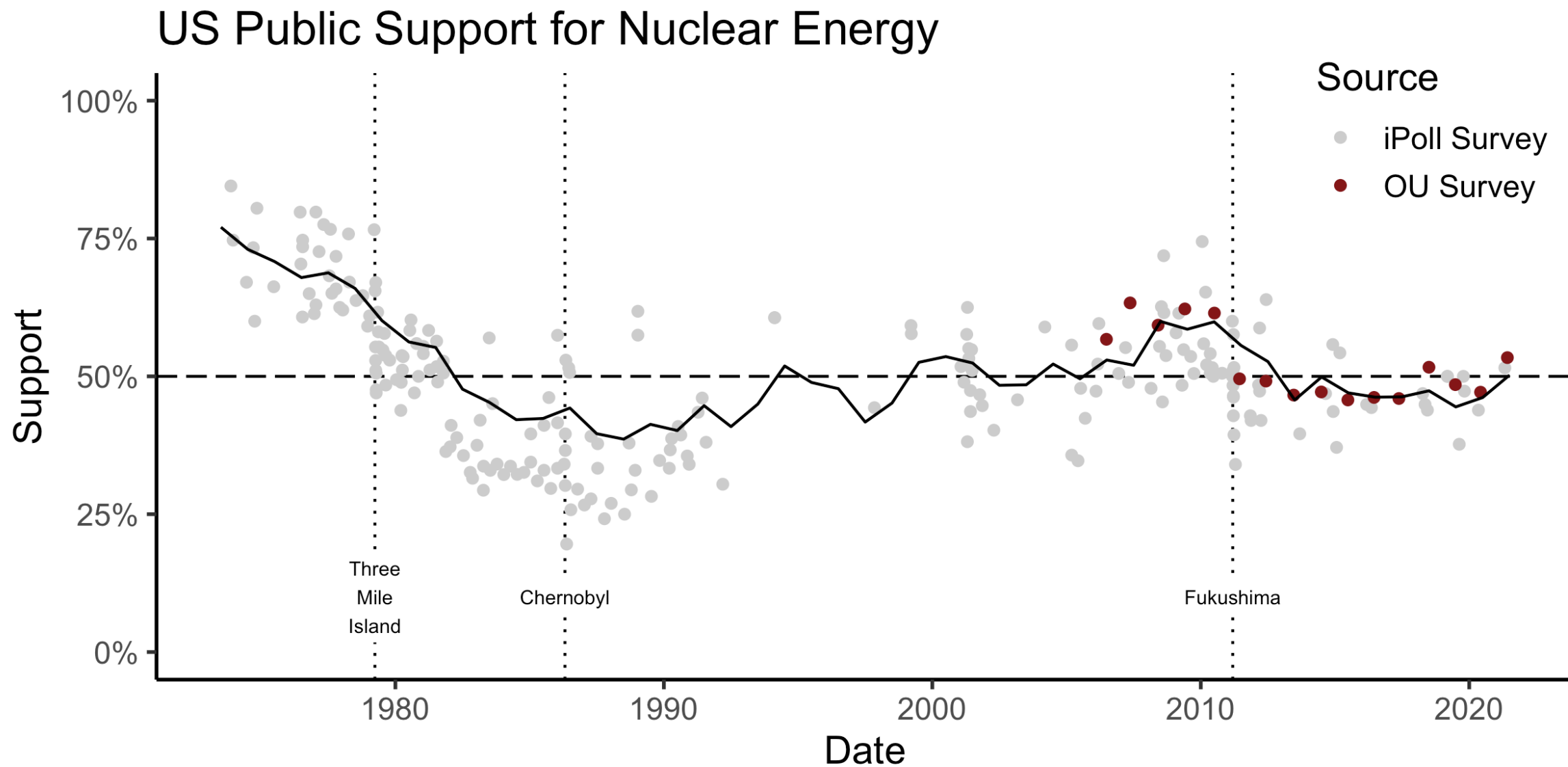
Advanced nuclear energy technologies: Can advanced nuclear reactors help revive the role of nuclear in the US?

- Comparing support for advanced reactor technologies to traditional reactors
- Exploring possible constituents

Community led decision-making: How can we connect community needs with energy choices?

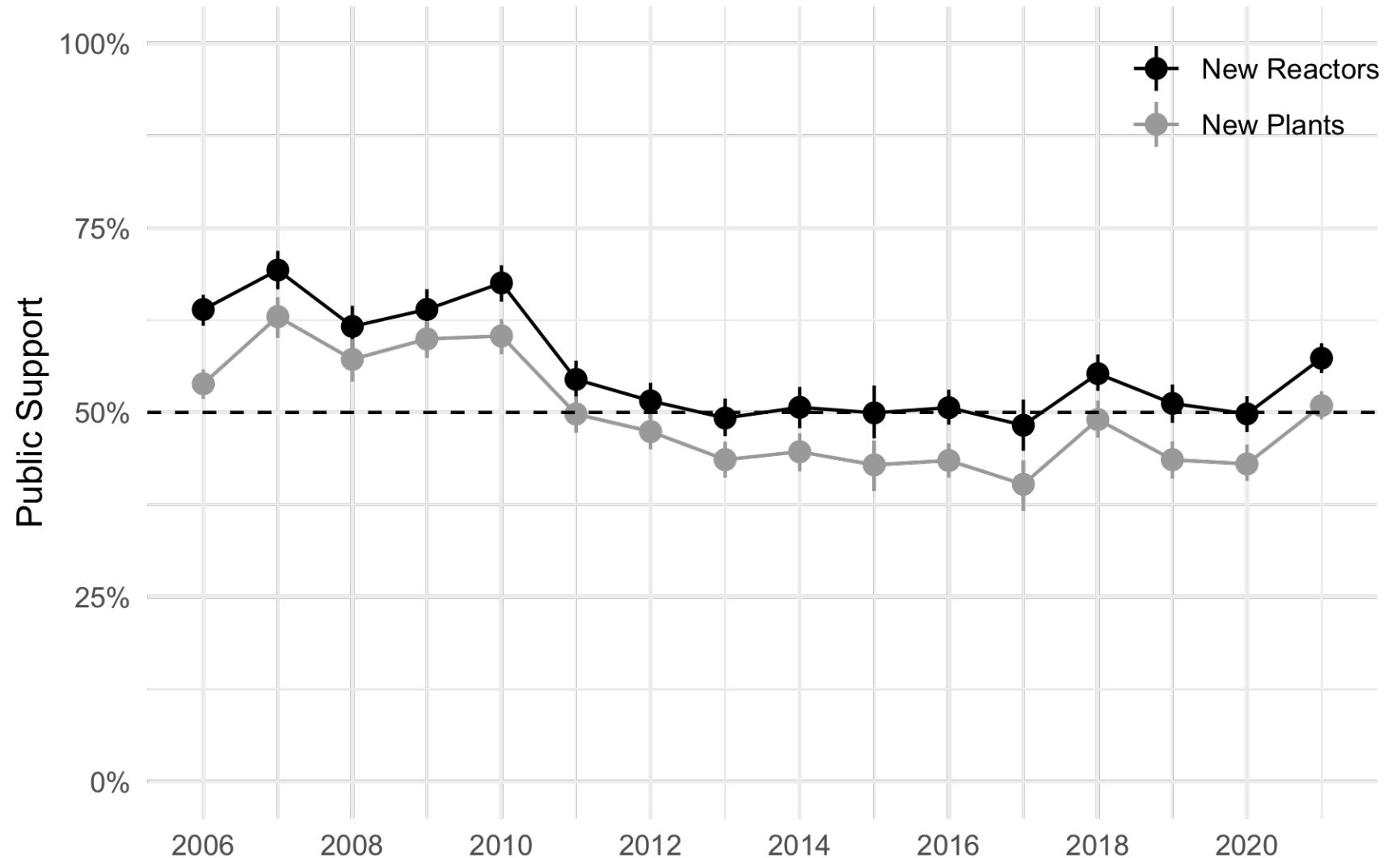
- Communities, not countries, are increasingly making decisions about their energy sources
- Understanding variation in support for nuclear energy at the community level
- Opportunities for participatory design

Long-Term Public Views on Nuclear Energy



Public Support for Nuclear Energy

- How do you feel about constructing:
 - Additional nuclear reactors at the sites of **existing** nuclear power plants in the US?
 - Additional nuclear power plants at **new** locations in the US?
- Support is higher for new reactors at existing locations than new plants
- Public support decreased significantly after Fukushima and never fully recovered

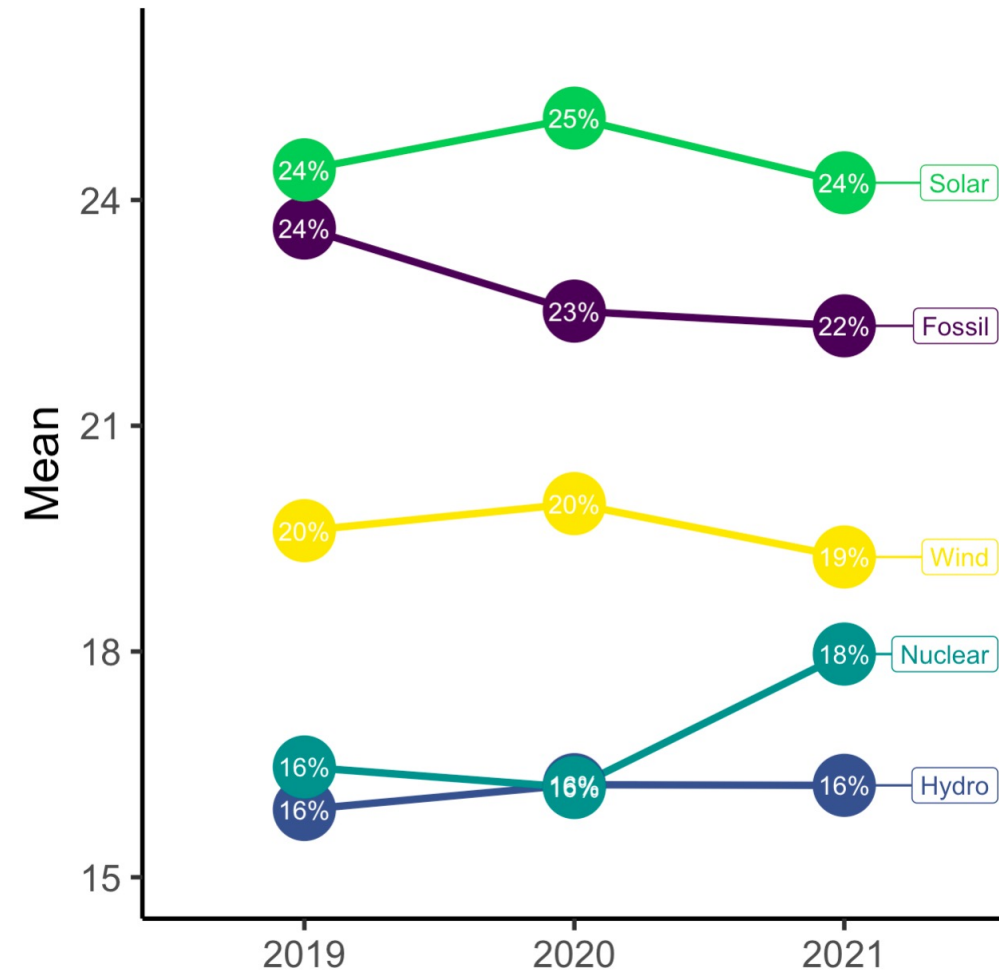


Data: 2006-2021

Preferred Energy Mix

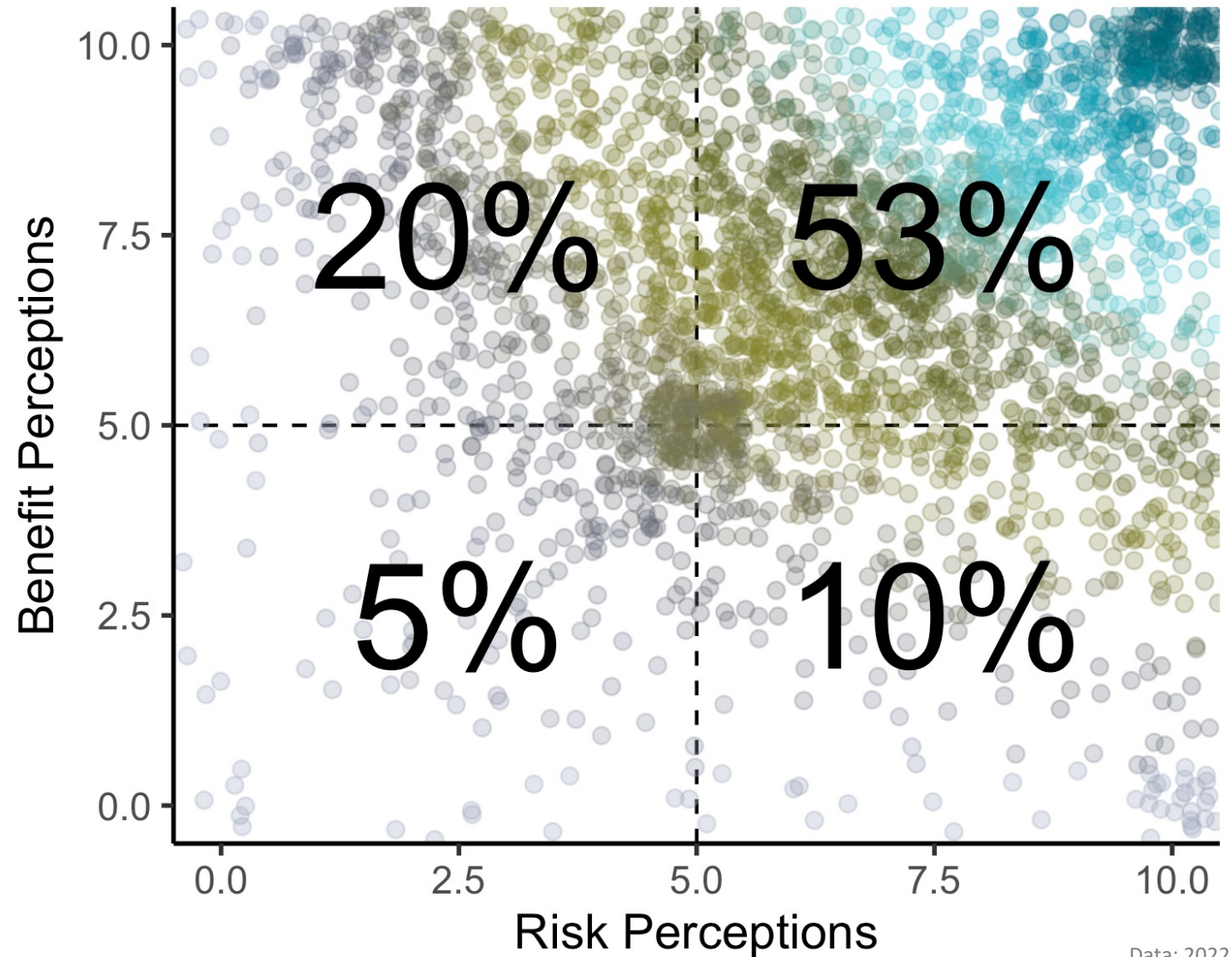
- We currently get about...
 - 63% of our electricity from **fossil fuels** (coal, oil, natural gas),
 - 20% from **nuclear energy**,
 - 2% from **solar energy**,
 - 7% from **wind energy**,
 - 7% from **hydropower**, and
 - 1% from other sources (wood, biofuels, waste products, and geothermal).
- We want to know what percentage of the total U.S. electricity supply over the next 20 years you would like to see come from each of the 5 primary sources.

Over the next 20 years, what percent of our electricity should come from...



Drivers of Public Support for Nuclear Energy

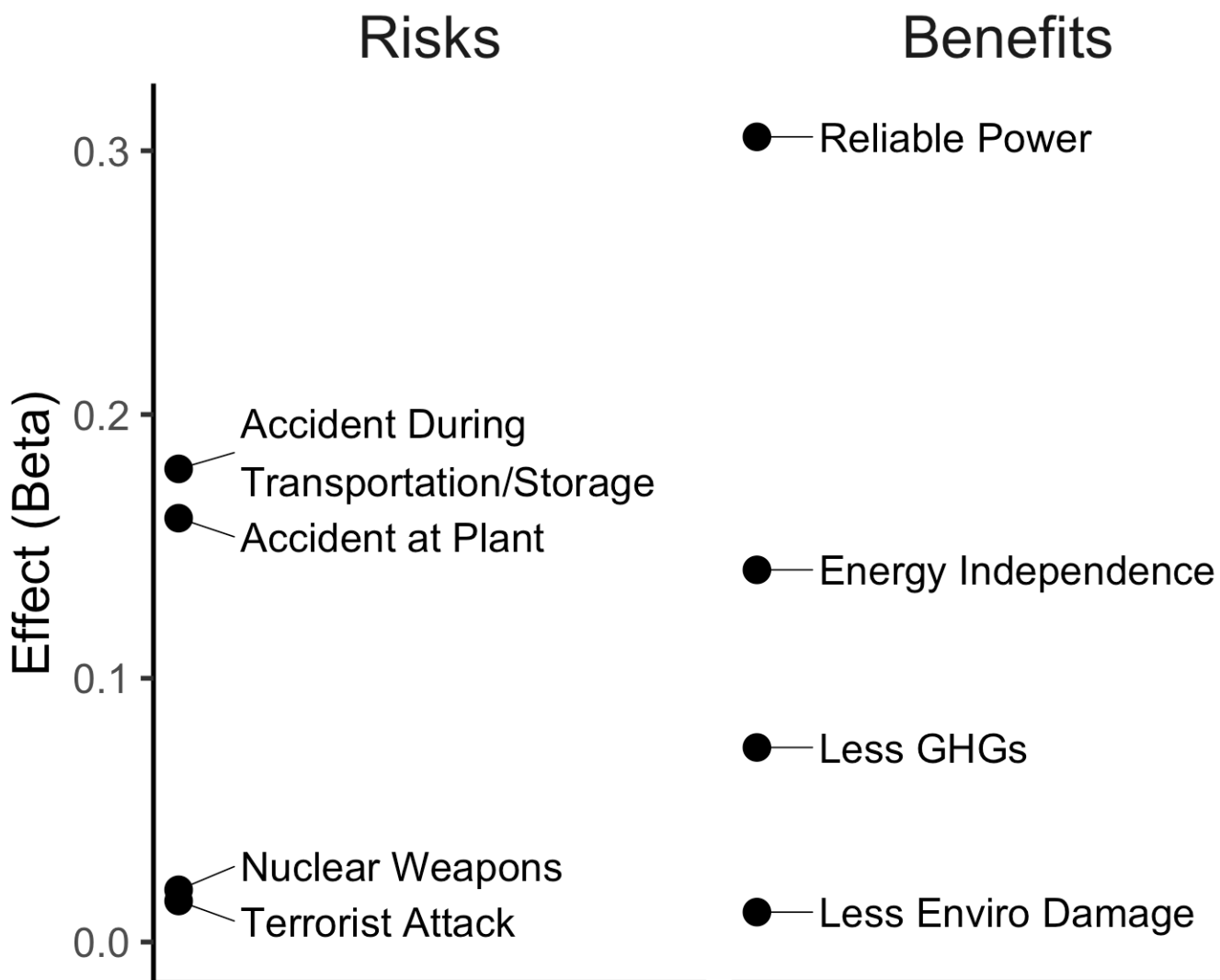
- Risk and benefit perceptions account for most of the variation in support/opposition
 - Exert roughly the same impact, push (pull) opposite directions
- Many people have high risk and high benefit perceptions, so a large portion of the population is torn in their views about nuclear energy



Data: 2022

Drivers of Public Support for Nuclear Energy

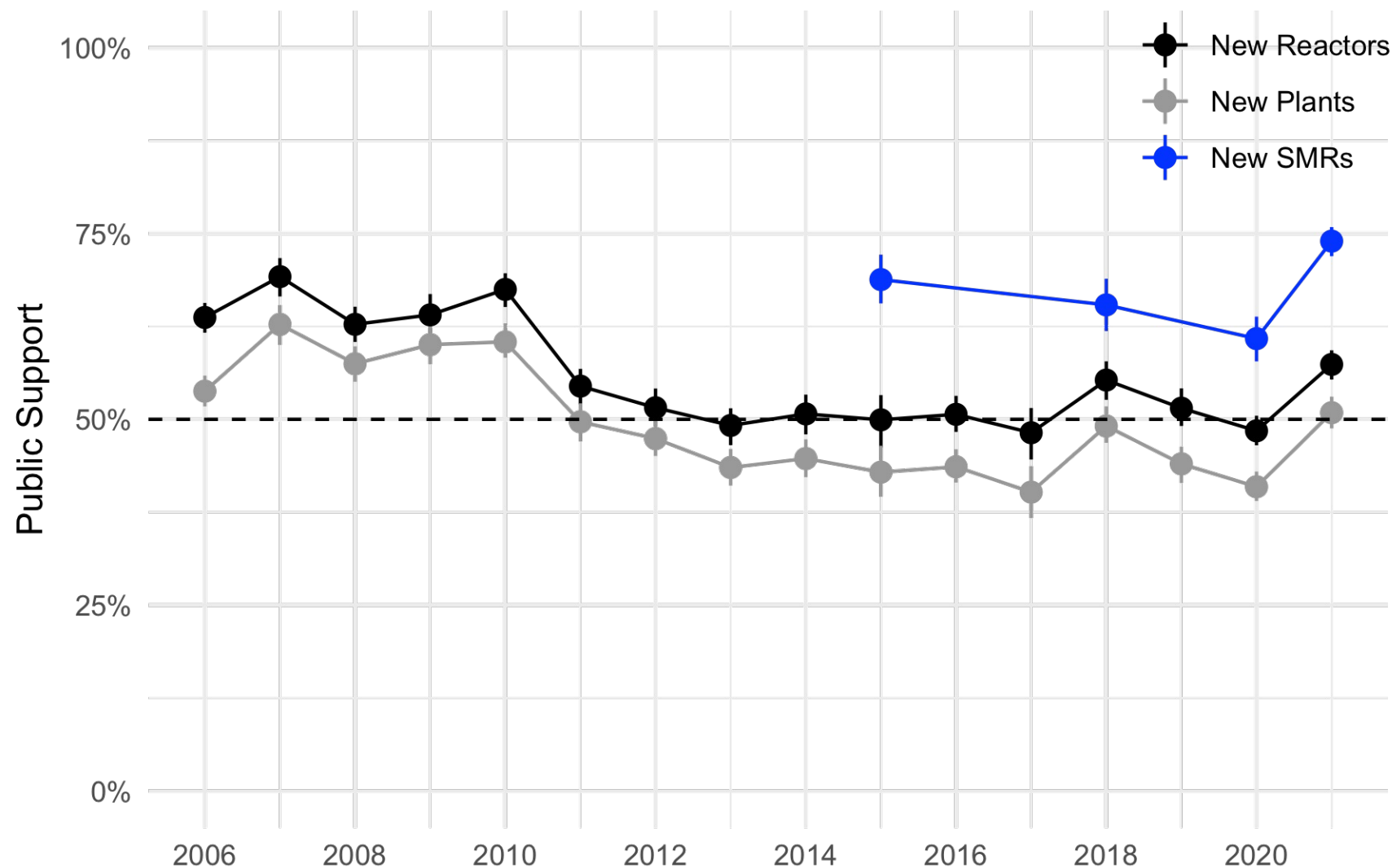
- People weigh multiple risks and benefits when formulating opinions about nuclear energy
- Fear of an accident at a plant has the largest negative impact on support
- Viewing nuclear power as a reliable source of electricity has the largest positive impact on support



Data: 2022

Public Support for Advanced Reactor Technologies

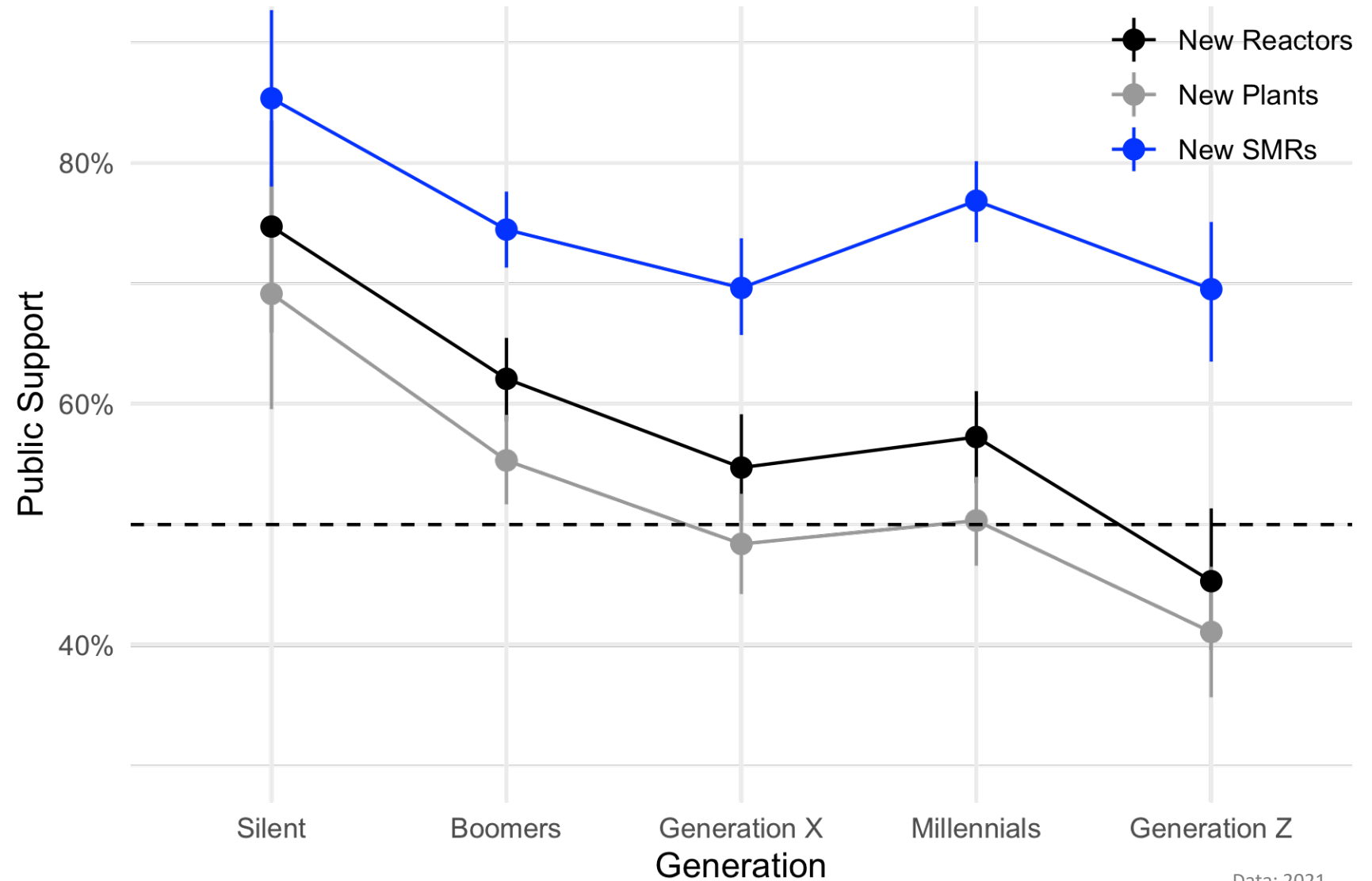
- How do you feel about constructing:
 - Additional nuclear reactors at the sites of **existing** nuclear power plants in the US?
 - Additional nuclear power plants at **new** locations in the US?
 - Small modular reactors to generate electricity in the U.S.?
- Public support is significantly higher for SMRs



Data: 2006-2021

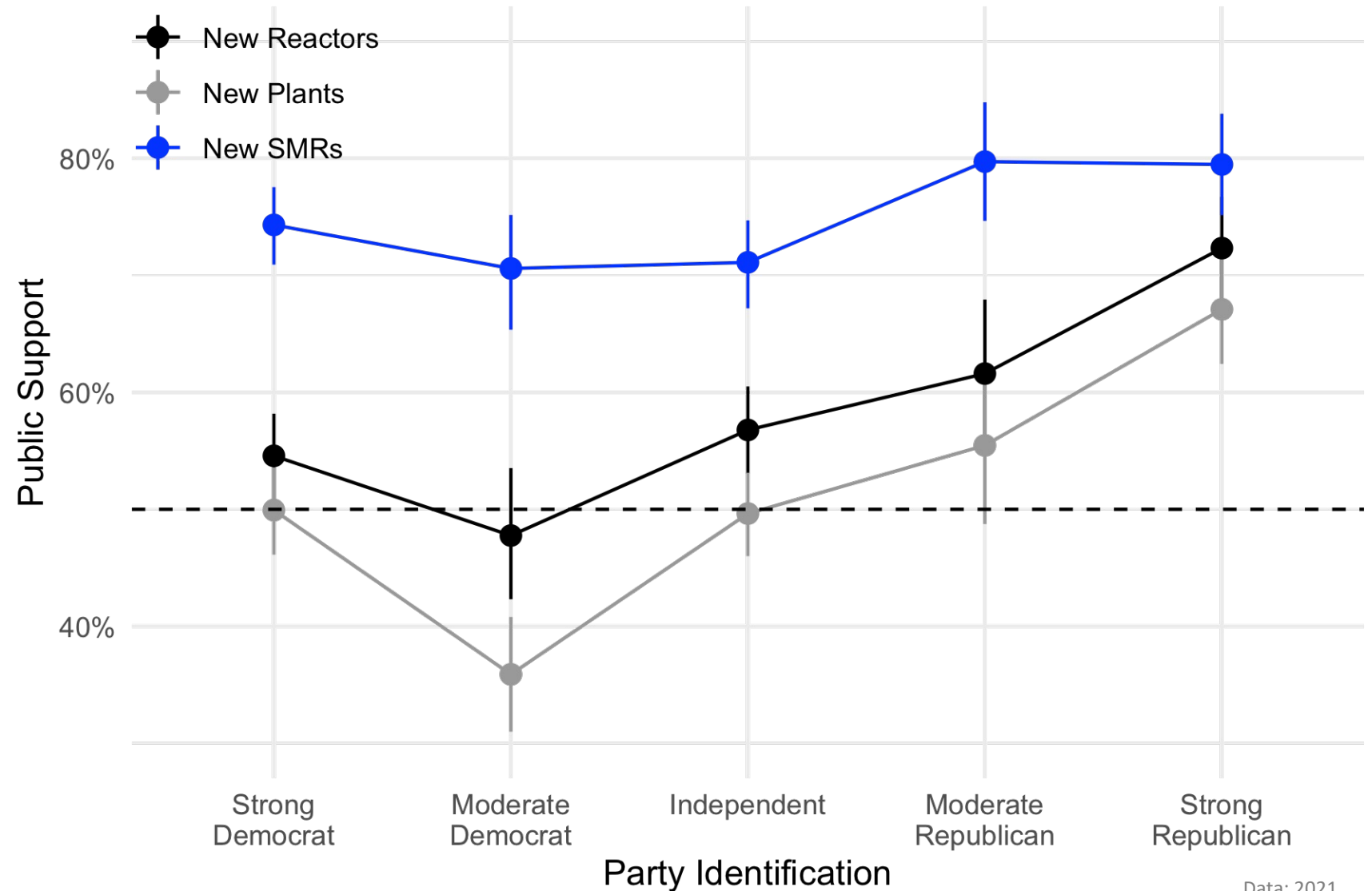
Opportunities for Advanced Reactors – Young People

- Support for SMRs is more consistent across generations – young people are drawn to innovation and new technology



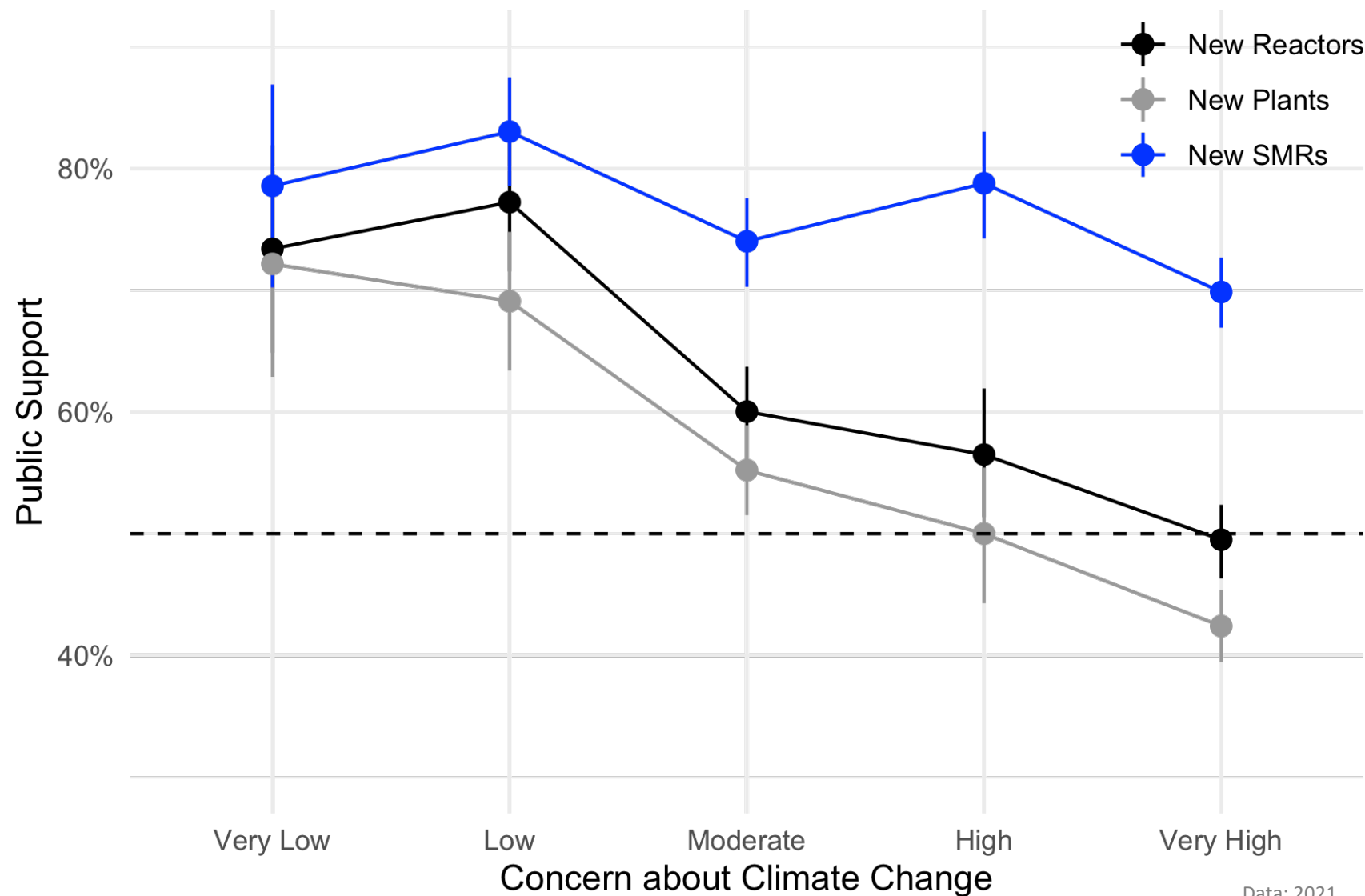
Opportunities for Advanced Reactors – Partisan Views

- Support for SMRs seems to be more consistent across partisan groups; substantial support even among Democrats



Opportunities for Advanced Reactors – Climate Change

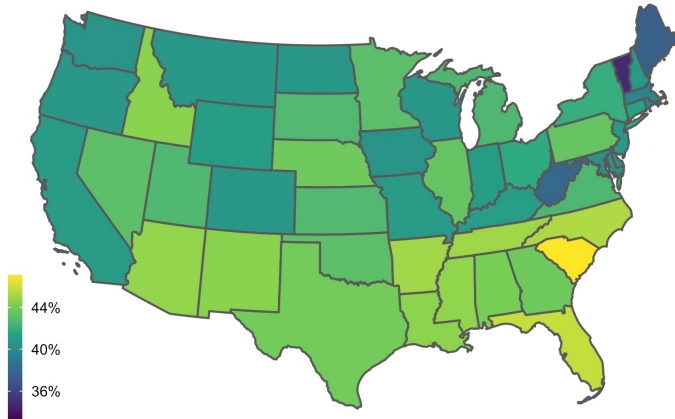
- Support for SMRs seems to be more consistent; substantial support even among those who worry about climate change



Mapping Community Perceptions

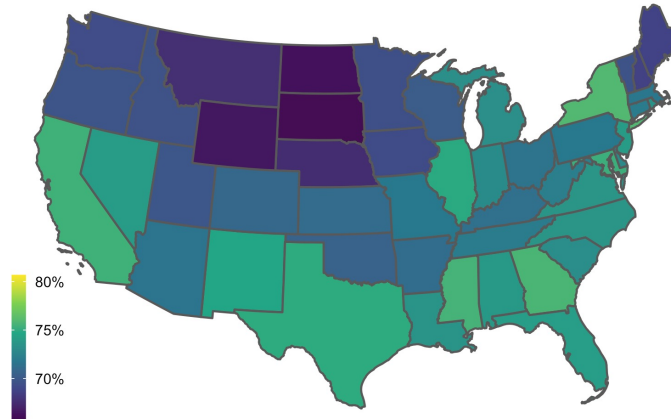
(a) Support by State

Estimated % of adults who support nuclear energy



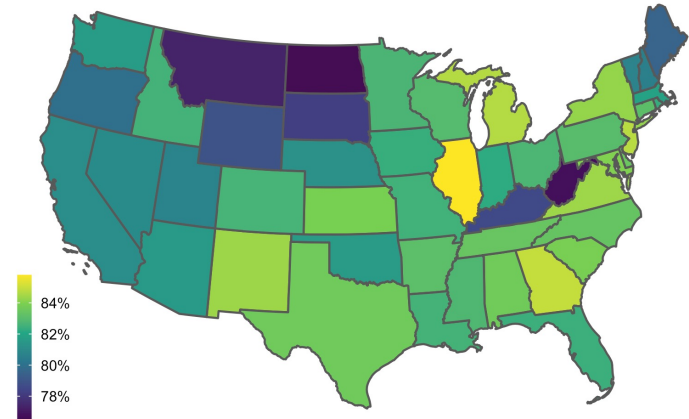
(b) Risk Perceptions by State

Estimated % of adults who worry about the risks of nuclear energy



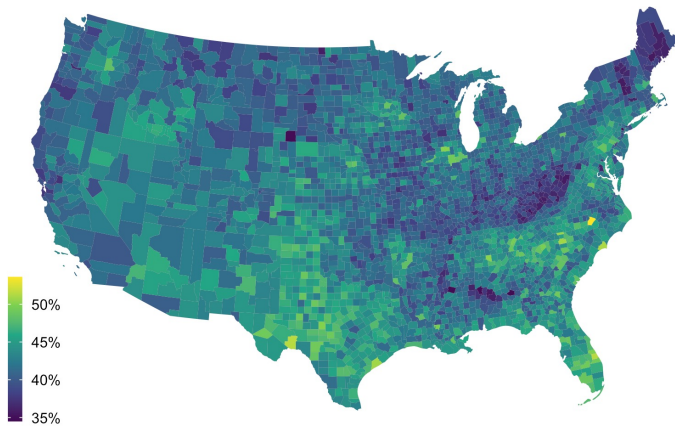
(c) Benefit Perceptions by State

Estimated % of adults who value the benefits of nuclear energy



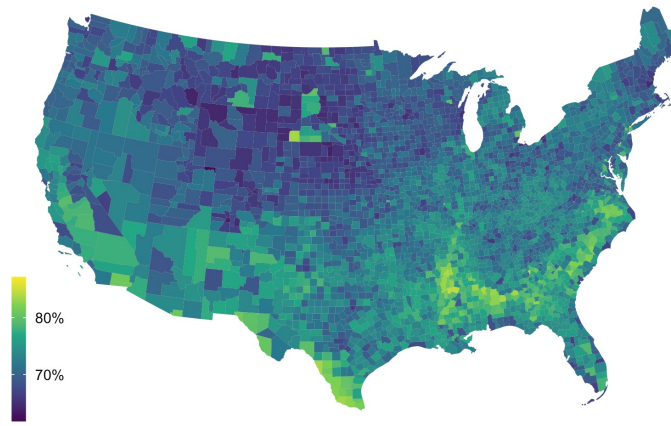
(d) Support by County

Estimated % of adults who support nuclear energy



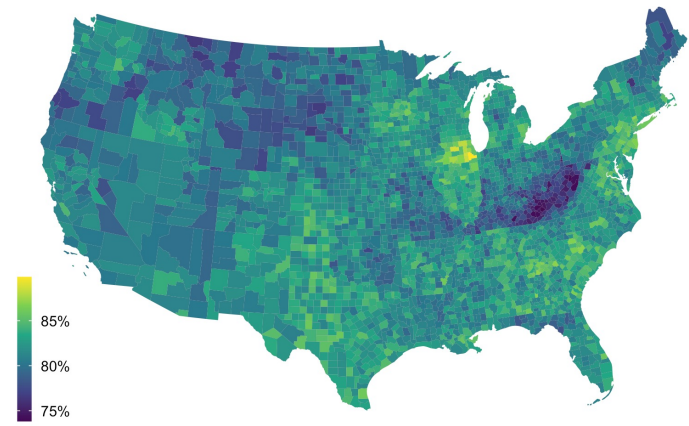
(e) Risk Perceptions by County

Estimated % of adults who worry about the risks of nuclear energy



(f) Benefit Perceptions by County

Estimated % of adults who value the benefits of nuclear energy



Public and Local Attitudes about Nuclear Energy Technology

PLANET Tool

Public and Local Attitudes about Nuclear Energy Technology

From the Fastest Path to Zero Initiative & National Institute for Risk & Resilience

Maps

Methodology

Data Export

About

Kuhika Gupta

These maps show how Americans' nuclear energy risk perceptions, benefit perceptions, and policy support vary at the state and county levels.

Select a measure below and click on the map to explore data for each county.

Support for building new reactors

Risk Perception

Benefit Perception

Select a state below to see a map showing county information for that state.

Select a state

UNITED STATES

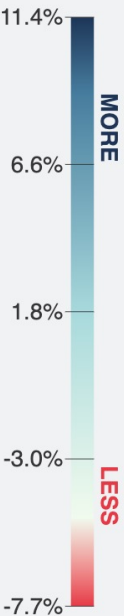
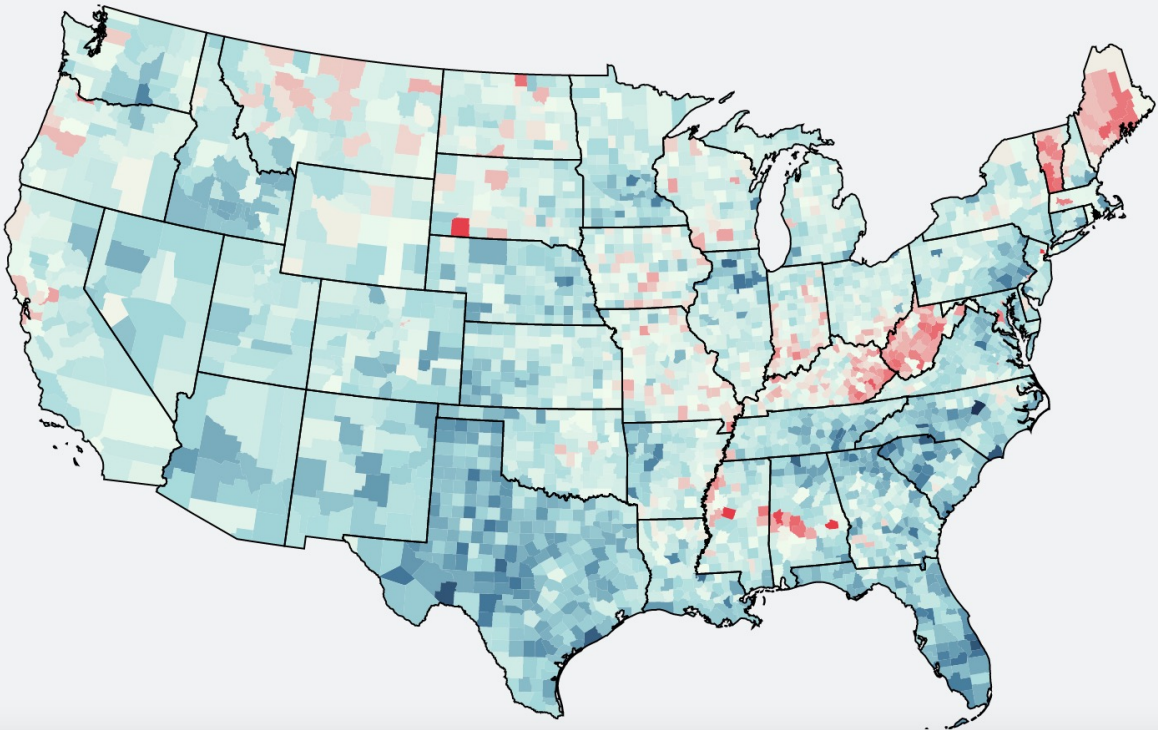
Estimated % of adults who support construction of new nuclear reactors ⁱ

Counties

ON

raw value

difference



What does all of this tell us?

Public opinion is dynamic and shifts over time

- Risk perceptions, benefit perceptions, and trust in key actors can impact support. Most people view it as high risk and high benefit; energy reliability and accidents are most influential.

The future of nuclear energy is undecided; advanced reactors display potential

- When asked, US residents foresee nuclear as a stable part of the energy mix, but they are unsure about increased reliance.
- Many democrats and people who worry about climate change don't see nuclear as part of the solution; younger generations are not sold on the benefits of existing nuclear technology.
- Support for new technologies such as SMRs, MSRs, and micro-reactors is stronger and cuts across traditional cleavages.

Engaging potential host communities early and enabling positive narratives is crucial

- States, cities, and towns across the US are increasingly attentive to their energy portfolios – having open conversations about if/how nuclear can be part of their energy mix is important.
- Engaging potential host communities early in the process and allowing community members to help design the facility can enable a more positive narrative around siting.

Questions

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University of Oklahoma

POTENTIAL ENERGY

**Perceptions of Nuclear Power in Coal
Communities**

June 21st, 2022

Project Goals

Our research objectives were to deeply understand coal-to-nuclear candidate communities, what their support for nuclear looks like, and what messages best grow it.

We addressed four key questions:

1

How strong is local support for the coal-to-nuclear transition?

2

How broad is the support?

3

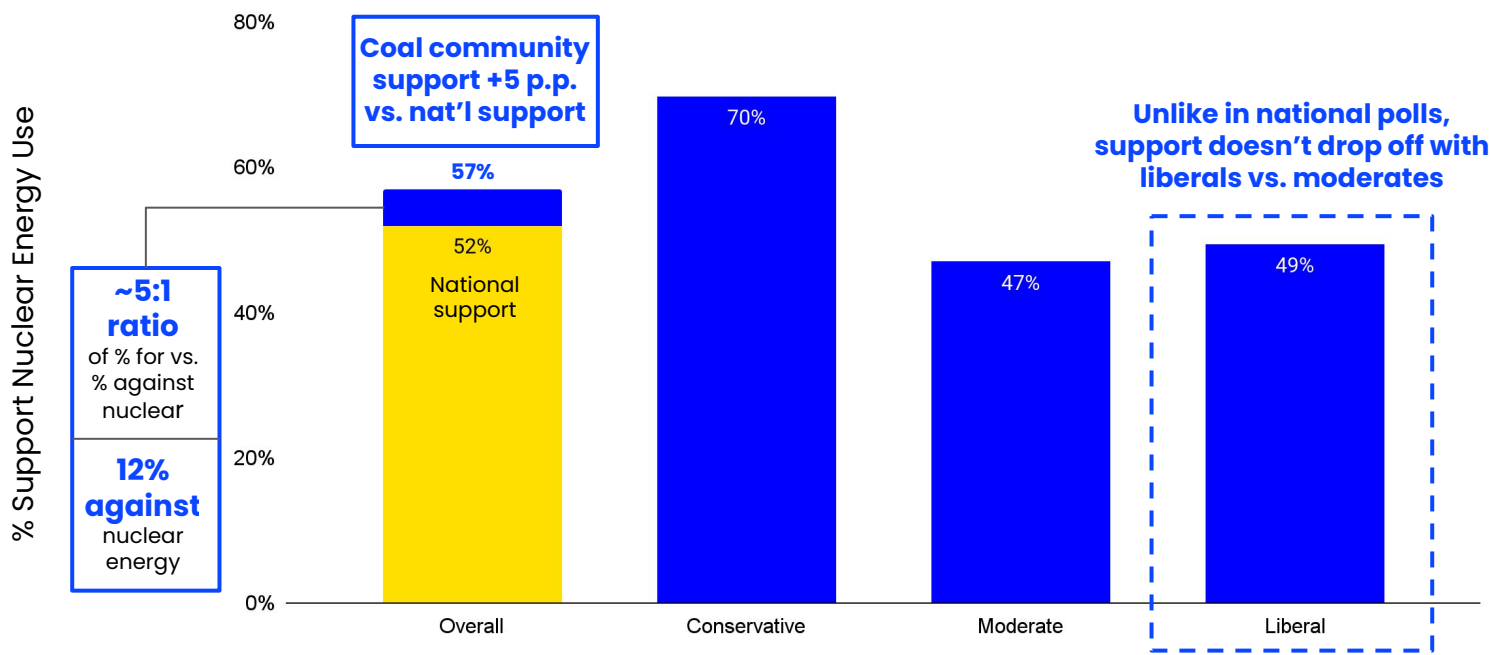
To what extent can audiences be moved?

4

What messaging increases support?

Baseline support for nuclear in coal communities outweighs opposition by nearly 5x

Local coal communities % support of nuclear energy vs nat'l baseline and by ideology



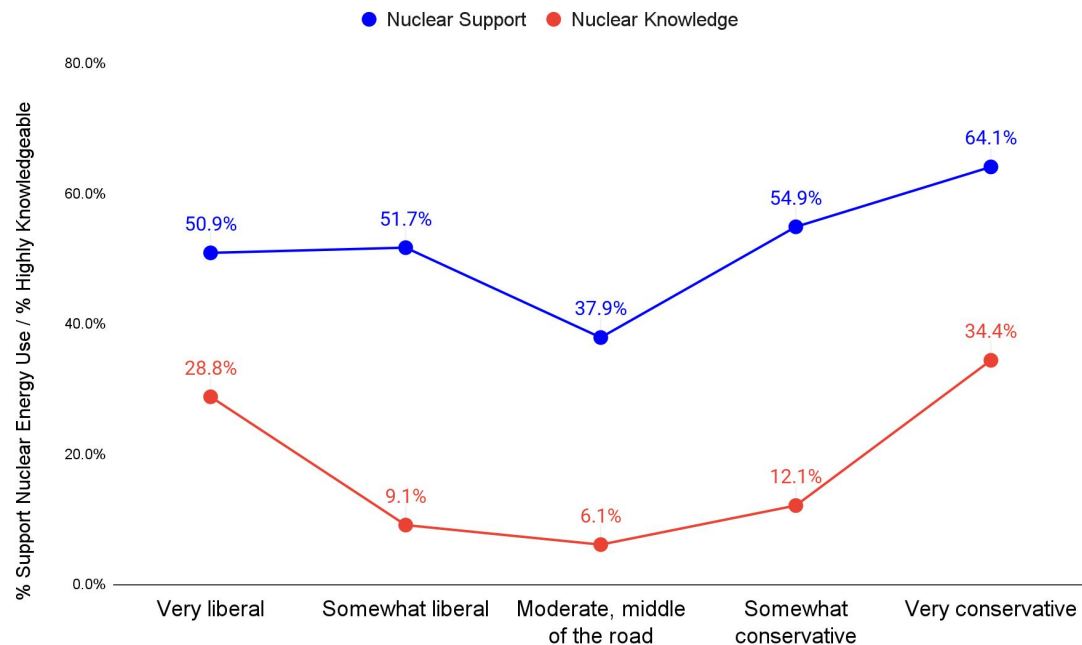
Sources: Potential Energy National Nuclear Baseline Poll (Apr. 2022); Potential Energy Nuclear Baseline Survey (Mar. 2022); Funk and Hefferon "U.S. Public Views on Climate and Energy" (Pew Research, Nov. 2019)

Notes: Support for nuclear energy was asked through a 5-point scale on agreement with the following statement: "I support the use of nuclear energy to generate electricity."
Sample sizes: National Nuclear Baseline Poll (n = 949), Overall Coal-to-Nuclear Baseline (n = 3,021), Conservative (n = 1,225), Moderate (n = 1,081), Liberal (n = 714)

Nuclear support is strong on the left and right, a unique situation

California data: Nuclear support and knowledge by ideology

Preliminary data

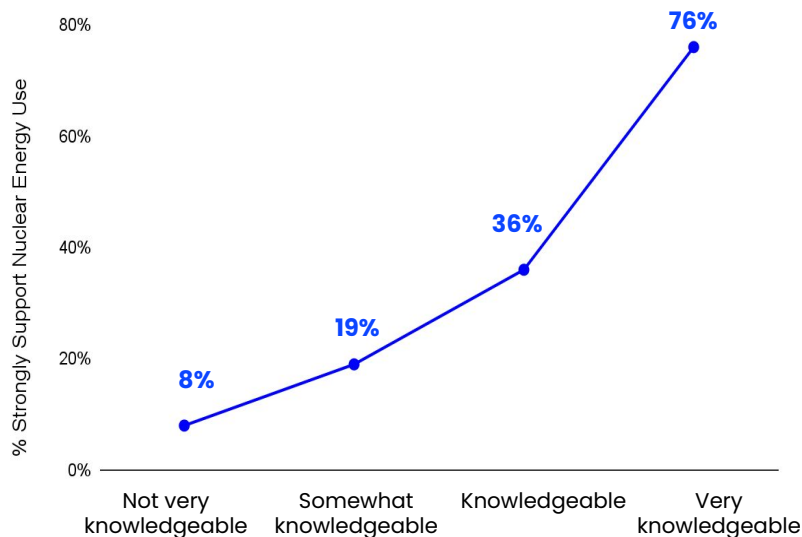


Source: Potential Energy CA Nuclear Sentiments Survey (May 2022)
Sample size: CA Nuclear Sentiments Survey (n = 500)

Education on the issue makes a significant difference – nuclear support directly correlates with nuclear knowledge

Exponential returns on nuclear support as knowledge increases

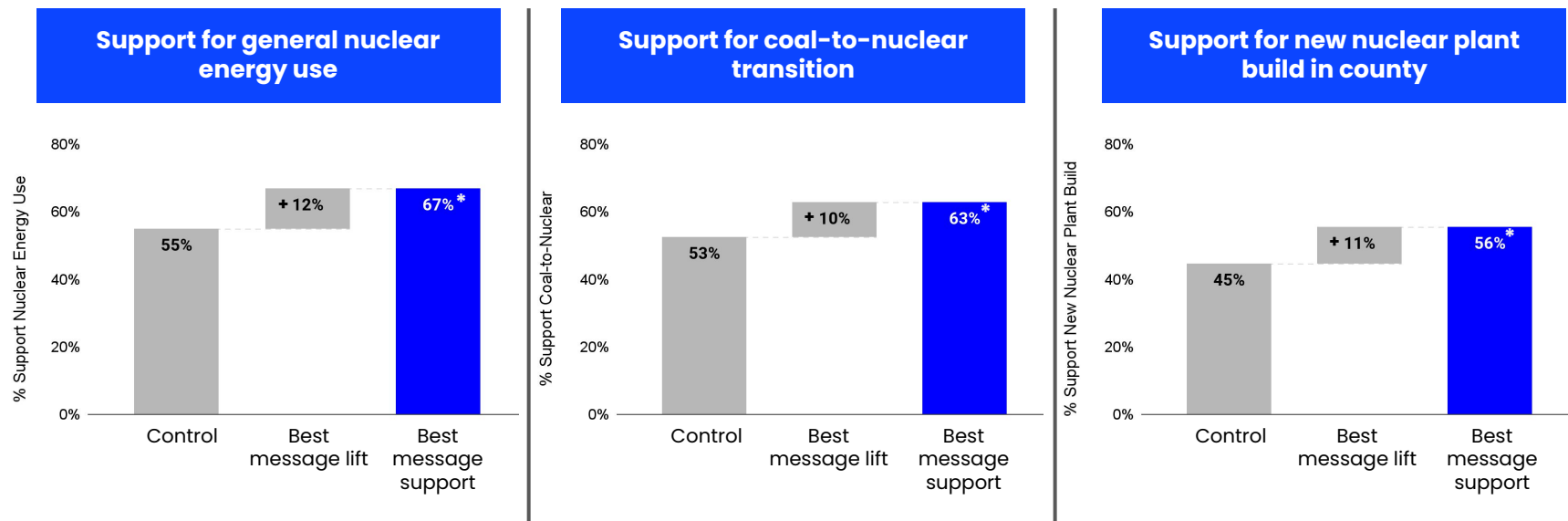
And there is significant headroom to educate audiences



- **Only 15% of coal-to-nuclear candidate communities are highly knowledgeable**
- **Only 7% of the least supportive audience, Moderates, are highly knowledgeable**
- **Only 37% of community members know where their energy comes from**

Our data shows that strong messaging significantly increases support for nuclear energy

Lift from best message on support for nuclear, by metric



Source: Potential Energy Nuclear Message RCT (Apr. 2022)

Notes: All support metrics were asked through a 5-point scale on agreement with the following statements: 1) "I support the use of nuclear energy to generate electricity." 2) "I would support replacing retiring coal power plants with nuclear power plants within my county." 3) "I would support the construction of a new nuclear power plant within my county."

Sample size: Overall Nuclear Message RCT (n = 5,001)

* denotes statistical significance at a 95% confidence level

Several messages present opportunities for future campaign development

Energy independence



Resonated with key audiences across **both general support and local build support** through bipartisan, topical framing

Nuclear innovation



Highly effective with Moderate audience and presents opportunity to rebrand nuclear power with several proof-points

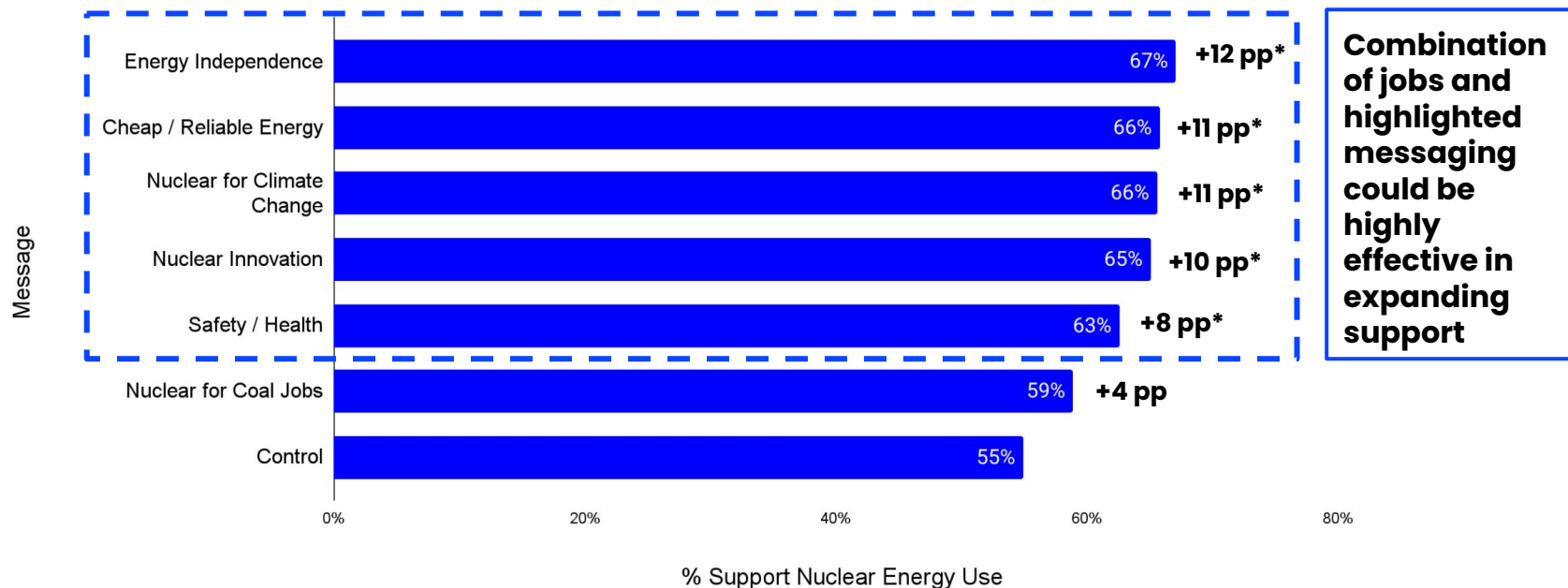
Climate change



Effective with lower-support groups – women, Moderates, and Liberals – **without polarizing** Conservative audiences

Multiple messages were highly effective in lifting nuclear energy support in coal communities

Topline nuclear energy support post-messaging, by message



Source: Potential Energy Nuclear Message RCT (Apr. 2022)
* denotes statistical significance at a 95% confidence level
Sample size: Overall Nuclear Message RCT (n = 5,001)



Nuclear Energy: What Does the Public Think?

Jackie Toth, Deputy Director



@GoodEnergyColl



/GoodEnergyColl



/good-energy-collective

Who We are

Good Energy Collective is a progressive think-tank that delivers policy and leadership on nuclear energy.



good energy collective

3 minute read · June 6, 2022 7:28 PM EDT · Last Updated 6 months ago

Americans split on nuclear energy as safety worries linger - Reuters/Ipsos poll

By Timothy Gardner

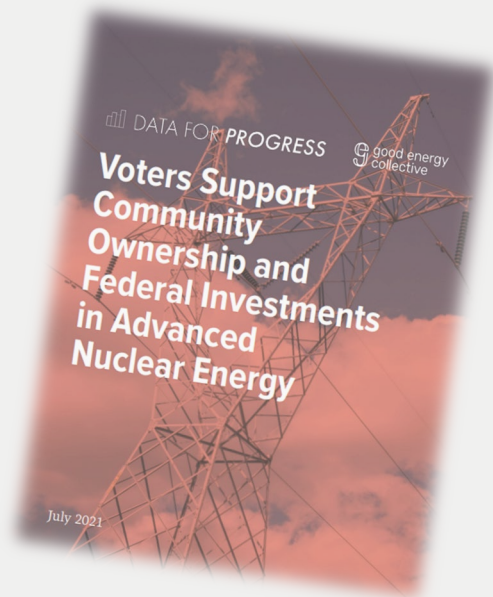
WASHINGTON, June 6 (Reuters) - Just under half of Americans support nuclear power to generate electricity, a waning industry the Biden administration has been trying to revitalize with billions of dollars in public spending as part of a plan to cut U.S. greenhouse gas emissions, a new Reuters/Ipsos poll showed.

The poll, conducted last week, found 45% of Americans support nuclear power, 33% oppose it, and 22% are not sure how they feel about it. Of those supporting it, 48% cited energy reliability, 43% cited lower overall pollution, and only 39% said they favor it as a low-carbon energy source.

Article: <https://www.reuters.com/business/energy/americans-split-nuclear-energy-safety-worries-linger-2022-06-06/>

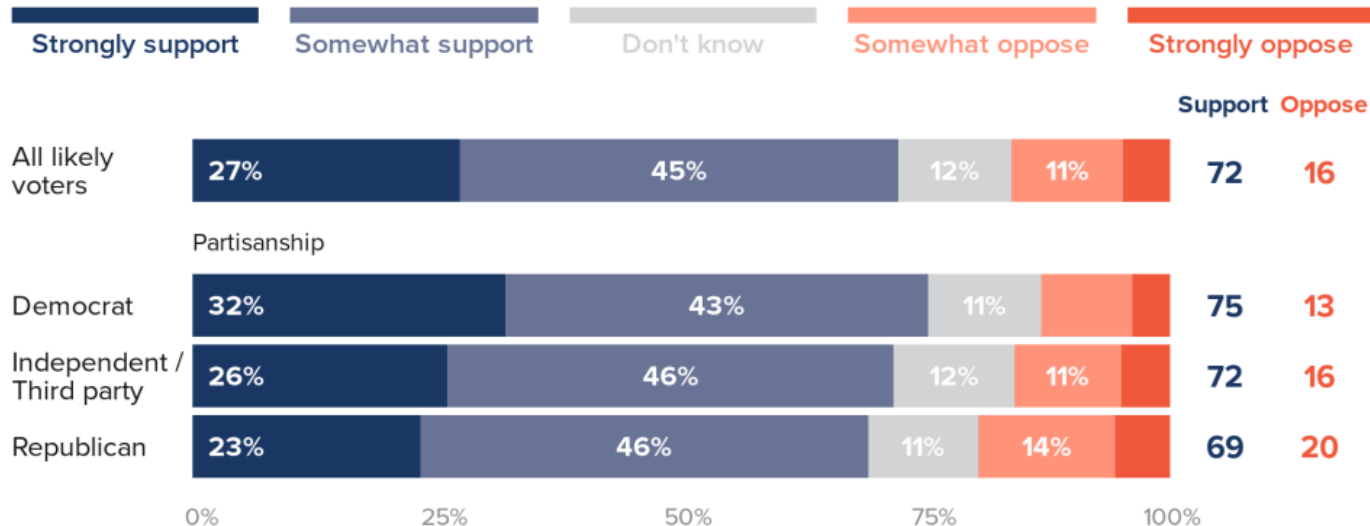
Poll: [https://www.ipsos.com/sites/default/files/ct/news/documents/2022-](https://www.ipsos.com/sites/default/files/ct/news/documents/2022-06/Reuters%20Ipsos%20News%20Issue%20Poll%205%20Topline%20and%20Writeup%20-%20June%201%20thru%202%202022.pdf)

[06/Reuters%20Ipsos%20News%20Issue%20Poll%205%20Topline%20and%20Writeup%20-%20June%201%20thru%202%202022.pdf](https://www.ipsos.com/sites/default/files/ct/news/documents/2022-06/Reuters%20Ipsos%20News%20Issue%20Poll%205%20Topline%20and%20Writeup%20-%20June%201%20thru%202%202022.pdf)



A Majority of Voters Support Federal Investments in Next-Generation Nuclear Power

Would you support or oppose federal investments in new advanced nuclear technologies that are safer, cheaper, and more efficient than previous generations of nuclear power and generate 100% carbon pollution-free energy?

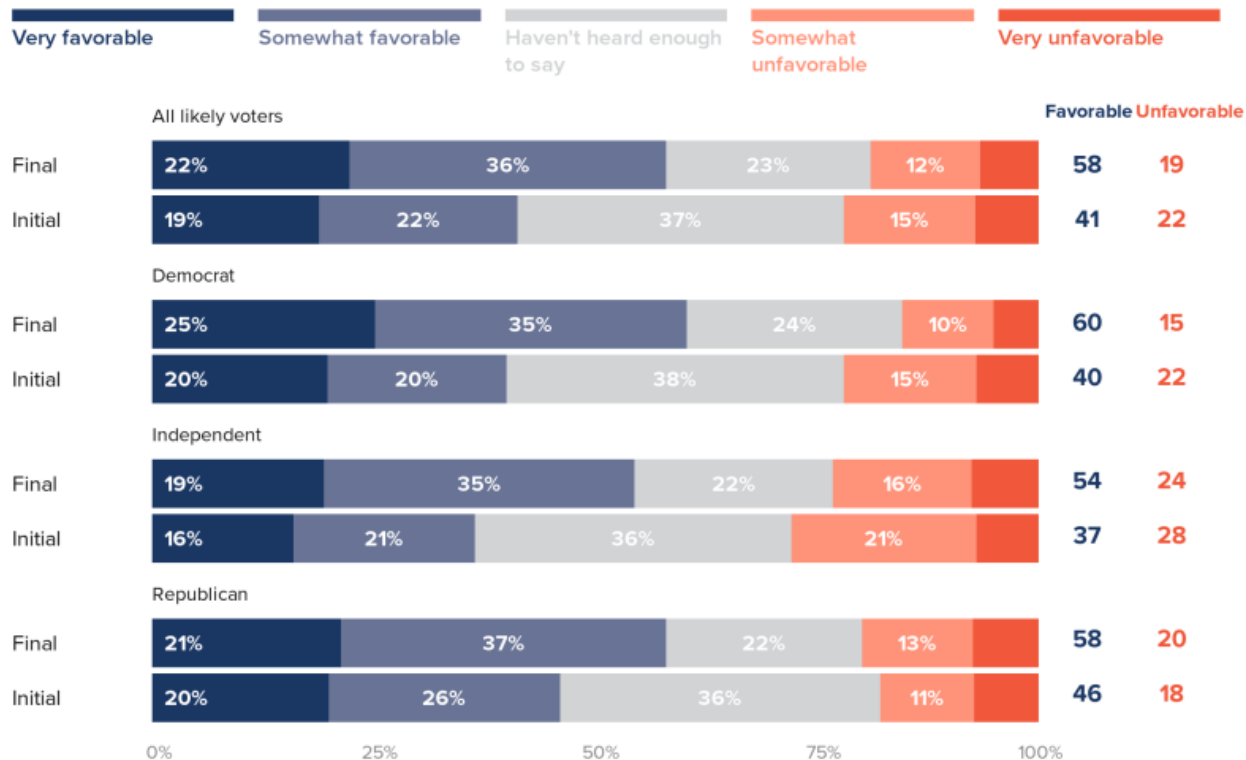


March 19–21, 2021 survey of 1,270 likely voters

Y5C8nF

After Learning More, Voters Across Party Lines View Advanced Nuclear More Favorably

Do you have a favorable or unfavorable opinion of advanced nuclear energy?



March 19–21, 2021 survey of 1,270 likely voters

ca85Kf

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collective

DATA FOR PROGRESS

Relevant Programs

- DOE-NE Community Engagement Awards
- NEUP Awards
- Coal-to-Nuclear Engagement
- Feasibility Studies in Isolated Communities
- Fission for the Future Program
- Federal Interim Waste Storage Process
- State-Level Progress

Implications for Utility Commissions

- Upfront Planning
- Fielding Safety, Cost, Waste Questions
- Encountering Increased Voluntary Public Engagement



Get in touch!

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