

LARIMER COUNTY | ENGINEERING DEPARTMENT

P.O. Box 1190, Fort Collins, Colorado 80522-1190, 970.498.5700, Larimer.gov

The role of the Advisory Board is to advise the Board of County Commissioners and appropriate departments on environmental and science-related issues that affect Larimer County.

Environmental and Science Advisory Board

MINUTES

Date: June 11th, 2024

Time: 6:00 – 9:00 p.m.

Location: Rm 150 Carter Lake, 200 West Oak St., Fort Collins, Colorado and Virtual by Zoom

Contact: Shelley Bayard de Volo, sbayard@larimer.org or 970.498.5738

MEMBERS		STAFF		GUESTS
Rodger Ames – Chair	X	John Kefalas *		Leo Grassens
Tasha Carr	X	Shelley Bayard de Volo ‡	X	Zachary Maffeo
Anna Cloud	X	Heidi Pruess §	X	
Jim Gereck	X			Platte River Power Authority
Matthew Haag	X			Leigh Gibson, Senior External Affairs Specialist
Ted Hendrickx	X			Masood Ahmad, Senior Manager, Resource Planning
Allyson Little	X			
Lark Murphy	X			
Andrew Newman	X			
Barry Noon	X			
Nicole Poncelet-Johnson	X			
George Rinker	X			
Shelby Sommer - Vice-Chair	X			
Natalie Walsh	X			
Katrina Winborn-Miller	X			
Chris Wood	X			

X = present; * = Commissioner Liaison; ‡ = Engineering; † = ESAB Liaison; § = Climate and Sustainability Program

Call to Order: 6:00 p.m.

1. **Amendments or additions to the agenda** – None.





2. **Introduction of members, staff and guests** – Members and guests introduced themselves.
3. **Public Comment** – None
4. **Commissioner's Update** – Was not in attendance

Discussion Items

- Platte River Power Authority Integrative Resource Plan - Leigh Gibson and Masood Ahman presented on the Platte River Power Authority's Integrated Resource Plan (IRP). Their slides are attached to these meeting minutes. The IRP can be found on PRPA website at: <https://www.prpa.org/2024irp/>.
5. **Approval of Minutes** – The Board approved the May minutes. Matthew motioned to approve the May minutes, and Ted seconded. The May minutes were approved by acclamation.
 6. **Updates and Round Table**
 - Recent legislature on use of non-functional turf - Shelby discussed the recent Colorado legislative session and water related bills. Her slides are attached with the minutes. Bill SB24-005 relates to non-functional turf and Shelby stressed the importance of paying attention to this one because of its implementation starting January 2026.
 - Appointing PRPA IRP review sub-committee – Review the plan and tonight's presentation slides to develop points for the BOCC to consider. Rodger asked for members who are interested to speak up. Leo Grassens would like to serve; he will officially be an active member starting July 1. Other members that will participate are Matthew, Tasha, and Rodger. Chris recused himself as an ESAB member but can participate as a subject matter expert to address any questions as they come up. Andrew recused himself from discussion and voting on this matter.
 - 2024 Workplan accepted by BOCC; Bylaws approved by County Attorney – Shelley updated the Board on the status of the workplan and bylaws.
 - Recognizing outgoing ESAB members – Rodger recognized the outgoing members and provided them with a certificate of appreciation. Outgoing members are: Ted Hendrickx, Ally Little, George Rinker, Shelby Sommer, and Katrina Winborn-Miller.
 - Halligan Reservoir and options for presentation – Nicole inquired with the City of Fort Collins regarding having someone present on the Halligan Water Project. Shelley explained that once the City's 1041 application is submitted to the County Planning Department, the Board cannot receive a presentation or otherwise comment on the project. If members are interested to learn more, she encouraged them to go to the Halligan project website and watch the presentations they have hosted there.
 - Water Quality standards for arsenic – Nicole noted that the Water Quality Control Commission (WQCC) is reviewing the state's arsenic standards. The current standards will be extended to 2029, while the WQCC works on developing new standards.
 7. **Issue Index** – will be updated.
 8. **Agenda Topics for Future Meetings** – For July, the Larimer County Water Master Plan update, PRPA IRP Memo. The Board will take August off.
 9. **Adjourn** – The meeting adjourned at 8:00 PM.



Platte River
Power Authority

Estes Park • Fort Collins • Longmont • Loveland

Platte River Power Authority

Overview

Agenda and goals

Agenda:

- Platte River overview
- 2024 Integrated Resource Plan results and recommended portfolio
- Next steps
- Q&A

Goals:

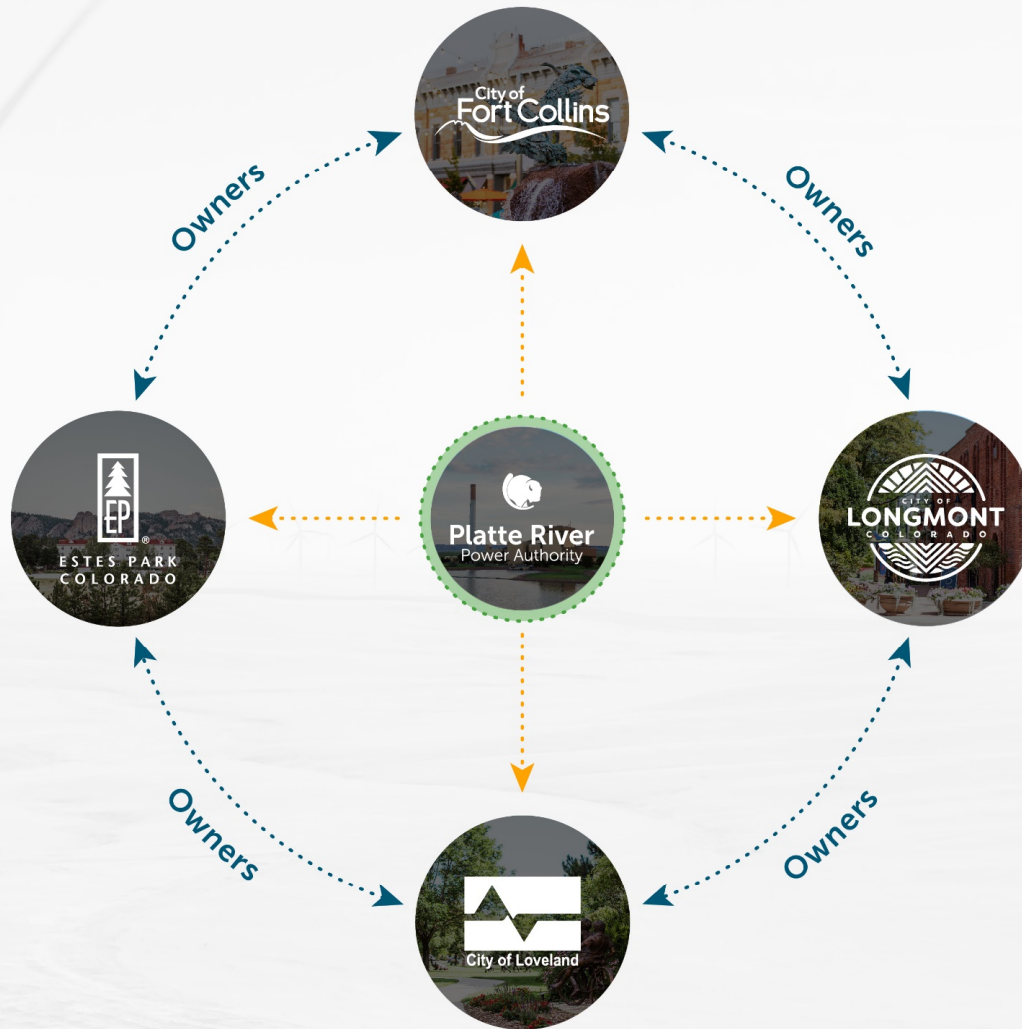
- Inform
- Solicit feedback
- Promote upcoming opportunities for public comment and engagement



Platte River overview

Leigh Gibson, Senior external affairs specialist





Platte River's Board of Directors



Gary Hall
Mayor
Town of Estes Park
Board member since April 2024



Reuben Bergsten
Director of utilities
Town of Estes Park
Board member since Jan. 2012



Jeni Arndt
Vice chair
Mayor
City of Fort Collins
Board member since April 2021



Tyler Marr
Deputy city manager
City of Fort Collins
Board member since Jan. 2024



Joan Peck
Mayor
City of Longmont
Board member since Nov. 2021



David Hornbacher
Assistant city manager
Longmont Power & Communications
Board member since Aug. 2019



Jacki Marsh
Mayor
City of Loveland
Board member since 2017



Kevin Gertig
Board chair
Director of Loveland
Water and Power
Board member since Dec. 2021

Owner communities

Town of Estes Park

Utility: Estes Park Power and Communications

Annual retail customers: 10,876

City of Fort Collins

Utility: Fort Collins Utilities

Annual retail customers: 77,681

City of Longmont

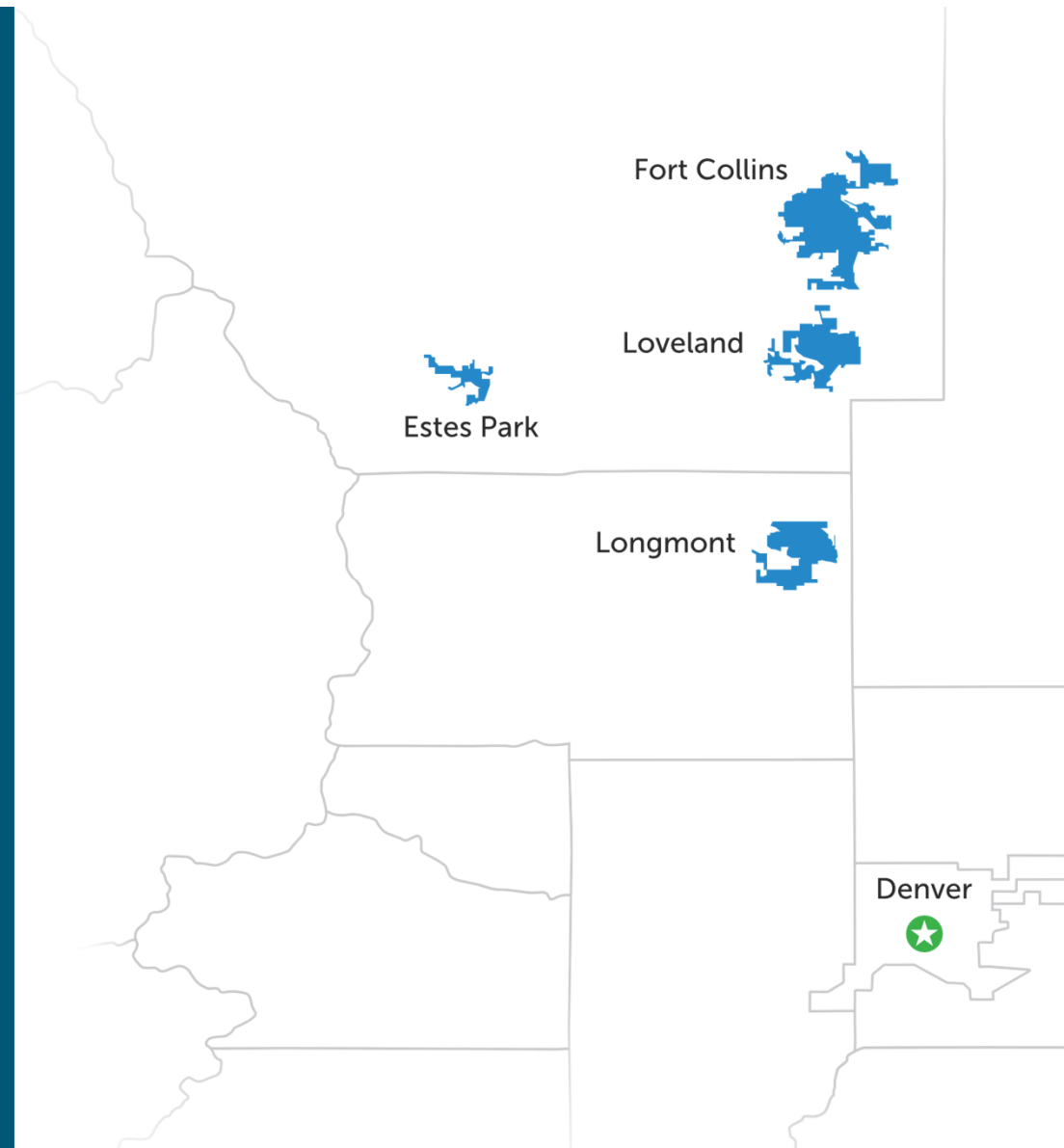
Utility: Longmont Power & Communications

Annual retail customers: 45,558

City of Loveland

Utility: Loveland Water and Power

Annual retail customers: 38,941





Platte River Power Authority



Reliability



Environmental
responsibility



Financial
sustainability

Estes Park

Fort Collins

Loveland

Longmont

Denver

4 municipalities
350K+ residents

Community
owned, public
power utility



~300
employees

Resource capacity

Resource capacity	MW	
Coal	431	
Natural gas	388	
Hydropower	80	
Wind power ⁽¹⁾⁽²⁾	303	67
Solar ⁽¹⁾	52	22
Total	1,254	998

- (1) For the effective capacity calculation, wind facilities are assigned firm capacity of 22% of their nameplate capacity and solar facilities are assigned 42% of their nameplate capacity. Platte River is also using a 2 MWh battery charged by solar.
- (2) 72 MW of wind is currently sold to other entities, 60 MW of which will return to Platte River in 2030



A photograph of a wind farm at sunset. The sky is a mix of orange, pink, and blue. In the foreground, a large wind turbine is silhouetted against the sky. In the background, many other wind turbines are visible, stretching across the horizon.

Resource Diversification Policy

Passed by Platte River's Board of Directors in 2018

Purpose

To provide guidance for resource planning, portfolio diversification and carbon reduction.

Goal

To support owner community clean energy goals, we will proactively work towards a 100% noncarbon resource mix by 2030 while maintaining our foundational pillars of providing reliable, environmentally responsible and financially sustainable energy and services.

Accomplished

- An organized regional market must exist with Platte River as an active participant

In progress

- Transmission and distribution infrastructure investment must be increased
- Transmission and distribution delivery systems must be more fully integrated
- Improved distributed generation resource performance
- Technology and capabilities of grid management systems must advance and improve
- Advanced capabilities and use of active end user management systems
- Generation, transmission and distribution rate structures must facilitate systems integration

Awaiting technology

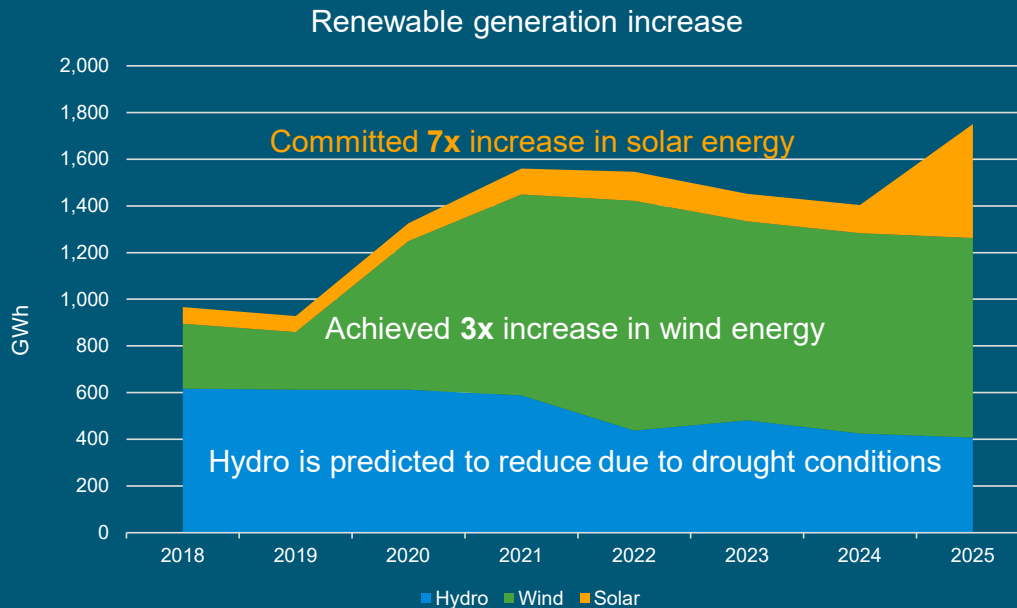
- Battery storage performance must mature and the costs must decline
- Utilization of storage solutions to include thermal, heat, water and end user available storage

Renewable integration challenges

- Renewable intermittency
 - Day to day operation
 - Extreme weather operation
- Ensuring reliability in all weather conditions
- Serving load with intermittent renewable generation will require:
 - Energy storage
 - DERs and flexible load
 - Dispatchable generation



Progress since RDP passage in 2018



- Filed 2020 IRP, filed Clean Energy Plan with the state (80%+ carbon reduction by 2030), announcement to retire coal resources
- 225 MW Roundhouse Wind Energy Center
- Added 22 MW Rawhide Prairie Solar with 2 MWh battery
- Signed 150 MW Black Hollow Solar power purchase agreement
- Finalizing winning proposals from 2022 solar and battery storage RFPs
- Recently issued 150-250 MW wind RFP
- Implementing a distributed energy resources strategy
- Entered Southwest Power Pool Western Energy Imbalance Service market

2024 Integrated Resource Plan

Masood Ahmad, Senior Manager, Resource
Planning



What is an Integrated Resource Plan (IRP)?

- IRP is a planning process which integrates customer demand and resources (DERs) with utility resources to provide reliable, economical and environmentally desirable electricity to customers
- Typically developed for the next 10-20 years and updated every few years
- IRP assists with preparing for industry changes including:
 - Technological progress
 - Consumer preferences
 - Regulatory mandates
- Required by Western Area Power Administration (WAPA) every five years
- WAPA requires a short-term action plan and an annual follow up on plan execution
 - Last IRP was submitted in 2020



IRP timeline

2023

2024

June

July

Aug

Sept

Oct

Nov

Dec

Jan

Feb

Mar

April

May

June

July

Aug

Community engagement

Community listening session

City council meetings

Community engagement meeting

City council meetings

Community engagement meeting

Ongoing public engagement in collaboration with owner communities

Resource planning

- Pre-IRP studies
- Load forecasting
- Other inputs, assumptions

IRP modeling

Portfolio development

Review results

Reliability assessment with renewables and DER integration

IRP document development

Board presentation

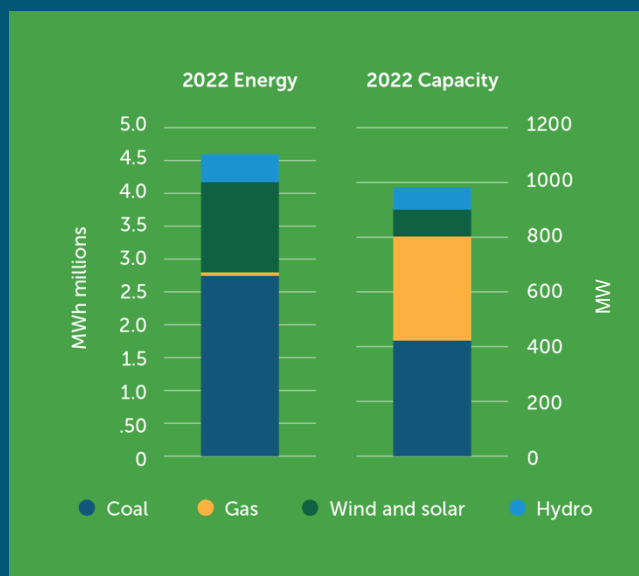
IRP document approval and submission



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Power Authority

IRP challenge

Create a transition plan to retire 431 MW of coal, currently providing over half of the low-cost energy and reliable capacity. Replace this with low or no-carbon energy and capacity within six years.



Replace more than 2 million MWh of energy and equivalent capacity

Focus mostly on energy – but capacity or reliability is also critical



Solar



Battery storage



Wind

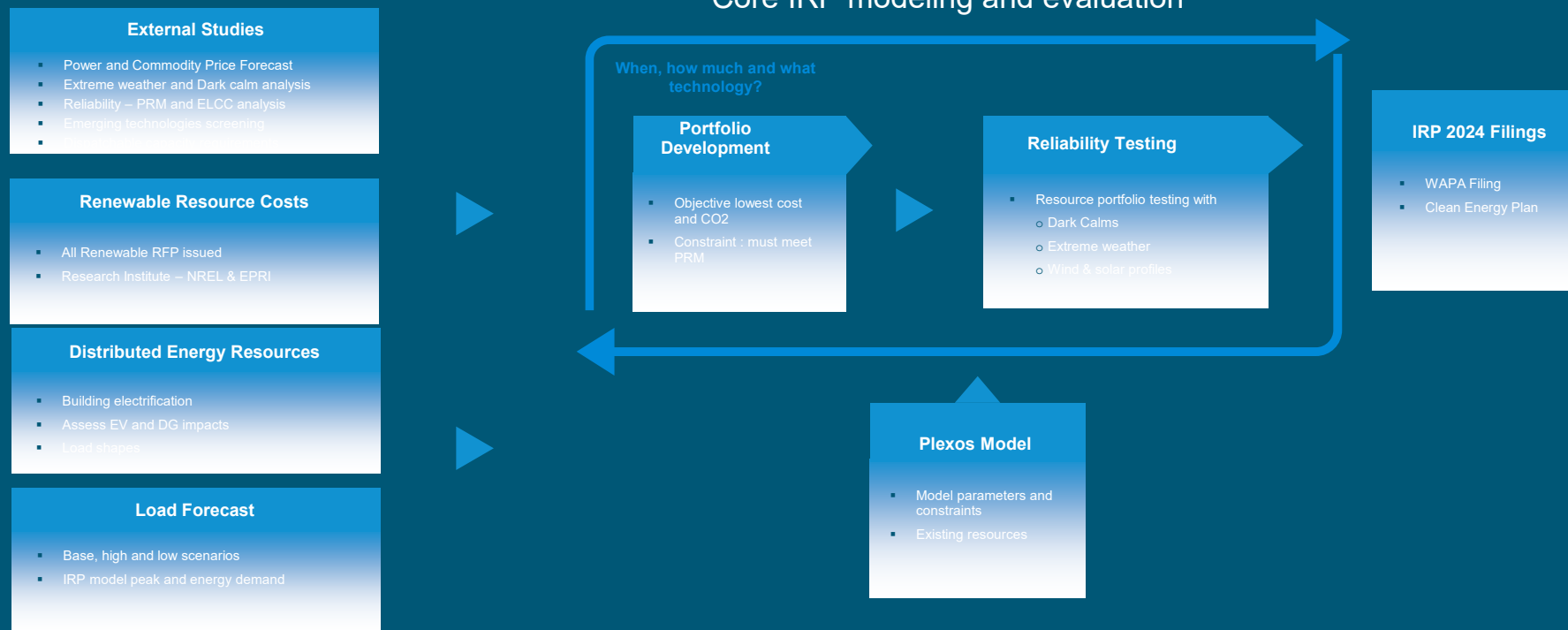


VPP



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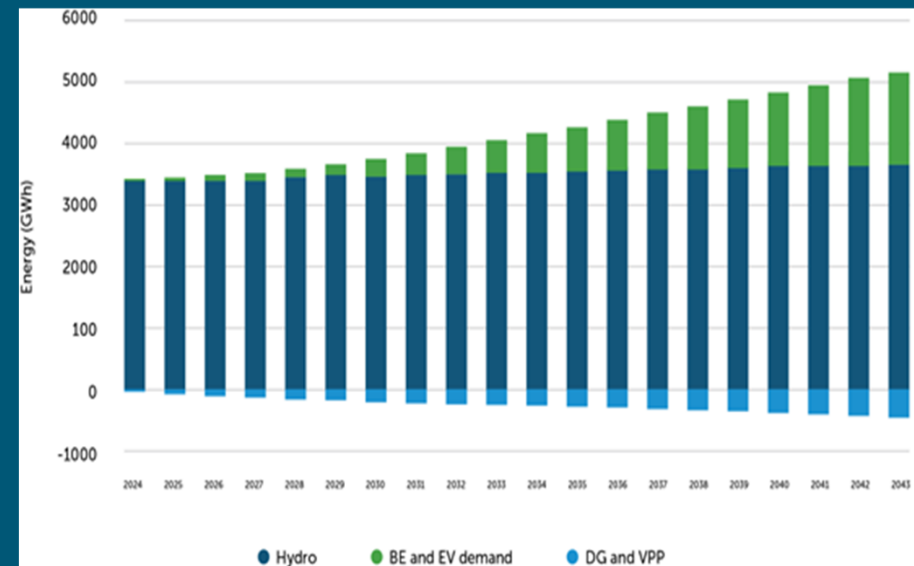
IRP process overview



IRP major assumptions

- Electric demand growth
 - Including electrification and electric vehicle demand
- VPP and DER deployment
- Technological breakthroughs
 - LDES commercially available in 2035
 - Green Hydrogen commercially in 2035
- Market – provides regional optimization & renewable integration
- Renewable Energy Costs
 - Solar : \$26/MWh to \$38/MWh (Long term contract cost)
 - Wind : \$30/MWh to \$34/MWh (Long term contract cost)
- Dispatchable Capacity Costs
 - 4hr- battery storage : \$11/kW-month to \$14/kW-month (Long term contract cost)
 - Long duration energy storage : \$2.5 million/MW (Capital cost)
 - Thermal : \$1.5 million/MW (Capital cost)

DERs play a critical role



Distributed energy resources

Modeled in load forecast



Energy efficiency

Save energy and save money by using energy more efficiently



Electrification

Reduce greenhouse gases by replacing fossil fuel use with increasingly decarbonized electricity

Flexible DER as part of a virtual power plant (VPP)



Distributed generation

On site noncarbon generation

Solar generation



Demand response

Shift energy to align electric use to renewable availability and to decarbonize the electric system in a cost effective and reliable manner

Electric vehicles, batteries and traditional demand response



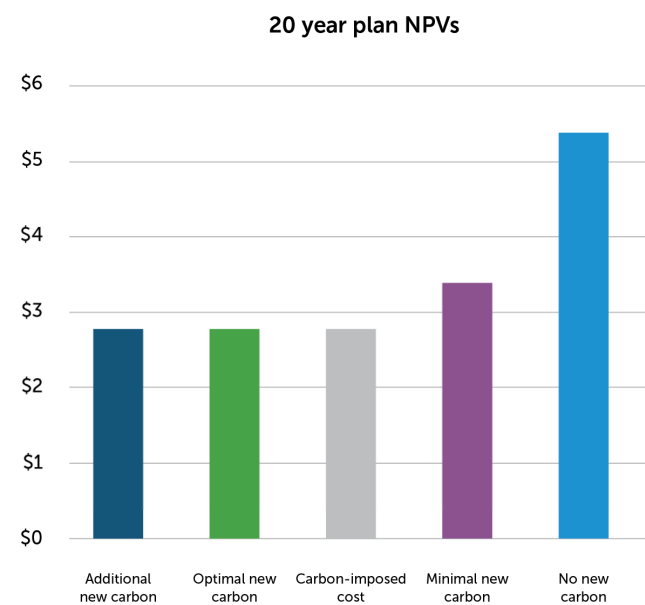
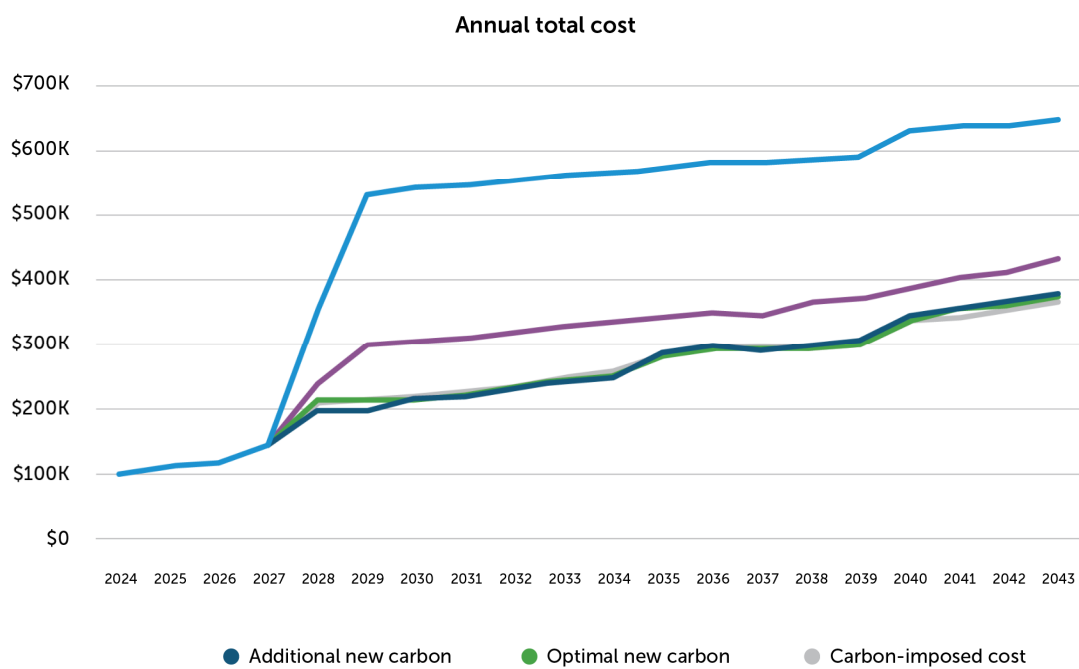
Distributed energy storage

Summary of five portfolios

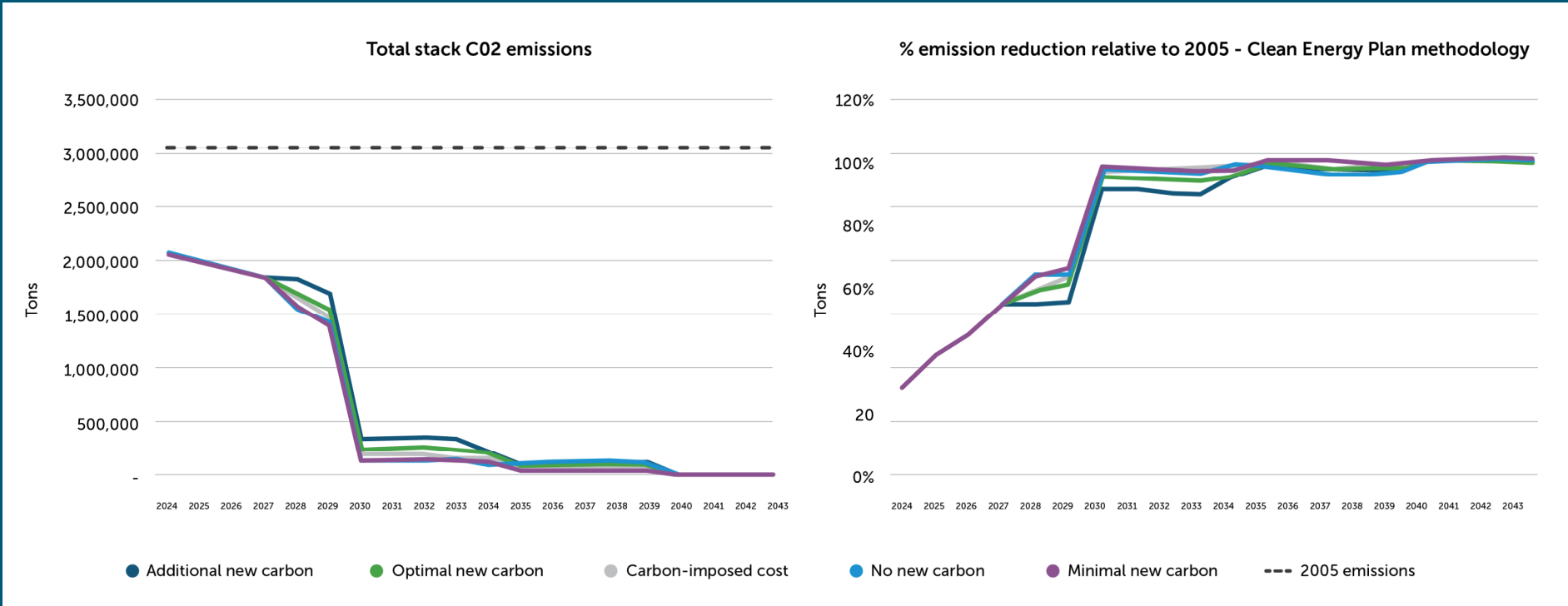
Portfolio	Total resource addition in 20 years, MWs								Cost	2030	2035
	Solar	Wind	4-Hr Storage	LDES	Thermal	Distribute d Solar	Distribute d Storage	Total renewable + storage	NPV, \$ billion	CO2 tons x000	CO2 tons x000
No new carbon	600	885	2850	10	0	337	123	4,805	\$5.34	126	104
Minimal carbon	600	885	1100	110	80	337	123	3,155	\$3.37	127	36
Carbon-imposed cost	550	985	400	160	160	337	123	2,555	\$2.78	196	54
Optimal new carbon	600	885	275	160	200	337	123	2,180	\$2.77	241	74
Additional new carbon	450	985	175	110	280	337	123	2,380	\$2.76	329	98



Comparative portfolio costs



Comparative CO2 emissions and % reduction vs. 2005



Recommended portfolio details

	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
Coal	-77			-74	-289															-431
Solar	150	150								100					50			100	50	600
Wind			200	200		60					100			100		60			225	945
Storage 4-hr		25	25	50	75		25	25	25							-2			25	273
Storage Long Duration				10							50					50	50			160
Solar DER	16	21	22	21	15	14	13	12	10	10	10	13	14	14	15	16	17	18	19	291
Storage DER	3	5	7	7	8	7	8	8	8	7	6	5	4	4	5	6	7	7	7	120
Thermal				200																200
Total annual	92	201	254	214	-182	81	46	45	43	117	166	18	18	118	70	131	75	126	327	1958
Total net	92	292	546	760	578	659	705	750	793	910	1076	1094	1112	1230	1300	1431	1505	1631	1958	

Next steps

- Finalize the IRP document with board input
- Continue public engagement in the next few months
- IRP approval in July and then file with WAPA
- Continue the plan execution on multiple fronts:
 - New resource additions: renewables, storage and dispatchable
 - DER implementation
 - Public engagement and education
 - Continue planning for just transition at Rawhide



Questions



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Larimer County Environmental & Science Advisory Board

Water-Related Legislation Update - 2024

List of relevant bills that have been signed into law or passed and awaiting signature (courtesy of the Colorado Water & Land Use Planning Alliance).

Introduced Bills - 2024 Legislative Session	Status (Pass/Fail/Postponed)
<u>SB24-005 Prohibit Landscaping Practices for Water Conservation</u>	Became Law
<u>SB24-037 Study Green Infrastructure for Water Quality Management</u>	Passed
<u>SB24-148 Precipitation Harvesting Storm Water Detention</u>	Became Law
<u>SB24-174 Sustainable Affordable Housing Assistance</u>	Passed
<u>SB24-179 Floodplain Management Program</u>	Passed
<u>HB24-1007 Prohibit Residential Occupancy Limits</u>	Became Law
<u>HB24-1107 Judicial Review of Local Land Use Decision</u>	Passed
<u>HB24-1152 Accessory Dwelling Units</u>	Passed
<u>HB24-1266 Local Government Utility Relocation in Right-of-Way</u>	Passed
<u>HB24-1304 Minimum Parking Requirements</u>	Passed
<u>HB24-1313 Housing in Transit-Oriented Communities</u>	Passed
<u>HB24-1362 Measures to Incentivize Graywater Use</u>	Passed
<u>HB24-1379 Regulate Dredge & Fill Activities in State Waters</u>	Passed
<u>HB24-1463 Restrictions on Tap Fees</u>	Passed

SB24-005: Prohibit Landscaping Practices for Water Conservation

- Beginning January 1, 2026, the bill prohibits local governments and special districts from installing, planting, or placing nonfunctional turf, artificial turf, or invasive plant species as part of a new development or redevelopment project on commercial, institutional, or industrial property, common interest community property, or a street right-of-way, parking lot, median, or transportation corridor.
- Further, beginning January 1, 2025, the Department of Personnel and Administration (DPA) must not use prohibited landscaping in construction and renovation projects on state facilities.
- Does not apply to nonfunctional turf installed before the effective dates, certain grass seeds or sod, or artificial turf on athletic fields of play. Does not apply to residential property.

SB24-174 Sustainable Affordable Housing Assistance

- DOLA would create methodologies for statewide, regional, and local housing needs assessments and to conduct a statewide HNA every 6 years. Local governments would conduct local HNAs and regions may conduct regional HNAs. Local governments would complete housing action plans and report on adopted affordability and displacement mitigation strategies. DOLA would create a directory of best practices and provide technical assistance. Certain agencies must consider compliance in funding decisions.
- **Local comprehensive plans must include a water supply element and a strategic growth element.**