



Ohio Energy Saving and Management Conference

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Vice President Sustainability Solutions

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Constellation's Value Proposition



Enduring Businesses Ready to Meet The Climate Crisis

- World-class nuclear operator and largest U.S. generator of 24/7 carbon-free firm electricity with ability to extend asset lives
- Leading provider of energy solutions to commercial and industrial customers
- Strong advocate for, and ideally situated to benefit from, energy policies that drive the transition to carbon-free energy

Delivering Value For Our Shareholders

- Strong free cash flows, optimized through industry-leading operations, support of carbon-free energy and focus on costs
- Disciplined capital allocation strategy supports strong investment grade balance sheet, growth investment consistent with corporate strategy, and return of capital to owners

Premier ESG Company

- ~90% carbon-free energy growing to 100% carbon-free by 2040
- Committed to advancing diversity, equity and inclusion in our workplace and communities
- Maintaining the highest standards of corporate governance



Constellation at a Glance



Carbon-Free Generation Fleet:

- #1 provider of carbon-free 24/7 energy in the United States
- Lowest carbon emissions and carbon intensity generator in the United States
- 32,355 MWs of total generating capacity
- ~126 million metric tons of carbon avoided ⁽¹⁾
- 94.8% capacity factor at nuclear plants
- Ability to extend fleet to 80 years providing 24/7 carbon-free power through 2050 and beyond



Industry Leading Customer Business:

- #1 in market share for C&I customers (2)
- #2 retail electricity provider (2)
- #3 in market share for mass market customers (2)
- Ranked #1 Overall Retail Energy Supplier ⁽³⁾
- Top 10 natural gas provider in the U.S.
- Serves ¾ of the Fortune 100
- ~2 million total customers
- 208 TWhs of load served
- Operates in 48 states and the District of Columbia



Supporting our Communities:

- Fortune 200 company, based on \$24.4B in operating revenues in 2022
- Approximately 13,400 employees nationwide
- Employees volunteered over 80,000 hours in 2022
- Donated more than \$12.5M to charitable causes, including \$4.6M from employee contributions
- Increasingly diverse workforce, with strong diverse hiring and promotion rates and community workforce development partnerships

Note: Numbers reflect year-end 2022

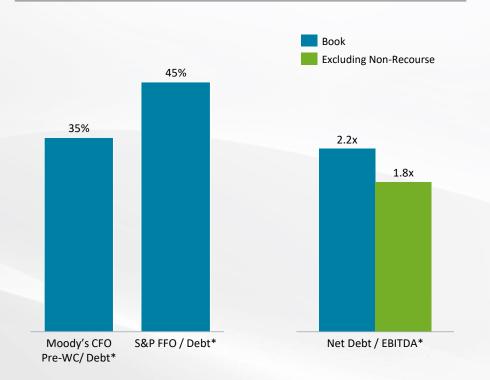
- (1) Measured using the EPA Greenhouse Gas Emissions calculator https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator
- 2) Per DNV's 2022 Market Share Landscape report
- 3) Per DNV's 2022 Energy Blueprint: Sales Strategies report, Constellation ranked #1 in pre-sale support, pricing and contracting, and after sale service



Constellation's Strong Balance Sheet Recognized by S&P's Upgrade to BBB+

2023E Credit Metrics (1)

Current Credit Ratings



Moody's	Baa2; positive outlook
S&P	BBB+; stable outlook ⁽²⁾

Share Repurchase Update

Under our \$1 billion authorization for share repurchases, we have deployed ~\$750 million to repurchase ~8.5 million shares through Q3

Note: Forecasted year-end debt is ~\$8.3 billion, including 2023 financings

- (1) Credit metrics forecast as of Fourth Quarter 2022 Earnings Conference Call disclosure
- (2) Credit rating upgraded by S&P to BBB+ on November 22, 2023



Firm Nuclear Power Plays a Unique Role in the Fight Against the Climate Crisis



Firm Carbon-Free Nuclear power provides firm carbon-free electricity while displacing fossil fuels in applications requiring a continuous power supply



Resilient
Nuclear power has
onsite fuel for 18-24
months, providing
resilient and reliable
power every season, no
matter the weather



Variable Renewables
Nuclear power can
support higher
deployment of variable
wind and solar
generation without the
need for backup capacity
from fossil fuel
generation

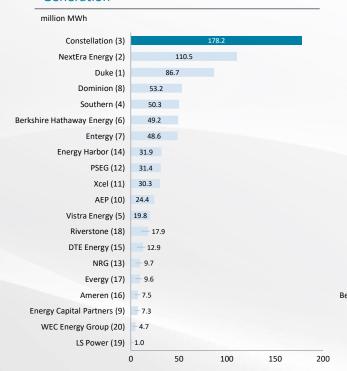


License Renewals Second license renewals will extend carbon-free production to 80-years – more than 3 times the useful life of renewables and 2 times the useful life of coal

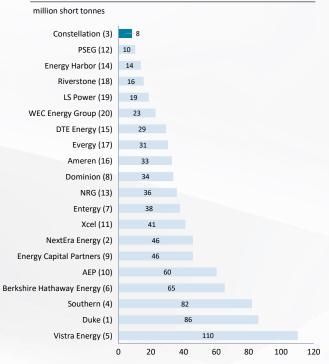


Constellation is the Largest Producer of Carbon-Free Electricity in the United States

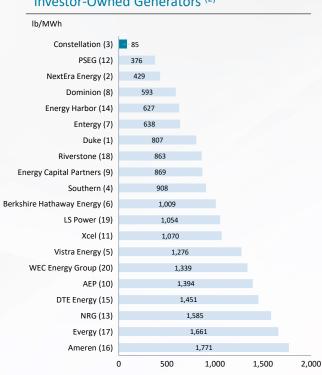




Lowest CO₂ Emissions Among Major Investor-Owned Generators ⁽²⁾



Lowest Carbon Intensity Among Major Investor-Owned Generators (2)

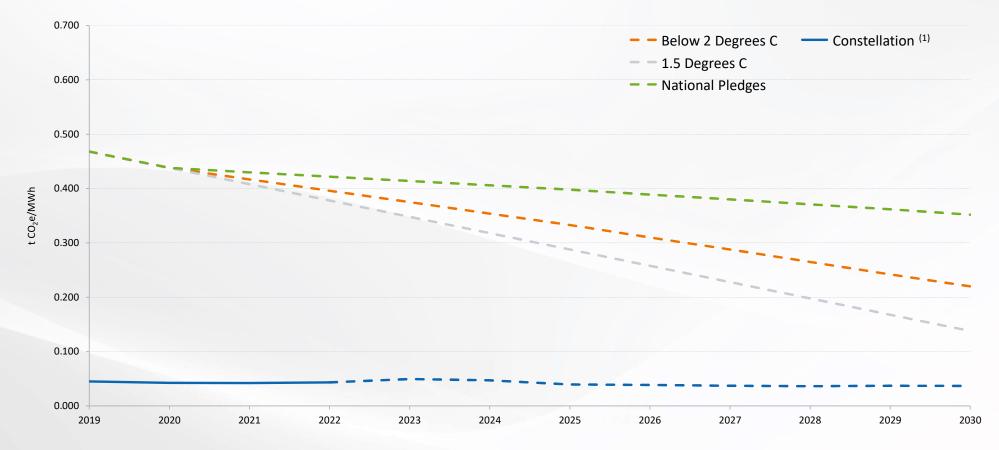


⁽¹⁾ Reflects 2021 regulated and non-regulated generation. Source: Benchmarking Air Emissions, November 2023: https://www.ceres.org/resources/reports/benchmarking-air-emissions-100-largest-electric-power-producers-united-states-2023



⁽²⁾ Number in parentheses is the company's ranking among the 20 largest investor-owned producers (total MWh) in 2021, i.e. Constellation was the third largest generator in 2021

Constellation's Emissions are Already Significantly Below Paris Climate Agreement Levels



Reflects Transition Pathway Initiative data as of July 20, 2023: https://www.transitionpathwayinitiative.org/sectors/electricity-utilities

(1) 2023-2030 reflects projected emission intensity adjusted for publicly announced fossil retirements, based on actual emissions intensities in CY2022



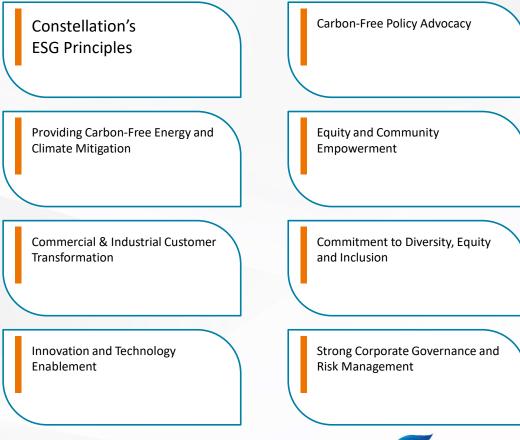
Constellation

Constellation's ESG Principles

Our Value Proposition and ESG Principles

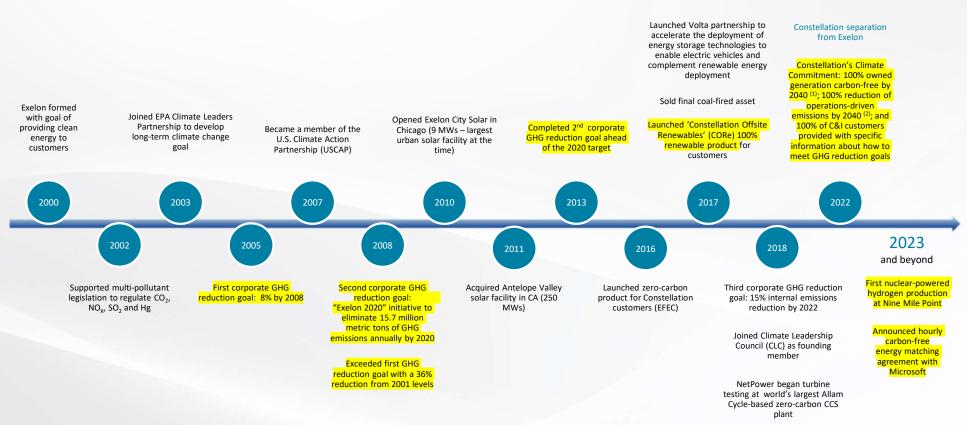
Constellation is positioned to deliver long-term value for our shareholders through our enduring businesses that are ready to meet the climate crisis. We are leading the transition to a carbon-free future as one of the largest providers of energy solutions to commercial and industrial (C&I) customers and the largest producer of carbon-free power in the U.S. Furthermore, our fleet is uniquely situated to be the reliable, baseline carbon-free energy source of the energy transition. We are proud of our history of actively working to reduce our emissions and improving the value, longevity and output of our assets through policy leadership, technology and innovation. Based on this foundation, Constellation is ideally suited to support our customers' ambitions to reduce their environmental impact and seek solutions to the climate crisis. Our disciplined capital allocation strategy supports a strong investment grade balance sheet, reinvestment in our business, growth investment consistent with our corporate strategy and return of capital to owners.

Our ESG principles are core to our business strategy and value proposition. Our values and ESG principles guide us in our central purpose. We are focused on driving action in these critical focus areas:





Accelerating the Transition to a Carbon-Free Future



Note: Events prior to 2022 occurred prior to Constellation's separation from Exelon Corporation

- (1) Subject to policy support and technology advancements
- (2) From a 2020 baseline. Any emissions that cannot be technologically reduced by that time will be offset.



Constellation's Climate Commitment

100%

100%

100%

Of our owned generation will be carbon-free by 2040

Reduction of our operations-driven emissions by 2040 (1)

Of C&I customers provided with specific information about how to meet GHG reduction goals

✓ Clean Energy Supply:

- Clean Electricity Supply: We commit that our owned generation supply will be 100% carbon-free by 2040; with an interim goal of 95% carbon-free by 2030 subject to policy support and technology advancements.
- Operational Emissions Reduction Goal: We aspire to reduce operations driven emissions by 100% by 2040 subject to technology and policy advancement
 - Interim target to reduce carbon emissions by 65% from 2020 levels by 2030
 - Constellation commits to reducing methane emissions 30% from 2020 levels by 2030, aligned with the Administration's global methane pledge
- Supply Chain Engagement: Partner with our key energy suppliers on their GHG emissions and climate adaptation strategies

✓ Clean Customer Transformation:

- Prior to the end of 2022, we successfully delivered on our commitment to provide 100% of our C&I customers with customer-specific information on their GHG impact for facilities contracting for power and gas supply from Constellation, that include hourly carbon-free energy matching
- Commit to support reductions in customers' gas emissions and a transition to low carbon fuels

✓ Technology Enablement and Commercialization:

Commit to enable the future technologies and business models needed to drive the clean energy economy to improve the health and welfare of communities through venture investing and R&D. We will target 25 percent or more of our investments in business enterprises led by minorities, women, veteran/service-disabled veterans and LGBTQ+ individuals and will require investment recipients to disclose how they engage in equitable employment and contracting practices, using performance as a factor when considering investments

(1) Any emissions that cannot be technologically reduced by that time will be offset; includes all GHGs except methane which is addressed in a separate methane reduction goal



Our Commercial Business: Who & What We Serve









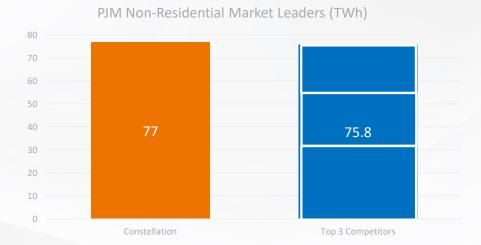
	Whol	lesale	C&I		Mass Markets	
Customers	Power Cooperative	Municipal Power Authorities	Large Commercial	Industrial	Residential	Community Choice Aggregation
Our Cus	Utilities	Financial Institutions	Public Sector	Small & Medium Commercial	Government Aggregation	Small Business
Competencies	generation to prov products • Highly tailored pro	 Expertise in sourcing contracted generation to provide customized products Highly tailored products and solutions Commodity and risk management 		 Strong direct customer and broker relationships High customer retention rates Industry-leading association relationships 		ions to address side needs services
Our	and hedging	sk management	Scalable platformBundled energy solution		Proven partnership	model

*2020 Data



Constellation is the Top Retail Energy Provider to Businesses in U.S.

- Largest non-residential supplier in the United States by volume (135 Annual TWh)
 - Constellation is also the largest non-residential supplier in the PJM region, serving more C&I volume than the next 3 competitors combined
- Top-rated energy supplier by the Aggregation, Broker and Consultant community
 - #1 overall rating among all energy suppliers
 - At the national level, highly rated across all 3 phases of the commodity sales cycle including pre-sales, pricing & contracting and after-sales service
 - Rated #1 in Pricing and Contracting in PJM



PJM Ranking: Pricing & Contracting

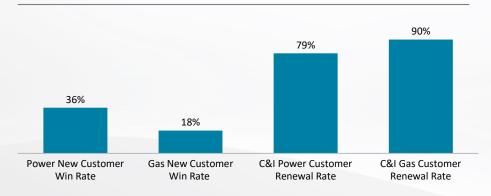
Rank	Supplier	Total Score
1	Constellation Energy	4.07
2 to 9	Rest of Market (average)	3.79

Source: DNV Competitive Energy Markets

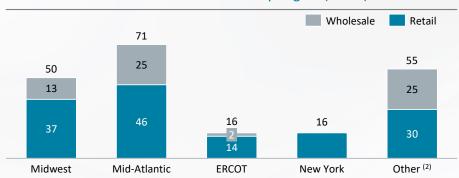


Leading Customer Platform Enables Customers to Meet Their Energy and Sustainability Needs

Leading Customer Operational Metrics (TTM) (1)



2022 Electric Load Served by Region (TWhs)



Our Experience and Capabilities Deliver Value to Our Customers and for Our Shareholders

Strong platform creates opportunities to help customers manage volatile energy markets

Volatility supports expanding customer margins

Successful load auctions

Comprehensive suite of products tailored to meet our customers' evolving needs

- (1) As of December 31, 2022
- 2) Other includes New England, South and West

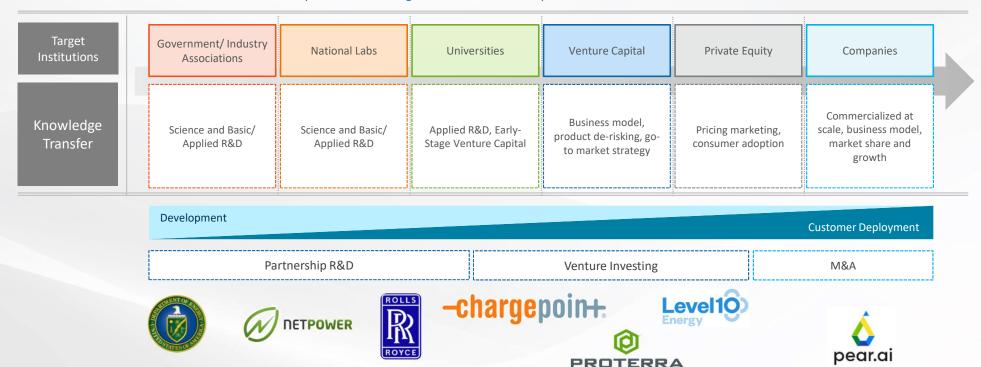
Hourly Carbon-Free Energy Matching Agreements

- Landmark agreement with Microsoft (announced June 2023) combines the environmental attributes of nuclear power with hourly carbon-free energy matching to help one of Microsoft's Virginia data centers operate on nearly 100% clean power.
- Agreement with ComEd enables ComEd to power its 54 facilities with reliable, carbon-free energy produced where and when it is used, marking another key step toward a carbon-free economy.
- Agreements are setting a new standard for how companies across the U.S. can achieve real emissions reductions and is proof that hourly, regional matching of clean energy to demand is both practical and feasible today with suitable infrastructure and energy innovation.



Committed to Enabling Technology Development

Constellation's culture of innovation is advancing the energy transition by enabling new technology, forging strategic partnerships, investments and acquisitions to bring the next innovative product to our customers





Our C&I Concentration is a Core Strength

Financial Stability



- Predictable load and stable unit margins
- Repeatable business with high retention and win rates
- Insulation from weather-driven volatility
- Maximized cash flows from high customer satisfaction and win and renewal rates

Scalable Platform



- Broad suite of energy, sustainability, and analytics solutions for customers
- Lower customer acquisition and services costs allows for scalability

Strong Foundation for Growth



 Best positioned to sell sustainability and carbon-free products due to our strong customer relationships







2024 Global Macro Risks



US elections: President, Congress

Onshoring

Increasingly strained relations with China and Taiwan

Israel – Hamas War – Middle East

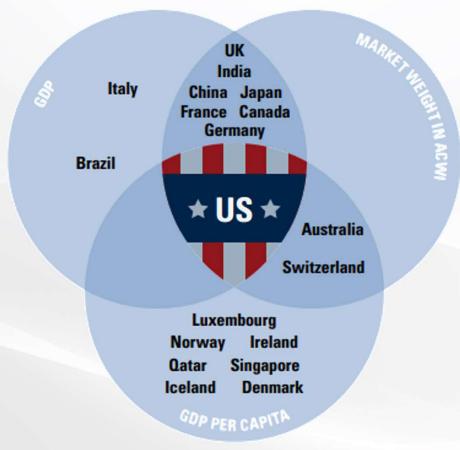
Ukraine War stalemate

Political instability – Elections in 70+ countries

Growth stagnation in China



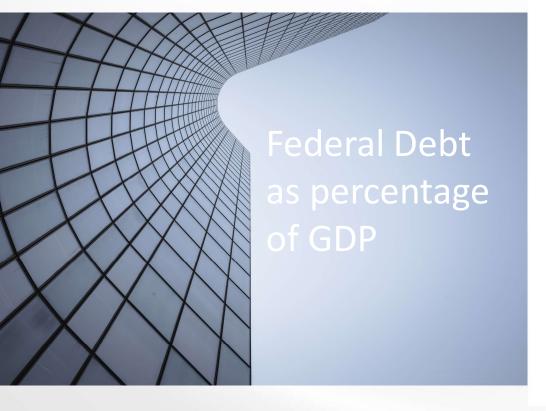
Top 10 Countries based on GDP, GDP per Capita & Market Weight



Data as of December 31, 2023

Source: Investment Strategy Group, Datastream, IMF World Economic Outlook.





Federal debt as a share of GDP has increased from a pre-GFC low of 35% in 2007 to 98% in 2023.



Data through 2023.

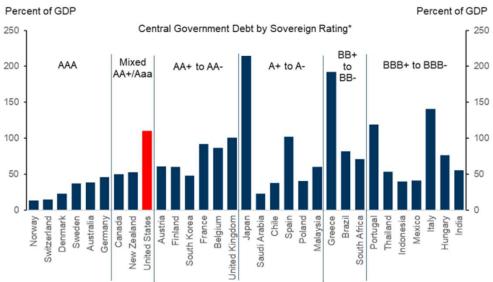
Note: 2023 data is a CBO estimate.

Source: Investment Strategy Group, Haver Analytics.





Central Government Debt by Sovereign Rating*

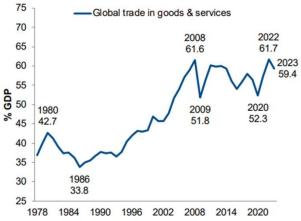


* Mixed AA+/Aaa represents countries that have at least one rating of the highest grade and other ratings below the highest.

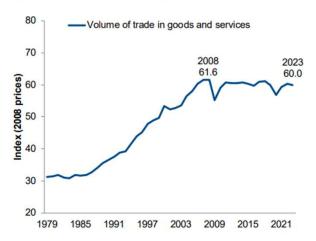




1. Global Trade in Goods & Services – 1978-2023 (% World GDP)



2. Global Trade in Goods & Services – 1978-2023 (% World GDP, constant prices)



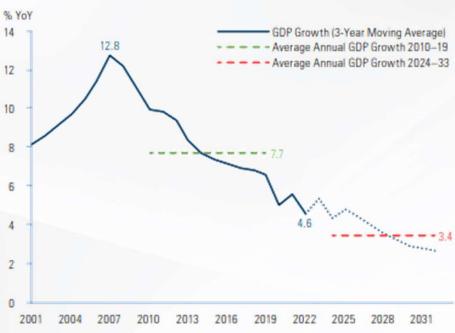
- Globalization, defined as the sum of world exports and imports as a share of world GDP, has plateaued since 2008.
- Since 2008, the global trade-to-GDP ratio in nominal USD terms has fluctuated between 51.8% and 61.7%. Those fluctuations are in large part due to relative price movements. In volume terms, the ratio has been more stable and declined modestly.





Source: Goldman Sachs – January 2024 Investment Strategy Group Outlook

China's growth rate peaked in 2007 and has been on a steady decline since.



Data through 2022. Forecast through 2033.

Source: Investment Strategy Group, Haver Analytics.

Note: Forecasts have been generated by ISG for informational purposes as of the date of this publication. There can be no assurance the forecasts will be achieved.

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Supply & Demand Fundamentals

What is Driving Gas & Power Prices?





Natural Gas Pricing Trends

US & Saudi Oil Production including Natural Gas Liquids

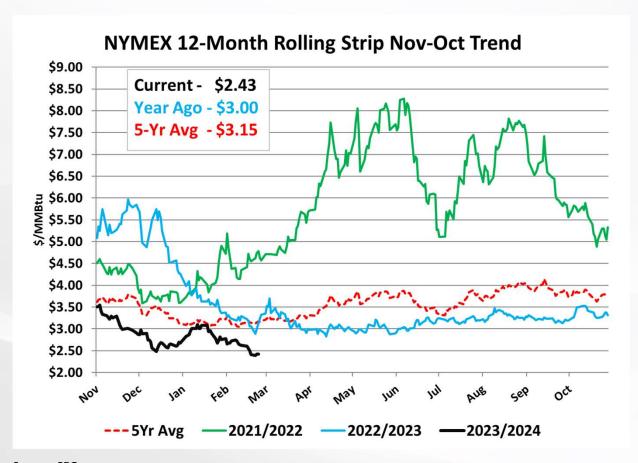


Data through 2022.

Source: Investment Strategy Group, Energy Institute's Statistical Review of World Energy, IEA.



NYMEX 12-Month Sinks Back Below 5- Year Avg



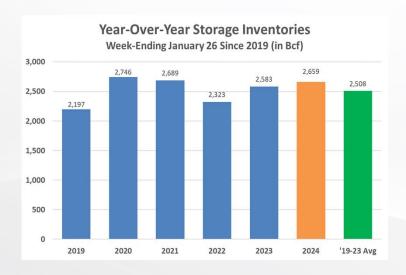
Key Takeaway:

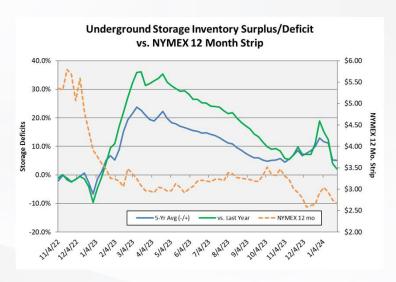
The overall bearishness in the market is not only impacting prompt month and balance of winter thru March 2025; it's also having a ripple effect in 2025 and 2026.

Source: CEG



Storage: Winter Fading





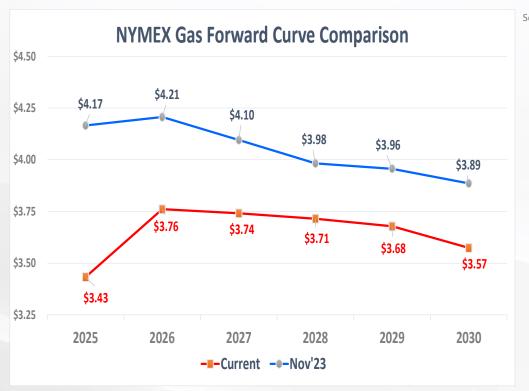
- Storage stands at 2,584 Bcf for week ending Feb 2nd after a withdraw of 75 Bcf. The Feb 9th draw was in line with estimate of 76 Bcf as weather has turned warmer.
- The surplus vs. last year expanded from 54 to 187 Bcf (8%) and the five-year average surplus doubled from 5% to 10%. EIA's Feb STEO lowered end of March storage from 2,155 Bcf to 1,905 Bcf. A mild February my push it back closer to 2 Tcf.

Customer Takeaway: Storage has seen the peak of winter and now the lack of cold air in Canada has removed the risk in the short term of additional cold air.

Sources: EIA



NYMEX Forward Curve Since Start of Winter



Source: CEG

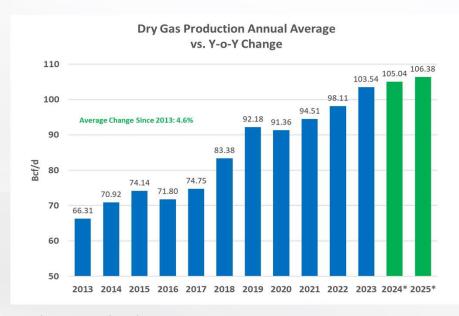
NYMEX	Current		Nov'23	
Average	\$	3.65	\$	4.05

vs. Nov'23		
Year	\$ Chng	% Chng
2025	(\$0.73)	-18%
2026	(\$0.45)	-11%
2027	(\$0.35)	-9%
2028	(\$0.27)	-7%
2029	(\$0.28)	-7%
2030	(\$0.31)	-8%
Avg	(\$0.40)	-10%

Key Takeaway: Since the beginning of Winter in early-Nov'23, the NYMEX forward price curve has dropped an average of 10% through 2030, with 2025 18% lower since then and 2030 8% lower.



EIA Expects 1.5% Production Growth in 2024, Rigs Flatten



*EIA Forecast (Jan 9)

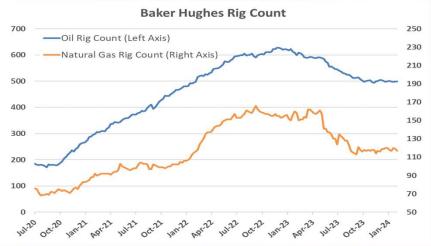
Key Takeaway: Flattening rig counts and modest budget growth from producers in 2024 point towards a deceleration in output for the year. The industry may pick up tailwinds from more operator consolidation and always-improving technologies and drilling efficiencies making the supply-side of the balance sheet murky.

According to the EIA's January Short-Term Energy Outlook, the 2023 production average came in at 103.5 Bcf/d with a near steady climb from January's 101.9 and finishing December at 104.66

Expect its 2024 forecast to move around slightly from its current 105 Bcf/d and its marginal 1.3 increase in 2025.

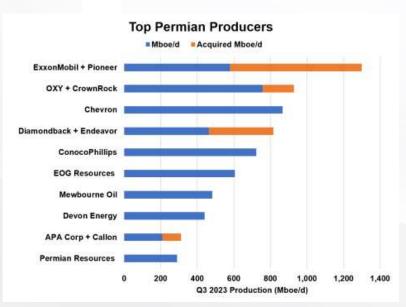
Rig counts have flattened out since September 15 with oil rigs in a 10 rig range from 497 to 507 and latest reading at 499.

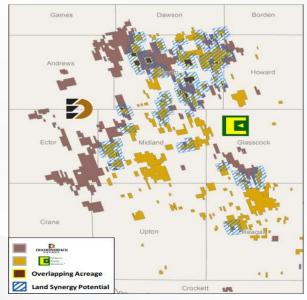
• Natural gas rigs have also been a narrow 6 rig range from 114 to 120 with 117 the most recent count.





Mergers & Acquisitions Remain Elevated





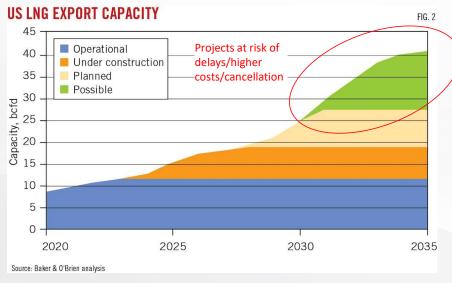
- On Feb 12th Diamondback announced its \$26 billion purchase of privately held Endeavor Energy Resources to create the 4th largest Permian producer of 816 MBOE/d with 6,100 wells with a breakeven of less than \$40/bbl.
- Diamondback's move follows 2023's Exxon/Pioneer, Chevron/Hess Oxy/Crown Rock, APA/Callon along with Southwestern/Chesapeake forming a large enough gas producer to rival EQT Corp.

Key Takeaway: Diamondback continues the consolidation seen in 2023 within the oil and gas producer's seeking top-tier acreage (Endeavor) along with reducing overhead to reduce capital costs.

Sources: RBN Energy, Diamondback, WSJ



Biden Administration Instructs DOE to Review LNG Approvals

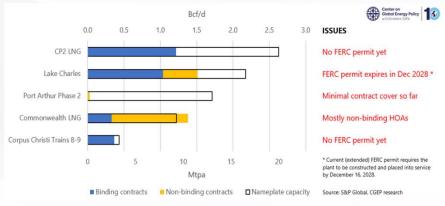


<u>Statement from President Joe Biden on Decision to Pause Pending Approvals</u> of Liquefied Natural Gas Exports | The White House

Customer Takeaway: Net market impacts are not yet known as this amounts to only a freeze on authorizations. Results of the review will ultimately determine the fate of long-term LNG exports in the US. What was a seemingly freight train of natural gas growth heading down the tracks has caught a smidge of headwinds due to sustainability and politics. More to come on this issue...

- A pause, announced on January 26, for any pending LNG export facility approval is expected to last several months as the Department of Energy will review the economic and environmental impacts of such projects seeking federal approval.
- This will not impact facilities currently under construction with all necessary approvals in hand meaning LNG export growth is still assumed to increase ~5 Bcf/d in the next 2-3 years.
- Projects looking to come online in 2027 and beyond could be most impacted by this (see "planned" and "possible" in left graph & below)

US LNG Export Projects Pending DOE Approval*



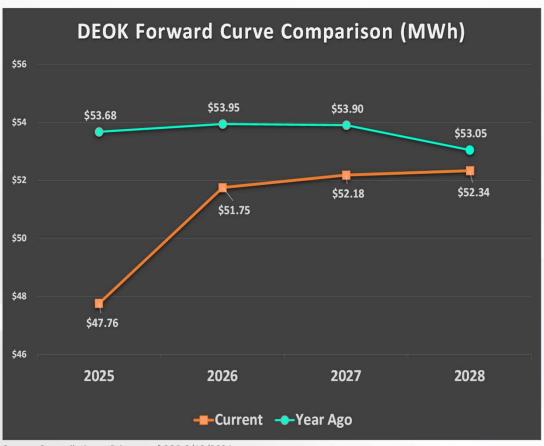






Power Pricing Trends

Forward Power Curve Over the Past Year



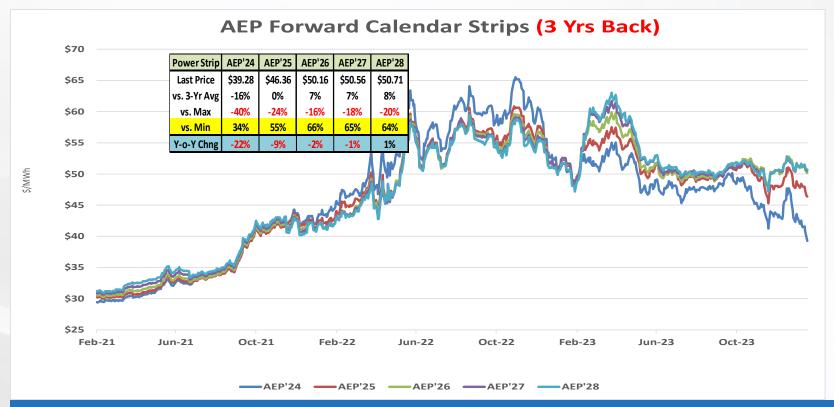
DEOK	Current		Year Ago		Sep'22	
2024	\$	39.68	\$	53.40	\$	52.87
2025	\$	47.76	\$	53.68	\$	49.04
2026	\$	51.75	\$	53.95	\$	48.37
2027	\$	52.18	\$	53.90	\$	48.16
2028	\$	52.34	\$	53.05	\$	47.56
Avg	\$	48.74	\$	53.60	\$	49.20

Year Ago		
Strip	\$/Chng	% Chng
2024	(\$13.72)	-26%
2025	(\$5.91)	-11%
2026	(\$2.19)	-4%
2027	(\$1.72)	-3%
2028	(\$0.71)	-1%
Avg	(\$4.85)	-9%

Source: Constellation Prices as of COB 2/13/2024



Midwest Forward Power Pricing

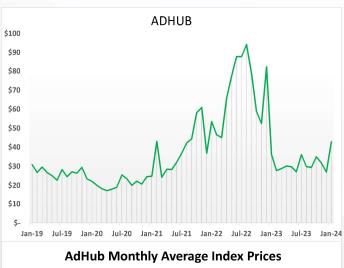


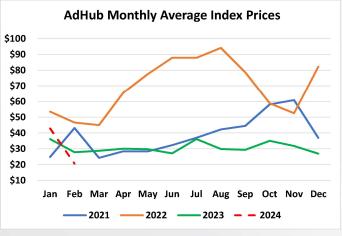
Key Takeaway: Forward power prices in AEP have been consolidated and trading sideways for the better part of the past year until now where the bearishness in the market is starting to take hold.

Source: CEG



Day Ahead Index Settlement Price History





ADHUB	2021	2022	2023	2024
Jan	\$24.80	\$53.52	\$ 36.21	\$42.92
Feb	\$43.16	\$46.61	\$ 27.84	\$20.64
Mar	\$24.26	\$45.06	\$ 28.81	\$ -
Apr	\$28.44	\$65.64	\$ 30.14	\$ -
May	\$28.42	\$77.57	\$ 29.80	\$ -
Jun	\$32.28	\$87.93	\$ 27.14	\$ -
Jul	\$36.98	\$87.91	\$ 36.16	\$ -
Aug	\$42.27	\$94.25	\$ 29.89	\$ -
Sep	\$44.51	\$78.79	\$ 29.37	\$ -
Oct	\$58.12	\$58.81	\$ 35.07	\$ -
Nov	\$60.91	\$52.55	\$ 31.85	\$ -
Dec	\$36.90	\$82.31	\$ 27.00	\$ -
Avg	\$38.42	\$69.25	\$ 30.77	\$31.78
Change	N/A	80%	-56%	3%

Source: Constellation. Prices as of COB 2/15/2024.







Sustainability Trends & Challenges

U.S. is Rapidly Decarbonizing





Federal government will procure

100%
carbon pollution-free 24/7 electricity by





60% of FORTUNE
500 companies have set climate and energy goals

\$100B per year needed in clean energy investment to reach 90% clean energy by 2035





Businesses are Demanding Carbon-Free Energy Products and Solutions



60% of the Fortune 500 have set a target related to GHG emission reduction, a 12% increase since 2017, according to World Wildlife Fund



JP Morgan created a methodology called Carbon CompassSM which establishes Paris-aligned targets to reduce carbon intensity in Oil & Gas, Electric Power and Auto Manufacturing portfolios by 2030



"A Fifth of World's Largest Companies Committed to Net Zero Target"

Forbes



Bloomberg targets to become the first one-stop-shop for sustainability data



The State Department's Clean Energy Demand Initiative (CEDI) is "bringing corporations and countries together in pursuit of their climate and energy goals"



Over 200 Companies have signed The Climate Pledge to reach the terms of the Paris Agreement 10 years early



"Given how central the energy transition will be to every company's growth prospects, we are asking companies to disclose a plan for how their business model will be compatible with a net zero economy."

— Larry Fink,

CEO Blackrock



Clean Energy Buyers Alliance, which is comprised of nearly 300 members, has committed to achieving a 90% carbon-free U.S. electricity system by 2030



The Ceres Ambition 2030 initiative is working to decarbonize six of the highest-emitting sectors

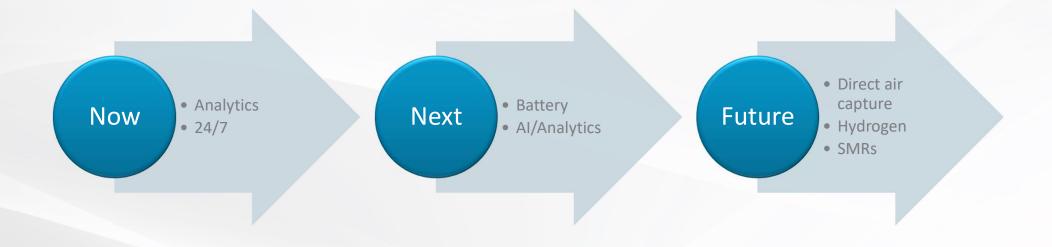


Constellation Provides Industry-Leading Sustainability Solutions

Providing solutions for our customers to -Support carbon-free energy generation Simplify complete energy solutions Manage customer price risk Annual REC's Matching **Efficiency Solutions** Firm Carbon-Free Energy Renewables **Total Carbon Accounting** The **Hourly Carbon-Free Future** Energy (CFE) Constellation has developed a broad suite Matching of zero-carbon solutions for customers and continues to innovate through use of digital tools and analytics.



Roadmap will Continue to Evolve over time





Developing an Integrated Value Proposition to Meet Sustainability Goals





Global Warming

In 2023, there were 28 weather and climate disasters with damages totaling \$1 billion or more, a record high, according to the latest <u>report</u> by the National Oceanic and Atmospheric Administration's National Centers for Environmental Information. These weather disruptions collectively cost \$92.9 billion in damages, an estimate adjusted for inflation, the agency found.

"It's clear that not only are climate hazards happening more often, but they're happening more often in places where people live, which is why we're seeing all of these damages increase over time," said Jeremy Porter, head of climate implications research for First Street Foundation, a nonprofit organization in New York.



Rapidly Increasing Power Demand

Industry Data Center Load Growth Forecasts +235% 57 60 **Industry forecasts** +165% data center load will 50 45 increase 2-3x above Data Center Demand (GW) +106% +106% 2022 levels by 2030 +30% 35 35 30 2022 23 2030 17 17 10 S&P Global BCG McKinsey Newmark Altman Salon Sources: (1) BCG; (2) McKinsey; (3) Newmark; (4) Altman Salon*; (5): S&P Global *Note: Altman Salon 2030 value extrapolated from 2027 data.



SBTi Double Corporate Climate Validations in One Year as Scale up Gathers Pace



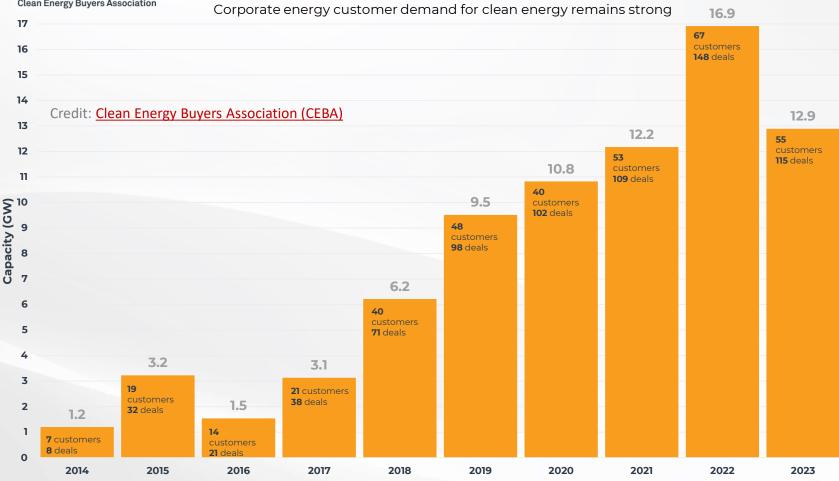
- 4,204 companies validated by the SBTi by end of 2023
- The SBTi awarded charitable status
- Sector-specific standards for high-emitting sectors to be developed
- O An independent Validation Council will be formed for target validations

The number of companies and financial institutions setting greenhouse gas (GHG) reduction targets and having them validated by the Science Based Targets initiative (SBTi) doubled in 2023 (up from 2,079 in 2022). This extraordinary demand for corporate decarbonization standards and target validation services has prompted a major scale-up operation to quickly develop a broader range of trusted, credible, emissions reduction standards and increase capacity for validating companies' targets, while aiming for the highest level of service excellence for companies and financial institutions.

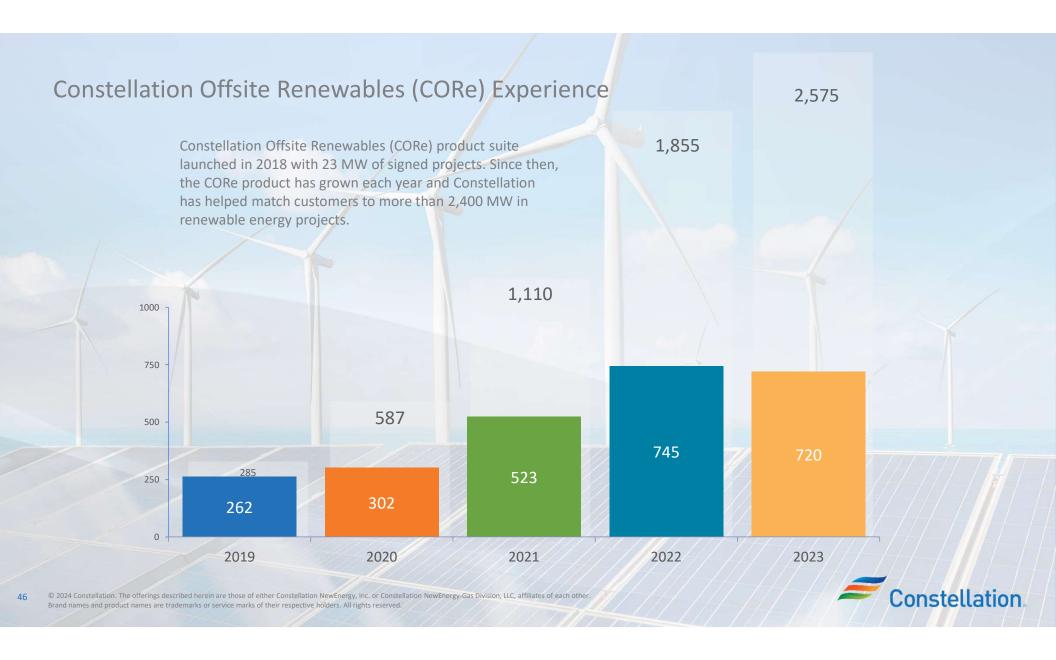




CEBA Deal Tracker







Headwinds remain in the Renewable Energy Market

Interconnection:

PJM Queue reform slowing new PPA projects.

Supply and Demand:

Renewable energy inventory is tight, driving prices higher.

Regulatory:

Federal and state

Largest, repeat purchasers dominate market

% of Corporate PPAs secured by top 5 buyers in recent years*

2022: 9.7MW/16.9MW

2021: 7.5MW/12.3MW

2020: 6.5MW/10.5MW

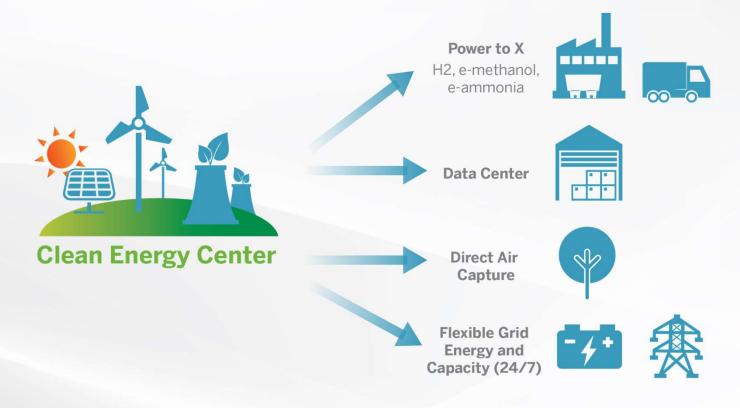
Total: 23.7MW / 39.7MW

(60%)

* Source: CEBA Deal Tracker



Clean Energy Centers



Nuclear assets serve as Clean Energy Centers to not only produce 24/7 clean power for our customers, but, in a number of instances, to use that clean power to decarbonize other sectors through the production of clean fuels and the direct capture of CO2 from the atmosphere.





Hourly Carbon-Free Energy Matching



Hourly Carbon-Free Energy (CFE) Can Drive Affordable Decarbonization



- Hourly CFE brings focus to the technologies, policies and market mechanisms to balance carbon-free generation and load to reliably and affordably decarbonize the U.S. electric grid
- Hourly attributes unlock opportunities beyond matching generation with load
- As granular data on emissions across the grid become more available, buyers can target clean energy procurement to periods in which emissions are highest

We need a holistic approach to supporting the development of clean energy procurement



Challenges to Overcome

According to a report^[1] produced by McKinsey and the Long-Duration Energy Storage Council (LDES) two factors are holding back wider adoption of 24/7 clean PPAs: relatively high costs and a lack of agreed-upon standards, but both can be overcome with a concerted industry effort.

100% 24/7 Matching using today's wind, solar, and storage technology may cost up to \$200/MWh

Introducing new technologies like long-duration storage and small modular reactors as well as incorporating existing sources of clean generation helps reduce the cost below \$100/MWh

Lack of standards around contract structures, geographic and temporal parameters, and data granularity leads to a patchwork approach to 24/7 matching

Groups like EnergyTag, LF Energy, and the UN 24/7 Compact are working hard to harmonize efforts among buyers and suppliers of 24/7 clean energy

[1] A path towards full decarbonization with 24/7 clean Power Purchase Agreements, LDES Council and McKinsey, May 2022



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Biographical Information

Raj Bazaj, Vice President, Sustainability Solutions, Constellation

Raj leads a business group at Constellation that works with a diverse group of customers assisting them in implementing a wide range of solutions to help them achieve their sustainability objectives. Key focus areas include data analytics, renewables and energy efficiency. The primary goal is to create a customized decarbonization strategy while effectively managing risk and costs.

Raj has worked in the chemical and energy industry across a wide range of roles. He began his career in the chemical industry working with multi-national companies Bayer, Cytec Industries and American Cyanamid. Roles included R&D, marketing and sales before being promoted to the Director of Marketing for NAFTA where he also managed the Export and Resale sales channels. Responsibilities included managing the P&L and developing short- and long-term strategy including production of chemicals manufactured in the U.S for export overseas.

Raj started his energy career with WPS Energy Services (later Integrys) in 2005 as the Managing Director for retail power and gas sales. The business was acquired by Constellation in 2014. Most recently Raj led the effort to develop a multi-year partnership agreement with the Johnson Controls Hall of Fame Village. The agreement recognizes Constellation as the official energy provider and provides exclusive naming rights for the Constellation Center for Excellence, a key component of the development project under way in Canton, OH.

As a member of the White House Initiative on Asian American and Pacific Islanders (AAPI), Raj has attended Leadership summits at the White House under both the Obama and Trump administration. The initiative focuses on several key areas including education, career development, business, jobs, immigration, heath care, housing and workforce leadership.

Raj holds a B.S. in Chemical Engineering from the University of Arizona and an Executive MBA from the University of Connecticut.