Welcome to Kern River's 2024 Customer Meeting

August 21-23, 2024

Truckee, California

Photo: Ritz-Carlton, Lake Tahoe

Kern River
GAS TRANSMISSION COMPANY
A BERKSHIRE HATHAWAY ENERGY COMPANY

Welcome

Mac McGuire

Vice President, Customer Service
& Business Development

Kern River Gas Transmission Company

Photo: Ritz-Carlton, Lake Tahoe

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President's Message

Laura Demman

President

Kern River Gas Transmission Company

Photo: Ritz-Carlton, Lake Tahoe

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National Energy Issues and Elections 2024

Jonathan Weisgall

Vice President, Government Relations,

Berkshire Hathaway Energy

Photo: Ritz-Carlton, Lake Tahoe

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National Energy Issues

Photo: Ritz-Carlton, Lake Tahoe

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Energy Transitions

- Biomass → coal → oil → renewables?
- Transitions take a long time
- Successor to the Age of Oil: Age of Natural Gas? Age of Renewables? Age of Nuclear?
- “All of the Above”?
- Back to the future?

“The Future is Electric”

> Prices on electric cars will continue to drop until they're within reach of the average family.

The Washington Post, 1915

Images: BMW, Detroit Electric, 2015, courtesy of EVASD

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1912 EV Charging Station

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Energy Trends and Uncertainties

- De-carbonization
- Electrification of everything
- Integrating intermittent resources into the grid
- Centralized power → customer-generated power
- Subsidize uneconomic power plants?
- No direct price on carbon
- Is gas the next coal?
- Bans on natural gas

Energy Trends and Uncertainties

(cont'd)

- Net zero by 2050
- ESG
- Impacts of war in Ukraine
- Supply chain challenges
- Domestic supply of energy components
- Energy independence vs. decarbonization
- Environmental justice
- Cybersecurity threats

Energy Trends and Uncertainties

(cont'd)

- Politics of climate change:
  - 1997: Hagel-Byrd resolution (95-0)
  - 1998: Clinton signs Kyoto Protocol
  - 2016: Obama signs Paris Agreement 2016
  - 2017: Trump withdraws U.S. from Paris Agreement
  - 2021: Biden rejoins Paris Agreement
  - 2025? Trump says he will withdraw

Energy Trends and Uncertainties

(cont'd)

- Surge in power demand
- Energy storage
- Trade/tariff issues
- Role of A.I.
- Wildfires
- Impact of IIJA and IRA
- 2025 debate over the Tax Credit and Jobs Act
- Does the U.S. have a national energy policy?

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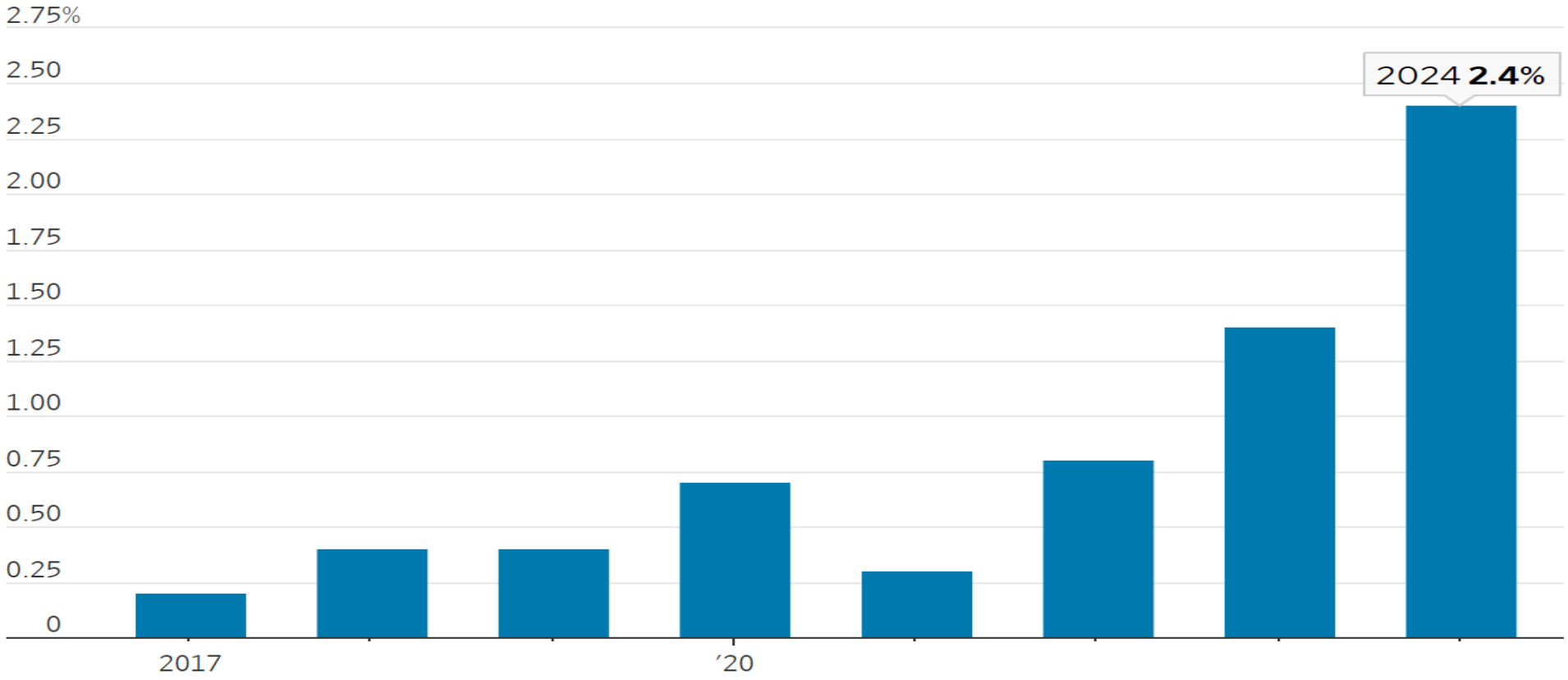
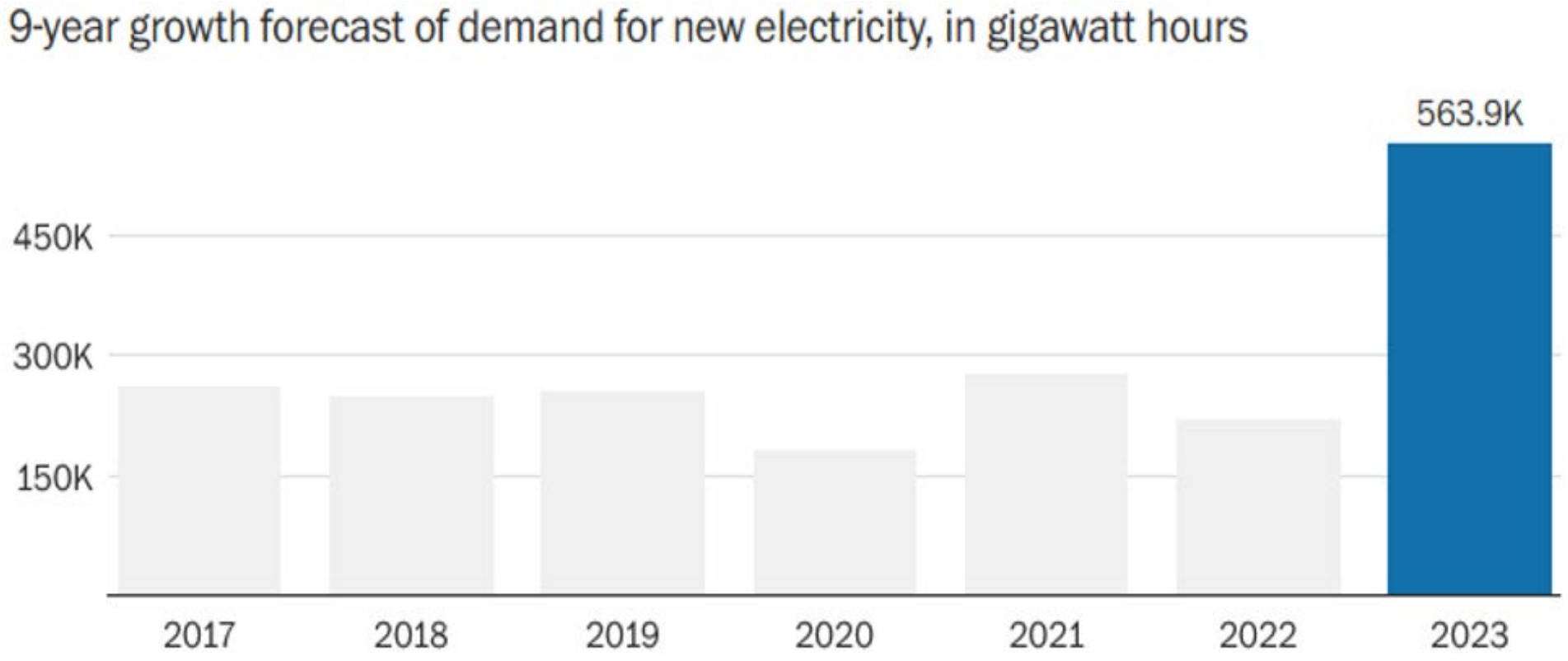
PJM 10-year Growth Forecast

PJM Interconnection's yearly forecast on how much electricity demand is expected to grow each year over the next 10 years

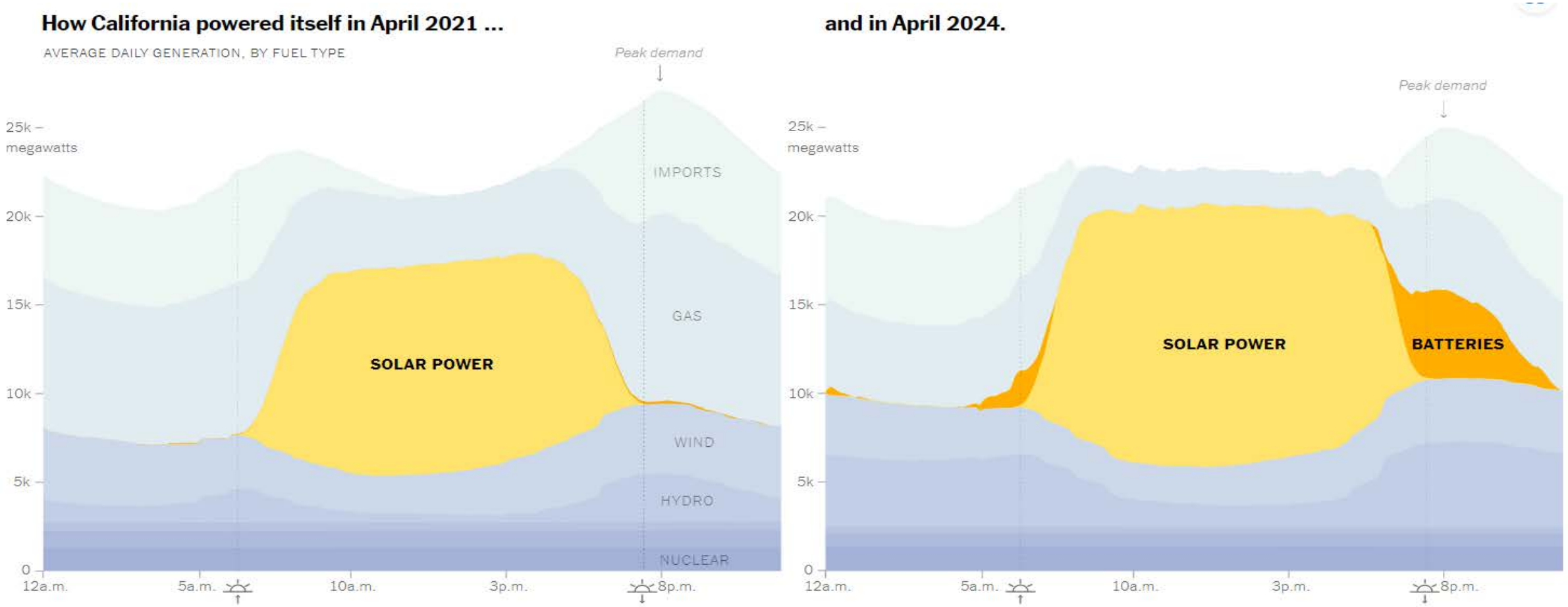


Source: PJM Interconnection

9-Year North America Growth Forecast

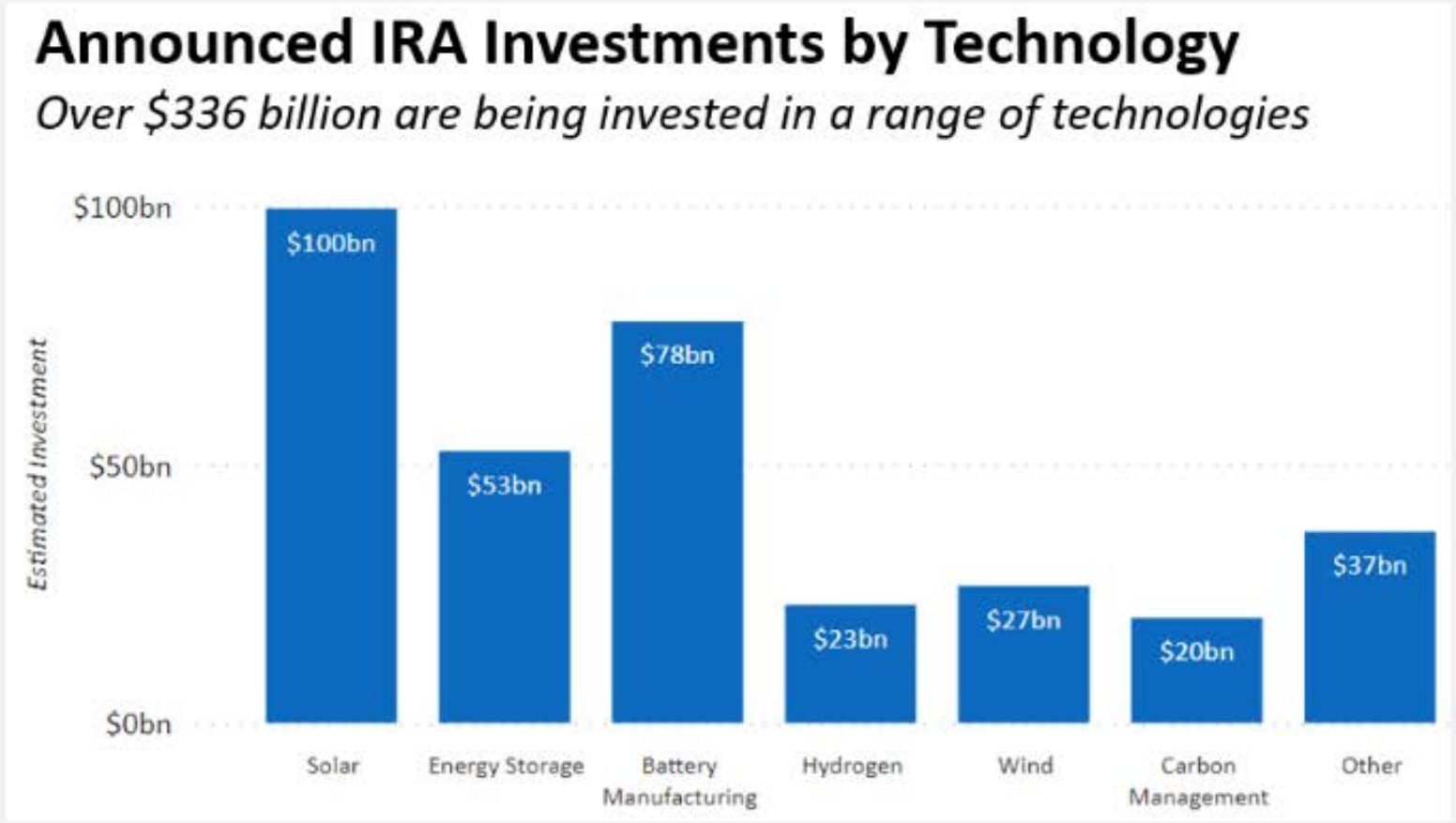


California Average Daily Generation by Fuel Type, 2021 vs. 2024



Source: California Independent System Operator via Grid Status · Please see the bottom of this page for notes. · By The New York Times

How has the IRA fared since enactment in 2022?



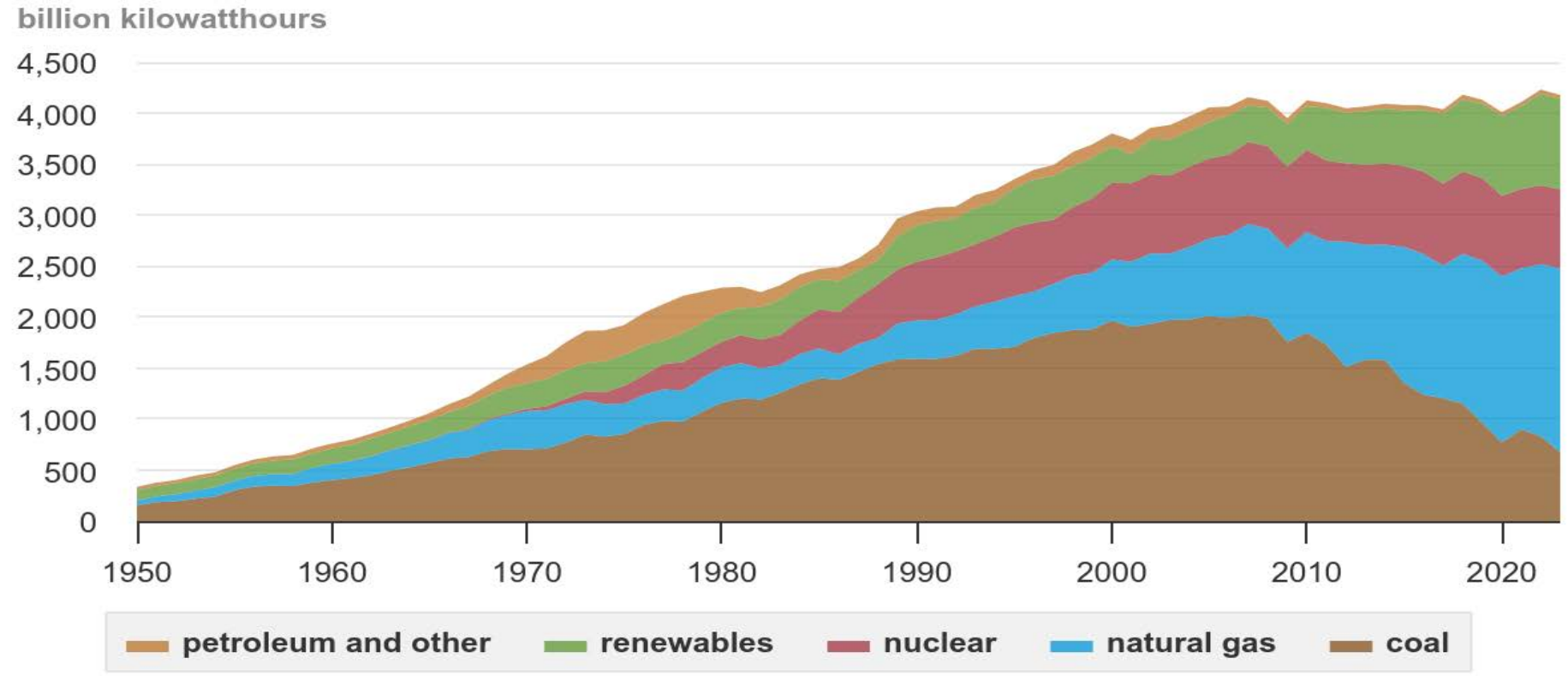
Source: Rhodium Group/Clean Investment Monitor (CIM)

Investment is Leading to Jobs

Dollars are flowing to these industries at all levels, including manufacturing, transportation, and sales.

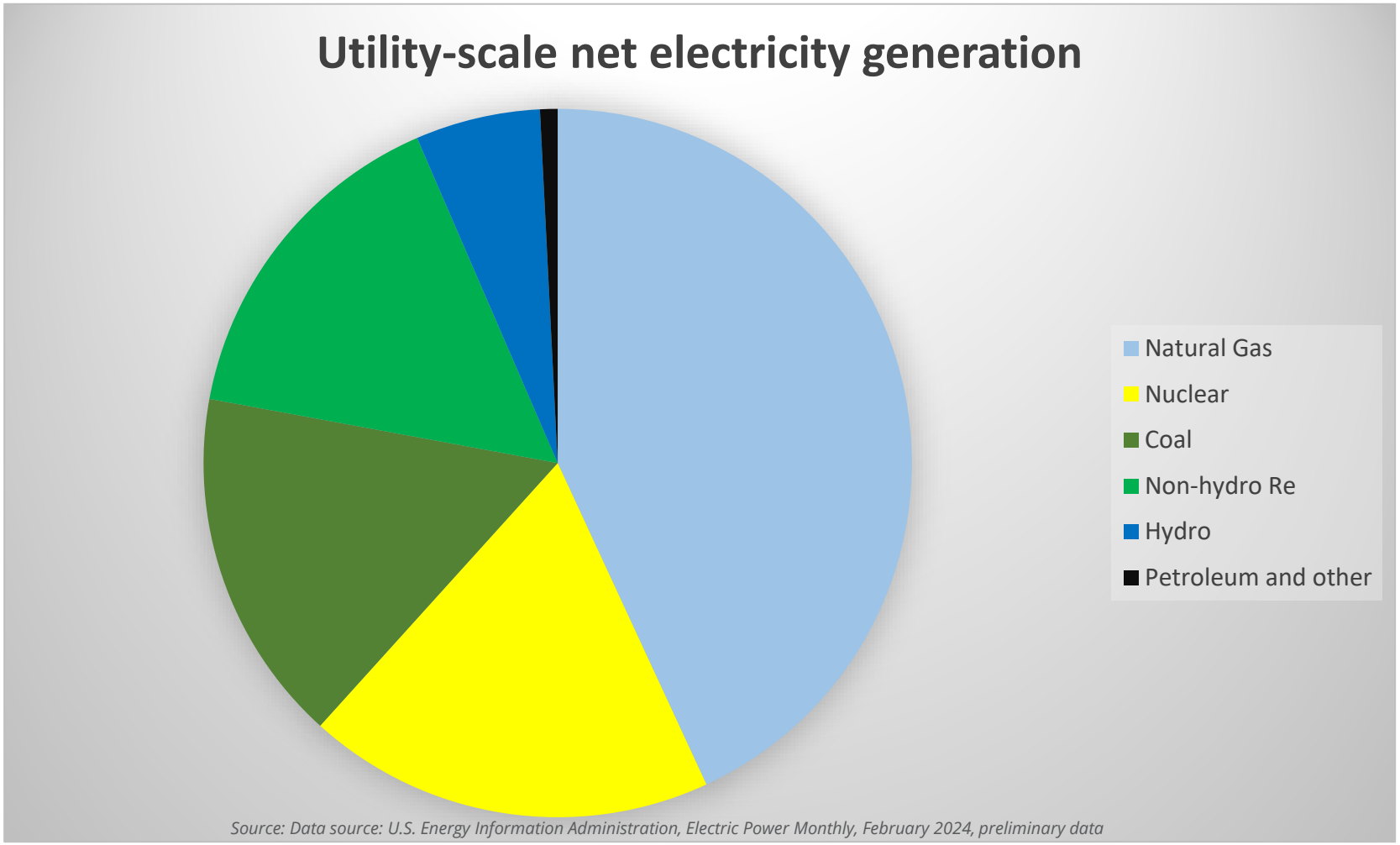
These investments are generating long-term economic growth for the whole country and creating jobs in underserved communities.

U.S. Electricity Generation 1950-2023



Data source: U.S. Energy Information Administration, *Monthly Energy Review* and *Electric Power Monthly*, February 2024, preliminary data for 2023
Note: Includes generation from power plants with at least 1 megawatt electric generation capacity.

Electricity Generation by Source, 2023



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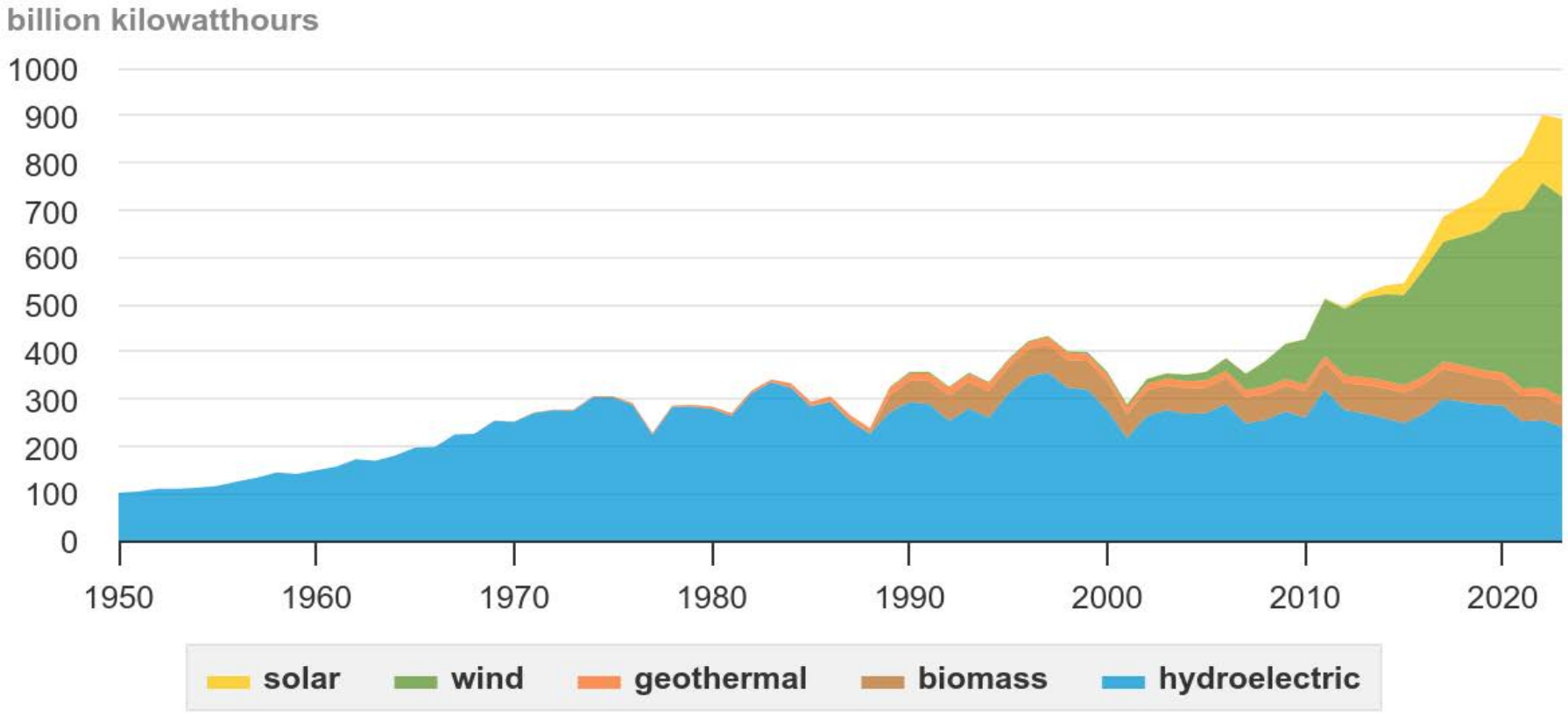
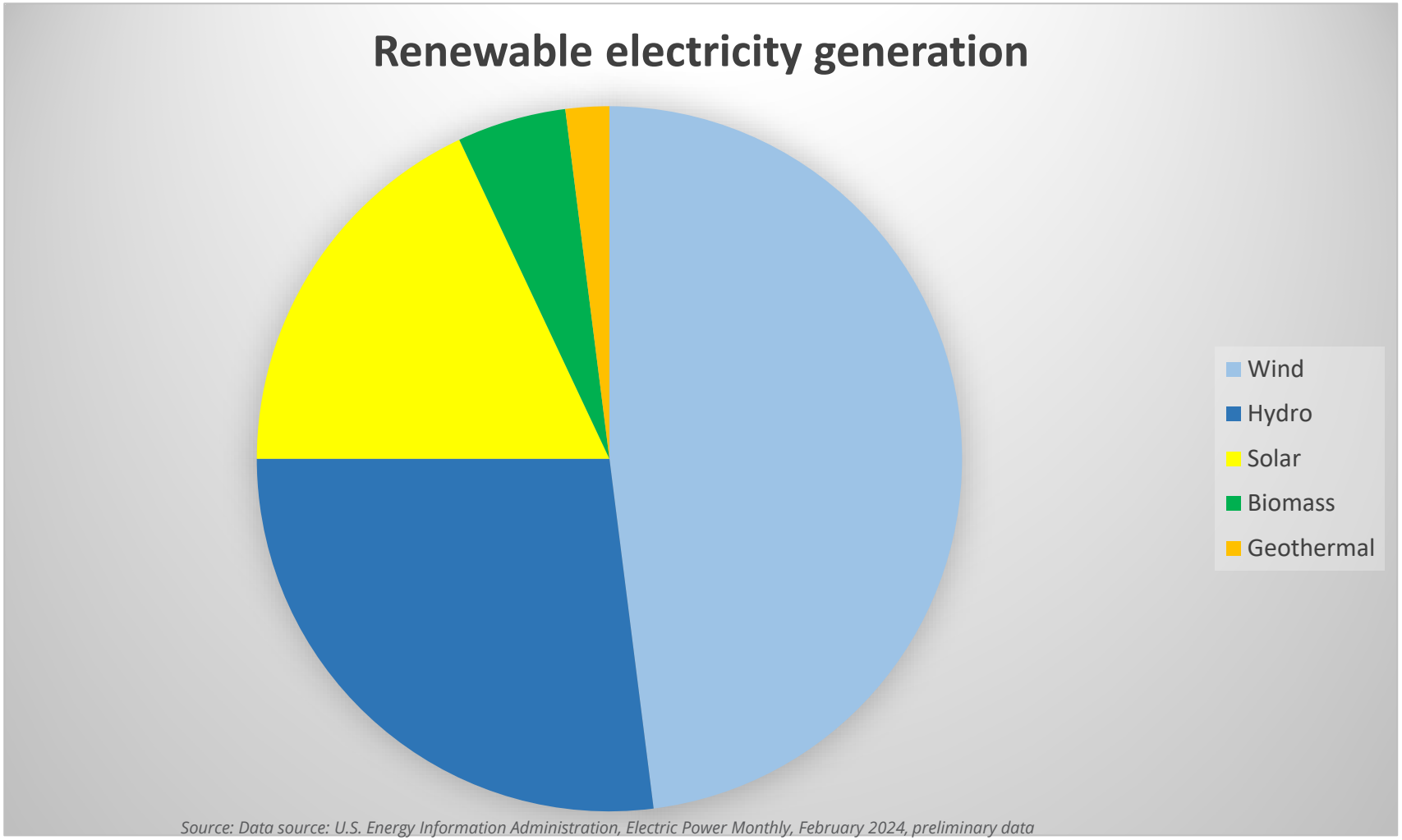
U.S. Renewable Generation 1950-2023



Data source: U.S. Energy Information Administration, *Monthly Energy Review* and *Electric Power Monthly*, February 2024, preliminary data for 2023

Note: Includes generation from power plants with at least 1 megawatt electric generation capacity. Hydroelectric is conventional hydropower.

Renewable Generation by Source, 2023



Source: Data source: U.S. Energy Information Administration, Electric Power Monthly, February 2024, preliminary data

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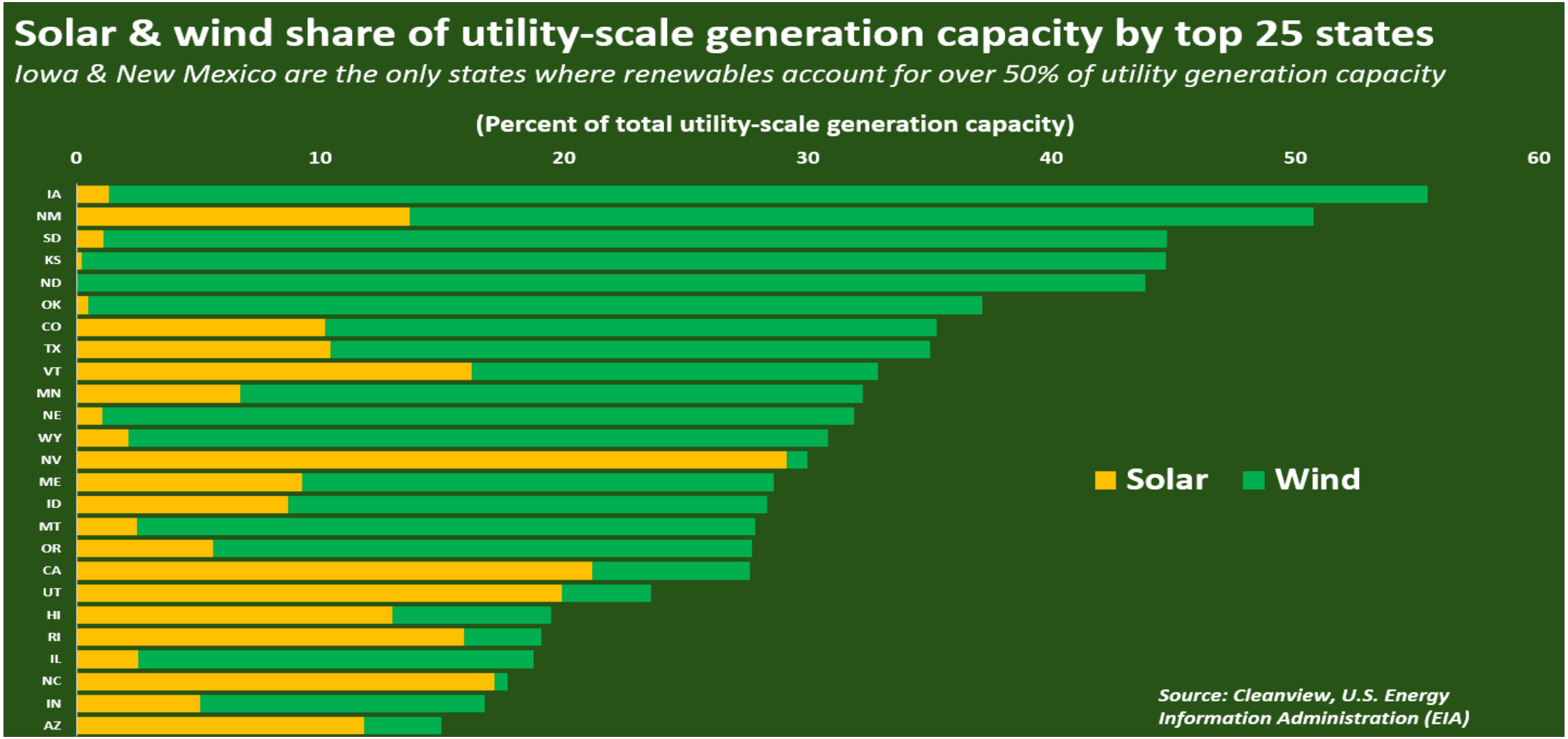
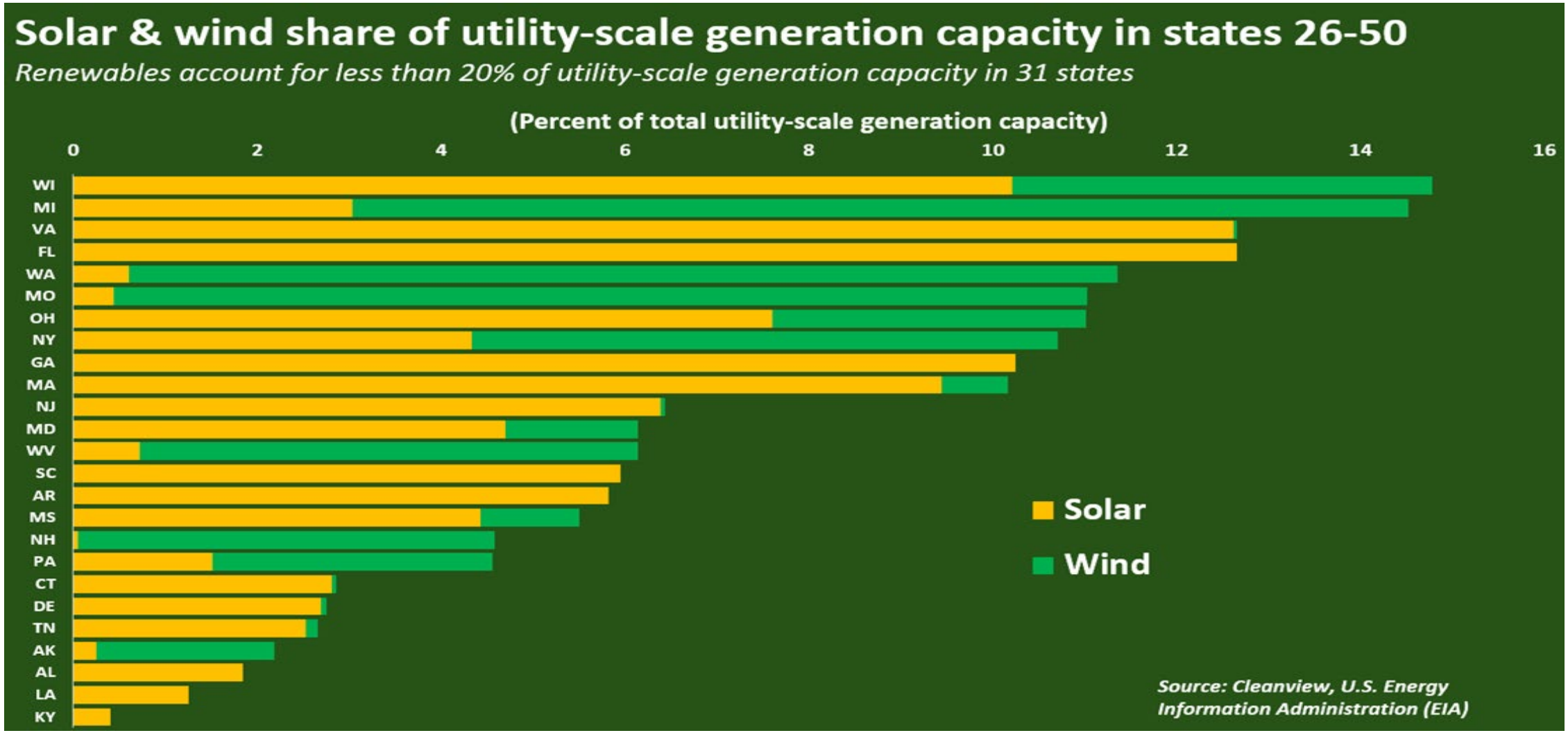
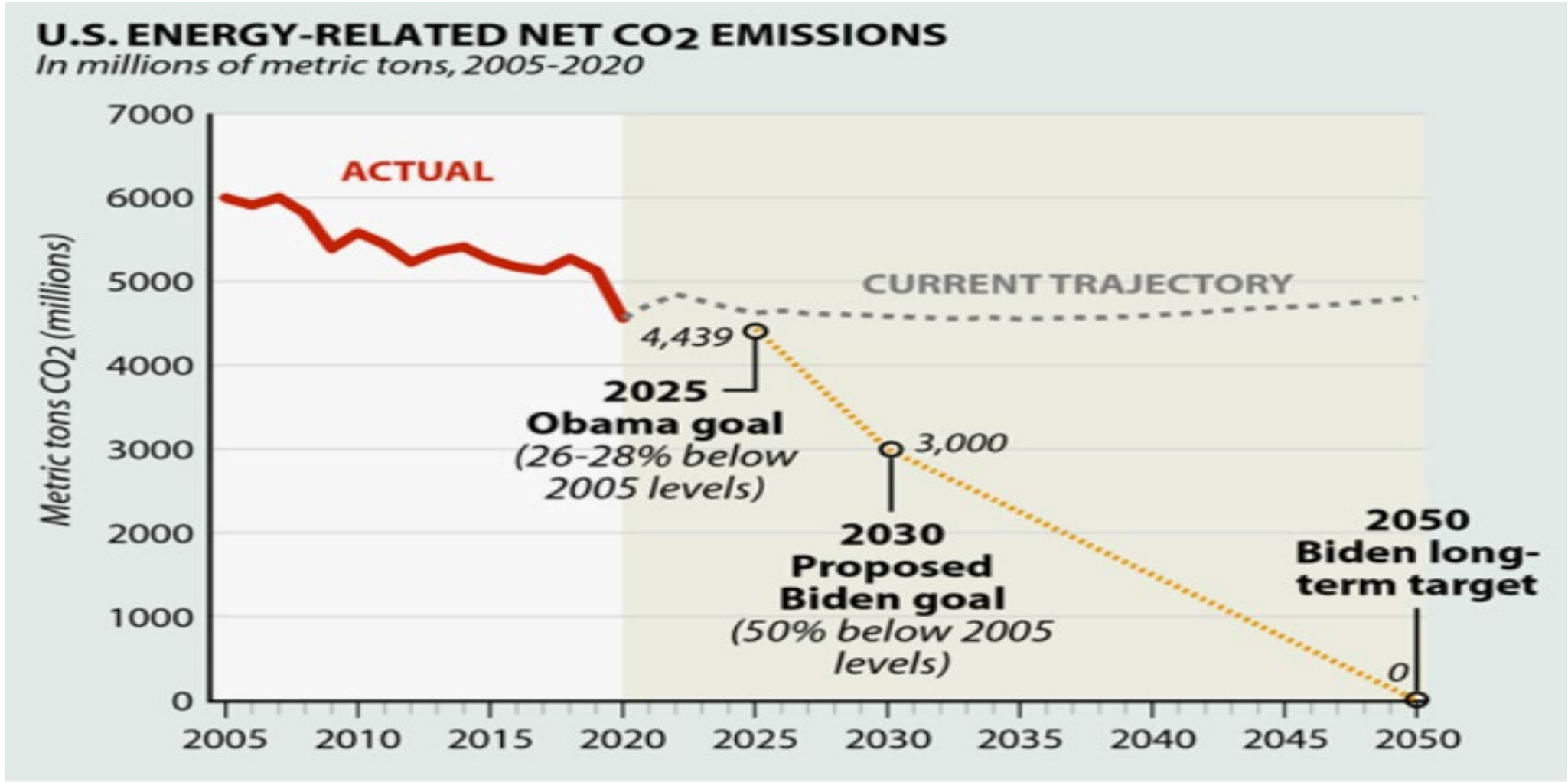
Top 25 States – Wind and Solar Procurement



Bottom 25 States – Wind and Solar Procurement



The Challenge



Elections 2024

Photo: Ritz-Carlton, Lake Tahoe

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2024 Elections

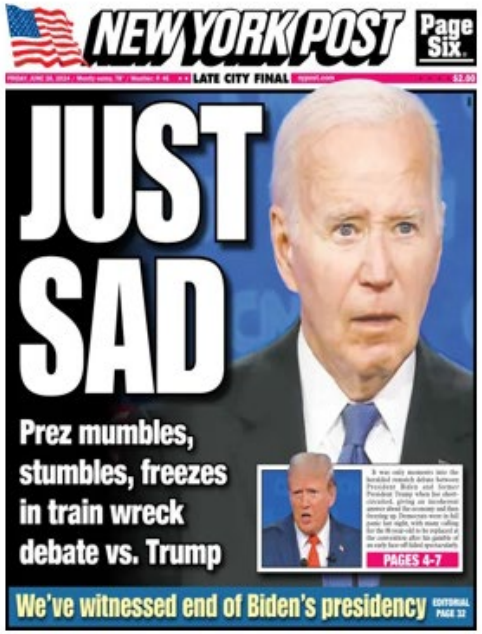
- President and Vice President
- 34 U.S. Senate seats
  - 23 Democratic seats v. 11 Republican
  - Currently 51D vs. 49R
  - 10 retirements (7D and 3 R)
- All 435 U.S. House seats
  - Currently 219R vs. 213D
  - 56 retirements: 29D and 27Rs (including 6 committee chairs)

2024 Elections (cont'd)

- 11 governors
  - 3D and 8R
  - Currently 27R and 23D
  - Retiring/term limited: 4R and 3D
- 5,812 state legislative seats
  - Senates: 1,109R vs. 851D
  - Houses: 2,944R vs. 2,420D
- 94 statewide ballot measures in 32 states
  - Abortion on the ballot in FL, MD, NY
  - May be on the ballot in 8 other states

A Decisive Six Weeks

Iconic Images Make & Break Campaigns



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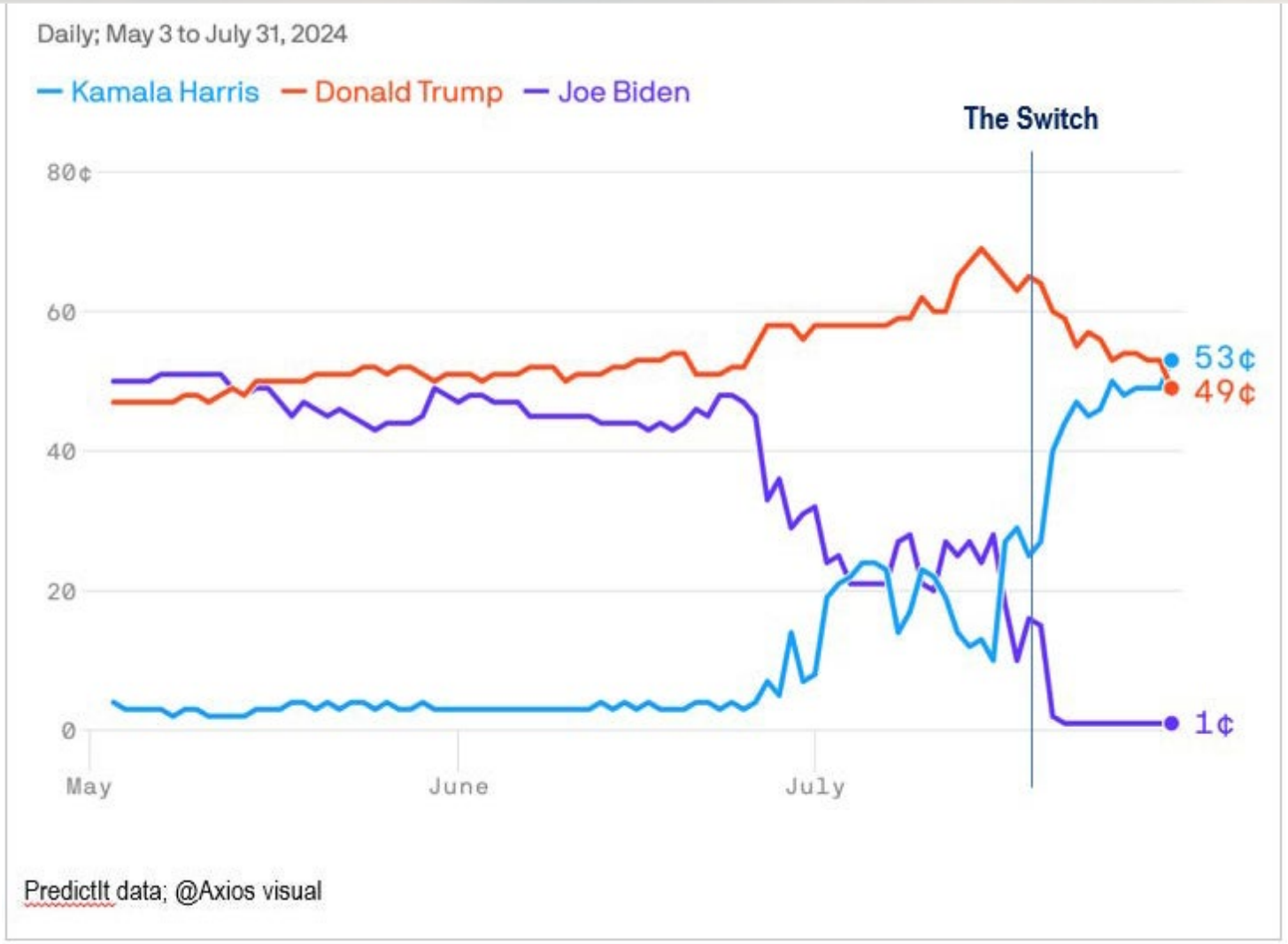
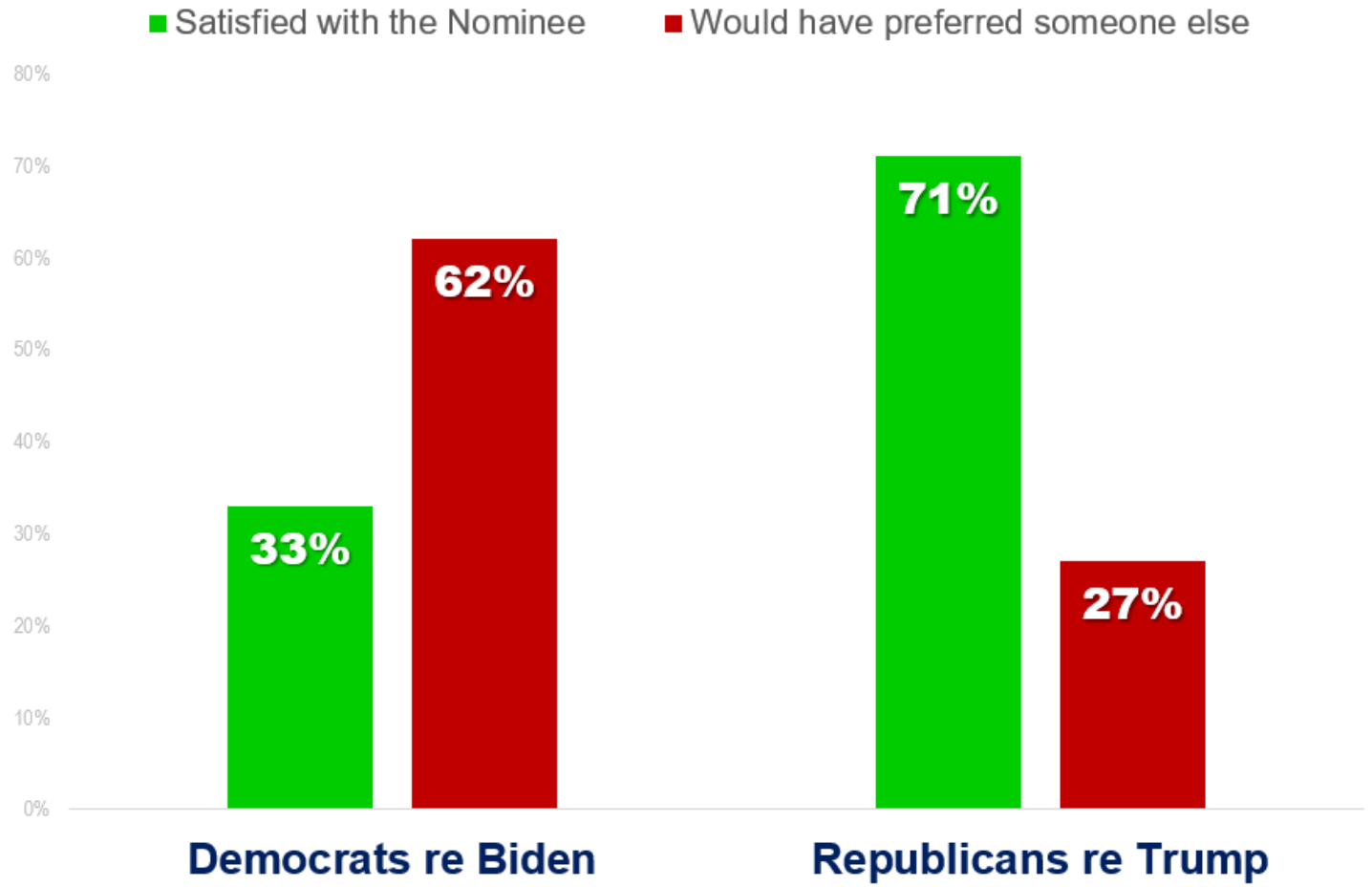
Ancient History

- June 27 Biden presidential debate disaster
- July 2 Congressional withdrawal calls start
- July 5 Biden ABC interview: “Only if the Lord Almighty came down”
- July 11 Biden NATO press conference debacle (“VP Trump”)
- July 13 Trump assassination attempt
- July 15 Trump names Sen. JD Vance as VP running mate
- July 17 Biden tests positive for COVID
- July 18 Trump accepts GOP nomination
- July 21 Biden withdraws, endorses Harris
- Aug. 6 Harris names Gov. Walz as VP running mate

PredictIt Trading Prices for Winning the Presidential Election



Enthusiasm Chasm



Source: Hart Research / Public Opinion Strategies for NBC News, July 7-9, 2024 (***before*** shooting & GOP convention)

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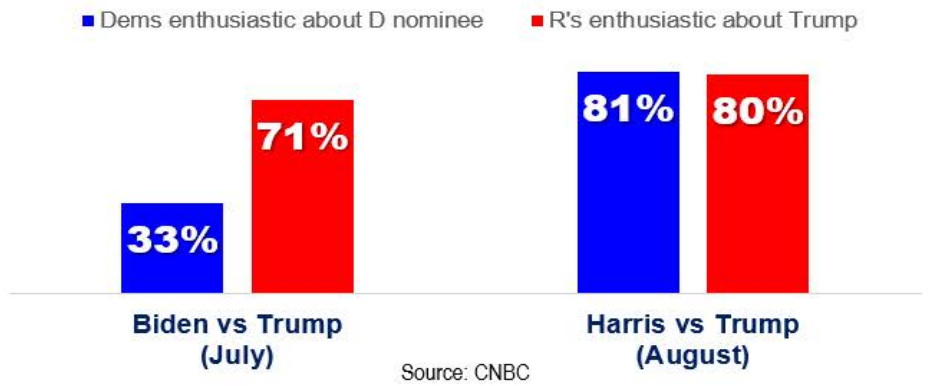
State of the Race

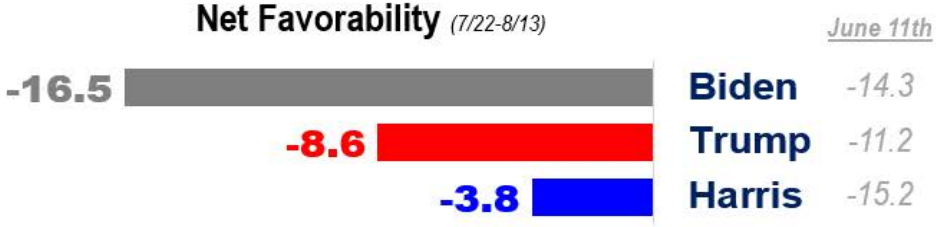
STATE OF THE RACE

Enthusiasm Gap



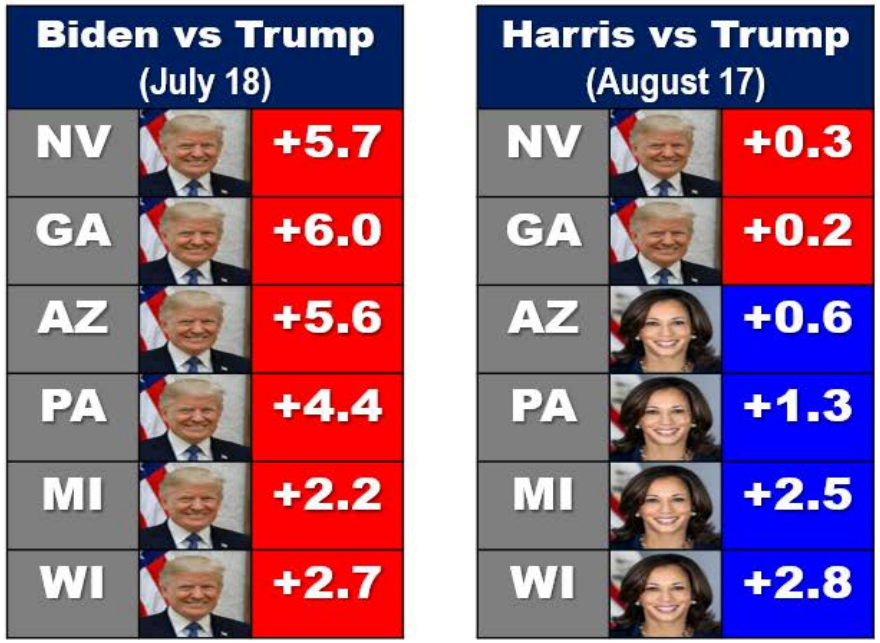
Source: CNBC

Favorability



Source: Real Clear Politics, 8/17

Polling Averages



Source: 538

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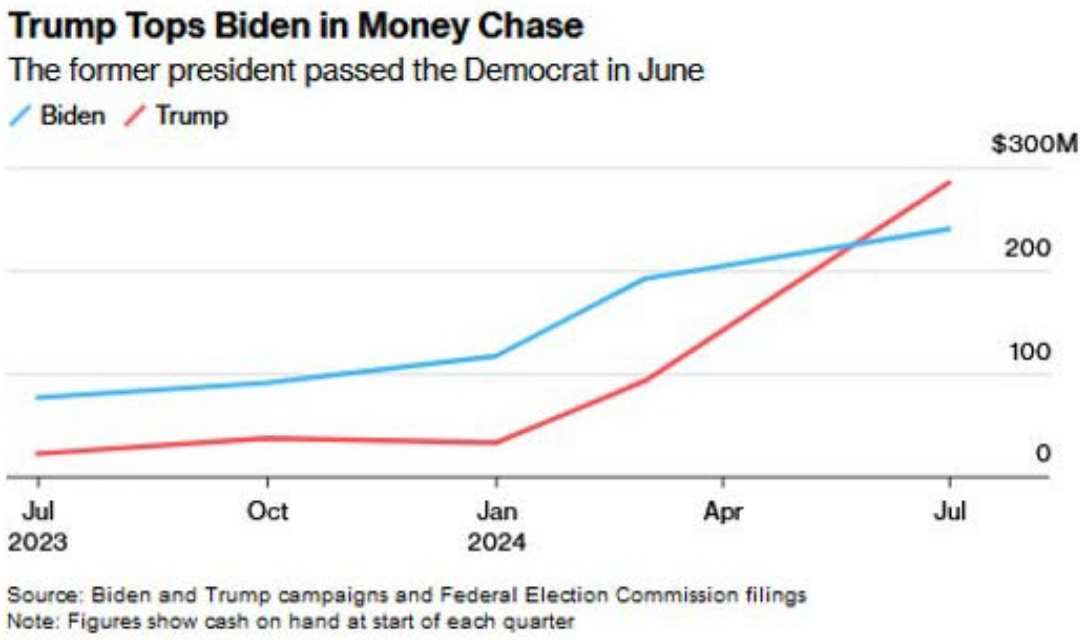
New Momentum Closing the Funding Gap

TRUMP vs BIDEN



TRUMP vs HARRIS

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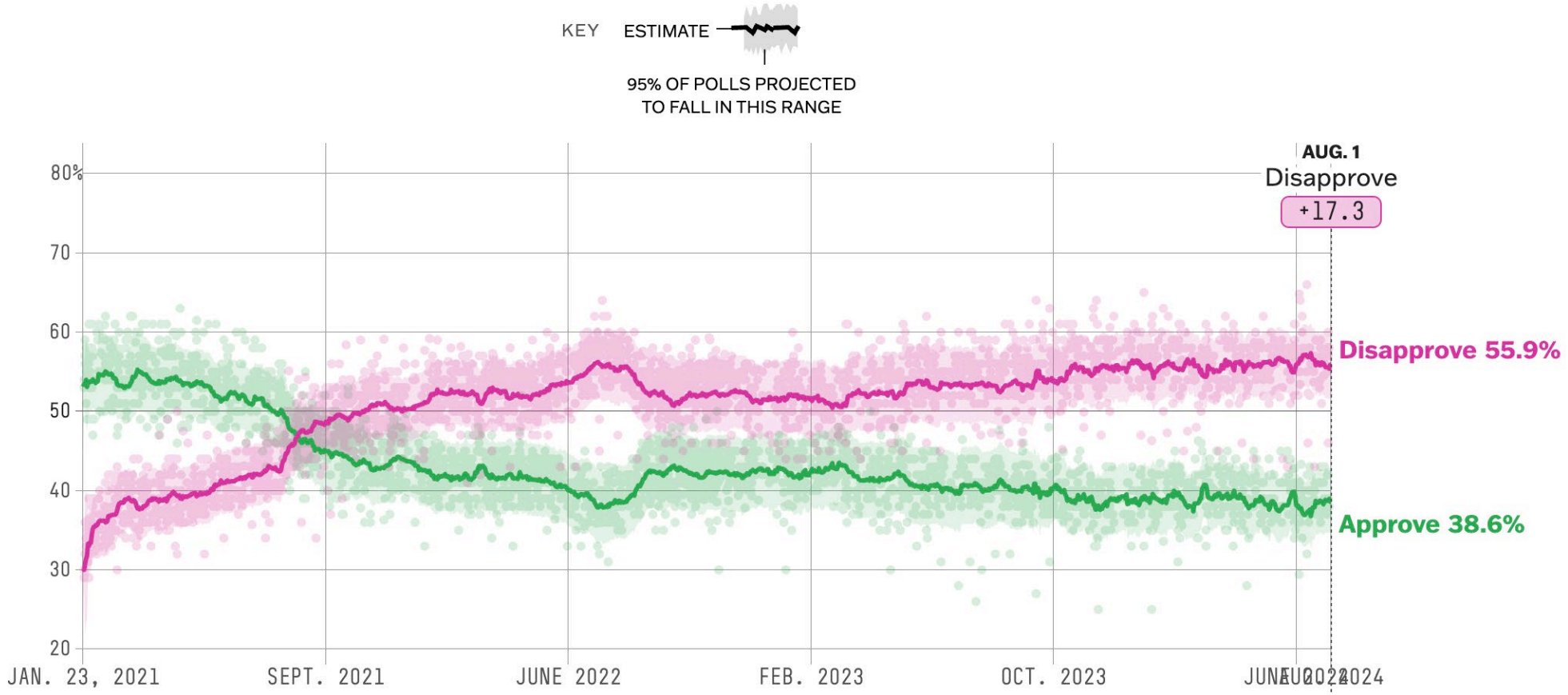
Biden Job Approval Since Inauguration



Source: FiveThirtyEight

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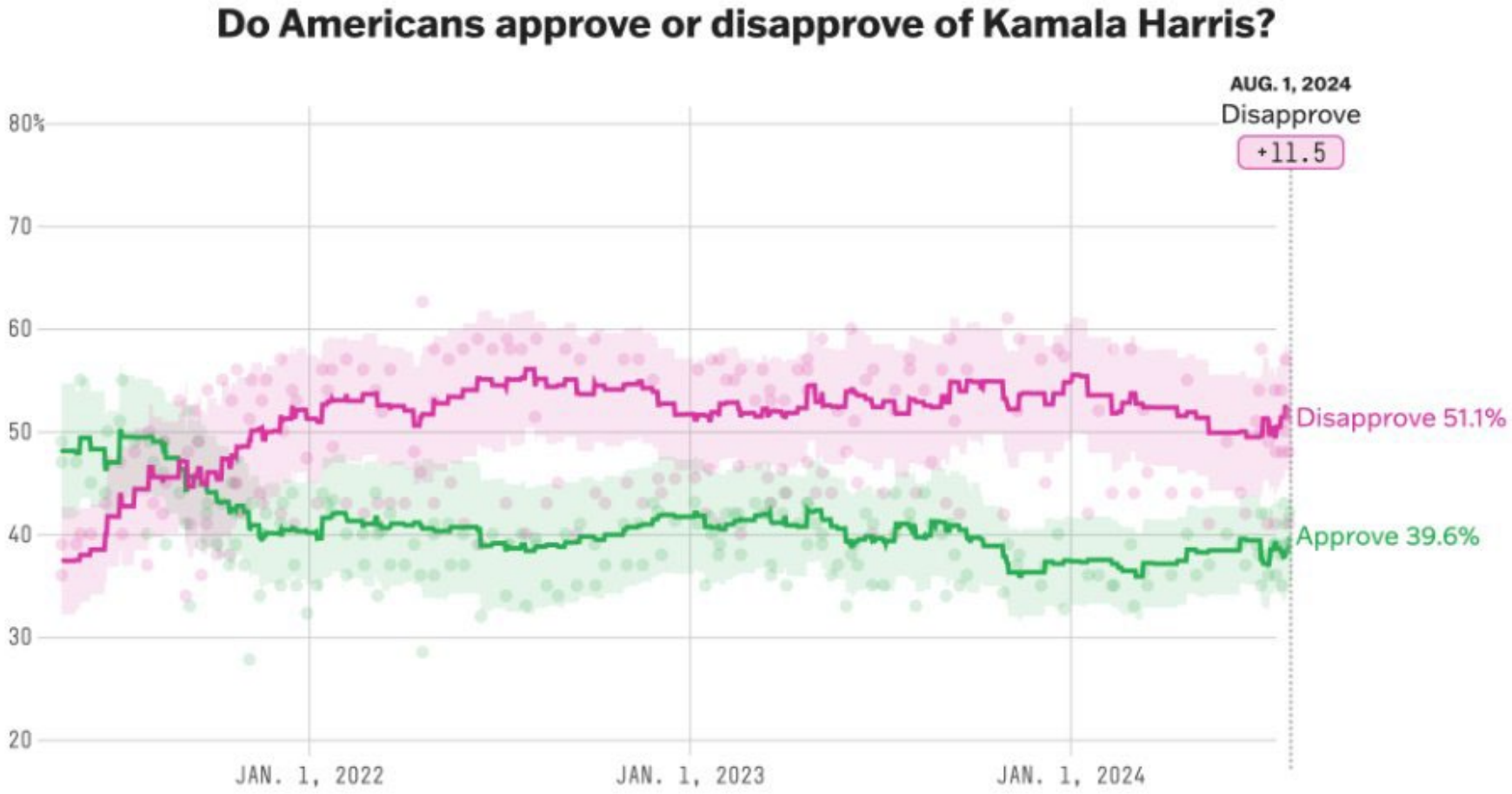
Harris Job Approval Since Inauguration



Source: FiveThirtyEight

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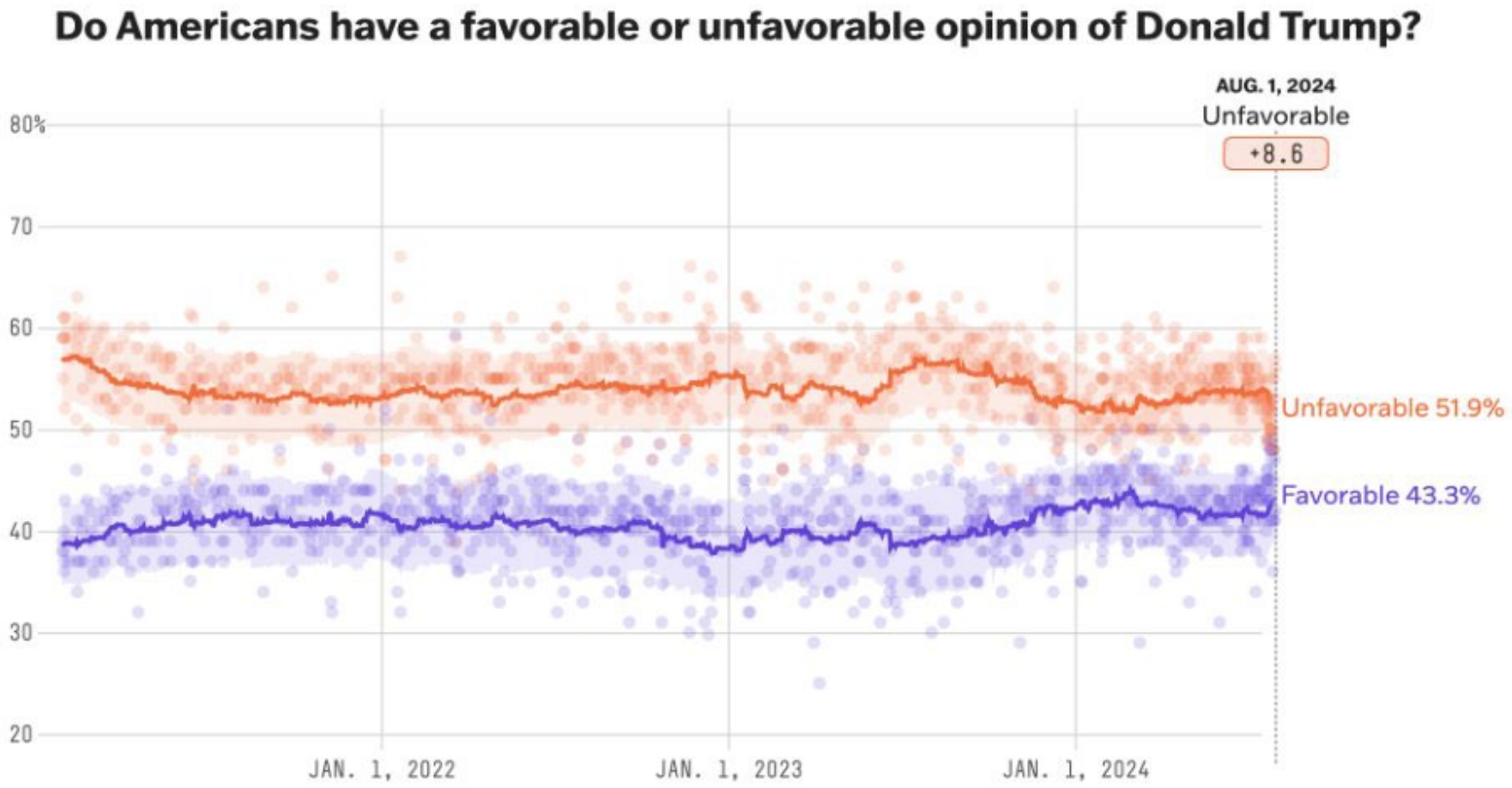
Trump Approval Since 2021



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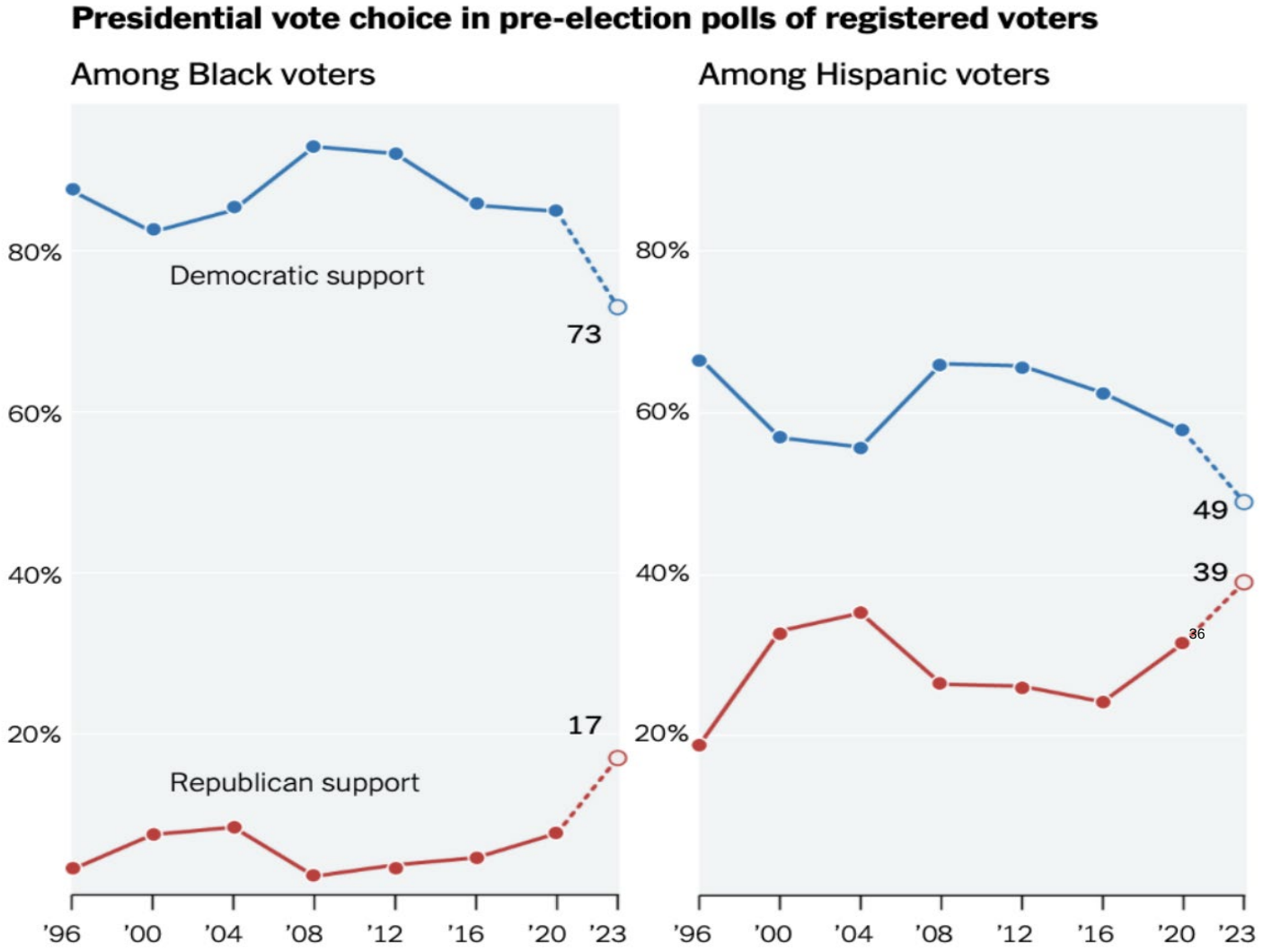
Black and Hispanic Voters



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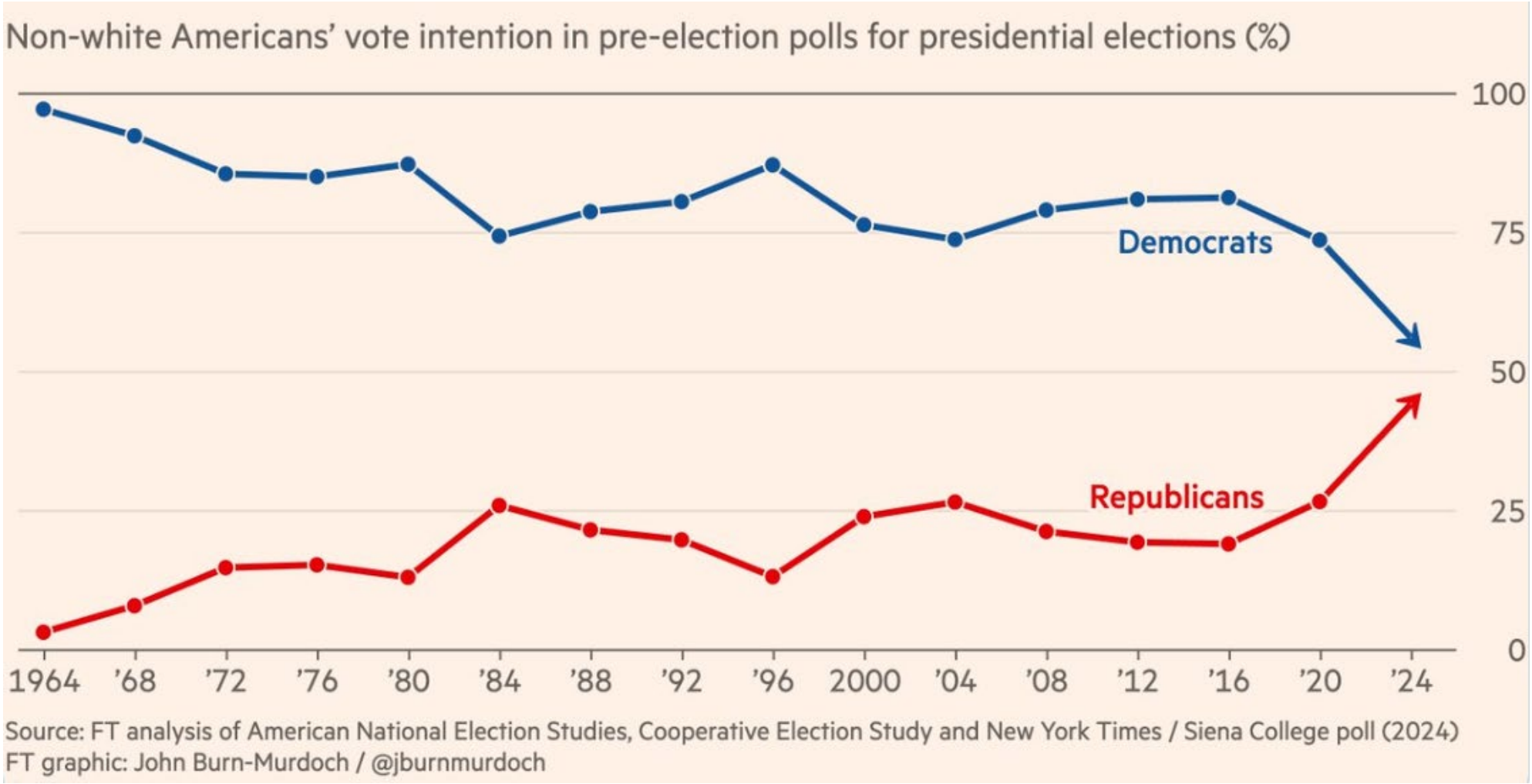
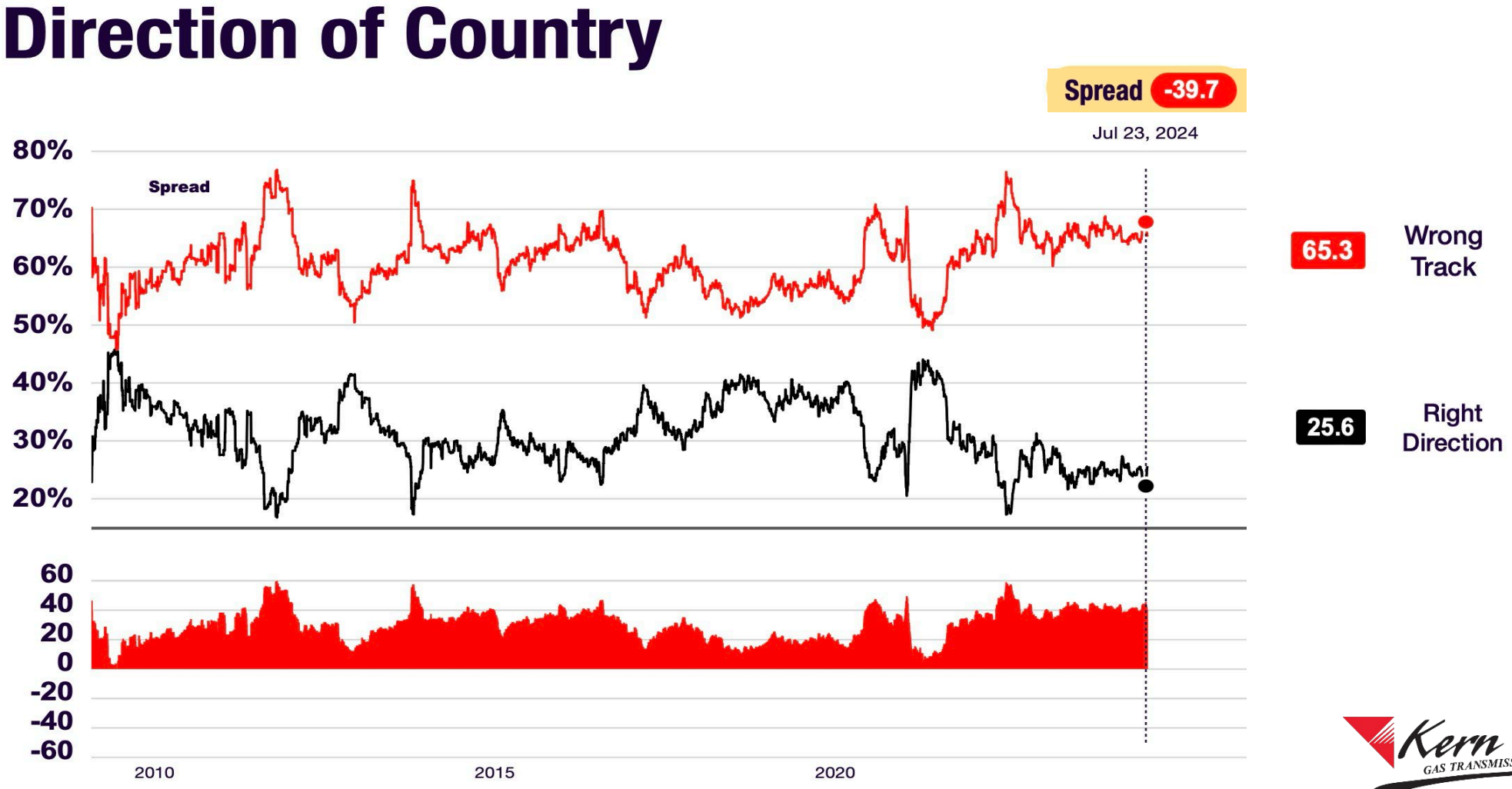
Non-White U.S. Voter Intentions 1964-2024



Is the United States heading in the right direction?



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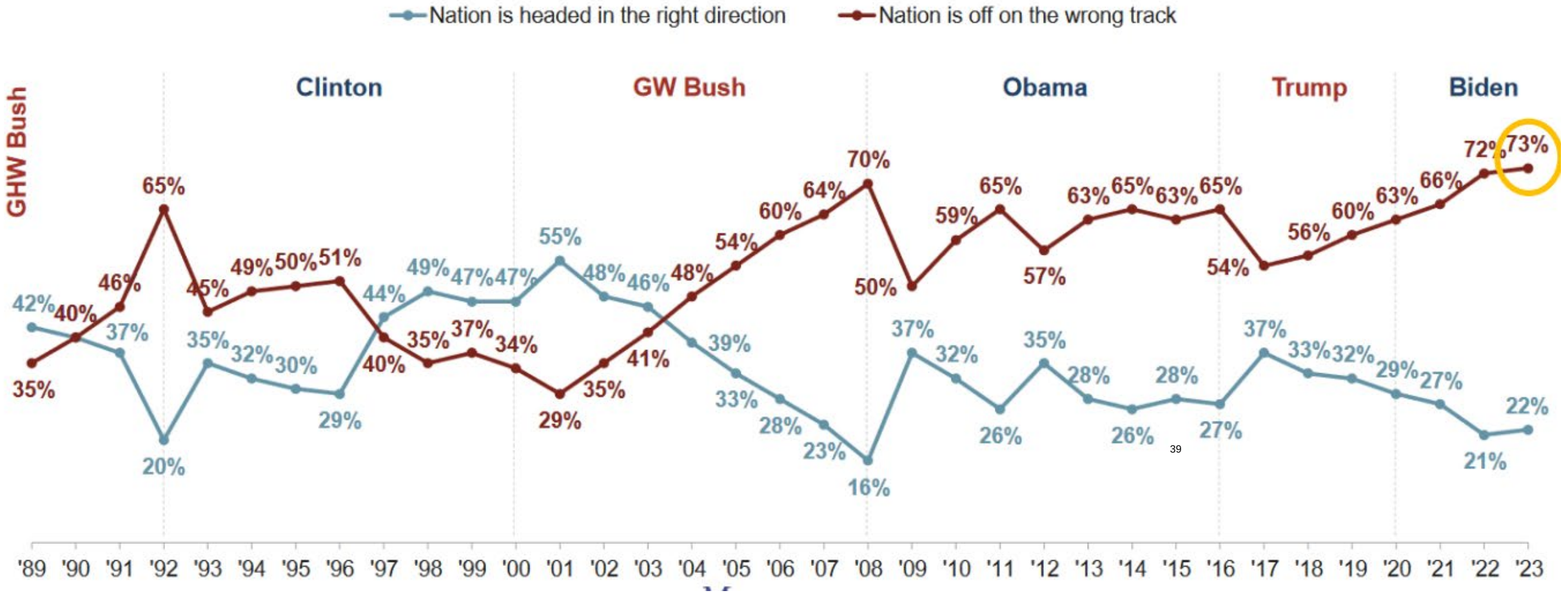
Right Track – Wrong Track



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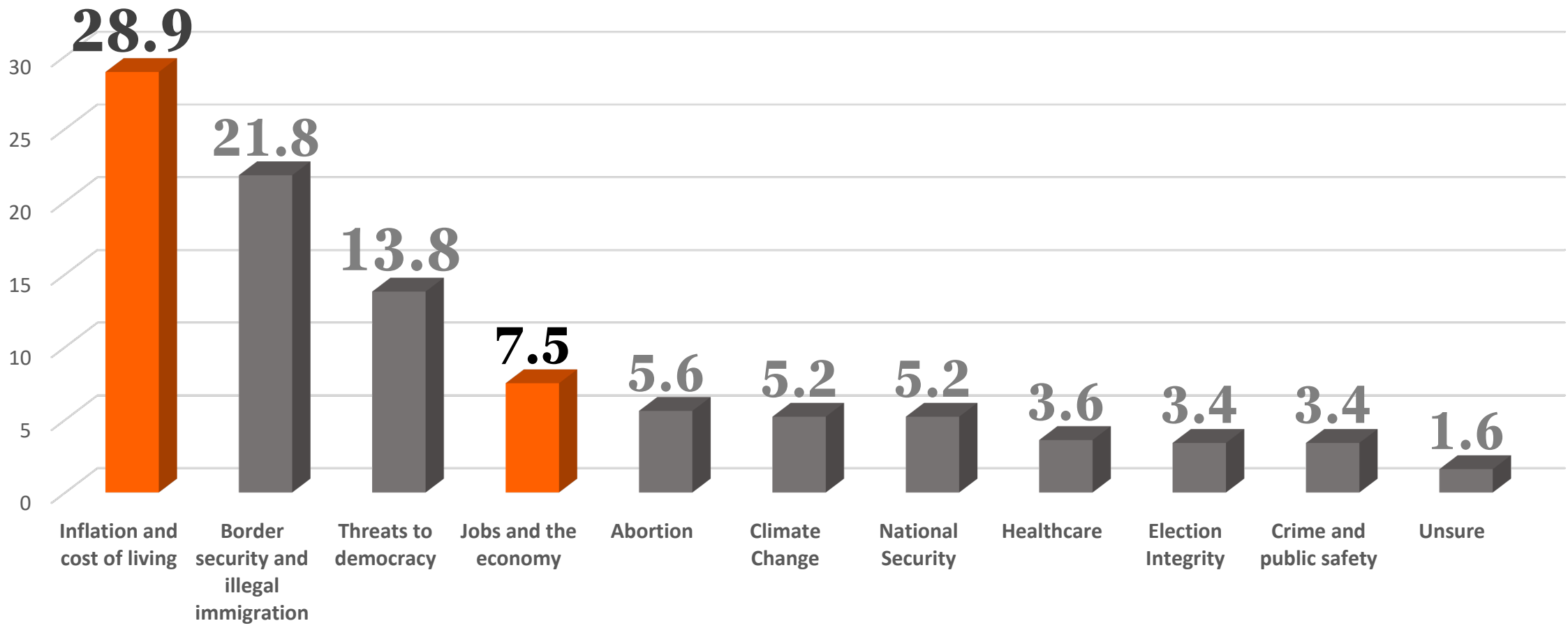
Voters' Top Priority

Which one of the following issues do you believe should be the top priority for Congress?



Cygnal National Poll | June 30 – July 1 | n=1,515 likely general election voters.

Inflation vs. Wage Growth 2010-2024

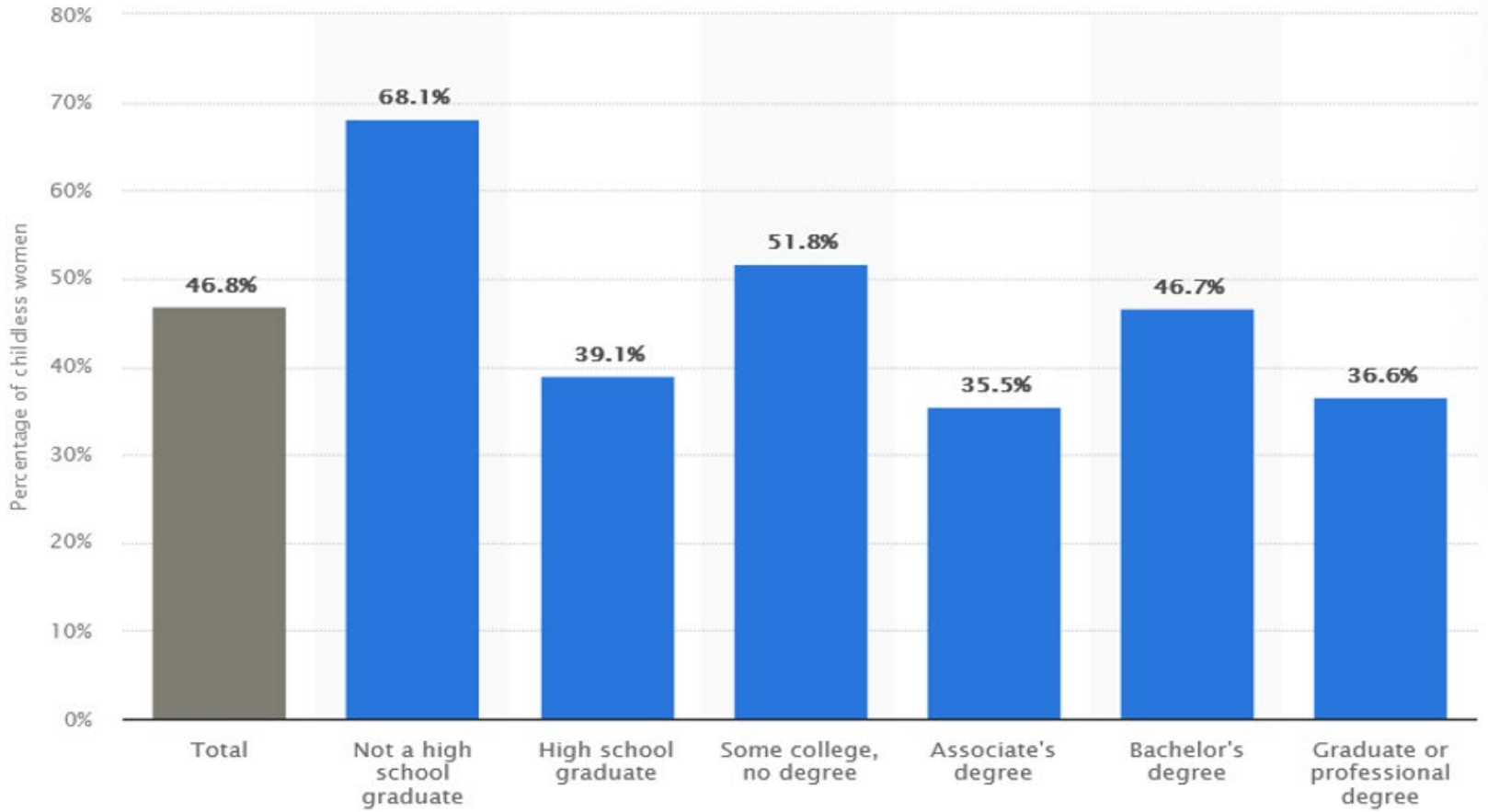
Sources: Bureau of Labor Statistics, FactSet, Axios Visuals

Campaigns – Play on Anger, Fear and Mistrust

AREN'T YOU ANGRY?

AREN'T YOU AFRAID?

“Childless cat ladies”: Percentage of Childless Women in the U.S. in 2020, by Educational Background



Shake the Etch A Sketch

What Can Be

Unburdened by What Has Been

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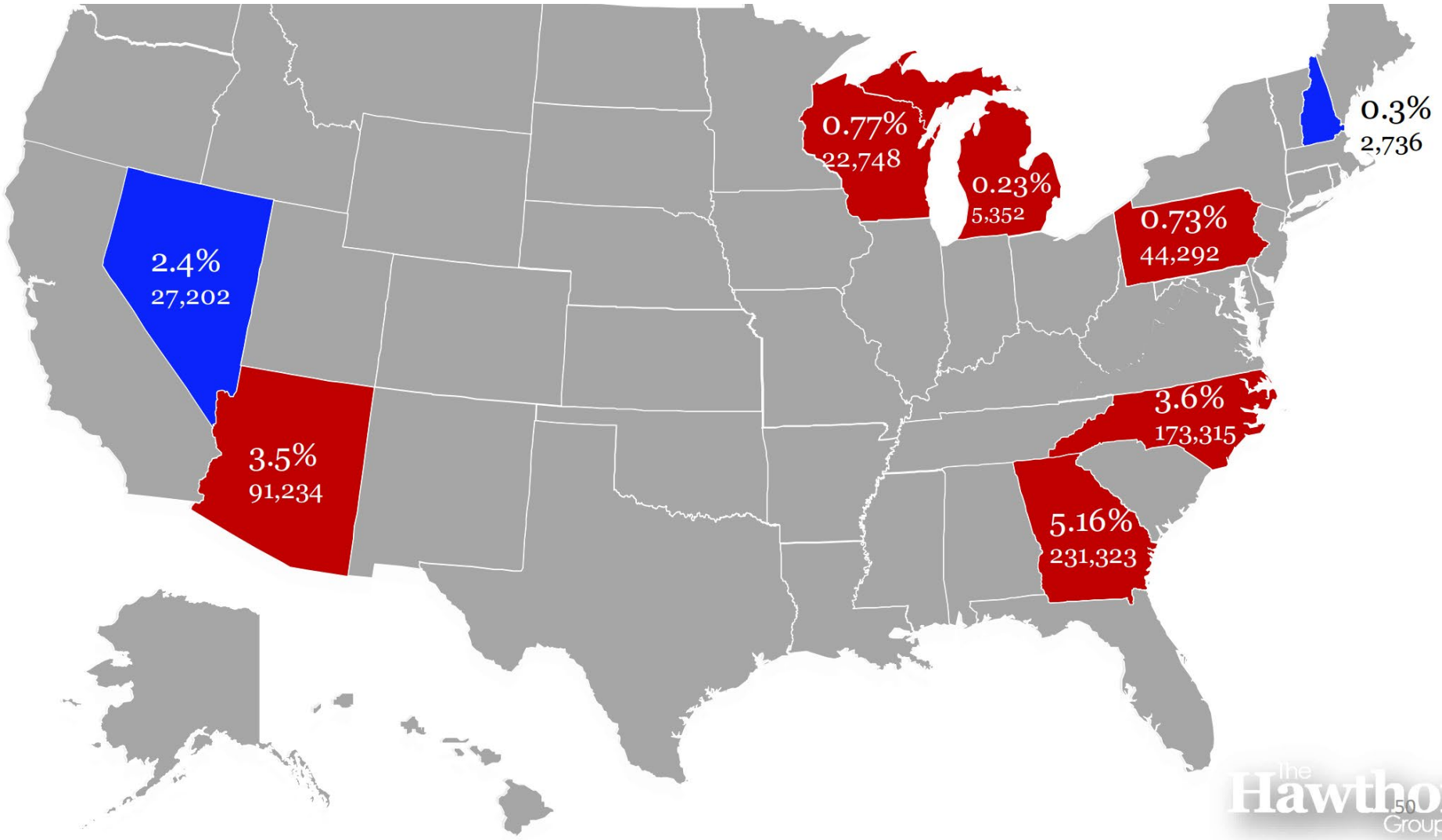
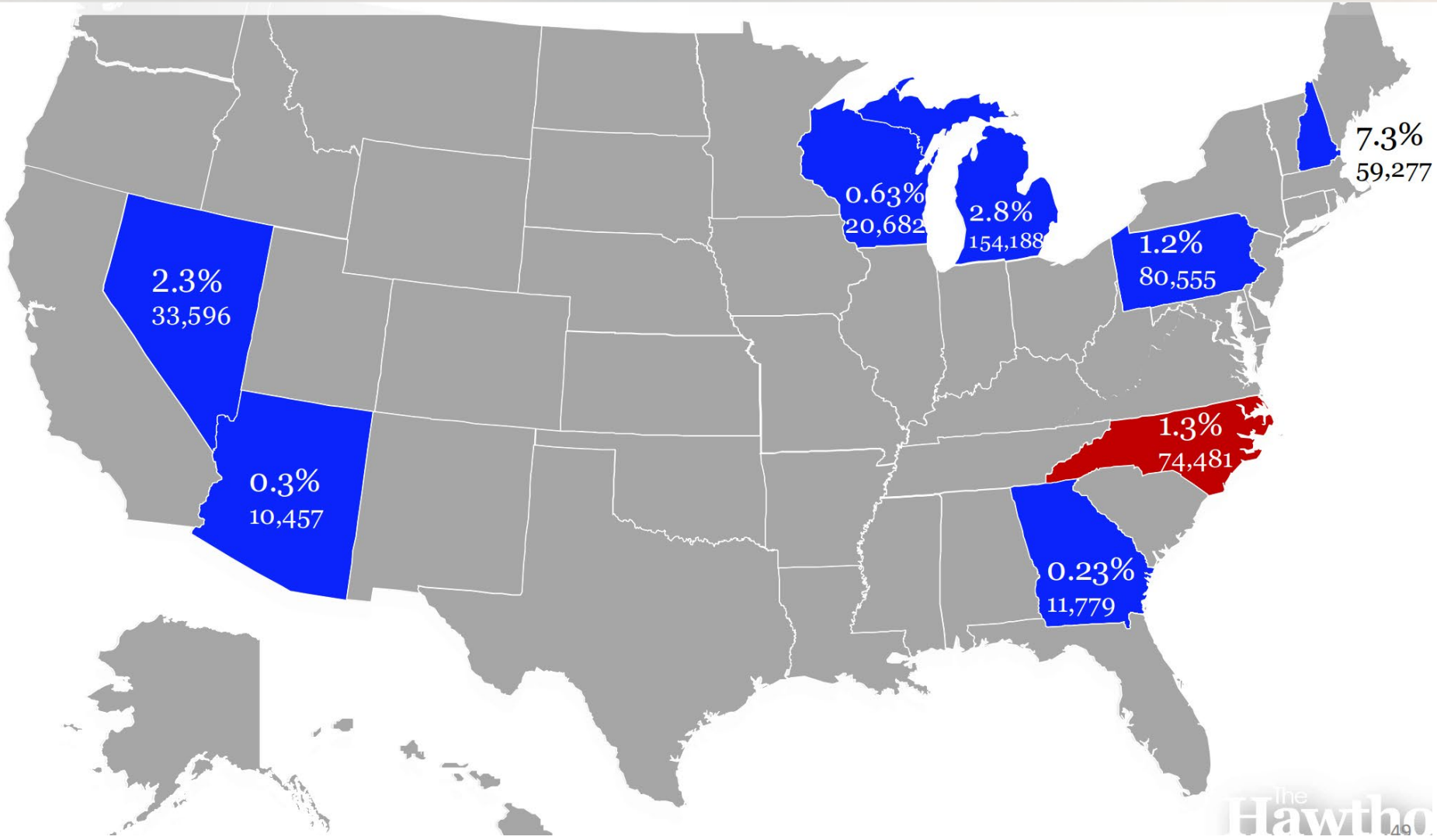
2024 Swing States – 2016 Results



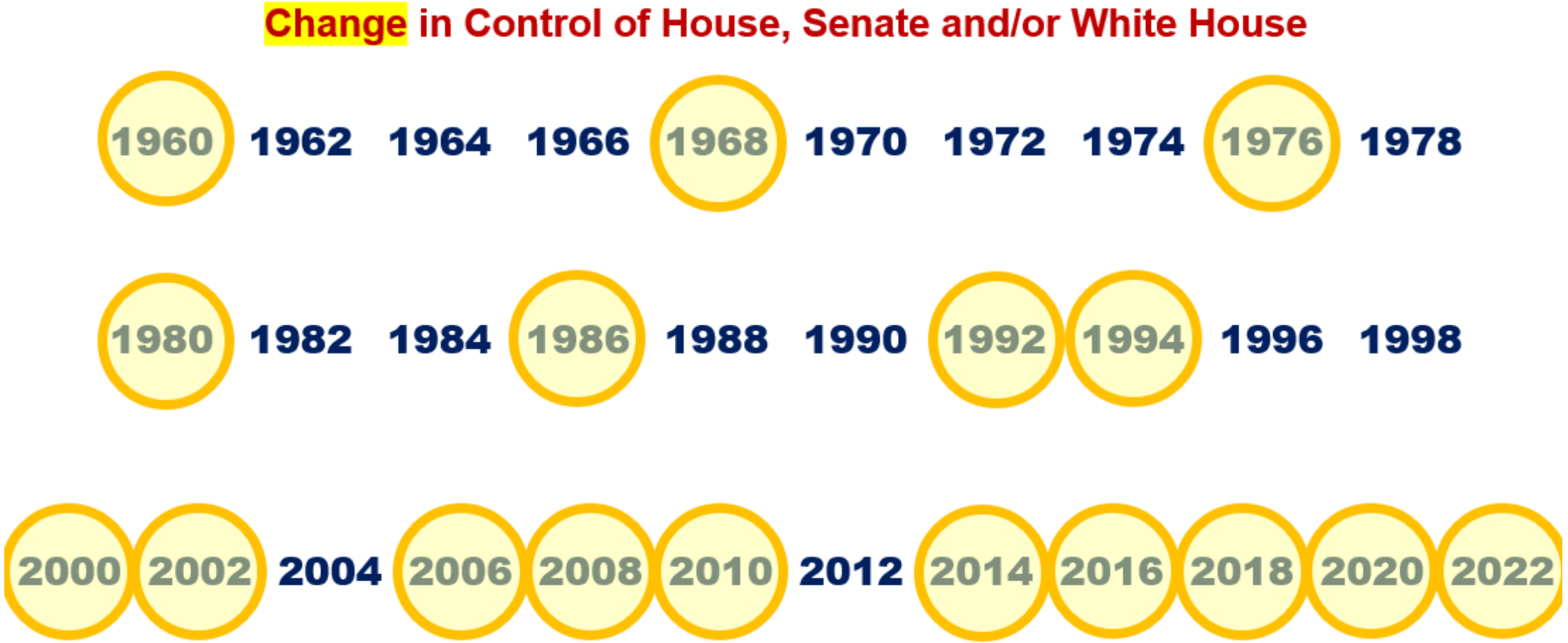
2024 Swing States – 2020 Results



Polling

- Swing groups:
  - Double haters
  - Independents
  - Trump-resistant Republicans
  - Suburban voters
- Education levels
- Gender gap

Change Elections are the New Normal



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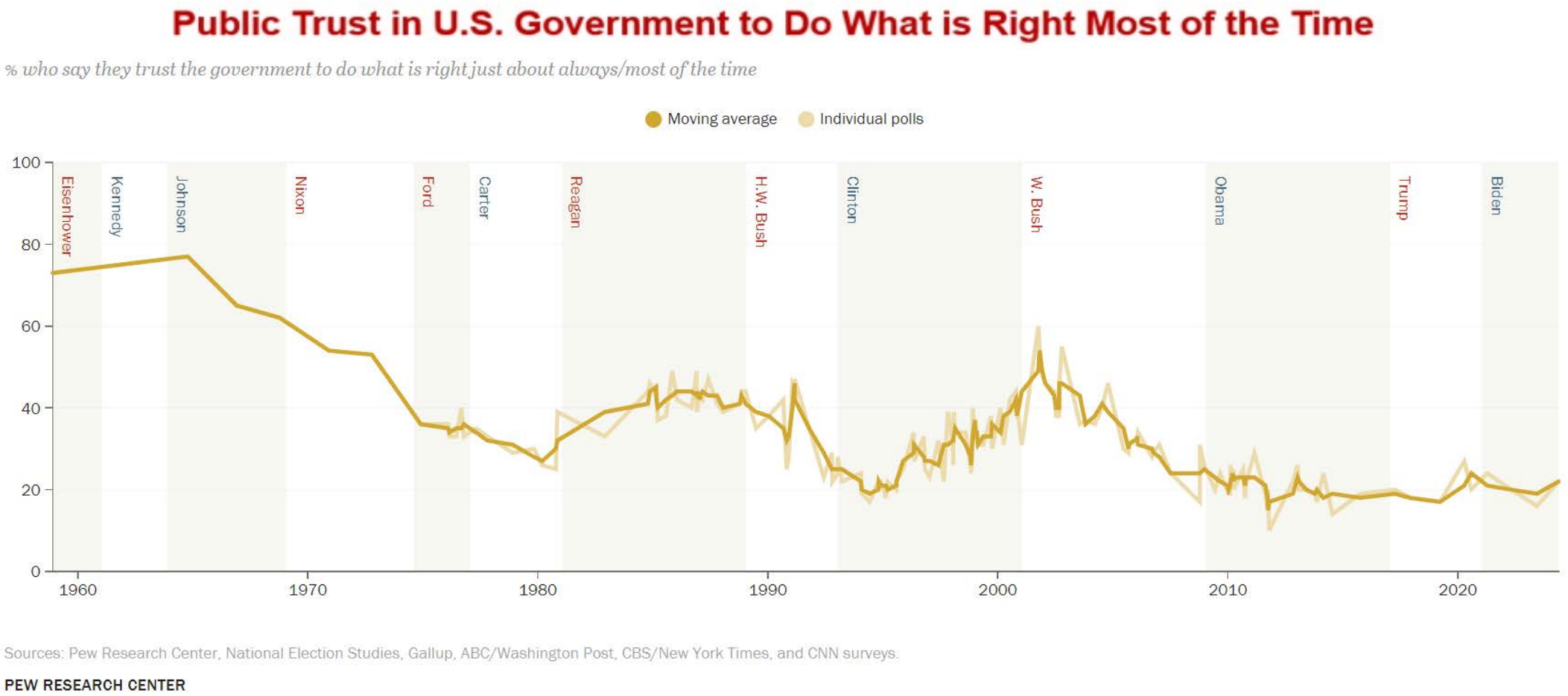
Low Trust in Government = High Demand for Change



The More "Washington" Candidate Usually Loses

Candidates with More Years in Washington Won 11 of 12

(before perceived disorder of the late 1960's / early 70's)

MORE / TIE (YEARS)		FEWER (YEARS)
Harding (6)	1920	(4) Cox
Coolidge (3.5)	1924	(2.5) Davis
Hoover (7.5)	1928	(0) Smith
Hoover (11.5)	1932	(7.5) FDR
FDR (11.5)	1936	(0) Landon
FDR (15.5)	1940	(0) Willkie
FDR (19.5)	1944	(0) Dewey
Truman (14)	1948	(0) Dewey
Eisenhower (0)	1952	(0) Stevenson
Eisenhower (4)	1956	(0) Stevenson
Kennedy (14)	1960	(14) Nixon
LBJ (27.75)	1964	(12) Goldwater

Candidates with More Years in Washington Lost 11 of last 14

MORE / TIE (YEARS)		FEWER (YEARS)
Humphrey (28)	1968	(14) Nixon
McGovern (22)	1972	(18) Nixon
Ford (27.25)	1976	(0) Carter
Carter (4)	1980	(0) Reagan
Mondale (16)	1984	(4) Reagan
Bush (14.75)	1988	(0) Dukakis
Bush (18.75)	1992	(0) Clinton
Dole (36)	1996	(4) Clinton
Gore (24)	2000	(0) GW Bush
Kerry (20)	2004	(4) GW Bush
McCain (26)	2008	(4) Obama
Obama (4)	2012	(0) Romney
Clinton (20)	2016	(0) Trump
Biden (42)	2020	(4) Trump

Source: Mehlman Consulting analysis

Who is the “Change Candidate” in 2024?

HARRIS WALZ 2024			TRUMP VANCE MAKE AMERICA GREAT AGAIN! 2024
Incumbent party		**Incumbency** ✓	Insurgent Party
4 more years of current direction		**Policy** ✓	Change direction back
Progressive technocratic		**Ideology** ✓	Populist anti-elitist
Past 8 years in a row		**Washington** ✓	4 years, 4 yrs ago
21 days, “New”	✓	**Frontrunner**	3,310 days, “Still”
1st Woman of Color	✓	**Identity**	36th White Male in past century
Youngest Boomer candidate	✓	**Age**	Oldest Boomer candidate
Happy & Hopeful	✓	**Vibe**	Angry & Tough

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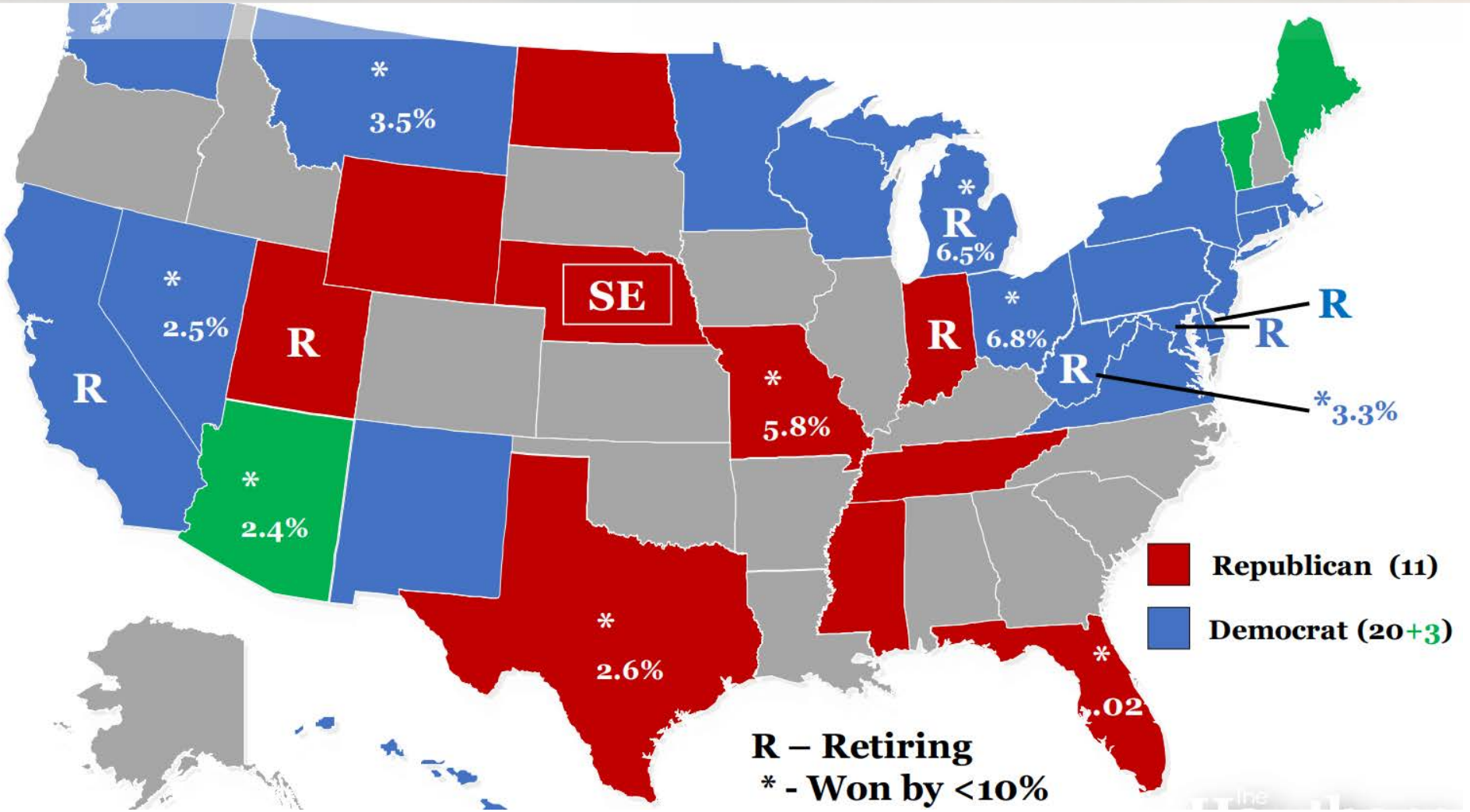
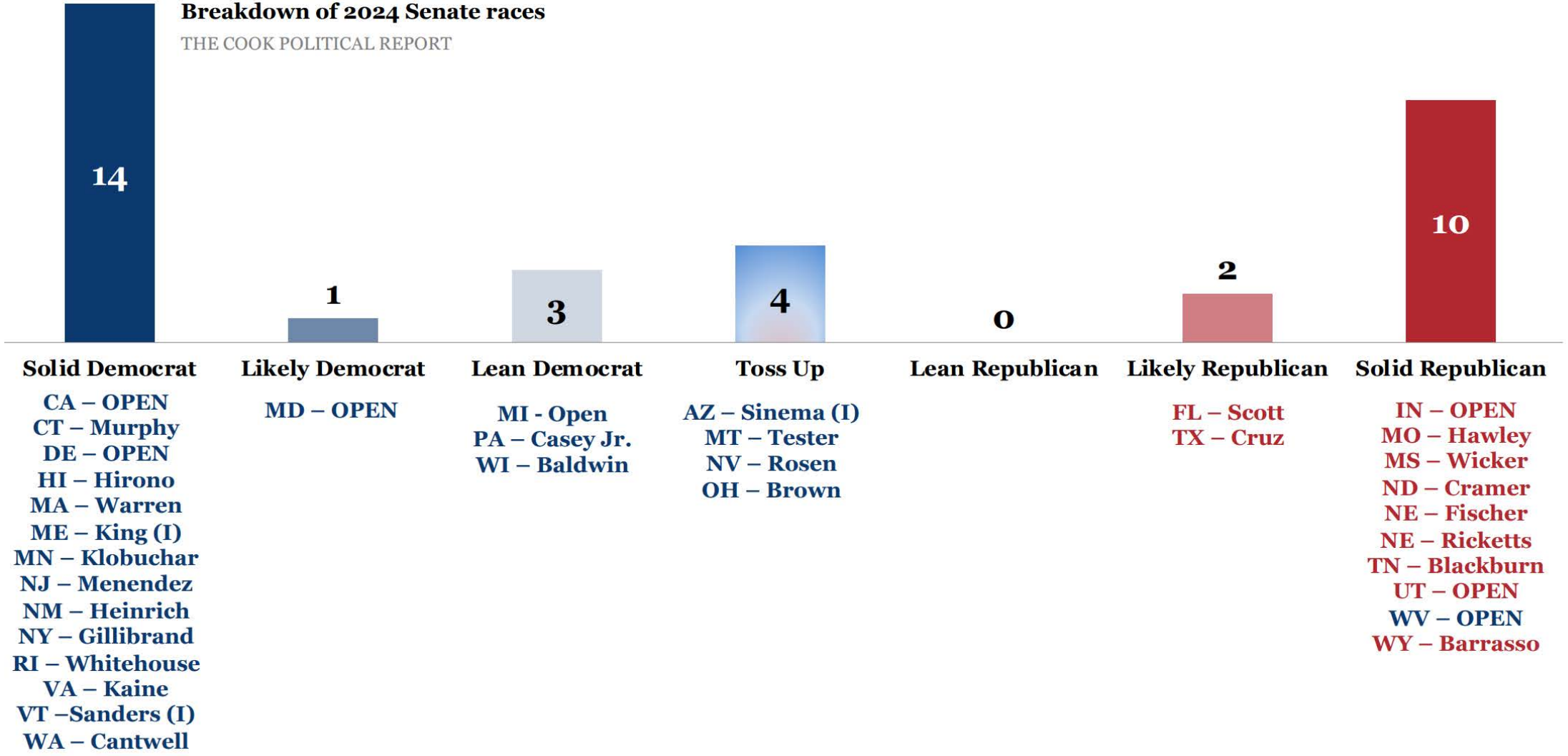
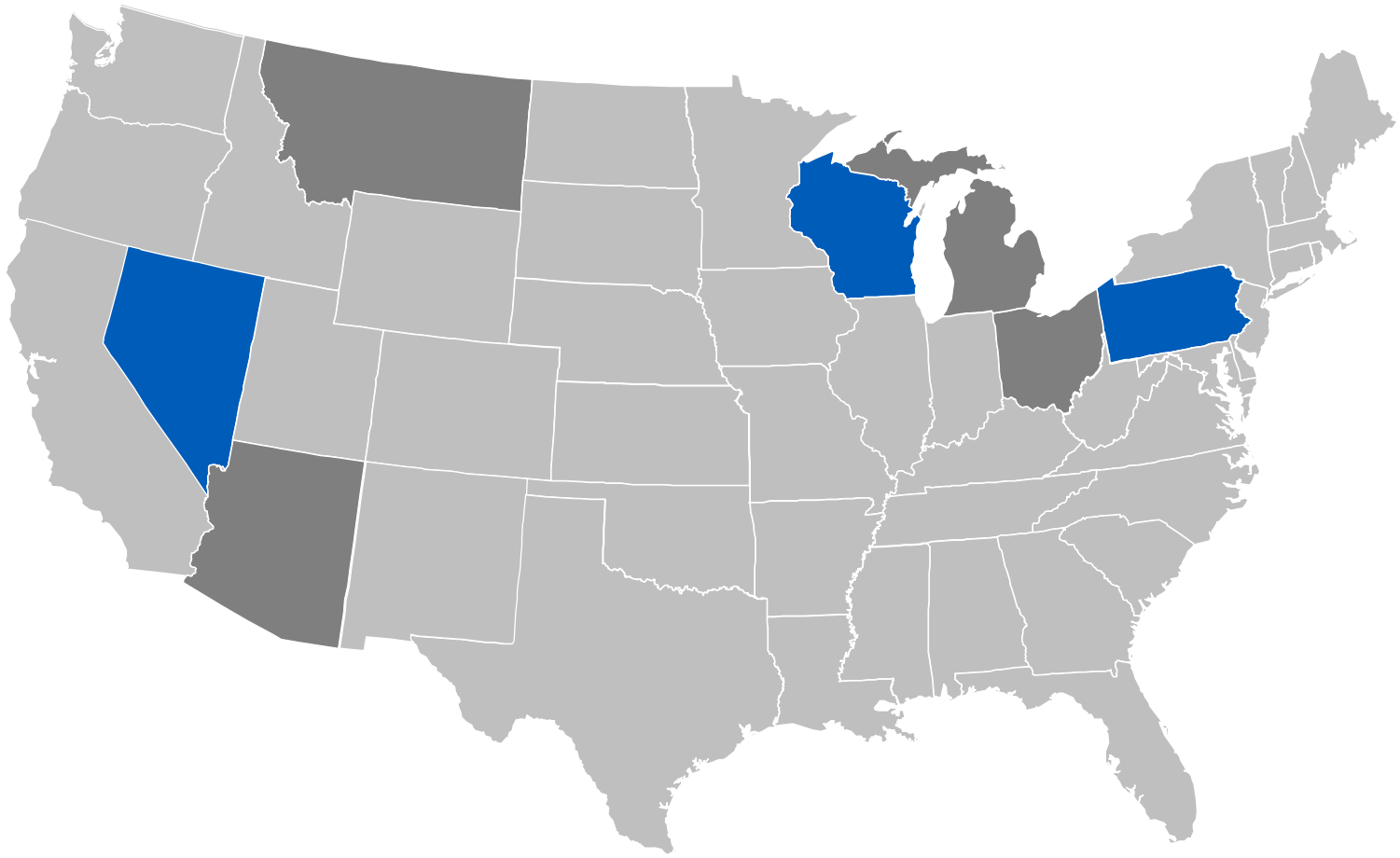
Senate Elections – 2024



Senate Races – Charlie Cook Predictions



7 Most Competitive Senate Races

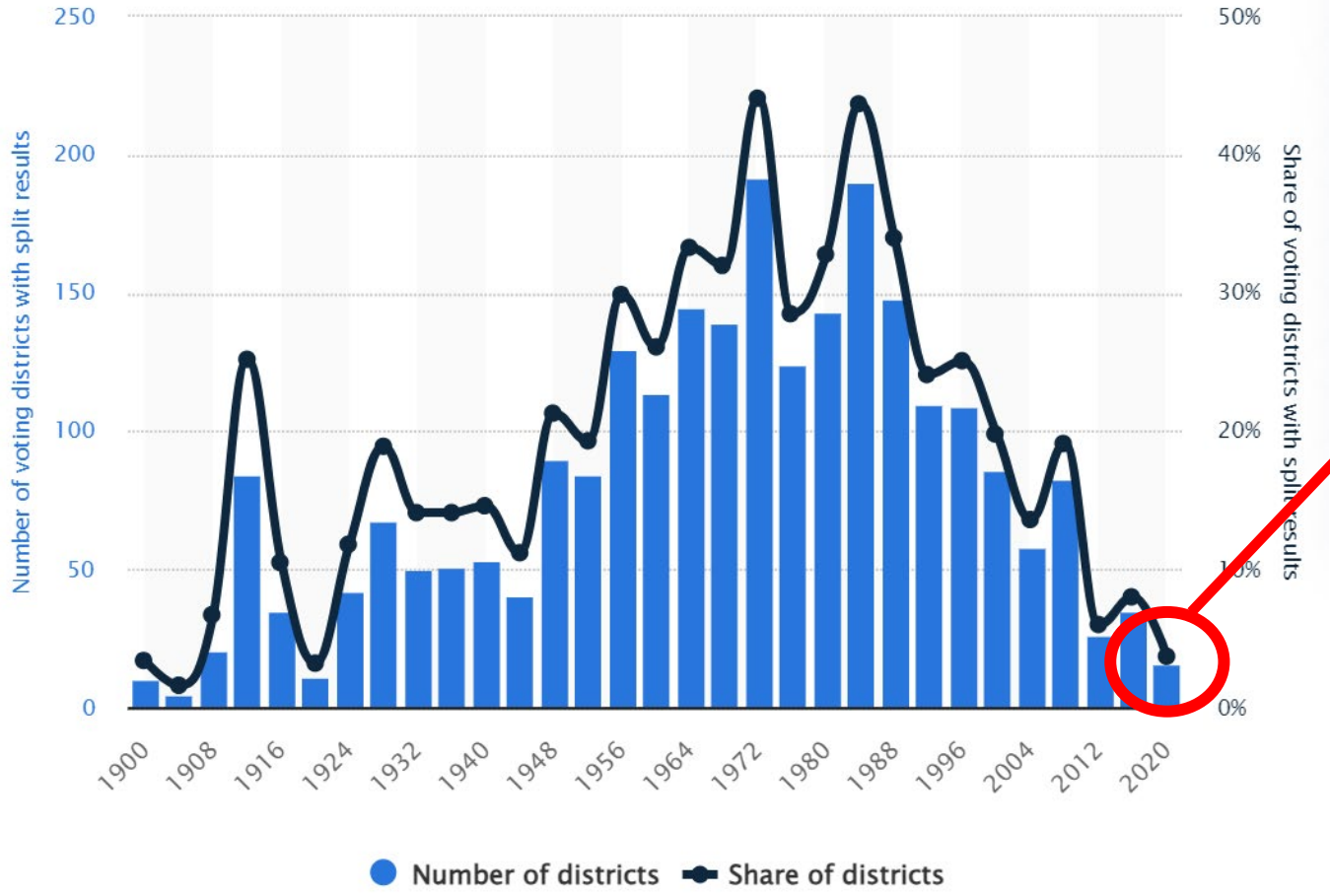


Four states where Democrats have at best a 50% chance of winning

Three states where Democrats have a slight advantage

Challenges Facing Tester and Brown

Share of voting districts splitting the vote between Presidential and House candidates in the United States from 1900 to 2020



The 2020 House races had the fewest ticket splitters in 100 years

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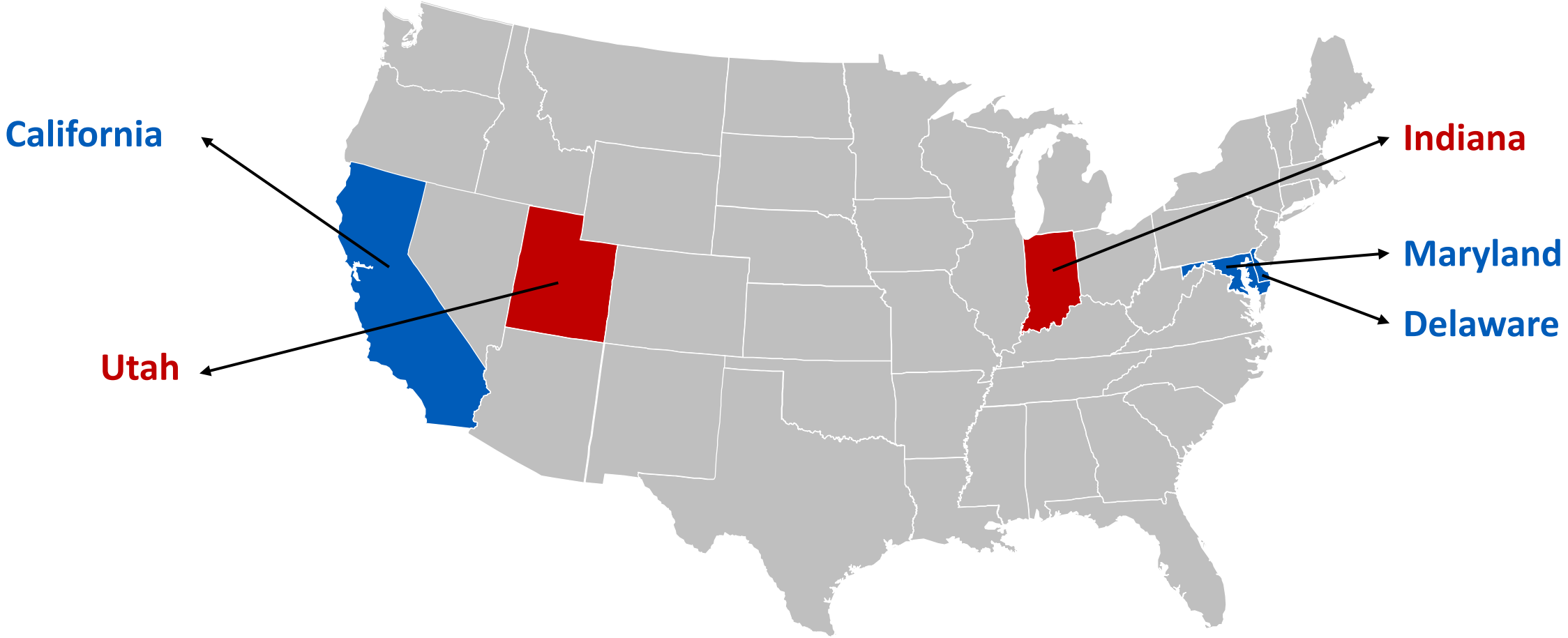
Open Senate Seats



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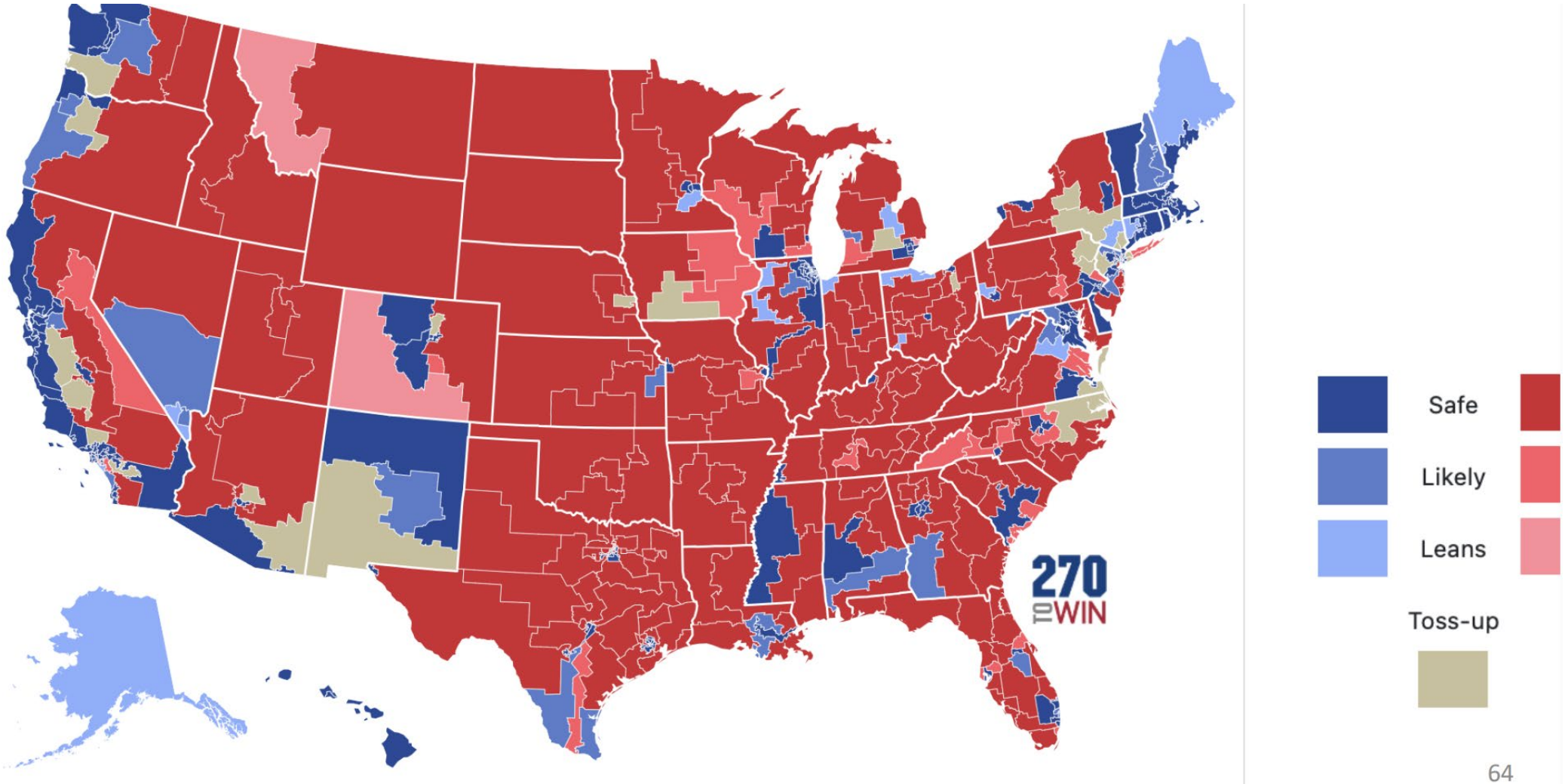
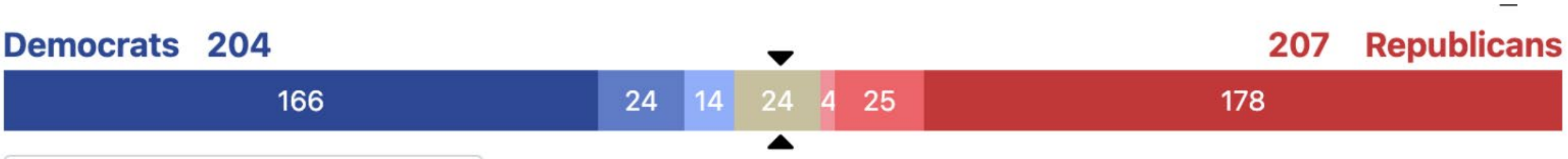
House Elections – 2024



Very Few Competitive House Seats



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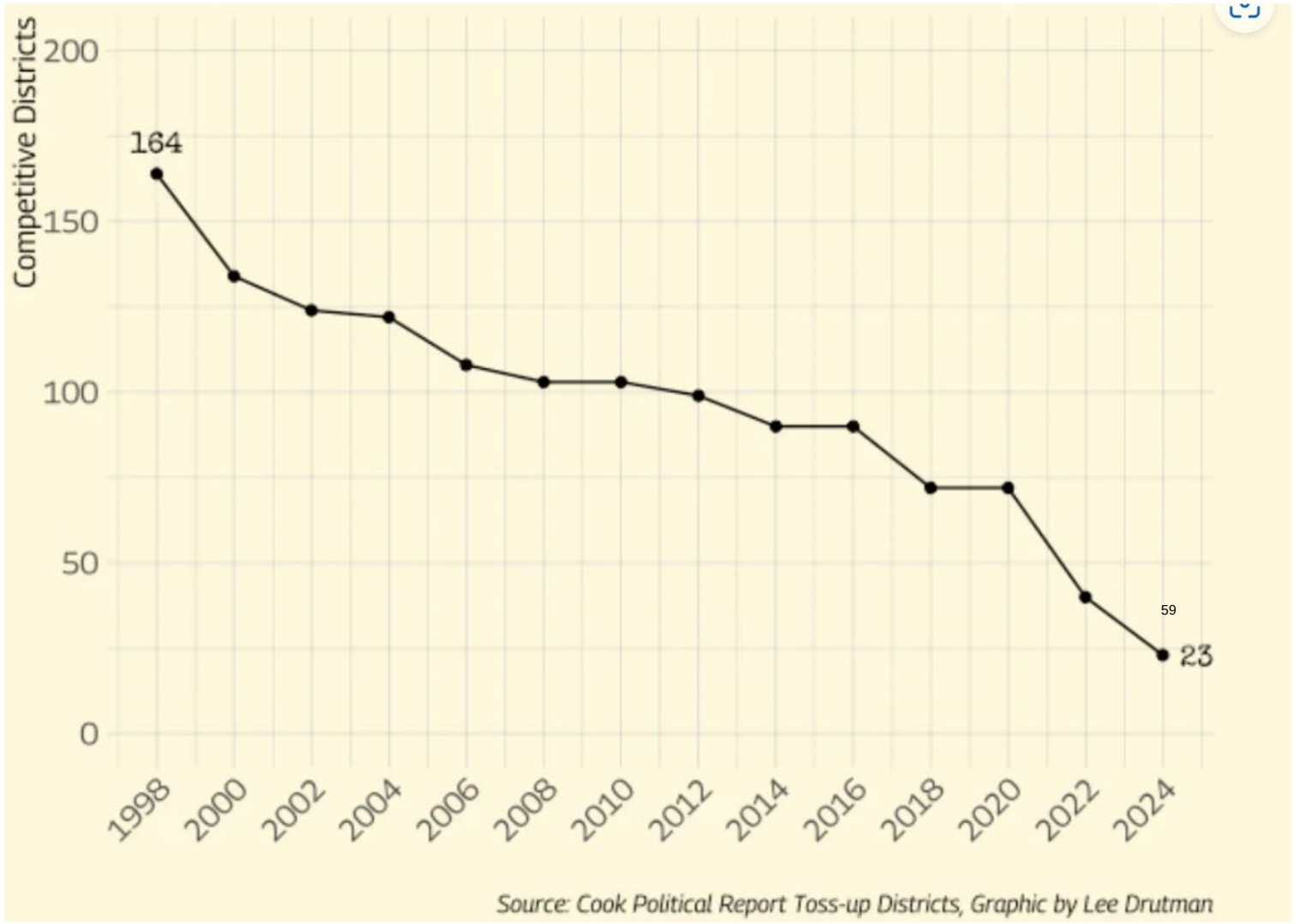
Decline in Competitive House Districts



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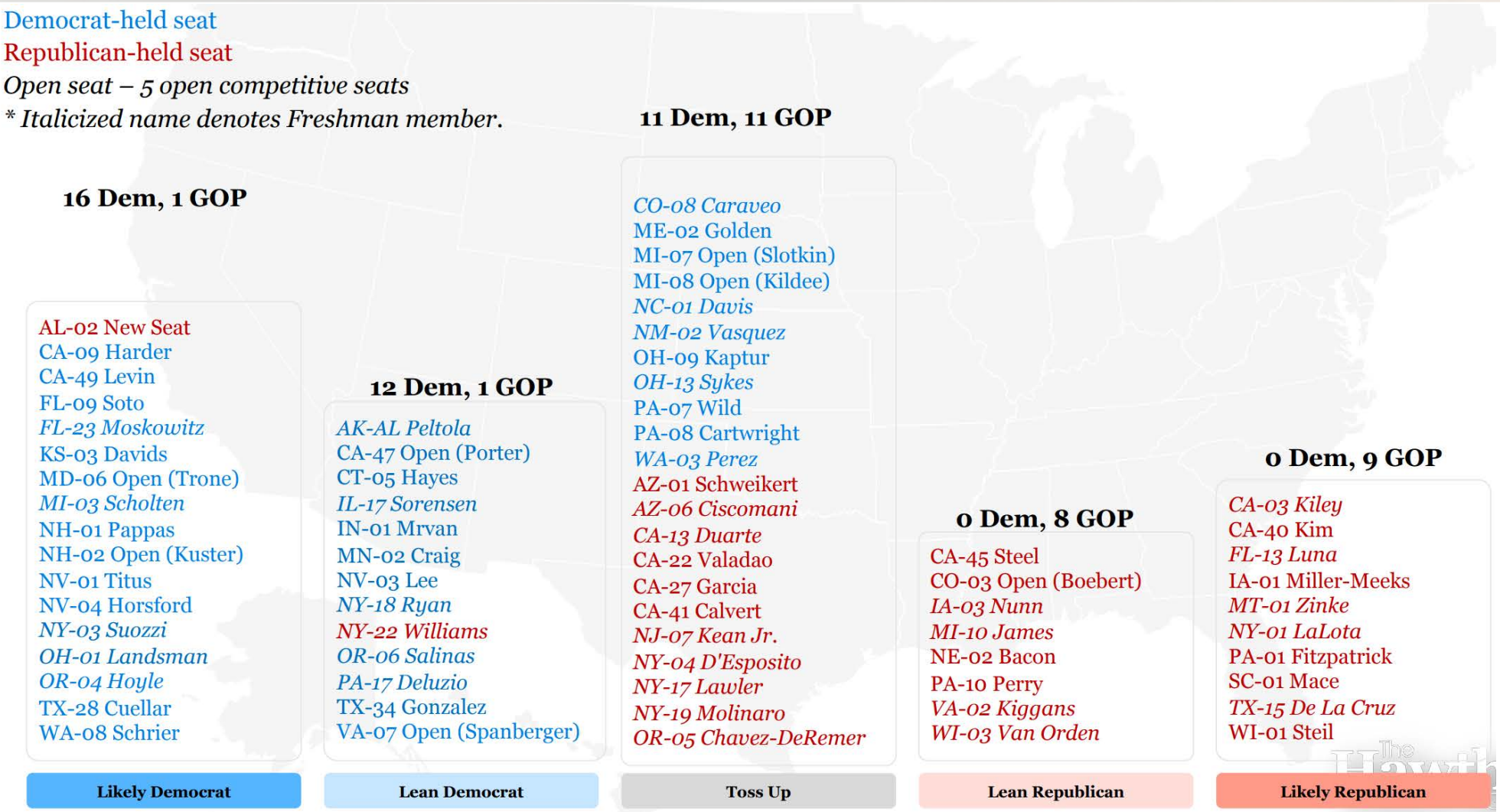
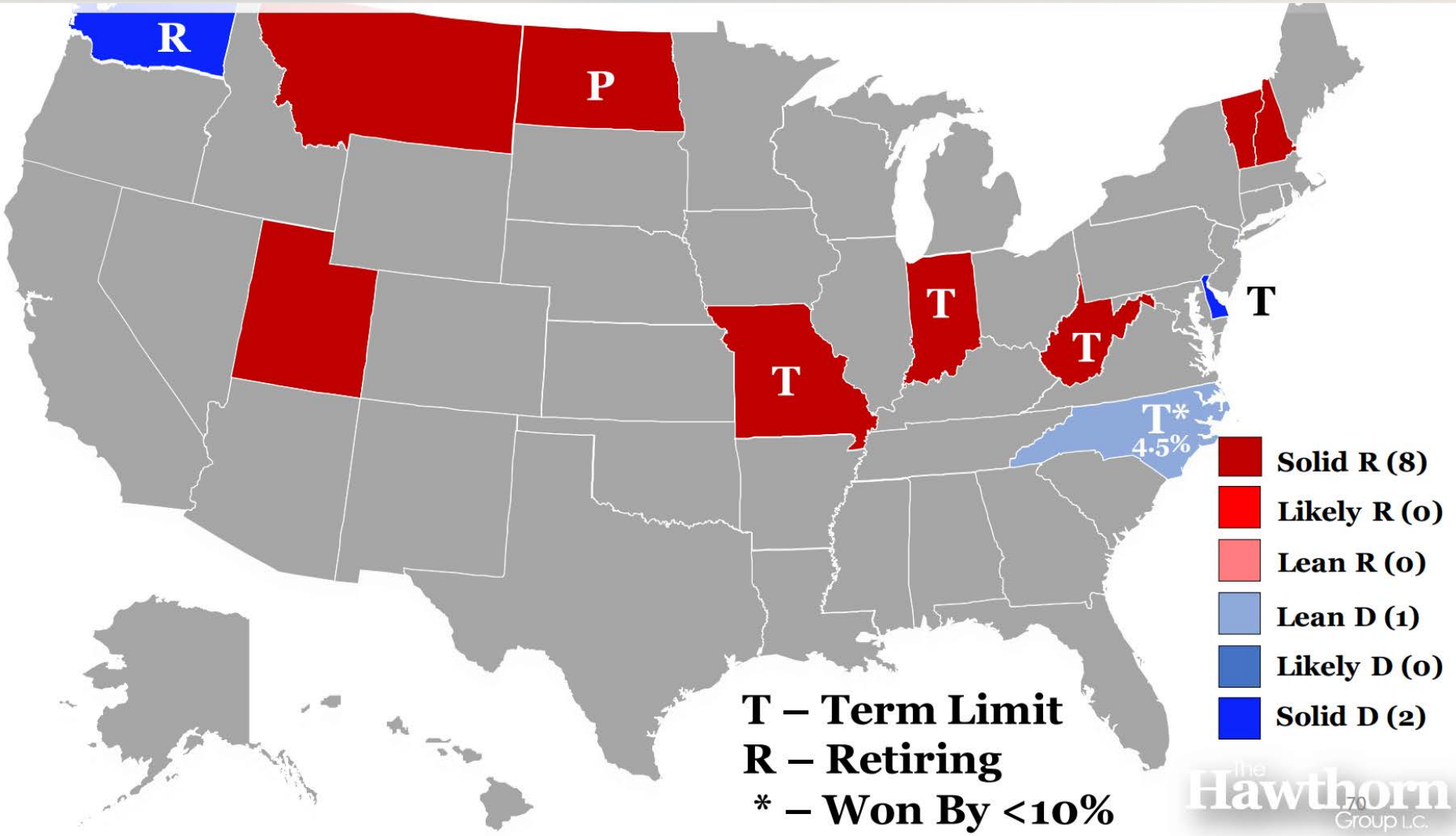
Charlie Cook Predictions – House

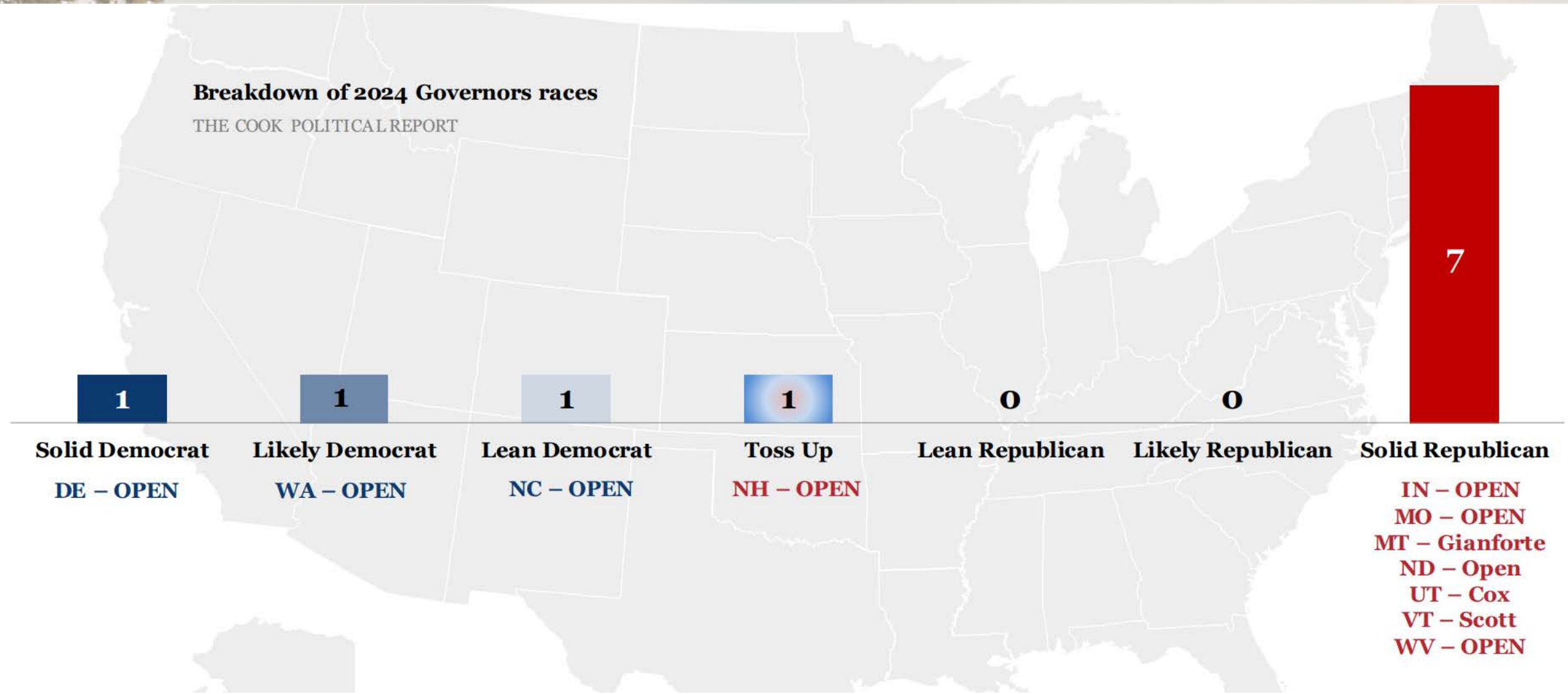
Democrat-held seat
Republican-held seat
Open seat – 5 open competitive seats
** Italicized name denotes Freshman member.*



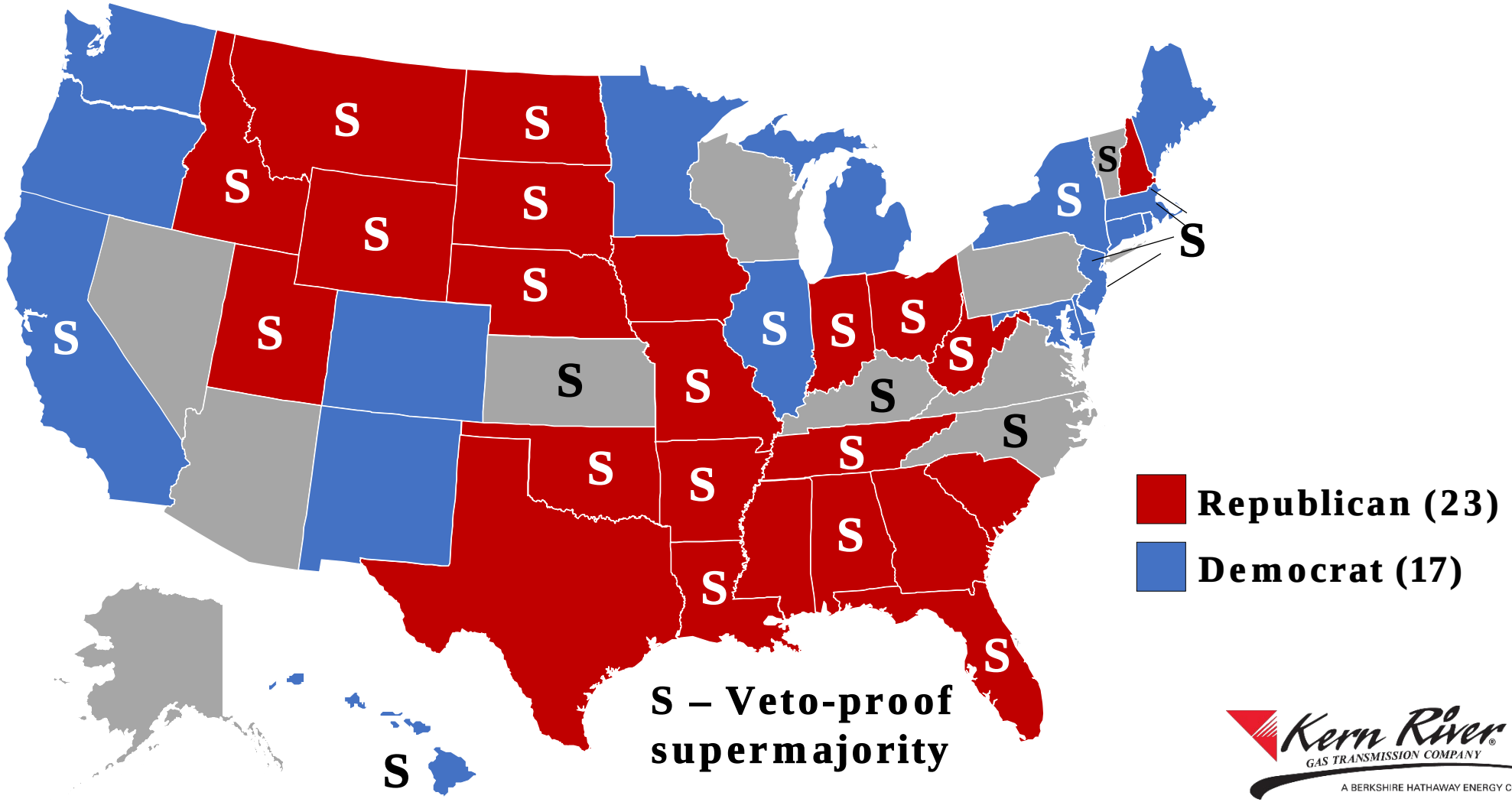
Gubernatorial Elections - 2024



Charlie Cook Predictions – Gubernatorial



Current State Trifectas



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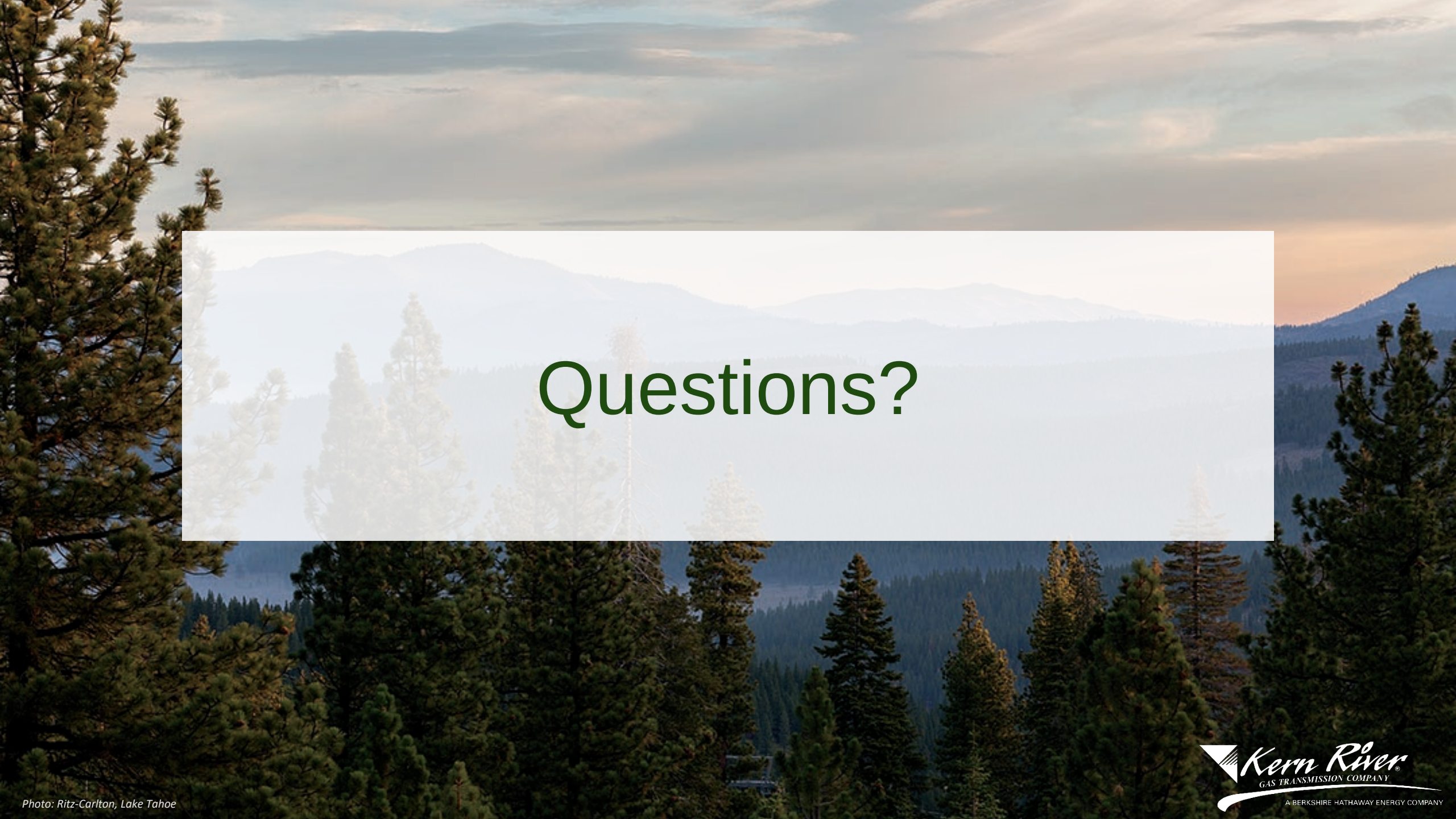

Questions?

Photo: Ritz-Carlton, Lake Tahoe

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Operations Update

Bob Checketts

Vice President, Operations & Engineering

Kern River Gas Transmission Company

Photo: Ritz-Carlton, Lake Tahoe

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Operational Excellence Philosophy

- Operate our assets in an efficient, cost-effective manner that reduces risk for the long-term benefit of our customers
- Maintain a high level of system availability and reliability in order to provide exceptional customer service
- Be prepared to quickly respond to catastrophic events that impact system operations
- Facilitate system operations in a manner that protects the organization’s assets from terrorists and criminal attacks
- Maintain compliance with regulatory requirements

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2024 Operations Goals

- Safety
  - Zero OSHA recordable employee injuries
  - Zero preventable vehicle accidents
- Environmental
  - Minimize the amount of liquids spilled
  - Zero protected species takes
  - Reduce methane emissions
- Regulatory
  - Zero non-compliance notices and violations
- Operational excellence
  - No unplanned interruptions to primary firm customers
  - High compressor unit reliability
  - No loss of critical system functionality due to physical/cyber vulnerabilities

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Security Initiatives

- Enhance physical and cyber security protections

Physical Security

- Deploying intrusion systems throughout the pipeline system at all types of assets
- U.S. Department of Homeland Security/Transportation Security Administration Pipeline security directives (also has a cybersecurity component)

Cybersecurity

- Continue increasing employee awareness
- Internal and external audits
- Continue enhancing controls to minimize risks

EPA Methane Rule

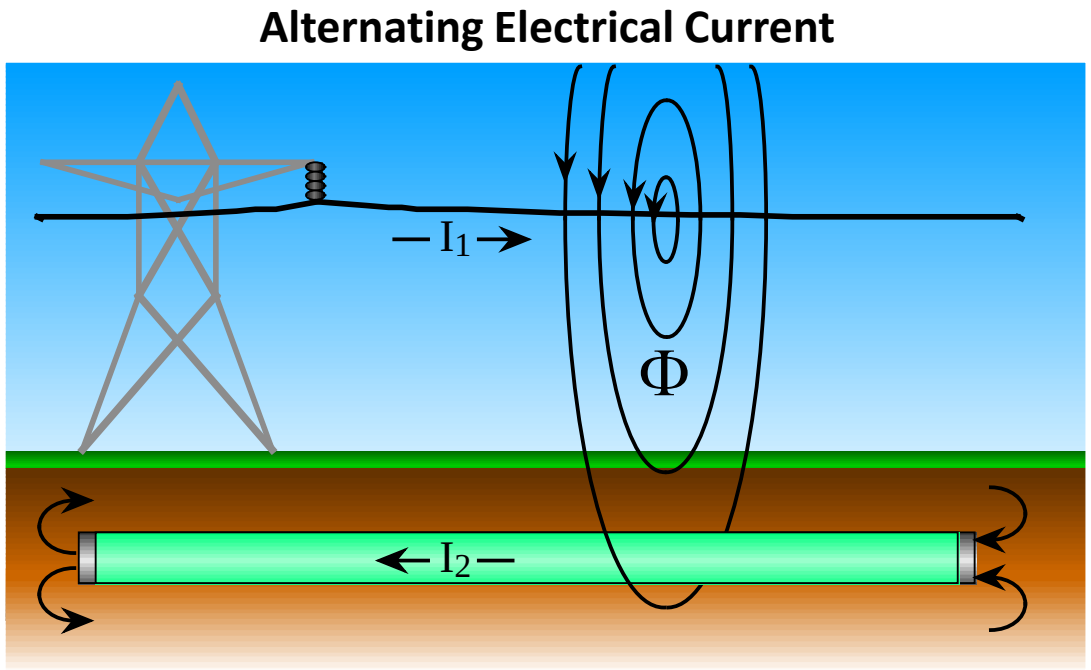
- Final rule published March 8, 2024, with an effective date of May 7, 2024
  - Implementation is phased in over time
- Requirements include:
  - Quarterly leak detection at all compressor stations
  - Conversion of gas-emitting process controllers at compressor stations
  - Third-party monitoring program for super-emitter events

Significant Projects

- Risk mitigation for extreme events
  - Wildfires
  - Earthquakes
  - Flash flood events

Integrity Management Activities

- Pipeline corrosion surveys
  - Alternating and direct current
- Pipeline replacements due to population growth
- Preparing for 2025-2027 integrity inspections
  - In-line inspections
  - Cathodic protection surveys
  - Depth-of-cover surveys



Electrical current leaves the power line and goes to the ground

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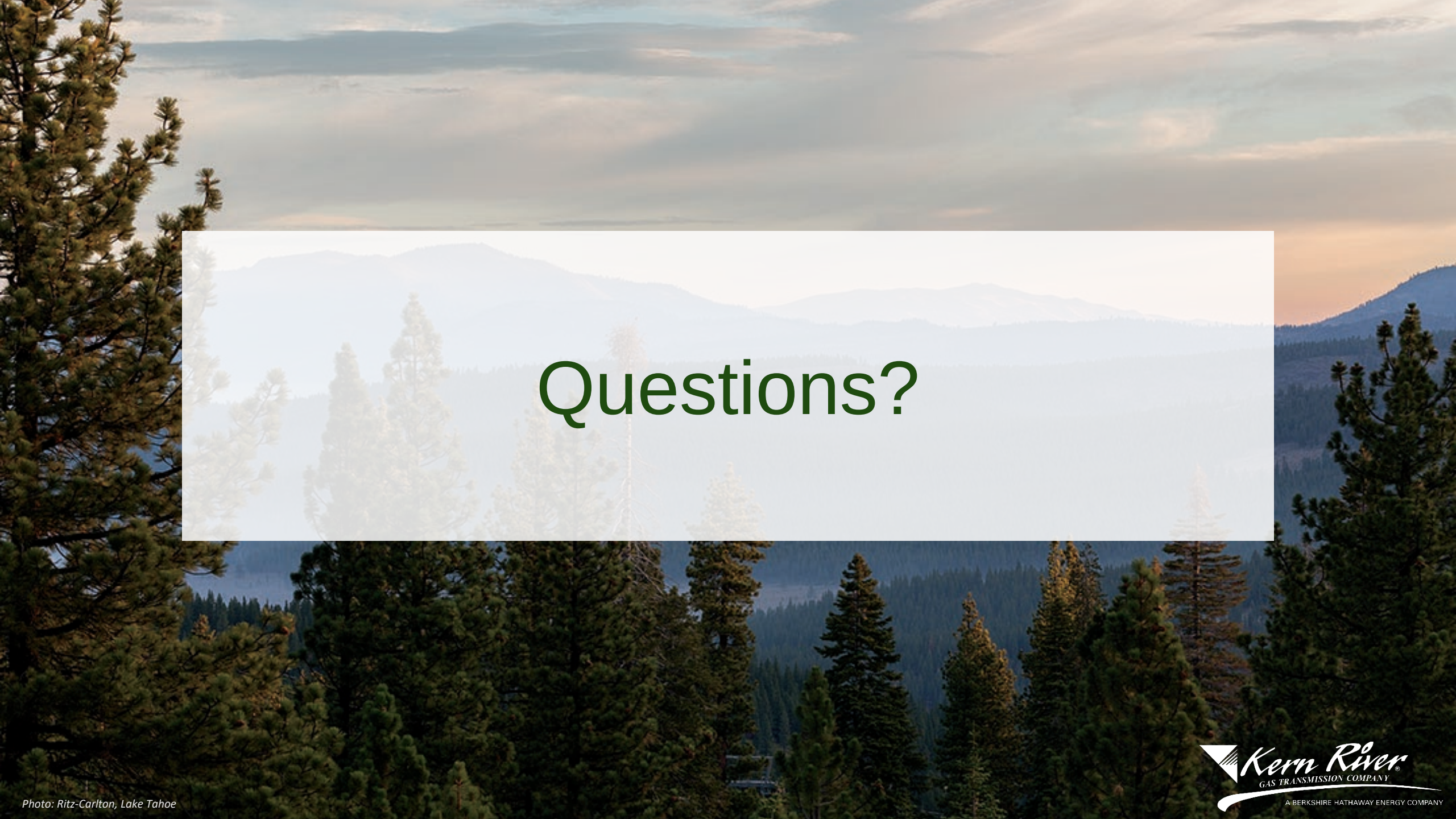

Questions?

Photo: Ritz-Carlton, Lake Tahoe

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Commercial Update

Esteban Lara

Transportation Sales &
Risk Management Director

Kern River Gas Transmission Company

Photo: Ritz-Carlton, Lake Tahoe

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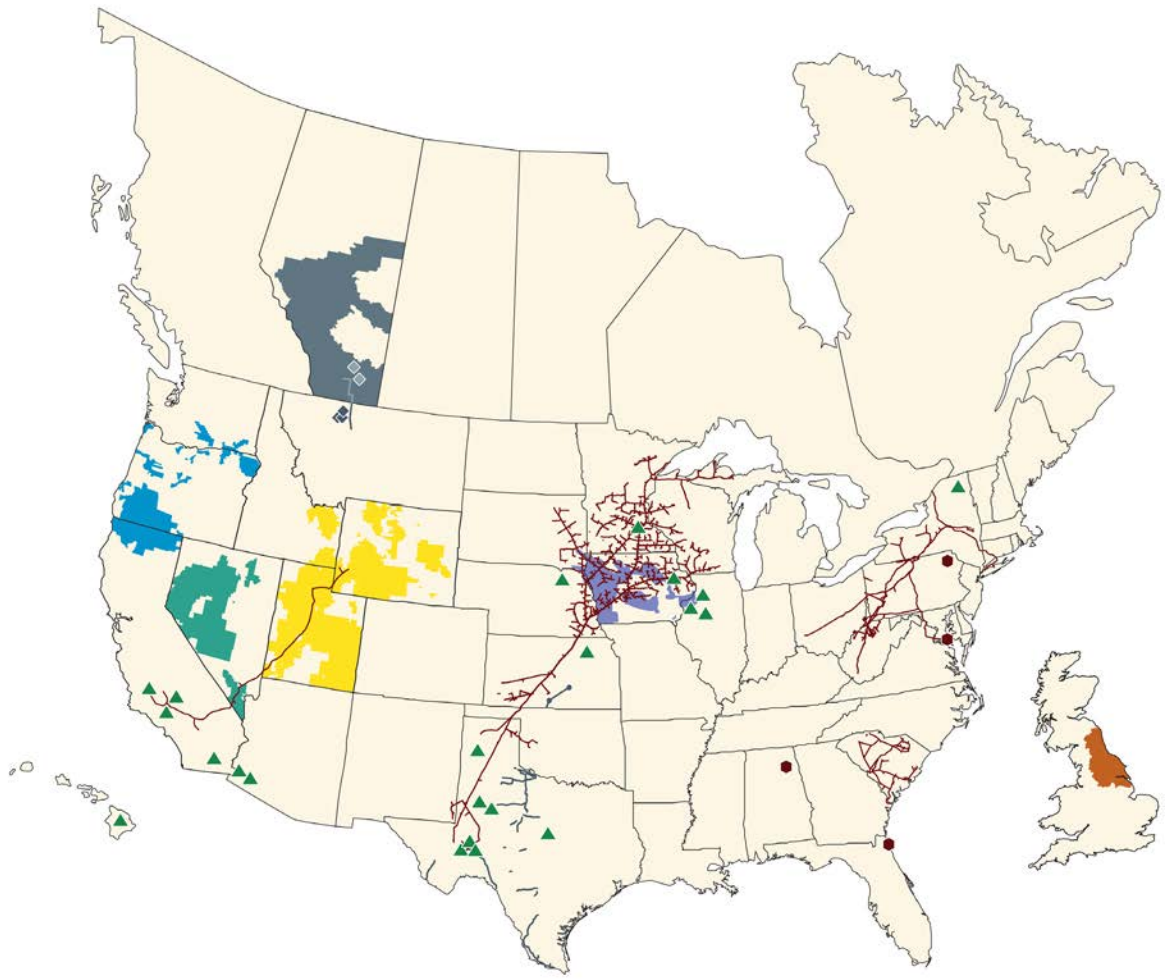
Berkshire Hathaway Energy Exceptional Businesses and Assets

PACIFICORP
PACIFIC POWER
ROCKY MOUNTAIN POWER
BHE TRANSMISSION
ALTALINK
BHE CANADA
BHE U.S. TRANSMISSION
MIDAMERICAN ENERGY COMPANY
NVEnergy
NORTHERN POWERGRID
BHE PIPELINE GROUP
BHE RENEWABLES



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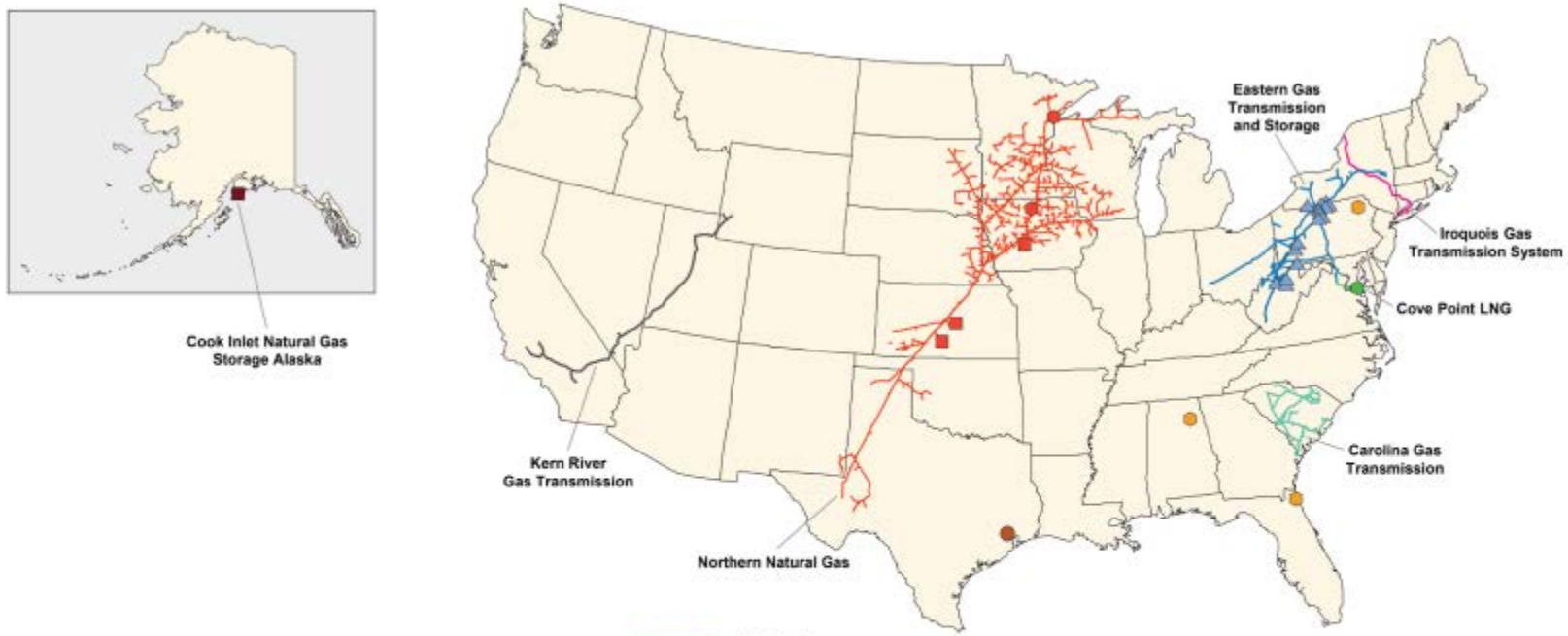
Berkshire Hathaway Energy Exceptional Businesses and Assets



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Berkshire Hathaway Energy Exceptional Businesses and Assets

CUSTOMER SERVICE

- 13 million customers and end-users
- Top-rated service provider within the industry
- Kern River was ranked #1 in the regional pipeline group for the 14th straight year and #1 or #2 out of all interstate pipelines for the 16th straight year

REGULATORY INTEGRITY

- BHE utility rates are below national averages
- Kern River rates are a cost-competitive option to Southern California and southern Nevada

EMPLOYEE COMMITMENT

- Kern River achieved over two years without a preventable vehicle accident
- Kern River employees have worked more than six years without a recordable injury and over thirteen years without a lost-time injury

OPERATIONAL EXCELLENCE

- Exceptional cyber and physical protection
- Kern River has had no unplanned interruptions to primary firm customers since May 2012

ENVIRONMENTAL RESPECT

- BHE has 47% renewable/noncarbon generation
- Kern River's 2022 methane emissions was 0.0061% - much lower than the industry average of 0.26%

FINANCIAL STRENGTH

- $137.8b in total assets
- Operating cash flows > $7.1b
- Kern River reduced rates twice since 2014

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Supply Flow Options

- Our customers have access to abundant and cost-competitive supplies connecting to premium markets in Utah, Nevada and California
  - Wyoming – access to Rockies, Canadian supplies
  - Goshen – access to Green River, Uinta and Piceance supplies
  - Dag Moj – access to San Juan and Permian supplies
  - Freemont Peak – access to PG&E system supply
  - Oxy 17Z – access to CA Resources' Elk Hills supply

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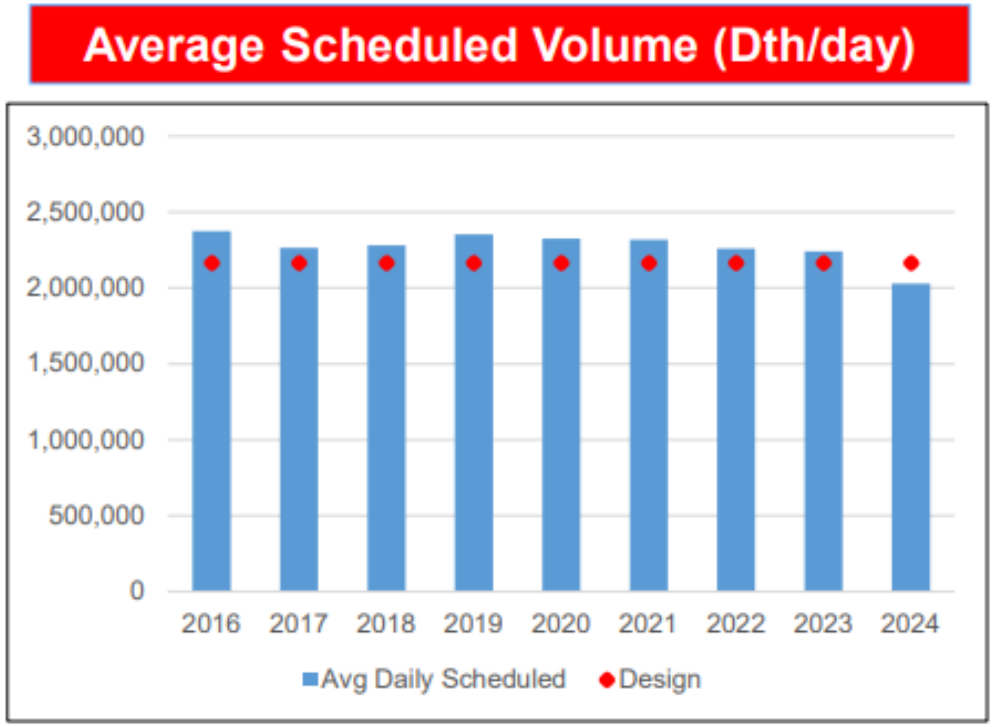
System Utilization

- Received approximately 25% of natural gas sources from Rockies production in 2023
- Delivered approximately 24%(1) of California's demand for natural gas in 2023, an average of 1.5 Bcf/d
- Delivered approximately 80%(2) of southern Nevada's natural gas in 2023, an average of 0.5 Bcf/d
- Deliveries to Utah have increased by 41% since 2018 (~0.2 Bcf/d in 2023)
- Scheduled throughput averaged 103% of design capacity in 2023, and 94% in 2024 through July 8, 2024



2024 – through July 8

(1) Based on the 2023 California Gas Report

(2) Based on Kern River's average scheduled volumes to Nevada and Southwest Gas Transmission Company's system capacity served by El Paso Natural Gas and Transwestern Pipeline

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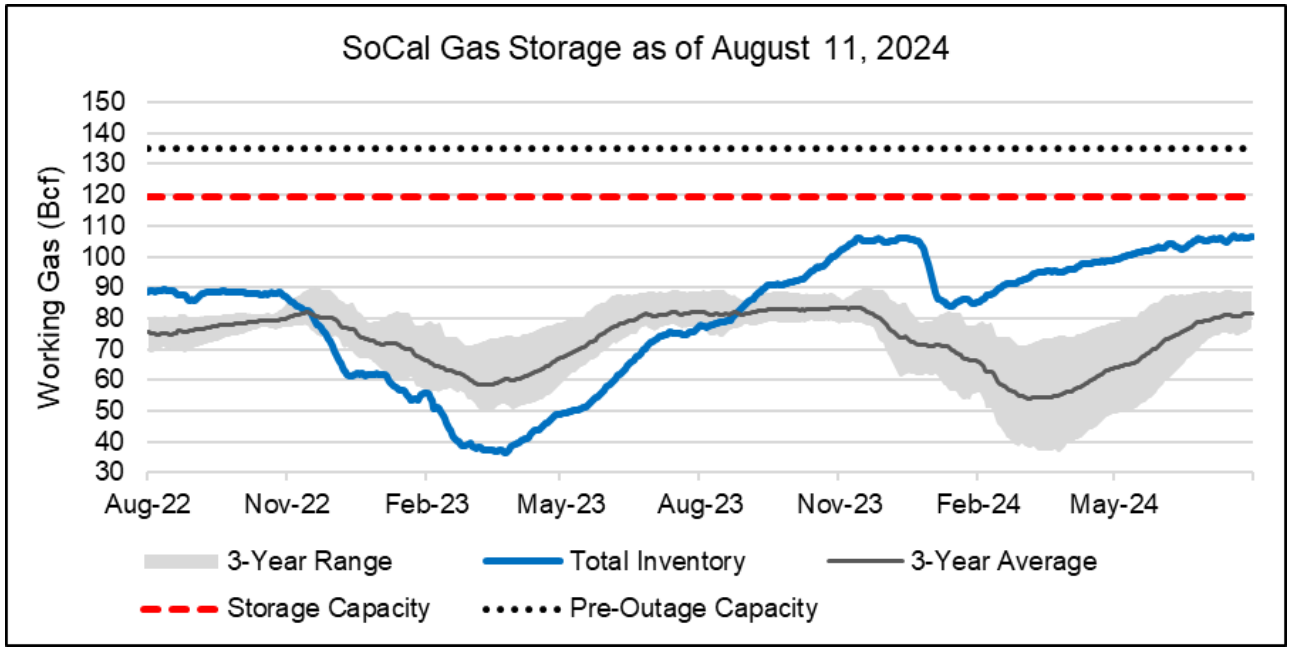
Market Dynamics

- California intrastate pipeline maintenance
  - Needles/Topock Area
  - Topock (TW & EPNG)
  - Northern Zone
- California storage regulations
  - Aliso Canyon's capacity increase from 41.1 Bcf to 68.6 Bcf
  - Current SoCalGas storage capacity: 119.5 Bcf
    - Pre-outage capacity: 135 Bcf



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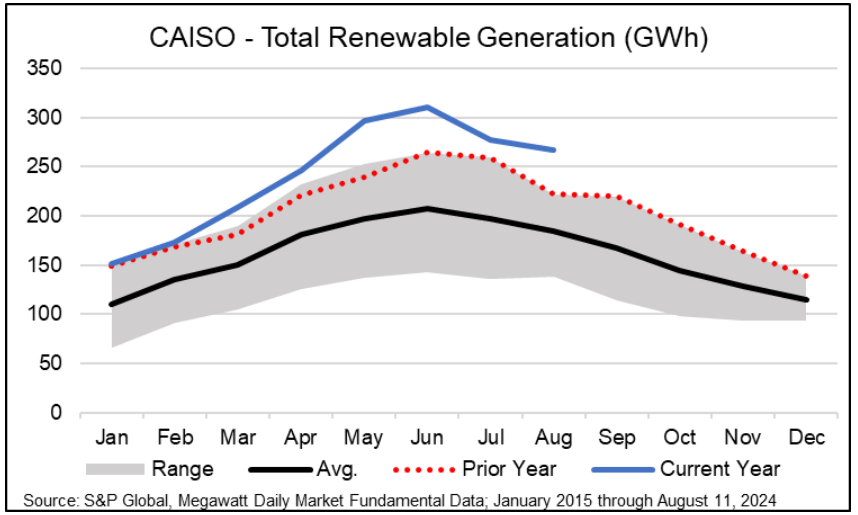
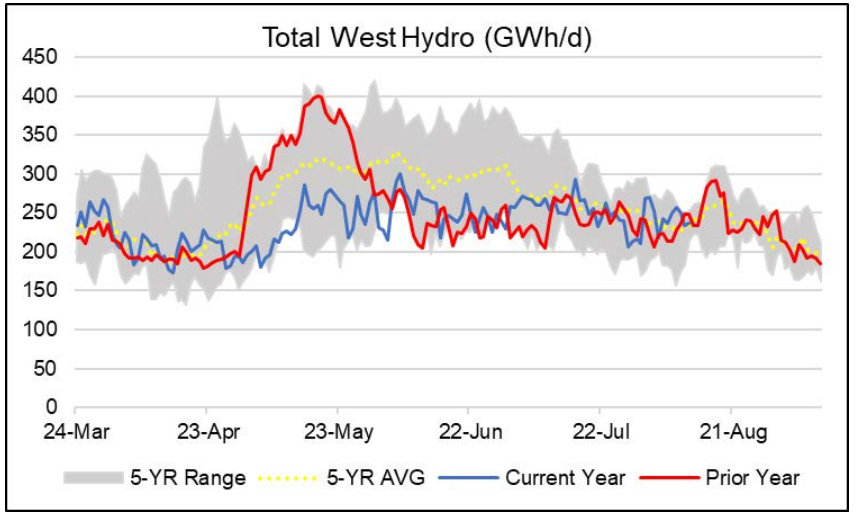
Market Dynamics (continued)

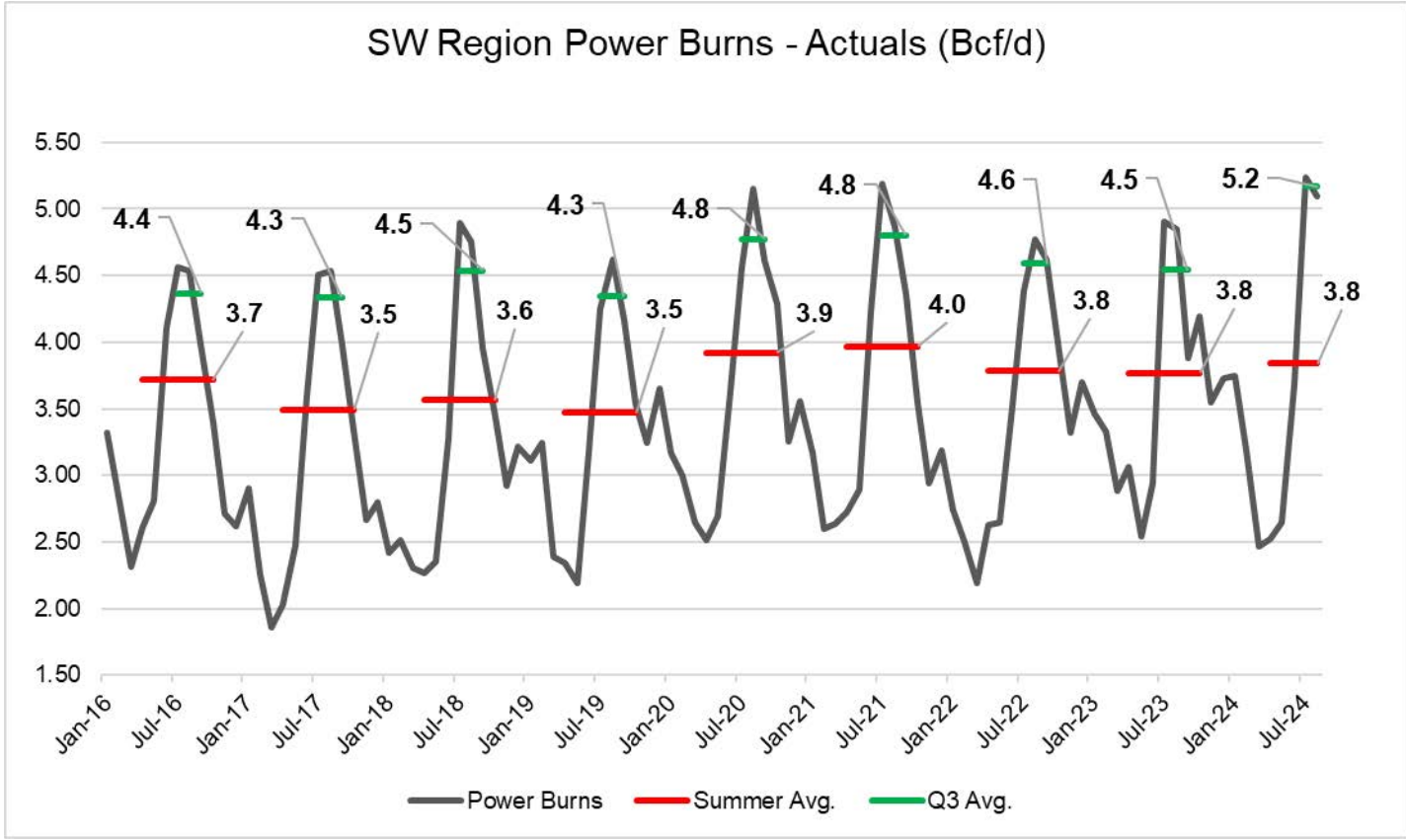
- Renewables and other alternative energy sources
  - CAISO setting all-time highs
- Hydroelectric generation
  - Total West hydro: Slightly below 5-year average
    - CAISO: Above 5-year average
    - BPA: Below 5-year average





Market Dynamics (continued)

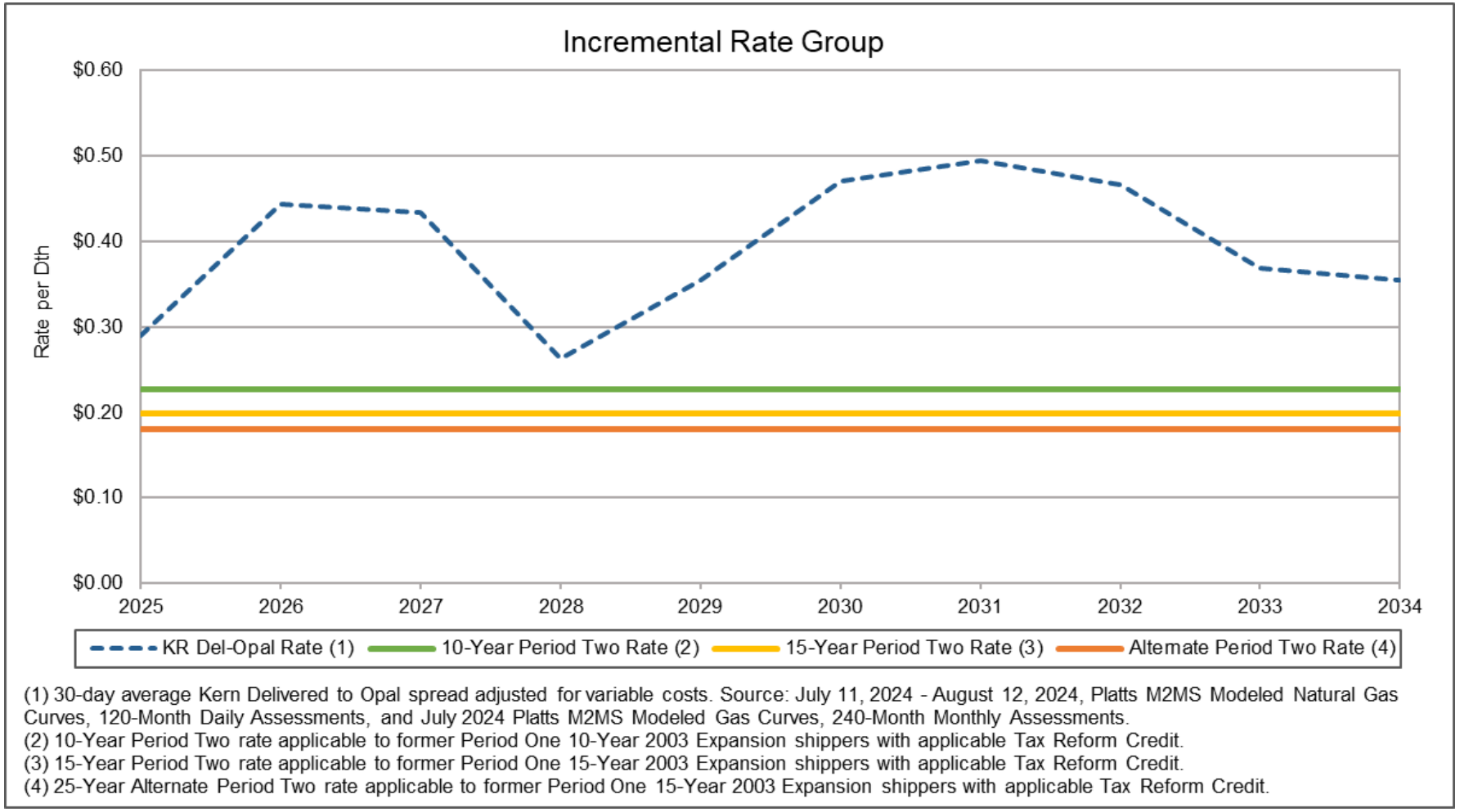
- Gas-fired power generation remains strong in the region
  - Since May 2024, each month this summer has recorded higher year-over-year gas-fired power generation compared to the same month last summer
  - Kern River set five new all-time system records for power plant deliveries, reaching 1.09 Bcf, surpassing previous records dating back to 2015
  - Kern River also set five new all-time records specifically for deliveries to Nevada power plants, reaching 0.56 Bcf



Market Dynamics (continued)

- Others
  - Data centers
  - Deliveries to Mexico
  - LNG projects and exports
  - Coal, nuclear and natural gas power plant retirements
  - Changing production/shifting pipeline paths
  - FERC’s project approval process
  - Pipeline capacity de-contracting

Period Two Rates vs. Future Net Spread



(1) 30-day average Kern Delivered to Opal spread adjusted for variable costs. Source: July 11, 2024 - August 12, 2024, Platts M2MS Modeled Natural Gas Curves, 120-Month Daily Assessments, and July 2024 Platts M2MS Modeled Gas Curves, 240-Month Monthly Assessments.
(2) 10-Year Period Two rate applicable to former Period One 10-Year 2003 Expansion shippers with applicable Tax Reform Credit.
(3) 15-Year Period Two rate applicable to former Period One 15-Year 2003 Expansion shippers with applicable Tax Reform Credit.
(4) 25-Year Alternate Period Two rate applicable to former Period One 15-Year 2003 Expansion shippers with applicable Tax Reform Credit.

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Current Firm Capacity

- Successful Open Season
  - Strong interest from the market
- No current firm capacity available, however…
  - Conditions evolve and are not static
  - Contact Esteban Lara for any capacity inquiries
    - Office: 801-937-6128
    - Email: Esteban.Lara@KernRiverGas.com
    - ICE: eslara

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Business Development Updates

Nevada Projects

- Prospecting the development of a delivery meter station with a design capacity of ~500,000 Dth/day
- Completed the Silverhawk delivery meter station expansion for NV Energy

California Projects

- Constructing a new delivery meter station with a design capacity of ~14,000 Dth/day
- Completed the Lanes Crossing delivery meter station for the City of Victorville

Wyoming Projects

- Constructing a new receipt meter station with a design capacity of ~480,000 Dth/day

Utah Projects

- Increasing the design capacity of an existing delivery meter station to ~20,000 Dth/day
- Fielding numerous data center project requests with total capacity of >1,000,000 Dth/day
- Completed the Delta lateral and Intermountain meter station for Intermountain Power Agency
- Completed the Bayview receipt and delivery meter station for Bayview RNG

Transportation Sales & Business Development Contacts

- Esteban Lara, Director
  - Office: 801-937-6128
  - Email: Esteban.Lara@KernRiverGas.com
- Kevin Armstrong, Sales Desk
  - Office: 801-937-6167
  - Email: Kevin.Armstrong@KernRiverGas.com
- Brian Ludwig, Sales Desk
  - Office: 801-937-6270
  - Email: Brian.Ludwig@KernRiverGas.com
- Richard Seiger, Senior Business Development Representative
  - Office: 801-937-6137
  - Email: Richard.Seiger@KernRiverGas.com

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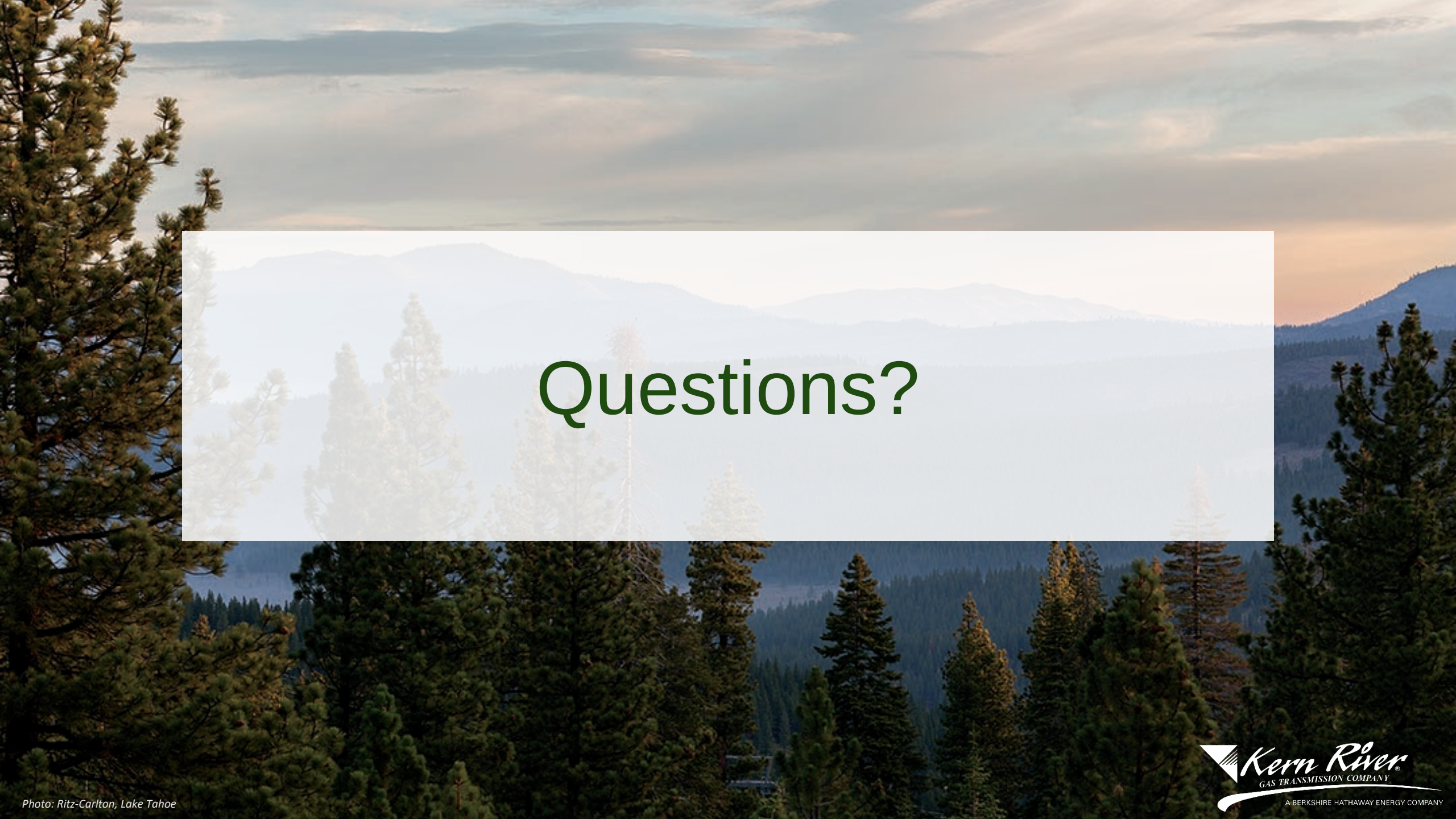

Questions?

Photo: Ritz-Carlton, Lake Tahoe

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Customer Service Update

John Joosten

Director, Marketing & Customer Services

Kern River Gas Transmission Company

Photo: Ritz-Carlton, Lake Tahoe

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Customer Satisfaction

Mastio & Company 28th Edition Natural Gas Pipeline Study

- Kern River ranked No. 1 out of all interstate pipelines
- Kern River has ranked No. 1 in the regional pipeline group for the past 14 years
- We are committed to continuous improvement
- Thank you for participating

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Customer Satisfaction

Kern River's top five attributes (by importance)

Rank	Question	Customer Importance	Kern River Score
1	Firm gas transportation is highly reliable	9.76	9.92
2	Communicates in an honest and forthright manner	9.53	9.85
3	Scheduled gas volumes are accurate	9.52	9.84
4	Accuracy of invoices	9.48	9.90
5	Representatives are accessible when needed	9.45	9.81

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Customer Satisfaction

Kern River's top five attributes (by score)

Rank	Question	Customer Importance	Kern River Score
1	Accuracy of invoices	9.48	9.90
2	Firm gas transportation is highly reliable	9.76	9.92
3	Financial Stability of the pipeline	8.85	9.86
4	Scheduled gas volumes are accurate	9.52	9.86
5	Communicates in an honest and forthright manner	9.53	9.85

Kern River® GAS TRANSMISSION COMPANY
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Customer Commitment

To be the best energy company in serving customers and the communities to which we deliver natural gas

This means…

- You will get what we promise accurately and on time
- Relationships will be mutually beneficial based on our core principles
- Share the purpose behind our actions
- Negotiate and perform in good faith
- Seek balanced outcomes
- Do necessary due diligence but maintain an attitude of partnership
- Invest in our assets to provide highly reliable service and to meet your future growth needs

Kern River GAS TRANSMISSION COMPANY
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2024 Accomplishments

- Rapids
  - Rapids system availability 99.903%
  - Continue to improve security, efficiency, and maintain regulatory compliance
  - Continue to add EDI trading partners

Pipeline System Management

Line Pack Notices[1]

Line Pack Level	2019	2020	2021	2022	2023	2024[2]
Low	3	3	2	6	7	0
High	10	9	17	8	15	12

- Kern River manages line pack through effective coordination and communication with customers and operators of facilities connected to Kern River
- Kern River has not issued a scheduling or imbalance penalty since 1996

[1] Several notices may have been posted for a single critical line pack event

[2] 2024 notices through August 12th

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System Operations

- Wholly owned system is looped except through Las Vegas
  - Allows continuous gas flow down one pipeline when the other is out of service for maintenance events
- Gas control
  - Fully functional off-site backup if needed during emergencies
- SCADA
  - All facilities are remotely monitored and controlled from gas control
- Real-time modeling
  - Monitors system efficiency
  - Helps identify problems on the pipeline system before they happen
- Meter stations
  - Connected to both the mainline and loop line
  - Automatic switchover from either line when necessary

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2024 Customer Focus

- Offer in-person training
- Proactive communication with customers throughout the year
- Continue training personnel
  - Mentors assigned to new representatives
- Commercial personnel available by ICE Chat IM, office phone, cellphone, texting and email

2024 Updates & Beyond

- Investigate Rapids customer password change efficiencies
- Update Rapids code base for improved efficiency and user experience
- Continue to evaluate and implement customer-suggested improvements

2024 Customer Survey

- Mastio & Company 29th Edition Survey begins late November 2024
- Pre-survey items
  - Kern River will call survey participants prior to the survey to review the action items developed earlier in the year to assess our performance in 2024
  - Kern River will send an email before the survey begins soliciting your participation
  - Mastio will send 28th Edition Survey scores to those that participated
- Survey follow-up
  - Kern River will call participants after the survey is completed to review results and to develop action items to address concerns/issues
- Please disclose your identity
- <u>Our goal – rank No. 1 and have continuous year-over-year improvement while delivering safe, reliable services to our customers!!!</u>

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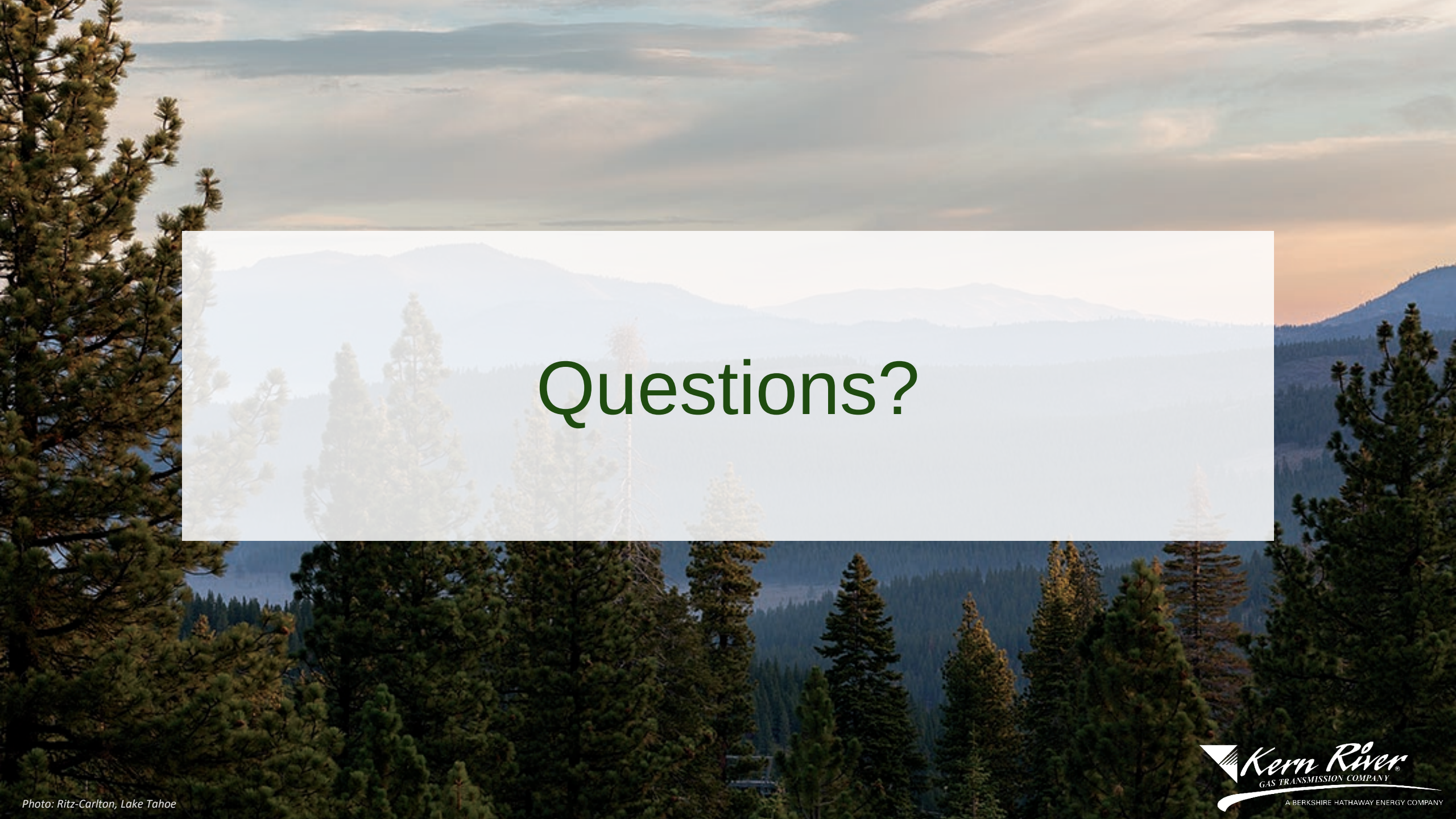

Questions?

Photo: Ritz-Carlton, Lake Tahoe

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Break

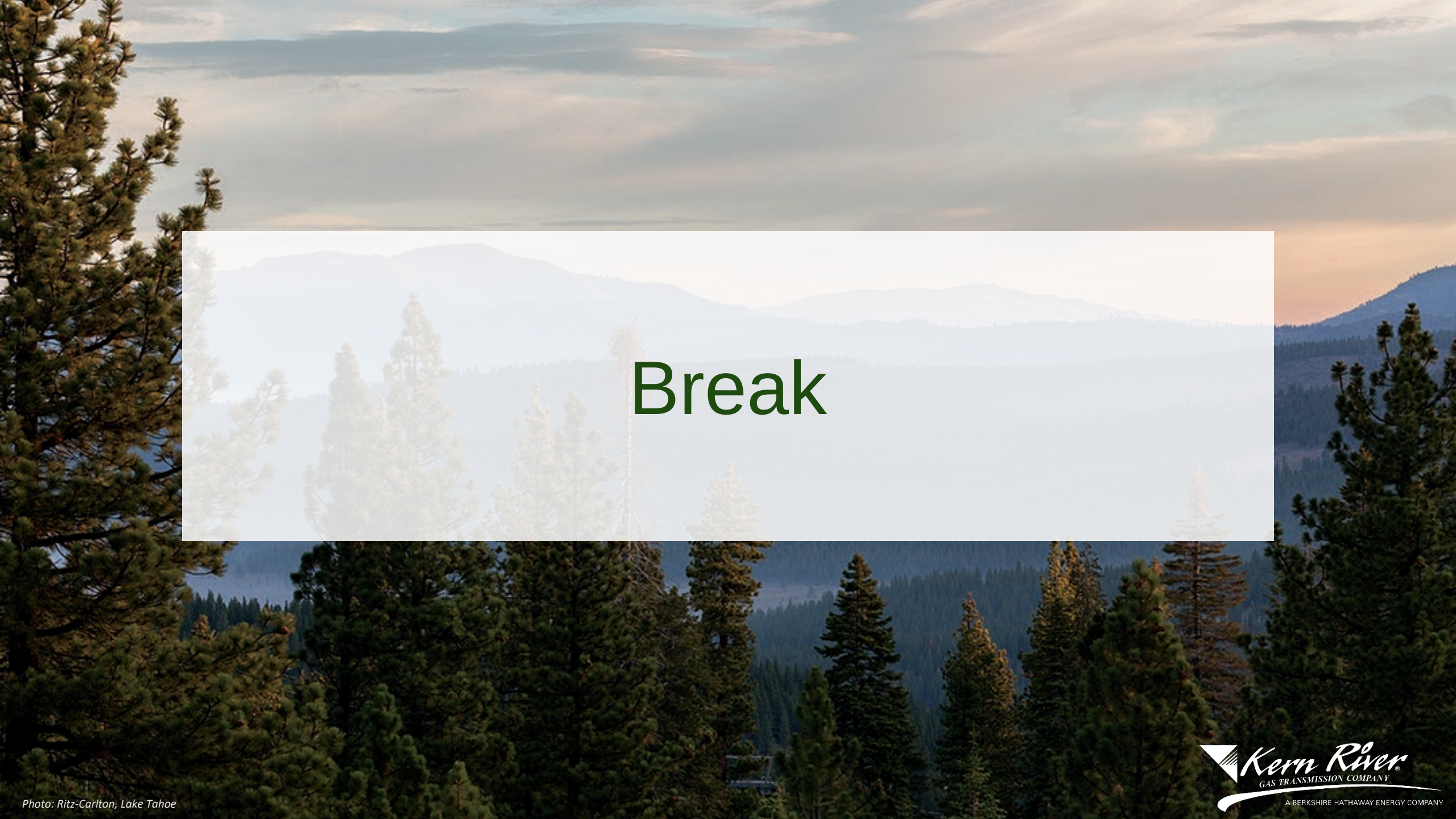

Photo: Ritz-Carlton, Lake Tahoe

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S&P Global
Commodity Insights

Natural Gas Outlook

Kern River Customer Meeting

Matthew Palmer / Executive Director

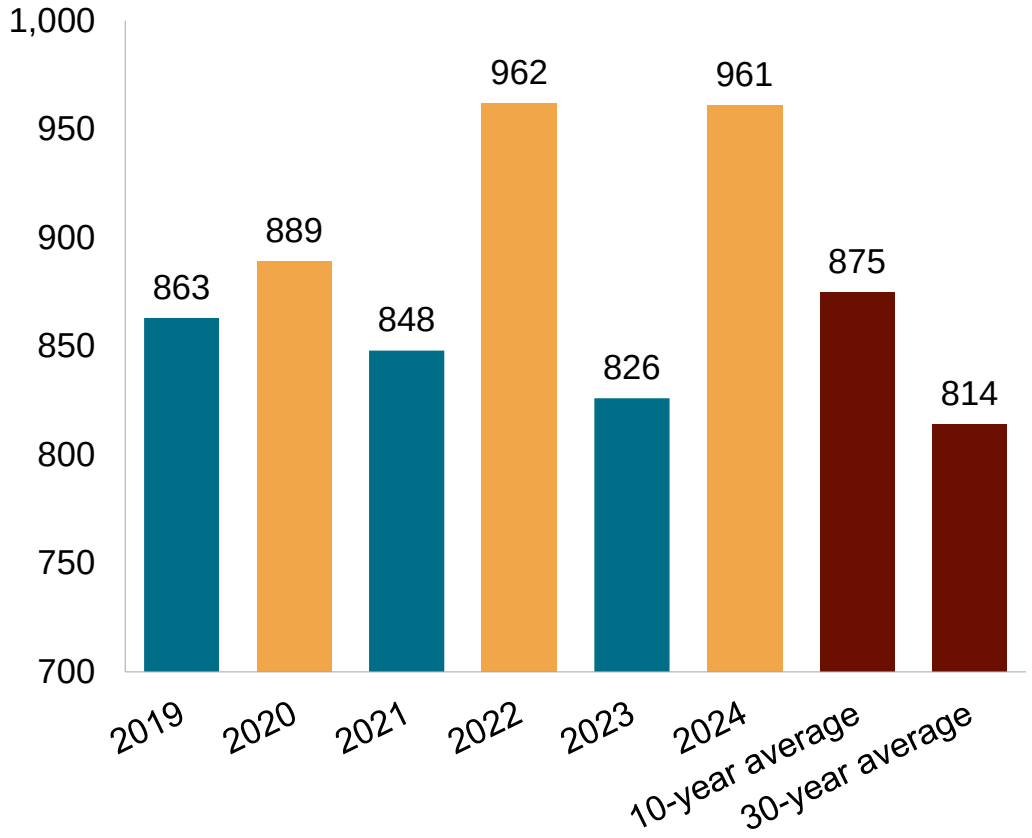
August 2024

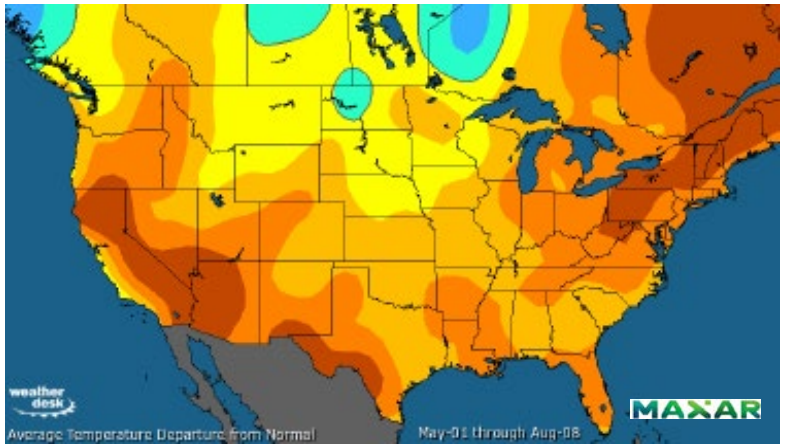
What's happening right now?

How is the weather in your neighborhood?

Summer thus far has been 10% hotter than the 10-year normal and 18% above the 30-year normal

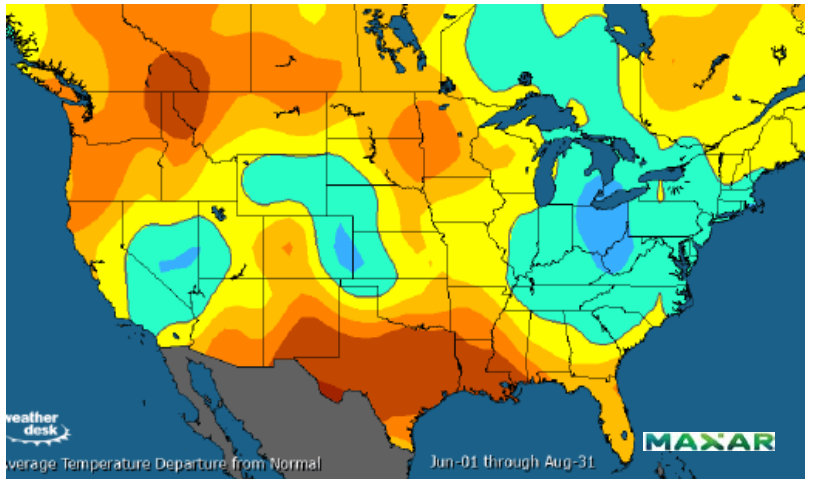
PWCDD tracker (May 1 to August 8)





Summer 2024 thus far

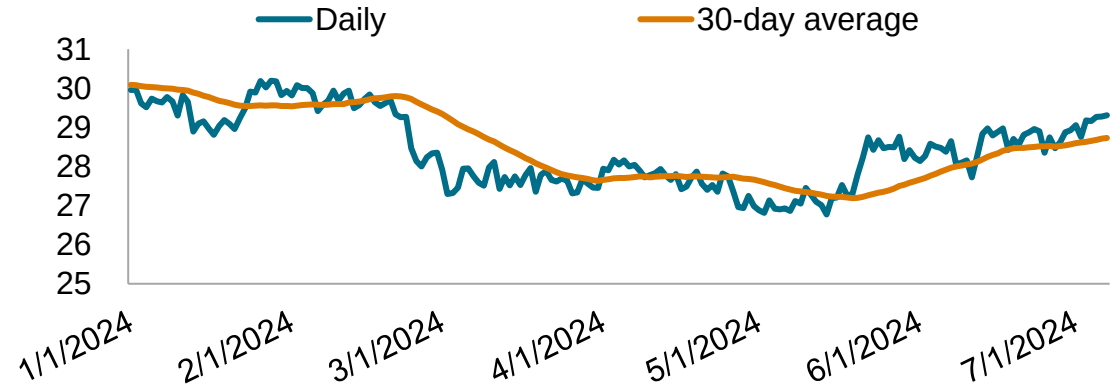
Summer 2023



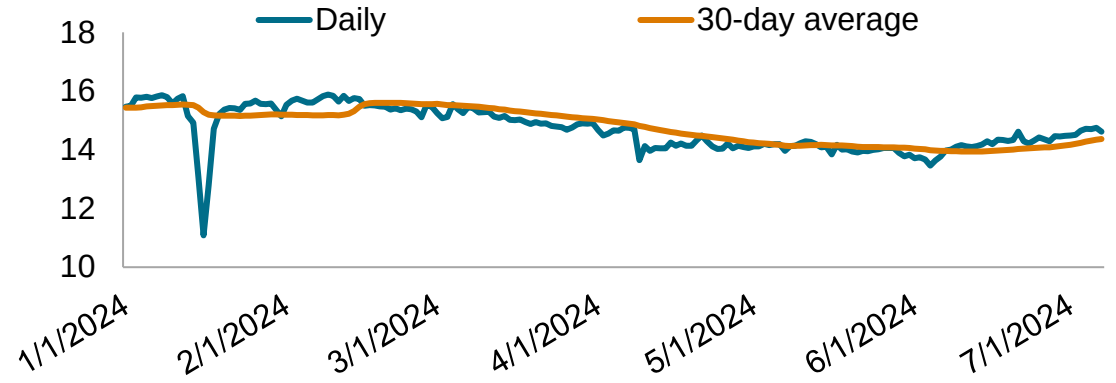
Data compiled August 9, 2024.
PWCDDs = population-weighted cooling degree-days.
Sources: S&P Global Commodity Insights; Maxar.

MVP boosts Marcellus production, EQT brings back curtailed volumes and Haynesville recovery lags

Marcellus (Bcf/d)



Haynesville (Bcf/d)

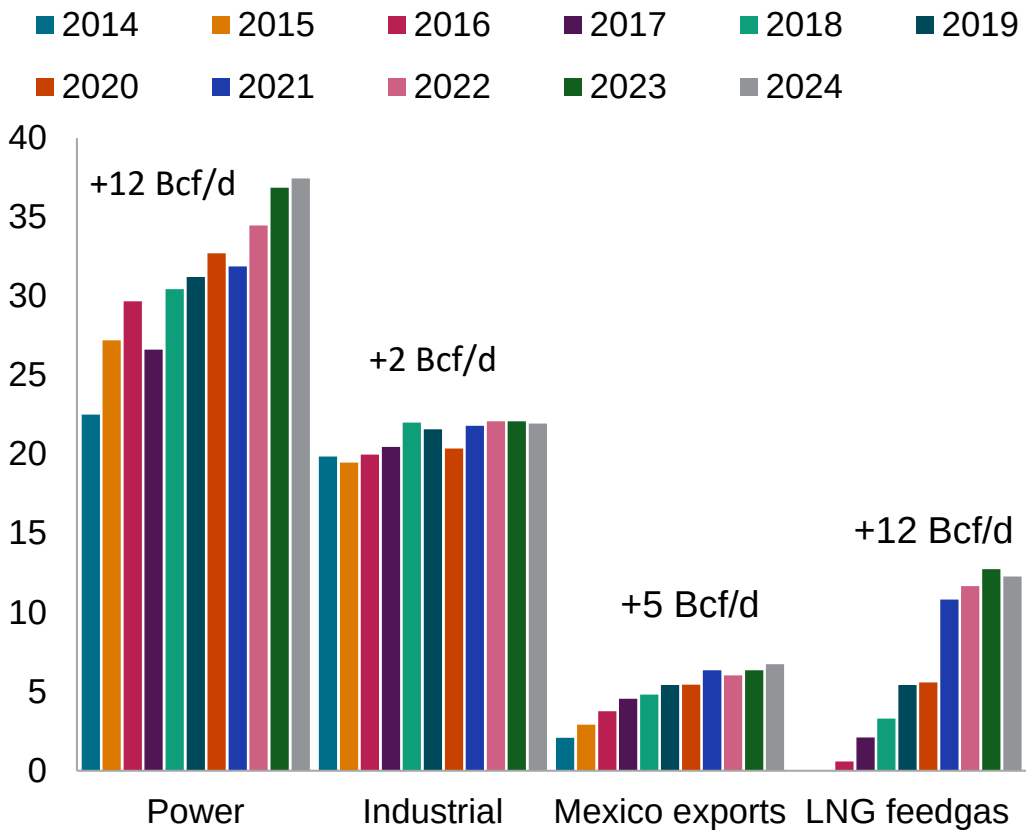


Data compiled July 7, 2024.
Source: S&P Global Commodity Insights.

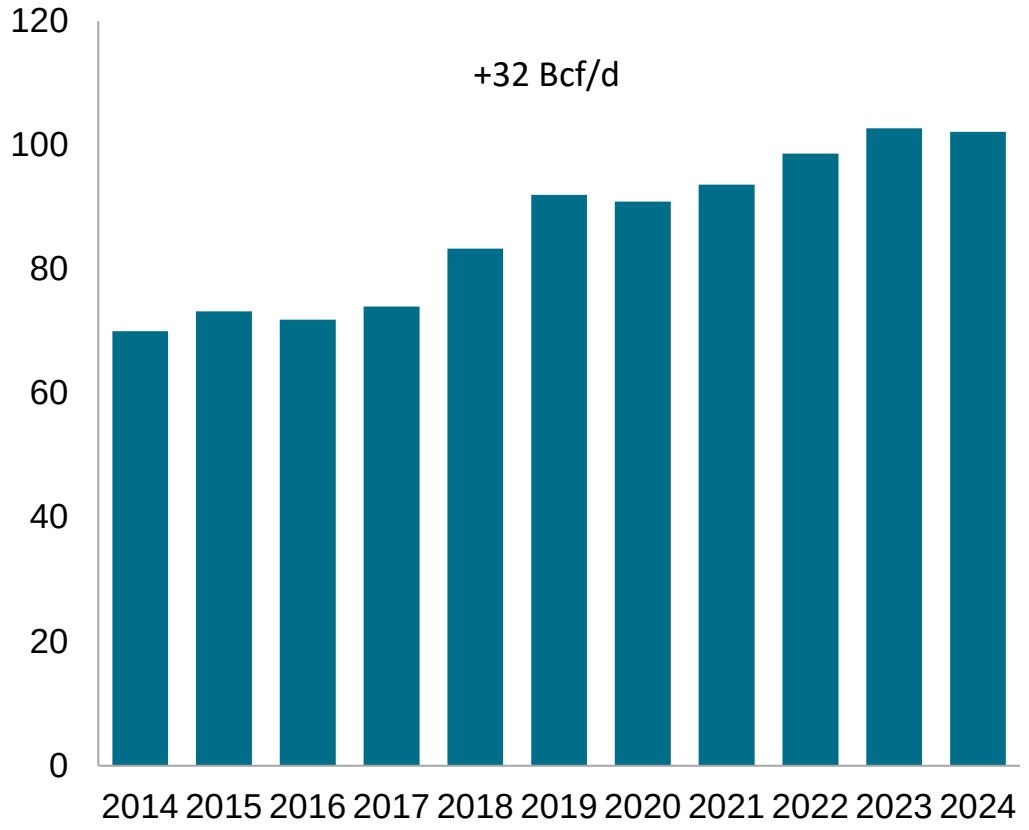
- **Mountain Valley Pipeline (MVP) coming online has allowed for increased gas transportation capacity and improved access to Marcellus supply.**
  - Total Northeast production has also been aided by regional gas demand from the power sector, which is tracking 0.9 Bcf/d higher season to date compared to summer 2023 (and 1.2 Bcf/d higher month to date versus July 2023).
- **Beginning mid-June, Haynesville production began trending upward as Southeast gas-fired power generation began ramping up significantly, indicating a need for more regional supply.**
- **US Lower 48 dry gas production surpassed 102 Bcf/d for multiple days in July and has averaged 101.7 Bcf/d through July 18, below year-ago levels.**

Over the past decade the US natural gas market has experienced tremendous growth

Key demand sectors April - July (Bcf/d)



US natural gas production April - July (Bcf/d)

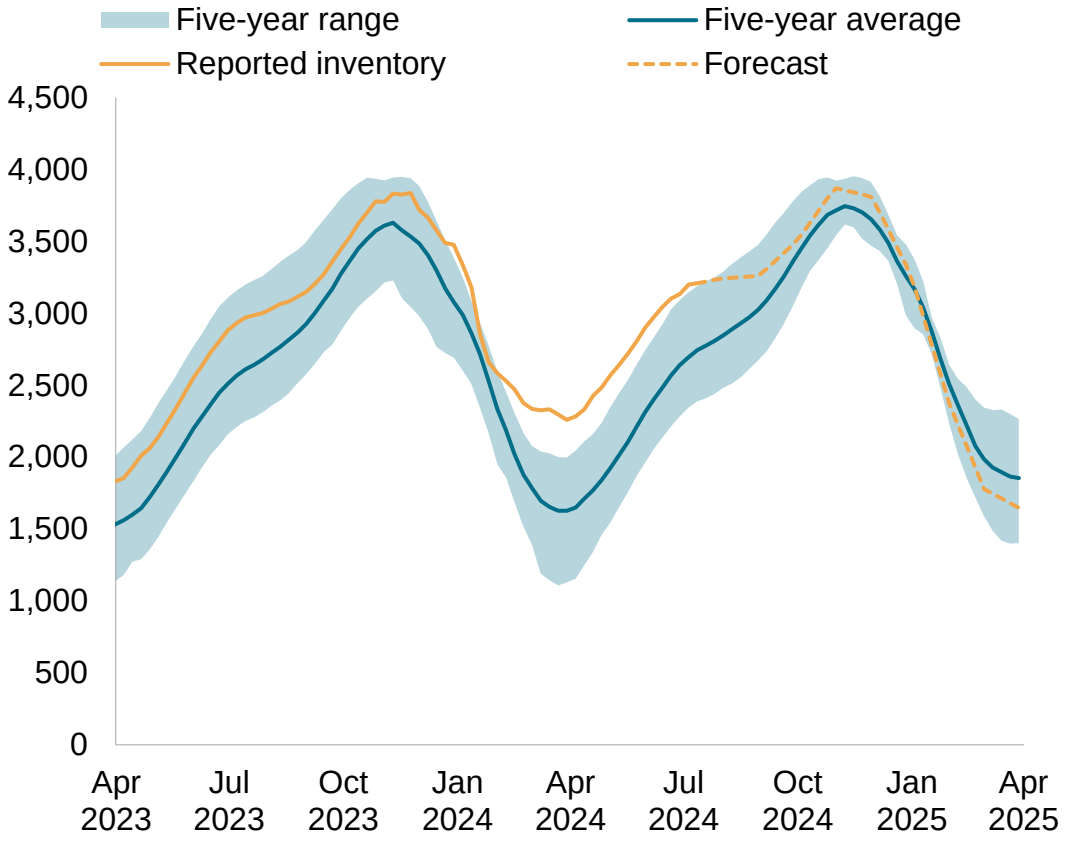


As of August 7, 2024.
Source: S&P Global Commodity Insights

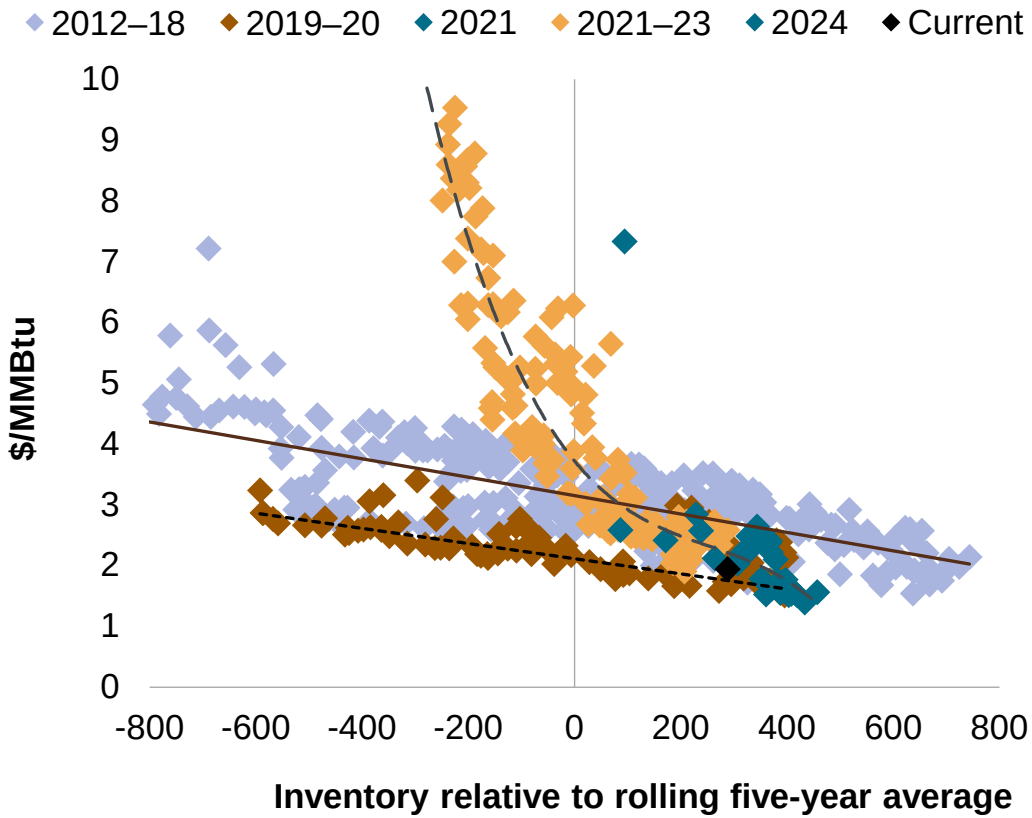
S&P Global
Commodity Insights

The storage surplus will remain through end-October; inventories will fall below the 5-year average in early 2025 as demand materially surpasses supply

US Lower 48 storage inventory (Bcf)



Henry Hub and natural gas storage yield curve



Data compiled August 9, 2024.
Five-year data is 2019–23.
Sources: S&P Global Commodity Insights; EIA.

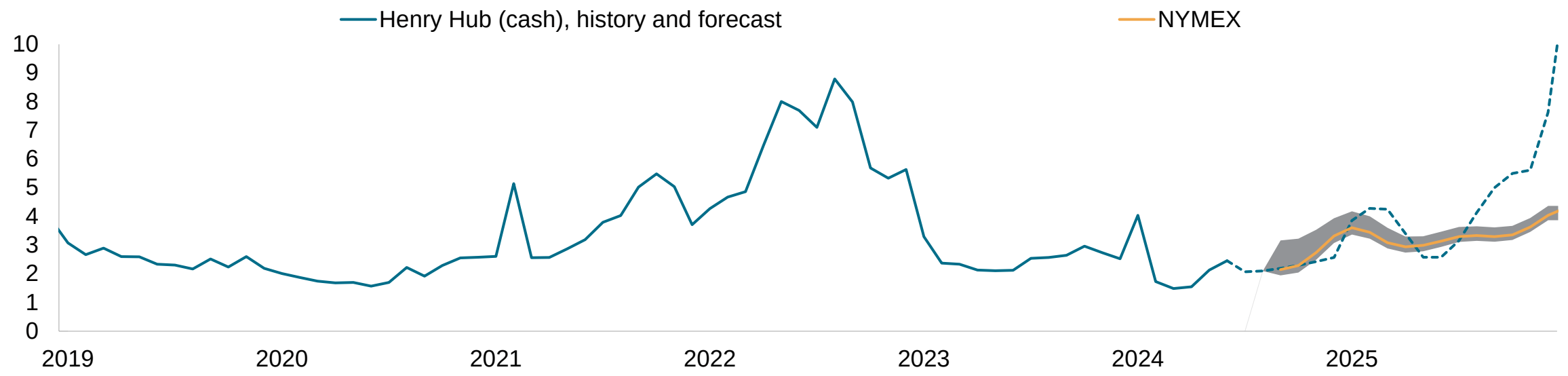
S&P Global
Commodity Insights

Henry Hub expected to average $2.25/MMBtu in 2024, but edges higher in 2025 with rising LNG exports

Henry Hub outlook and NYMEX comparison (nominal $/MMBtu)

	Summer 2023	Summer 2024	Summer 2025	Winter 2022–23	Winter 2023–24	Winter 2024–25	2023	2024	2025
Henry Hub	2.44	2.11	3.76	3.79	2.50	3.48	2.53	2.25	4.33
NYMEX	2.39	2.12	3.19	4.43	2.52	3.24	2.74	2.29	3.35

Henry Hub prices and NYMEX futures ($/MMBtu)



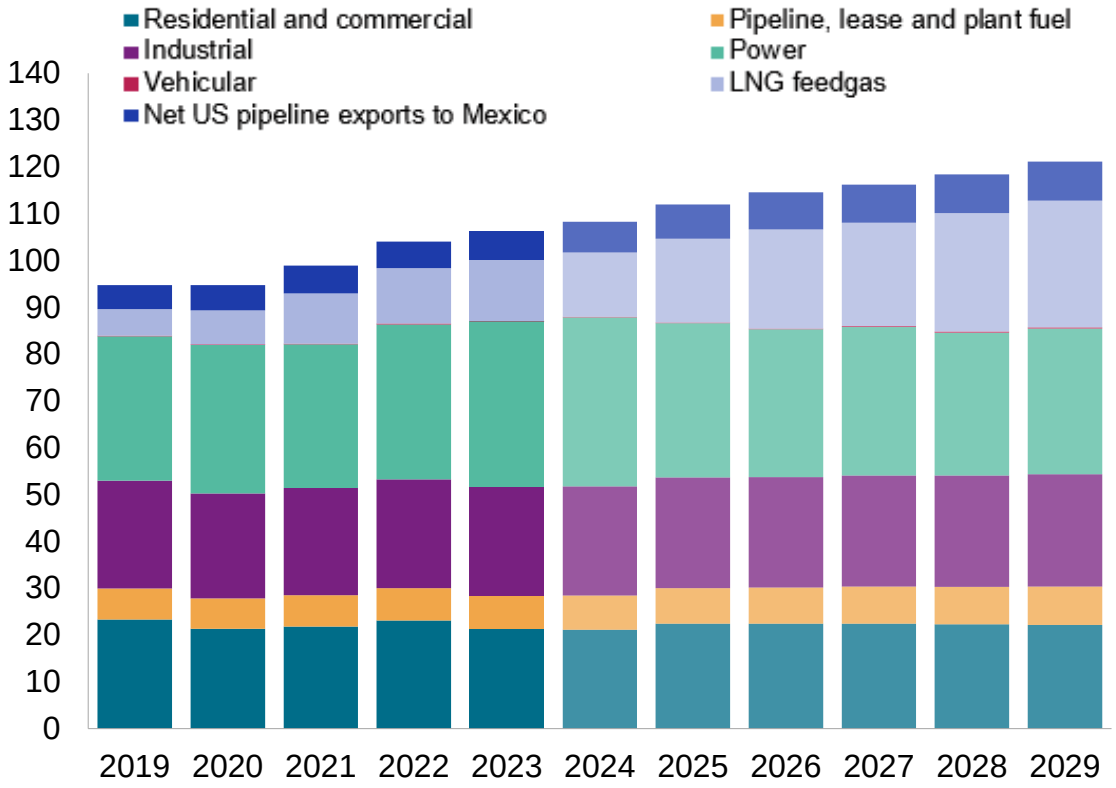
Data compiled August 9, 2024.
New York Mercantile Exchange (NYMEX) history is monthly settlement and futures as of August 9, 2024.
Sources: S&P Global Commodity Insights, CME Group.

S&P Global
Commodity Insights

US 5-Year Outlook

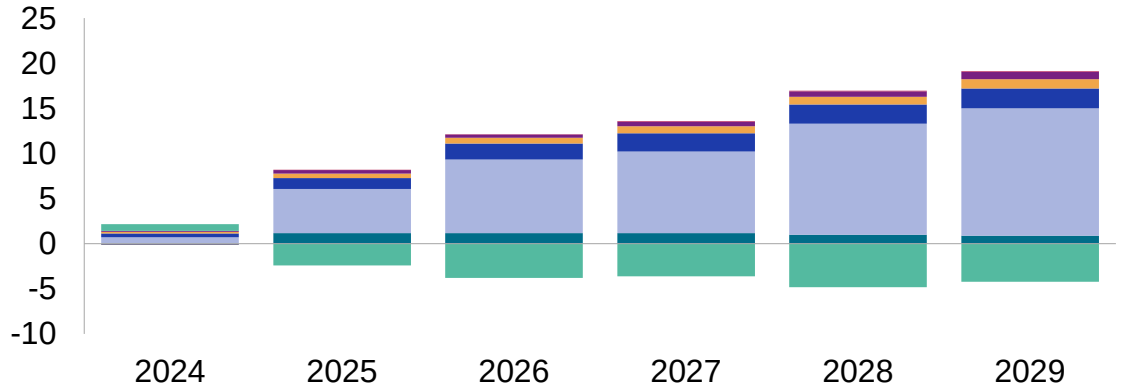
Exports drive overall demand growth while the power sector reduces domestic end-use through 2029

US Lower 48 natural gas domestic demand and exports (Bcf/d)



- Total US Lower 48 demand will rise by nearly 15 Bcf/d in 2024–29 reaching 121 Bcf/d driven by growth in LNG feedgas and exports to Mexico, respectively, that are partially offset by declining gas-fired generation needs.

US Lower 48 demand and export growth from 2023 (Bcf/d)

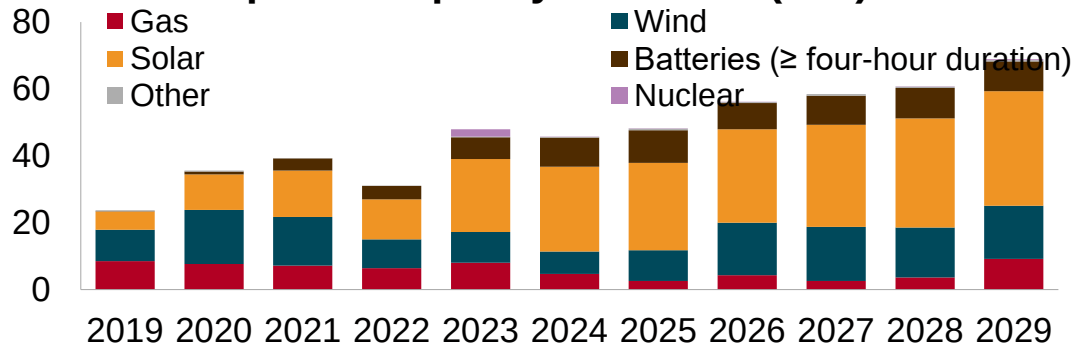


Data compiled July 15, 2024.
Sources: S&P Global Commodity Insights; EIA.

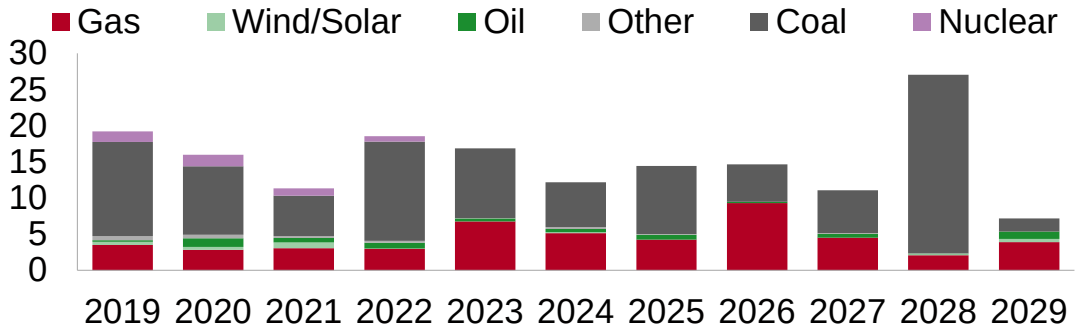
S&P Global
Commodity Insights

Massive renewable capacity additions, phasing out coal, and gas capacity needed for reliability

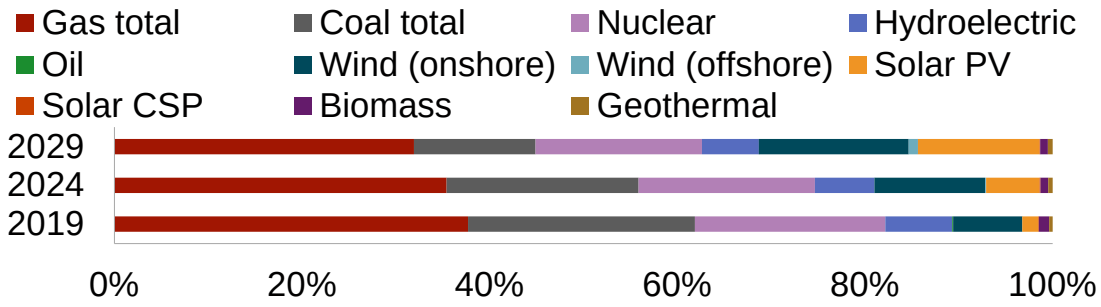
US Lower 48 power capacity additions (GW)



US Lower 48 power capacity retirements (GW)



Percentage of total US power generation



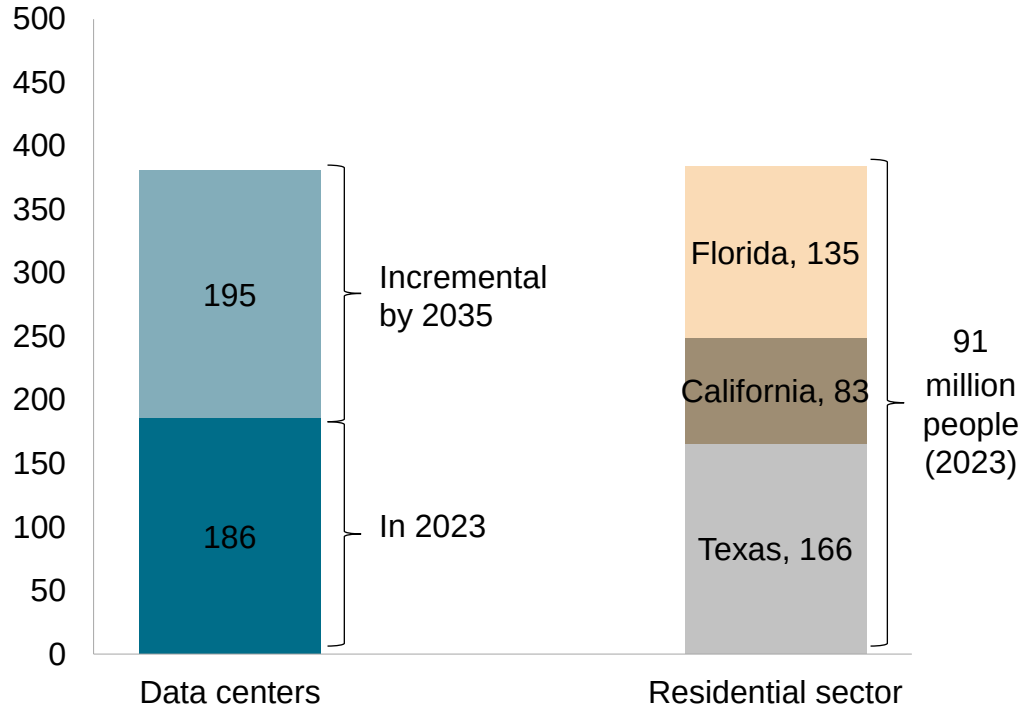
CSP = concentrating solar power; PV = photovoltaic.

- **For 2024–29, we expect nearly 87 GW of generating capacity to be retired across the US Lower 48.** While much of the coal-fired fleet remains under economic pressure, strong electricity demand growth, coupled with reliability concerns regarding renewables and the grid, slow the pace of coal-fired power plant retirements.
- **For 2024–29, US power sector capacity additions will total 381 GW, peaking at 76 GW in 2029.** Solar PV capacity gains surpass 220 GW, while onshore and offshore wind turbines are projected to add 78.6 GW combined. The gas-fired fleet is forecast to register about 27.1 GW of new capacity (across CCs and CTs), but also 29.1 GW of retirements (mostly less-efficient STs).

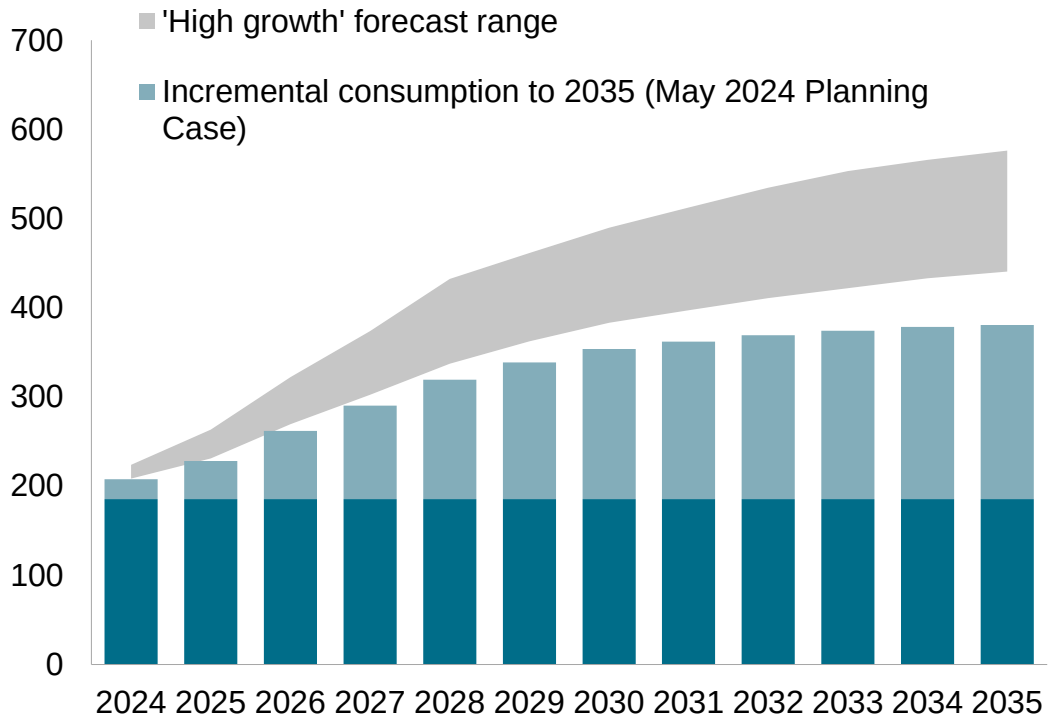
Data compiled July 15, 2024.
CSP = concentrating solar power; PV = photovoltaic; CC = combined cycle; CT = combustion turbine; ST = steam turbine.
Sources: S&P Global Commodity Insights; EIA; North American Electric Reliability Corp.; ABB Velocity Suite.

US datacenters are projected to consume as much electricity as households in the three most populous states

US electricity demand from datacenters (May 2024 Planning Case) vs. residential sales, TWh



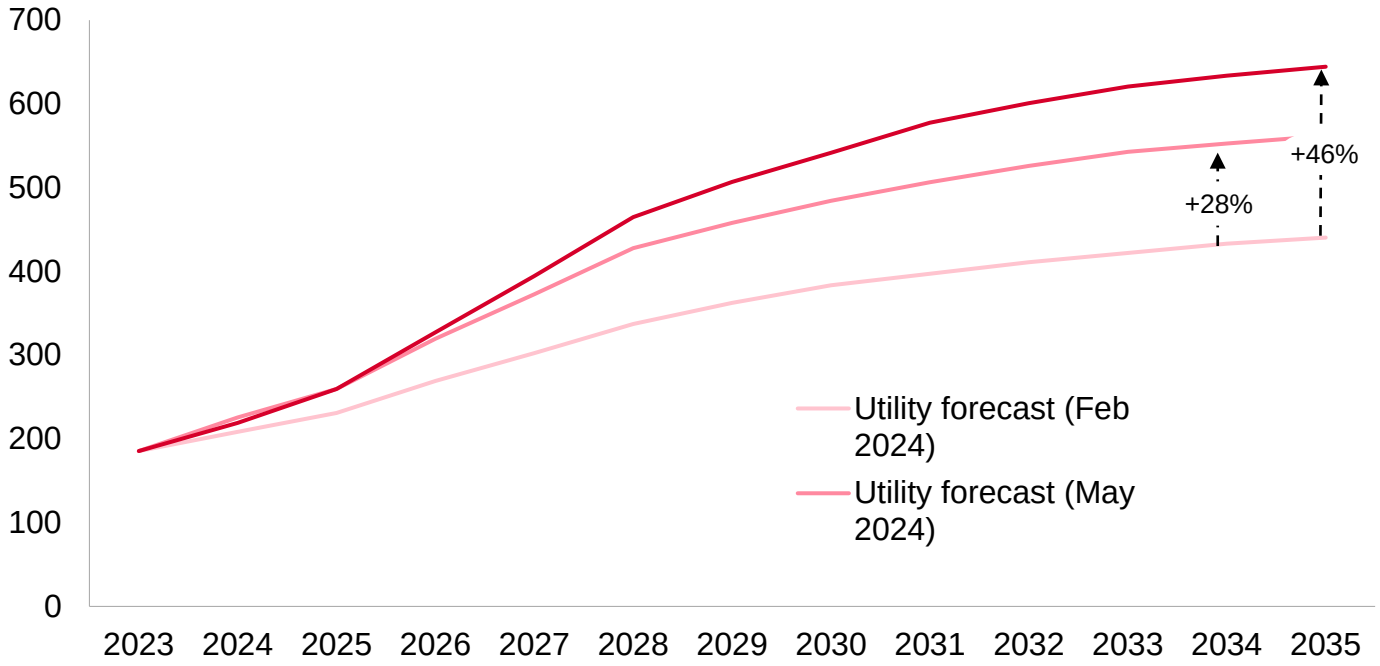
US electricity demand from datacenters, TWh



Data compiled Jun. 10, 2024.
Notes: The “High growth forecast range” is based on datacenter load forecasts aggregated across US utilities and grid operators (high-end) and third-party forecasts. Excludes cryptocurrency mining datacenters.
Sources: S&P Global Commodity Insights, EIA

Utility datacenter load forecasts have pushed higher in recent months

US datacenter load forecasts (aggregate utility), TWh



Utility forecast include data center load forecasts from various ISO/RTOs and electric utilities. Excludes cryptocurrency mining datacenters
Data compiled Jun. 26, 2024.

Source: S&P Global Commodity Insights.

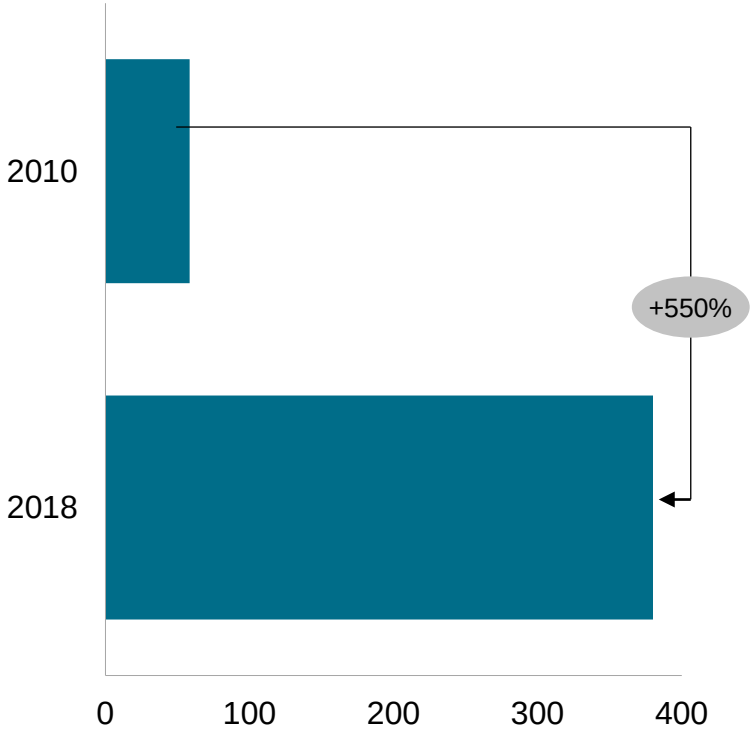
In recent months, utilities and grid operators raised their 2035 outlook for total datacenter load by nearly 50%.

- At the end of April 2024, the CEO of ERCOT increased load growth expectations to 2030 by 40 GW owing to primarily to new industrial loads like datacenters, oil and gas operations, cryptocurrency mining, and green hydrogen.
- In PJM, May 2024 announcements from PPL, ComEd, and AEP boosted the outlook for data center loads.
- In MISO, a June 2024 announcement revealed 6 – 8 GW of datacenter load additions.
- In the West, the Northeast Power Coordinating Council and PG&E announced higher data center loads in March and June, respectively

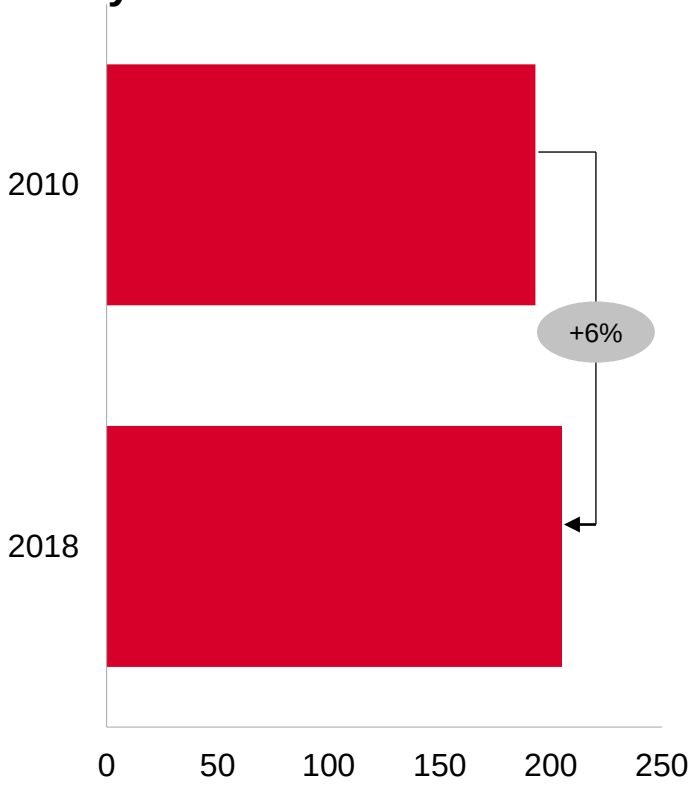
Utilities have indicated that risks to the upside remain.

Global computing efficiency far outpaced demand for compute in the 2010s

Global data center compute instances, millions



Global data center electricity use, TWh/year



- From 2010-18, datacenter electricity consumption increased slightly despite massive increases in datacenter service demand
- Major technology companies expect datacenter energy efficiency gains to continue:

  If you look back at datacenters and traditional compute, there's been massive innovations and improvements in computer and datacenter efficiency over the past ten years. The growth of data center electricity consumption was far sublinear to the growth in computer usage. I do believe that for AI you will see a similar trend.

  Rough quote from Maud Texier, Global Director of Clean Energy and Decarbonization Development at Google.

A compute instance is defined as a virtual machine with its own set of resources (CPU, RAM, and storage) running on physical hardware. Data center electricity demand includes electricity consumed by traditional, hyperscale, and cloud data centers

Sources: S&P Global Commodity Insights, Eric Masanet et al., Recalibrating global data center energy-use estimates, Science, February 28, 2020, accessed from: https://datacenters.lbl.gov/sites/default/files/Masanet_et_al_Science_2020.full_.pdf. "Google's demanding goals for decarbonization", The Energy Gang. Podcast audio, May 2024.

Data compiled May. 22, 2024.

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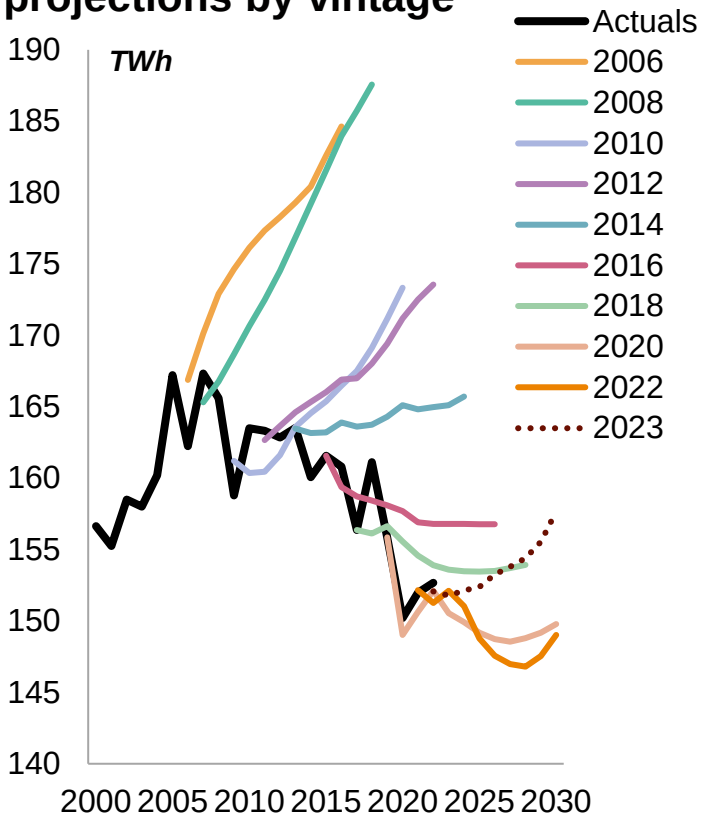
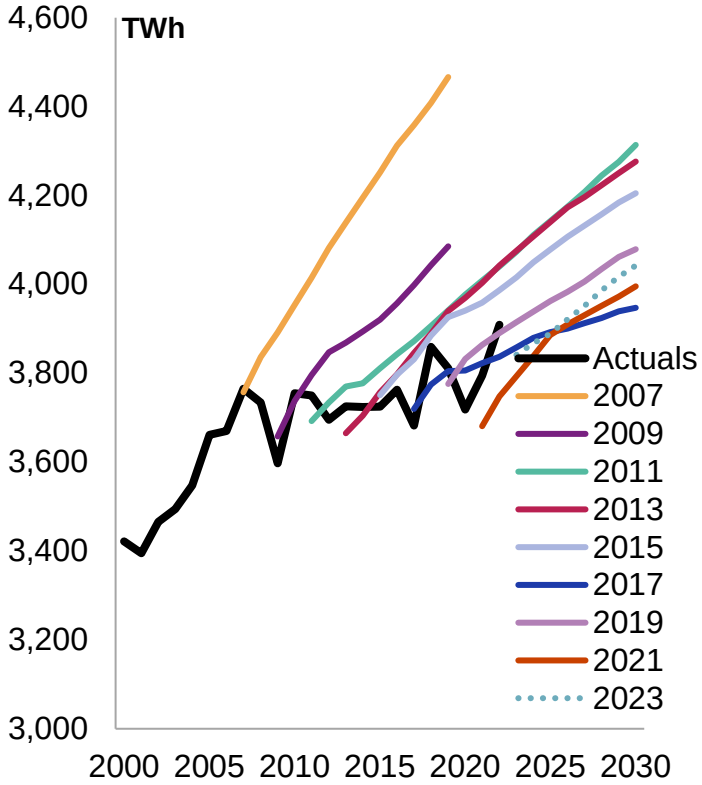
Industry stakeholders have a history of over-forecasting electricity demand

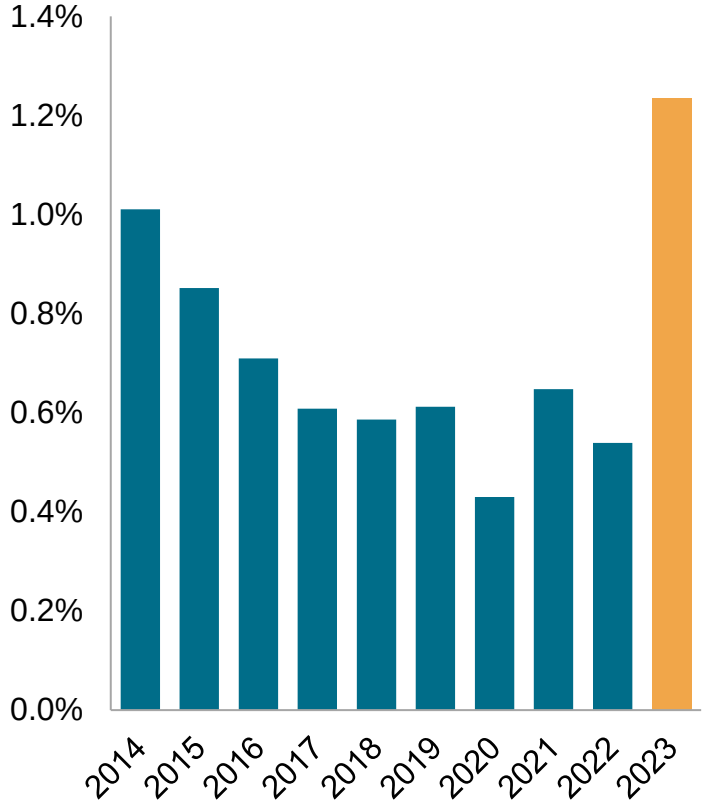
NYISO electricity demand projections by vintage



EIA electricity sales projections by vintage



NERC net energy for load, 10-year annual average growth rates

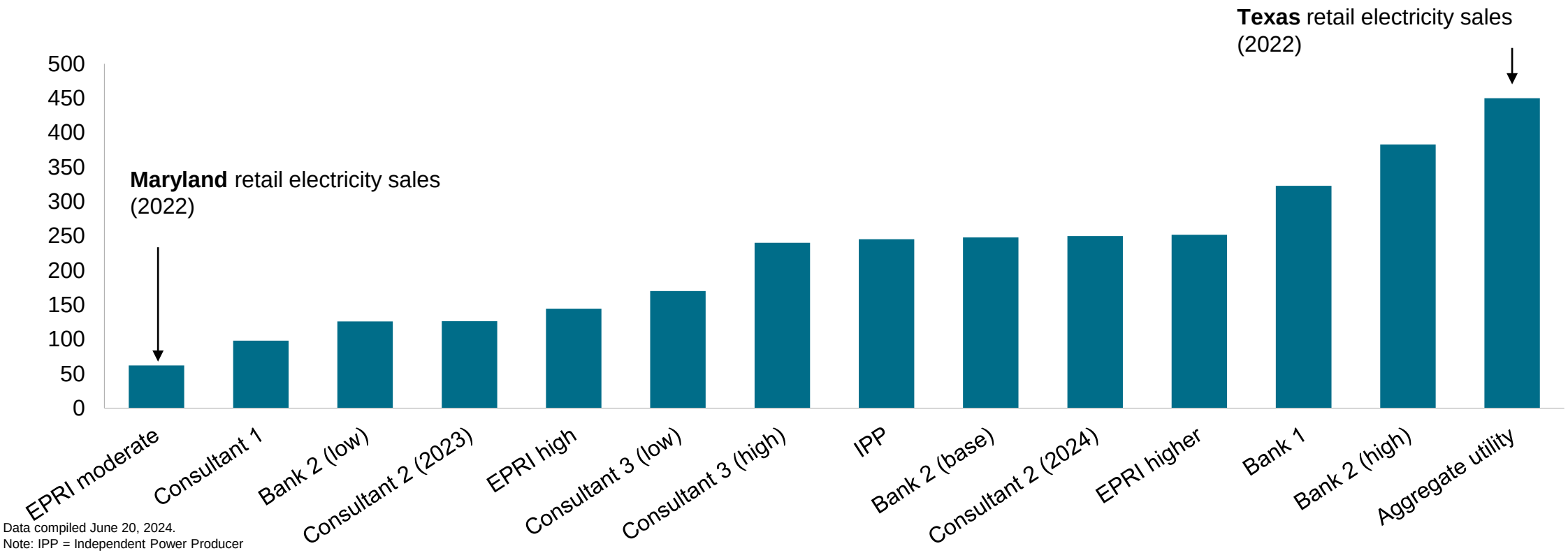


Data compiled April 2024.
Source: S&P Global Commodity Insights, NYISO Gold Books, NERC and EIA Annual Energy Outlooks.

S&P Global
Commodity Insights

Industry datacenter load forecasts range from ‘Maryland to Texas’

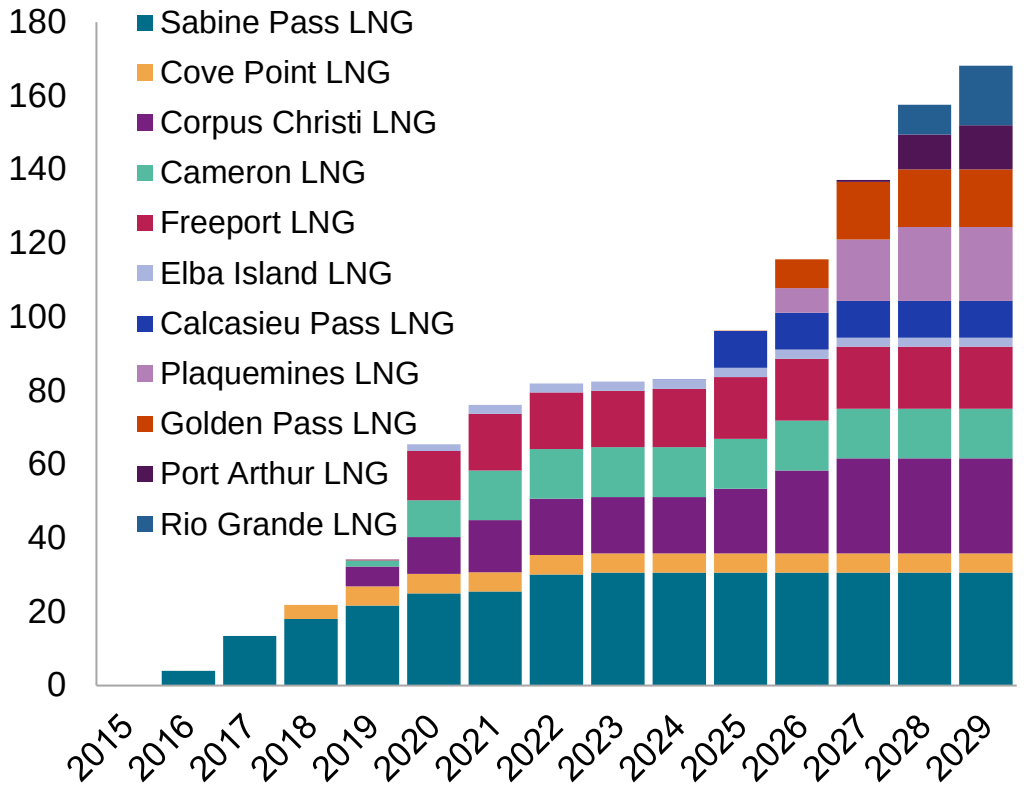
Estimates for new US datacenter demand from 2023-30, TWh



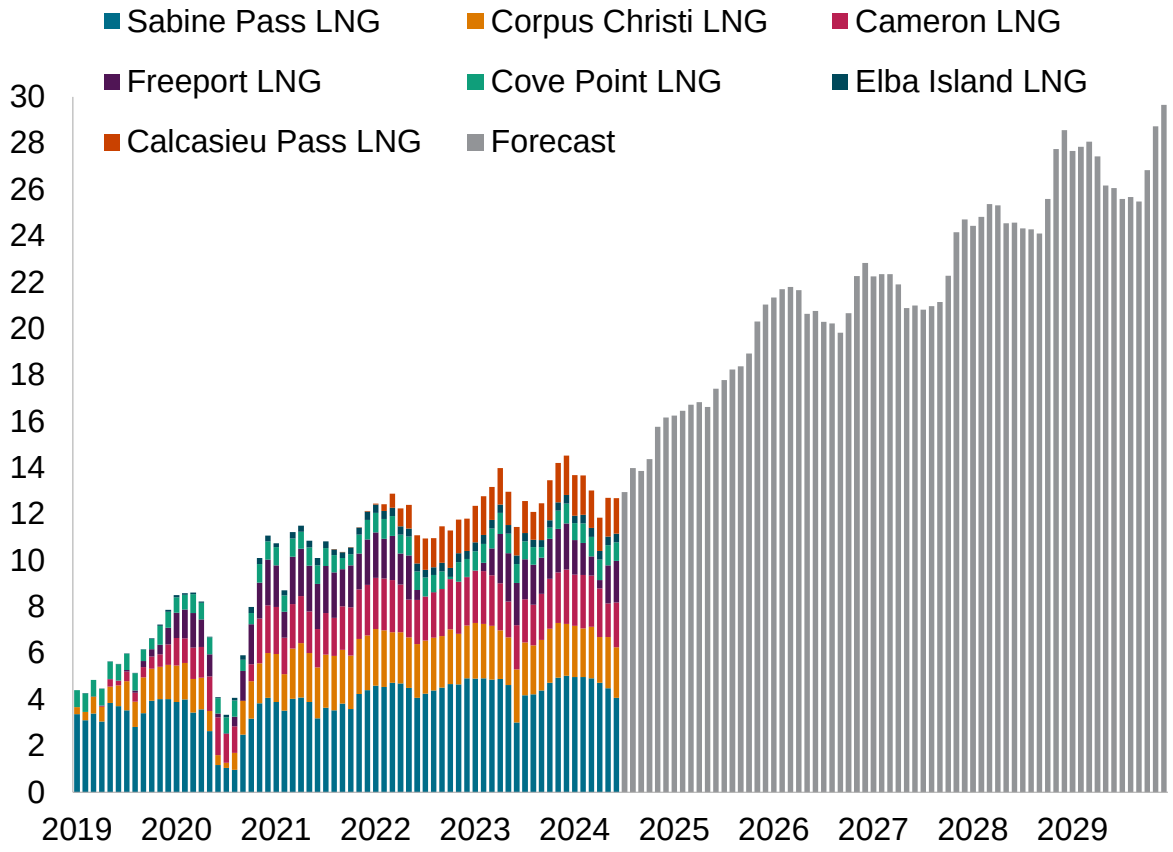
Data compiled June 20, 2024.
Note: IPP = Independent Power Producer
Source: S&P Global Commodity Insights.

US LNG feedgas projected to reach 27.1 Bcf/d in 2029; non-FTA LNG export authorizations will resume in 2025 regardless of election results

US LNG export capacity by *commercial* start year (MMt)



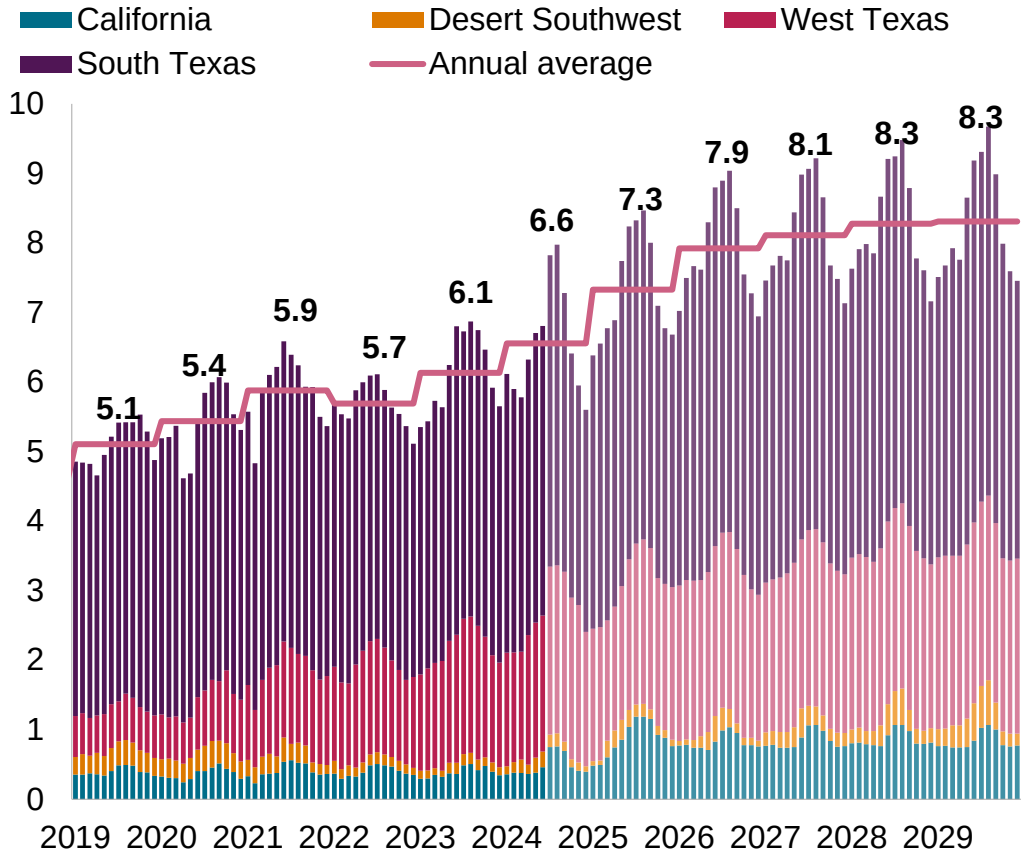
US Lower 48 LNG feedgas (Bcf/d)



Data compiled August, 9, 2024.
FID = final investment decision; FTA = free-trade agreement.
Source: S&P Global Commodity Insights.

Growing domestic industrial and power sector demand and ramping Mexico LNG exports will increase US piped exports to Mexico by 2.2 Bcf/d through 2029

Net pipeline exports to Mexico (Bcf/d)

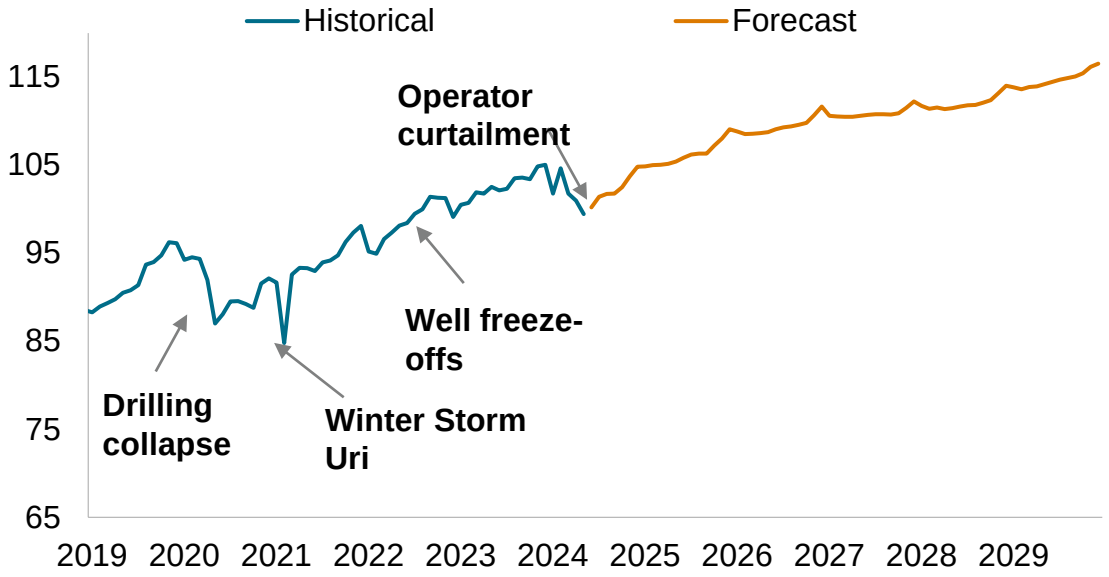


- Net domestic production in Mexico is now expected to average about 2.4 Bcf/d in 2024, 0.1 Bcf/d lower than in 2023. Piped imports from the US Lower 48 will account for 73% of the total gas supply in Mexico.
- In 2024, we expect average US Lower 48 exports to Mexico to gain 500 MMcf/d year over year.
- By 2029, we expect US Lower 48 exports to account for over 75% of total supply in Mexico.
- Domestic demand growth in the power, industrial and LNG export sectors will contribute to a 2.4-Bcf/d gain in total demand by 2029 over 2023 levels:

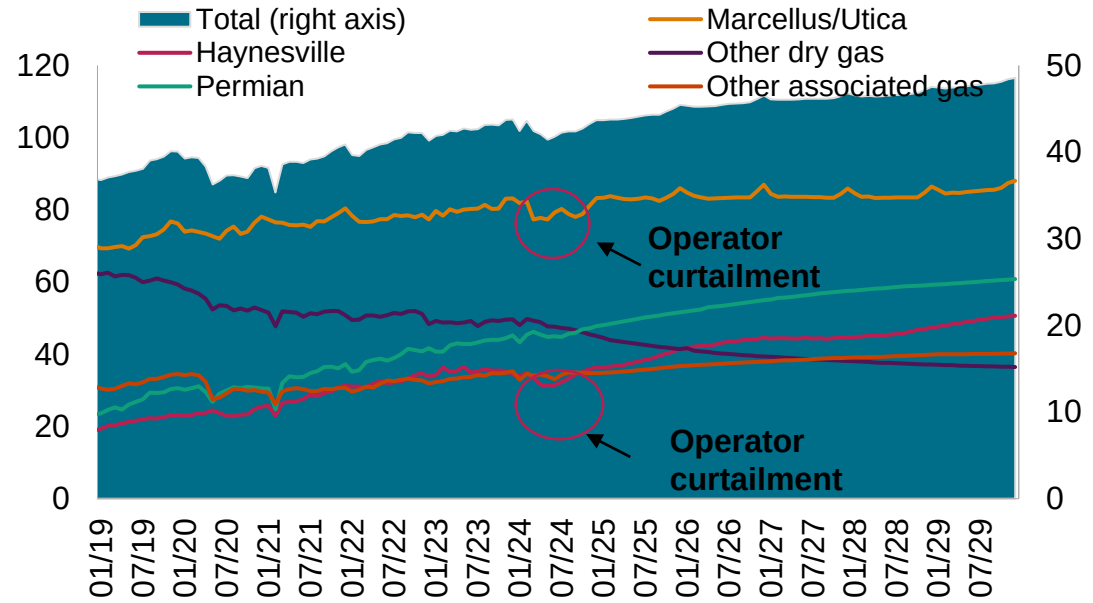
Data compiled July 20, 2024.
Sources: S&P Global Commodity Insights; EIA.

US Lower 48 gas production is expected to grow as prices strengthen and incremental feedgas demand commences

US Lower 48 natural gas production (Bcf/d)



US Lower48 natural gas production by source (Bcf/d)

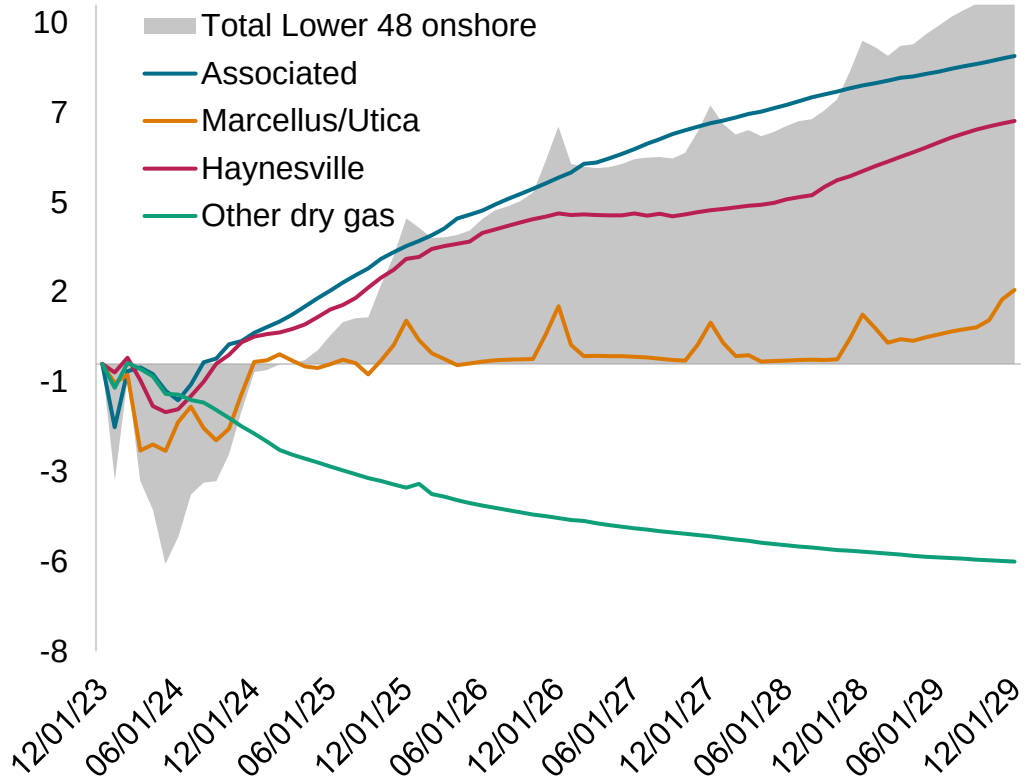


- The Permian Basin is the largest source of production increase, followed by the Haynesville play, concentrating production growth where the demand upside is and given LNG project sponsors' strategy for feedgas sourcing. Marcellus/Utica production potential is limited to long-haul pipeline development.

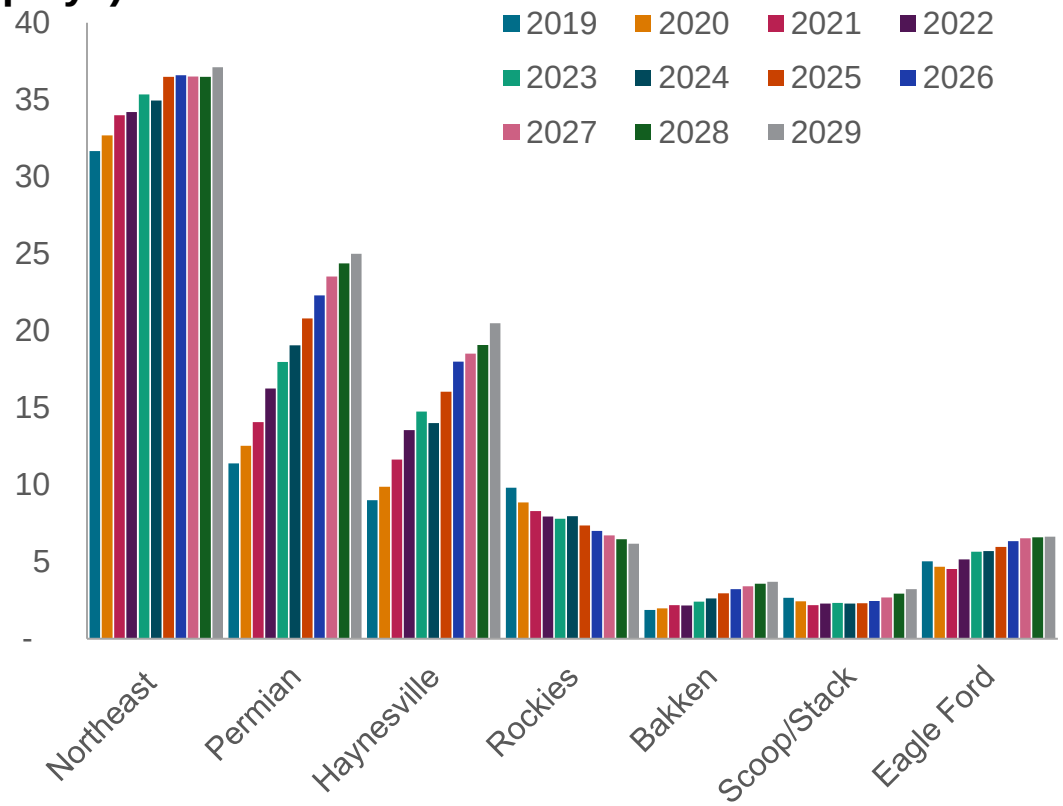
Data compiled July 15, 2024.
Sources: S&P Global Commodity Insights; EIA.

Production growth trajectory resumes by year-end into early 2025; Haynesville, Permian and other associated gas plays support supply increases in 2025–29

Change in natural gas production since December 2023 peak (Bcf/d)



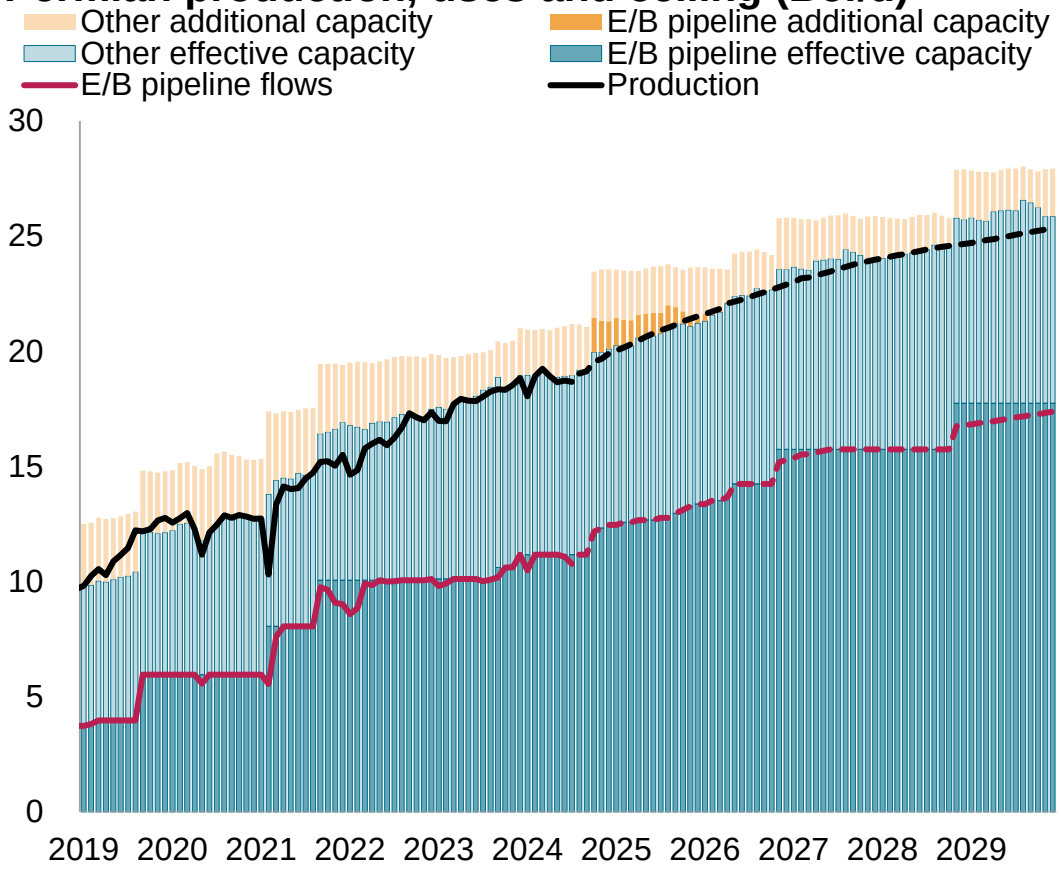
Annual average production (select regions and plays)



Data compiled July 15, 2024.
Sources: S&P Global Commodity Insights; EIA Drilling Productivity Report.

Permian desperately awaiting new eastbound takeaway later this summer; output to grow to 25 Bcf/d by 2029

Permian production, uses and ceiling (Bcf/d)



- Permian production averaged a record 18 Bcf/d in 2023, 1.7 Bcf/d higher than in 2022, aided by rising oil prices, growing exports to Mexico and 1.1 Bcf/d of pipeline takeaway additions to coastal Texas markets.
- We expect Permian supply to continue its growth and reach 25 Bcf/d in 2029, aided by infrastructure expansions.
- Negative cash prices plagued Permian hubs throughout the spring and early summer due to a low-demand environment in downstream markets (exacerbated by the extended Freeport LNG maintenance) and several pipeline maintenance events, which crippled available takeaway capacity.
- The greenfield Matterhorn Express (October 2024, 2.5 Bcf/d) will provide important Permian egress boost in late summer 2024.
- Beyond this project, we have included 4.1 Bcf/d of pipeline expansions.

Data compiled July 16, 2024.

E/B = eastbound. Solid and broken lines reflect history and outlook, respectively. The sum of effective capacity bars reflect our production ceiling estimate and can be lower than total capacity. "Additional capacity" for E/B and other are not in our ceiling estimate given downstream demand and/or pipeline connectivity limitations. E/B pipeline flows outlook is based on its historical share of production growth.

Source: S&P Global Commodity Insights.

US West and Rockies

North American natural gas regions

North American gas analysis for 9 regions and 16 subregions

Gas regions

- Gulf Coast
- Rocky Mountains
- Atlantic Canada
- Midcontinent
- Southeast
- Eastern Canada
- Northeast
- West
- Western Canada

Gas subregions

Gulf Coast

1. **Gulf of Mexico:** Gulf of Mexico
2. **Louisiana:** Louisiana
3. **Texas:** Texas

Northeast

4. **Appalachia:** Kentucky, Ohio, Pennsylvania, West Virginia
5. **Atlantic:** Delaware, District of Columbia, Maryland, Virginia
6. **New England:** Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont
7. **NJ/NY:** New Jersey, New York

Midcontinent

8. **Lower Midcontinent:** Arkansas, Kansas, Oklahoma
9. **Midwest:** Illinois, Indiana, Iowa, Michigan Minnesota, Wisconsin, Missouri
10. **Plains:** Nebraska, North Dakota, South Dakota

Southeast

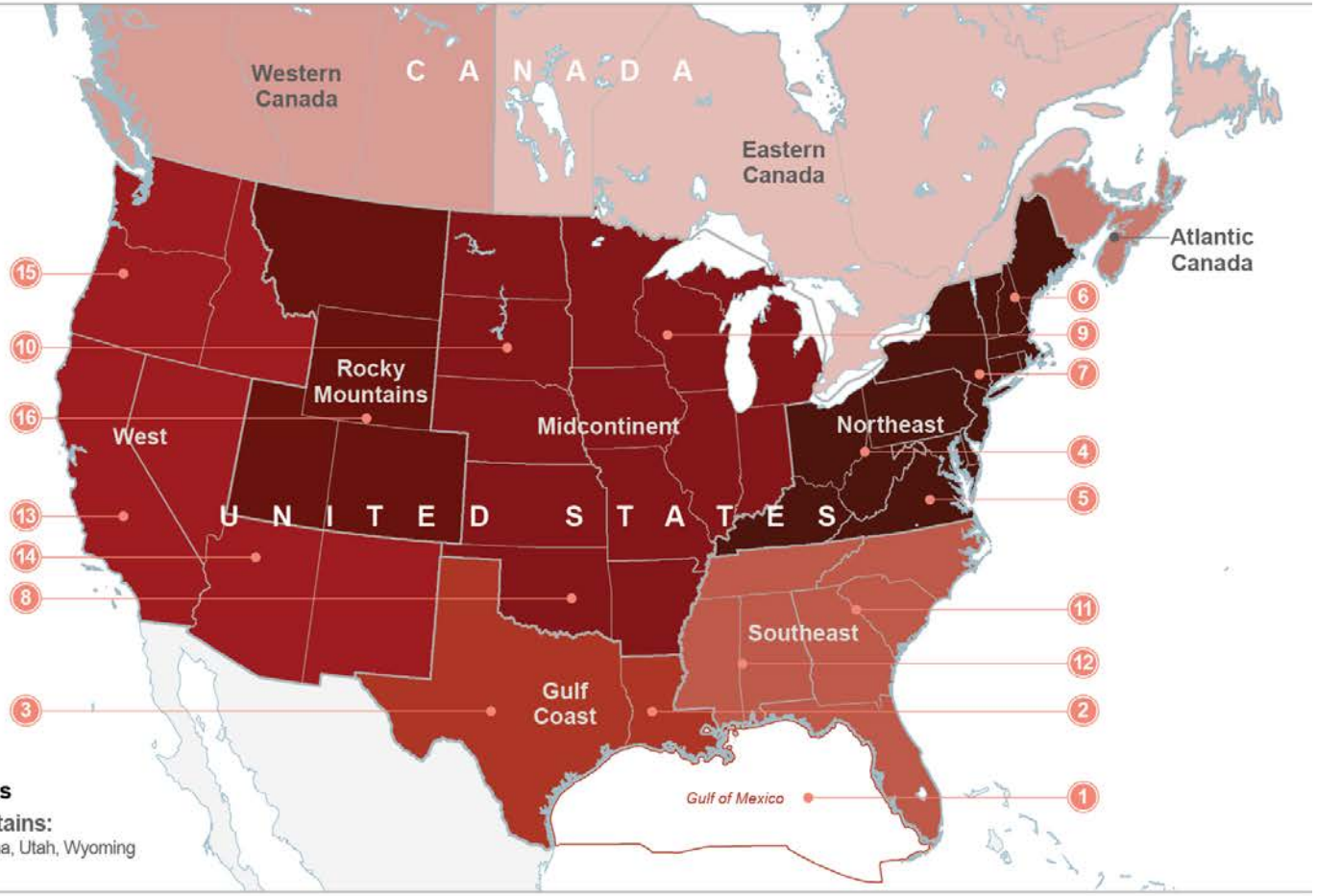
11. **Atlantic Coast:** Florida, Georgia, North Carolina, South Carolina
12. **Southern Corridor:** Alabama, Mississippi, Tennessee

West

13. **California:** California
14. **Desert Southwest:** Arizona, Nevada, New Mexico
15. **Pacific Northwest:** Idaho, Oregon, Washington

Rocky Mountains

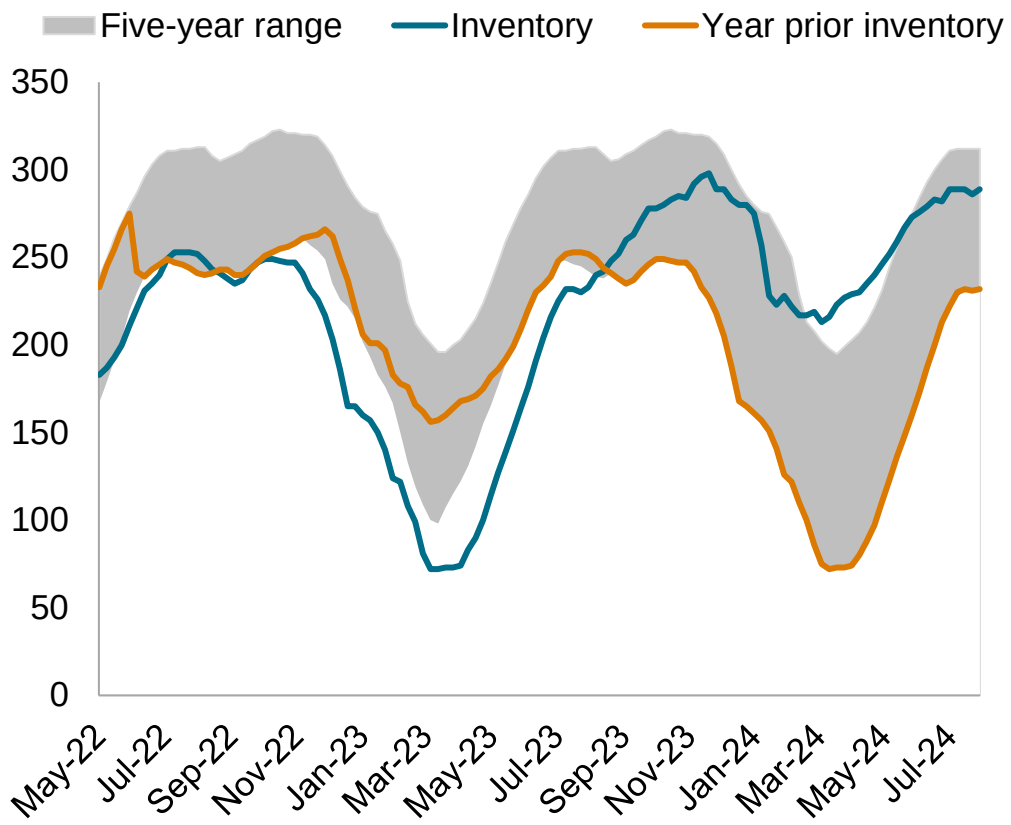
16. **Rocky Mountains:** Colorado, Montana, Utah, Wyoming



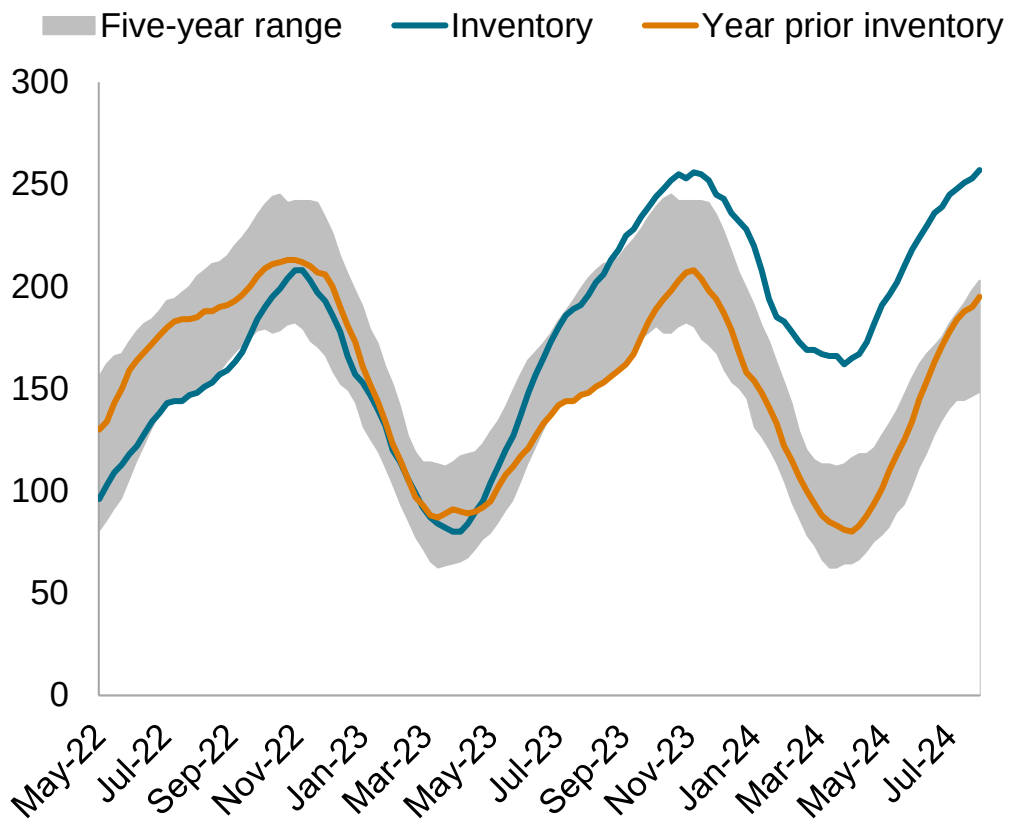
Data compiled Feb. 8, 2023
Source: S&P Global Commodity Insights: 2012022.

Both Pacific and Mountain region storage well positioned ahead of upcoming winter

Pacific region storage inventory (Bcf)



Mountain region storage inventory (Bcf)

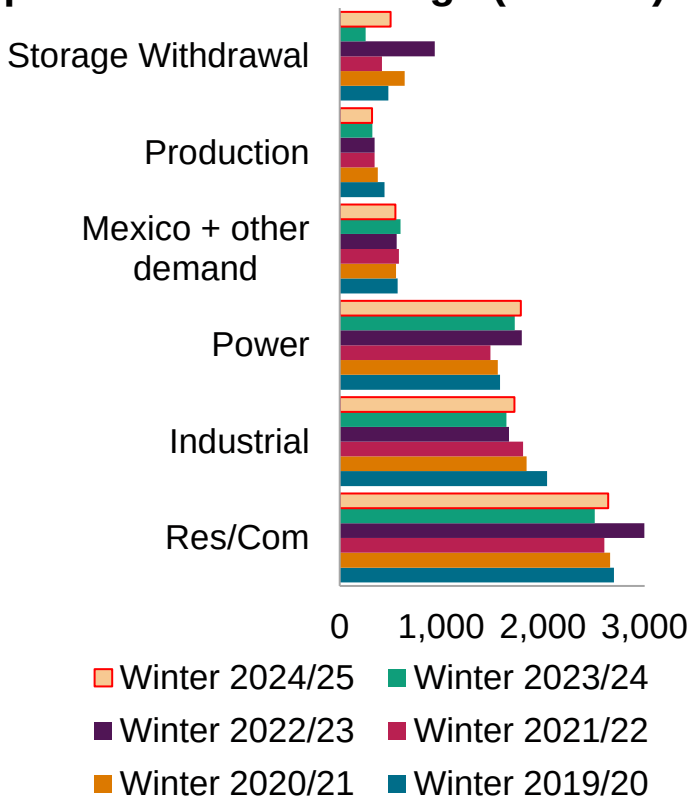


As of August 9, 2024.
Source S&P Global Commodity Insights, EIA.

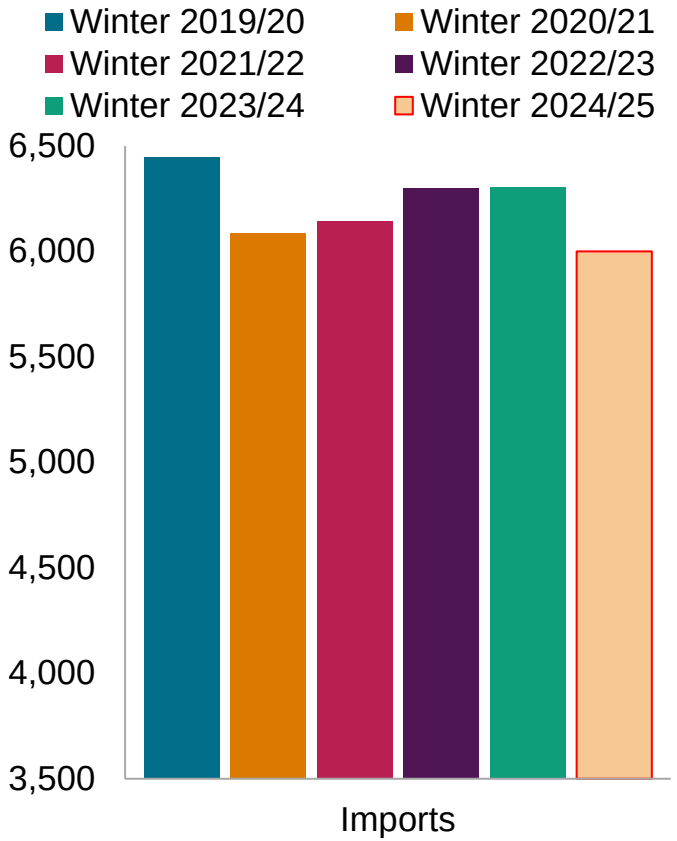
S&P Global
Commodity Insights

With above average storage, less imports are required–assuming an average winter and no pipeline disruptions

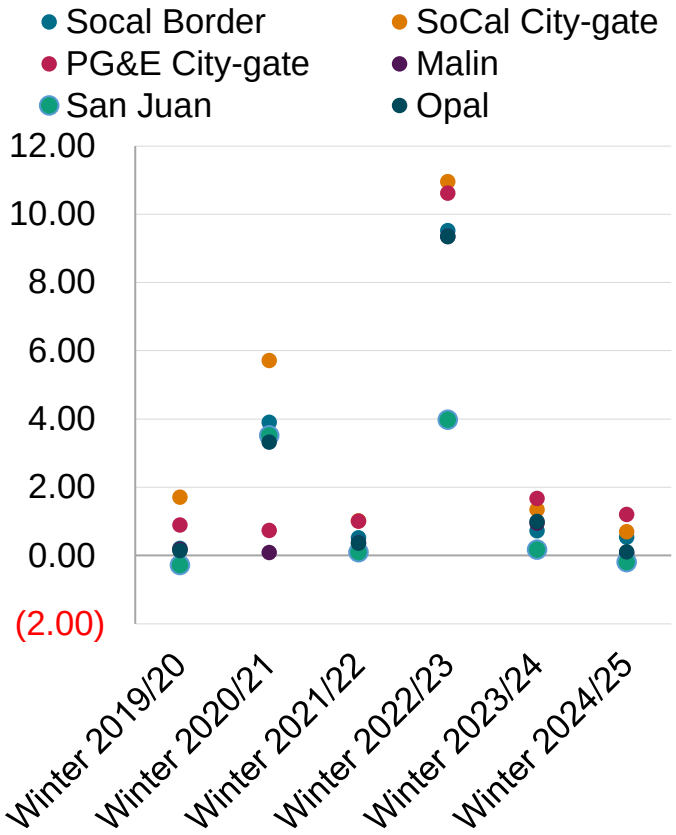
California winter demand, production and storage (MMcf/d)



California winter imports (MMcf/d)



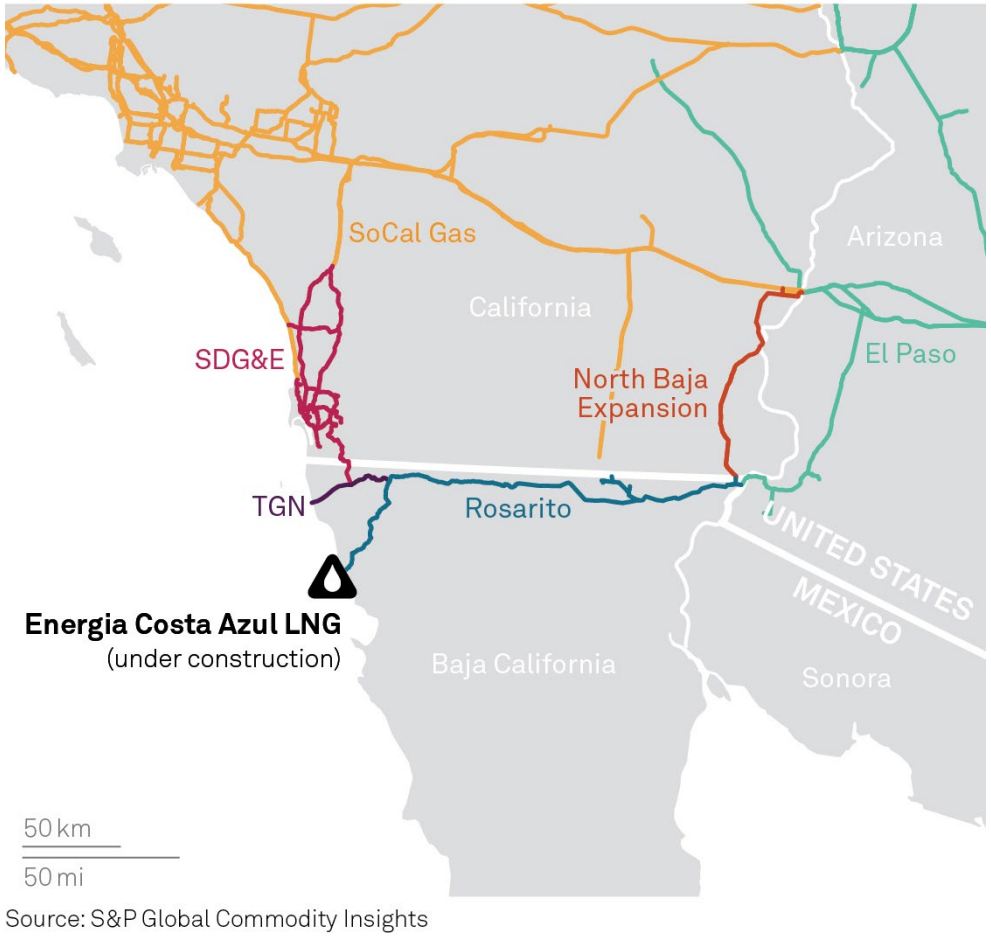
Select US West basis



As of August 9, 2024.
Source: S&P Global Commodity Insights, EIA.

Energía Costa Azul LNG: a source of potential volatility in the SoCal market as feedgas begins flowing in late 2025.

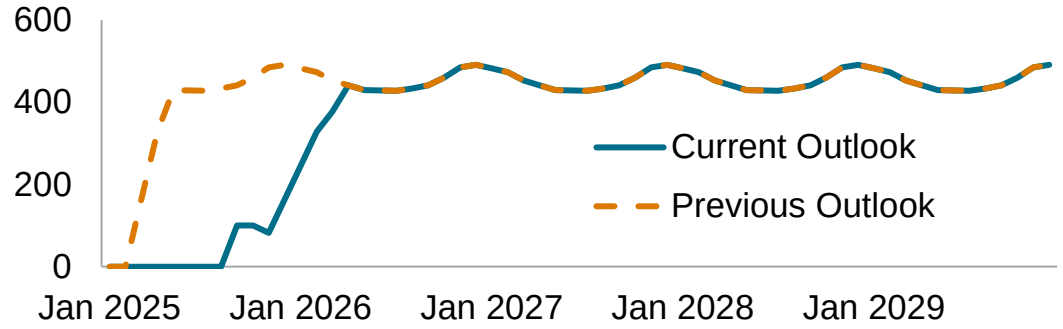
Energia Costa Azul LNG



Source: S&P Global Commodity Insights

As of August 9, 2024.
Sources: S&P Global Commodity Insights

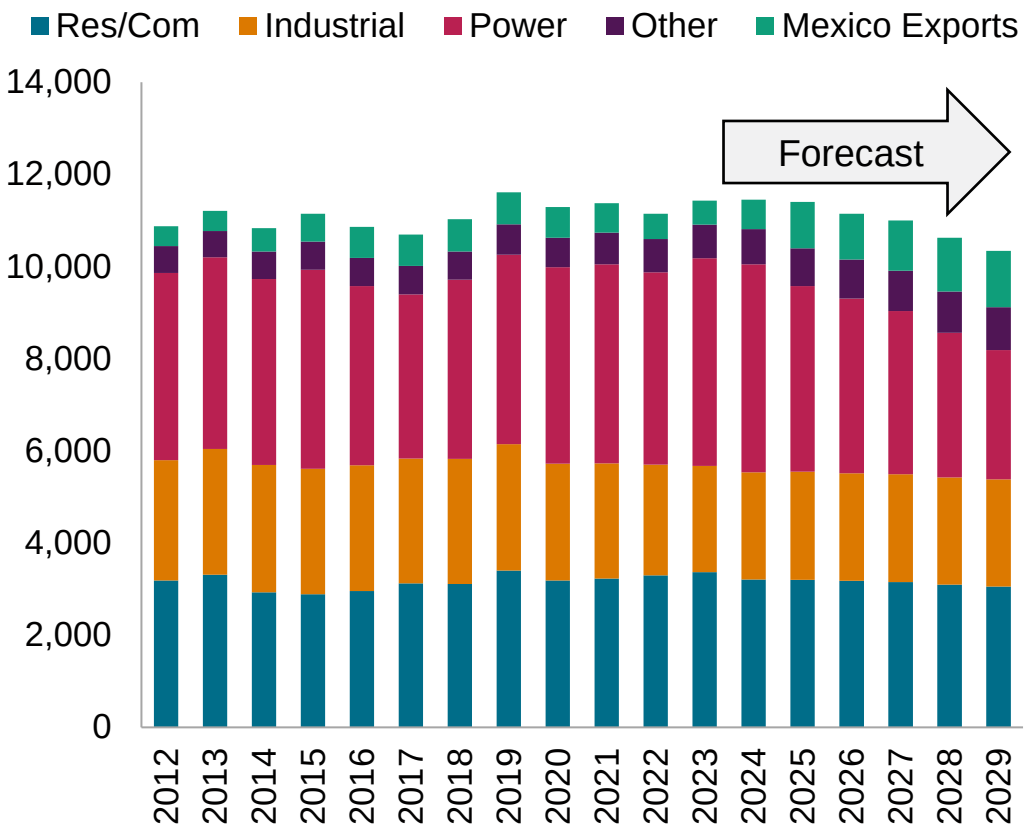
Energía Costa Azul feedgas requirement (MMcf/d)



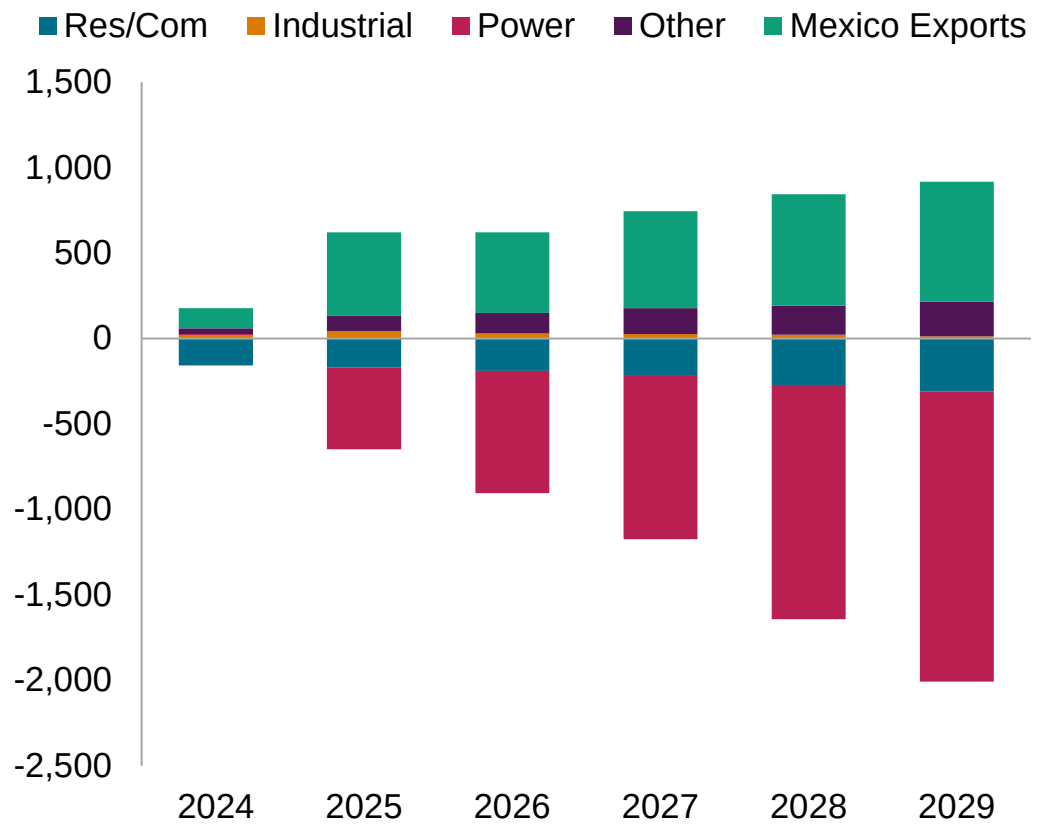
- According to Sempra's second-quarter earnings release on Aug. 6, construction at ECA LNG Phase 1 is currently 85% complete; however, the project has encountered contractor labor retention and productivity issues which have extended the timeline.
- Sempra's Gasoducto Rosarito (GRO) connects the existing ECA regasification terminal to the Southern California market via an interconnect with TC Energy's North Baja Pipeline.
  - North Baja Pipeline provides access to the Permian and San Juan basins via an interconnection with Kinder Morgan's El Paso Natural Gas Company (EPNG) at Ehrenberg, Arizona.

Rapid growth in wind and solar capacity drive declines in electric demand for natural gas, while exports offset some of the decline

US West demand (MMcf/d)



US West demand relative to 2023 (MMcf/d)

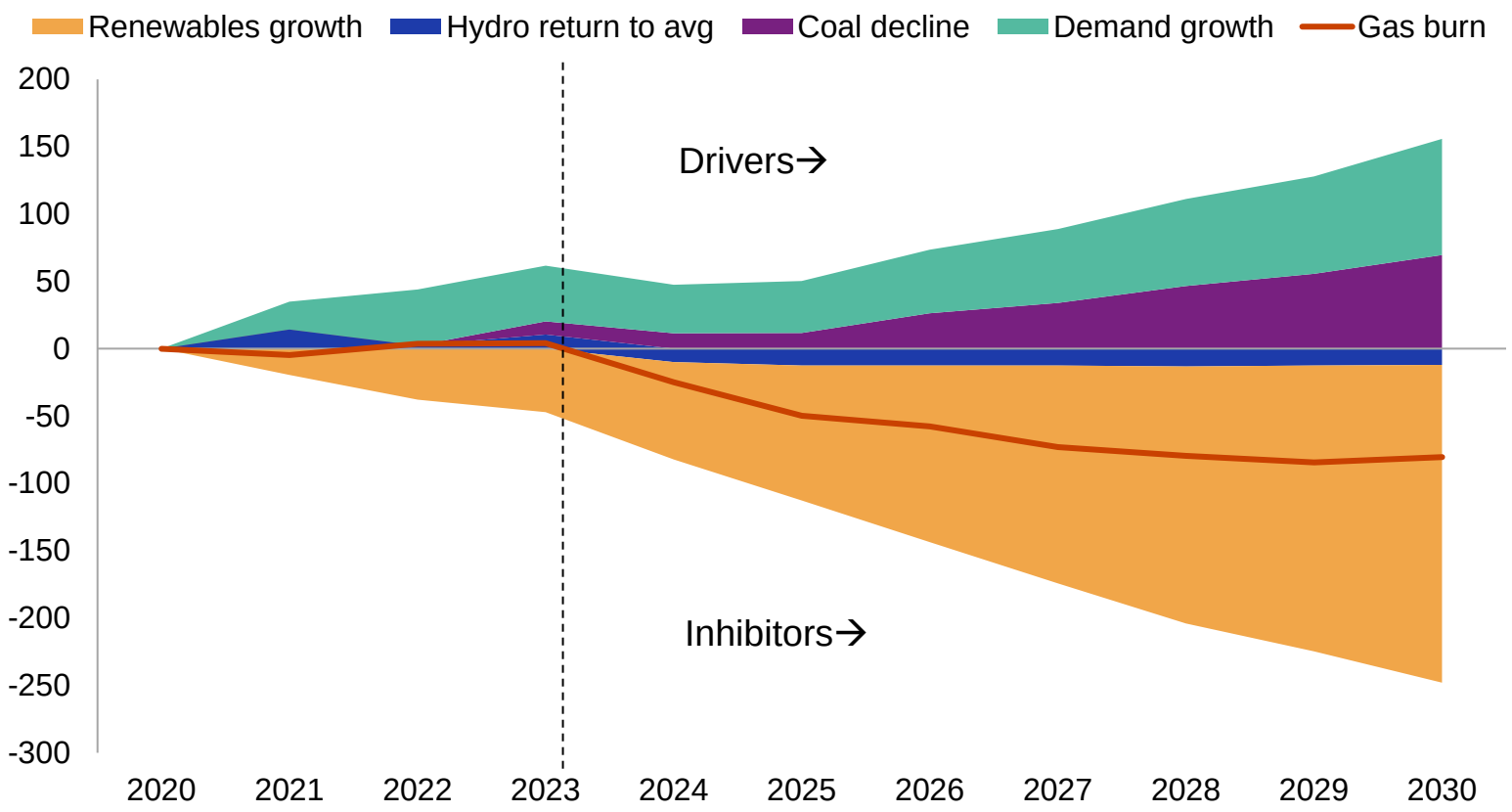


As of August 8, 2024.
Source: S&P Global Commodity Insights, EIA.

S&P Global
Commodity Insights

US WECC gas burn declines 40% through 2030 as rise in renewable generation outpaces combined effect of coal decline and load growth

US WECC gas burn drivers relative to 2020 (TWh)



Data compiled March 2024
Source: S&P Global Commodity Insights.

Weather-related factors have propped up gas burn recently

- Strong HDD/CDD in 2022/23
- Down year for renewables in 2023
- WECC-wide hydro below average

Upside risks going forward:

- Demand growth (2% = break even)
- Slower renewables growth
- Continued drought

Headwinds increase post-2030

- Coal fleet mostly retired
- Offshore wind ramps up

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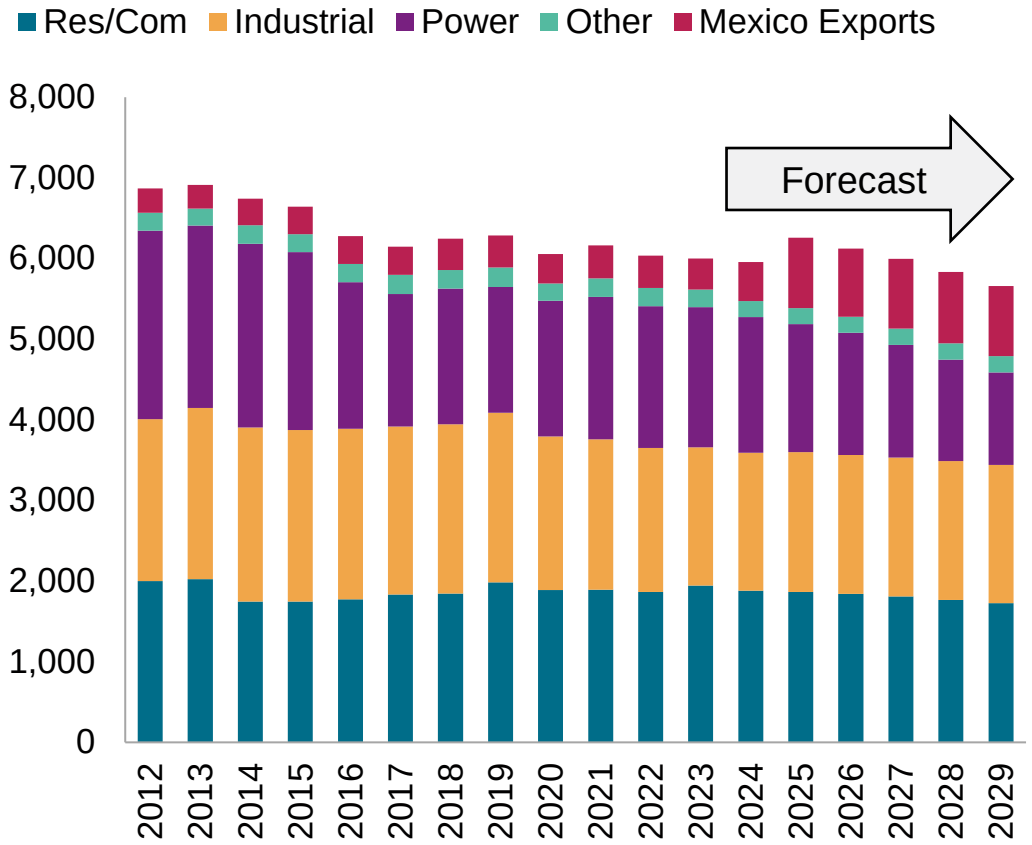
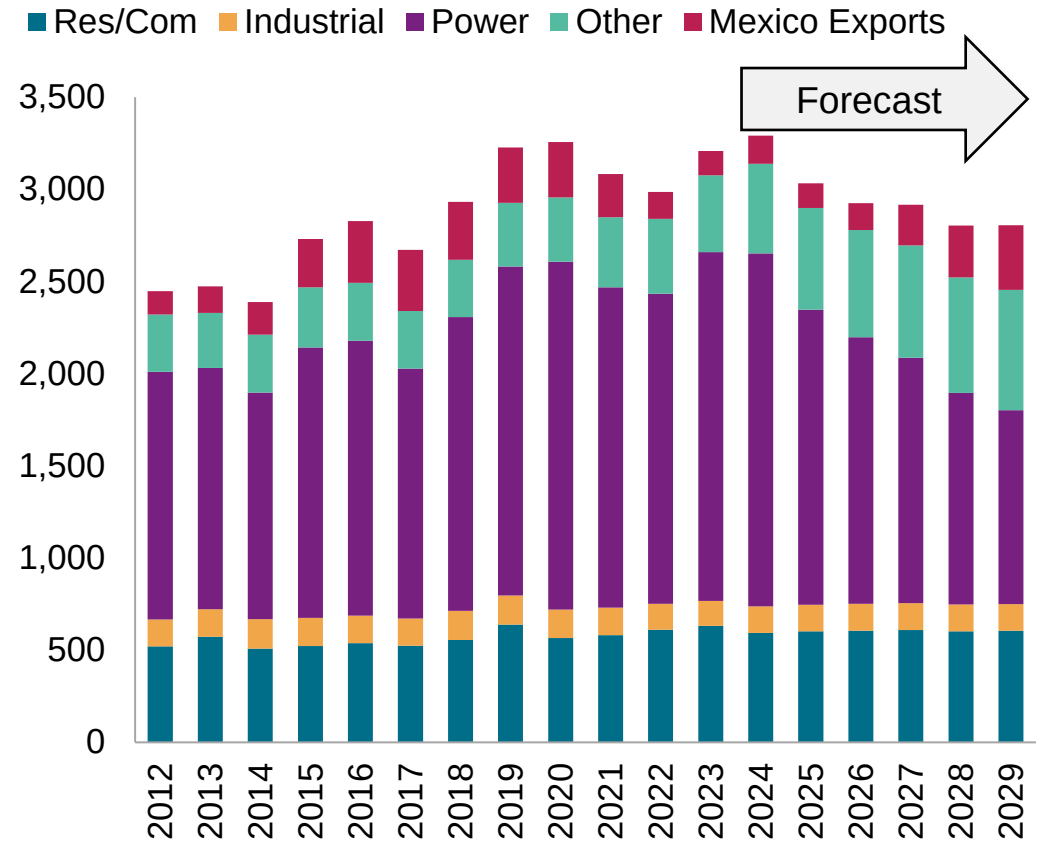
California and Desert Southwest demand profiles to 2030

California demand (MMcf/d)



Desert Southwest demand (MMcf/d)



As of August 8, 2024.
Source: S&P Global Commodity Insights, EIA.

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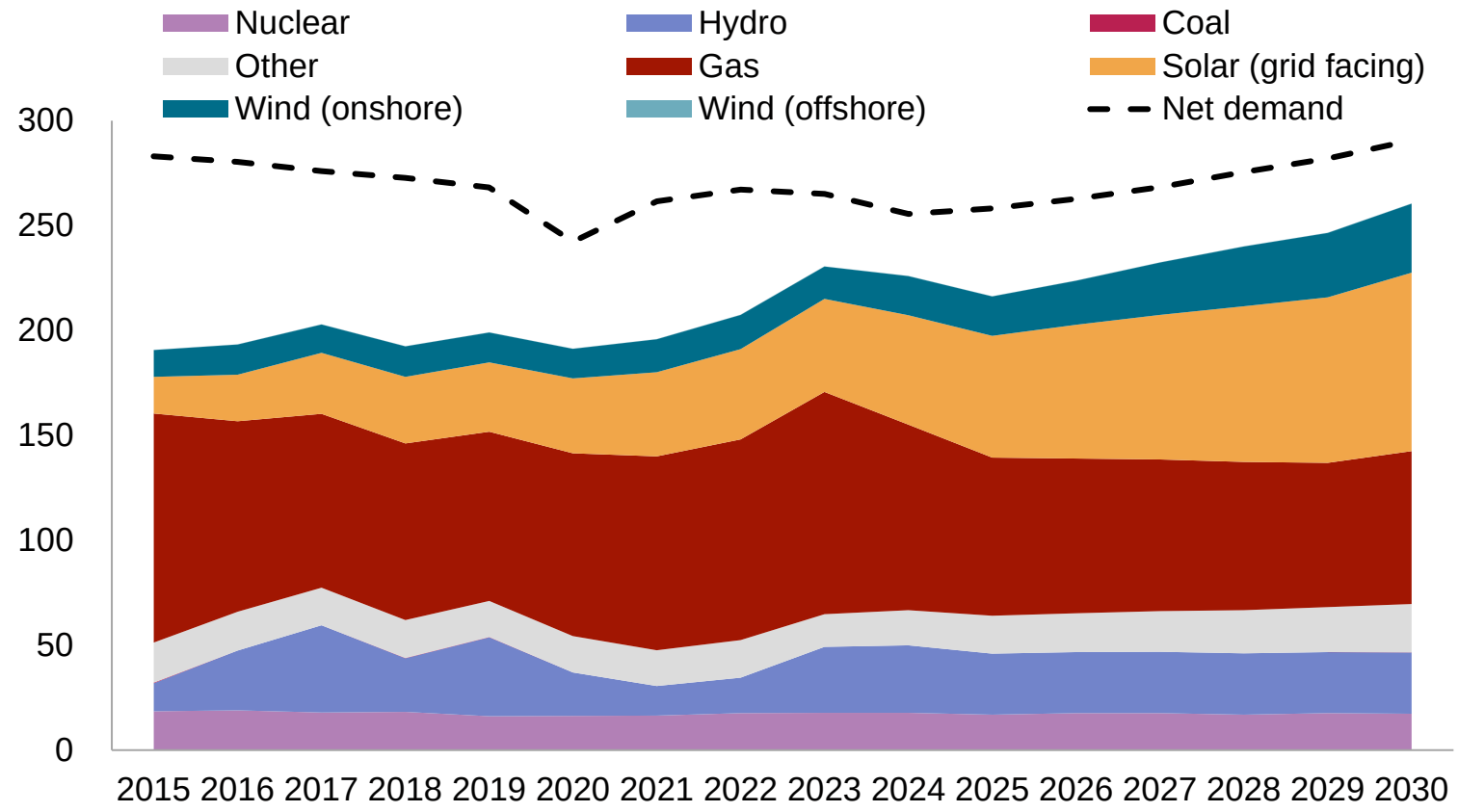
Gas generation declines modestly through 2030 as solar increases

California generation and net demand (TWh)



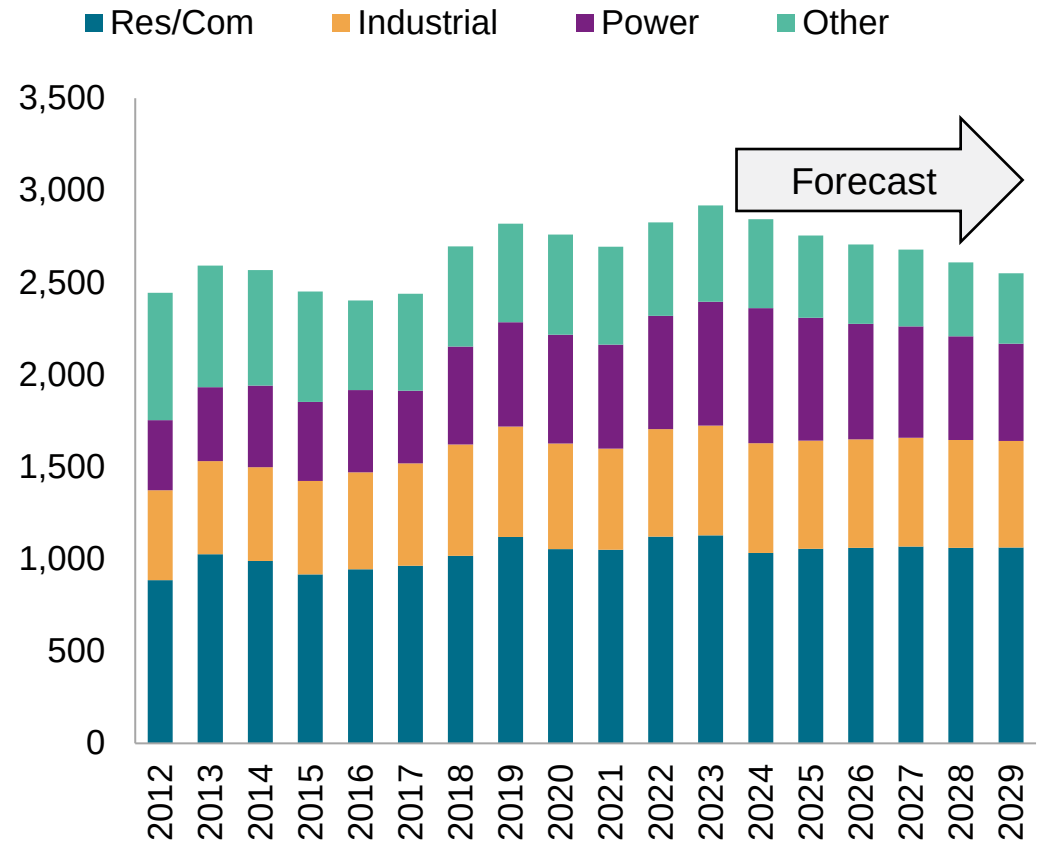
As of August 8, 2024.
Other includes oil, biomass and geothermal.
Source: S&P Global Commodity Insights, EIA.

Wind and solar ramp up to meet RPS and GHG reduction goals, driving down gas generation and emissions.

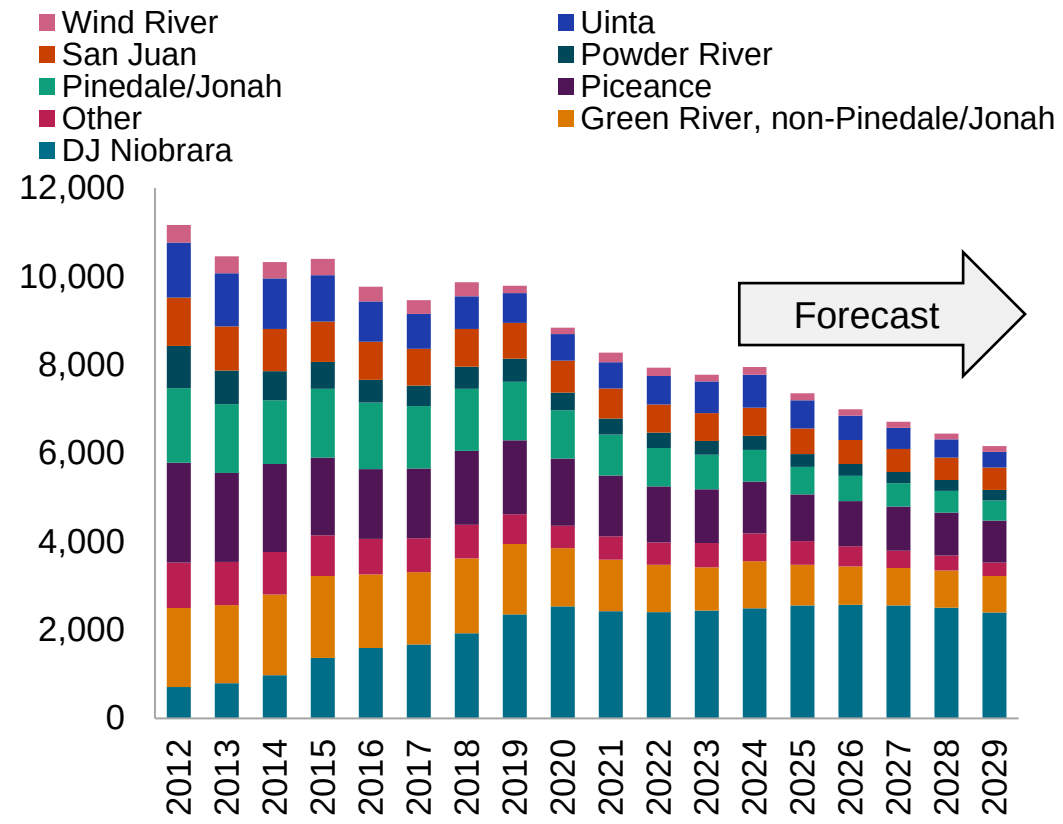
- Solar generation increases quickly through 2030 to meet the state's RPS target of 60% of retail sales.
- Gas CC capacity factors fall from 40% in 2024 to 36% by 2030.
- California met the CPUC's mandate of 33% RPS by 2020 and is on track to meet their 2030 target but will fall short of their goal of 100% carbon-free electricity by 2045.

Rockies supply and demand to 2030

Rockies demand (MMcf/d)

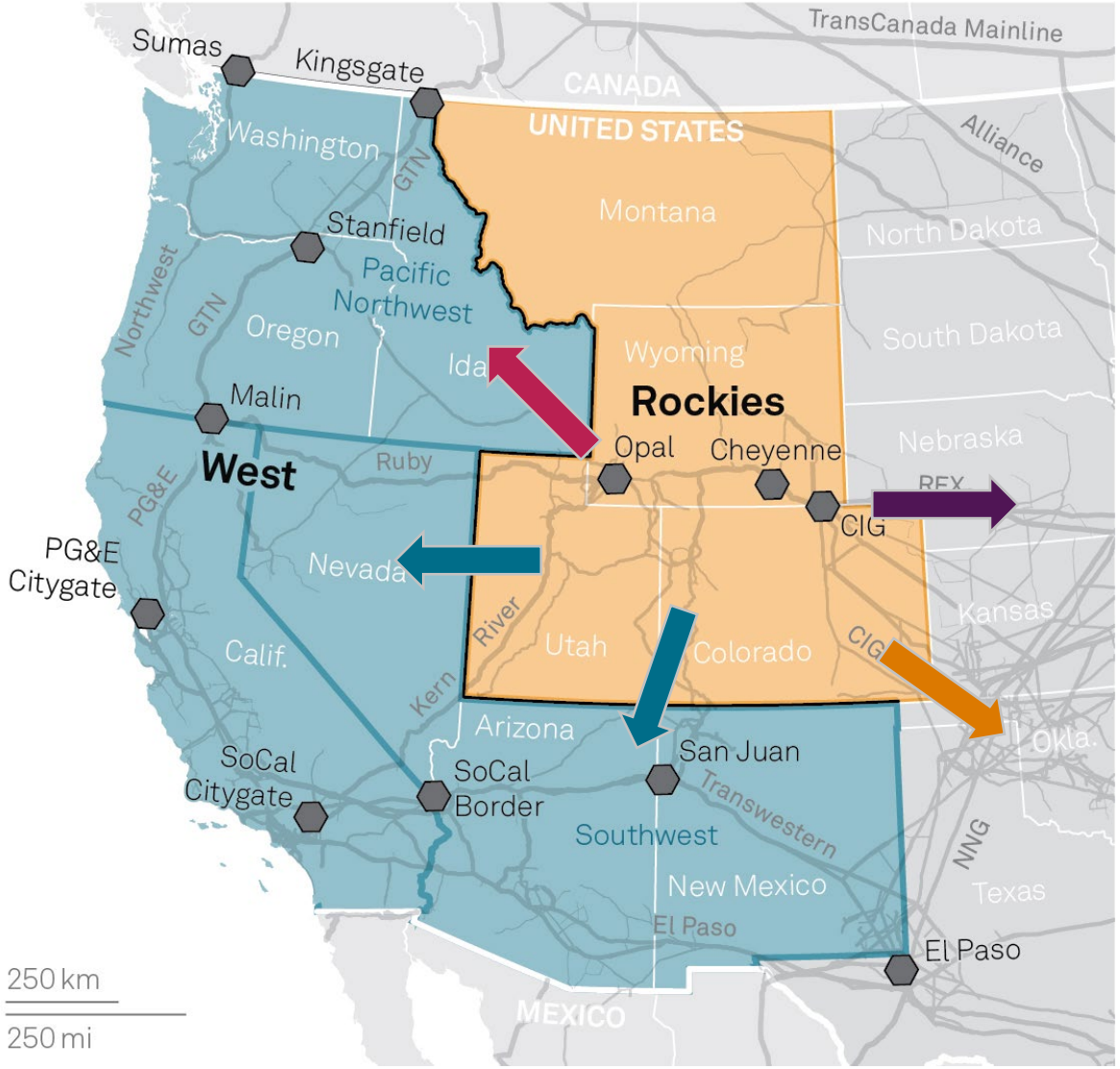


Rockies natural gas production (MMcf/d)

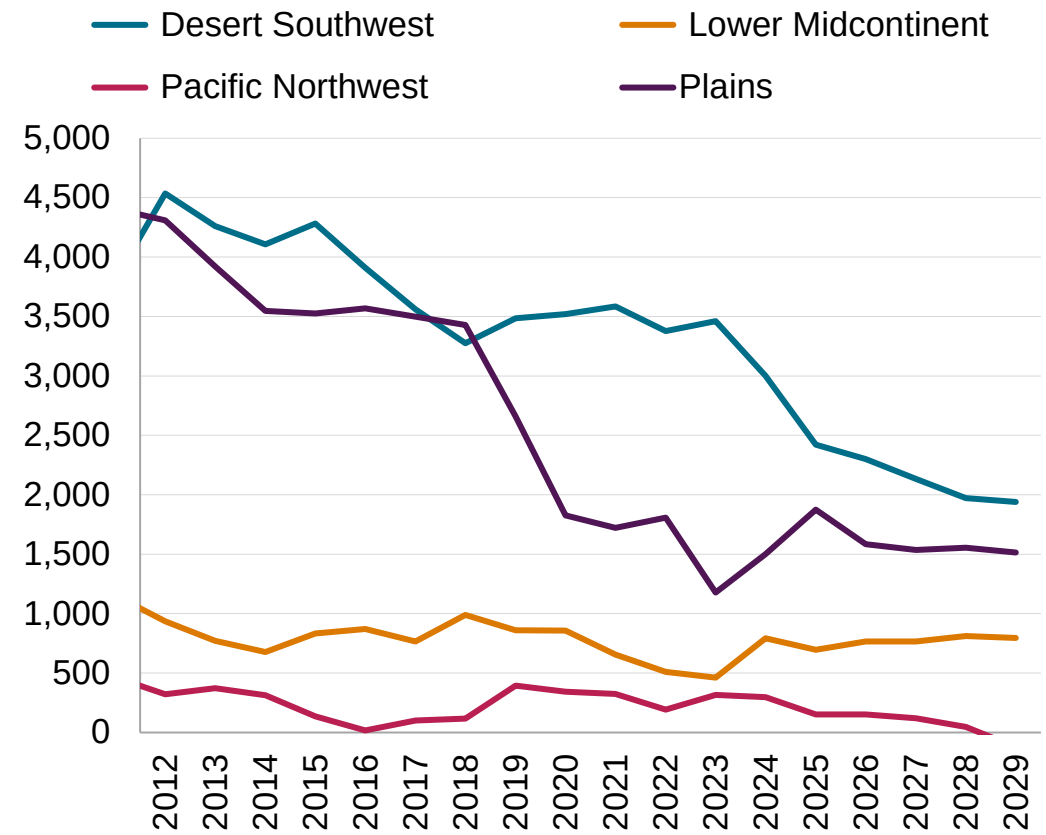


As of August 8, 2024.
Source: S&P Global Commodity Insights, EIA.

Rockies exports to adjacent regions



Rockies exports (MMcf/d)



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Closing Comments

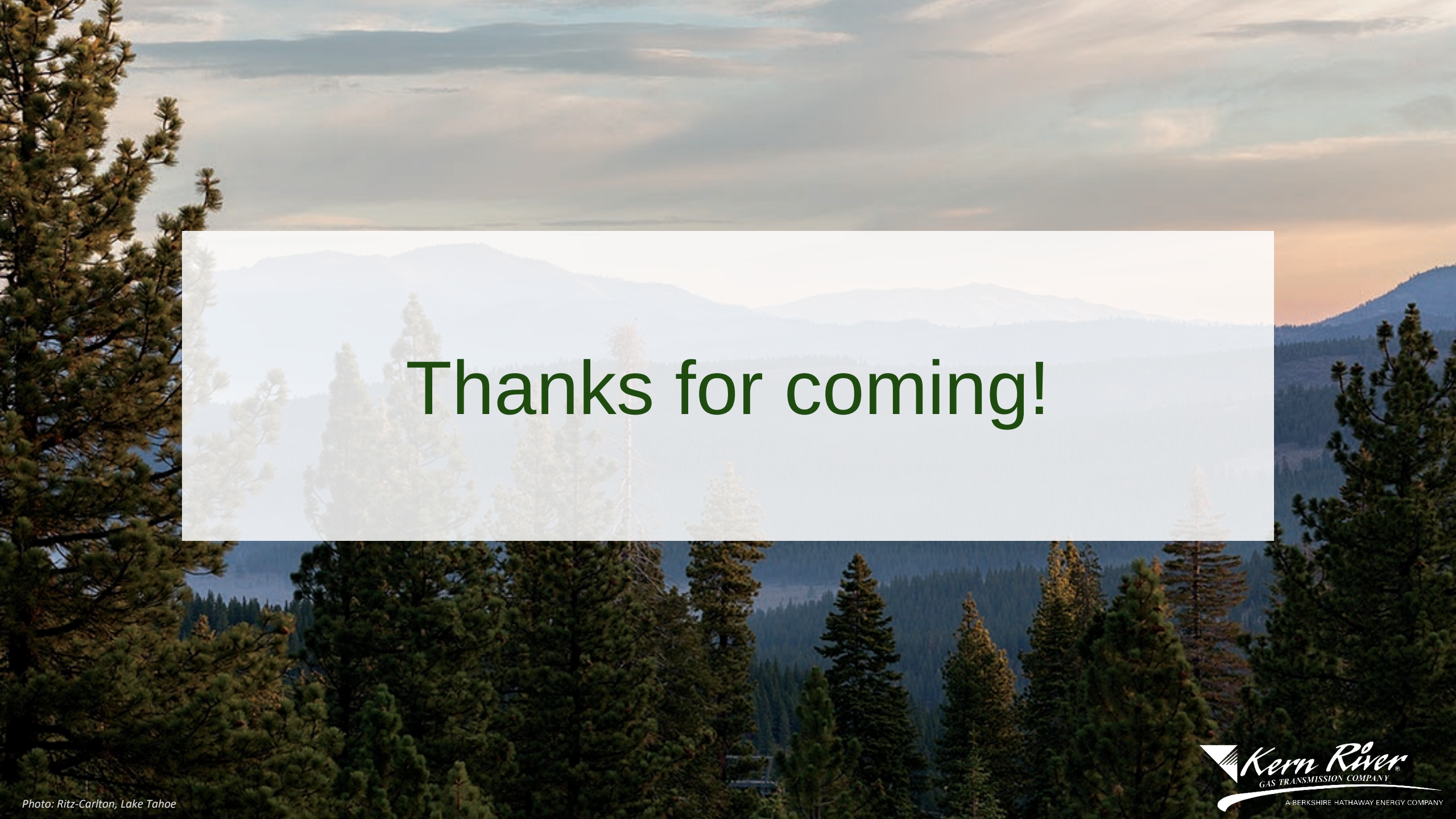
Mac McGuire

Vice President, Customer Service
& Business Development

Kern River Gas Transmission Company

Photo: Ritz-Carlton, Lake Tahoe

Kern River
GAS TRANSMISSION COMPANY
A BERKSHIRE HATHAWAY ENERGY COMPANY



Thanks for coming!

Photo: Ritz-Carlton, Lake Tahoe

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