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Board of directors

July 25, 2024

2024 Integrated Resource Plan

Raj Singam Setti, chief operating officer, innovation and resource strategy integration



2024 IRP - Addressing customer needs

Decarbonization Path: "Reliable Renewable", adding renewable energy to reduce carbon emissions and maintain reliability with dispatchable capacity



Reliability



Environmental responsibility



Financial sustainability



Add renewables

Continue to add even more sources of reliable, renewable energy



Add dispatchable capacity

A three-pronged approach – Virtual Power Plant, Energy Storage, and Aeroderivative



2024 IRP- Journey



Community Engagement

Between June 2023-August 2024, 36 unique engagement events reaching hundreds of people across our service region.



Extensive Evaluation

Platte River
collaborated with nine
top consultants,
dedicating thousands of
hours to evaluate and
model scenarios.



Portfolio Options

The analysis resulted in five portfolio options and one recommended path for future energy planning.



Summary of five portfolios

Portfolio		Total resource addition in 20 years, MWs									2035
	Solar	Wind	4-Hr Storage	LDES	Thermal	Distributed Solar	Distributed 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



Recommended portfolio – Optimal New Carbon

Consistent with Resource Diversification Plan goals, maintains optionality for the future, and equitable access for all citizens.

	2025	2026	2027	2028	2029	2030	Total
Coal (MW)	-77			-74	-280		-431
New Solar (MW)	150	150					300
Existing Solar (MW)							52
New Wind (MW)			200	200		60	460
Existing Wind (MW)							231
Hydro (MW)							70
Storage 4-hr (MW)		25	25	50	75		175
Storage Long Duration (MW)				10			10
Solar DER (MW)	16	21	22	21	15	14	109
Storage DER (MW)	3	5	7	7	8	7	37
Thermal (MW)				200			200
Existing CTs (MW)							388



Next steps

- 2024 IRP board approval
- File with Western Area Power Administration
- Continue the plan execution on multiple fronts:
 - New resource additions: renewables, storage and dispatchable
 - Distributed Energy Resources, Distributed Energy Resources Management Systems and Virtual Power Plant implementation
 - Public engagement and education
 - Continue planning for Just Transition at Rawhide Energy Station
- Start planning for the 2028 IRP



Questions



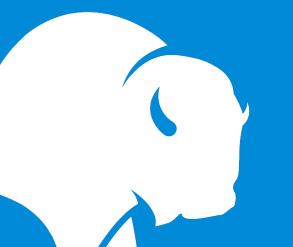


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40th Anniversary of Rawhide Energy Station



Black Hollow Solar groundbreaking event





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Fiber management intergovernmental agreement amendment

Shelley Nywall, director of finance



Topic

- Intergovernmental Agreement for Fiber Management (Fiber IGA)
 - Defines terms and conditions for Platte River to provide fiber optic network management and related services to the owner communities
- First Amendment to the Intergovernmental Agreement for Fiber Management
 - Remove all provisions concerning the Long-Haul Fiber Account
- Long-Haul Fiber Account
 - Accumulated revenues from leases of the excess fibers in the long-haul fiber assets partially offset by expenses approved by the Fiber Optic Executive Committee



Background

1998-1999 Platte River Fiber Optic Network

- Provides high quality, reliable communications critical to real-time operations of the bulk electric system
- Consists of cables and fiber bundles in the fiber rings and the long-haul fiber (connects the fiber rings), including fibers in excess of Platte River's needs
- Transferred excess fibers in the Longmont fiber ring to Longmont
- Proportionate share of the cost of fiber rings treated as a return of equity for all owner communities
- Board approved leasing excess fibers on behalf of the owner communities

2017 Platte River Fiber Optic Network Accounting Policy

- Identifies cost responsibility; Platte River assumes all costs, including where there are shared fibers
- Determined incremental cost of additional fibers is immaterial



Background

2018-2019

- Increased interest in owner community broadband services and Platte River's excess fibers
- Senate Bill 05-152 restricted the ability of local governments to engage in broadband activities
 - Each owner community opted out by voter approval but unsure of applicability to Platte River at that time
- Fiber Optic Network
 - Fiber rings: transferred excess fibers in the fiber rings around each remaining owner community
 - Long-haul fiber: equitable distribution could not be determined (used by all entities but not at the same rate)
- Fiber IGA executed
 - Created the Long-Haul Fiber Account due to
 - Concerns regarding Senate Bill 05-152 restrictions on Platte River
 - Equitable transfer of the long-haul excess fibers to the owner communities had not been determined
 - Temporary solution with the expectation those assets would be distributed to the owner communities



Background

• **2024**

- Senate Bill 05-152 no longer a concern (repealed by Senate Bill 23-183)
- Platte River continues to own the long-haul fiber assets and excess fibers
- Long-Haul Fiber Account does not follow proper accounting practices
 - Transactions should be recorded as revenues and expenses on the Statement of Revenues,
 Expenses and Changes in Net Position
- Platte River recommended removal of the Long-Haul Fiber Account to the Fiber Optic Executive Committee



Proposed amendment

- First Amendment to Intergovernmental Agreement for Fiber Management
 - Eliminates the Long-Haul Fiber Account
 - Platte River retains ownership of the long-haul assets and all associated fibers and lease revenues
 - Fiber Optic Executive Committee recommends approval
 - Each owner community's city council or town board also approves the amendment
 - Estes Park approved May 28, 2024
- Approval requested at the August board meeting
- No affect to the management or cost responsibility of the Fiber Optic Network



Questions





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One-year WEIS participation and SPP RTO West update

Jeremy Clark, director of power markets



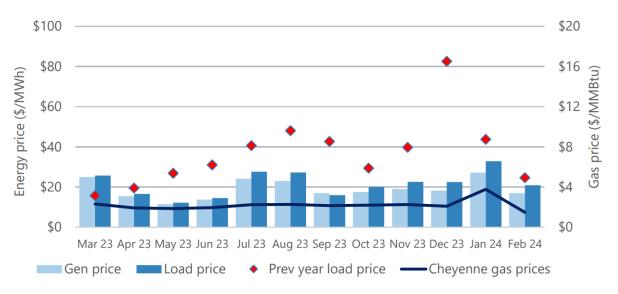
Platte River overview

- Platte River exited the Public Service Company of Colorado (PSCo) joint dispatch agreement (JDA) to join the Southwest Power Pool Western Energy Imbalance Service (SPP WEIS)
- JDA was dissolved with counterparties joining WEIS for better integration of renewables
- On April 1, 2023, the Public Service Company of Colorado Balancing Authority Area (PSCo BAA), including Platte River Power Authority, PSCo and Black Hills Energy, integrated into WEIS



WEIS as a whole

Figure 1: WEIS energy and natural gas prices



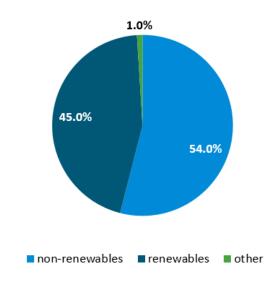
*Southwest Power Pool, Inc. Market Monitoring Unit, 2024

- The addition of the PSCo BAA to the WEIS market decreased coal from 60% to 40% of total generation
- WEIS average energy prices decreased due to addition of PSCo BAA renewable resources and low natural gas prices
- Market participants include
 - Basin Electric Cooperative
 - Black Hills Energy
 - Cheyenne Light, Fuel and Power Company
 - City of Farmington NM Electric Utility
 - Colorado Springs Utilities
 - Deseret Power Electric Cooperative
 - Guzman Energy
 - Municipal Energy Agency of Nebraska
 - Platte River Power Authority
 - Public Service Company of Colorado
 - The Energy Authority, Inc.
 - Tri-State Generation and Transmission Association
 - United Power, Inc.
 - Western Area Power Administration

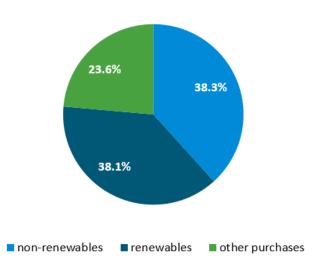


WEIS year one (April – March): generation mix

WEIS generation mix

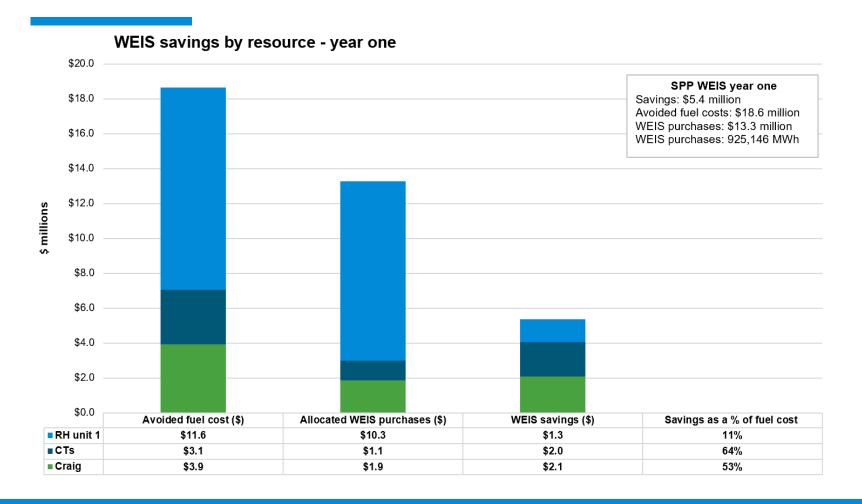


Platte River generation mix





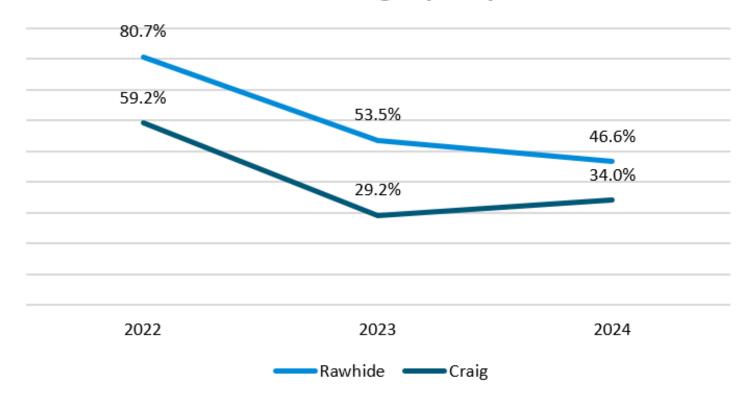
WEIS year one (April – March): Platte River savings





Platte River coal plant capacity factors

Rawhide and Craig capacity factors





Lessons learned

Changes in bilateral transactions	Fewer megawatt-hours sold but increased pricing. The "solar" hours in the shoulder months brought little demand. Light load hours were in demand more than high load hours (high load was a difficult market).
Unit dispatch	Projects online and dispatched at minimum (fuel savings). All units must be scheduled for supply adequacy, but the market dispatches them as needed.
Additional market scheduling and monitoring requirements	More complex day-ahead and real-time scheduling requirements. Additionally, generation dispatch is received every 5-minutes.
Purchased power volume	Higher than expected due to a considerable amount of energy purchased economically through SPP WEIS.
Gas nominations	Since joining WEIS, gas units have operated near minimums. Gas nominations have been adjusted accordingly.



Questions



SPP RTO West integration project update

Melie Vincent, chief operating officer – generation, transmission, and markets



Background and purpose

- Platte River successfully joined the Southwest Power Pool (SPP) Western Energy Imbalance Services market on April 1, 2023
- Platte River decided to join the SPP Regional Transmission Organization (RTO) in mid-2023 and will fully integrate into the market on April 1, 2026

The RTO is a critical part of the Resource Diversification Policy by achieving the following:

- Expanding and integrating noncarbon energy resources to serve Platte River's load
- Sharing services and operations that are currently performed by each individual utility
- Participating in a wholesale forward market that hedges risk, reduces price volatility, and economically coordinates resource operations at a regional level to meet demand.



Timeline

	2023			2024				2025				2026	
Activity	Q3 23	Q4 23	Q1 24	Q2 24	Q3 24	Q4 24	Q1 25	Q2 25	Q3 25	Q4 25	Q1 26	Q2 26	
Commitment agreements	7/1, 10/10												
Tariff and member on-boarding		8/1-3/31											
Requirements and design	10/2			-7/1									
MOPC approval				4/1									
Development			4/1-12/31										
Internal Testing (SAT, SIT/FIT)						10/1-7/1							
Member Testing							4/1-12/31		1				
Parallel Operations											1/26	5-4/1	
Go-live												4/1	



Recent accomplishments

- Market fundamentals training (both internal and SPP provided)
- SPP Open Access Transmission Tariff (OATT) revision process and FERC filing
- Completed onboarding documentation with SPP
- Completed gap analysis report



Gap analysis summary

New workflows

- Day-ahead and real-time workflow for the front office
- Transmission billing for back-office accounting
- New risk policies and associated workflow for the risk department

Software implementations

- Software to facilitate SPP RTO market operations (energy bids/offers and settlements)
- Expansion of the Energy
 Trading Risk Management
 system already in
 production

Existing operations adjustments

- Switching balancing authorities
- Plant operations optimization for market participation
- FERC Energy Quarterly Reporting



Next steps

- Adjust implementation plan to incorporate results of the gap analysis
- Review and update Platte River agreements that will be affected by SPP RTO West
- Finalize resource registration with SPP for creation of new market footprint and network models
- Update workflow design for impacted processes and to support software implementations



Questions





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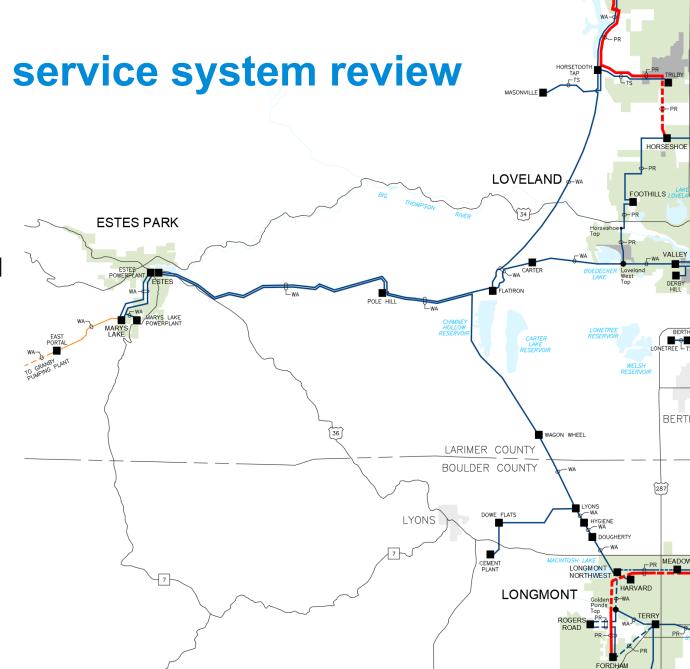
Flatiron Estes Park transmission line update

Melie Vincent, chief operating officer, generation, transmission and markets



Estes Park transmission service system review

- The rebuild project on the Western
 Area Power Administration (WAPA)'s
 Lyons Estes 115-kV line and Flatiron
 – Estes 115-kV corridor was completed
 on Oct. 18, 2023
- Project should have protected Estes
 Park from islanding. However, the
 Estes Park blackout on Oct. 29, 2023,
 proved further modifications were
 needed
- WAPA received federal approval to install airflow spoilers in January 2024. Installation was complete March 2024



FORT COLLINS

March 30, 2023: construction outage event

- During the rebuild, the Estes Power Plant (EPP) Lyons 115-kV line tripped
- A guard structure fell into the EPP Lyons 115-kV line, one mile outside of Flatiron, causing the trip
- Granby 454 was already open, due to potential high loading on the Adams Tunnel circuit. The Pole Hill – Flatiron line was out, as part of WAPA's work to rebuild the lines. As a result, Estes Park was islanded with hydro units online in Estes Park. Frequency oscillations prevented the units from controlling output
- 19:18, Platte River shed load at Marys Lake (ML) and Estes Park to arrest frequency oscillations. All load in the Estes Park area was shed
- 19:35, Platte River, WAPA, the Southwestern Power Pool Reliability Coordinator and Tri-State Generation & Transmission began coordination efforts to restore load to the Estes Park area
- 19:43, ML-T3 was energized from the west portal to provide a hot line for load restoration
- 21:48, all load was restored in the Estes Park area, following coordination between Platte River and WAPA to energize city load transformers



Oct. 29, 2023: line galloping

- Granby 454 was already open due to potential high loading on the Adams Tunnel circuit
- Line galloping caused the Estes Park Pole Hill 115-kV line and the Estes Park Lyons 115-kV line to trip, resulting in a blackout for the Town of Estes Park
- Line galloping happens when ice forms on conductors and wind causes the conductors to sway
 up and down and side to side. The phases then hit each other, causing the lines to trip
- 08:05, Estes Park shed load
- 12:06, Estes Park load restored following coordination efforts between Platte River, Estes Park Utilities, WAPA and Tri-State staff
- Post event actions: WAPA fast-tracked the installation of airflow spoilers to reduce galloping. Platte River and WAPA personnel developed a plan to re-energize the Town of Estes Park in a quicker manner



April 27, 2024: winter storm

- Before midnight, service was lost on the Adams Tunnel 69-kV feed into Estes Park. Shortly thereafter, the Lyons Estes and Estes Pole Hill lines tripped
- 01:20, Estes Park lost 11.76 MW of load
- 01:23, Platte River, WAPA and Tri-State began implementing the coordinated operating plan developed in 2023 to quickly restore load to Estes Park
- 01:41, the 69-kV connection through Adams Tunnel was restored, allowing transformers at ML and Estes Park to be re-energized
- 03:38, Granby 454 was re-opened due to potential high loading on the Adams Tunnel circuit
- 04:00, Estes Park Pole Hill tripped. At 04:02, Platte River and WAPA transmission operators decided to close Granby – 454. This avoided a second loss of Estes Park load, as the Estes Park – Lyons line subsequently tripped at 04:04
- Some Estes Park distribution outages continued following the restoration of transmission service
- Post event actions: a meeting with WAPA at Platte River took place for post-event analysis and the establishment of next steps to reduce outage risks





Platte River capital investments for improvement

- Energy storage
 - Partial solution, still requiring grid connection to maintain system stability
 - Limited to four-hours of redundancy
 - Battery islanding of distribution loads requires significant distribution system upgrades
- Close Granby 454 during times of increased line risk to maintain three feeds to Estes Park
 - WAPA holds Granby 454 open to mitigate the risk of overloading the Adams Tunnel circuit. WAPA and Platte River would need to identify procedures that address both the circuit overload risk and Estes Park islanding risk
 - May require upgrade of line through the Adams Tunnel
- Upgrade of the Marys Lake transformer to increase the overall capacity of the circuit feeding Estes Park from the west



WAPA action items

Barton Barnhart, senior vice-president and regional manager, Western Area Power Administration



Questions





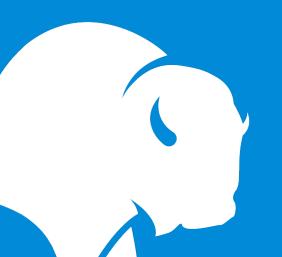
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Update of the 2024 Colorado Legislative Session

Javier C. Camacho, director of public and external affairs, strategic communications and social marketing



Agenda

- Overview of the legislative session
- Tracked priority legislation
- Next steps



75th Colorado General Assembly

January 10 – May 8, 2024

- Legislators:
 - House: Democrat super majority (46 Democrats, 19 Republicans)
 - Senate: Democratic control (23 Democrats, 12 Republicans)
- Bills:
 - 705 introduced
 - 60 introduced in the last month
 - 60% still pending in the last three days of session
 - Nearly 75% passed
- Platte River:
 - Tracked 34 bills
 - Took positions on six bills



HB24-1338 Cumulative Impacts and Environmental Justice

Status: passed. Platte River position: monitor after amend.

- This bill was a priority for the Governor's office and CDPHE.
- As originally drafted, Section 4 of the bill would have given local elected officials regulatory authority over air quality, in addition to the existing authority held by federal and state agencies.
- As amended and passed, the bill no longer contains the local control section.
- This bill sets up the office of environmental justice within CDPHE.



SB24-229 Ozone Mitigation Measures

Status: passed. Platte River position: monitor

- This bill mostly targets NOx and permitting for oil and gas, but it also requires the APCD
 to establish an annual report about violations enforcements and investigations as well as
 an email listsery to keep interested parties notified of violations and settlements.
- This bill impacts Platte River less than several of the ozone bills that were introduced earlier in the session (SB24-165, SB24-166, HB24-1330, and HB24-1339), which were abandoned in favor of SB24-229.



Failed legislation due to passage of SB24-229

Status: failed.

- SB24-165 Air Quality Improvements (monitor): This bill would have created a program targeting indirect sources of emissions and a seasonal pause for oil and gas operations.
- SB24-166 Air Quality Enforcement (oppose): This bill would have allowed a person to commence civil action against any polluter that violated APCD regulations in a district court where the violation occurred or where the person resides.
- HB24-1330 Air Quality Permitting (monitor): This bill would have created new permitting rules for oil and gas as well as indirect sources.
- HB24-1339 Disproportionately Impact Community Air Pollution (monitor): This bill would have added two new members to the Air Quality Control Commission and would have required the APCD to revisit a recent rulemaking specific to industrial and manufacturing emission regulations.



Other passed bills of interest

- HB24-1454 Grace Period Noncompliance Digital Accessibility (monitor): Prior to passing, state agencies and public entities were required to comply with digital accessibility standards on or before July 1, 2024. The bill provides a one-year extension to July 1, 2025, of immunity from liability for failure to comply with the digital accessibility standards for an agency that demonstrates good faith efforts toward compliance or toward resolution of any complaint of noncompliance.
- SB24-197 Water Conservation Measures (monitor): This bill allows Platte River to keep its water rights in Division 6 after the Craig and Hayden coal units retire.
- HB24-1030 Railroad Safety Requirements (monitor): This bill limits the length of trains without negatively impacting the delivery of coal to Rawhide Energy Station.



Net-zero by 2040

- The Colorado Energy Office (CEO) wanted to introduce a bill in which qualifying utilities, including Platte River, would need to file updated Clean Energy Plans that modeled netzero and near net-zero emissions by 2040.
- For municipal utilities, the board of directors would then instruct the utility to achieve net-zero or near net-zero emissions by 2040.
- Platte River engaged in the stakeholder process early and often.
- After multiple conversations and iterations of draft legislation, the CEO ultimately decided not to introduce the bill. Instead, it committed to take more time to work through the nuances of this topic and to introduce this legislation in the 2025 session.



Next steps

Continued stakeholder engagement

- Governor's office and state agencies
- Legislators
- Trade associations and other utilities

Elections monitoring

Federal, state, and local elections this fall



Questions





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May operational results

Owner community load	Budget	Actual	Variance	% varia	nce
Owner community demand	466 MW	439 MW	(27 MW)	(5.6%)	
Owner community energy	250 GWh	235 GWh	(15 GWh)	(6.0%)	
Not variable cost* to com/o ov/per community energy	\$5.9M	\$5.2M	(\$0.7M)	(6.19/)	
Net variable cost* to serve owner community energy	\$23.39/MWh	\$21.97/MWh	(\$1.42/MWh)	(6.1%)	

^{*}Net variable cost = total resource variable costs + purchased power costs - sales revenue

Downward pressure		
Generation and market outcomes pushing costs lower		
Coal generation fuel savings \$0.61M		
Gas generation fuel savings	\$0.27M	

Upward pressure		
Generation and market outcomes pushing costs higher		
Lower bilateral sales volume \$0.51M		
Higher Craig generation fuel pricing	\$0.24M	

YTD operational results

Owner community load	Budget	Actual	Variance	% varia	ince
Owner community demand	2,311 MW	2,221 MW	(90 MW)	(3.9%)	•
Owner community energy	1,305 GWh	1,255 GWh	(50 GWh)	(3.8%)	
Not veriable cost* to serve owner community energy	\$26.5M	\$22.2M	(\$4.3M)	(12.00/)	
Net variable cost* to serve owner community energy	\$20.33/MWh	\$17.72/MWh	(\$2.63/MWh)	(12.8%)	

^{*}Net variable cost = total resource variable costs + purchased power costs - sales revenue

Downward pressure		
Generation and market outcomes pushing costs lower		
Coal generation fuel savings \$4.4M		
Lower wind generation volume	\$2.4M	

Upward pressure		
Generation and market outcomes pushing costs higher		
Lower bilateral and market sales volume \$3.5M		
Higher coal generation fuel pricing	\$1.3M	

June operational results

Owner community load	Budget	Actual	Variance	% varia	ınce
Owner community demand	659 MW	615 MW	(44 MW)	(6.7%)	•
Owner community energy	285 GWh	284 GWh	(1 GWh)	(0.4%)	♦
Not veriable cost* to serve owner community energy	\$3.6M	\$2.5M	(\$1.1M)	(20.60/)	
Net variable cost* to serve owner community energy	\$12.65/MWh	\$8.78/MWh	(\$3.87/MWh)	(30.6%)	

^{*}Net variable cost = total resource variable costs + purchased power costs - sales revenue

Downward pressure		
Generation and market outcomes pushing costs lower		
Coal generation fuel savings \$1.30M		
Higher bilateral sales volume	\$0.87M	

Upward pressure		
Generation and market outcomes pushing costs higher		
Higher purchase volume \$0.61M		
Higher wind generation volume	\$0.50M	

YTD operational results

Owner community load	Budget	Actual	Variance	% varia	ince
Owner community demand	2,970 MW	2,836 MW	(134 MW)	(4.5%)	•
Owner community energy	1,590 GWh	1,539 GWh	(51 GWh)	(3.2%)	
Not veriable cost* to corve owner community energy	\$30.1M	\$24.7M	(\$5.4M)	(45.00/)	
Net variable cost* to serve owner community energy	\$18.95/MWh	\$16.07/MWh	(\$2.88/MWh)	(15.2%)	

^{*}Net variable cost = total resource variable costs + purchased power costs - sales revenue

Downward pressure		
Generation and market outcomes pushing costs lower		
Coal generation fuel savings \$5.7M		
Higher bilateral sales pricing \$2.2M		

Upward pressure		
Generation and market outcomes pushing costs higher		
Lower bilateral and market sales volume \$3.3M		
Higher coal generation fuel pricing	\$1.6M	



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Financial summary

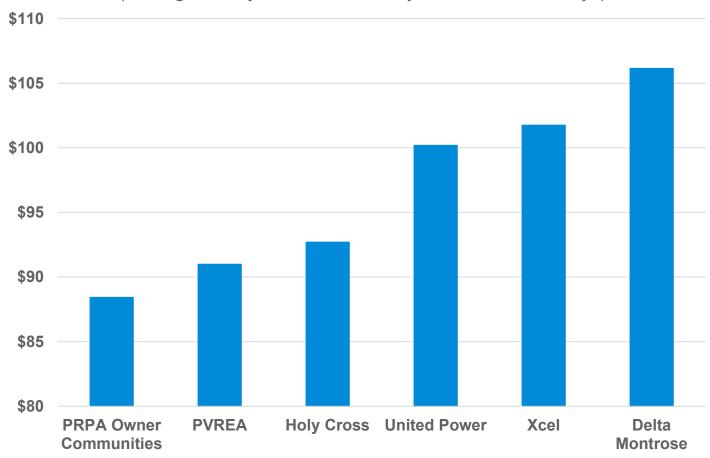
Category	May variance from budget (\$ in millions)		June variance from budget (\$ in millions)		YTD variance from budget (\$ in millions)	
Change in net position	\$1.1	•	\$2.2	•	\$8.3	•
Fixed obligation charge coverage	.11x	•	0.46x	•	.41x	•
Revenues	\$(1.0)		\$0.8	•	\$(3.3)	
Operating expenses	\$1.3	•	\$0.9	•	\$11.5	•
Capital additions	\$1.4	•	\$(2.1)		\$13.1	•

2% ● Favorable | 2% to -2% ◆ At or near budget | < -2% ■ Unfavorable



Residential Cost of 700 kWh

(Average of July 2023 and January 2024 CAMU Surveys)



Data compiled from the Colorado Association of Municipal Utilities rate surveys





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