

Rocky Mountain Power's Business Update to the Public Service Commission of Utah September 16, 2022



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PacifiCorp Overview

- Six-state service territory
- Rocky Mountain Power
 - Serves Utah, Idaho and Wyoming
 - Over 997,000 customers in Utah
- Pacific Power
 - Serves Oregon, Washington, and California
- 4,800 employees
- 2 million electricity customers
- 141,400 square miles of service territory
- 17,780 transmission line miles
- 11,668 MW owned generation









EPA Ozone Transport Rule

- On March 11, 2022, the Environmental Protection Agency (EPA) released a prepublication version of its "Ozone Transport Rule" (OTR). On April 6, 2022, the EPA formally proposed the rule.
 - OTR is also referred to as the Good Neighbor Rule or Cross-State Air Pollution Rule
 - > OTR is focused on reductions of nitrogen oxides, precursors to ozone formation
 - OTR will now cover 26 states four states are included for the first time Wyoming, Utah, Nevada and California
 - Beginning in 2023, trading allowances and emissions budgets are expected to be set to achieve reductions through immediately available measures
 - Starting in May of 2026, emissions budgets are expected to be set for coal-fired units at levels achievable through the installation of selective catalytic reduction (SCR) controls
 - Daily emission limits for coal units with SCR currently installed become effective in 2024; otherwise, these daily emission limits become effective in 2027.
 - Public comments were filed June 21, 2022. Berkshire Hathaway Energy submitted comments on behalf of affected companies, including PacifiCorp; the comments draw attention to several concerns with the proposed rule

EPA Ozone Transport Rule State Map



EPA Ozone Transport Rule

Summary of Berkshire Hathaway Energy Comments:

- Western states should be removed from the proposed rule.
 - The Proposed Rule is based on a pre-existing framework that was not designed for, and is not workable for, western states.
 - EPA incorporated the four new western states into the proposed rule based on flawed modeling and questionable administrative procedures.
 - The proposed rule is likely to force early coal-unit retirements on a timeline expected to disrupt the reliable delivery of electricity and could directly result in electricity shortages throughout the West and have significant cost implications for customers.
- If EPA does not remove the western states from the proposed rule, several elements must be corrected.
 - EPA should undertake meaningful outreach with the Western Electricity Coordinating Council and the North American Reliability Corporation to ensure that any final interstate transport rule is appropriately modeled to address reliability impacts.
 - EPA's over-control analysis for Utah and Wyoming is flawed and must be revisited.
 - The proposed "enhancements" to the existing trading program eliminate the benefits of a marketbased trading program and should be modified.
 - Additional flexibility and a safety valve are necessary to the success of the trading program.

EPA Regional Haze Rule

 The Regional Haze Rule was promulgated pursuant to the Clean Air Act; the Rule's focus is regulating the emission of 'haze-causing pollutants' (NOx, SO2, PM) to achieve visibility improvements at Class I Areas.



• The Rule has decadal phases designed to create gradual and consistent progress towards visibility improvements at Class I Areas, with a goal to achieve "natural" visibility by 2064.

Regional Haze Rule Jim Bridger Unit 1 & 2 Conversion

- As part of business planning and compliance with Regional Haze Rule requirements, Jim Bridger Units 1 & 2 are scheduled to convert to natural gas operation in 2024.
- Under a consent decree between PacifiCorp and Wyoming, the units will operate on coal through the end of 2023. Units 3 & 4 are planned to operate on coal until 2037.
- Rulemaking processes are underway to revise the Wyoming State Implementation Plan to allow for the gas conversions.



Regional Haze Rule Second Planning Period



- Utah's Department of Environmental Quality submitted the state's regional haze state implementation plan for the second planning period to EPA and met the agency's deadline of August 15, 2022
- The second planning period will run through 2028
- PacifiCorp supports Utah's plan, which requires updated 12-month rolling massbased nitrogen oxide limits for the Hunter and Huntington plants as well as a sulfur dioxide rate-based limit.
- EPA has 18 months to review and approve/disapprove all or parts of the state's plan







Service Territory Overview

General Stats

PacifiCorp provides electricity to approximately **1 million Utah customers** via **512 substations**, **24,000 miles** of distribution lines, and about **7,200 miles** of transmission lines across nearly **60,000 square miles**

System Wide Initiatives

- ✓ Weather Stations
- ✓ Situational Awareness
- ✓ Operational Protocols
- ✓ Community Education and Outreach

Utah Service Territory



PSPS Zones Extreme Risk of Wildfire

Approximately 230 miles or 1% of all overhead distribution lines are located within 10 individual PSPS Zones

	Prioritized System Hardening	
1	Covered Conductor	
1	Advanced Protection	
	and Control	
1	Expulsion Fuse	
	Replacements	

Approximately **680 miles** or **4%** of all **overhead lines** are located within the FHCA

458 miles of overhead distribution in the FHCA;

218 miles of overhead transmission in the FHCA

Fire Season Activity 2021 & 2022



2021 Fire Season Activity

Fire Name	Acreage	Date of Origin	Service Area	County	Infrastructure Damage	
Flatt Fire	14,379	June 18, 2021	Cedar City	Iron	Yes	28 Distribution Poles
Bear Fire	12,170	June 8, 2021	Price	Carbon	Yes	2 Distribution Poles
Pack Creek	8,952	June 9, 2021	Moab-Canyonland	Moab	Yes	1 Distribution Pole / 3 Transformers / 6 meters
Bennion Fire	8,313	June 4, 2021	Price	Carbon	No	
Crater Ridge Fire	7,682	July 17, 2021	Riverton	Big Horn	No	

2022 Fire Season Activity

Fire Name	Acreage	Date of Origin	Service Area	County	Infrastructure Damage	
Halfway Hill Fire	11,702	July 8, 2022	Richfield	Millard	No	
Two and a Half	8,700	August 8, 2022	Preston	Bannock	No	
Jacob City Fire	4,114	July 9, 2022	Tooele	Tooele	No	
Dry Creek	1,772	July 8, 2022	Santaquin	Millard	No	
Lakeshore Fire	392	June 17, 2022	WRC	Salt Lake/Tooele	Yes	28 Transmission Structures

Advanced Weather Forecasting & Situational Awareness

New Weather Forecast Models

- In-house Weather Research & Forecast (WRF) model
- Detailed 30-year Weather Reanalysis as a foundation for risk-based forecast

Weather Station Network

- Expanded to **96 weather stations** in Utah in 2022
- 10-minute observations to support real-time operations



Advanced Wildfire Models

- Millions of territory-wide wildfire simulations performed daily
- Wildfire risk and consequence forecasts
- Used for real-time decision making and long-term planning of system hardening



New Meteorology Team

- 5 full-time meteorologists provide 24/7/365 support
- Provides daily and event-driven forecast products to the company
- Supports the company's Emergency Coordination Center for all-hazards including fire weather & PSPS

New Websites

 Real-time displays of weather station & forecast data

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RockyMountainPowerWeather.com

Elevated Fire Risk Settings in 2022

Elevated Fire Risk Settings

Situational awareness provides valuable input to decision making



Public Safety Power Shutoffs 2021 & 2022 🕥

Utah Safety Watch and De-Energizations							
Type Area Date & Time Duration (hrs) # Custor							
Watch	Cedar City	4/23/21 3:30 PM	4				
Watch	Cedar City	5/19/21 12:26 PM	4				
Watch	Cedar City	6/17/22 7:00 AM	72				
De-energization	Cedar City	6/17/22 7:00 AM	11	55			

PSPS Zones Reflect Extreme Wildfire Risk



PSPS Zone Name	Customers	OH Distribution	UG Distribution
Big Cottonwood	20	2	5
Jordanelle N. Shore	959	12	51
Little Cottonwood	160	4	2
Mountain Dell	105	5	3
Olympus C. / Millcreek	231	10	1
Park City	988	9	19
Summit Park	1,089	16	29
Wasatch Mtn. State Park	63	3	3
Wallsburg/Sundance	463	18	17
Cedar City	641	34	17
titions Prepare Tor PSPS Director Approves ↓ Dynamic ↓ Real Time ↓ Weather	input from Public Monitoring of Lo Forecasting & Ris	Begin Restoration Safety Partners scal Conditions k	toration mplete EEE Monitor Conditions through Situational Awareness



New Resources Update





Energy Vision 2024 Transmission

Gateway South – Aeolus to Mona

- 416 miles of 500-kV; estimated cost of \$2b
- Construction started June 1, 2022, for planned in-service 2024
- Allows interconnection of an additional 1,920 MW of renewable generation resources in eastern Wyoming deliverable across PacifiCorp's system
- CPCN granted by Wyoming PSC (May 2022)



- Gateway West Segment D.1 Windstar to Shirley Basin
- 59 miles of new build and 58 miles of rebuild of 230-kV; estimated cost of \$283m
- Construction expected to start in 2022 for planned in-service 2024
- Allows interconnection of 765 MW of renewable generation resources in the Dave Johnston / Windstar area near Glenrock, Wyoming (included in the total 1,920 MW for eastern Wyoming)
- CPCN granted by Wyoming PSC (May 2022)

Pumped Storage: Need for Energy Storage Capacity

- Energy storage has been identified as a critical component of our resource need
 - PacifiCorp's Integrated Resource Plan indicates a need for thousands of megawatts of energy storage over the 20-year planning horizon as increasing amounts of renewable resources are deployed
- Pumped storage hydropower is proven energy storage technology that may play a role as energy storage becomes a more important part of a least-cost, least-risk portfolio to safely and reliably meet customer energy needs
- PacifiCorp has taken steps to preserve options for pursuing potential pumped storage opportunities throughout its system that may benefit customers



Pumped Storage Overview

- Pumped storage hydropower (PSH) is a proven technology that currently accounts for 93 percent of all utility-scale energy storage in the United States
- PSH is a type of hydroelectric energy storage that relies upon a configuration of two water reservoirs at different elevations that allows for the generation of electricity as water moves from the upper to the lower reservoir
- The system requires energy to pump water to the upper reservoir, with cycle efficiencies on the order of 70-80 percent, depending on the system



Pumped Storage Hydro Preliminary Permits



- On October 13, 2021, PacifiCorp filed preliminary permit applications with the Federal Energy Regulatory Commission to maintain firstpriority to seek federal hydropower licenses at 11 sites
 - Allows stakeholder collaboration and upfront studies without competition from other developers
- Feasibility studies of these sites are an important part of our longterm planning
- PacifiCorp has existing transmission infrastructure, water rights, and land rights at many proposed locations
- If determined to be feasible, PacifiCorp would file a license application with FERC



PacifiCorp Pumped Storage Opportunities



Preliminary Permit Applications

Project	Location	Capacity (MW)	Head (ft)	System Type	Prelim. Permit Status
Dry Canyon	Mud Lake near Dingle, ID	1800	1,505	Closed Loop	Issued
Barn Canyon	Near former Carbon Plant site, UT	300	2,005	Closed Loop	
Box Elder	South of Dave Johnston Plant, Glenrock, WY	500	890	Closed Loop	
Crooked Creek	Near Lake Abert, Southern OR	500	1,922	Closed Loop	Issued
Electric Lake	Electric Lake near Huntington, UT	500	950	Open Loop	
Long Ridge	Near Currant Creek Plant close to Mona, UT	500	1,610	Closed Loop	
Rock Canyon	Near Hunter Plant close to Castle Dale, UT	500	2,163	Closed Loop	
Rocky Ridge	South of Dave Johnston Plant, Glenrock, WY	500	1,455	Closed Loop	Issued
Saddle Mountains	Mid-Columbia, near Beverly, WA	500	1,093	Closed Loop	Issued
South Fork	Viva Naughton Reservoir near Kemmerer, WY	500	1,115	Open Loop	Issued
Winter Ridge	Near Summer Lake, Southern OR	500	2,603	Closed Loop	Issued

Dry Canyon Pumped Storage Hydro South-East Idaho 💌

- Closed-loop proposal with lower reservoir within PacifiCorp's 1907 ROW for irrigation storage and power development within the 1968 boundary of the Bear Lake National Wildlife Refuge
- Proximity to PacifiCorp's transmission corridor that connects our east and west system balancing areas
- PacifiCorp water rights, property rights, transmission and adjacent topography
- PacifiCorp has adjacent 2,700 acres with wetland mitigation potential to be studied
- Potential significant enhancements could be provided to further the U.S. Fish and Wildlife Service's mission at the refuge and in South-East Idaho
- Significant broad conservation enhancements could be available in SE Idaho



Customer Service Updates





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AMI Project Overview and Deployment Progress

Utah AMI Project:

45,000

40,000

- Implement a hybrid AMI/AMR system
- Installation of 235,000 AMI meters
- 827,000 AMR meters will be read via the network
- Project completion December 2023

Additional Districts targeted for 2022 are Smithfield, Tremonton, Laketown, Tooele, Park City and Richfield

Targeted for 2023 is Vernal, Price, Cedar City and Moab

459 customers have opted out of receiving a smart meter, with 421 requesting to stay with their current AMR meter and 38 requesting a digital non-communicating meter

2022 AMI Meter Install Progress



97,542 AMI meters installed as of September 12, 2022





80,000 post installation postcards have been sent to Utah customers inviting them to login to their Rocky Mountain Power web account and start exploring the benefits their new AMI meter will bring.

Get to know your NEW METER!



Your upgraded meter is up and run Now it's time to see what it can dol Sgn in to your online account and g your new meter features a soin.

POWER MOUN

MORE OPTIONS, FEWER SURPRISES

Your Rocky Mountain Power online account is where you can stay in the know and see the information your upgraded metar has to offer.

It's also where you'll get access to tips and tools designed to give you more control of your monthly bill and help you make smart energy decisions that are right for your lifestyle.

SIGN IN AND START EXPLORING

Sign in to your online account today and start taking advantage of your upgraded meter benefits.

Don't have an online account yet? Signing up is quick and easy at rockymouncainpower.net.

TO LEARN MORE, VISIT rodymountainpower nethinstanupgrade

Para máx información, familia al 1-888-225-2411 para hablar con un incipiotación en español. 6200 facilio Provinte Frence & HOWER

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2022 Service Quality Results



Utah Reliability History - Excluding Major Events





Western Regional Market Initiatives





Real-Time and Day-Ahead Market Update



- CAISO Western Energy Imbalance Market (WEIM)
 - To date, PacifiCorp has realized more than \$452m in customer benefits since EIM formation in 2014
 - \$2.39b in total market benefit
 - As of July, 2022
- CAISO Extended Day Ahead Market (EDAM)
 - PacifiCorp has been heavily engaged in market design and governance efforts
 - Expect final design Q4 2022
- SPP Markets+
 - PacifiCorp monitoring Markets+ development
 - Service offering Q4 2022, with financially binding commitment to investigate Q1 2023 - ?

Extended Day-Ahead Market Timeline



- Q2 2023: Tariff filing at FERC
- CY 2023: EDAM Implementation
- Spring 2024: EDAM Go-live

Western Resource Adequacy Program (WRAP) Update



- August 31, 2022: Tariff filed at FERC
- September 15, 2022: Forward showing for Winter 2022-23
- October 4, 2022: Forward showing for Summer 2023
- December 16, 2022: Participant commitment to the binding program



North Temple Office Site Redevelopment





North Temple Office Site Redevelopment

- PacifiCorp planning for the redevelopment of its North Temple campus
 - Existing North Temple Office is no longer adequate to serve customers
 - Major systems (electrical, plumbing, HVAC, etc.) are beyond useful life; renovation requires all systems to be brought to code
 - New facilities designed with increased resiliency requirements for earthquake and extreme weather events ٠
 - New facilities designed to improve collaboration, operational efficiencies, attract and retain talent
 - Construction of new facilities near the Jordan River is scheduled for Spring 2023
 - Headquarters (HQ): ~800 existing NTO employees; corporate functions and customer care employees from call center in West Valley City
 - Essential Services Building (ESB): electric grid operations, data center and global security
 - Parking structure: enables efficient use of property; bolsters relationship with Salt Lake City for future developments
 - Master plan for site envisions a vibrant mixed-use community
 - Pedestrian friendly with landscaping and paving support multi-modal uses
 - Opportunities to incorporate daytime and nighttime use



HQ Rendering



ESB Rendering



