Platte River Power Authority

Estes Park • Fort Collins • Longmont • Loveland

Board of directors

April 25, 2019

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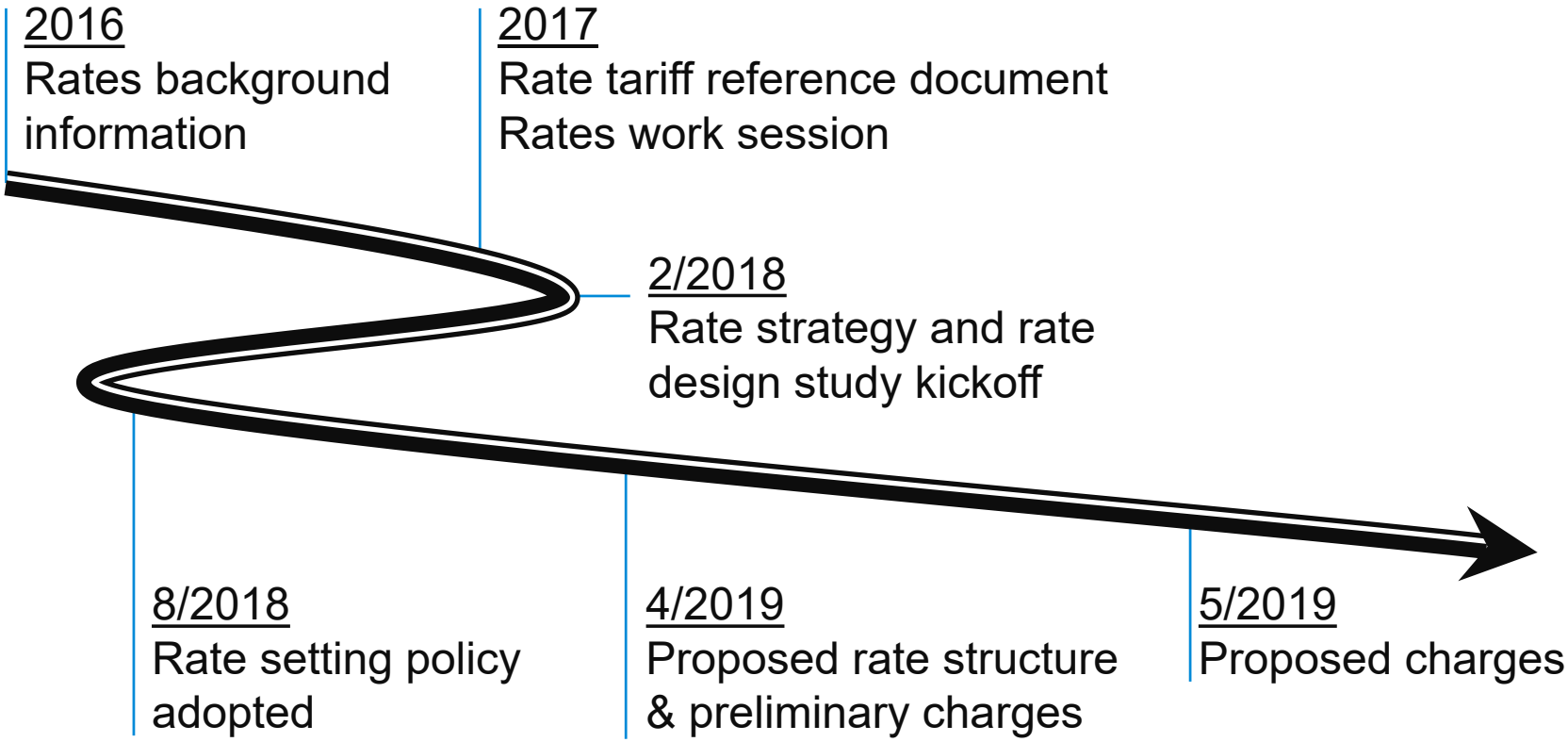
2020 preliminary wholesale rates

April 25, 2019

Rates timeline



Rate setting philosophy

Rate setting goals

- Improve value added of Platte River in support of owner communities
- Offer a desirable portfolio of services and rates that meet owner communities' needs
- Better align wholesale pricing signals with cost of service and owner community retail pricing signals
- Send pricing signals that result in system benefits

Rate setting guidelines

- Maintain financial strength
- Fixed cost recovery
- Fair, equitable, defensible
- Sound economic principles
- Long-term stability
- Flexible offerings
- High value to owners
- Effectively manage generation risk
- Improve pricing signals to owners and their customers

Preliminary owner community impacts

	Estes Park	Fort Collins	Longmont	Loveland
Rate structure change impact (%)	-0.2%	-1.0%	1.2%	1.0%
Rate structure change impact ($)	(18,141)	(1,017,607)	603,887	431,861

- Impacts due to varying owner community load profiles
  - Owner community impact analysis packets provided to staff
- Cost recovery methodology changes create differences from how costs were previously collected
- Critical first step to enable owner communities to meet customer needs and wants through flexible service offerings

2020 preliminary monthly charges

2020 preliminary monthly charge	Cost Category	Cost allocations
Owner charge	Fixed	Administrative & general, demand side management
Demand charges		
Transmission	Fixed	Administrative & general, operations & maintenance, debt
Generation	Fixed	Administrative & general, fixed operations & maintenance, debt, reserves, surplus sales margin credit, hydro demand, baseload, combustion turbine
Energy charges		
Dispatchable fixed	Fixed	Administrative & general, fixed operations & maintenance, debt, reserves, surplus sales margin credit, hydro demand, baseload
Dispatchable variable	Variable	Fuel, hydro energy, variable operations & maintenance, purchased power, wheeling
Intermittent variable*	Variable	Purchase power agreements, ancillary services, project associated transmission
Tariff 7 legacy	Variable	Preservation of existing owner community premium commitments

*Intermittent as defined by EIA: An electric generating plant with output controlled by the natural variability of the energy resource rather than dispatched based on system requirements. Intermittent output usually results from the direct, non-stored conversion of naturally occurring energy fluxes such as solar energy, wind energy, or the energy of free-flowing rivers (that is, run-of-river hydroelectricity).

2020 preliminary monthly charges

2020 preliminary monthly charge	Recovery method	Period	Charge
Owner charge	Per percent owner community energy	Year-round	$9,979
Demand charges			
Transmission	Per kW owner community system member demand (non-coincident peak) or minimum	Year-round	$5.75
Generation	Per kW System Coincident Peak or minimum	Summer	$6.26
		Non-summer	$4.35
Energy charges			
Dispatchable fixed	Per kWh for all energy supplied	Year-round	$0.01550
Dispatchable variable	Per kWh for dispatchable energy supplied	Year-round	$0.01758
Intermittent variable	Per kWh for intermittent energy supplied	Year-round	$0.04122
Tariff 7 legacy	Per kWh for tariff 7 committed energy supplied	Year-round	$0.04258
Power factor	Per reactive kilovolt-ampere of such excess	Year-round	$0.3600

Owner charge

- Owner allocation based on each owner community's ratio of total energy for the six most recent year-end values
- Owner charge is based on six years:
  - Allocated costs include DSM expenses, which are long-term behavioral shifting programs
    - A reasonable approach is to establish a time period twice the time period for the demand methodology
  - Provides rate stability in fixed cost recovery
  - Allows owner communities to see change over time, without dramatically impacting year-to-year changes

Demand charges

- Unbundled transmission and production
- Demand ratchets (minimum demand)
  - Designed to address fluctuations in demand by owners and result in more certainty in the monthly bill for each owner, as well as revenue certainty for Platte River
  - Emphasizes the efficient use of infrastructure to maximize short-term and long-term marginal cost savings, providing a system benefit
  - Greater owner community financial incentive to lower peaks during months with high demands, while lowering the financial incentives to lower peaks during non-peak months

Demand transmission charge

- Non-coincident peak (NCP) charge
  - Transmission built to serve individual community peak load requirements
- Ratchet based on the average three most recent year-end maximum annual non-coincident peaks multiplied by 75 percent
- Ratchet based on three years to provide balance
  - Normalize weather related impacts
  - Owner community efforts to change load profile
- 75 percent based on the ratio of the Platte River average coincident peak to the maximum coincident peak

Demand generation charge

- Seasonal coincident peak charge
  - Generation capacity serves system requirements
- Seasonal charges because summer season drives generation capacity expansion requirements
- Generation demand ratchet based on the average three most recent year-end maximum summer season coincident peak multiplied by 75 percent
- Ratchet based on three years to provide balance
  - Normalize weather related impacts
  - Owner community efforts to change load profile
- 75 percent based on the ratio of the Platte River average coincident peak to the maximum coincident peak

Energy charges

- Unbundled dispatchable and intermittent
- Unbundled fixed and variable costs
- Transparency allows for more flexible service offerings at retail including 100 percent intermittent supply
- No seasonality to energy charges
  - Variance between seasons was minimal
  - Model functionality exists to analyze and monitor seasonal differences

Energy charges

- Dispatchable fixed applies to all kWh supplied
  - Reliability, or firming component, of energy rates
- Tariff 7 legacy (2020)
  - Tariff 7 kWh commitments assigned from total intermittent supply
  - Charge equals the existing $0.025 premium plus the dispatchable variable charge
- Intermittent energy allocated monthly based on each owner community's ratio of total owner community monthly sales (excluding Tariff 7 allocation)
- Dispatchable variable energy provides the balance of energy requirements

Rate setting accomplishments

Rate setting goals accomplished

- ✓ Improve value added of Platte River in support of owner communities
- ✓ Offer a desirable portfolio of services and rates that meet owner communities' needs
- ✓ Better align wholesale pricing signals with cost of service and owner community retail pricing signals
- ✓ Send pricing signals that result in system benefits

Additional accomplishments

- ✓ Increased rate transparency
- ✓ Flexibility to meet owner needs and wants
- ✓ Improve cost of service rate setting methodologies

Communications plan

- Rates microsite on prpa.org scheduled to go live early June 2019
  - Rates philosophy
  - Frequently asked questions
  - 2020 rates at a glance
  - Other materials as they become available
- Rates at a glance
  - Summary of speaking points for interactions with the public
- Customer support for owner communities

Rates schedule

		2019					2020
		Apr	May	Jun – Sep	Oct	Nov – Dec	Jan
Follow up and owner community support as needed	Councils, staff, customers						
2020 preliminary wholesale rates	Board information						
2020 proposed wholesale rates	Board consensus						
Redraft tariff language, revised entire tariff book							
2020 tariffs adopted by the BOD	Board action						
2020 tariffs effective							

Questions

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20 MW solar/battery update

April 25, 2019

Background

February 2018
Issued RFP for 20 MW solar and up to 5 MWh storage

April 2018
Limited the battery size to 2 MWh

May 2018
Short-listed three bidders

August 2018
First choice bidder withdrew, and Platte River contacted remaining bidders for updated proposals

October 2018
Selected GCL New Energy as the project developer

November 2018
GCL New Energy teamed up with DEPCOM Power and PPA negotiations began

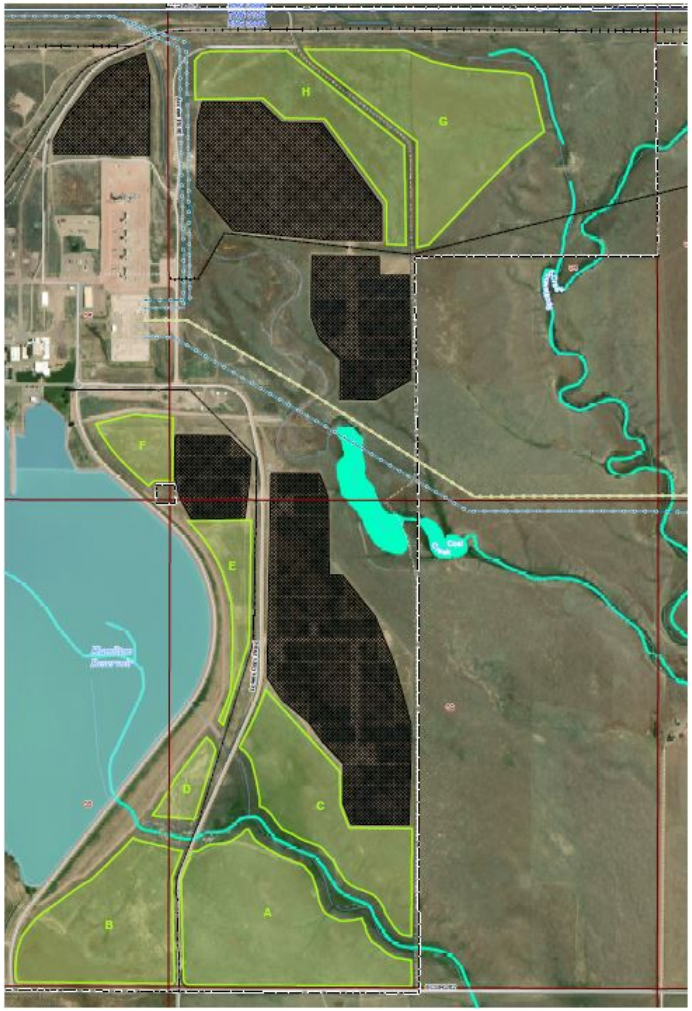
December 2018
Platte River began negotiating LLA

February 2019
Executed the PPA and LLA with GCL New Energy and filed the 1041 Larimer County permit

Solar project

- Nameplate capacity: 20 MW
- Year 1 annual generation estimate: 52,000 MWh
- PPA price: Approximately half the price of Rawhide Flats solar
- Estimated interconnection cost: $2.00/MWh
- Single axis tracking (same as existing Rawhide solar)
- High capacity factor (30 percent) due to clipping of solar output during peak times

Proposed site – constraint map



Storage project

- Tier 1 battery vendor (e.g. LG Chem, Samsung)
- Battery size (year 1):
  - 2 MWh maximum discharge capability
  - 1 MW discharge capacity
- Battery degrades over two percent per year:
  - Maximum degradation of 20 percent
- Round-trip efficiency of 90 percent

Battery charging implications

- During initial five years, battery must be charged by 20 MW solar project
- After initial five years, battery may be charged by grid
- Unless Platte River owns battery, any charging from grid may be considered a retail purchase from Poudre Valley REA:
  - Retail purchases to charge battery would not be economical
  - Platte River could purchase battery after five years
  - If Platte River purchases battery, it must be purchased at market value, due to IRS requirements

Timeline

February 2019	Executed PPA and LLA
February 2019	Filed 1041 permit with Larimer County
May 2019	Larimer County Planning Commission public hearing
June 2019	Larimer County Commissioners public hearing on 1041 permit
June 2019	Finalize development plans
August 2019	Site prep and commence construction
March 2020	Commercial operation date

Takeaways

- The solar project will serve approximately 1.5 percent of Platte River's total member load, after the commercial operation date
- The battery project will give Platte River an opportunity to understand communication needs as well as the battery's limitations and will provide an opportunity to learn how to maximize the value of this resource

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Wind interconnection update

April 25, 2019

Timeline

February 2019

City of Fort Collins approved easement over Meadow Springs Ranch

February 2019

Larimer County Planning Commission (CO) recommended approval of the Roundhouse renewable energy transmission project's 1041 permit application

Laramie County Commissioners (WY) approved transmission site plan application

February 2019

Larimer County Commissioners (CO) approved Roundhouse renewable energy transmission project's 1041 permit application

March 2019

Timeline

April 2019

Weld County Planning Commission (CO) recommended approval of the Roundhouse renewable energy transmission project's 1041 permit application

May 2019

Weld County Commissioners (CO) final decision on the Roundhouse renewable energy transmission project's 1041 permit application

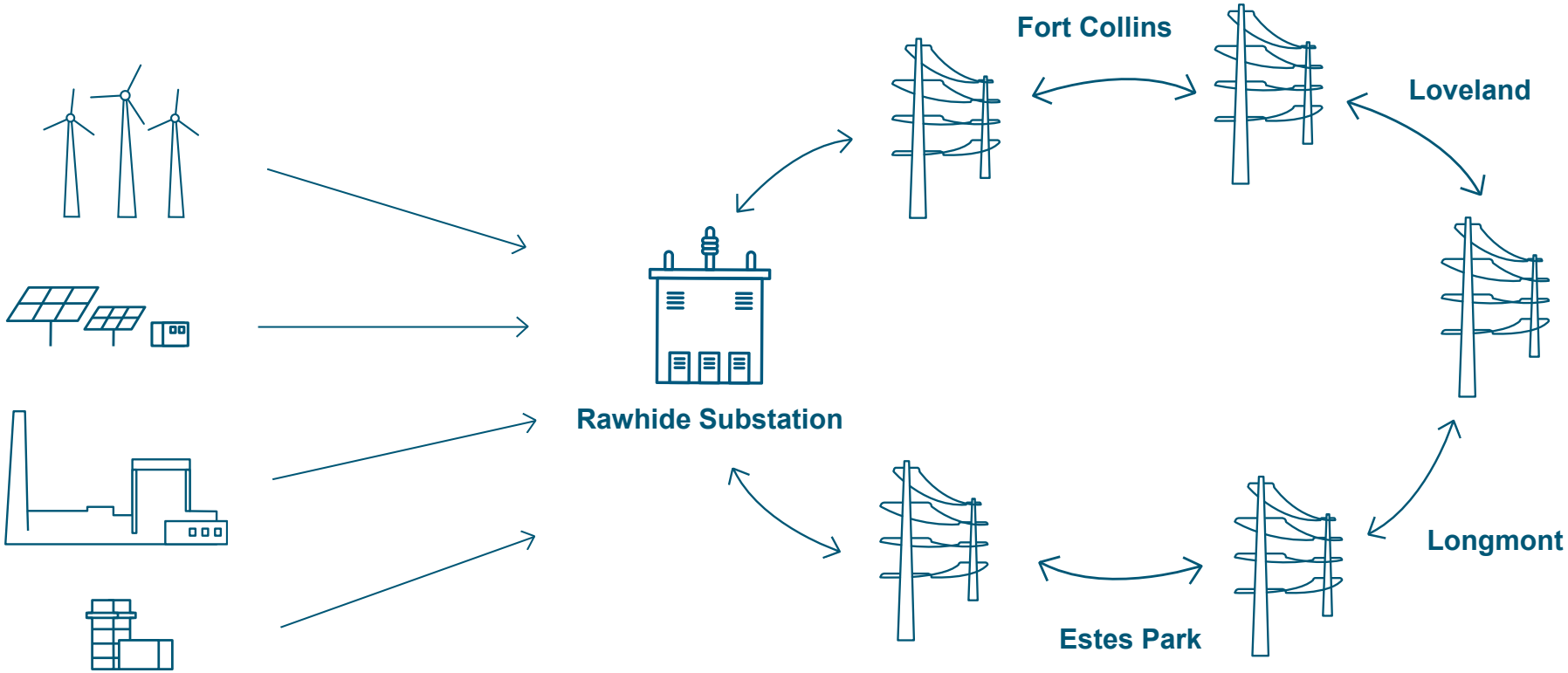
June 2019

Finalize acquisition of all easements on preferred route on transmission site plan

June 2019

Wyoming Industrial Siting Council hearing and initial decision

Generator outlet vs. transmission line



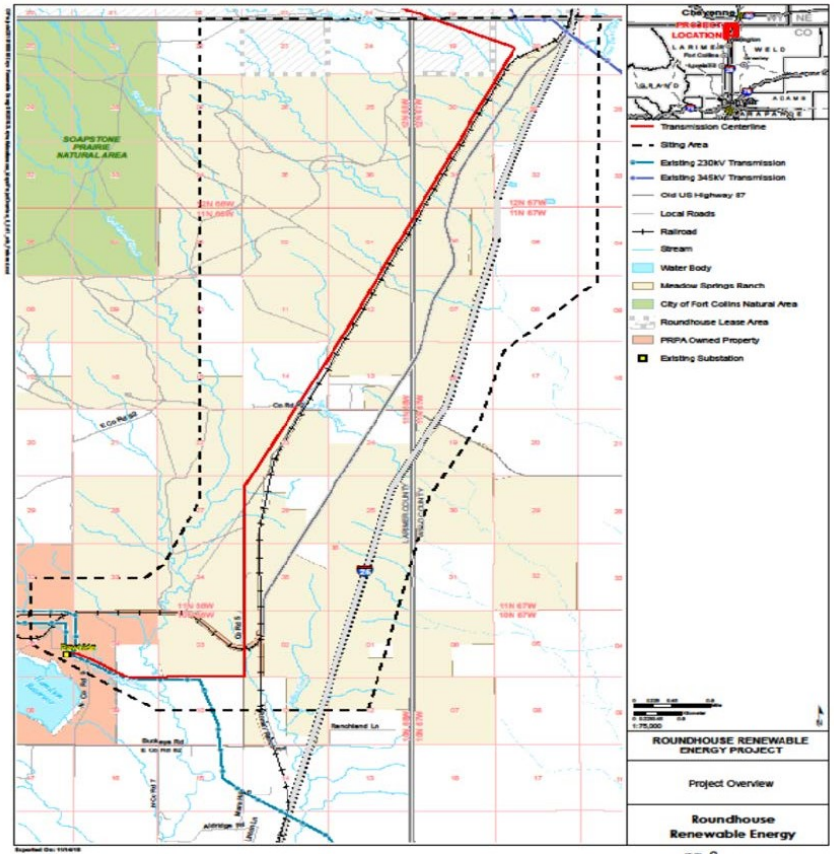
Terms of purchasing generator outlet

- Purchase generator outlet (transmission line and substation interconnection facilities) for an estimated cost of $19.8 million on or close to the Dec. 1, 2020, commercial operation date
  - $950,000 per mile (estimated 19 miles)
  - $1.75 million in substation interconnection costs
  - Estimated net present value of -$6.0 million
- Generator outlet constructed to Platte River's standards
  - Steel poles, cement foundations and no guy wires
  - 72 fiber strand OPWG
  - NextEra will provide light detection and radar (LIDAR) data for the entire generator outlet line

Terms of purchasing generator outlet

- Power purchase agreement (PPA) purchase price reduced $2.00/MWh
- Platte River agrees to purchase an additional 15 MW of wind at the same discounted price of the initial 150 MW purchase, to replace 12 MW of wind sold to third party
- Option to purchase an additional 60 MW of wind extended until July 1, 2019
- Platte River is not responsible for wind that could not be generated during any planned or unplanned generator outlet transmission line outage that limits deliveries into the Rawhide Substation

Benefits of the generator outlet purchase



- Ensure line is built to Platte River's standards
- Retain greater control over future deliveries into the Rawhide Substation
- Access to future renewables in Wyoming with potential expansion capability, since Platte River owns line and easement (line capacity of at least 400 MW)
- Provides negotiating leverage to potentially obtain future renewables at a lower cost
- Third-party use of the transmission line or generator outlet facility will require them to pay Platte River

Key takeaways

- Roundhouse wind project is ahead of schedule which may allow construction to commence this fall
- Generator outlet ownership will provide greater opportunities to add additional renewables in the future at a lower cost
- Risk of being required to purchase wind during generator outlet outage or limitation is mitigated
- Extending the option to purchase additional wind until July 1, 2019, will provide an opportunity to pursue sales from Craig generation and test Rawhide Unit 1 at lower minimum levels

Questions

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Potential transmission right-of-way disposal

April 25, 2019

Rex Branch right-of-way

- Received requests from property owners affected by Platte River right-of-way that runs from LaPorte to Owl Creek
- Reviewed the property owners' requests and Platte River's intentions with this right-of-way generally
- Overview of analysis and recommendations
- Return in May with a resolution for board consideration

Red Line is the Rex Branch Right-of-Way Route
Gage Hill 1839 m
Rex Quarry
Bonner Peak 2113 m
US 287
Poudre Valley Canal
Kellogg Airstrip
Canyon Highway
US 287 CO 14
Cache la Poudre River
US 287 SH 14
Goat Hill 1708 m
Laporte
Bingham Hill 1633 m

Rex Branch right-of-way history

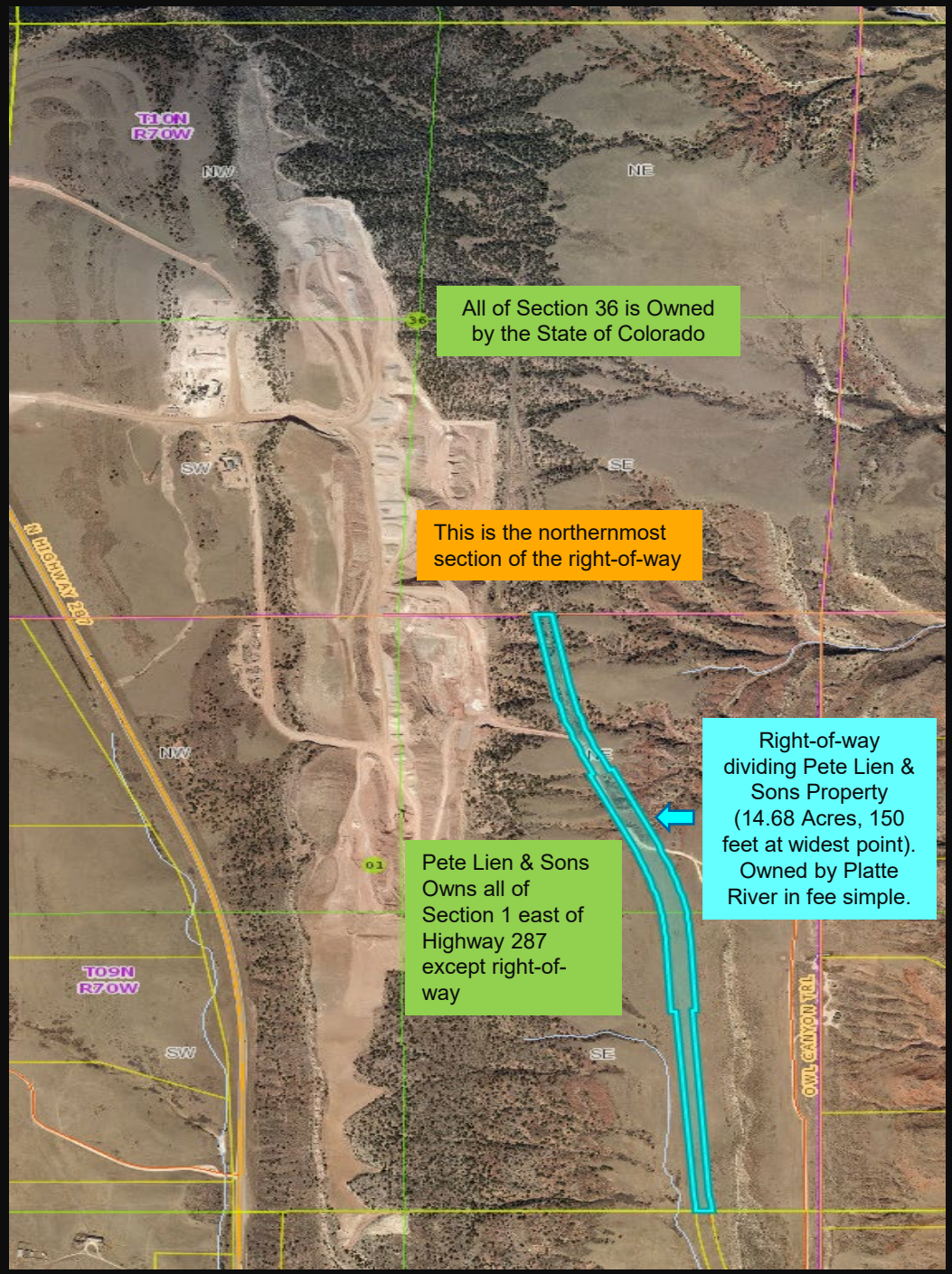
- Purchased from Burlington Northern Santa Fe Railroad Company in 1985 as a potential alternative route for energy from the Rawhide Energy Station
- Right-of-way never used
- Fee simple ownership of one section
- Easement with a possibility of reverter for all other sections:
  - Easements will automatically revert to the underlying property owner if the easements are abandoned or used for any purpose other than electric transmission or distribution

Rex Branch right-of-way current state

- No current or future use for this right-of-way
- Multiple alternative energy paths to Rawhide better suited than Rex Branch right-of-way
  - Falls several miles short of Rawhide Plant site
  - Other routes provide larger transmission capacity
  - Other routes provide better location for power delivery to communities

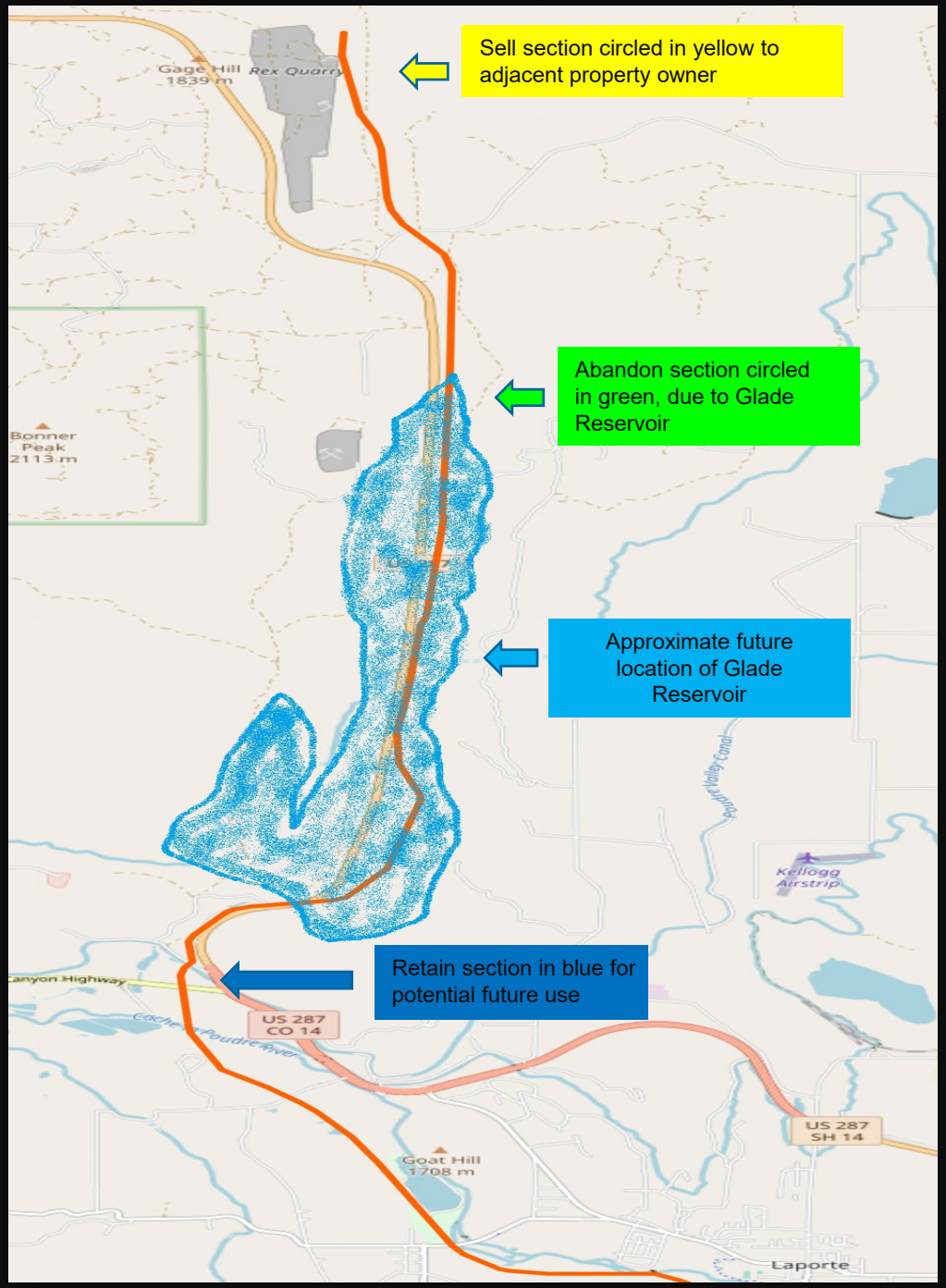
Rex Branch right-of-way current state

- Glade Reservoir will interrupt the right-of-way, requiring re-routing over undesirable path
- Property owners have approached Platte River concerning future plans with this right-of-way


T10N
R70W
NW
NE
36
All of Section 36 is Owned by the State of Colorado
SW
SE
This is the northernmost section of the right-of-way
N HIGHWAY 287
NW
NE
Right-of-way dividing Pete Lien & Sons Property (14.68 Acres, 150 feet at widest point). Owned by Platte River in fee simple.
01
Pete Lien & Sons Owns all of Section 1 east of Highway 287 except right-of-way
T09N
R70W
SW
SE
OWL CANYON RD

Rex Branch right-of-way recommendation

- Sell section that Platte River owns in fee simple to adjacent property owner
- Abandon easement rights to sections that will be covered by the Glade Reservoir or will be north of Glade Reservoir
- Retain easement rights for sections to the south of Glade Reservoir
  - Potential use for easement to the south of Glade Reservoir as a power source for future pump plant and/or development associated with the Glade Reservoir


Sell section circled in yellow to adjacent property owner
Abandon section circled in green, due to Glade Reservoir
Approximate future location of Glade Reservoir
Retain section in blue for potential future use
Gage Hill 1839 m
Rex Quarry
Bonner Peak 2113 m
Poudre Valley Canal
Kellogg Airstrip
Canyon Highway
US 287 CO 14
Cache la Poudre River
Goat Hill 1708 m
US 287 SH 14
Laporte

Rex Branch right-of-way next steps

- Seeking board approval in May authorizing the general manager to dispose of the fee simple section and easements of this right-of-way in accordance with these recommendations
- Continue working out the details and specifics, including:
  - Determining the value of the fee simple section
  - Determining the exact demarcation boundary of Glade Reservoir for easement abandonment and retention

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Integrated Resource Plan Survey Results

2018

ABOUT US

- Started in 1995
- Based in Kansas City area
- Have extensive background working for and with cooperatives
- More than 300 utility clients in 34 states
- A services company acting as an extension of our clients' staff

INSIDE INFORMATION

(a solutions company)

Integrated Resource Plan Survey 2018

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Results include online and phone survey replies from 1,108 residential end users and 788 commercial responses.

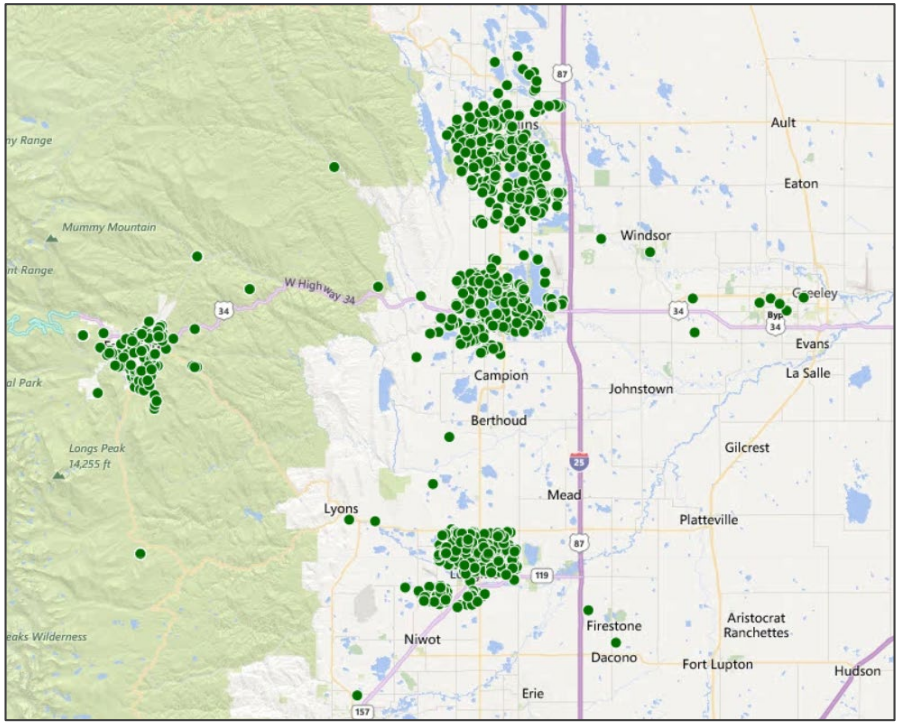
Aggregated from each city's statically valid survey. Estes Park, Fort Collins, Longmont and Loveland each have individual reports.

Inside generates a random sample of 2500 customers from each utility's complete residential customer file. All commercial customers received the survey.

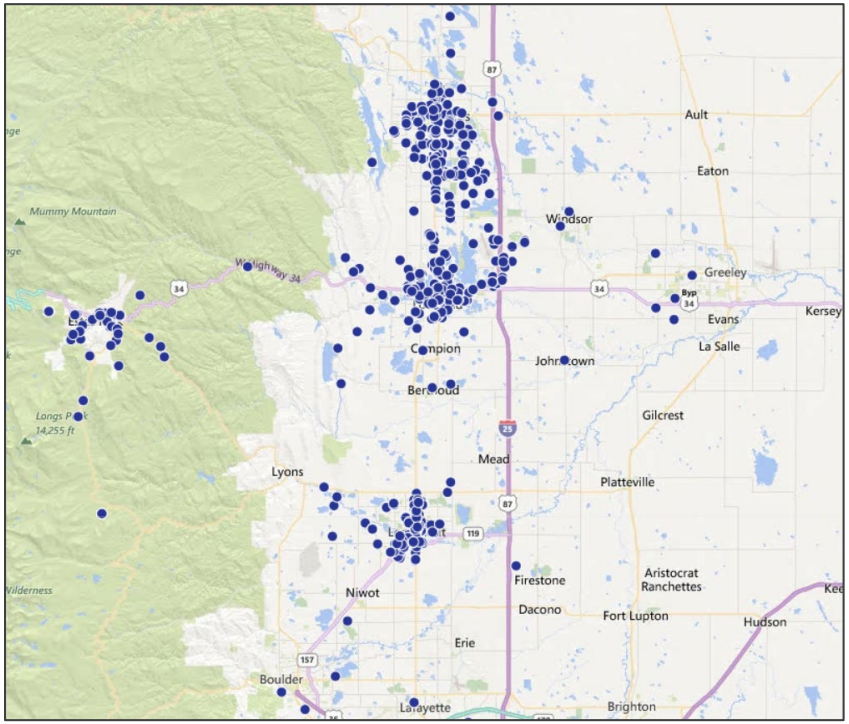
Residential survey = +/-2.9% margin of error, 95% degree of probability; Commercial survey = +/-3.4% margin of error

Respondents

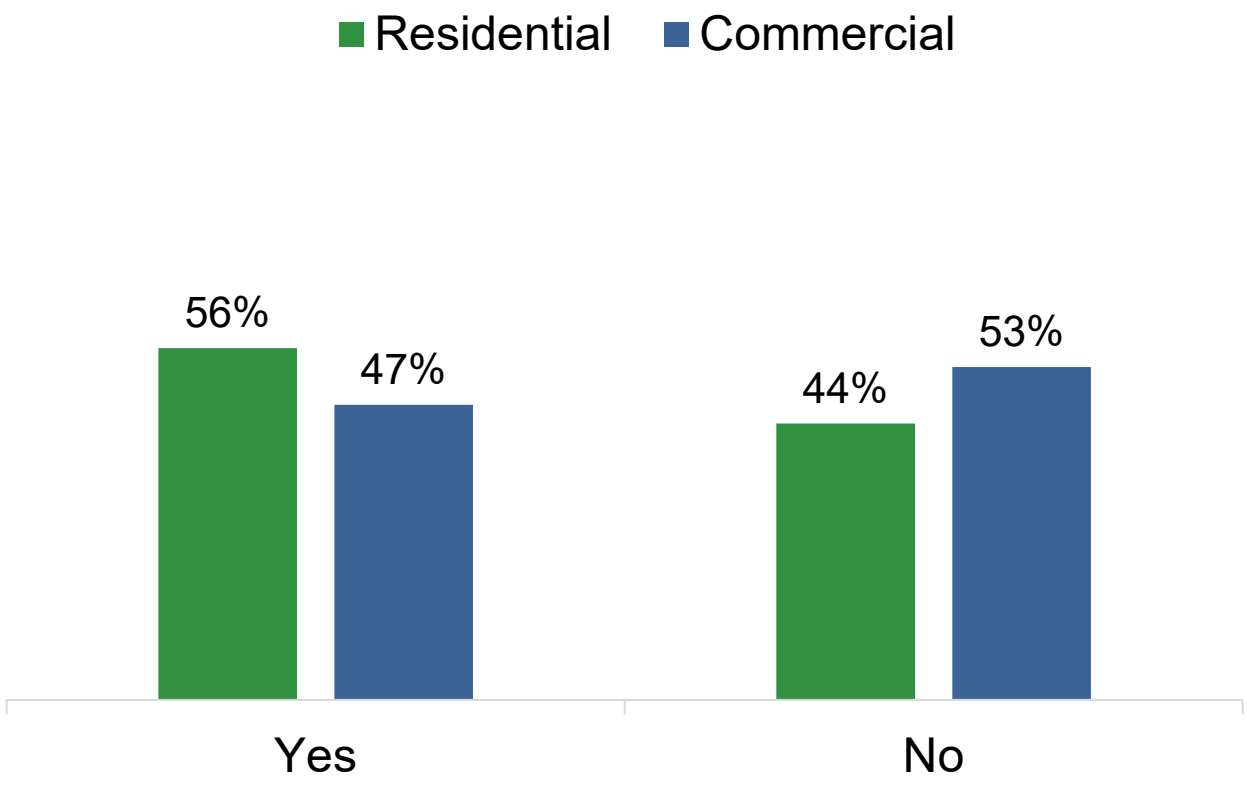
Residential



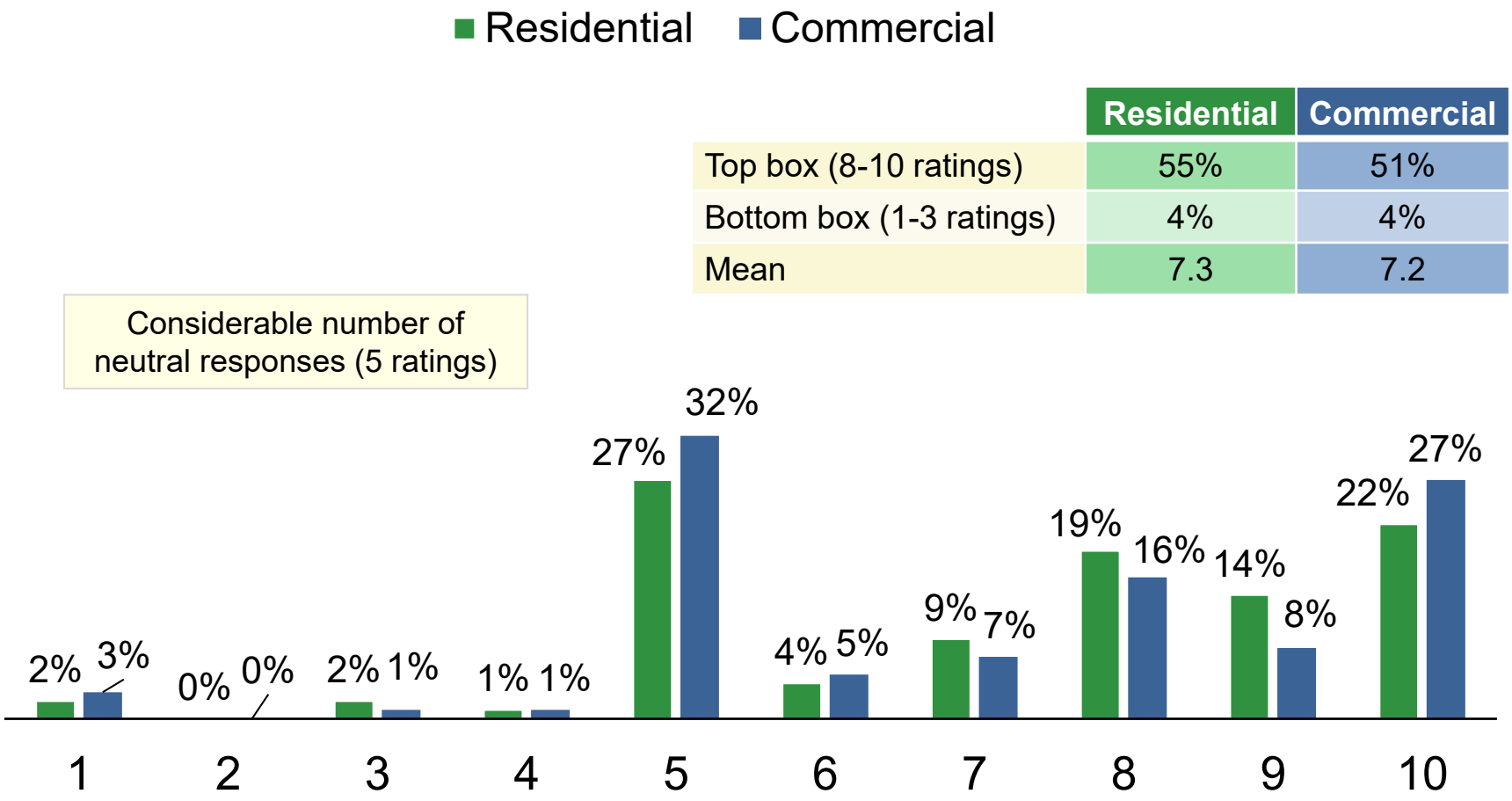
Commercial



Aware Platte River Power Authority provides generation



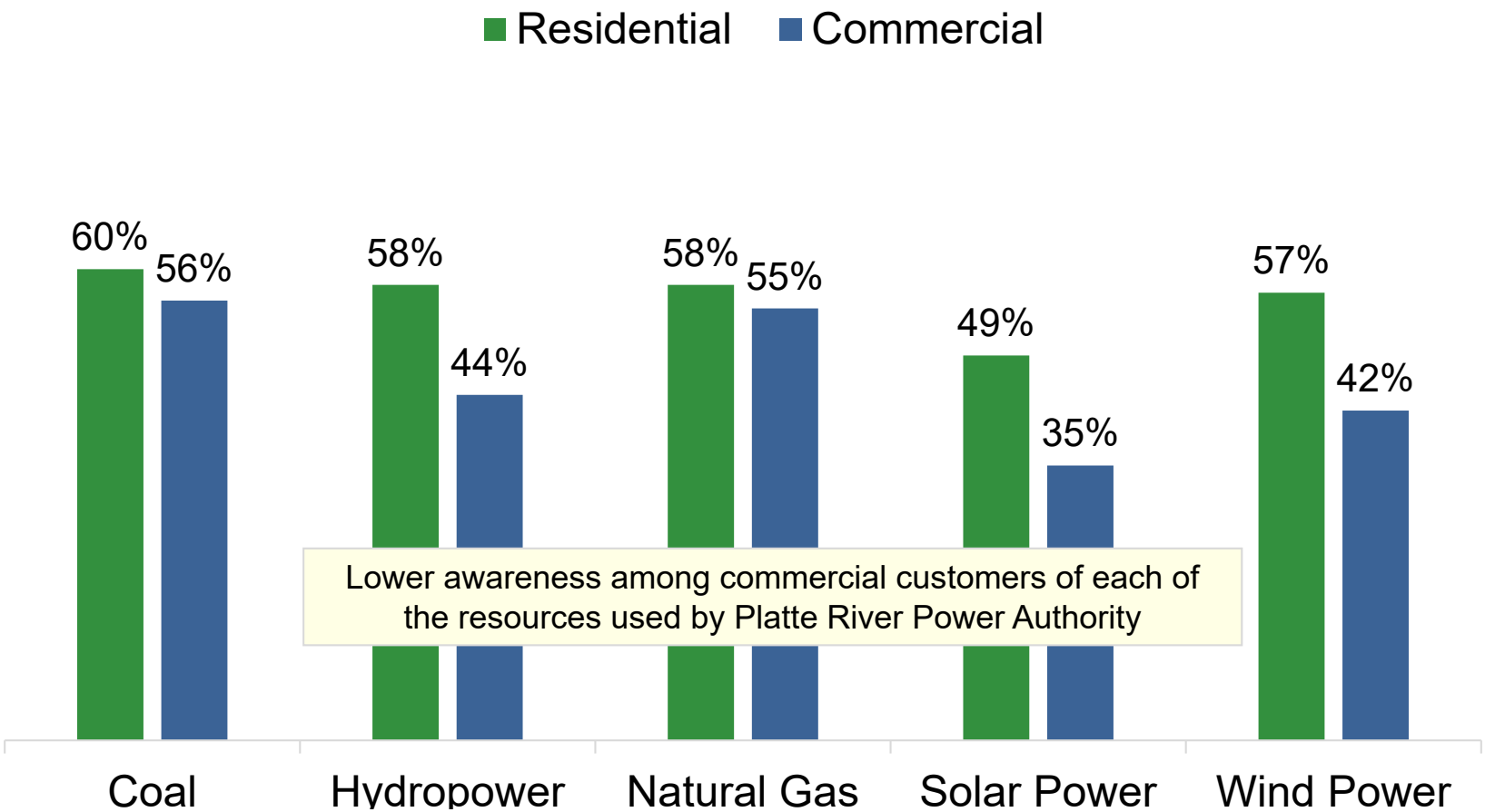
Opinion of Platte River Power Authority



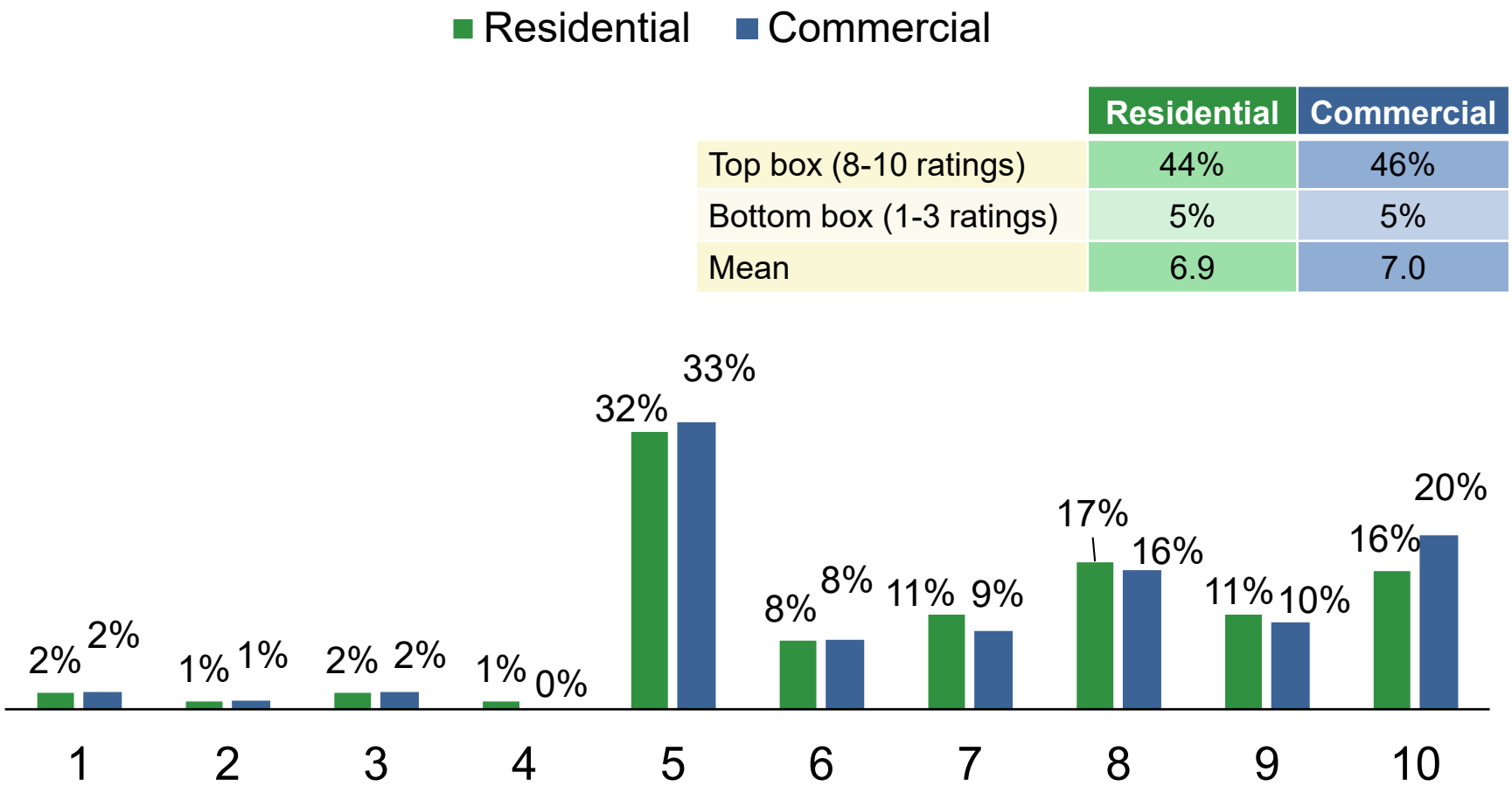
	Residential	Commercial
Top box (8-10 ratings)	55%	51%
Bottom box (1-3 ratings)	4%	4%
Mean	7.3	7.2

1=not at all favorable, 10=very favorable

Resources used by Platte River Power Authority



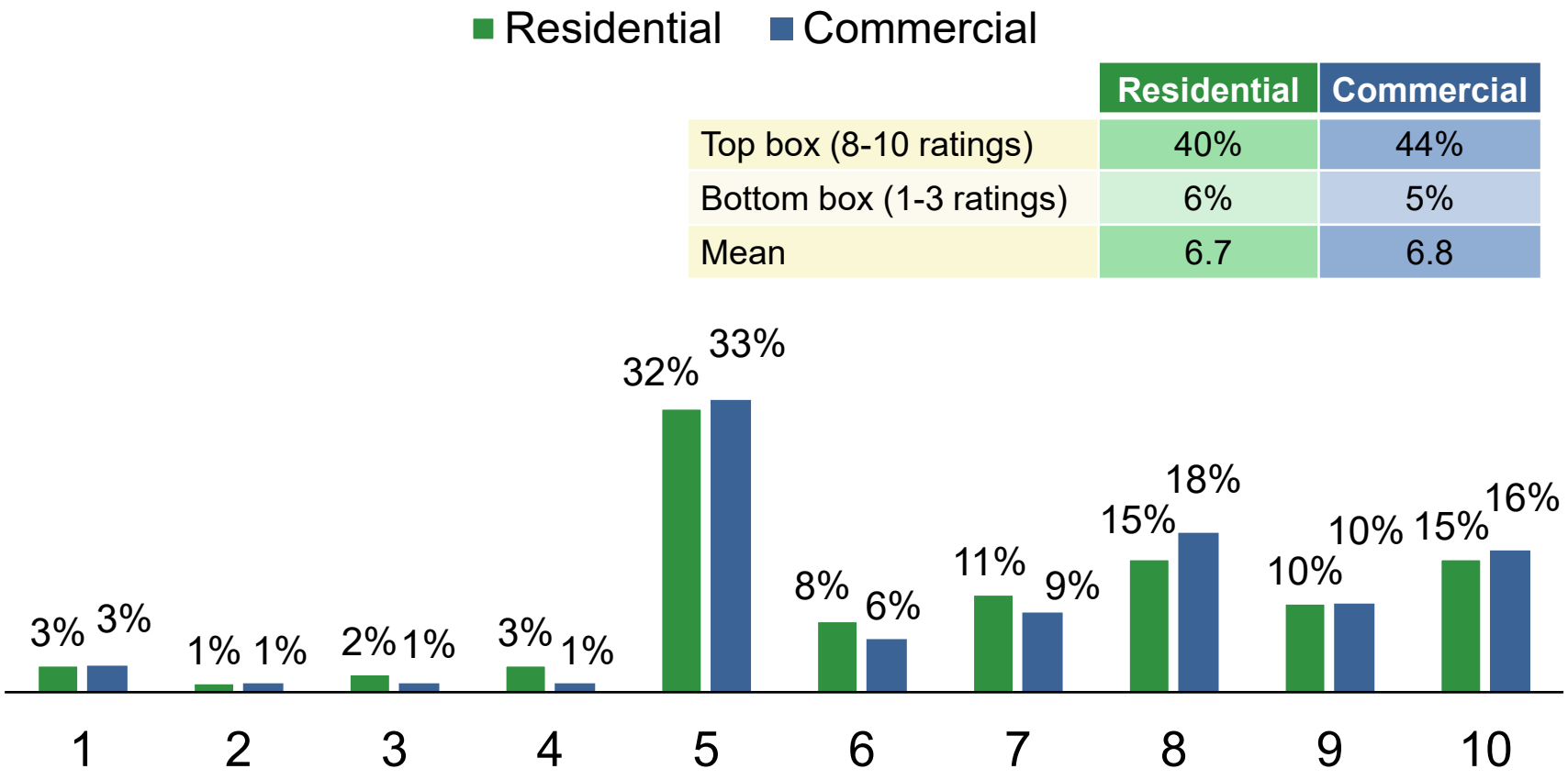
Platte River Power Authority shows concern for the environment



	Residential	Commercial
Top box (8-10 ratings)	44%	46%
Bottom box (1-3 ratings)	5%	5%
Mean	6.9	7.0

1=strongly disagree, 10=strongly agree

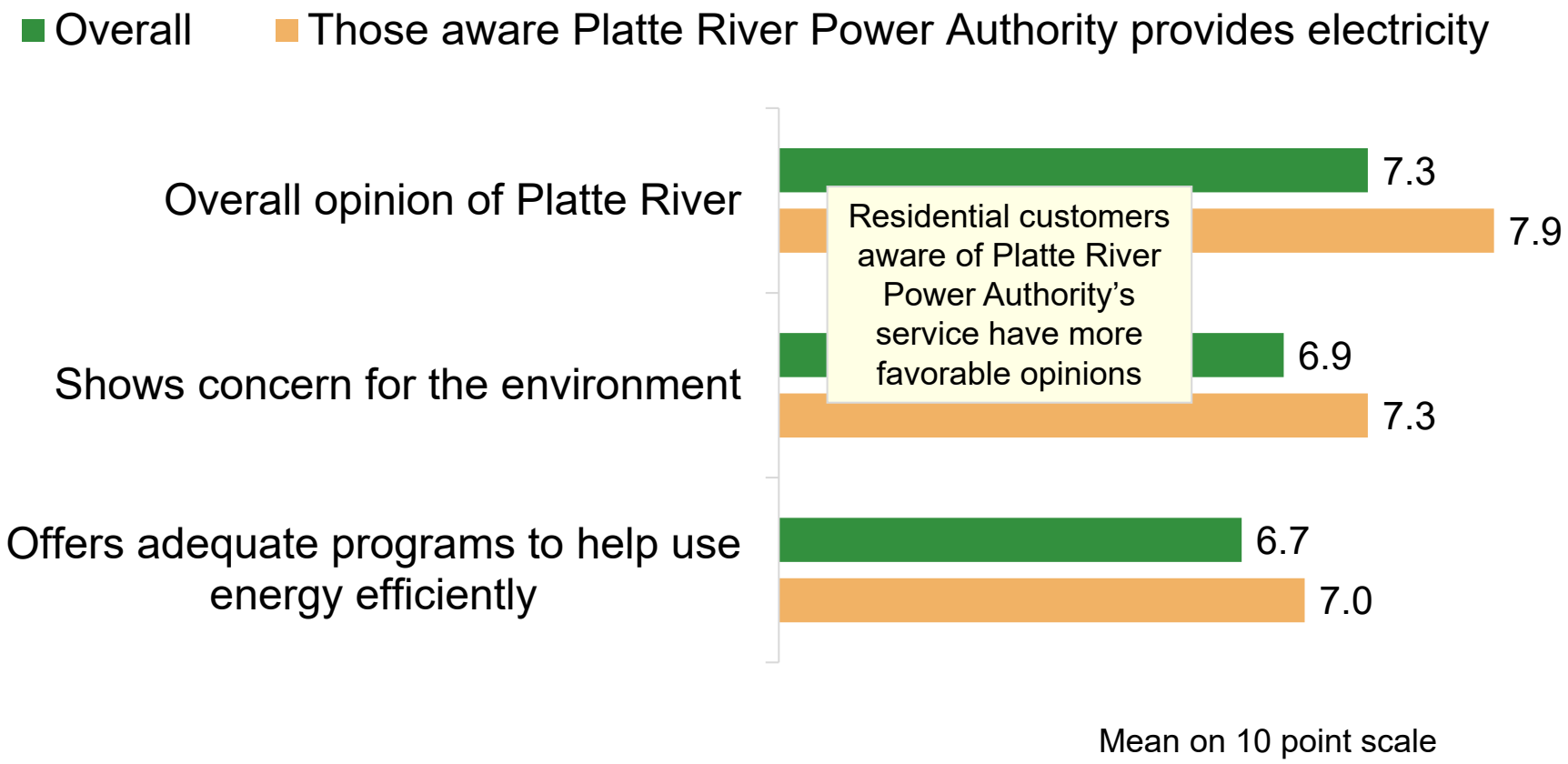
Platte River Power Authority offers adequate programs to help use energy efficiently



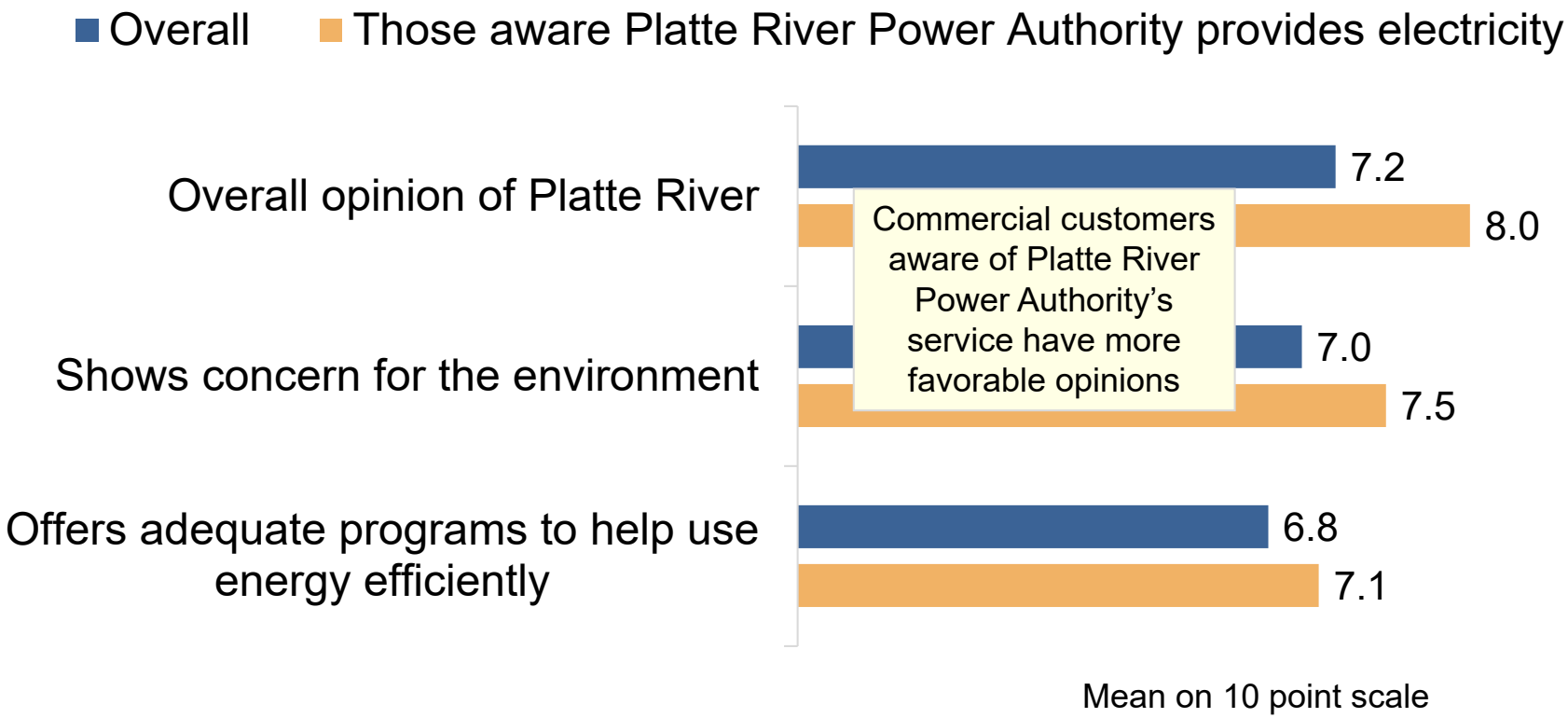
	Residential	Commercial
Top box (8-10 ratings)	40%	44%
Bottom box (1-3 ratings)	6%	5%
Mean	6.7	6.8

1=strongly disagree, 10=strongly agree

Opinion comparison - residential

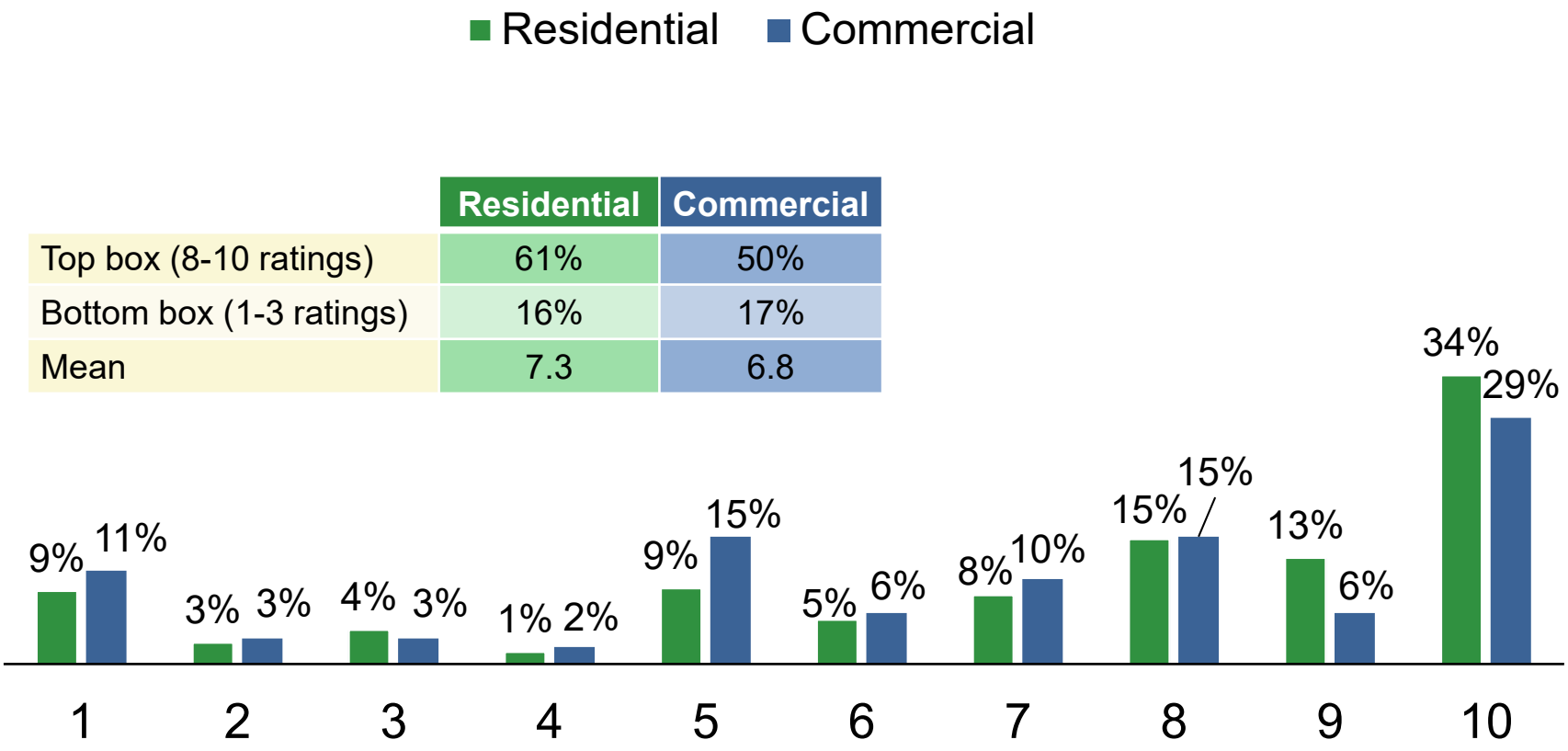


Opinion comparison - commercial



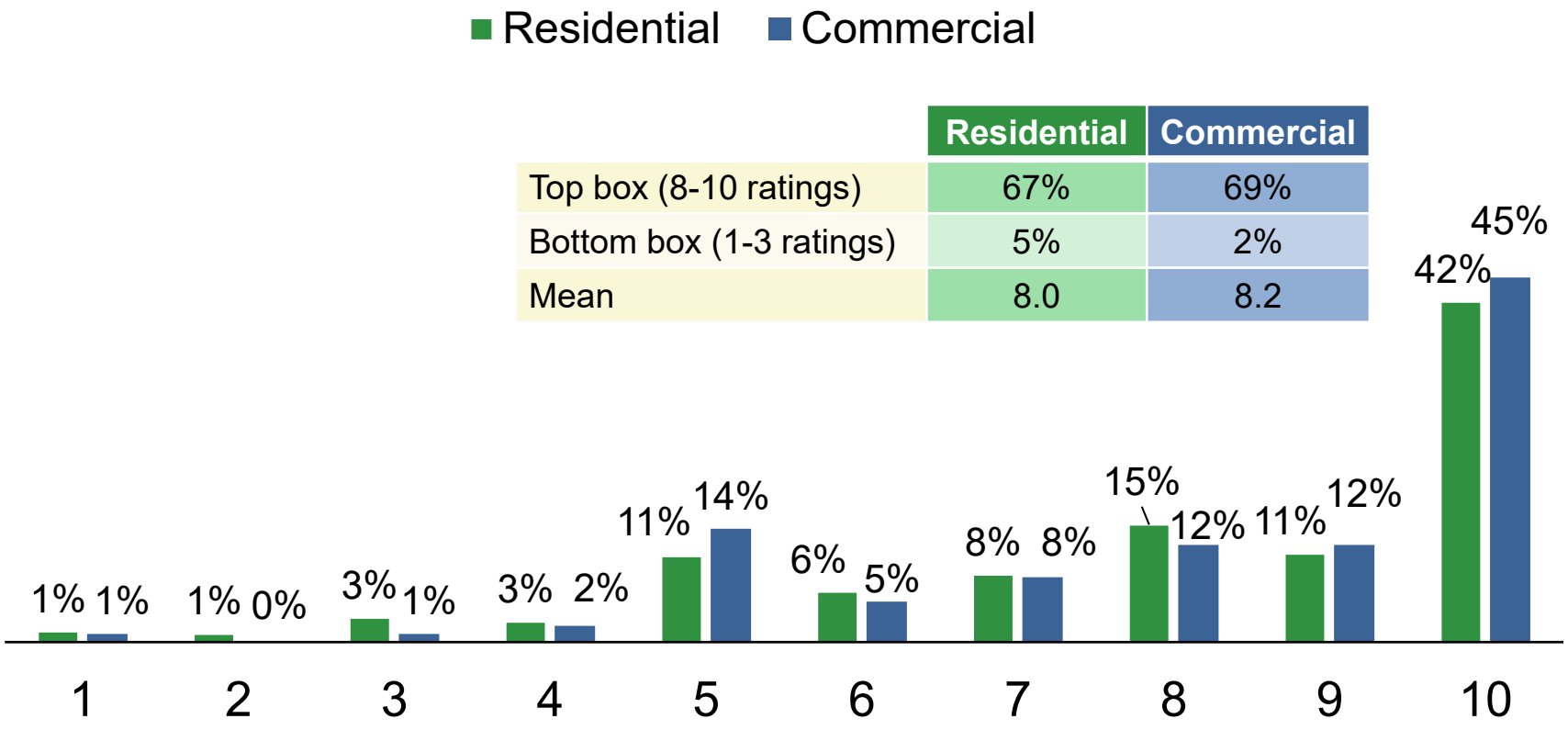
How important is it that 100 percent of the energy you receive comes from renewable resources?

	Residential	Commercial
Top box (8-10 ratings)	61%	50%
Bottom box (1-3 ratings)	16%	17%
Mean	7.3	6.8



1=not at all important, 10=very important

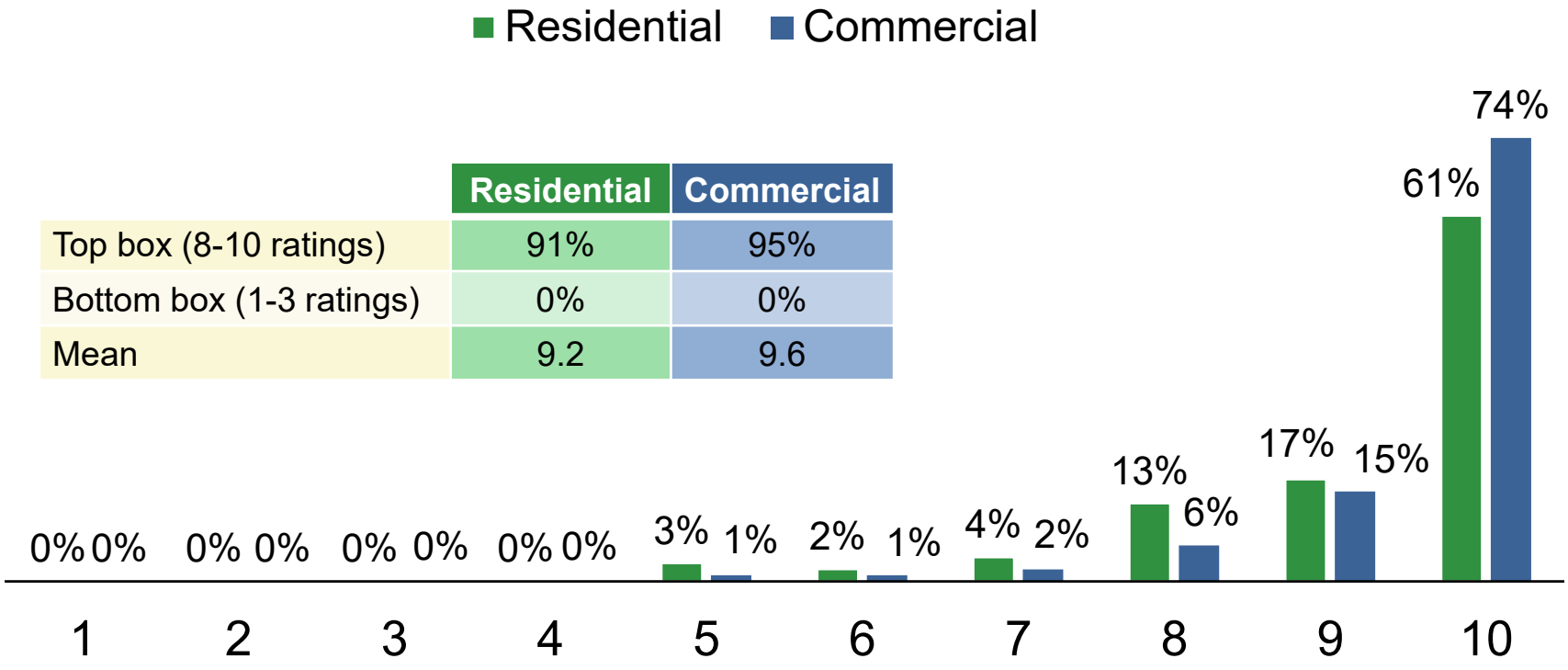
Importance of lowest possible cost



	Residential	Commercial
Top box (8-10 ratings)	67%	69%
Bottom box (1-3 ratings)	5%	2%
Mean	8.0	8.2

1=not at all important, 10=very important

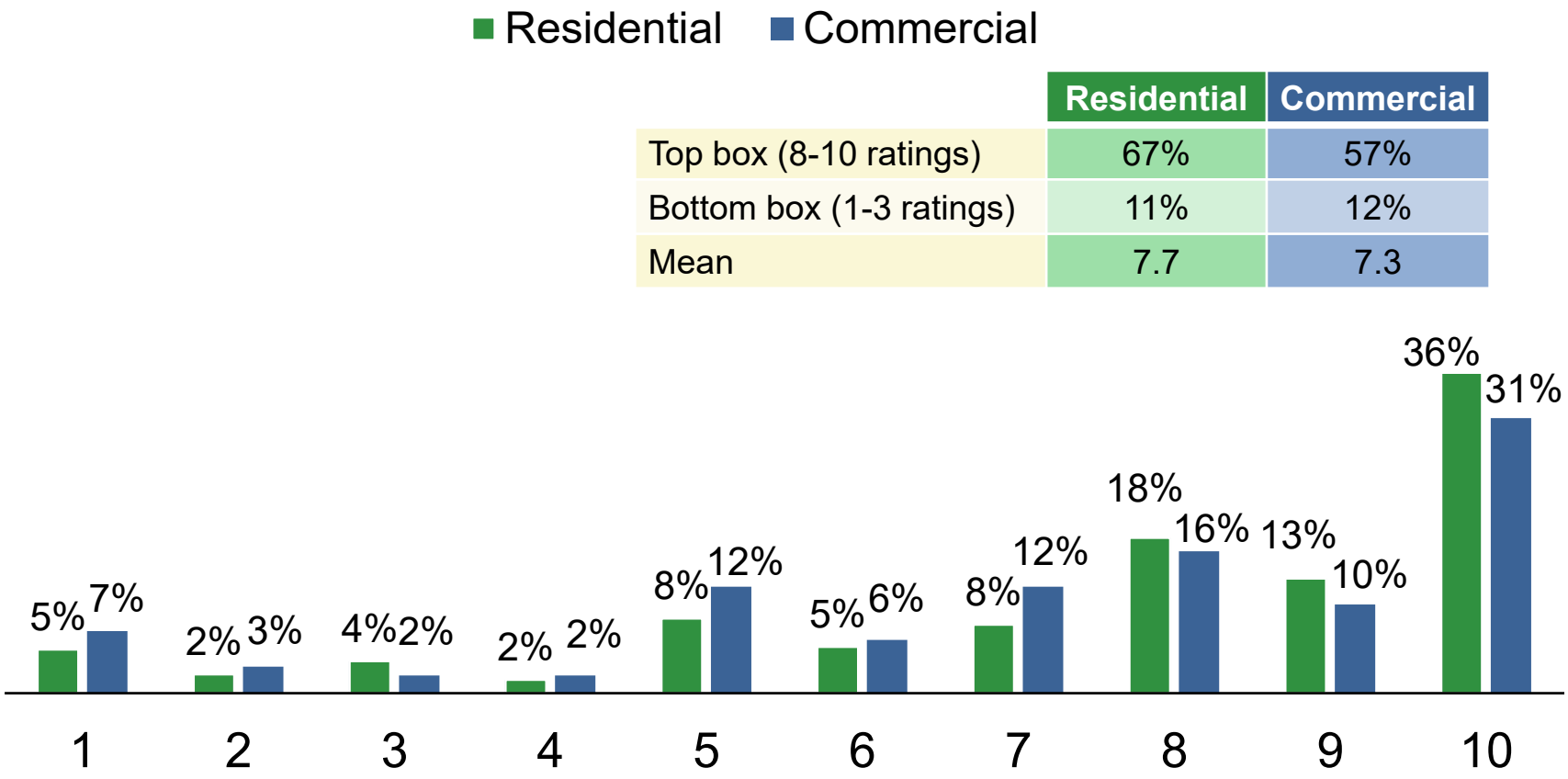
Importance of reliable service



	Residential	Commercial
Top box (8-10 ratings)	91%	95%
Bottom box (1-3 ratings)	0%	0%
Mean	9.2	9.6

1=not at all important, 10=very important

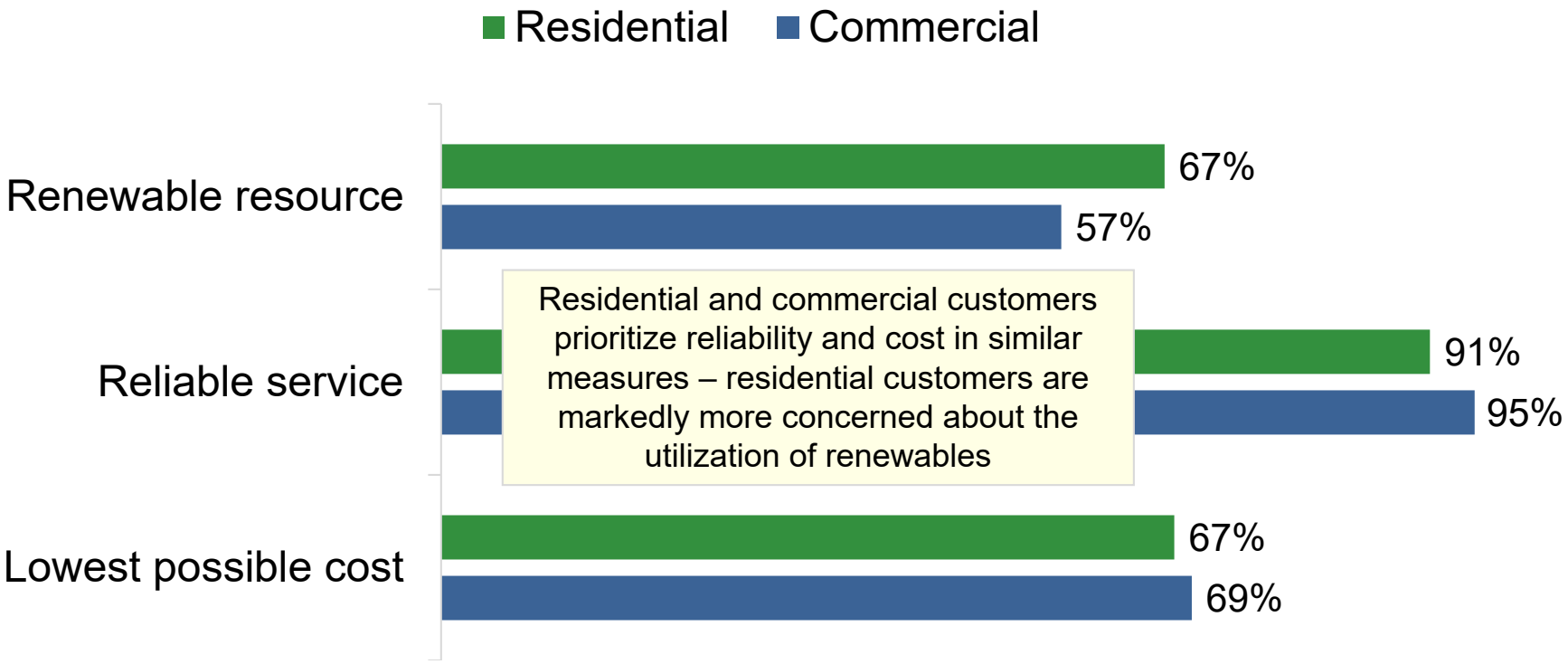
Importance of renewable resources



	Residential	Commercial
Top box (8-10 ratings)	67%	57%
Bottom box (1-3 ratings)	11%	12%
Mean	7.7	7.3

1=not at all important, 10=very important

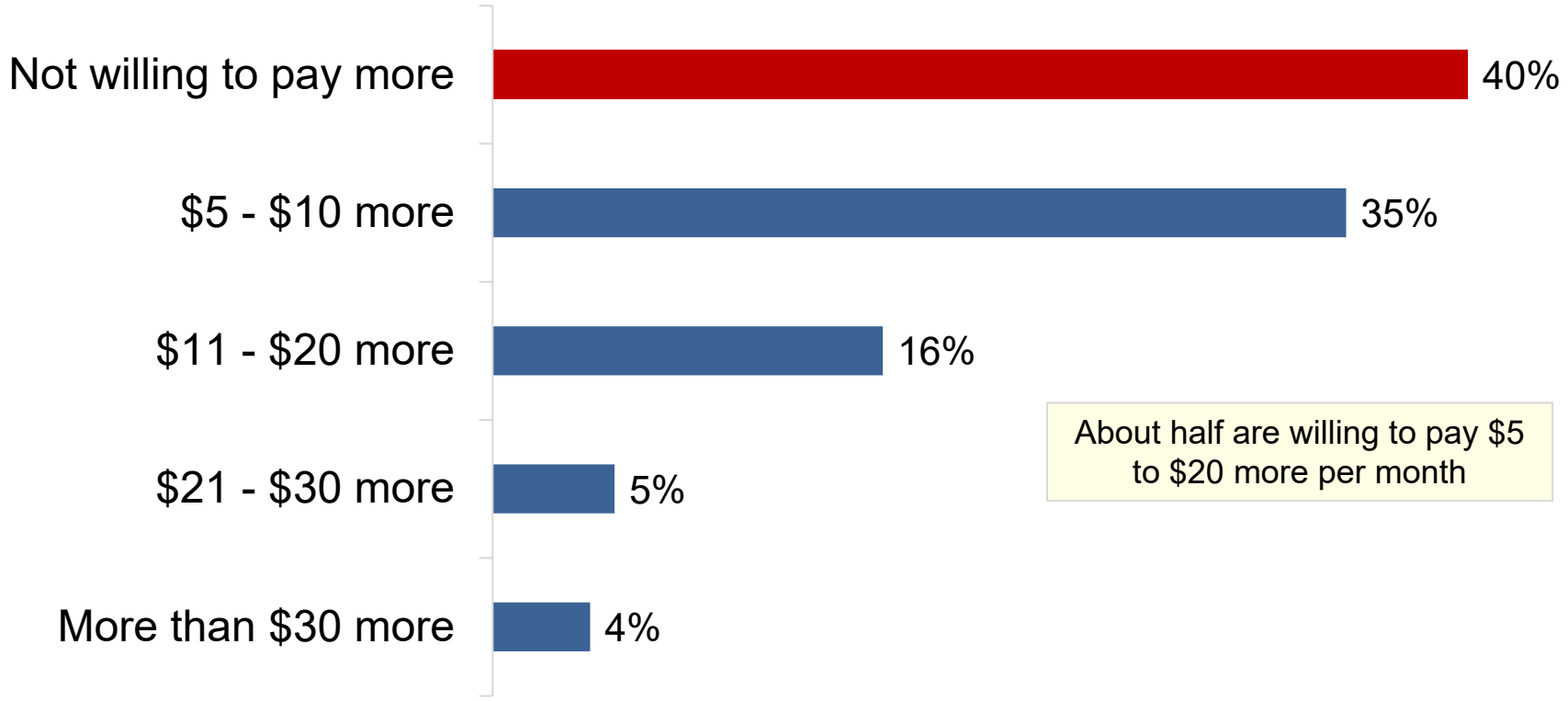
Service characteristics importance



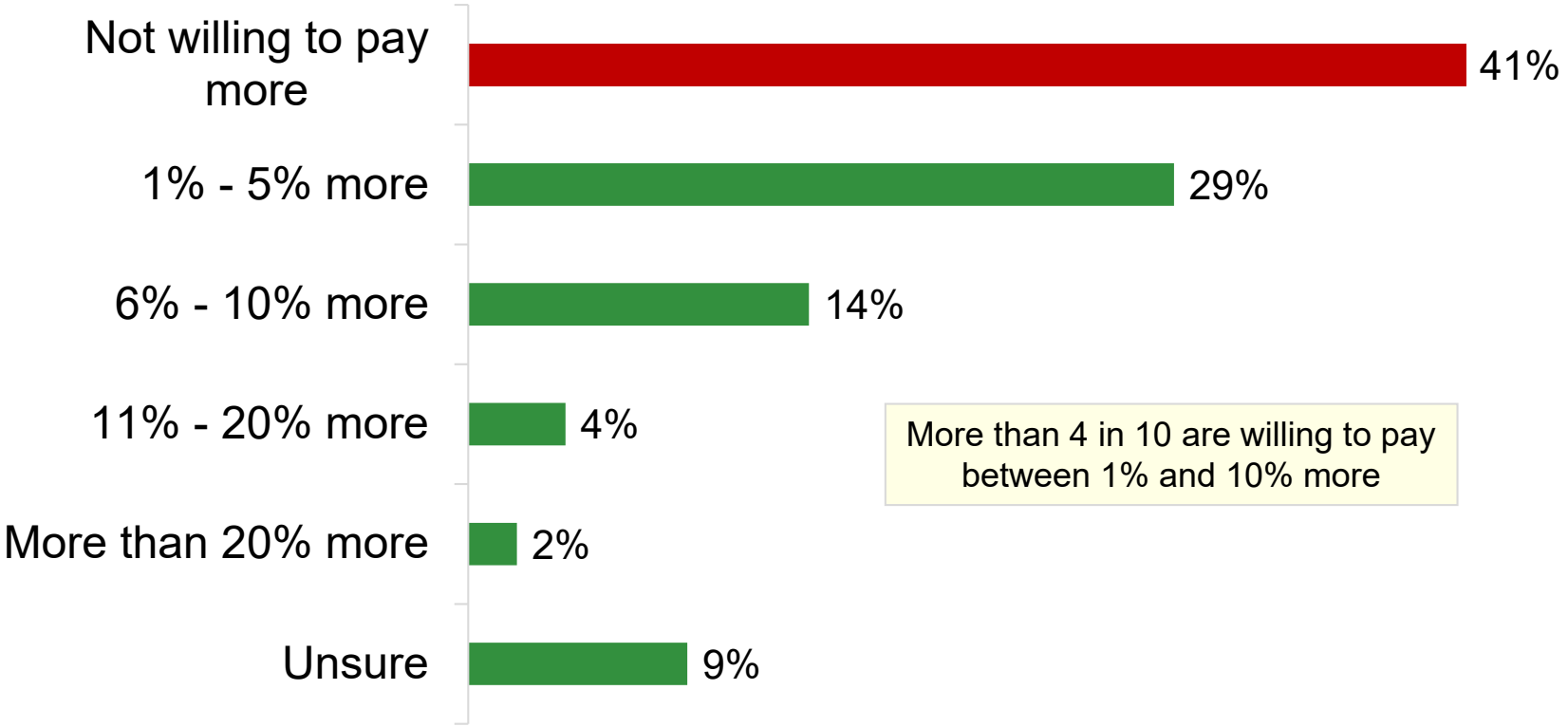
Residential and commercial customers prioritize reliability and cost in similar measures – residential customers are markedly more concerned about the utilization of renewables

Somewhat or very important (8-10 ratings)

Additional monthly amount willing to pay for renewable energy - residential

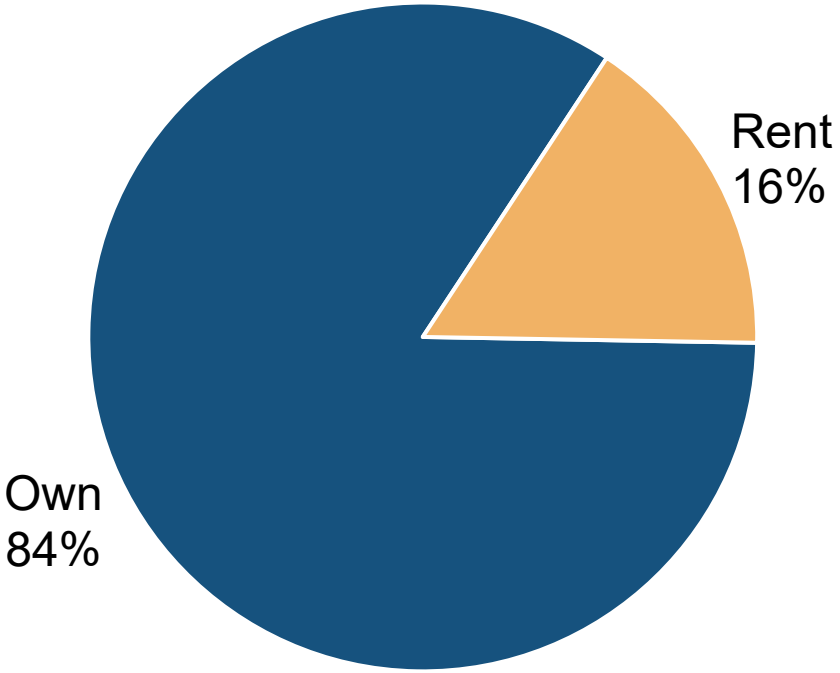


Additional monthly amount willing to pay for renewable energy - commercial



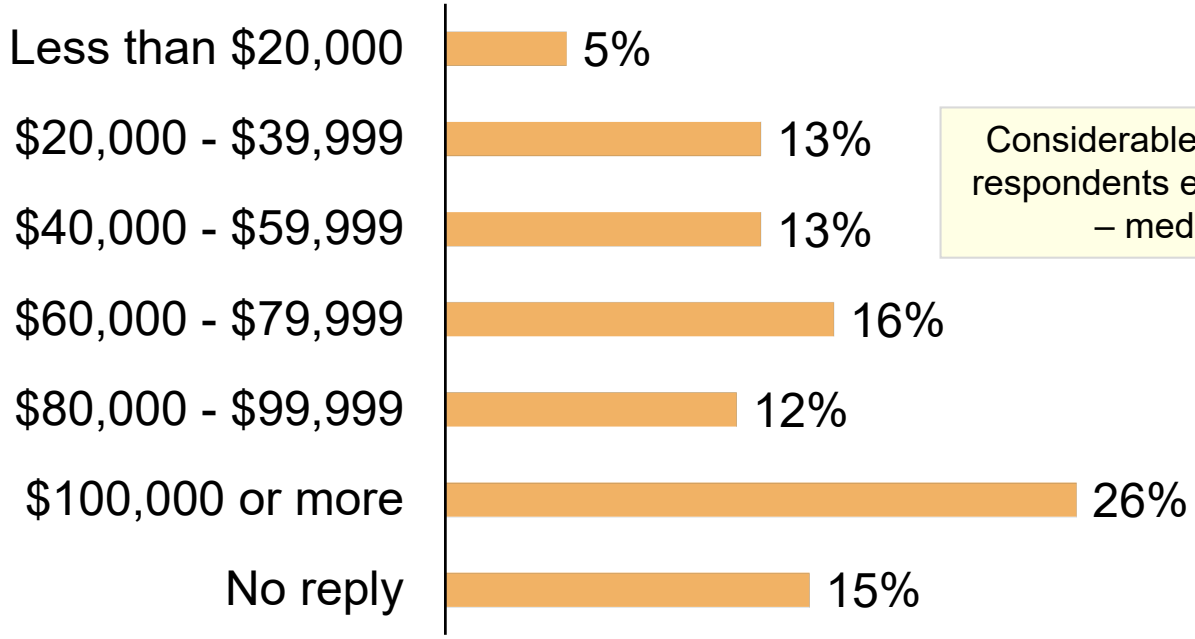
Demographics

Home ownership



Demographics

Income



Considerable income levels, about 4 in 10 respondents earn $80,000 or more per year – median income is $74,041

- More than half (56 percent) of residential customers are aware Platte River Power Authority provides electricity generation and transmission services to their utility – fewer than half (47 percent) of commercial customers are aware
- Customers who are aware Platte River Power Authority provides G&T services to their utility rate Platte River Power Authority higher in overall favorability, showing concern for the environment, and offering adequate energy efficiency programs
- Reliability is the most important service characteristic to residential and commercial customers by a considerable margin
- About half of residential customers are willing to pay $5 to $20 per month more on their bill for electricity generated from renewable resources – 4 in 10 are not willing to pay more
- 4 in 10 commercial customers are willing to pay 1 percent to 10 percent more per month for renewable energy – another 4 in 10 are not willing to pay more
- Mix of ages responding to the residential survey, but more older customers – median age is 57, median length of service is 11 years
- Median length of service for commercial customers is 10 years – 7 in 10 of the businesses have fewer than 10 employees

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March operational results

Category	March variance		YTD variance	
Municipal demand	2.8%	●	(2.7%)	■
Municipal energy	1.5%	◆	(1.0%)	◆
Baseload generation	8.6%	●	(1.7%)	◆
Wind generation	(23.9%)	■	(14.6%)	■
Solar generation	0.4%	◆	1.0%	◆
Surplus sales volume	15.5%	●	23.2%	●
Surplus sales price	43.5%	●	41.4%	●
Dispatch cost	(8.8%)	●	(4.8%)	●

Variance key: Favorable: ● >2% | Near budget: ◆ +/- 2% | Unfavorable: ■ <-2%

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Financial summary

Category	March variance from budget ($ in millions)	Year to date variance from budget ($ in millions)
Net income	$3.0 ●	$6.5 ●
Fixed obligation charge coverage	1.77x ●	1.30x ●
Revenues	$1.5 ●	$3.8 ●
Operating expenses	$1.3 ●	$2.5 ●
Capital additions	($0.5) ■	$2.1 ●

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

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