Platte River Power Authority

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Board of directors

March 28, 2024

Resource Adequacy Reporting per HB23-1039

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

Resource Adequacy

- Resource adequacy (RA) is the ability of utilities' generation to meet all end-use customer energy demand.
- We serve our customers under all conditions, 24 hours a day, 7 days a week.
- RA ensures there is enough accredited capacity and reserves for the grid operator to maintain a balanced supply and customers’ demand across the electric system.

Planning Reserve Margin

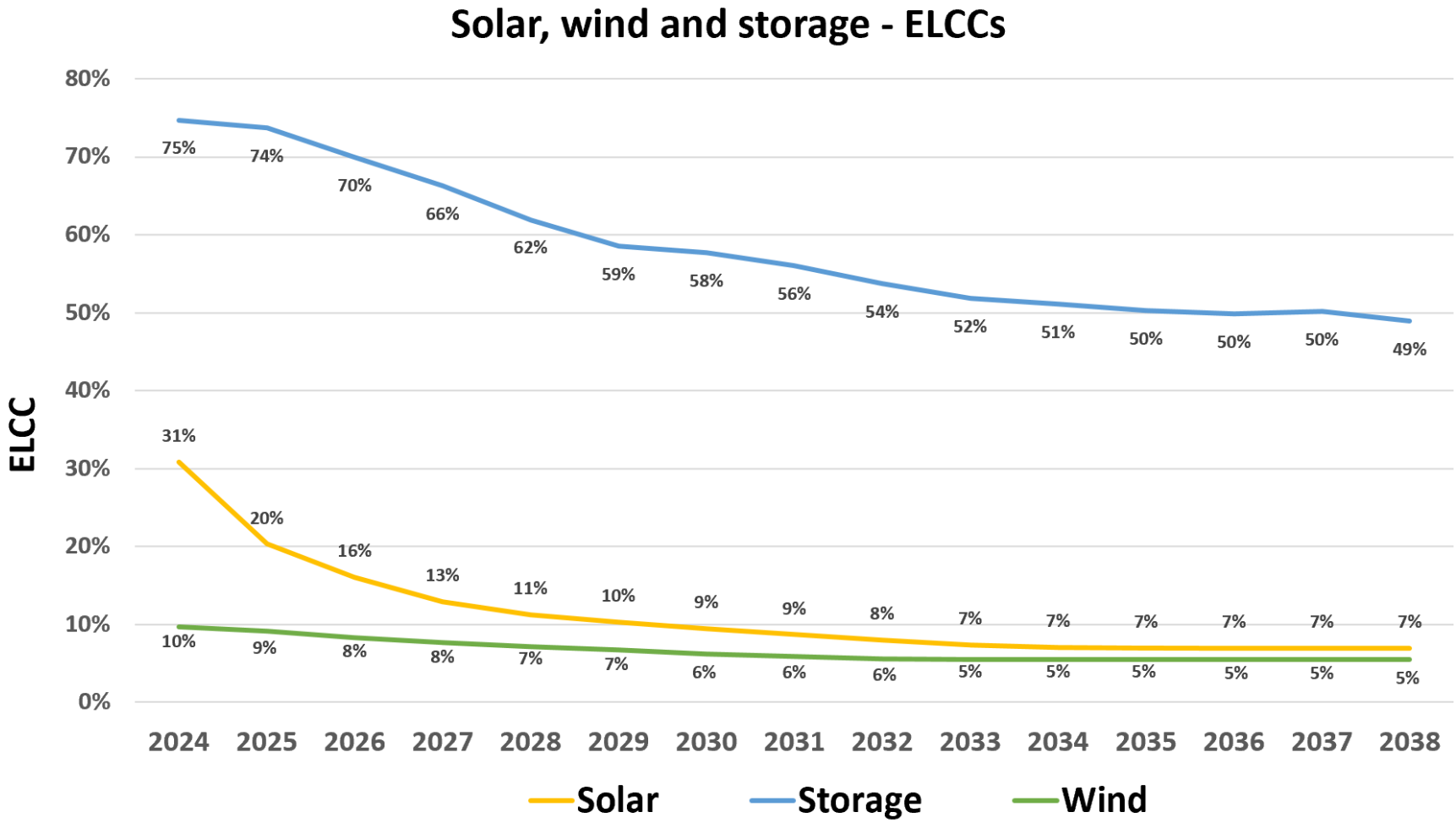
- North American Electric Reliability Corporation (NERC) defines RA requirement to have a Planning Reserve Margin (PRM – additional capacity relative to the peak demand) that will limit the probability of loss of load in a planning year being equal to 0.1
- Historically, utilities have been able to meet this RA criteria by carrying a PRM of 12-15%
- With the retirement of dispatchable resources and the addition of intermittent renewables, expected PRM is going up – a recent Western Electricity Coordinating Council study recommended 20%+
  - An independent consultant specializing in this area advised Platte River uses 19.9% for 2024 Integration Resource Plan
- A critical factor in maintaining resource adequacy under a changing grid mix is accurately assessing renewable energy potential and future demand for electricity, particularly when there is likely going to be stress on the power system.

Supply side resources

Installed capacity in MWs	2024	2025	2026	2027	2028	2029	2030
Dispatchable Generation							
Rawhide Unit 1	280	280	280	280	280	280	
Craig 1	77	77					
Craig 2	74	74	74	74	74		
Existing CTs	388	388	388	388	388	388	388
New Dispatchable					200	200	200
Total Dispatchable Generation	**819**	**819**	**742**	**742**	**942**	**868**	**588**
Carbon-Free Generation							
Hydro	81	78	75	72	70	70	70
Wind	231	231	231	431	631	631	691
Utility Solar	52	202	352	352	352	352	352
Utility Storage	1	1	26	51	111	186	186
Total Carbon Free Generation	**365**	**512**	**684**	**907**	**1,164**	**1,239**	**1,299**
Total Generation Capacity	**1,184**	**1,331**	**1,426**	**1,649**	**2,106**	**2,107**	**1,887**

ELCC of intermittent resources

- Effective Load Carrying Capability (ELCC) is the average capacity available at the time of peak load
- As more intermittent capacity is added, ELCC continues to drop



PRM projections for Platte River

Platte River will have enough resources to meet the NERC approved RA criteria during the next five years.

Firm or Accredited capacity		2024	2025	2026	2027	2028	2029	2030
	Dispatchable generation UCAP	784	784	711	711	907	836	565
	Hydro	81	78	75	72	70	70	70
	Wind - ELCC Adjusted Capacity	39	39	39	55	69	69	79
	Solar - ELCC Adjusted Capacity	29	60	84	84	84	84	84
	Storage - ELCC Adjusted Capacity	1	1	18	35	75	119	119
	Firm Capacity	**934**	**961**	**927**	**956**	**1,204**	**1,178**	**917**
	Total Generation Capacity	*1,184*	*1,331*	*1,426*	*1,649*	*2,106*	*2,107*	*1,887*
Load and other Obligations								
	Owner Community Load	732	740	747	755	762	770	778
	Firm Sales	65						
	DERs Obligations (BE, EV and DS)	1	1	2	3	6	10	15
	Demand Response	(7)	(8)	(9)	(13)	(20)	(26)	(31)
	Net Load Obligation	**791**	**733**	**740**	**745**	**748**	**754**	**762**
	Planning Reserve Margin (PRM)	**18%**	**31%**	**25%**	**28%**	**61%**	**56%**	**20%**
	Target PRM 2024-2025	**15.0%**						
	Target PRM 2026 onward	**Per RTO West guidelines**						

Questions

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March 28, 2024

VPP series: distributed energy storage update

Zach Borton, distributed energy resources services manager

Platte River storage strategy

- Long Duration Storage (use case)
- 4-hour storage
  - Utility Scale Storage (use case)
  - Distributed Energy Storage (use case)

Distribution-scale storage timeline

2018

Resource Diversification Policy

Energy Storage

- Performance must mature
- Cost must decline

2021

PV Solar + BESS RFP released in December 2021

2022

Shortlisted developers

2023

Final vendor selection

Distribution-scale storage timeline

2018

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- Cost must decline

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PV Solar + BESS RFP released in December 2021

Bids included storage interconnected within **transmission and distribution systems**

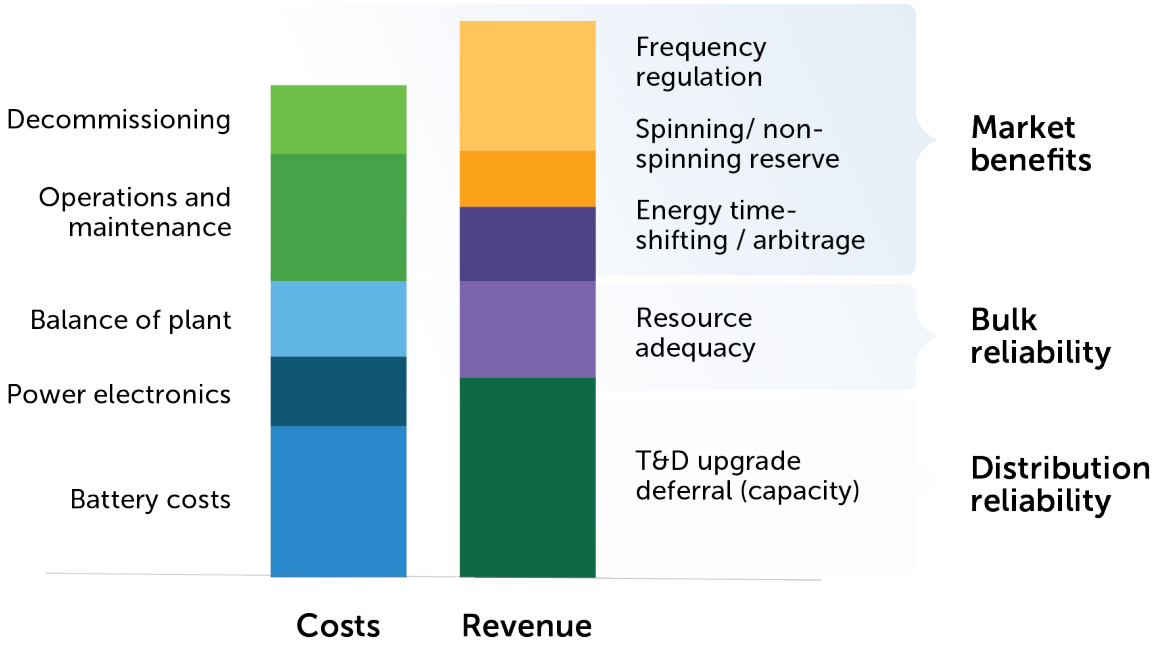
2022

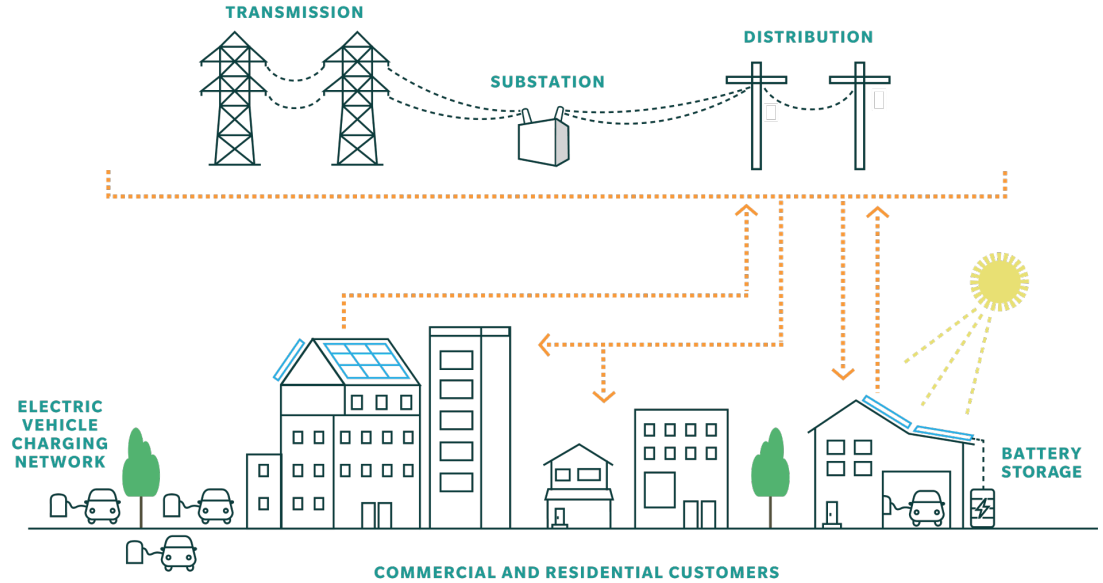
Shortlisted developers

2023

Final vendor selection

Value stacking – the “cost factor”





Energy storage economics – EPRI Storage Wiki

Distribution-scale storage timeline

Resource Diversification Policy

Energy Storage

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2021

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Bids included storage interconnected within **transmission and distribution systems**

2022

Shortlisted developers

Of nine total “distributed” bids, three developers were shortlisted

2023

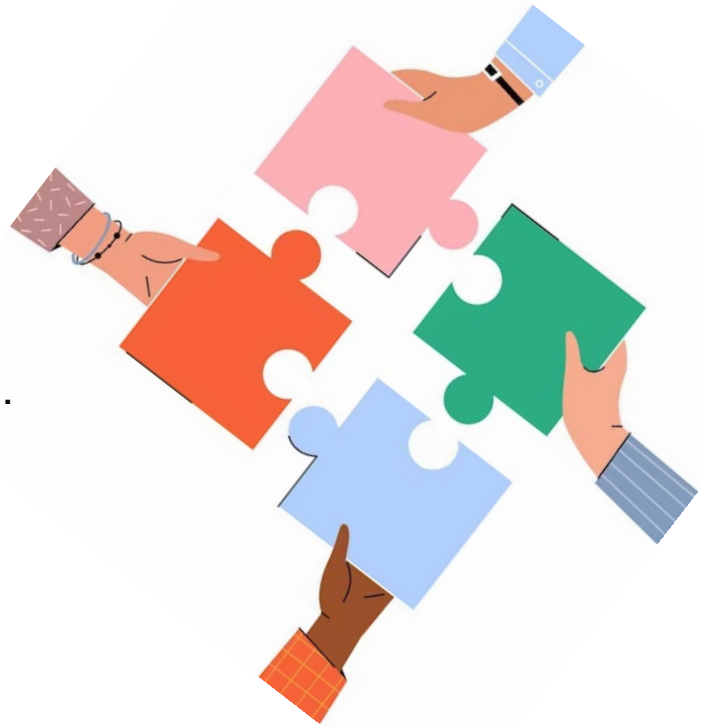
Final vendor selection

Location scout and use case discovery

- Owner community staff engineers conducted reviews of individual systems to identify sites with available land and viable use cases.

- The materials were packaged and sent to shortlisted bidders for rebid.

- Platte River engineers collaborated on developing a replicable interconnection strategy, while bidders submitted proposals for systems that incorporated the battery, inverter and transformer.



Distribution-scale storage timeline

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2022

Shortlisted developers

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2023

Final vendor selection

- Collaborative review and selection process
- Bidder awarded

2024 – Present day

- Preliminary site visits completed with Platte River, owner communities, developer, storage integrator and permitting professionals
- Formulation of risk mitigation strategies; circulation of safety and fire mitigation memorandum

Contract Risk Mitigation

- Completion
- Performance
- Decommissioning

Technology Risk Mitigation

- **LFP advantages:** Longer lifespan, great thermal stability
- **LFP disadvantage:** Lower energy density

2024 – Present day

- Preliminary site visits completed with Platte River, owner communities, developer, storage integrator, and permitting professionals
- Formulation of risk mitigation strategies; circulation of safety and fire mitigation memo
- Drafting of land lease documents underway, requiring city council approvals
- Continued engineering support as we begin interconnection and construction
- Project development and construction is expected to last 2 to 2.5 years with a 20-year project term

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Board of directors

March 28, 2024

Update of the 2024 Colorado Legislative Session

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

Legislative delegation

State senators

- Joann Ginal (District 14, Larimer County)
- Janice Marchman (District 15, Larimer and Boulder Counties)
- Sonya Jaquez-Lewis (District 17, Boulder, Broomfield and Weld Counties)
- Barbara Kirkmeyer (District 23, Larimer and Weld Counties)

State representatives

- Karen McCormick (House District 11, Boulder County)
- Judy Amabile (House District 49, Boulder and Larimer Counties)
- Ron Weinberg (House District 51, Larimer County)
- Cathy Kipp (House District 52, Larimer County)
- Andrew Boesenecker (House District 53, Larimer County)
- Mike Lynch (House District 65, Larimer and Weld Counties)

75th Colorado General Assembly

Since March 28, 2024:

- General assembly convened on January 10, 2024
- Scheduled to adjourn on May 8, 2024
- As of March 21, 566 bills introduced

Guiding principles of legislative advocacy

Principles

- Maintain high ethical, transparency standards in alignment with Platte River's Board of Directors
- Support our three pillars of environmental responsibility, financial sustainability, and reliability
- Ensure stable regulatory environment for planning
- Work in partnership with coalitions and our owner communities

Support

- Husch Blackwell Strategies (Carrie and Micki Hackenberger)
- CAMU
  - Legislative Committee
- Colorado Chamber of Commerce
  - Energy and environment council
  - Government affairs council

March 2024 Legislative Outlook

- General Assembly has introduced several air quality bills. The primary target of these bills is the oil and gas sector, however many industries are swept up in the scope – including utilities. Committees are watering these bills down through the amendment process, though as of March 21 several bills would still have a negative impact on Platte River.
- The Polis Administration is looking to legislate its policy goal of net-zero by 2040 for utilities through the existing Clean Energy Plan framework. The bill sponsors will introduce that bill soon.
- Joint Budget Committee has indicated a $200M+ deficit, so legislators will struggle to pass any bill with a large fiscal note.

SB24-165

Air Quality Improvements – Summary

- Omnibus bill that impacts many industries. There are three main areas that are relevant to the broader business community:
  - Emission standards and requirements for in-use, off-road, diesel-fueled fleets. The bill requires the AQCC to adopt rules before the end of 2028 specific to off-road, diesel-fueled fleets owned or operated in the state.
  - Regulation of indirect sources, for example an existing building that generates, attracts, or may attract mobile source activity that results in emissions of air pollutants (e.g., Platte River HQ). The bill would also set up a fee structure for indirect sources.
  - Vehicle Miles Traveled Targets. Requires AQCC to establish VMT reductions targets for the ozone non-attainment area.

Actions – *Monitor*

- CAMU position – amend.
- Committee adopted amendments to remove standards for in-use, off-road, diesel-fueled fleets and the VMT targets, however the indirect source program remains in the bill.
- We will continue to work with CAMU to seek more clarification on the indirect source section, revise bill language, and/or ensure the bill only impacts its intended targets: the transportation and the oil and gas sectors.

SB24-166

Air Quality Enforcement – Summary

- Defines a high priority violator as a source that exceeds the allowable emissions of an air pollutant five or more times in a three-year period and defines a repeat violator as a source that has five or more violations in a three-year period.
- Removes the ability for the division to issue a warning or take informal action for repeat violators while increasing the civil penalty requirements for repeat violators.
- Grants any person the ability to commence a civil action against an alleged violator. This would open the state and sources up to a multitude of potential lawsuits.

Actions – Oppose

- CAMU position – oppose. CML and the Chamber oppose this bill too.
- Committee adopted amendments to clarify that better and more narrowly define a “violation” and “exceedance,” however the path for considerable litigation remains.
- We will continue to oppose this bill until the civil action section is further addressed.

HB24-1330

Air Quality Permitting – Summary

- Proposes that no construction can take place until a construction permit is formally granted. This is applicable to both new construction and substantial alterations of an existing commercial or multi-family structure.
- Requires air quality modeling for any permit granted on or after January 2025.
- Proposes no new sources in a disadvantaged community.

Actions – *Monitor*

- CAMU position – monitor.
- Committee adopted amendments to narrow the scope to the oil and gas sector, though some problematic language remains.
- We will continue to monitor amendment language until we are satisfied that this bill will not affect utilities.

HB24-1338

Cumulative Impacts & Environmental Justice – Summary

- Creates the office of environmental justice within the CDPHE and requires the office to oversee the development of at least two Environmental Equity and Cumulative Impact Analyses (EECIAs).
- Authorizes local governments with jurisdiction over cumulatively impacted communities to review air permit applications for new or increased operational emissions of certain health-related air pollutants and request that the AQCC impose limits on those new or existing sources (Section 4).
- Establish a rapid response inspection team for air quality complaints.

Actions – *Amend*

- CAMU position – amend.
- We would like to see Section 4 struck to avoid further hurdles in the permitting process. CDPHE has indicated that they will strike Section 4, and we will work to continue to advocate that they do so.

HB24-1339

Disproportionately Impact Community Air Pollution – Summary

- Increases AQCC from nine to 11 members to include a member of a disadvantaged community and a climate scientist who do not derive income from an entity that the commission regulates.
- Requires the commission to implement rules by January 1, 2025, that:
  - Prevent emissions from the industrial and manufacturing sector from increasing in the near-term.
  - Modifies the administration of the GHG credit trading program.
  - Establishes source-specific GHG emission reduction requirements that must be met through direct reductions of GHG emissions for a sector sources that adversely affects disadvantaged communities.

Actions – *Monitor*

- CAMU position – amend.
- Clean up language to ensure new emissions rules only impact industrial and manufacturing sectors covered under GEMM rulemaking; utilities that filed Clean Energy Plans should have safe harbor from new emissions targets before 2030.

Other bills of interest

No bill number: Updating Clean Energy Plans / Net-Zero by 2040

- Qualifying utilities would need to file updated Clean Energy Plans that model net-zero and near net-zero emissions by 2040.

HB24-1030 Railroad Safety Requirements

- Limits the length of trains.

HB24-1352 Appliance Requirements and Incentives

- Changes state tax rebates for heat pumps.

HB24-1341 State Vehicle Idling Standard

- Grants authority to local governments to adopt idling standards that are more stringent than the state standard.

Next steps

Committee Monitoring

- Senate Transportation and Energy
- House Energy and Environment

Stakeholder calls

- City staff
- Colorado Energy Office
- CAMU
- Chamber of Commerce

Legislative session adjourns May 8

- Recap of the state legislature at May board meeting (May 30)

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March 28, 2024

February operational results

Owner community load	Budget	Actual	Variance	% variance	
Owner community demand	490 MW	448 MW	(42 MW)	(8.5%)	■
Owner community energy	261 GWh	248 GWh	(13 GWh)	(5.0%)	■
Net variable cost* to serve owner community energy	$4.6M	$4.5M	($0.1M)	1.7%	◆
	$17.72/MWh	$18.02/MWh	$.30/MWh		

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

Market impacts to net variable cost

Downward pressure	
Generation and market outcomes pushing costs lower	
Coal generation fuel savings	$.86M
Lower wind generation volume	$.34M

Upward pressure	
Generation and market outcomes pushing costs higher	
Lower bilateral and market sales volume	$.91M
Higher shaft share pricing	$.42M

Variance key: Favorable: ● | Near budget: ◆ | Unfavorable: ■

YTD operational results

Owner community load	Budget	Actual	Variance	% variance	
Owner community demand	977 MW	977 MW	0 MW	0.1%	◆
Owner community energy	547 GWh	536 GWh	(11 GWh)	(2.0%)	◆
Net variable cost* to serve owner community energy	$10.1M	$8.3M	$1.8M	(16%)	●
	$18.47/MWh	$15.51/MWh	($2.96/MWh)		

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

Market impacts to net variable cost

Downward pressure	
Generation and market outcomes pushing costs lower	
Coal generation fuel savings	$1.2M
Lower wind generation volume	$1.4M

Upward pressure	
Generation and market outcomes pushing costs higher	
Lower bilateral and market sales volume	$2.0M
Higher Craig pricing	$.40M

Variance key: Favorable: ● | Near budget: ◆ | Unfavorable: ■

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March 28, 2024

Financial summary

Category	February variance from budget ($ in millions)	YTD variance from budget (in millions)
Change in net position*	$(1.0) ■	$1.3 ●
Fixed obligation charge coverage	(0.07x) ■	0.27x ●
Revenues	$(1.7) ■	$(1.1) ■
Operating expenses	$1.6 ●	$3.3 ●
Capital additions	$5.6 ●	$9.5 ●

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

*February change in net position results impacted by a net loss on investments of $0.8 million and $0.4 million YTD.

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