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Board of directors

Oct. 31, 2024


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Board of directors

Oct. 31, 2024

Proposed 2025 Strategic Budget update

Jason Harris, senior manager, financial reporting and budget

Agenda

- Budget changes since work session
- Financial results
- Highlights – 2025 Strategic Budget

Budget changes since work session

- Updates to revenues and production cost model
  - Market assumptions
  - Fuel price and generation
- Refinements to departmental operations and maintenance expenses
- Updates to capital projects

Budget changes since work session

favorable/(unfavorable) change

Sales for resale ($0.7 million) ▪ Price and volume updates in the production cost model	Interest and other income ($0.5 million) ▪ Lower projected interest rates
Operating expenses ($3.6 million) ▪ Increases: Personnel for seven new positions due to reorganization, Yampa operating expenses, Oracle managed services and licenses, Public Service Company of Colorado (PSCo)'s estimated ancillary service tariff ▪ Decreases: Wheeling due to Western Area Power Administration updated rate and decommissioning of Medicine Bow Wind Project	Purchased power ($2.6 million) ▪ Increases: Purchased reserves due to PSCo's estimated tariff and purchases increased for price and volume updates in the production cost model estimates ▪ Decrease: Wind due to decommissioning Medicine Bow Wind Project
Fuel $0.5 million ▪ Price and generation volume updates for coal and natural gas resources in the production cost model	Capital additions $2.4 million ▪ Decreases: Transformer T1 replacement - Longs Peak Substation, Relay panel and breaker replacements - Airport Substation, Aeroderivative combustion turbines – Rawhide, Trapper Mine post-mining reclamation, other canceled or refined projects ▪ Increases: Bay connection and transmission line to Severance Substation - noncarbon resources, Data management and analytics platform, other refined or new projects
Debt service ($0.2 million) ▪ Final adjustment to GASB 96 assumptions	Contingency appropriation ($1 million) ▪ Approximately 20% of operating expenses and capital additions

Due to budget changes, estimated deferred regulatory revenues for 2025 are decreasing from $15.6 million to $8.9 million.

Financial results

Strategic Financial Plan metrics	Target minimums	2024 budget	2025 budget	Increase (decrease)
Fixed obligation charge coverage ratio	1.50x	1.93x[1]	**2.00x**	3.6%
Change in net position as a percentage of annual operating expenses	3%	3%	**3%**	0.0%
Adjusted debt ratio	< 50%	23%	**22%**	(4.3%)
Days adjusted liquidity on hand	200	443	**257**[2]	(40.6%)

[1] Reflects correction of an error in calculating this metric as defined in the Strategic Financial Plan approved by the board of directors in December 2023.
[2] Will change with the update to the 2024 estimate in the final budget document.

Budget results ($ millions)	2024 budget	2025 budget	Increase (decrease)
Total revenues	$ 313.0	**$ 321.5**	2.7%
Total expenditures	$ 314.6	**$ 392.0**	24.6%
Board contingency	$ 56.0[3]	**$ 75.0**	33.9%

[3] Contingency transfer to be determined at the end of the year.

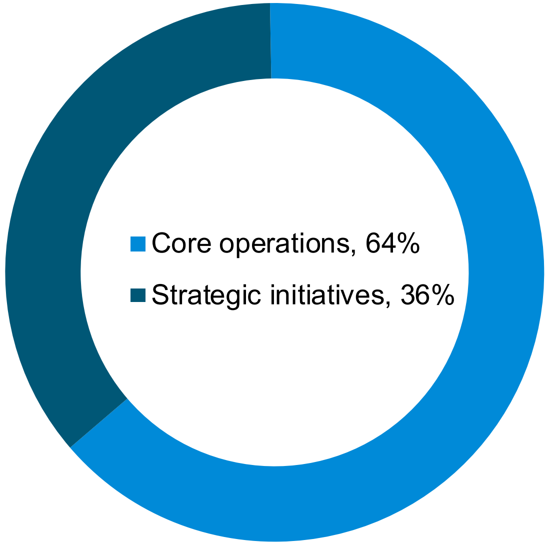
Financial impact

$ in thousands	Proposed budget	Prices & model update impacts	Other O&M net increase and contingency increase	Capital impacts	Favorable (unfavorable) changes	Updated proposed budget
Revenues						
Sales to owner communities	$ 248,446	$ (9)			$ (9)	$ 248,437
Sales for resale - long-term	17,755	(113)			(113)	17,642
Sales for resale - short-term	35,191	(622)			(622)	34,569
Wheeling	9,452				-	9,452
Interest and other income	11,875	(478)			(478)	11,397
Total revenues	$ 322,719	$ (1,222)			$ (1,222)	$ 321,497
Operating expenses						
Purchased power	$ 67,235	$ (268)	$ (2,286)		$ (2,554)	$ 69,789
Fuel	42,941	506			506	42,435
Production	53,920		(1,592)		(1,592)	55,512
Transmission	23,443		(458)		(458)	23,901
Administrative and general	41,819		(1,367)		(1,367)	43,186
Distributed energy resources	14,994		(206)		(206)	15,200
Total operating expenses	$ 244,352	$ 238	$ (5,909)		$ (5,671)	$ 250,023
Capital additions						
Production	$ 97,448			$ 1,025	$ 1,025	$ 96,423
Transmission	10,197			1,216	1,216	8,981
General	13,284			(234)	(234)	13,518
Asset retirement obligations	4,380			369	369	4,011
Total capital additions	$ 125,309			$ 2,376	$ 2,376	$ 122,933
Total operating expenses and capital additions	$ 369,661	$ 238	$ (5,909)	$ 2,376	$ (3,295)	$ 372,956
Debt service expenditures						
Principal	$ 14,802		$ (152)		$ (152)	$ 14,954
Interest expense	4,081		(11)		(11)	4,092
Total debt service expenditures	$ 18,883		$ (163)		$ (163)	$ 19,046
Total expenditures	**$ 388,544**	$ 238	$ (6,072)	$ 2,376	$ (3,458)	$ 392,002
Contingency appropriation	**$ 74,000**		$ (1,000)		$ (1,000)	$ 75,000
Total expenditures and contingency appropriation	**$ 462,544**	$ 238	$ (7,072)	$ 2,376	$ (4,458)	$ 467,002

Highlights – 2025 Strategic Budget

Foundational pillars		
1. Reliability	2. Environmental responsibility	3. Financial sustainability

Operating expenses and capital additions: $373 million



Strategic initiatives

- Resource diversification planning and integration (noncarbon resources, dispatchable resource, transmission and substations, operational flexibility, SPP RTO West market, Chimney Hollow)
- Community partner and engagement
- Workforce culture
- Process management and coordination (data management and analytics platform, enterprise risk management, project management)

Core operations

- Baseload and peaking generation, transmission, customer energy programs
- PPAs for existing renewable resources and hydropower
- Predictive maintenance
- Proactive capital investments to maintain reliability, efficiency and environmental compliance

Revenues

- Stable owner community loads
- Decreasing sales for resale
- Increasing wheeling
- 6.3% average wholesale rate increase

2025 budget: $467 M

Questions

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Utility scale storage request for proposals update

Pat Connors, director of portfolio strategy and integration

Integrated Resource Plan (IRP) with updates

	2024	2025	2026	2027	2028	2029	2030
New Storage Resources							
Utility Storage 4-Hr				100		50	
Community Storage 4-Hr			20				
Long Duration Storage 100-Hr						10	

2024 Utility scale storage RFP

Request for proposals (RFP) summary

- Issued RFP on June 13, 2024
- Proposals were due July 23, 2024
- Procurement target: 75-100 MW of 4-hour storage
- Expected commercial operation date: Dec. 1, 2026
- Proposed site locations:
  - Near Platte River’s Longs Peak Substation
  - Near Platte River’s Severance Substation
  - Co-located at an existing or future Platte River renewable resource

2024 Utility scale storage proposals

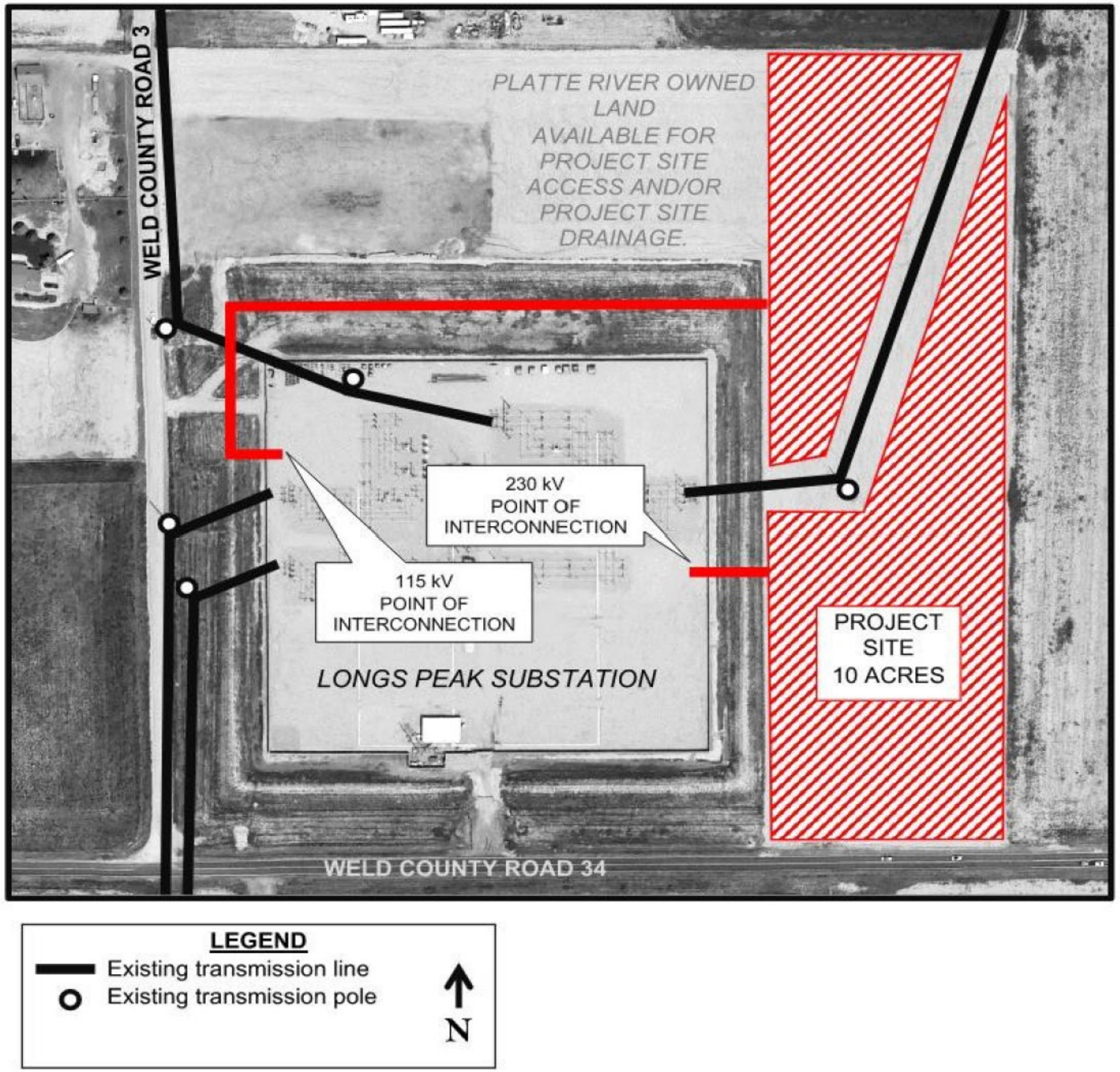
Summary of proposals

- Six developers submitted 20 different projects that conformed to the RFP
  - 14 stand-alone projects located at or near Longs Peak Substation
  - Two stand-alone projects located at or near Severance Substation
  - Four projects co-located with renewables
- Three non-conforming projects submitted
  - Build-transfer
  - Resource adequacy (capacity) rights only

Longs Peak site

Site development risks

- Near residential neighbors, noise mitigation
- Re-locate 230kV transmission line (red line)



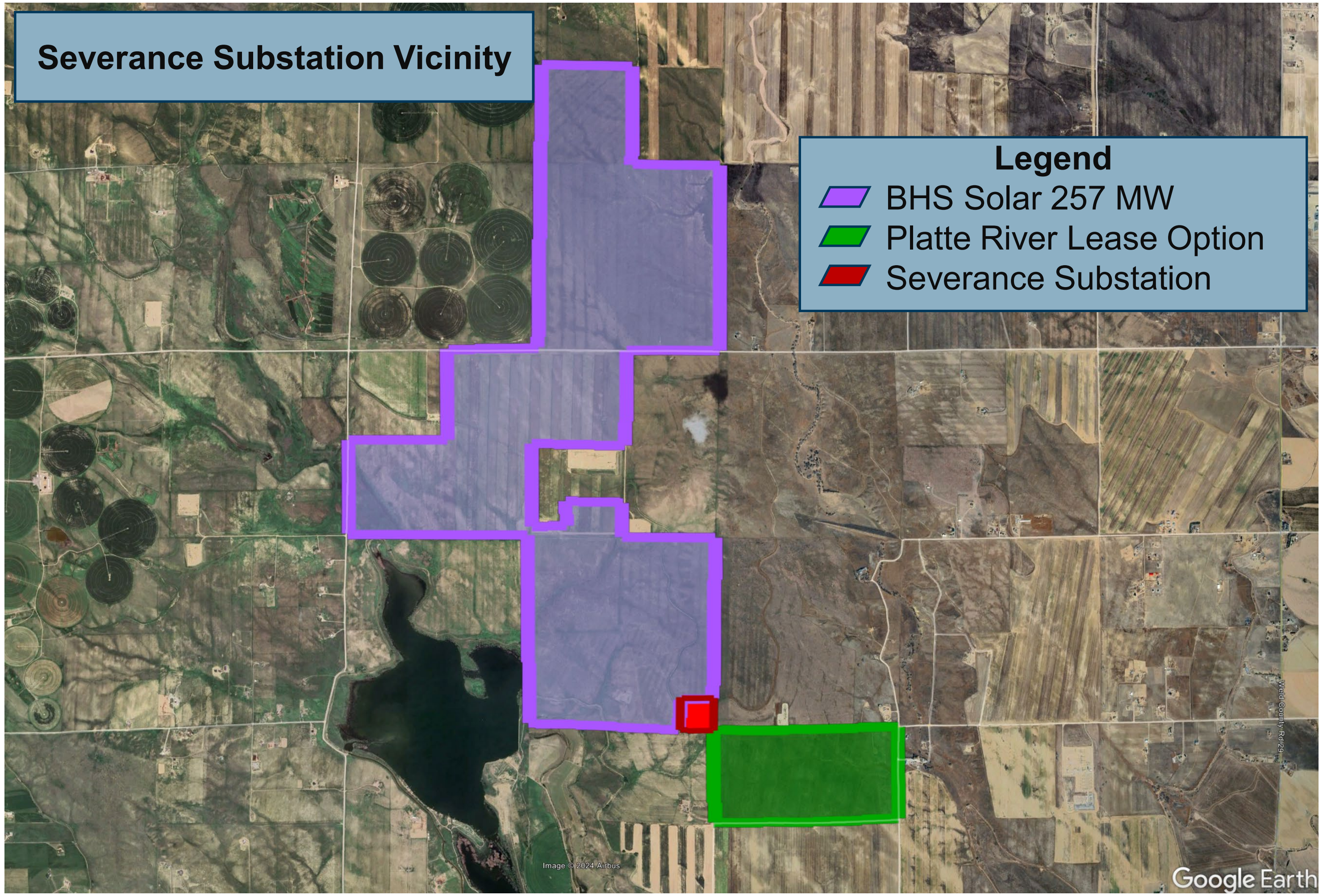
Severance site

Site development risks

- Site on Colorado State Land Board property
- Requires approval from Weld County

Alternate site option

- Other nearby properties could be a backup site option



Additional attributes and costs

<u>Additional attributes:</u>

- Contract term ranging from 15-year to 25-year
- Various commercial operation dates: late 2026 to early 2028
- Projects with and without augmentation of four-hour battery
- Tier 1 battery manufacturers

<u>Utility scale storage cost estimates:</u>

- Average price for 100 MW four-hour project: $112.50/MWh (four-hour discharge per day) or $13.50/kW-Month
- Prices do not include:
  - Energy charging costs
  - Round trip losses of about 15%

Other project considerations and risks

- Permitting
- Transmission interconnection costs
- Re-locate transmission line at Longs Peak
- Noise abatement
- Other costs not included in proposals
- Southwest Power Pool Regional Transmission Organization West congestion
    - Minimal difference between Longs Peak and Severance locations based on previous ACES modeling
- Developers
    - Experience constructing, owning, and operating in Colorado
    - Experience optimizing four-hour storage in an organized market
    - Financial review

Utility scale storage project status update

- Project size: **75-100 MW four-hour**
- Target Commercial Operation Date: **Jan. 1, 2027**
- Reputable developer selected
- Exchanged key terms of an Energy Storage Agreement (ESA)
- Appear to have general agreement on key terms
- In the process of exchanging initial drafts of the ESA
- Seeking to finalize ESA by year-end

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Rawhide Unit 1 minor outage recap

Travis Hunter, director of power generation

Agenda

- Schedule
- Why the need for the outage?
- Work accomplished
- Questions

Schedule

- Offline: Oct. 13, 2024
- Online: Oct. 20, 2024
- Week selected to minimize market impacts
  - Low loads due to mild weather
  - Market prices averaged $9.56/MWh, well below Rawhide Unit 1's dispatch costs

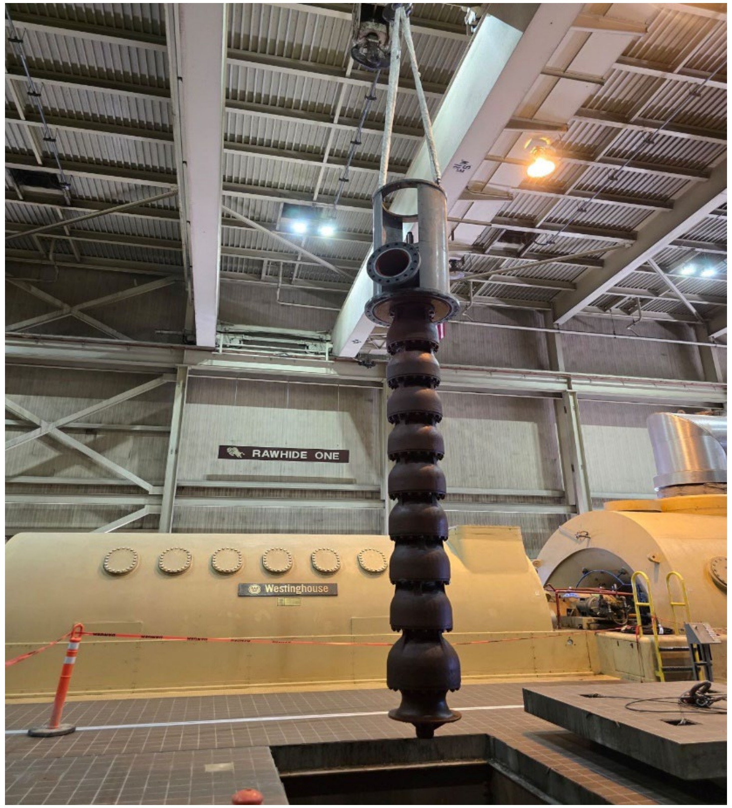
Reasons for the outage

Upgrades needed

- Failure of uninterruptable power supply (UPS)
  - UPS supplies backup power for the control system in black plant situations through an inverter
- Several leaking valves
- Burner nozzle tip replacement
- Governor valve actuator replacement
- Preventative maintenance on critical equipment

Work accomplished

- UPS was repaired
- New valves welded in
- Replaced four burner nozzle tips
- Replaced all governor valve actuators
- Replaced condensate pump 101
- Cleaned variable frequency drives
- Boiler, turbine and condenser inspections
- Boiler tube samples



Path forward

- Last major outage in fall 2025
    - Pushed from fall 2024
    - Eliminates a major outage, saving $10 million to $12 million
- Additional outages will be scheduled as needed to minimize financial impact

Questions

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Resource commitment and dispatch in an RTO

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

Agenda

- Key concepts
- Resource adequacy
- Day-ahead market timeline
- Example day-ahead market settlements
- Takeaways

Key concepts

- Organized wholesale markets are designed to commit and dispatch the least-cost resources necessary to reliably serve load across the market footprint
- Resource adequacy requirements ensure that the market has sufficient generation capacity available to serve load throughout a specified period
- Market commitment and dispatch also account for the physics and reliability risks in operating the market transmission grid
- Resources are committed and dispatched by the market according to costs and capabilities, as submitted by resource owners
- Resource offers structured to manipulate market results are against market rules and increase financial risk

Inputs for regional transmission organization resource (RTO) adequacy

- Forecasted net peak demand (NPD): prediction of the highest hourly demand for electricity in a specified period, such as a season or year
- Effective load carrying capacity (ELCC): measurement of resource's ability to contribute to system reliability
- Loss of load expectation: expected number of hours per year when a power grid's generating capacity will not meet peak demand
- Planning reserve margin (PRM): capacity needed to reliably serve load through unplanned power grid events
- Resource adequacy requirement (RAR): excess capacity load responsible entities (LRE) must maintain to meet RTO capacity requirements

LRE's NPD x (1 + PRM) = RAR

Example resource adequacy calculations

Resource adequacy requirement

- LRE NPD = 500 MW
- PRM = 16%

RAR = 500 MW x (116%)

= 580 MW

- LRE must maintain load carrying capacity of **80 MW more** than forecasted peak load to meet RTO resource adequacy requirement

Eligible load carrying capacity

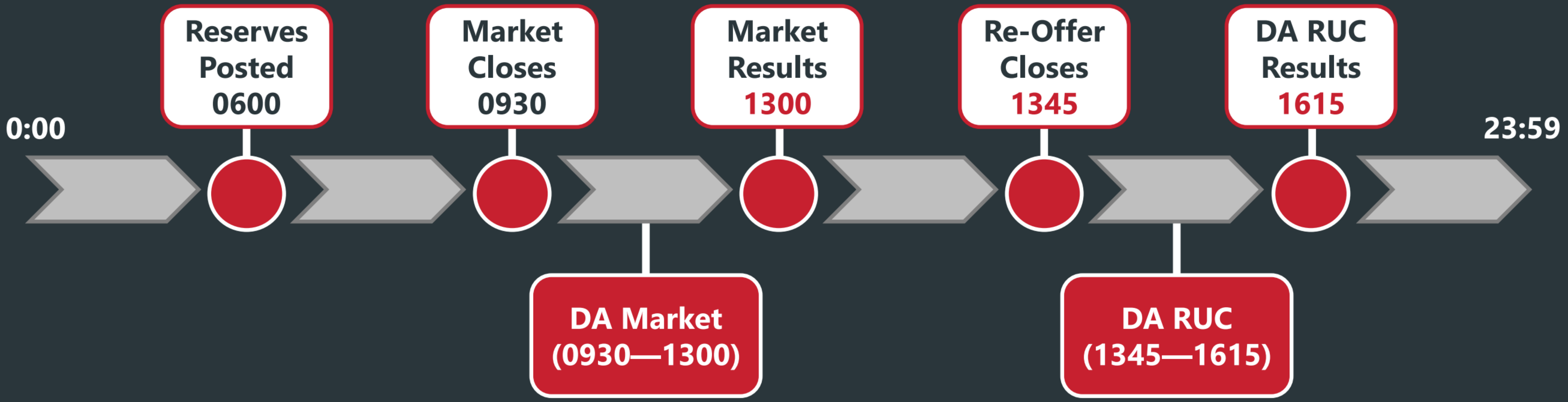
Resource	Nameplate (MW)	ELCC (%)	ELCC (MW)
Solar	300	65%	195
Wind	400	20%	80
Battery	50	70%	35
Thermal	300	90%	270
Total	***1,050 MW***		***580 MW***

- With the above portfolio, LRE must maintain nameplate capacity of **550 MW more** than forecasted peak load to meet RTO resource adequacy requirement

Inputs for RTO dispatch and unit commitments

- Load forecast: hourly forecast of total system load
- Load bids: market participant demand submitted to the market
- Resource offers: economic basis for unit commitment and dispatch
- Locational marginal price (LMP): calculated based on least cost resource, congestion and system losses
- Resource parameters: current status and capabilities of market resources
- Weather-dependent generation forecast: hourly forecast of wind and solar output
- Region system reserves: generation needed to operate market reliably
- Weather conditions: impact on footprint load and intermittent resource generation
- Transmission congestion and grid status

Day-ahead (DA) market timeline



SPP Marketplace Timelines Quick Reference Card, January 2023

Resource day-ahead market settlement

100 MW unit Offered at cost	Unit cost ($/MWh)	DA offer ($/MWh)	DA LMP ($/MWh)	DA commitment (MWh)	DA energy settlement ($)	Cost to generate	Variable financial benefit/(cost)
Committed *see below*	$30/MWh	$30/MWh	$50/MWh	100 MWh	$5,000	$3,000	$2,000
Not committed	$30/MWh	$30/MWh	$5/MWh	0 MWh	$0	$0	$0

- DA offer < DA LMP, unit is committed

  $30/MWh < $50/MWh

- When committed, unit is paid LMP multiplied by commitment

  $50/MWh x 100 MWh = $5,000

- Variable financial benefit is the market payment less the cost to generate

  $5,000 - $3,000 = $2,000

Resource day-ahead market settlement

100 MW unit offered <u>below</u> cost	Unit cost ($/MWh)	DA offer ($/MWh)	DA LMP ($/MWh)	DA commitment (MWh)	DA energy settlement ($)	Cost to generate	Variable financial benefit/(cost)
Committed	$30/MWh	$20/MWh	$50/MWh	100 MWh	$5,000	$3,000	$2,000
Committed *see below*	$30/MWh	$20/MWh	$25/MWh	100 MWh	$2,500	$3,000	($500)
Not committed	$30/MWh	$20/MWh	$5/MWh	0 MWh	$0	$0	$0

- DA offer < DA LMP, unit is committed

  $20/MWh < $25/MWh

- When committed, unit is paid LMP multiplied by commitment

  $25/MWh x 100 MWh = $2,500

- Because DA LMP < unit cost, there is a $500 loss

  $2,500 - $3,000 = ($500)

Resource day-ahead market settlement

100 MW unit Offered <u>above</u> cost	Unit cost ($/MWh)	DA offer ($/MWh)	DA LMP ($/MWh)	DA commitment (MWh)	DA energy settlement ($)	Cost to generate	Variable financial benefit/(cost)
Committed	$30/MWh	$40/MWh	$50/MWh	100MWh	$5,000	$3,000	$2,000
Not committed *see below*	$30/MWh	$40/MWh	$35/MWh	0 *(should be 100MWh)*	$0 *($3,500)*	$0 *($3,000)*	*($500)*
Not committed	$30/MWh	$40/MWh	$5/MWh	0MWh	$0	$0	$0

- DA offer > DA LMP, unit is NOT committed

  $40/MWh > $35/MWh

- The unit would have been committed, if offered at the $30/MWh cost, with a settlement

  $35/MWh x 100 MWh = $3,500

- Because DA LMP > unit cost, there is an opportunity cost

  $3,500 - $3,000 = $500 benefit not realized

- Not included: Regional cost and emissions impact of dispatching a less efficient unit

Takeaways

- Organized wholesale markets are based on costs, asset capabilities, system status and reliability risk
- Resource offers must accurately reflect costs and capabilities to ensure least-cost solutions
- Forcing resources to operate uneconomically does not benefit Platte River, the owner communities or clean energy efforts

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September operational results

Owner community load	Budget	Actual	Variance	% variance	
Owner community demand	618 MW	591 MW	(27 MW)	(4.3%)	■
Owner community energy	266 GWh	261 GWh	(5 GWh)	(1.9%)	◆
Net variable cost* to serve owner community energy	$3.2M	$2.8M	($0.4M)	(10.2%)	●
	$12.03/MWh	$10.80/MWh	($1.23/MWh)		

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

Market impacts to net variable cost

Downward pressure	
Generation and market variances pushing costs lower	
Coal generation fuel savings – Rawhide	$0.99M
Higher bilateral sales volume	$0.63M
Lower gas generation volume and pricing	$0.39M

Upward pressure	
Generation and market variances pushing costs higher	
Higher market purchase volume and pricing	$0.73M
Higher coal generation volume and pricing - Craig	$0.31M
Lower bilateral sales pricing	$0.29M

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

YTD operational results

Owner community load	Budget	Actual	Variance	% variance	
Owner community demand	4,970 MW	4,783 MW	(187 MW)	(3.8%)	■
Owner community energy	2,507 GWh	2,421 GWh	(86 GWh)	(3.4%)	■
Net variable cost* to serve owner community energy	$41.8M	$34.5M	($7.3M)	(14.3%)	●
	$16.66/MWh	$14.27/MWh	($2.39/MWh)		

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

Market impacts to net variable cost

Downward pressure	
Generation and market variances pushing costs lower	
Coal generation fuel savings - Rawhide	$7.13M
Lower wind generation and pricing	$3.31M
Lower gas generation volume and cost	$2.73M

Upward pressure	
Generation and market variances pushing costs higher	
Lower market sales volume and pricing	$3.52M
Higher market purchase volume and pricing	$2.26M
Higher coal generation fuel volume and pricing - Craig	$2.00M

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

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Financial summary

Category	September variance from budget ($ in millions)		YTD variance from budget ($ in millions)	
Change in net position[1]	$0.8	●	$9.1	●
Fixed obligation charge coverage	(.03x)	◆	.22x	●
Revenues	$(0.4)	◆	$(4.4)	◆
Operating expenses	$0.3	◆	$9.7	●
Capital additions	$0	◆	$(23.4)	■

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

[1] September and YTD variance for change in net position includes $0.8 million and $3.1 million above budget unrealized gains on investments, respectively.

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New organizational structure

- **Jason Frisbie** – Chief executive officer
  - **Angela Walsh** – Executive director of board and administration
  - **Dave Smalley** – Chief financial officer
  - **Sarah Leonard** – General counsel
  - **Travis Hunter** – Chief generation & transmission officer
  - **Melie Vincent** – Chief power supply officer
  - **Recruiting** – Chief technology officer
  - **Eddie Gutiérrez** – Chief strategy officer

Existing positions: Jason Frisbie, Angela Walsh, Dave Smalley, Sarah Leonard, Melie Vincent, Eddie Gutiérrez

New positions: Travis Hunter, Recruiting (Chief technology officer)

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