Western Regional Partnership

ENHANCING RESILIENCE TO AVOID CASCADING DISASTER

WRP Energy Webinar

November 21, 2024

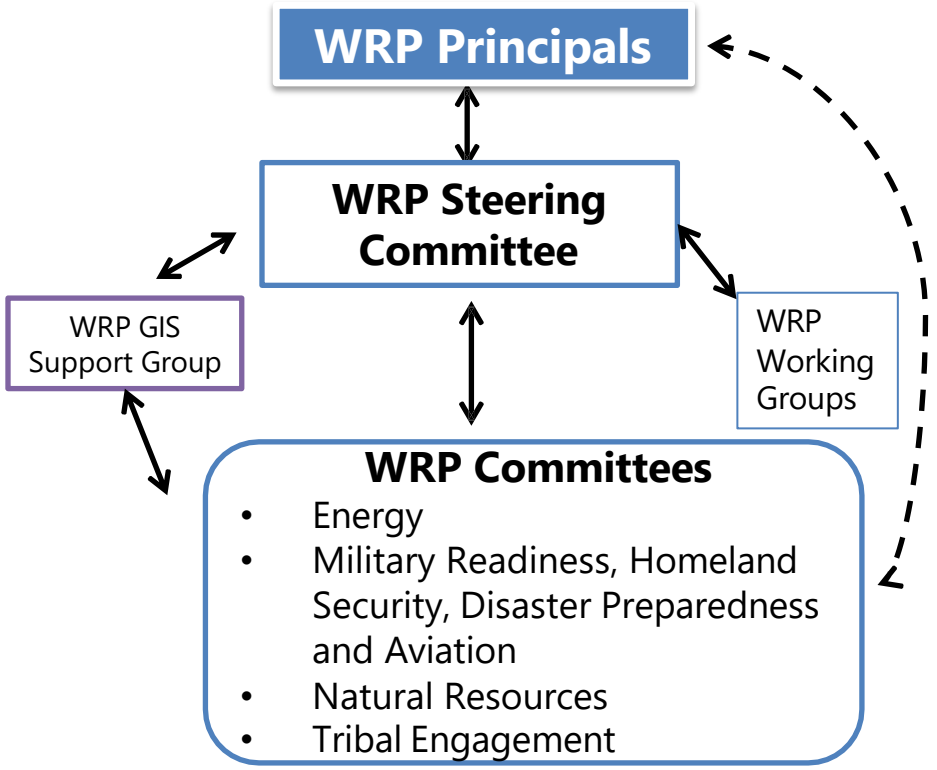
WRP Mission

WRP provides a proactive and collaborative framework for **senior-policy level Federal, State and Tribal leadership** to identify common goals and emerging issues in the states of **Arizona, California, Colorado, Nevada, New Mexico and Utah** and to develop solutions that support WRP Partners and protect natural and cultural resources, while promoting sustainability, homeland security and military readiness.

WRP Co-Chairs:

- **Honorable Spencer Cox**
  Governor of Utah
- **Dr. Annalise Blum,** Deputy Assistant Secretary for Water and Science, DOI
- **Mr. Ron Tickle**, Deputy Assistant Secretary of Defense (Environmental Management and Restoration)

WRP Structure



WRP Steering Committee

- Representatives of each of the six WRP States:
  - Arizona, California, Colorado, Nevada, New Mexico and Utah
- Bureau of Indian Affairs
- Bureau of Land Management
- Bureau of Reclamation
- Customs and Border Protection, U.S. Border Patrol
- Department of Homeland Security, HQ
- Federal Aviation Administration
- Federal Emergency Management Agency
- Federal Highway Administration
- National Park Service
- Natural Resources Conservation Service
- National Oceanic and Atmospheric Administration
- Office of Secretary of Defense
- U.S. Air Force Headquarters
- U.S. Army
- U.S. Army Corps of Engineers
- U.S. Department of Energy
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service
- U.S. Forest Service
- U. S. Geological Survey
- U.S. Marine Corps Installations West
- U.S. Navy
- Native American Leadership:
  - Navajo Nation, Inter-Tribal Council of CA, Inc.
- Western Governors Association Liaison

WRP Region's Uniqueness

Importance to the Military - Extensive Training Ranges, Premier Testing Facilities, Unmatched Military Air Space in WRP Region

75%	of **DoD Special Activity Airspace**	**67%**	of **USMC airspace**
~55%	of the **Army's landholdings**	**85%**	of **USMC Live Fire Ranges**
Over 33%	of **Navy's landholdings**	**4**	of the **largest USAF range complexes**

Edwards, Nellis/Creech/NTTR; Luke/Goldwater; and UTTR

Over 170 Federally recognized Tribes

Significant State Trust Landholdings

In WRP states, Federal land ranges from 34.1% - 84.9% of total state



Deep-Dives in support of WRP Priority ***Enhancing Resilience to Avoid Cascading Disaster***

- Water Security/resilience
- Wildland Fire (response/ prevention)
- Aviation/Airspace Needs

Western Regional Partnership

For More Information:

- Please sign up for a WRP account at wrpinfo.org

Thank you for your time!

Amy Duffy
WRP Coordinator
amyduffy@westernregionalpartnership.org
623.572.6656

WRP Energy Committee Webinar

Highlighting energy from a state perspective

- The WRP Region contains diverse existing energy generation resources, both conventional and alternative, and significant transmission corridors and capacity.
- Energy planning in the West includes ensuring grid resilience while integrating energy generation, renewable energy resources and transmission systems to reduce costs, achieve public policy goals, and maintain system reliability.
- Federal, state and tribal entities must work cooperatively across jurisdictional lines to ensure an adequate and stable energy supply exists throughout the WRP Region, especially in times of disaster, and to address intrastate and interstate implications.
- This webinar will feature presentations by WGA and the states of Arizona, California, Colorado, New Mexico and Utah to learn of their current energy-related priorities.

Webinar Speakers

- **AZ:** Maren Mahoney, Director, Office of Resiliency
- **CA:** Jim Bartridge, Senior Program and Policy Specialist, California Energy Commission
- **CO:** Dr. Will Toor, Executive Director, Colorado Energy Office
- **NM:** Cholla Khoury, Chief of Staff, New Mexico Public Regulation Commission
- **UT:** Dusty Monks, Interim Director, Utah Office of Energy Development
- **WGA:** Steven Emmen, Policy Advisor, Western Governors' Association (WGA)

Format

- Each speaker will provide 10-12 minutes opening remarks.
- Following the presentations, we will have questions and discussion.
- Please use the chat box to provide your question/comment. It would be helpful if you include your name, agency and to whom the question is directed (E.g., a particular speaker, or all).
- Throughout the call, please have your phone on mute so background noises are kept to a minimum.

Maren Mahoney

Director, Office of Resiliency

- Passionate about building an equitable, resilient future for all Arizonans.
- Previously:
  - Policy Advisor to Corporation Commissioner at the Arizona Corporation Commission
  - Managed an energy policy think tank at Arizona State University
  - Consultant for nonprofits on land use, energy, climate, and conservation issues
  - Civil litigator in New York and Arizona
- J.D., New York Law School. M.A. in Sustainability, ASU

ARIZONA
GOVERNOR'S OFFICE

State of Arizona Energy Policy Priorities

9/27/24

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Building a Resilient Arizona For Future Generations

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Climate Adaptation & Mitigation

Clean Energy Economy

Water Security & Sustainability

Healthy Forests

Transportation Accessibility

What We Do

State Energy Office

+

Natural Resource Policy

+

Climate Resilience Planning

Energy Policy Priorities

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Heat Preparedness and Mitigation

Energy Affordability and Access

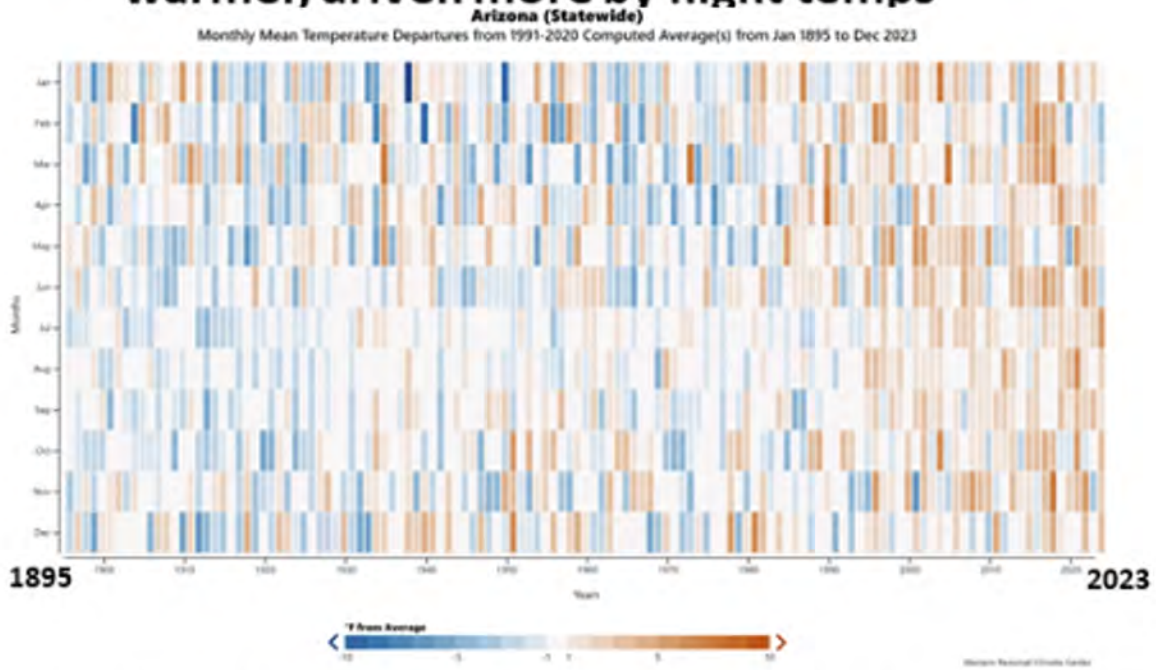
Energy Security

Clean Energy Economy

Grid Reliability and Resilience

Land and Energy

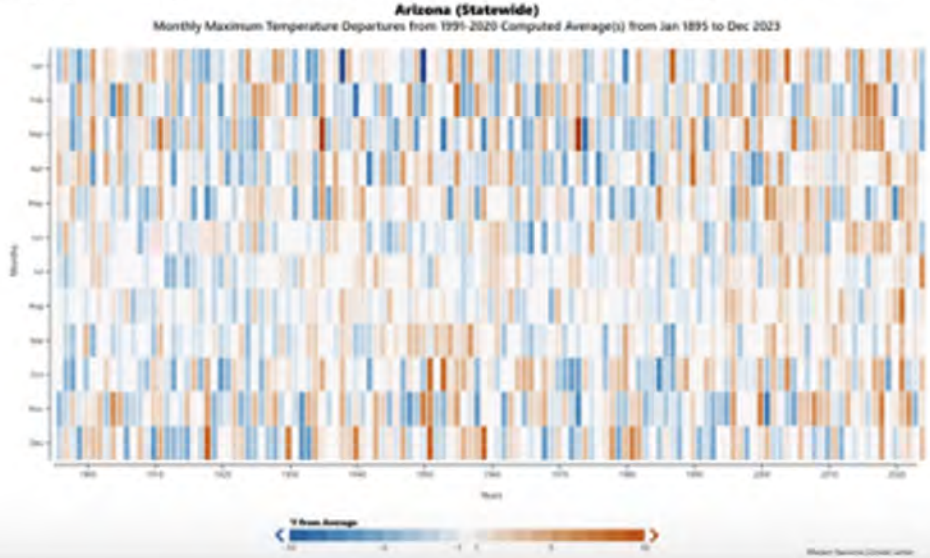
Monthly statewide temperatures are getting warmer, driven more by night temps



A heat map shows how monthly statewide temperatures have changed over time (since 1895).

Blue colors show cooler months (below average); orange colors show warmer months (above average).

Day (max) monthly statewide temperatures



Night (min) monthly statewide temperatures

Heat Preparedness and Mitigation

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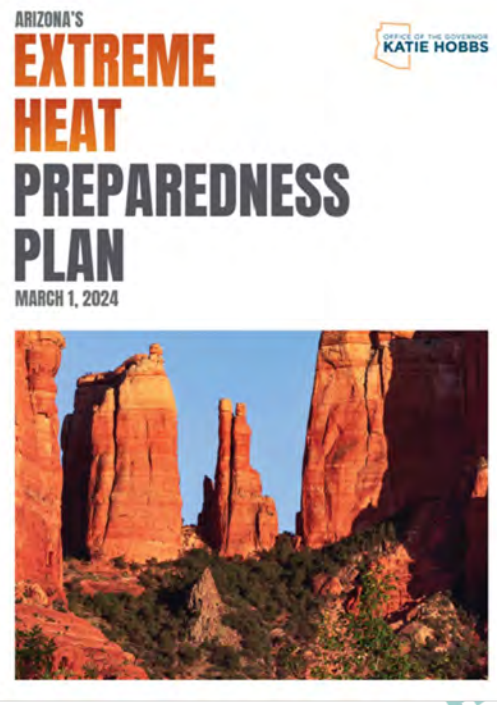
Executive Order 2023-16
Required the Director of the Office of Resilience to:
Coordinate and lead an interagency effort to ***develop an Extreme Heat Preparedness Plan*** by March 1, 2024;
Develop ***legislative proposals*** to protect the elderly, children, medically vulnerable, and other impacted communities;
Administer the DOE grid resilience grant to ***improve grid resilience***;
Create and lead the ***Interagency Resiliency Forum***, to support efforts to respond to extreme heat and other state resiliency and sustainability efforts;
Work with State and local agencies and external partners to ***collect innovative solutions*** to address extreme heat and provide cooling relief to Arizonans.



Energy Security Planning

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1. Address all energy sources and regulated and unregulated energy providers;
2. Provide a State energy profile, including an assessment of energy production, transmission, distribution, and end-use;
3. Address potential hazards to each energy sector or system, including–
    a. Physical threats and vulnerabilities; and
    b. Cybersecurity threats and vulnerabilities;
4. Provide a risk assessment of energy infrastructure and cross-sector interdependencies;
5. Provide a risk mitigation approach to enhance reliability and end-use resilience; and
6. Address:
    a. Multi-state and regional coordination, planning, and response; and
    b. Coordination with Indian Tribes with respect to planning and response. To the extent practicable, SESP's must encourage mutual assistance in cyber and physical response plans.

OOR as ESF-12

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- Resiliency serves as emergency support function (ESF)-12: Energy

- Respond to urgent situations to coordinate and support the restoration and re-establishment of damaged energy systems and components

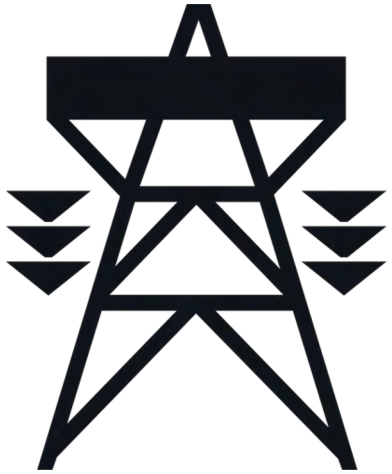
- Primary hub for state-level communication and coordination with key stakeholders

Grid Resilience and Reliability

Energy Efficiency and Conservation Block Grant (EECBG) Program

- $1.2 million available to eligible local governments in Arizona, funded by DOE
- Purpose is to assist local governments in creating and implementing strategies to improve energy efficiency, reduce energy use, and reduce fossil fuel emissions
- Grant applications closed on Oct. 29th, OOR currently reviewing applications

Grid Resilience Grant Program



- $20 million available to grid operators in Arizona
- Goal is to strengthen and modernize power grid against wildfires, extreme weather, and other natural disasters
- OOR also engaging with DOE on a special initiative called Grid Resilience Analysis and Impacts (GRACI) project, which is intended to better understand climate risks and how to best allocate funding to address extreme risk

Energy Affordability

Rebate Programs

- **Home Electrification and Appliance Rebate (HEAR):** Rebates for specified efficient electric appliances for eligible Arizona residents.
- **Homeowners Manage Energy Savings Rebate (HOMES):** Performance based energy efficiency rebate program. The rebate amount for each project is based on the percentage of energy-savings.
- EfficiencyArizona.com

Clean Energy Hub

- Connects Arizonans with the latest energy-saving programs available for households, businesses, schools, local governments, and other organizations.
- Provides information on which incentives are available at the federal, state, local, and utility level, how they work, what they can be used for, and more.
- https://resilient.az.gov/clean-energy-hub

Land and Energy

Wildfire and other disaster mitigation

- Partnering with DFFM, DEMA, utilities, and communities on PSPS policy
- In FY2024, the Department of Forestry and Fire Management (DFFM) treated of 23,975 acres for wildfire mitigation, surpassing its goal of 20,000 acres.

Community benefits and renewable energy development

- Supporting economic development in energy communities
- Funding grant writers for rural communities and small businesses to pursue IRA/BIL opportunities

Transmission development and regional markets

- Renewed SEO participation in line siting committee
- Governor Hobbs signed HB 2003 and 2004 into law, streamlining replacement process for cables and structures on transmission lines and utility construction processes.

Clean Energy Economy

Climate Pollution Reduction Grant (CPRG)

- Received $3 million in EPA grant funding for GHG inventory development and climate action.
- Delivered Priority Climate Action Plan and GHG Inventory to EPA in March of 2024
- Developing a follow-up plan, known as the Comprehensive Climate Action Plan (CCAP).

Solar For All Arizonans

- Received $156 million to deploy solar across disadvantaged communities in Arizona.
- Focused on deploying solar and storage installations in underserved, rural, and Tribal communities with high energy costs, limited grid reliability.
- Expected launch in 2026.

Thank you!

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Maren Mahoney
(she/her)
Director
602.501.4954
resilient.az.gov

Jim Bartridge

Senior Program and Policy Specialist, California Energy Commission

- Worked for CEC in a variety of policy and technical positions since 2001
- Bachelor and Master of Arts in Political Science (Environmental Policy and Public Administration), University of Nevada, Reno

California's Energy Goals and Policies

Jim Bartridge, California Energy Commission

Western Regional Partnership Energy Committee Meeting, November 21, 2024

PRIMARY FUNCTIONS OF THE

CALIFORNIA ENERGY COMMISSION

Advancing State Energy Policy

Investing in Energy Innovation

Developing Renewable Energy

Preparing for Energy Emergencies

Achieving Energy Efficiency

Transforming Transportation

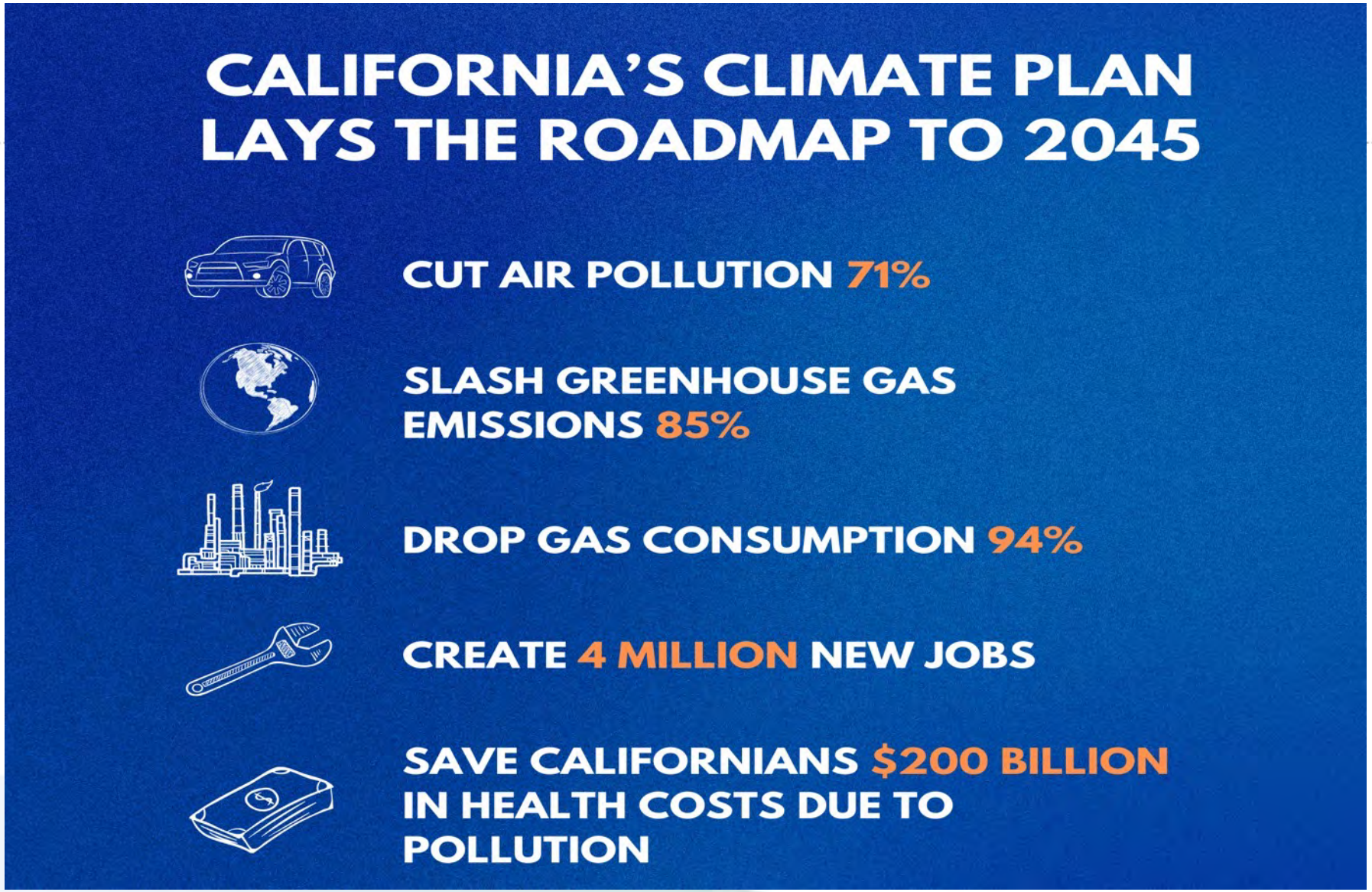
Overseeing Energy Infrastructure

Intergovernmental Collaboration

California Energy Commission: https://www.energy.ca.gov/

California's Climate Context

- The California Global Warming Solutions act of 2016 (SB 32, 2016)
- The 100 Percent Clean Energy Act of 2018 (SB 100, 2018)
- The California Climate Crisis Act of 2022 (AB 1279, 2022)
- The Clean Energy, Jobs and Affordability Act of 2022 (SB 1020, 2022)
- 100% of new vehicles sold in California will be zero-emission by 2035 (Executive Order N-79-20, 2022)



https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan

California's
Clean Electricity Goals

2020

33%

2030

60%

2045

100%

Under the Renewables Portfolio Standard, eligible resources include solar, wind, geothermal, biomass and small hydroelectric.

Under SB 100 which expands eligibility to include additional carbon-free resources

https://www.energy.ca.gov/programs-and-topics/topics/renewable-energy/clean-energy-serving-california

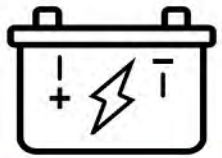
To Achieve Clean Energy

Development Needs
To Rapidly Accelerate

Solar & Wind

3X

Solar and wind build rates need to nearly triple*



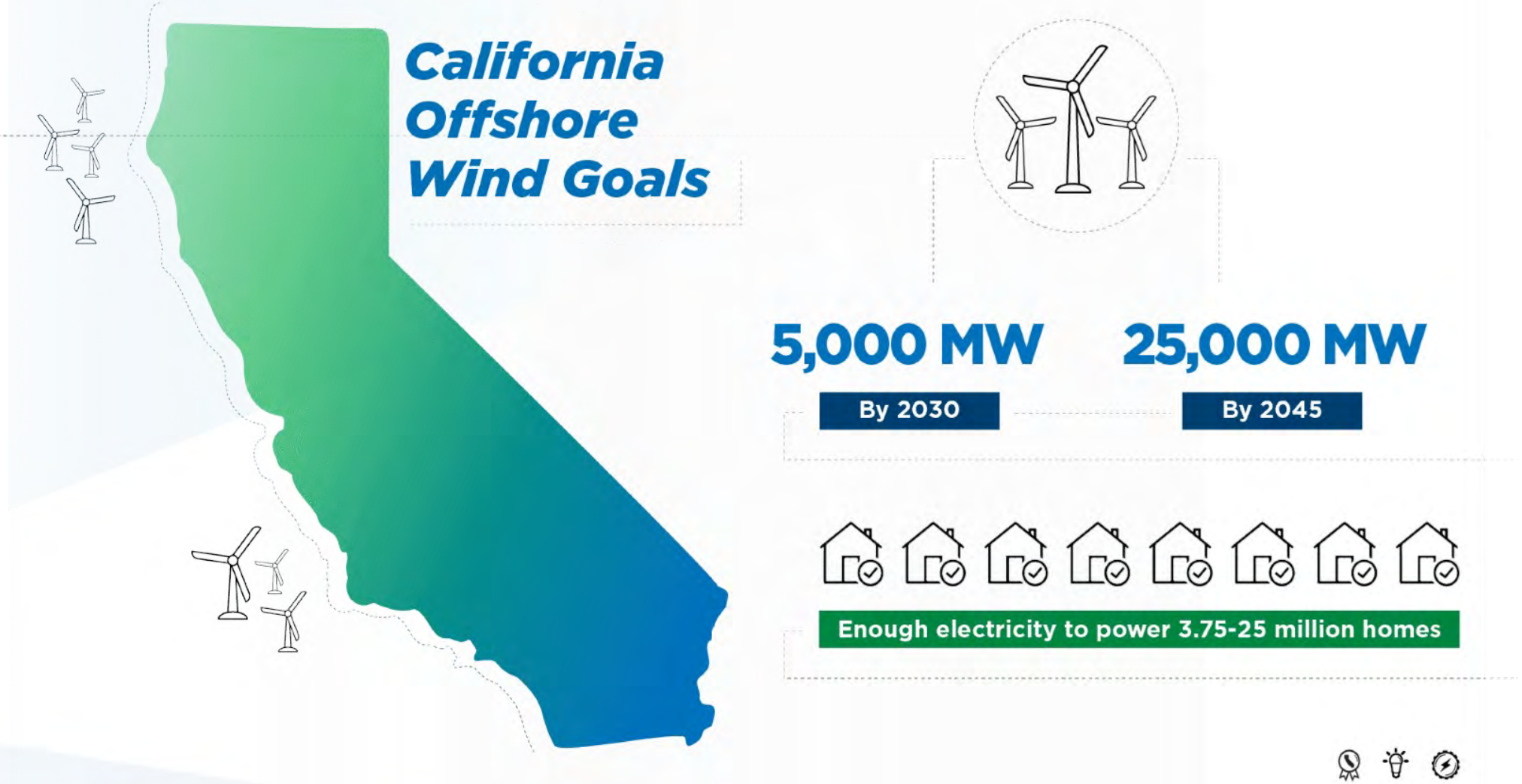
Battery

8X

Battery storage build rates need to increase by nearly eightfold**

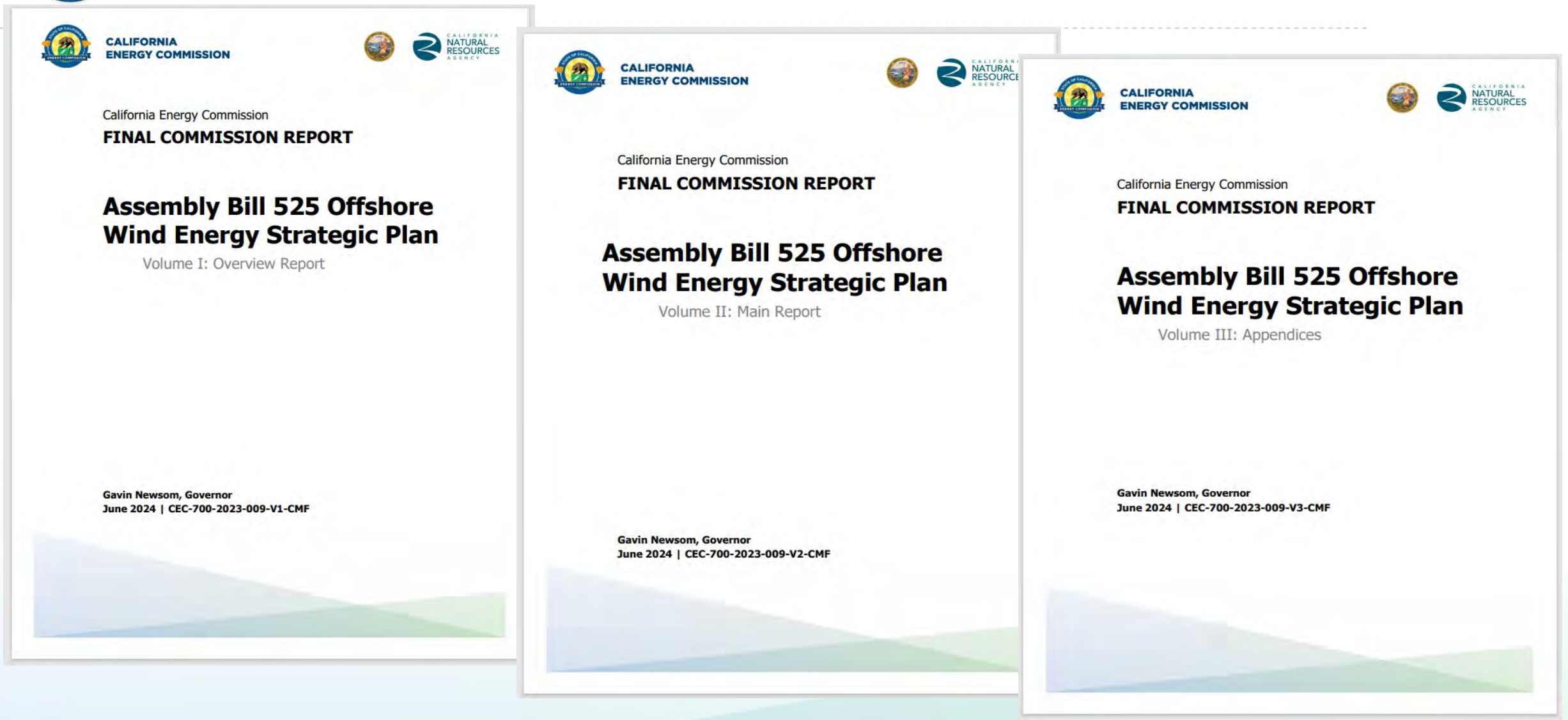
SB100 Joint Agency Report Activities: https://www.energy.ca.gov/sb100

*Based on 10-year average | **Based on 2020



CEC Report: *Offshore Wind Energy Development off the California Coast: Maximum Feasible Capacity and Megawatt Planning Goals for 2030 and 2045*

AB 525 Strategic Plan Volumes



AB 525 Reports: https://www.energy.ca.gov/data-reports/reports/ab-525-reports-offshore-renewable-energy

Opt-In Certification

Solar photovoltaic power plant of at least 50 MW 	Terrestrial wind power plant of at least 50 MW 	Energy storage system of at least 200 MWh 
Non-fossil-fueled thermal power plant of at least 50 MW (i.e., jurisdictional facility) 	Manufacturing/assembly facility for renewable energy/energy storage systems or components with at least $250 million investment 	Transmission from an eligible power plant or energy storage system to the first point of interconnection 

https://www.energy.ca.gov/programs-and-topics/topics/power-plants/opt-certification-program

Lithium Valley Vision

State Goal: 100% new ZEV sales by 2035
KGRA Potential: 375 million EV batteries

Energy Focus:

- Geothermal power
- Lithium industry
- Battery/EV manufacturing

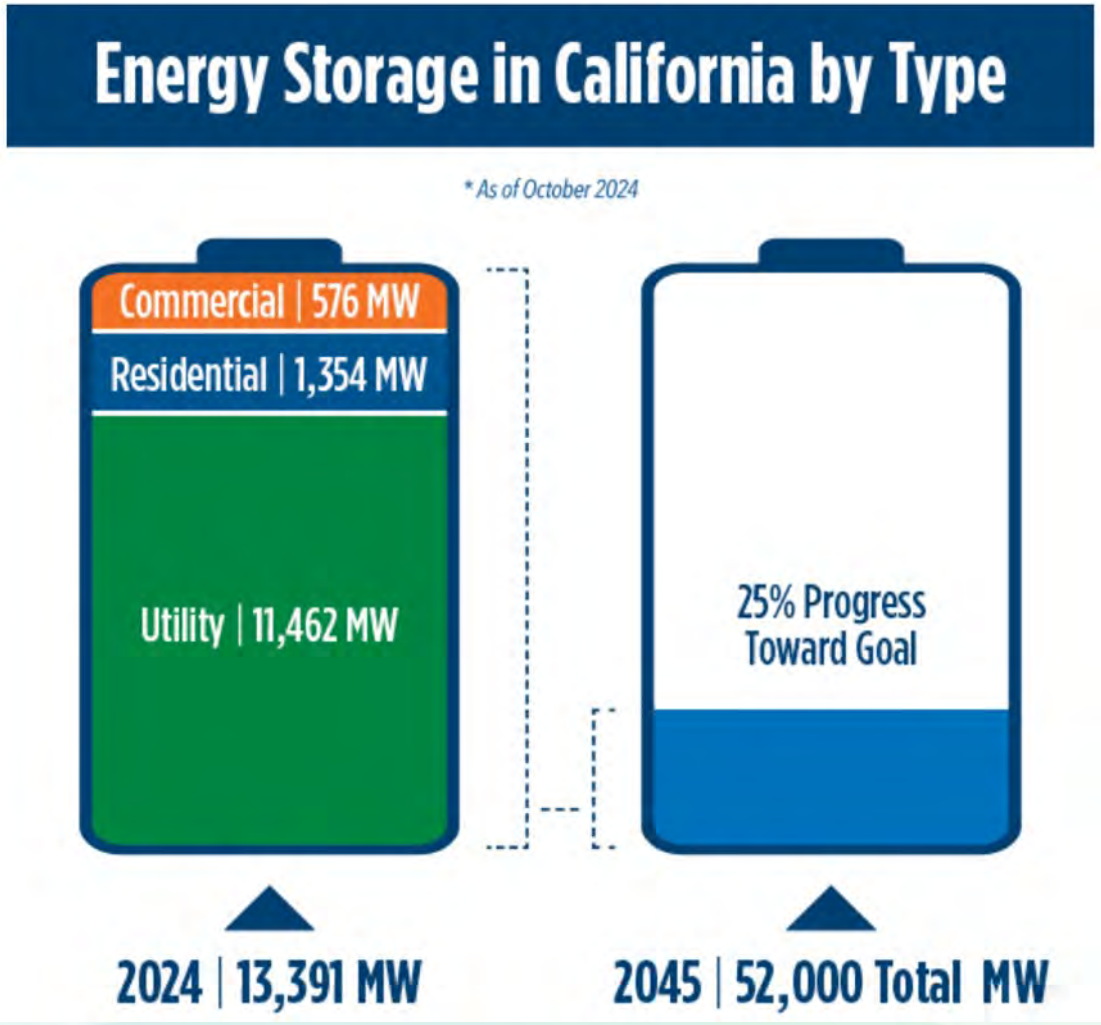
Ecosystem:

- Ancillary businesses
- Service expansion
- Infrastructure investments
- Workforce pathways
- Community development
- Local government support

https://www.energy.ca.gov/programs-and-topics/programs/lithium-valley-vision#:~:text=Located%20in%20the%20Eastern%20Coachella,for%20electric%20vehicles%20(EV).

Clean Resources and Storage

Renewable Capacity	MWs in 2023
Solar	20,871
Wind	6,284
Geothermal	2,744
Small Hydro	1,764
Biomass	1,262
Total	32,925



Electric Generation Capacity and Energy

California Energy Storage System Survey

Transmission

January: CEC/Schatz Northern California and Southern Oregon Offshore Wind Transmission Study

May 23: CAISO approved 23-24 Transmission Plan

May 28: California joined the Federal-State Modern Grid Deployment Initiative (GETs and DLRs)

May: PNNL West Coast Offshore Wind Transmission Study

July: CAISO 2024 20-Year Transmission Outlook

Aug: DOE awards California $600 million GRIP grant for CHARGE 2T project

Sept: Governor signs SB 1006 (Padilla, 2024) requiring transmission owners to study GETs.

Transmission (cont.)

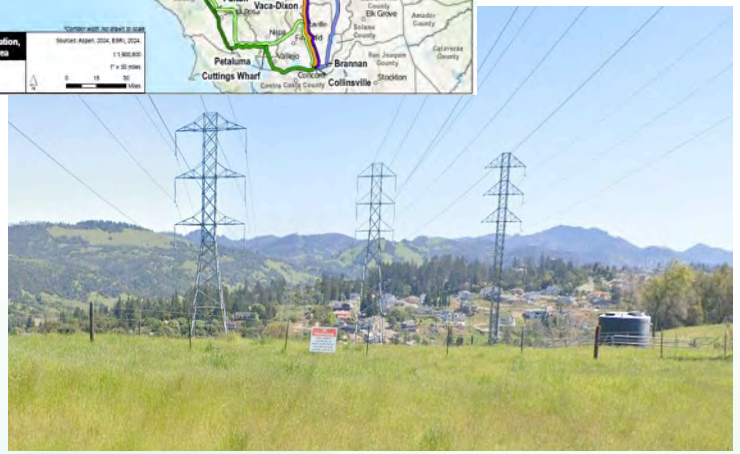
California Transmission System Information Webpage

SB 319 (McGuire, 2023) - CEC, CPUC, and California ISO are developing a Transmission Guidebook

Western Market Initiatives (EDAM and EIM)

FERC Order 1920

FERC Order 1977



Coordination with DoD

- Continued need for coordination, planning, and siting of renewables and transmission projects.
- CEC hosted the DOD Joint Agency Working Session, July 24-25.
- Activities funded by DOD Office of Local Government Defense Community Cooperation (OLDCC):
  - CEC/Schatz Northern California and Southern Oregon Offshore Wind Transmission Study
  - CAMEO CAMP tool now available from Governor's Office of Land Use and Climate Innovation/Military Affairs (OPR)

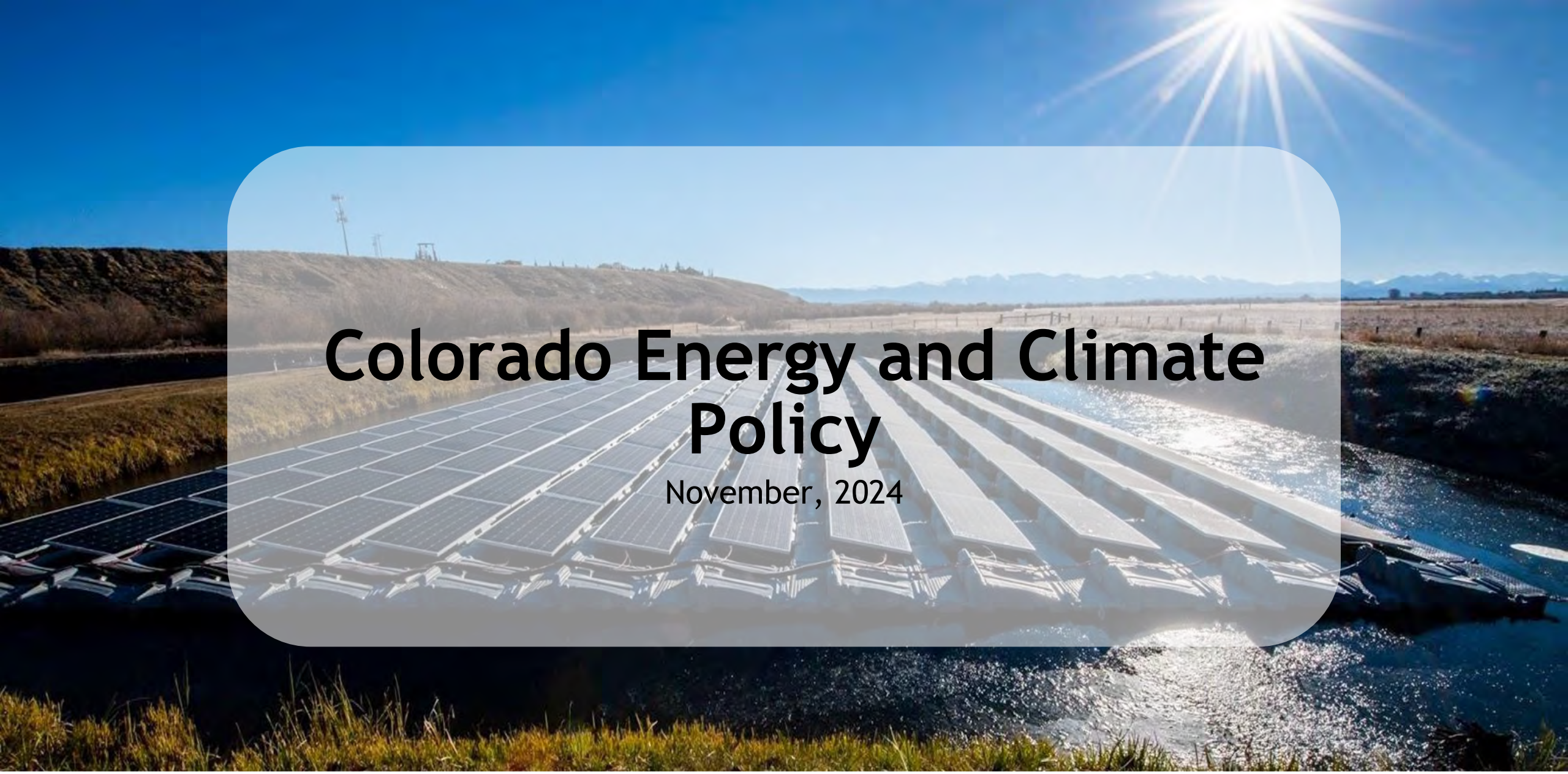
Thank You!

Jim Bartridge
Jim.Bartridge@energy.ca.gov

Dr. Will Toor

Executive Director, Colorado Energy Office

- Served in this position since January 2019
- Previously:
  - Transportation Program Director, Southwest Energy Efficiency Project
  - 15 years in local office (Boulder mayor and then county commissioner)
  - Chaired the Denver Regional Council of Governments (DRCOG)
- Ph.D., Physics, University of Chicago. BS in Physics, Carnegie Mellon University.



Colorado Energy and Climate Policy

November, 2024

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Statewide GHG Goals set by Legislature

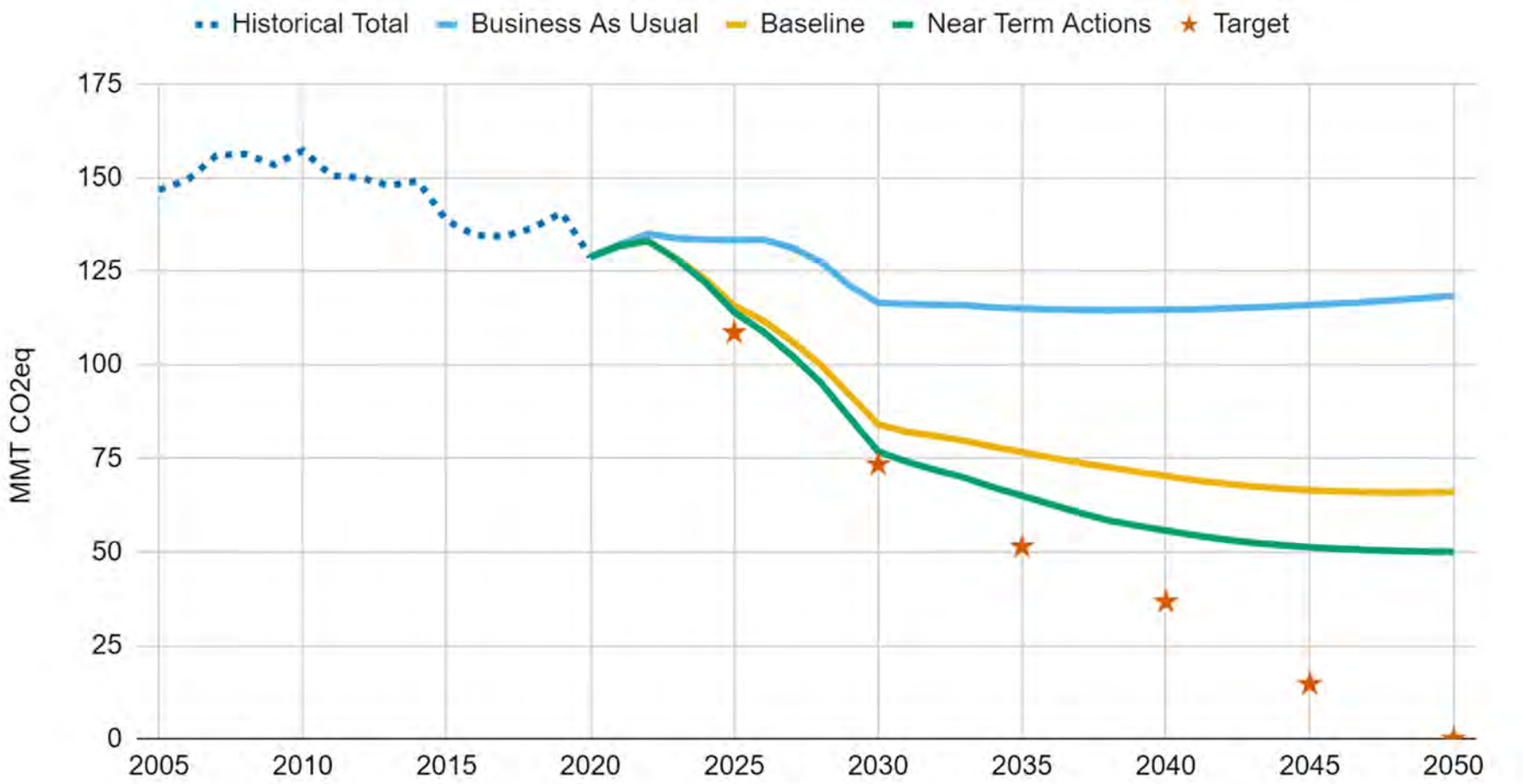
In 2019, the CO Legislature passed HB19-1261 which created science-based targets for reducing greenhouse gas pollution, later updated in SB23-16. Our current reduction targets (below 2005 levels) are:

- **26% by 2025**
- **50% by 2030**
- **65% by 2035**
- **75% by 2040**
- **90% by 2045**
- **Net Zero by 2050**

Major Components of Colorado's Climate Legislation

- GHG emissions reductions targets: 26% by 2025, 50% by 2030, and 90% by 2050
- AQCC to develop rules and policies to reduce GHG emissions
- Regulatory path for electric utilities to meet 80% GHG reduction by 2030 through PUC
- Require 60% reduction from oil/gas and 20% from industry by 2030 through AQCC
- Require 22% reduction from gas distribution utilities by 2030 through PUC
- ACC 2, ACT, Transportation GHG Planning Standard

Projected Trajectory



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Clean Electricity Progress in Colorado

Xcel Energy

- Reduce GHG 85% by 2030 from 2005 levels
- Retire Hayden 1 by 2027 and Hayden 2 by 2028 without layoff; retire Comanche 3 ny end of 2030s
- Convert Pawnee from coal to gas
- Power Pathway Project transmission lines for renewable interconnections
- Filed a Clean Energy Plan

Holy Cross Energy

- 100% carbon free electricity by 2030
- Filing a Clean Energy Plan
- 100 MW new wind
- 35 MW new solar
- 25 Mw solar + storage
- 5 MW additional hydro

Black Hills Electric

- Reduce GHG 90% by 2030 from 2005 levels
- 70% emission reduction by; 79% renewable by 20302023 with 200 MW solar project.
- PUC evaluating a Clean Energy Plan

Colorado Springs Utilities

- Reduce GHG 80% by 2030 from 2005 levels
- 32% renewable energy by 2030
- Close Drake coal plant by 2023 and close Ray Nixon coal plant by 2030.
- 200 MW new wind
- 175 MW new solar
- 167 MW battery storage.
- Filing a Clean Energy Plan

Platte River Power Authority

- Reduce GHG 90% by 2030 levels
- Close Rawhide coal plant by 2030
- Add 400 MW of renewable generation.
- Filing a Clean Energy Plan

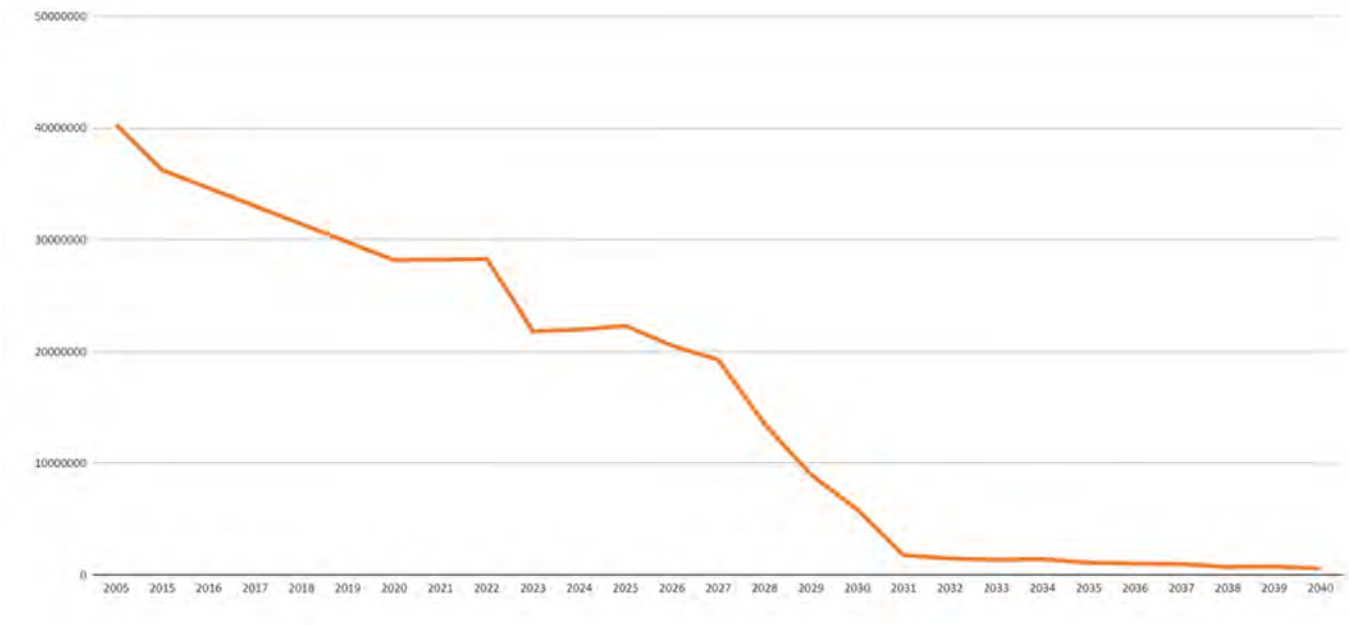
Tri-State G&T

- Reduce GHG emissions associated with wholesale sales 84%by 2030 from 2005 levels; reduce in-state emissions 90% by 2030.
- Close all coal-fired power plants and coal mines in Colorado by 2030.
- Add 300 MW wind, 1050 MW solar, 400 MW wind+storage, 100 MW solar+storage

The 6 utilities that operate 99% of the fossil power plants in Colorado have committed to reduce emissions averaging 85-88% by 2030

2040 clean energy modeling

- CEP Planning for 2030 was one outcome of 2019 goals.
- Goal of 80% GHG reduction in power sector by 2030: will achieve 84-87%.
- Modeling finds lowest cost pathway to meeting 2040 load achieves 94-97% emissions reductions by 2040.



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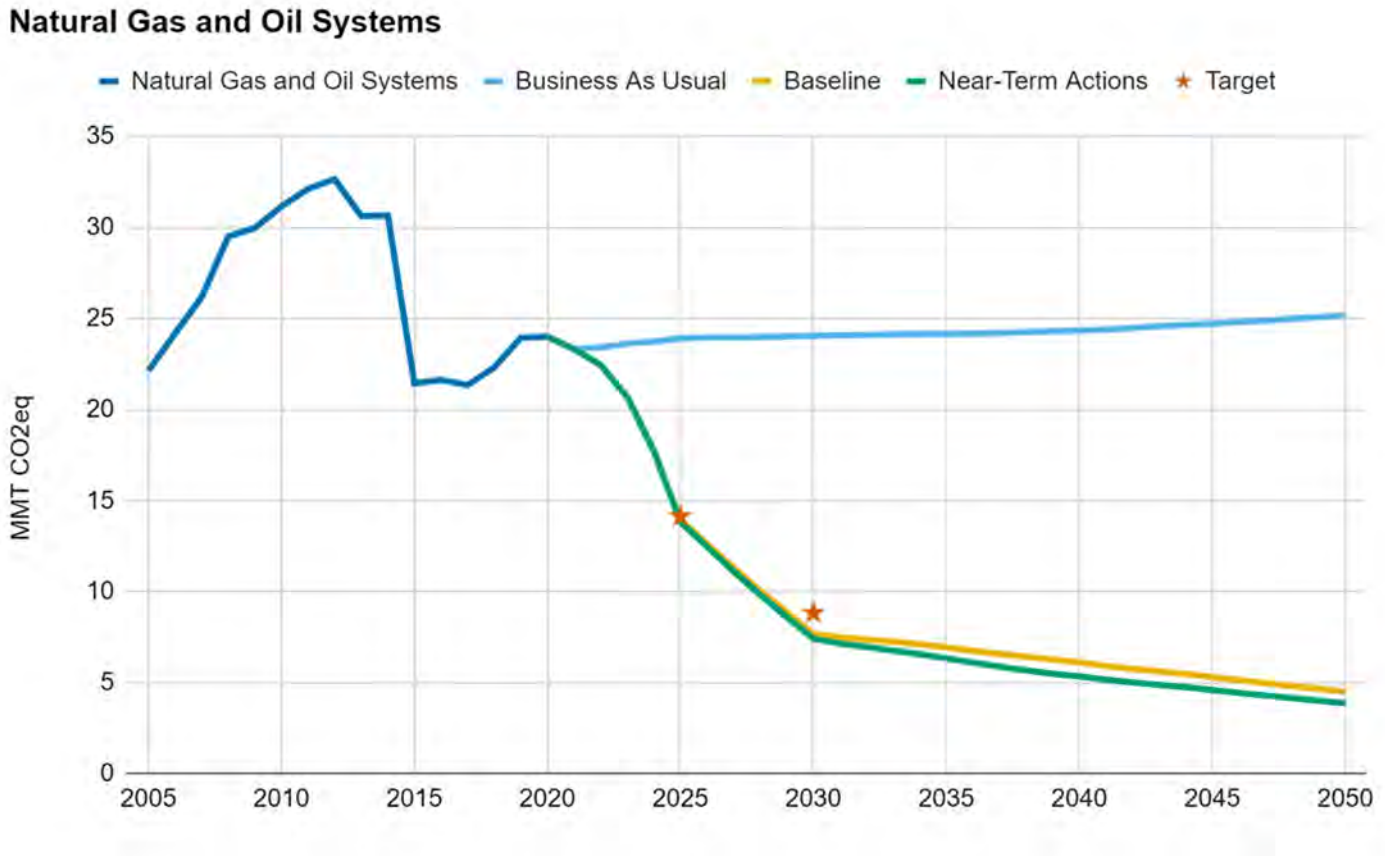
Oil and Gas

- Oil & Gas likely to exceed 2030 reduction goals
  - First in nation methane rules
  - Developing strategies for Net Neutral GHG Development and Operations
  - Implementing emissions intensity rules
  - Reducing Emission through Well Plugging



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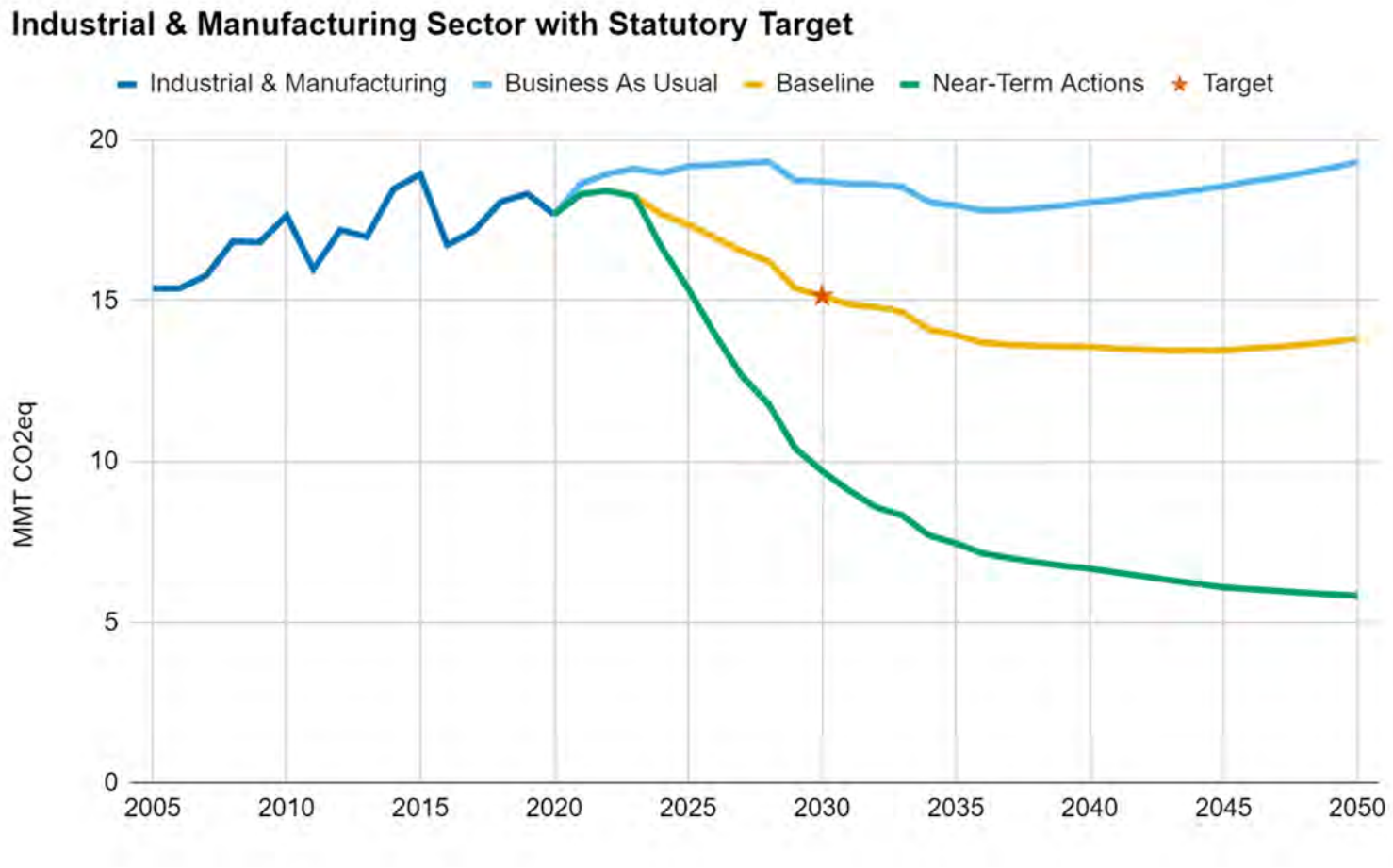
Key Additional Findings: Industrial

- Industrial sector likely to greatly exceed 2030 targets
- Modeling includes impacts of midstream combustion rule, GHG rules for manufacturers, clean air grants, decarbonization tax credits
- projects



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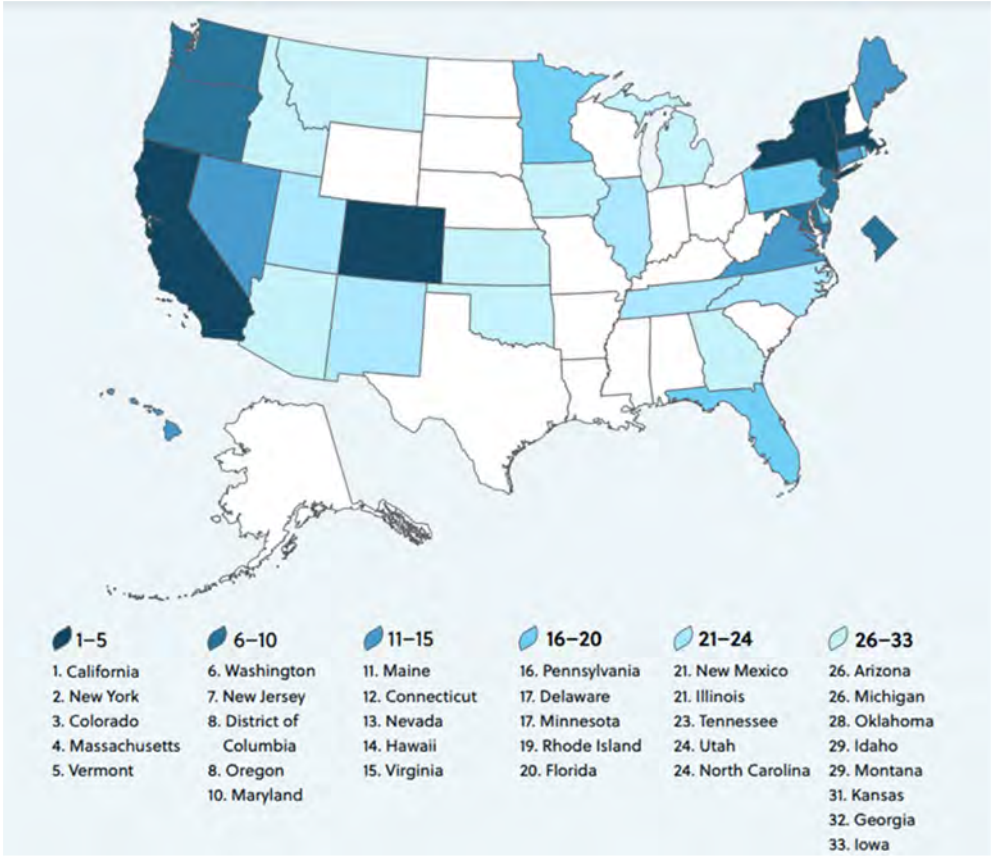
Transportation

- CO has established a strong foundation for a successful transition to L/MHD ZEVs.
- In 2023 the American Council for an Energy-Efficient Economy ranked Colorado as the third strongest state in transportation electrification policy.
- Colorado is taking a whole of government approach:
  - ACC and ACT rules
  - Dedicated revenue streams for charging infrastructure and vehicle purchase incentives
  - Tax credits- EVs, trucks, E-bikes
  - Requirements for utility TEPs

2023 American Council for an Energy Efficient Economy (ACEEE) State Transportation Electrification Scorecard



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48

Some key outstanding issues

- Renewable energy and transmission siting
- 2040 clean energy standard
- Emerging technologies – geothermal, CCUS, DAC, hydrogen
- Accelerating electrification

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COLORADO

Cholla Khoury

Chief of Staff, New Mexico Public Regulation Commission

- Served in this position since February 2023
- Previously:
  - State's Utility Consumer Advocate
  - Director of the Consumer and Environmental Protection Division
  - Chief Deputy Attorney General
- Bachelor's degree, Briar Cliff University, and J.D. from Drake University.

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Current Issues in New Mexico Electric Utility Regulation

CHOLLA KHOURY

CHIEF OF STAFF

NEW MEXICO PUBLIC REGULATION COMMISSION

*ALL OPINIONS EXPRESSED HERE ARE THOSE OF THE AUTHOR AND NOT THE OFFICIAL POSITION OF THE COMMISSION

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Snapshot of New Mexico Electricity

- **3 Investor Owned Electric Utilities (IOUs)**
  - **Public Service Company of New Mexico (PNM)**
  - **Southwest Public Service Company (SPS)**
  - **El Paso Electric Company (EPE)**

- **19 Rural Electric Cooperatives**

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Proactive State Policies

- **Renewable and Carbon Free Targets (NMSA 1978 § 62-16-4)**
- **Modernizing Our Grid (NMSA 1978 Sec. 62-8-13)**
- **Expanding Transportation Electrification (NMSA 1978 Sec. 62-8-12)**
- **Community Solar (NMSA 1978 Sec. 62-16B-1 thru 8)**

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Distribution Planning

- **The Key to Meeting New Mexico's Policy Goals:** Expect a rulemaking from the Commission soon.
- **Hosting Capacity Analysis:** Must identify grid constraints and prioritize and guide areas for resource deployment.
- **Strategic Planning**: Planning ahead and upgrading infrastructure strategically to allow continued growth of distributed resources.

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Interconnection

- **Streamlined Processes**: New interconnection rule (17.9.568 NMAC) simplifies and accelerate the connection of distributed energy resources (DERs) while reducing costs.

- **Enhanced Transparency**: Per the rule, utilities are now required to provide detailed grid condition reports and timelines to improve project planning and stakeholder engagement.

- **New Mexico Gets an A+:** New Mexico's interconnection policies earned it the only A+ grade, the highest rating from the Interstate Renewable Energy Council (IREC) Freeing the Grid report.

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Reliability

- **Standardized Reporting**: The Commission's Reliability Metrics Reporting Rule (17.9.589 NMAC) mandates consistent annual data collection, including key reliability indices like SAIDI and SAIFI, to track and improve service quality.

- **Proactive Investment**: Utilities are required to use reliability metrics in planning system upgrades, ensuring targeted improvements and resilience against disruptions.

- **Data-Driven Insights**: Per the rule, annual reliability reports provide valuable insights for identifying weak points and driving continuous improvement.

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Regional Transmission Organizations (RTOs)

- **SPS in the SPP**: SPS has been a part of the SPP for years, giving the New Mexico insight in participating in an RTO.

- **PRC's Role in SPP Governance**: The PRC (via the Chair) is a member of the SPP Regional State Committee (RSC), which provides collective state regulatory agency input on regional matters related to bulk electric transmission development and operations. The RSC includes retail regulatory commissioners from Arkansas, Iowa, Kansas, Louisiana, Minnesota, Missouri, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, and Texas.

- **Future of RTO Services**: As an regionalization becomes more urgent in the West, NM's two remaining IOUs face the choice of which market to join.

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Wildfires/Disaster Preparedness

- **Proactive Mitigation**: Utilities (specifically PNM via their Wildfire Mitigation Plan) are starting to adopt advanced wildfire mitigation strategies, including vegetation management, grid hardening, and leveraging AI to identify and address high-risk areas.

- **Emergency Coordination**: Per Emergency Support Function (ESF) #12, the Commission works closely with the State Energy Security Plan (SESP) to strengthen statewide emergency preparedness, particularly.

- **Public Safety Power Shutoff (PSPS)**: Utilities are implementing PSPS protocols to prevent wildfire ignitions during extreme weather by temporarily de-energizing lines in high-risk zones (PNM is doing this, but I wouldn't be surprised if some co-ops are as well).
- **Expect State Action in 2025.**

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Other Issues

- **Site Readiness and Infrastructure Development**
- **Challenges for Rural Co-ops**
- **Rising Costs to Ratepayer for Statewide Programs**

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Thank you!

Questions?

Dusty Monks

Interim Director, Utah Office of Energy Development

- Over 20 years' experience in the oil and gas industry.
- Crafts policies and conducts research that support Utah's "any of the above" energy philosophy.
- Passionate about educating people on the role of energy in sustaining modern life and unleashing human potential.
- Establishes and manages multiple interdisciplinary networks made up of key stakeholders in industry, policymakers, community organizations and academia.

UTAH OFFICE OF
ENERGY DEVELOPMENT

Utah's Strategic Energy Plan: Consumer First Policies

Energy Council Conference

The Power of Energy

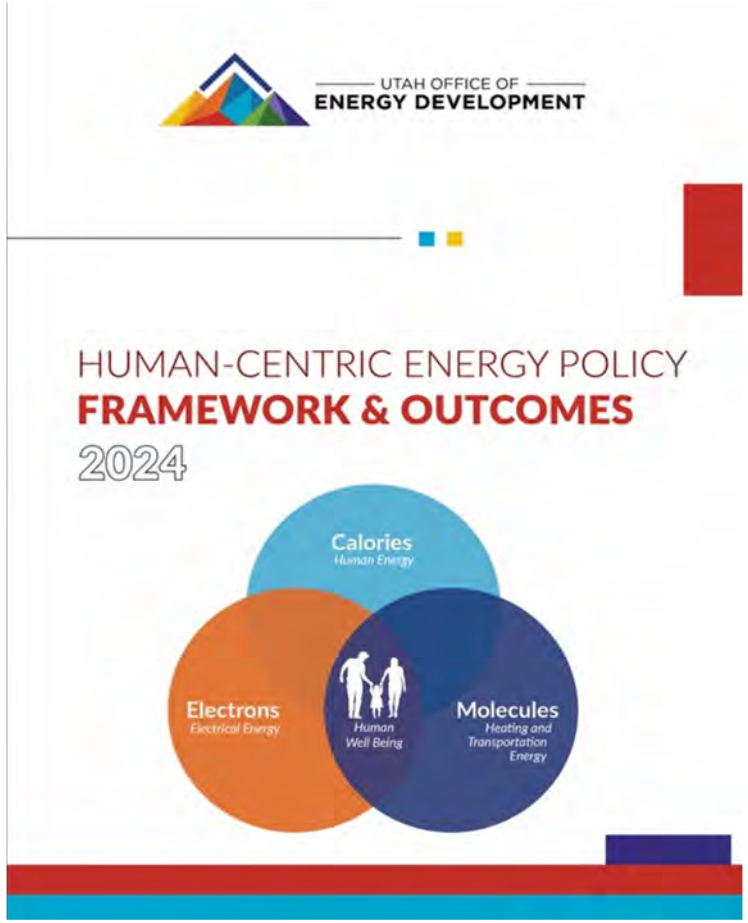
“The bottom 2% of Americans ALL live better than John D. Rockefeller was living when I was 6 years old. John D. Rockefeller was the richest man in the world, and today you can get better medicine, better education, better entertainment, better transportation–you can do everything better than he could.”

–

Warren Buffet

Energy the Utah Way: Consumer-Centric Policies

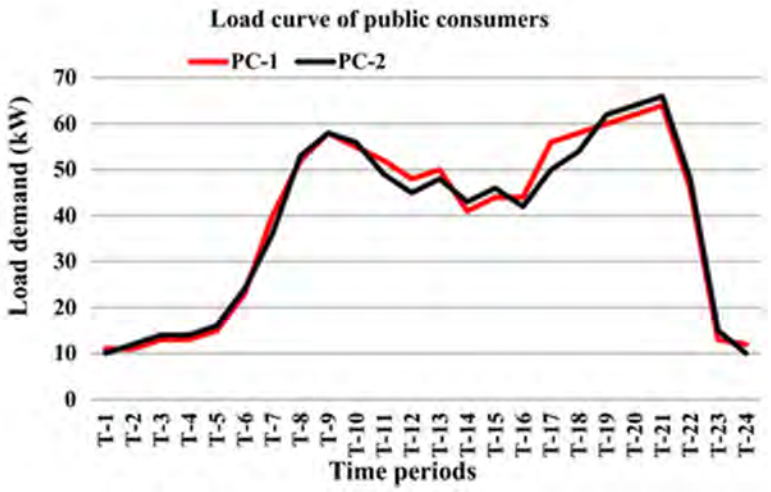
“Utah will develop its energy resources and plan its energy future with a focus on human well-being and quality of life, recognizing that reliable access to energy is vital for human health, adaptation, economic growth, and prosperity”

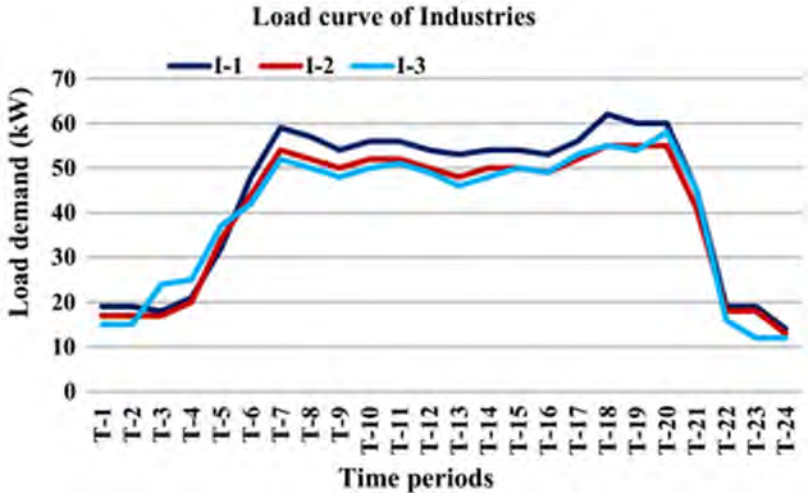


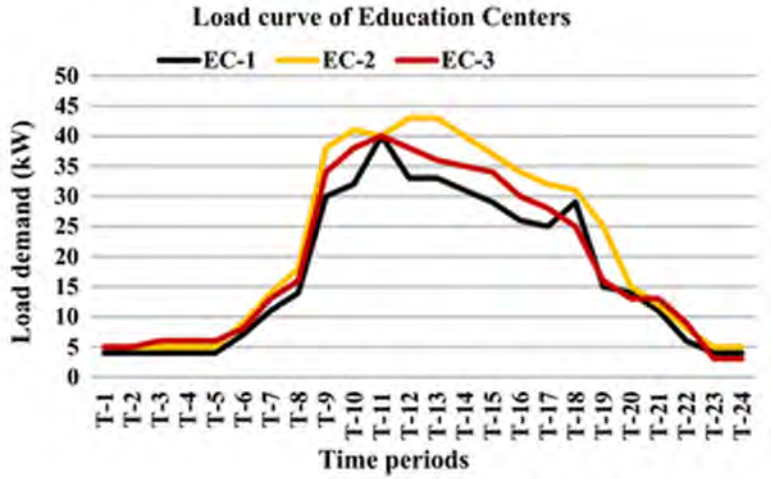
From Principles to Practice

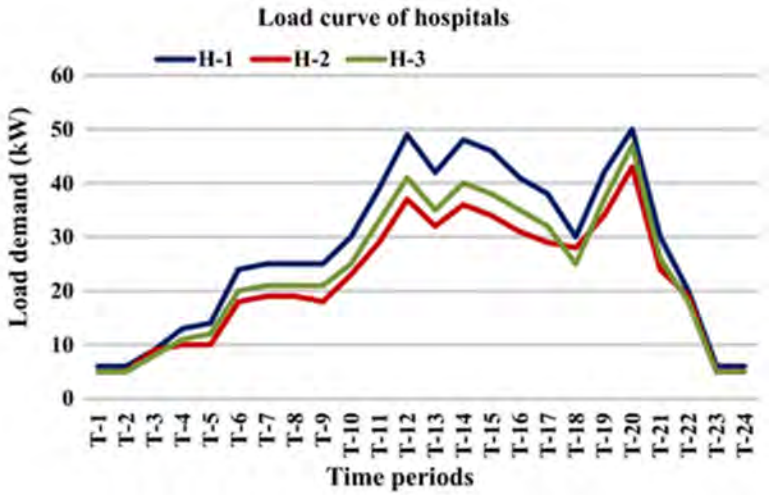
The Utah Office of Energy Development is using frameworks and metrics that provide insights into consumer impact.

Load Profiles (Consumer Needs)



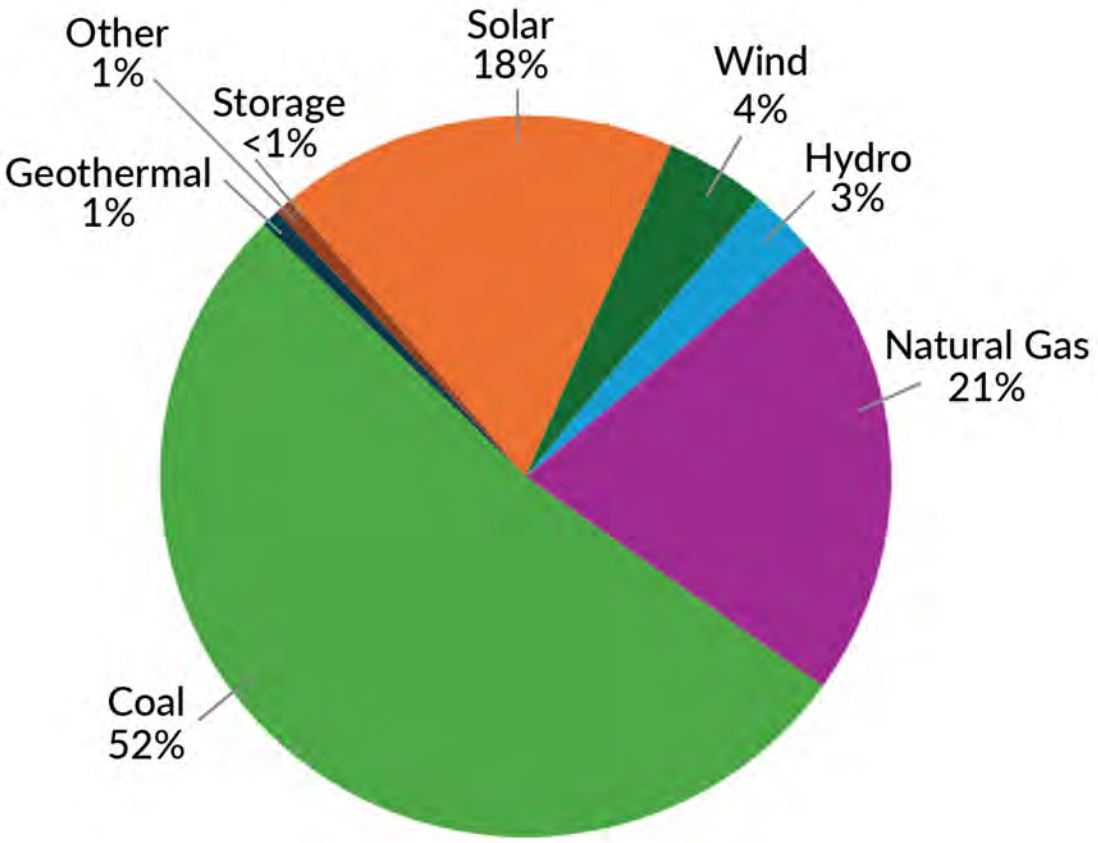




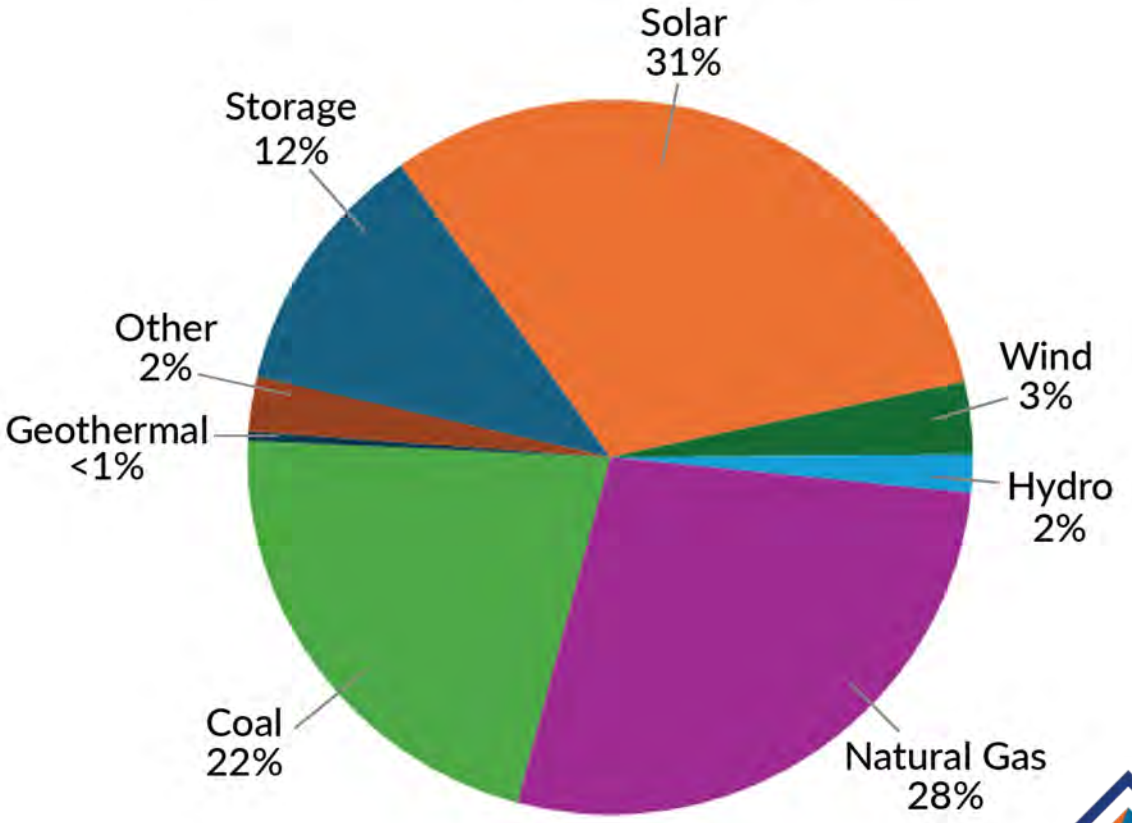


Resource Focused

EIA 2022 Utah Installed Capacity (% total)

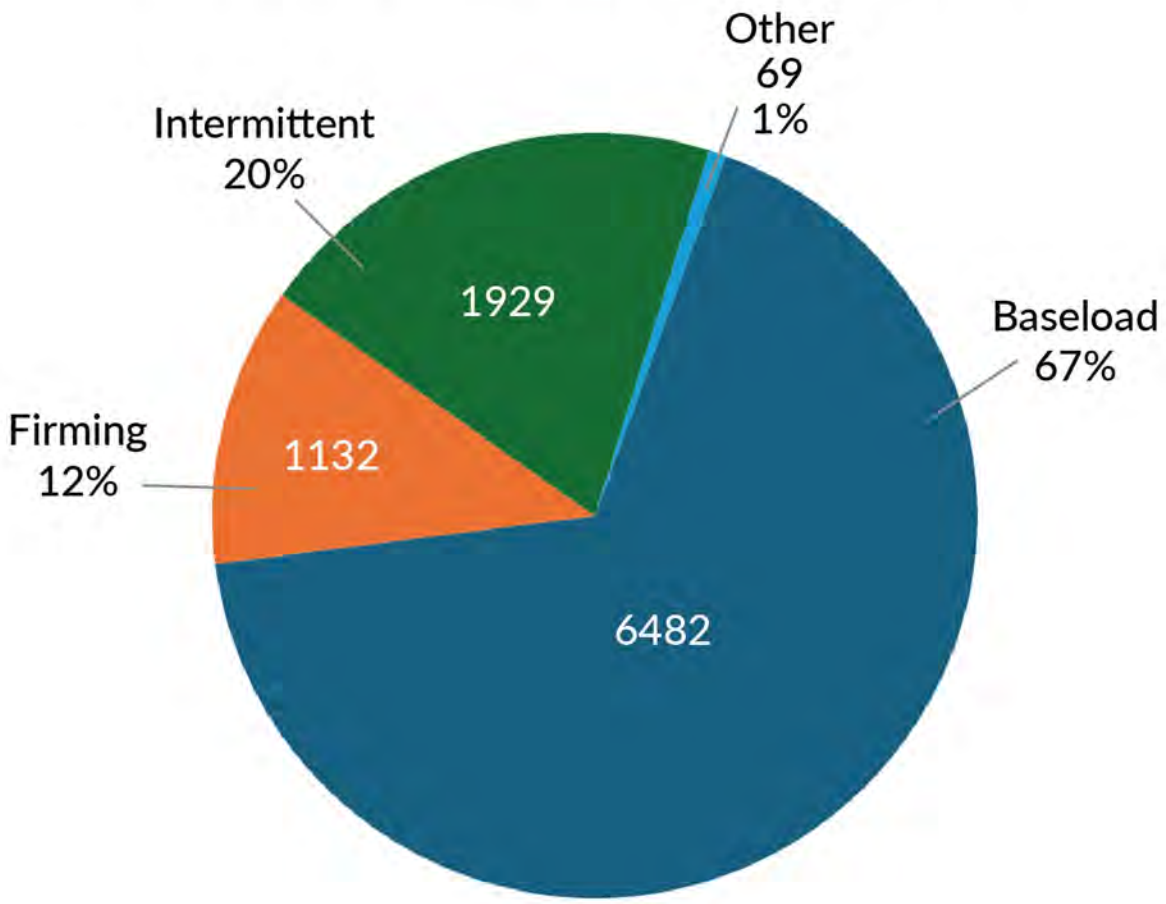


WECC 2032 Predicted Utah Installed Capacity (% total)

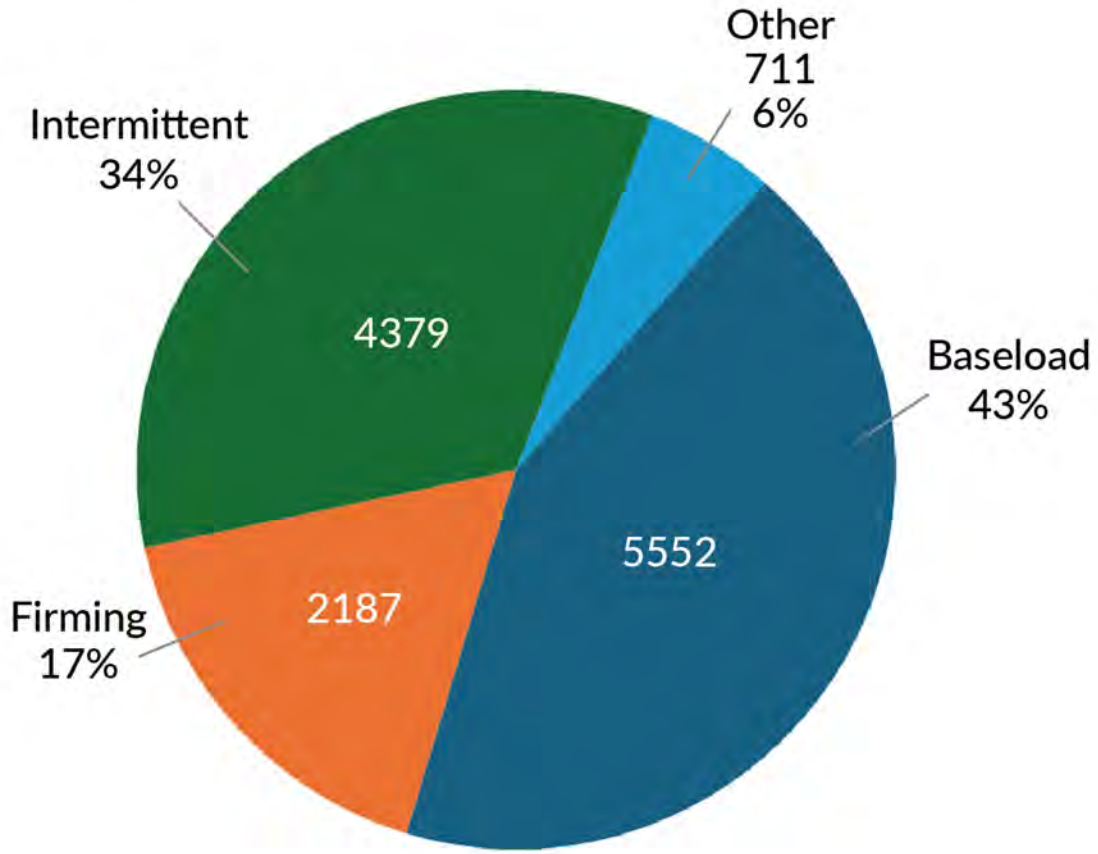


Consumer Focused

EIA 2022 Utah Installed Capacity (MW, %)



WECC 2032 Predicted Utah Installed Capacity (MW, %)



*The gains in intermittent and firming resources do not cover the losses in baseload

Levelized Costs

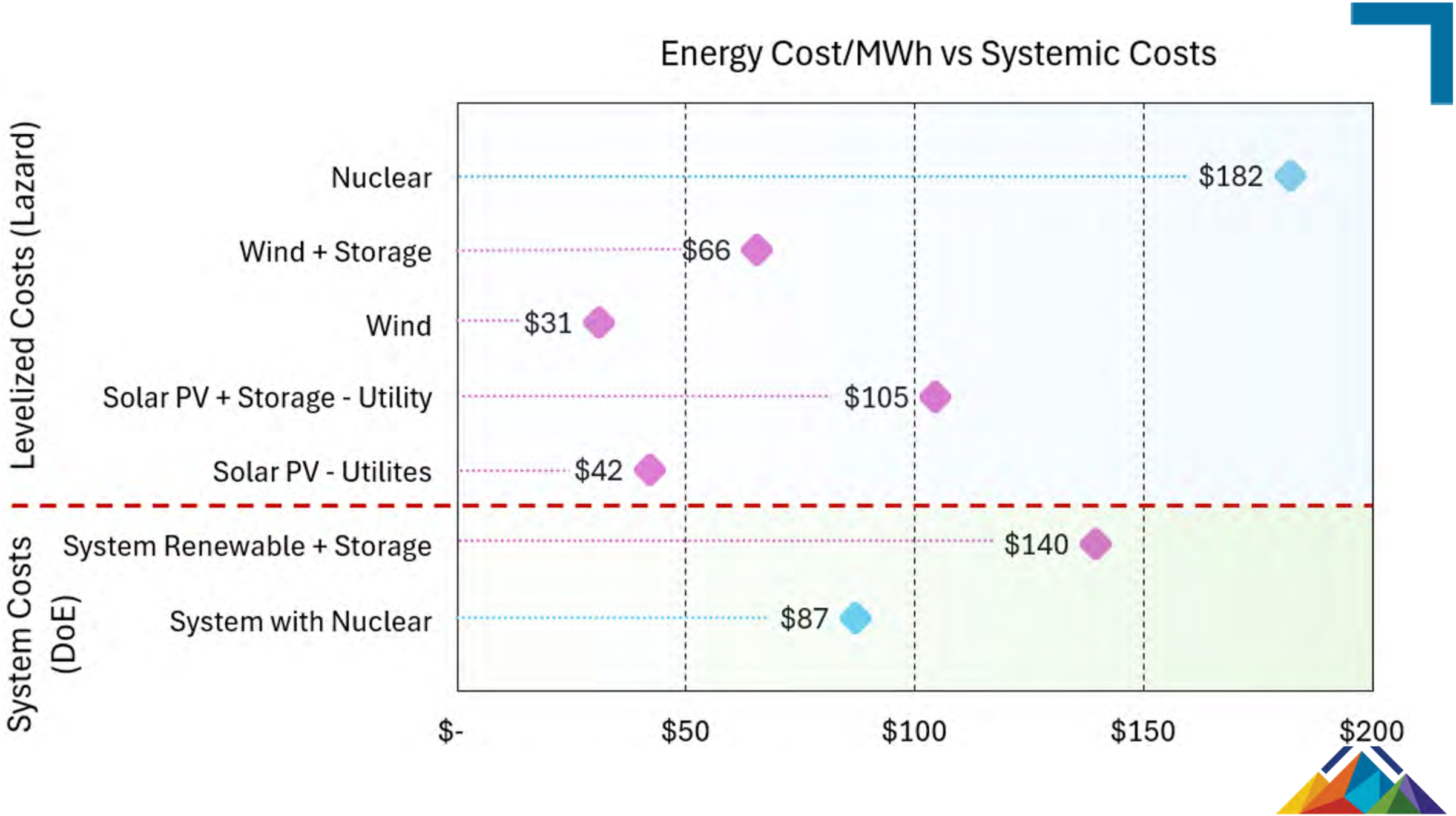
Levelized cost of energy (LCOE) is a financial tool for comparisons between diverse resources

LCOE is used to:

- Average total costs of building and operating an asset per unit of electricity over a specific period
- Primarily financial metric, not operation or system focused
- However, it is being used to drive policy decisions when individual cost is only one factor
  - Demand – not accounted for
  - Integration – not accounted for
  - Operation - not accounted for

*Building the cheapest option does not necessarily translate into savings

Levelized Costs


Energy Cost/MWh vs Systemic Costs
Levelized Costs (Lazard)
System Costs (DoE)
Nuclear
Wind + Storage
Wind
Solar PV + Storage - Utility
Solar PV - Utilites
System Renewable + Storage
System with Nuclear
$182
$66
$31
$105
$42
$140
$87
$-
$50
$100
$150
$200

Thank you!

dmonks@utah.gov

UTAH OFFICE OF
ENERGY DEVELOPMENT

Steven Emmen

Policy Advisor, Western Governors' Association

- Covers water, energy, air quality, and permitting issues.
- Worked on Colorado Governor Jared Polis' Chair initiative, the Heat Beneath Our Feet, examining the development and deployment of geothermal resources throughout the West.
- Previously:
  - Regional Representative for a U.S. Senator (in Denver metropolitan area)
  - Legislative Aide
  - Colorado State Senate
  - Oil and gas industry.
- Bachelor of Art in History, Colorado State University

Western Regional Partnership

ENHANCING RESILIENCE TO AVOID CASCADING DISASTER

WRP
WESTERN REGIONAL PARTNERSHIP

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