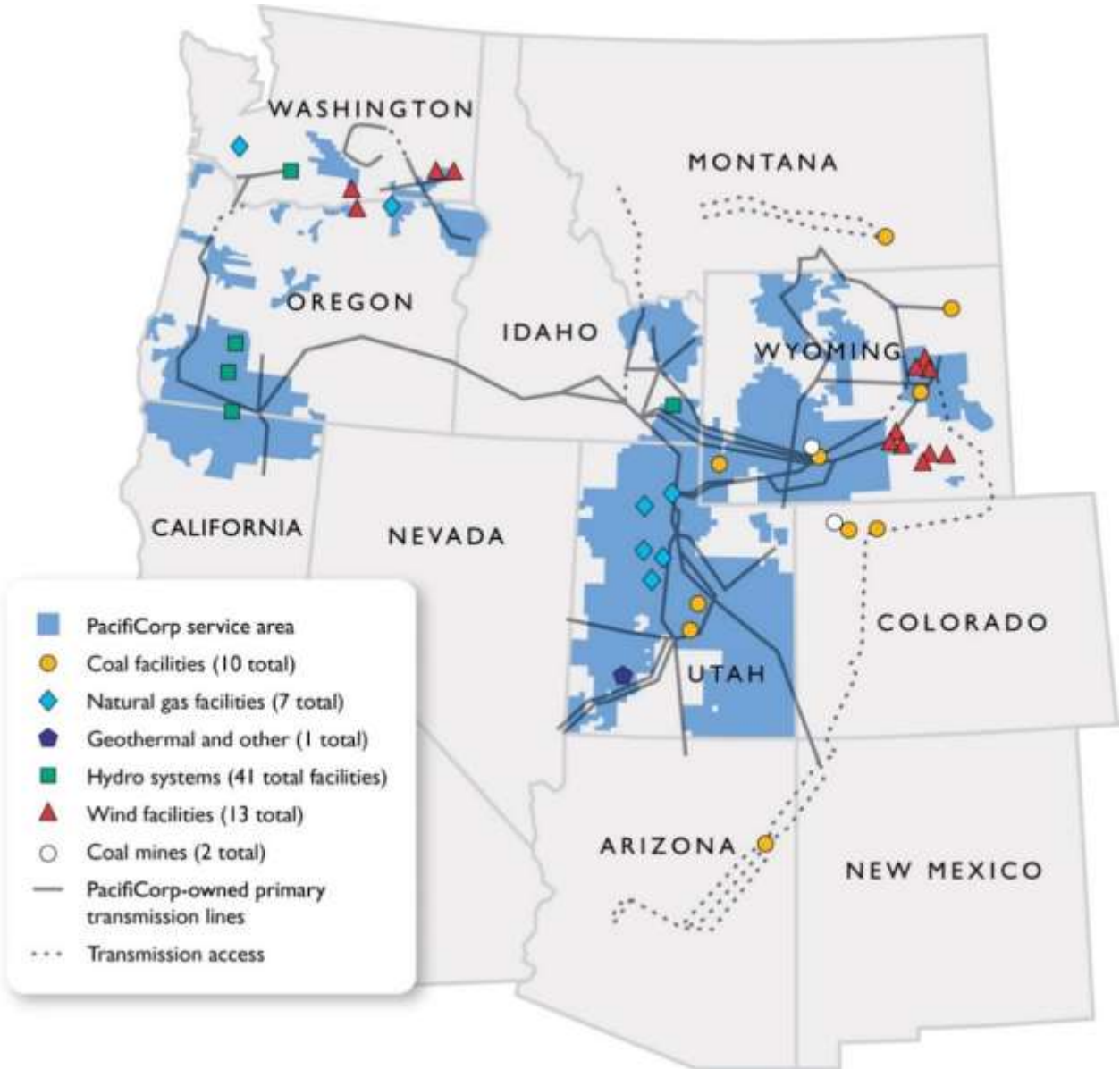


# Rocky Mountain Power Update

Wyoming Minerals, Business & Economic Development Committee  
May 16, 2018



# Company Overview



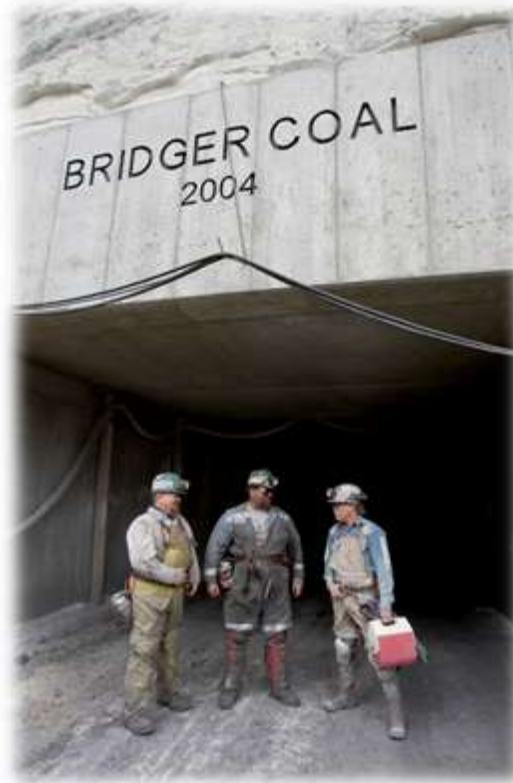
- 10,894 MW owned generation capacity<sup>(1)</sup>

- Coal 5,931 MW 55%
- Natural gas 2,766 MW 25%
- Hydro<sup>(2)</sup> 1,135 MW 10%
- Other 1,062 MW 10%

<sup>(1)</sup> Net MW owned in operation as of Dec. 31, 2016  
<sup>(2)</sup> All or some of the renewable energy attributes associated with generation from these generating facilities may be: (a) used in future years to comply with renewable portfolio standards or other regulatory requirements or (b) sold to third parties in the form of renewable energy credits or other environmental commodities

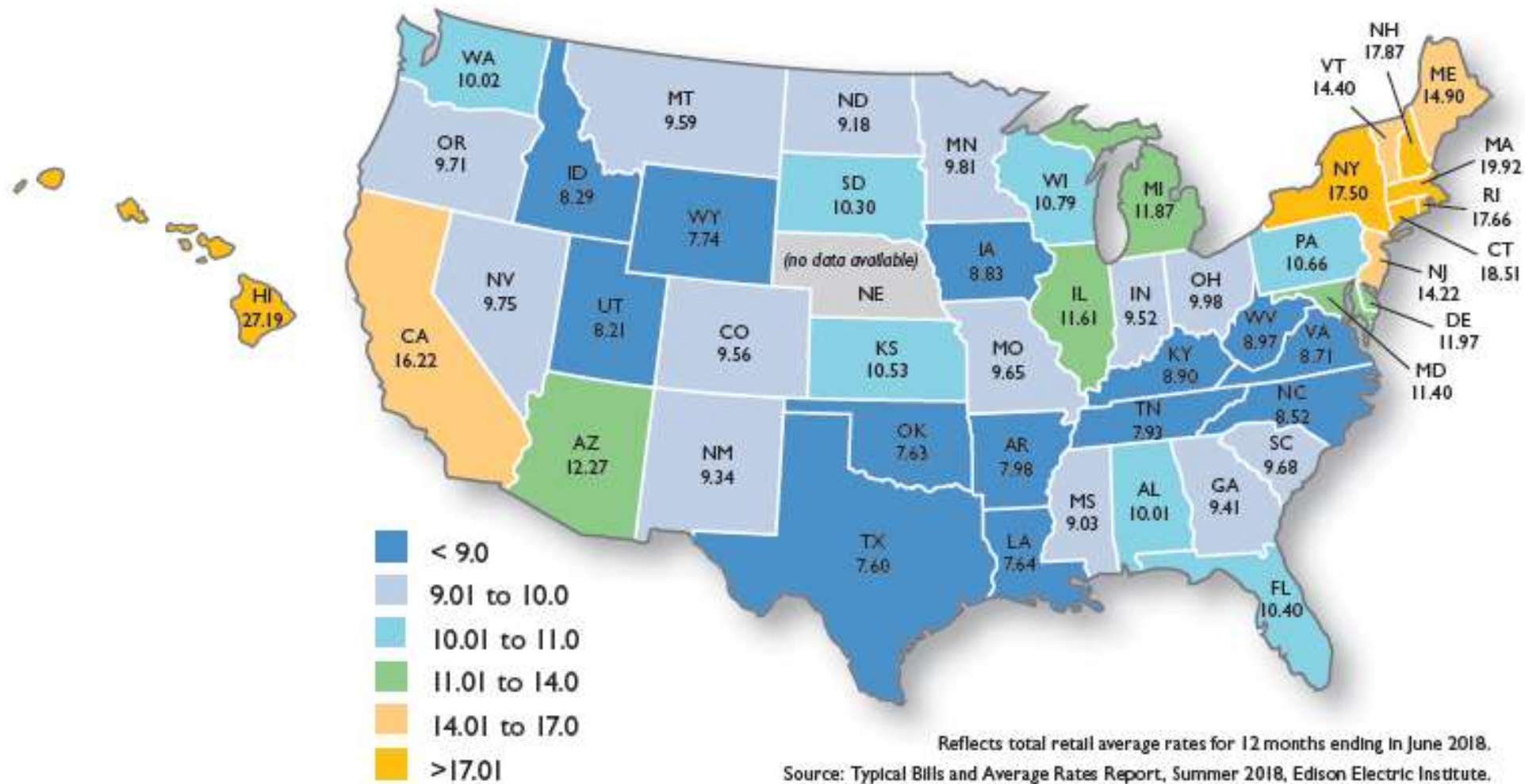
# Wyoming Overview

- 140,712 Wyoming Customers
- 1,298 Rocky Mountain Power Employees
- More than 700 Retirees

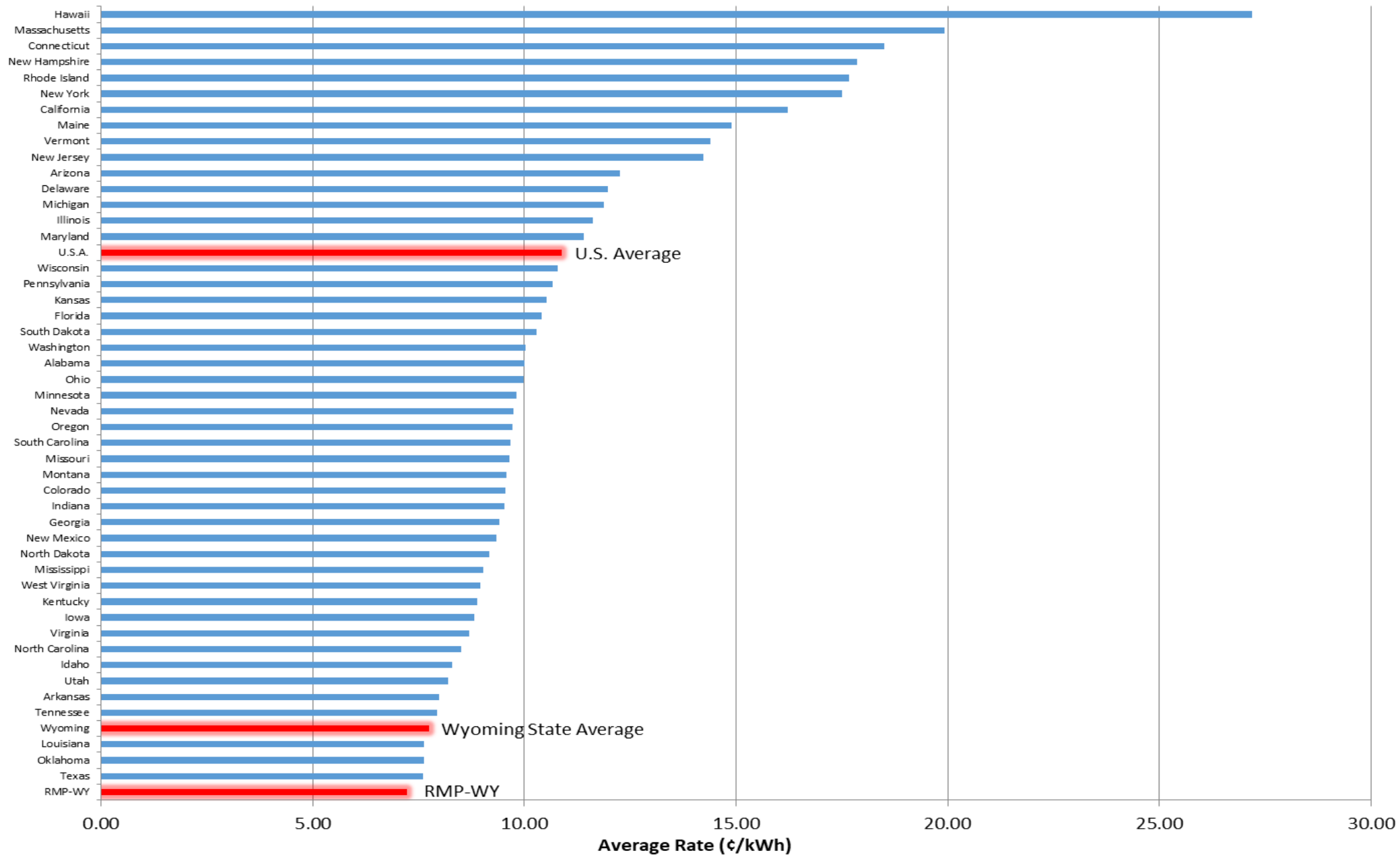


**Low-cost and reliable energy is  
our fundamental building block**

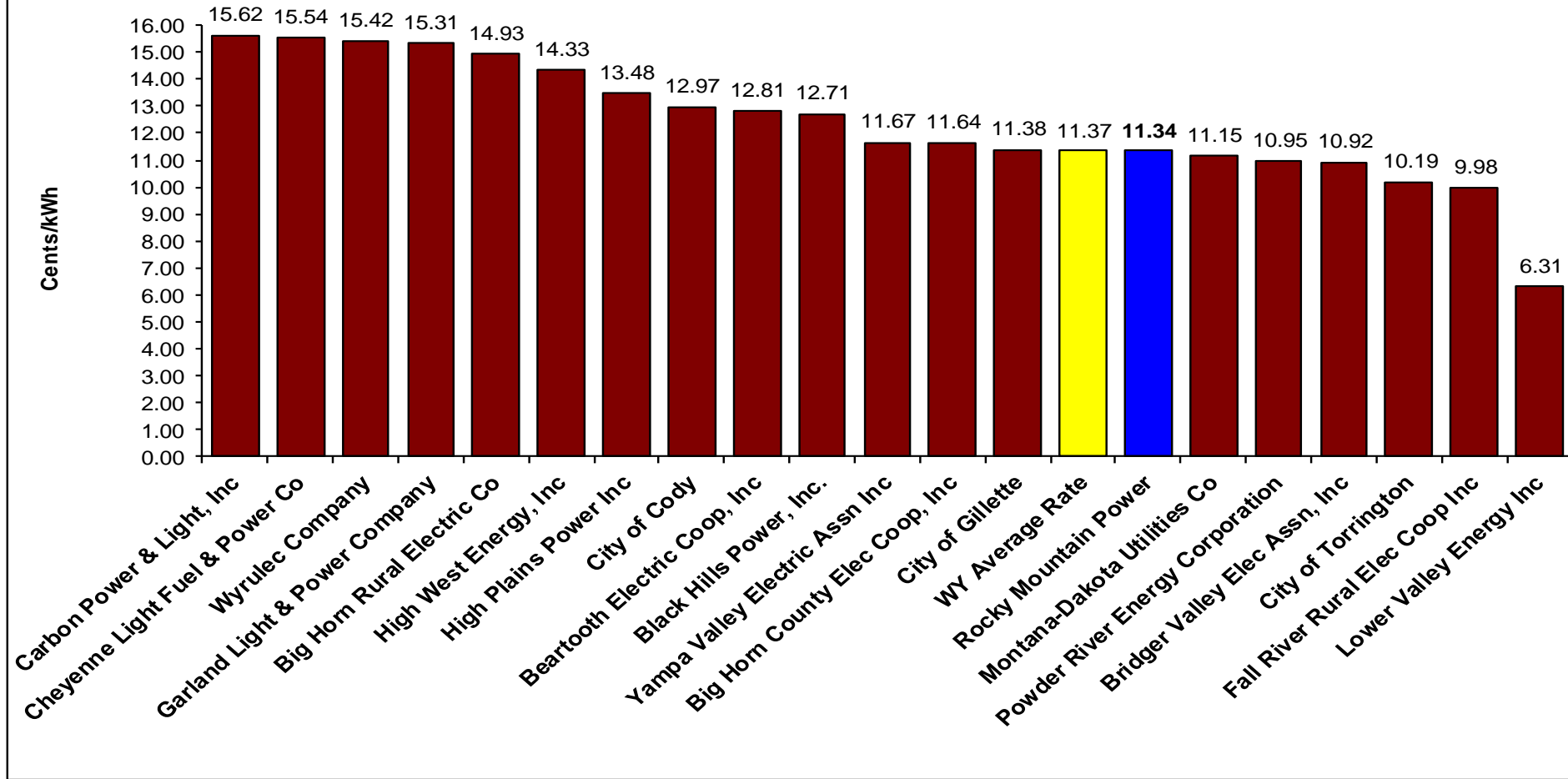
## Total retail average rates by state (cents per kilowatt-hour)



# Average Electricity Rates by State



### Wyoming Residential Average Rates 2017



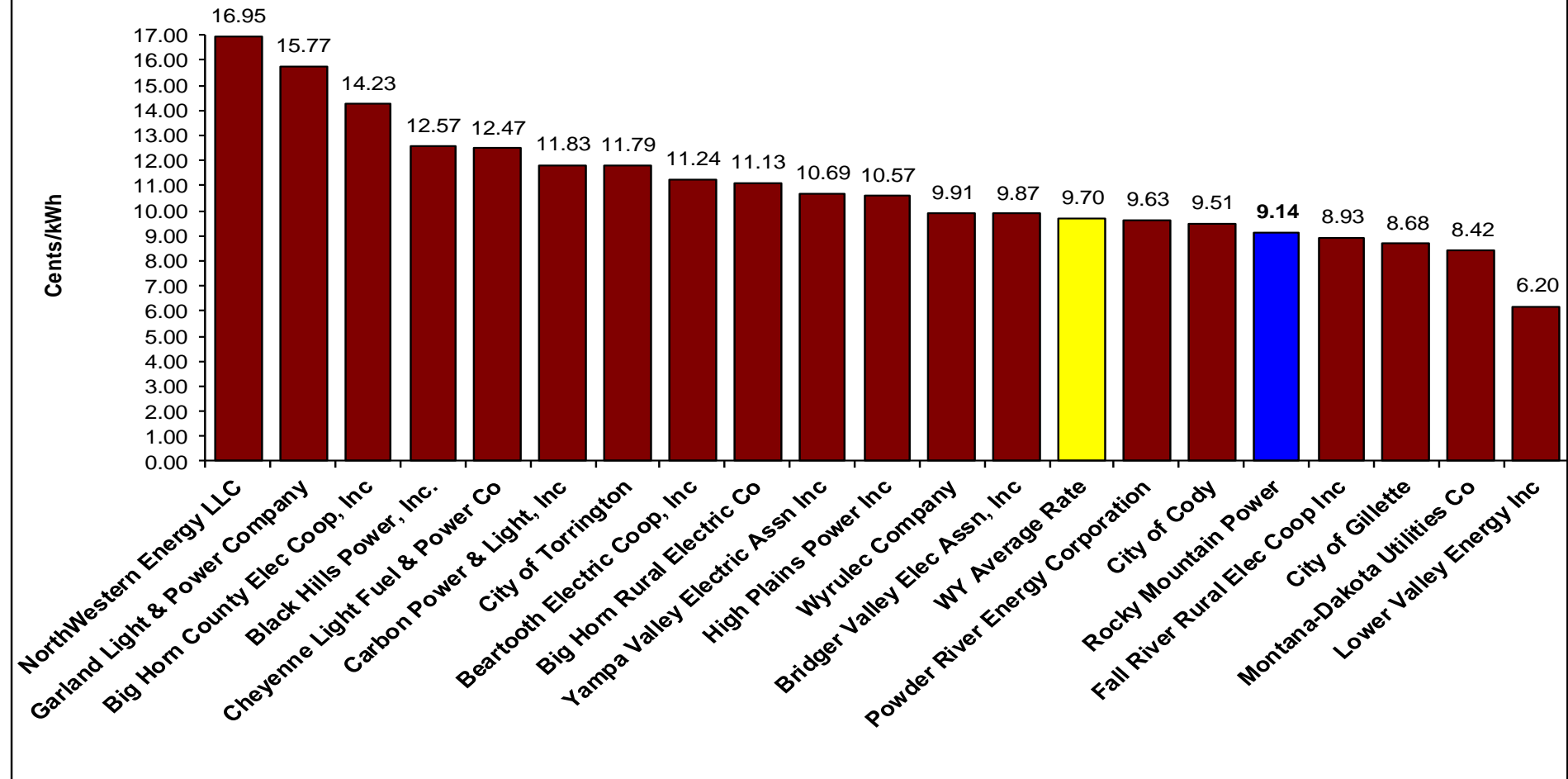
Source: Based on Energy Information Administration, Form EIA-861, 2017

Chart includes the 20 largest utilities by customer count that responded to Form EIA-861.

Does not include utilities that responded to alternate Form EIA-861S.

State average rate includes all utilities that responded to Form EIA-861.

### Wyoming Commercial Average Rates 2017



Source: Based on Energy Information Administration, Form EIA-861, 2017

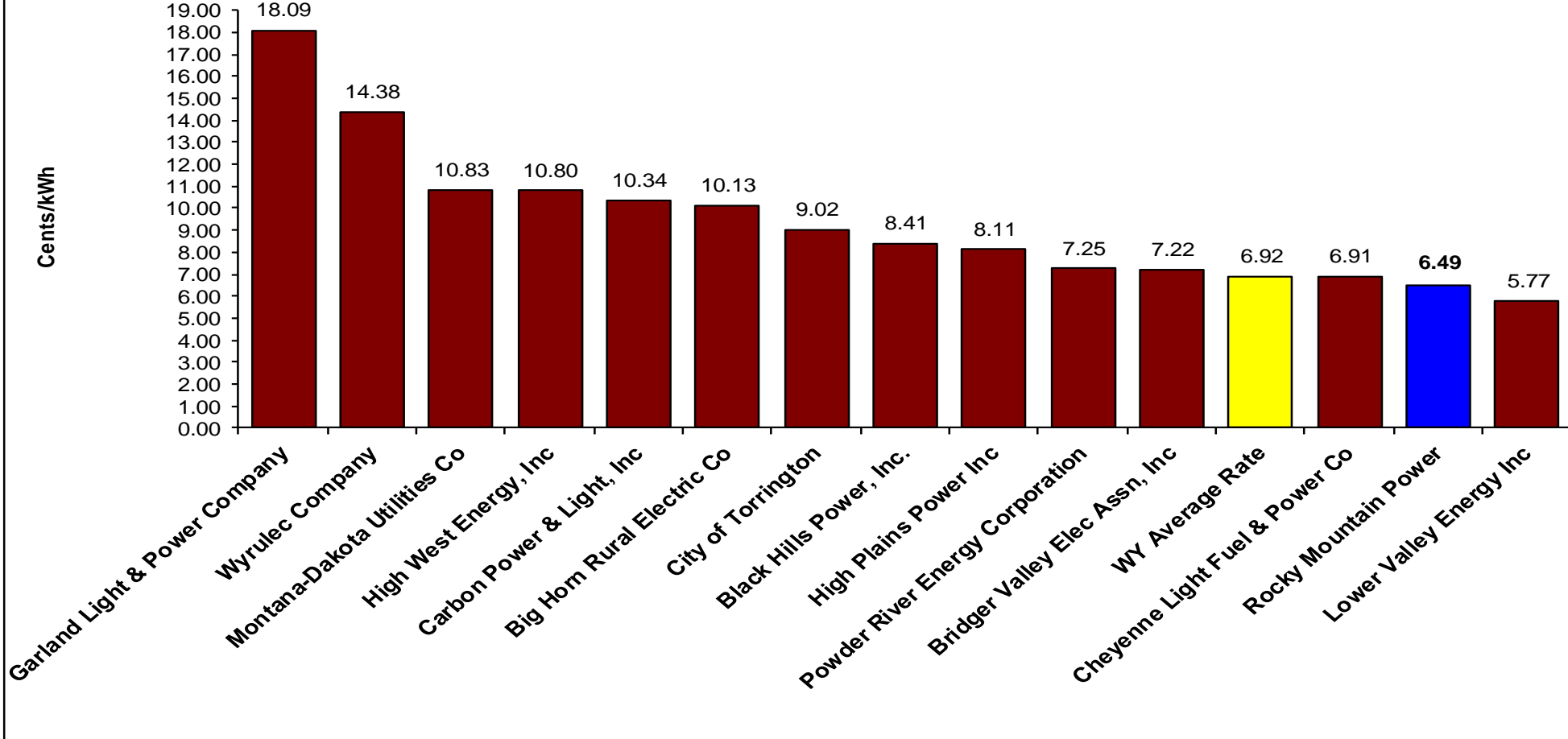
Chart includes the 20 largest utilities by customer count that responded to Form EIA-861.

Does not include utilities that responded to alternate Form EIA-861S.

State average rate includes all utilities that responded to Form EIA-861.



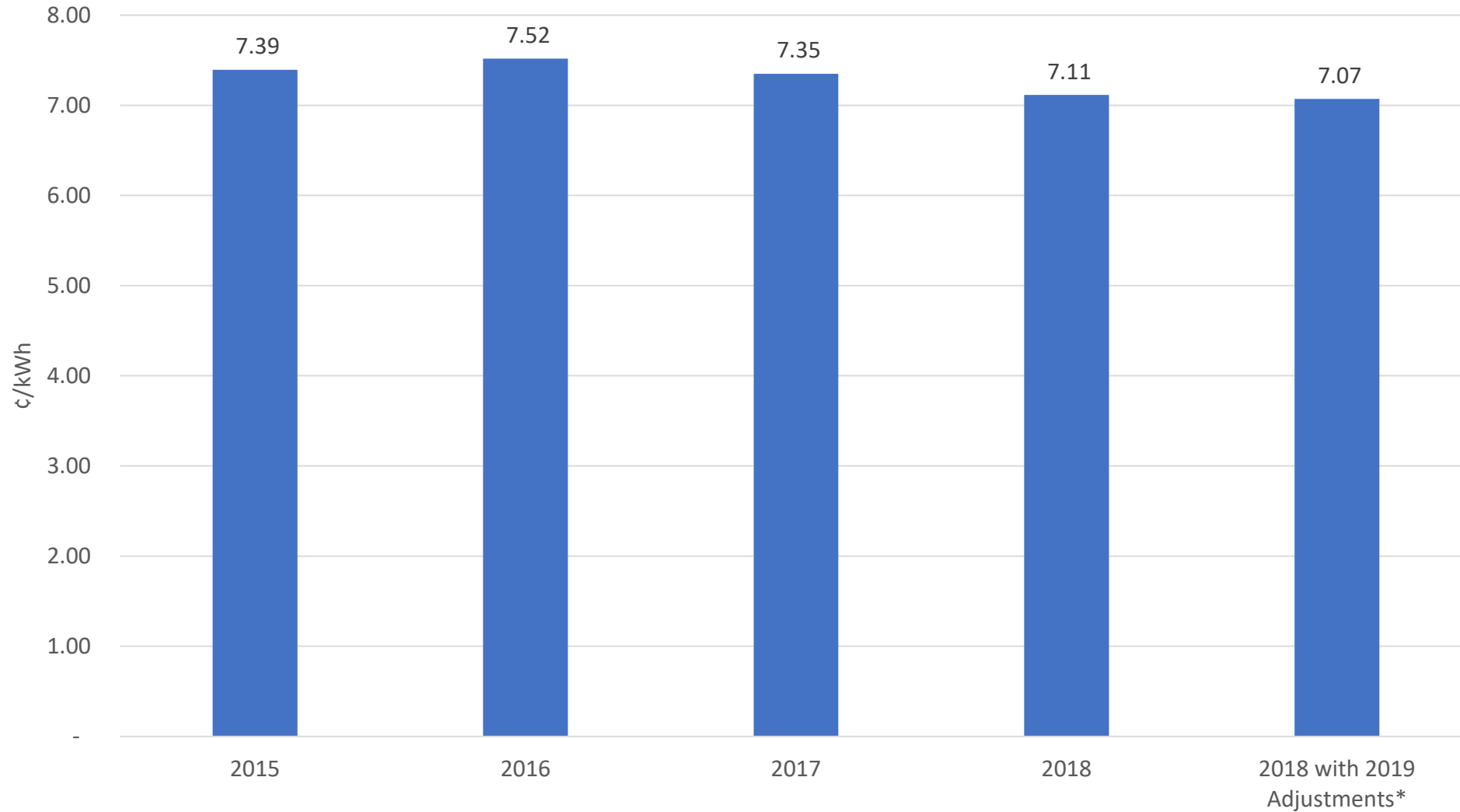
### Wyoming Industrial Average Rates 2017



Source: Based on Energy Information Administration, Form EIA-861, 2017

Chart includes all utilities that responded to Form EIA-861.  
 Does not include utilities that responded to alternate Form EIA-861S. Does not include utilities with less than \$30,000 in revenue.  
 State average rate includes all utilities that responded to Form EIA-861.

# Rocky Mountain Power Wyoming Total Retail Average Rates History



\*2018 average with the rate impacts for half of Federal Tax Act Adjustment credit, plus April 2019 filings.

Data Source: Edison Electric Institute (EII) Typical Bills and Average Rates Reports for CY 2015-2018



# Integrated Resource Plan Two-Year Cycle



# Integrated Resource Plan Updates

- Updated coal-retirement cases account for costs to address reliability issues identified and discussed at the December 2018 public-input meeting.
- The updated analysis shows there are potential customer benefits from accelerating the retirement of certain coal units—the greatest customer benefits are associated with an accelerated retirement of certain units at the Naughton and Jim Bridger power plants.
- The results of these studies do not reflect a final least-cost, least-risk plan.
- Additional resource portfolio analysis will be completed in the coming months before PacifiCorp finalizes the 2019 IRP, which it plans to file with state commissions by August 1, 2019.

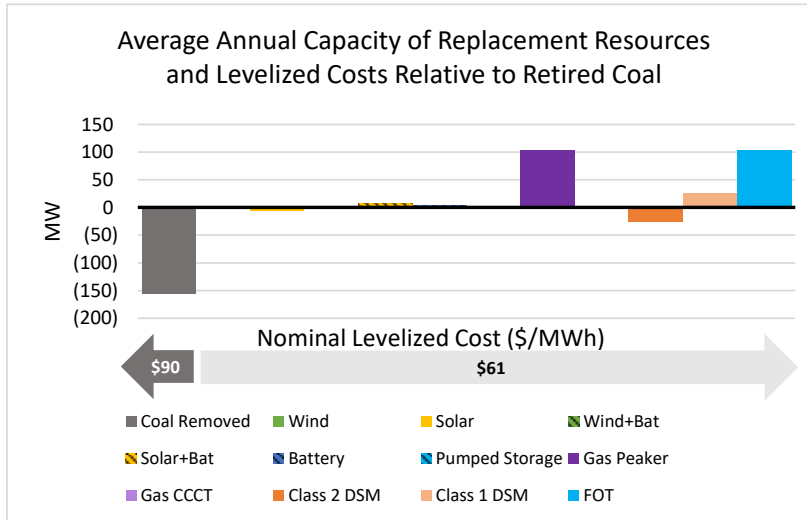
# Stacked-Retirement Cases PVRR(d) Results

Case	Inc. Retired Capacity in 2023 (MW)	PVRR(d) (Benefit)/Cost of Early Retirement (\$m)	Naughton 1	Naughton 2	Bridger 1	Bridger 2	Hayden 1	Hayden 2	Craig 1	Craig 2	Dave Johnston 3
C-34	357	(\$123)	✓	✓							
C-35	711	(\$211)	✓	✓	✓						
C-36	510	(\$158)	✓		✓						
C-37	554	(\$143)	✓		✓		✓				
C-38	755	(\$120)	✓	✓	✓		✓				
C-39	834	(\$52)	✓	✓	✓		✓			✓	
C-40	1,193	(\$191)	✓	✓	✓	✓	✓			✓	
C-41	1,529	(\$12)	✓	✓	✓	✓	✓	✓	✓	✓	✓
C-42	1,063	(\$248)	✓	✓	✓	✓					
C-43	928	(\$31)	✓	✓	✓						✓

\*Note: in all cases it is assumed that Naughton 3 (280 MW) is retired in 2019 and that Cholla 4 (387 MW) is retired at the end of 2020— however, these units are retired in the benchmark case and therefore not incremental to the stacked-retirement cases listed above.

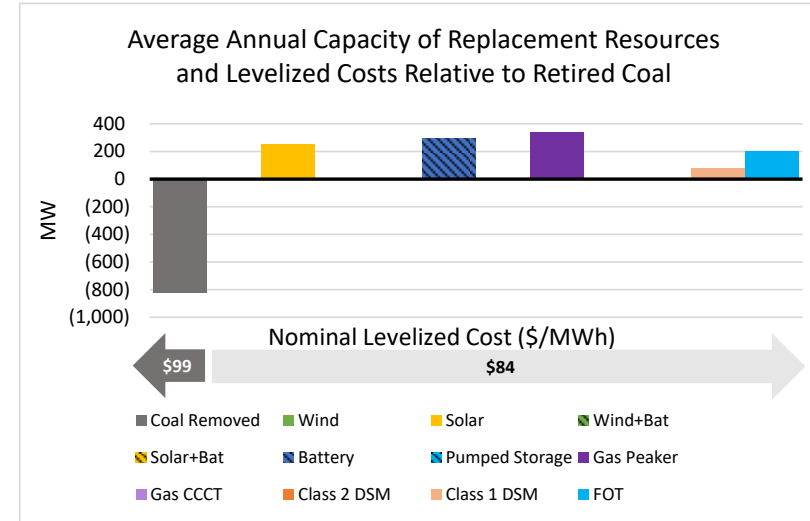
# Stacked Cases C-34 and C-42

## Case C-34 (NT1-2)



- The nominal levelized cost of the retired coal resources is \$29.33/MWh higher than the nominal levelized costs of the portfolio of replacement resources.
- CO<sub>2</sub> emission cost savings account for 18.6% of the overall benefit associated with accelerated retirement.
- Run-rate fixed costs would need to drop by 59.8% to achieve break-even economics with the replacement portfolio.

## Case C-42 (NT1-2, JB1-2)



- The nominal levelized cost of retired coal resources is \$14.21/MWh higher than the nominal levelized costs of the portfolio of replacement resources.
- CO<sub>2</sub> emission cost savings account for 77.0% of the overall benefit associated with accelerated retirement.
- Run-rate fixed costs would need to drop by 26.3% to achieve break-even economics with the replacement portfolio.

# IRP Next Steps

- Resource adequacy and system reliability risk assessment
- Employee and community transitions (*i.e.* staging of potential early coal retirements)
- Transmission infrastructure needs
- Rulemaking consistent with new legislation in Wyoming (S.F. 159)
- Interactions with state-driven new resource procurement rules
- Regional haze compliance alternatives
- Market price and CO<sub>2</sub> policy scenario risk assessment (price-policy scenarios)
- Alternative operational scenarios for existing coal units (*i.e.*, gas conversion, reduced operating minimums, and seasonal operations)

**Building a foundation for  
growth starts with investments  
in infrastructure.**



# Actively Investing in Wyoming's Infrastructure

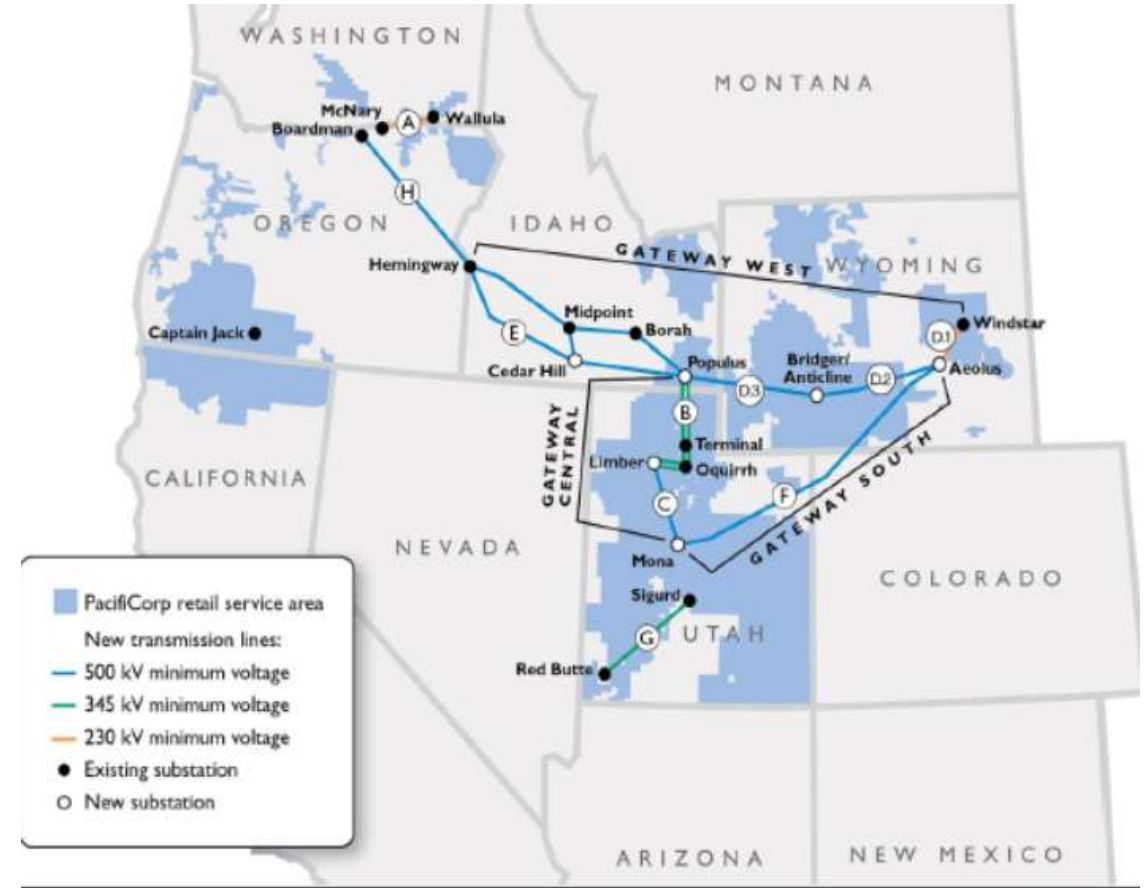
- **\$3.1 billion (\$2.6 billion in Wyoming)** Energy Vision 2020 initiative includes:
  - Building a new 140-mile Gateway West transmission segment in Wyoming to enable additional wind generation
  - Upgrading or “repowering” existing wind fleet with larger blades and newer technology
  - Adding 1,150 megawatts of new wind resources by the end of 2020
- Over **\$300 million** annually in labor, O&M, and other services in Wyoming
- Over **\$24 million** in annual taxes in Wyoming

# Gateway West



# PacifiCorp Major Transmission Projects

- Gateway West
  - BLM record of decision on 8 of 10 segments November 2013
  - BLM record of decision on last 2 segments April 2018
- Aeolus-to-Jim Bridger/Anticline
  - Segment D2 of Gateway West
  - Planned in-service Q4 2020
- Gateway South
  - BLM record of decision December 2016
- Boardman-to-Hemingway
  - BLM record of decision December 2017
  - Oregon Energy Facility Siting Council permit target date December 2020
- Segments In-Service
  - Populus-to-Terminal November 2010
  - Mona-to-Oquirrh May 2013
  - Sigurd-to-Red Butte May 2015
  - Wallula to McNary January 2019



This map is for general reference only and reflects current plans.  
It may not reflect the final routes, construction sequence or exact line configuration.

# Energy Gateway Permitting

## Gateway West (988 miles 230, 345 and 500 kV)

Milestone	Date	Cumulative Duration
SF299 Filed	Apr. 18, 2007	
Public Scoping	May 16, 2008	1 year 28 days
Draft EIS	July 29, 2011	4 years 3 months
Final EIS	Apr. 26, 2013	6 years 8 days
Record of Decision for most of project	Nov. 14, 2013	6 years 7 months
Bureau of Land Management Notice to Proceed for Aeolus to Jim Bridger	March 25, 2019	

# Energy Landscape is Rapidly Changing

- **Customer Demands and Expectations**

- The majority of Wyoming's power is exported to other states
- States, customer groups, corporations, and individuals are increasingly desiring generation portfolios with greater renewable resource allocations
- Economic development opportunities

- **Low Cost Renewables**

- **Low Cost Natural Gas**


- **Concerns regarding region market depth liquidity in market generation**

- **Environmental Compliance Costs**

- Costs since 2010 more than \$1 billion
- Changing landscape going forward



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POWER

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