



# Integrated Resource Plan

## 2021 IRP Public Input Meeting

### September 17, 2020



# Agenda



September 17, 2020

- Introductions
- Supply-Side Resources
  - Supply-Side Resource Table
  - Carbon Capture
- Portfolio Development Discussion
- Lunch Break (45 min) 11:15am PT/12:15pm MT
- State Policy Update
  - Wyoming and Utah (SF159, HB200, & HB411)
  - WA Clean Energy Transformation Act
- Conservation Potential Assessment Update
- Stakeholder Feedback Form Recap
- Wrap-Up/ Next Steps



# Supply-Side Resource Table



# Supply-Side Resources



- Background Review
  - Data sources
  - General assumptions
- Resource Update and Overview
  - Renewables
    - Solar PV
    - Wind
    - Energy Storage
  - Nuclear
  - Gas
  - Carbon Capture Utilization & Sequestration

# Background



- Data Sources
  - Third-Party Engineering Studies (performance and cost estimates)
  - Recent projects & Request for Proposal Bids
  - Engineer-Procure-Construct Contractors
  - Original Equipment Manufacturers (OEMs)
  - Developers
- General Assumptions
  - Mid-2020 dollars
  - Capacities and costs adjusted to “proxy site” parameters and general locations
  - Capital costs based on “greenfield” sites for gas-fueled resources
  - Capital costs include:
    - Direct: costs: Engineering-Procure-Construct (EPC) costs to in-service year; include applicable sales taxes, insurance and contractor’s contingency
    - Owner’s costs: Development, permitting, project management/engineering, water, “outside the fence” linears, land, legal costs, interconnection, capital spares and owner’s contingency
    - Owner’s financial costs: Allowance for Funds Used During Construction (AFUDC), capital surcharge and capitalized property taxes

# SSR Table Improvements



- Supply-Side Resource (SSR) Table changes since 2019 IRP cycle
  - Added demolition costs
  - Added detail for O&M costs
  - Updated energy storage options
- Trends
  - Forecasts indicate costs for solar, wind and energy storage will continue to decline

# Renewables Combined Study



- Burns & McDonnell is providing a single study of the following renewable resources:
  - Solar
  - Wind
  - Energy Storage
  - Solar + Energy Storage
  - Wind + Energy Storage
  - Solar + Wind + Energy Storage
- The report includes:
  - Current capital and O&M costs
  - (10) year forecast trend of expected capital costs
  - Performance data

## Renewable Resources

# Performance and Cost Summary Solar (2020\$)



Resource	Net Commercial				Base Capital (\$/KW)	Var O&M (\$/MWh)	Fixed		Average Full Load Heat Rate (HHV Btu/KWh)/Efficiency
	Elevation (AFSL)	Capacity (MW)	Operation Year	Design Life (yrs)			O&M (\$/KW-yr)	Demolition Cost (\$/kW)	
Idah Falls, ID, 100 MW, CF: 26.1%	4,700	100	2023	25	1,425	0.00	16.20	35.00	n/a
Idah Falls, ID, 200 MW, CF: 26.1%	4,700	200	2023	25	1,300	0.00	16.10	35.00	n/a
Lakeview, OR, 100 MW, CF: 27.6%	4,800	100	2023	25	1,444	0.00	16.20	35.00	n/a
Lakeview, OR, 200 MW, CF: 27.6%	4,800	200	2023	25	1,330	0.00	16.10	35.00	n/a
Milford, UT, 100 MW, CF: 30.2%	5,000	100	2023	25	1,422	0.00	17.60	35.00	n/a
Milford, UT, 200 MW, CF: 30.2%	5,000	200	2023	25	1,297	0.00	17.60	35.00	n/a
Rock Springs, WY, 100 MW, CF: 27.9%	6,400	100	2023	25	1,420	0.00	17.60	35.00	n/a
Rock Springs, WY, 200 MW, CF: 27.9%	6,400	200	2023	25	1,295	0.00	17.60	35.00	n/a
Yakima, WA, 100 MW, CF: 24.2%	1,000	100	2023	25	1,481	0.00	17.60	35.00	n/a
Yakima, WA, 200 MW, CF: 24.2%	1,000	200	2023	25	1,353	0.00	17.60	35.00	n/a
Idah Falls, ID, 100 MW, CF: 26.1% + BESS: 50% pwr, 4 hours	4,700	100	2023	25	1,626	0.00	30.00	255.00	85%
Idah Falls, ID, 200 MW, CF: 26.1% + BESS: 50% pwr, 4 hours	4,700	200	2023	25	1,546	0.00	28.95	255.00	85%
Lakeview, OR, 100 MW, CF: 27.6% + BESS: 50% pwr, 4 hours	4,800	100	2023	25	1,644	0.00	30.00	255.00	85%
Lakeview, OR, 200 MW, CF: 27.6% + BESS: 50% pwr, 4 hours	4,800	200	2023	25	1,575	0.00	28.95	255.00	85%
Milford, UT, 100 MW, CF: 30.2% + BESS: 50% pwr, 4 hours	5,000	100	2023	25	1,619	0.00	31.40	255.00	85%
Milford, UT, 200 MW, CF: 30.2% + BESS: 50% pwr, 4 hours	5,000	200	2023	25	1,538	0.00	30.45	255.00	85%
Rock Springs, WY, 100 MW, CF: 27.9% + BESS: 50% pwr, 4 hours	6,400	100	2023	25	1,621	0.00	31.40	255.00	85%
Rock Springs, WY, 200 MW, CF: 27.9% + BESS: 50% pwr, 4 hours	6,400	200	2023	25	1,538	0.00	30.45	255.00	85%
Yakima, WA, 100 MW, CF: 24.2% + BESS: 50% pwr, 4 hours	1,000	100	2023	25	1,751	0.00	31.40	255.00	85%
Yakima, WA, 200 MW, CF: 24.2% + BESS: 50% pwr, 4 hours	1,000	200	2023	25	1,651	0.00	30.45	255.00	85%



Renewable Resources

# Performance and Cost Summary Wind (2020\$)



Resource	Net		Commercial		Base Capital (\$/KW)	Var O&M (\$/MWh)	Fixed		Average Full Load Heat Rate (HHV Btu/kWh)/Efficiency
	Elevation (AFSL)	Capacity (MW)	Operation Year	Design Life (yrs)			O&M (\$/KW-yr)	Demolition Cost (\$/kW)	
Pocatello, ID, 200 MW, CF: 43.0%	4,500	200	2024	30	1,369	0.00	28.00	12.50	N/A
Arlington, OR, 200 MW, CF: 43.0%	1,500	200	2024	30	1,374	0.00	28.00	12.50	N/A
Monticello, UT, 200 MW, CF: 36.1%	4,500	200	2024	30	1,364	0.00	28.00	12.50	N/A
Medicine Bow, WY, 200 MW, CF: 48.6%	6,500	200	2024	30	1,364	0.00	28.00	12.50	N/A
Goldendale, WA, 200 MW, CF: 43.0%	1,500	200	2024	30	1,374	0.00	28.00	12.50	N/A
Pocatello, ID, 200 MW, CF: 43.0% + BESS: 50% pwr, 4 hours	4,500	200	2024	30	2,123	0.00	40.85	232.50	85%
Arlington, OR, 200 MW, CF: 43.0% + BESS: 50% pwr, 4 hours	1,500	200	2024	30	2,145	0.00	40.85	232.50	85%
Monticello, UT, 200 MW, CF: 36.1% + BESS: 50% pwr, 4 hours	4,500	200	2024	30	2,119	0.00	40.85	232.50	85%
Medicine Bow, WY, 200 MW, CF: 48.6% + BESS: 50% pwr, 4 hours	6,500	200	2024	30	2,119	0.00	40.85	232.50	85%
Goldendale, WA, 200 MW, CF: 43.0% + BESS: 50% pwr, 4 hours	1,500	200	2024	30	2,145	0.00	40.85	232.50	85%

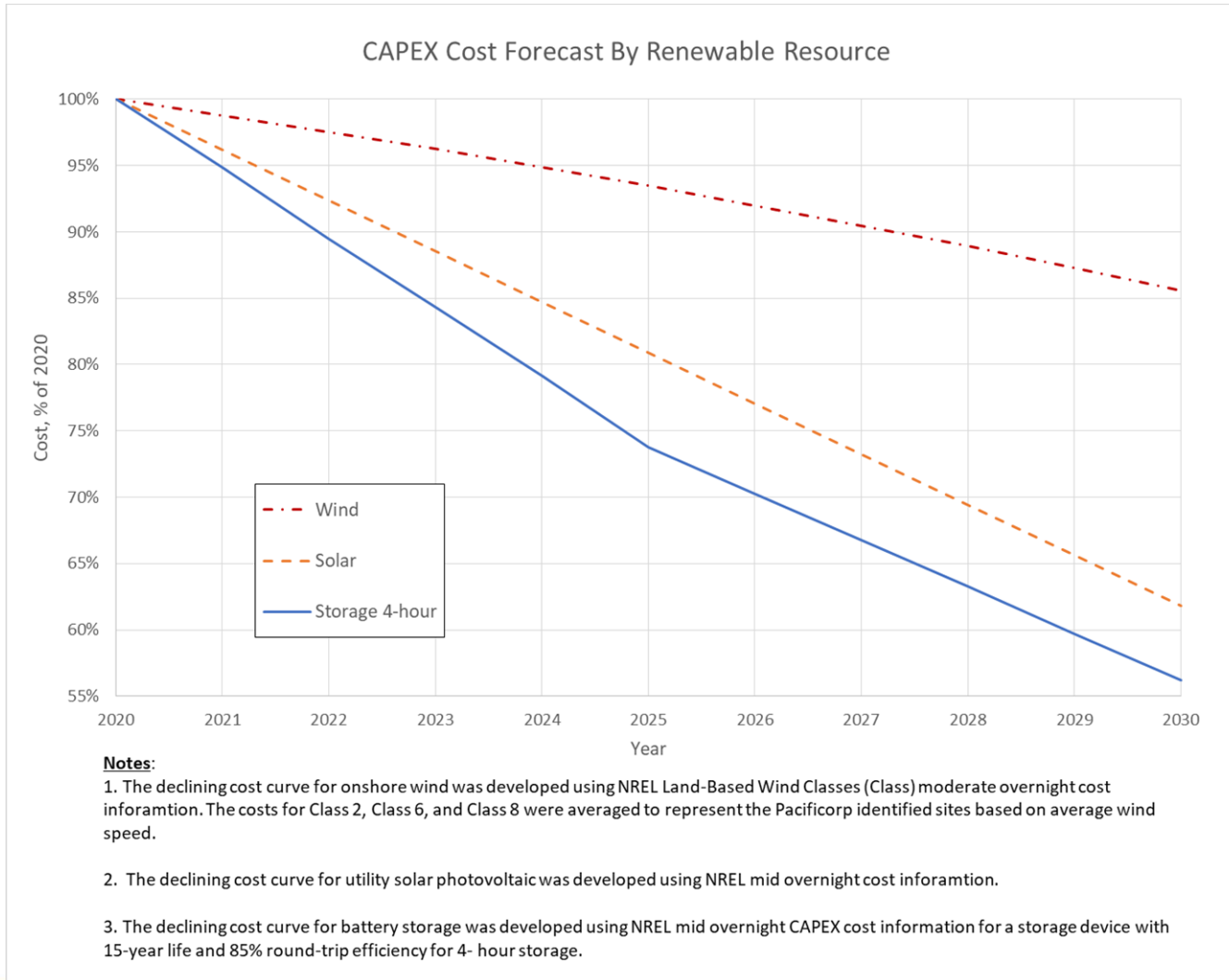
## Renewable Resources

# Performance and Cost Summary Energy Storage (2020\$)

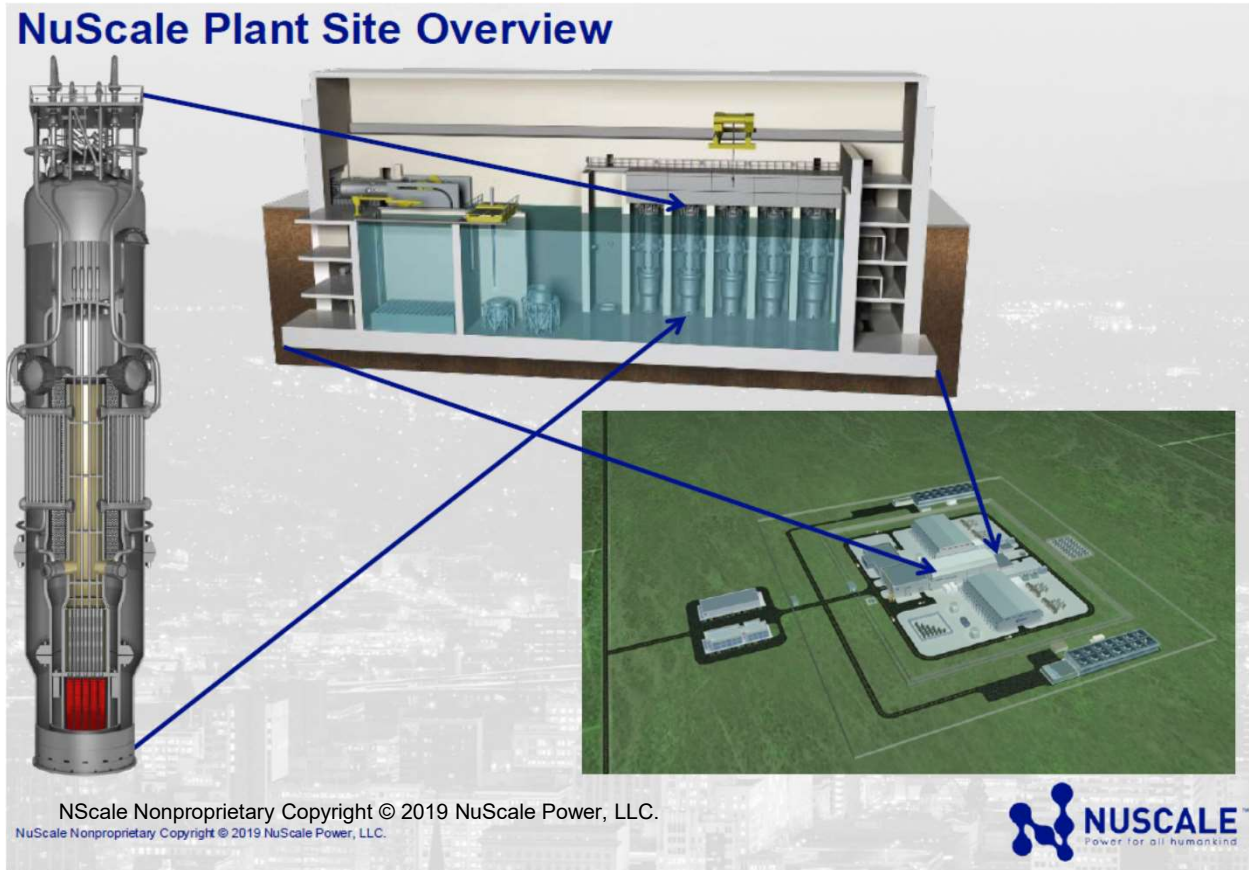


Resource	Net Commercial				Fixed				Average Full Load Heat Rate (HHV Btu/KWh)/Efficiency
	Elevation (AFSL)	Capacity (MW)	Operation Year	Design Life (yrs)	Base Capital (\$/KW)	Var O&M (\$/MWh)	O&M (\$/KW-yr)	Demolition Cost (\$/kW)	
Pumped Hydro, Swan Lake	N/A	400	2027	60	3,095	0.00	12.50	Not available	78%
Pumped Hydro, Goldendale	N/A	400	2031	60	8,866	0.00	37.50	Not available	78%
Pumped Hydro, Seminole	N/A	750	2029	80	3,461	0.37	16.00	Not available	80%
Pumped Hydro, Badger Mountain	N/A	500	2027	80	2,621	0.37	28.00	Not available	80%
Pumped Hydro, Owyhee	N/A	600	2029	80	3,203	0.37	20.00	Not available	80%
Pumped Hydro, Flat Canyon	N/A	300	2029	80	4,046	0.37	53.33	Not available	80%
Pumped Hydro, Utah PS2	N/A	500	2027	80	3,237	0.37	28.00	Not available	80%
Pumped Hydro, Utah PS3	N/A	600	2029	80	3,371	0.37	20.00	Not available	80%
Pumped Hydro, Banner Mountain	N/A	400	2028	50	3,276	0.00	28.50	Not available	81%
Adiabatic CAES, Hydrostor, 150 MW, 600 MWh	N/A	150	2024	50	1,954	6.50	12.67	Not available	60%
Adiabatic CAES, Hydrostor, 150 MW, 1200 MWh	N/A	150	2024	50	2,189	6.50	12.67	Not available	60%
Adiabatic CAES, Hydrostor, 150 MW, 1800 MWh	N/A	150	2024	50	2,445	6.50	12.67	Not available	60%
Adiabatic CAES, Hydrostor, 300 MW, 1200 MWh	N/A	300	2024	50	1,557	6.50	9.33	Not available	60%
Adiabatic CAES, Hydrostor, 300 MW, 2400 MWh	N/A	300	2024	50	1,692	6.50	9.33	Not available	60%
Adiabatic CAES, Hydrostor, 300 MW, 3600 MWh	N/A	300	2024	50	2,016	6.50	9.33	Not available	60%
Adiabatic CAES, Hydrostor, 500 MW, 2000 MWh	N/A	500	2024	50	1,549	6.50	6.60	Not available	60%
Adiabatic CAES, Hydrostor, 500 MW, 4000 MWh	N/A	500	2025	50	1,762	6.50	6.60	Not available	60%
Adiabatic CAES, Hydrostor, 500 MW, 6000 MWh	N/A	500	2025	50	1,930	6.50	6.60	Not available	60%
Li-Ion Battery, , 1 MW, 0.5 MWh	N/A	1	2023	20	1,948	n FOM	40.00	55.00	85%
Li-Ion Battery, , 1 MW, 1 MWh	N/A	1	2023	20	2,058	n FOM	50.00	110.00	85%
Li-Ion Battery, , 1 MW, 4 MWh	N/A	1	2023	20	3,167	n FOM	70.00	440.00	85%
Li-Ion Battery, , 1 MW, 8 MWh	N/A	1	2023	20	4,608	n FOM	100.00	880.00	85%
Li-Ion Battery, , 50 MW, 200 MWh	N/A	50	2023	20	1,828	n FOM	27.60	440.00	85%
Flow Battery, , 1 MW, 1 MWh	N/A	1	2023	20	4,719	n FOM	13.00	Not available	70%
Flow Battery, , 1 MW, 4 MWh	N/A	1	2023	20	5,051	n FOM	13.00	Not available	70%
Flow Battery, , 1 MW, 8 MWh	N/A	1	2023	20	7,268	n FOM	27.00	Not available	70%
Flow Battery, , 20 MW, 160 MWh	N/A	20	2023	20	4,686	n FOM	30.50	Not available	70%

# Renewables Cost Forecast



# Nuclear Small Modular Reactor



Resource	Elevation (AFSL)	Net	Commercial	Design Life (yrs)	Base Capital (\$/KW)	Var O&M (\$/MWh)	Fixed	
		Capacity (MW)	Operation Year				O&M (\$/KW-yr)	Demolition Cost (\$/kW)
Small Modular Reactor	5,000	684	2028	60	6,229	16.01	179.12	Not available

## Gas Resources

# Performance and Cost (2018\$)



Resource	Elevation (AFSL)	Net Capacity (MW)	Commercial		Base Capital (\$/KW)	Var O&M (\$/MWh)	Fixed		Average Full Load Heat Rate (HHV Btu/KWh)/Efficiency
			Operation Year	Design Life (yrs)			O&M (\$/KW-yr)	Demolition Cost (\$/kW)	
SCCT Aero x3	5,050	139	2025	30	1,777	9.04	0.00	Not Available	9,400
Intercooled SCCT Aero x2	5,050	187	2025	30	1,363	6.09	0.00	Not Available	8,816
SCCT Frame "F" x1	5,050	199	2025	35	841	17.04	0.00	Not Available	9,936
Brownfield SCCT Frame "F" x1	5,050	199	2025	35	811	17.03	0.00	Not Available	9,936
IC Recips x 6	5,050	111	2026	40	2,065	10.39	0.00	Not Available	8,292
CCCT Dry "H", 1x1	5,050	350	2026	40	1,687	2.14	0.00	12.14	6,362
CCCT Dry "H", DF, 1x1	5,050	51	2026	40	470	0.05	0.00	0.00	8,545
CCCT Dry "H", 2x1	5,050	686	2027	40	1,252	2.10	0.00	12.14	6,487
CCCT Dry "H", DF, 2x1	5,050	102	2027	40	358	0.05	0.00	0.00	9,470
Brownfield CCCT Dry "H", DF, 2x1	5,050	686	2027	40	1,251	1.33	0.00	12.14	6,874
CCCT Dry "J", 1x1	5,050	504	2026	40	1,299	1.81	0.00	12.14	6,352
CCCT Dry "J", DF, 1x1	5,050	63	2026	40	397	0.06	0.00	0.00	9,452
CCCT Dry "J", 2x1	5,050	1,004	2027	40	966	1.76	0.00	12.14	6,373
CCCT Dry "J", DF, 2x1	5,050	126	2027	40	309	0.06	0.00	0.00	9,456

# Sources of Information



- Carbon Capture and Storage Database
  - National Energy Technology Laboratory
  - “Project cost”
- Wyoming Carbon Capture, Utilization, and Storage (CCUS) Study
- Dave Johnston CC/EOR Feasibility Studies
- Constructed Full Scale Facilities
  - Petra Nova - Mothballed
  - Boundary Dam - Operating

# Key Requirements



- Size – Minimum economic CO<sub>2</sub> production
- Minimum production requirement
- Continuous, consistent operation requirement
  - No or less economic dispatch of generating unit
  - Changes to state regulations
- Utilities
  - Electric power, Steam, Cooling
- Carbon dioxide marketing and sales

# Risks



- Immature technology
- Capital cost
- Operations and maintenance costs
- Financial backstop
- Carbon capture forced outage rate
- Oil prices / carbon dioxide prices
- Regulatory risk – economic dispatch
- Marketing and sale of carbon dioxide
  - Not PacifiCorp's core business

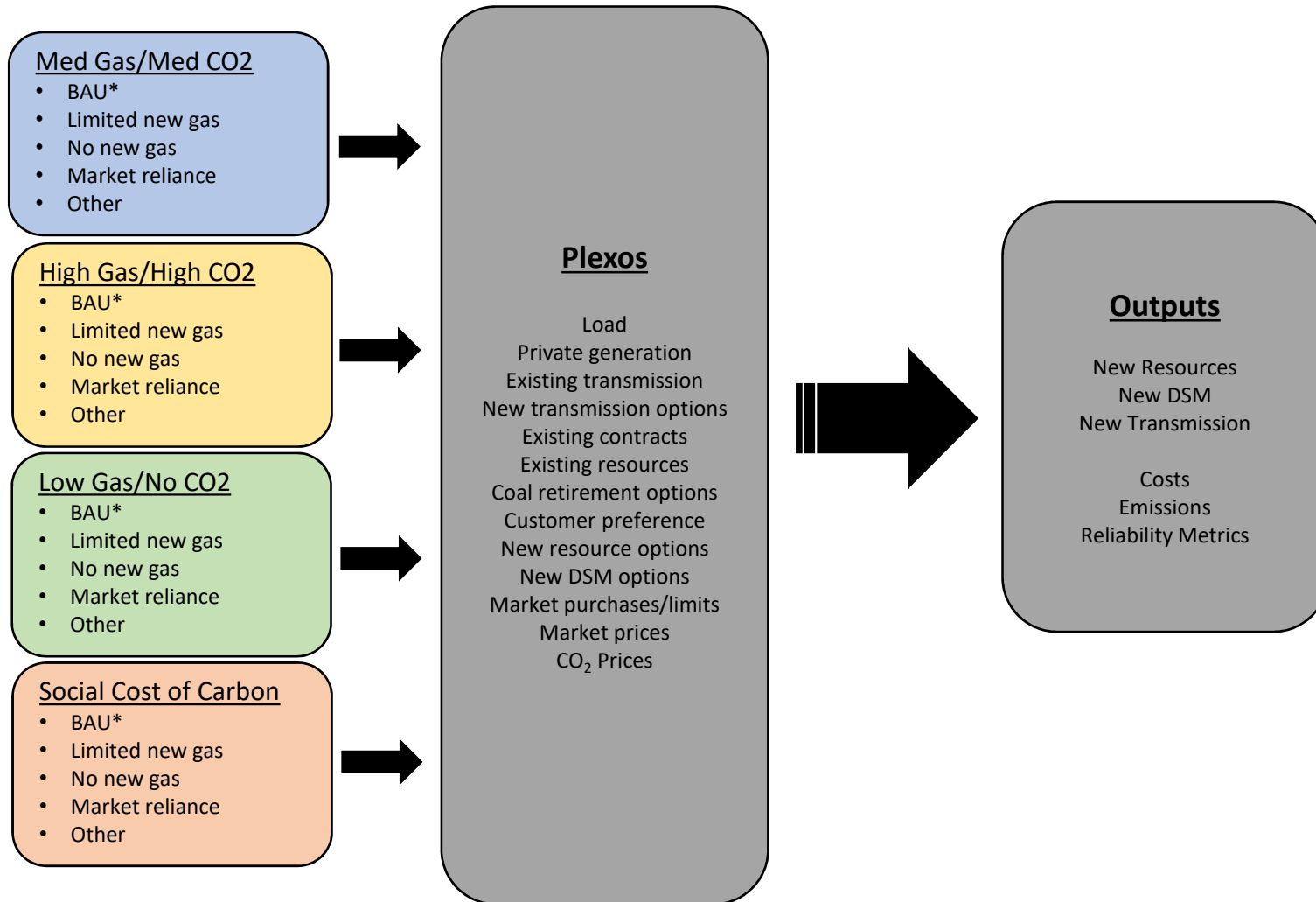




# Portfolio Discussion



# Portfolio Development



# Sensitivities



- Relative to top performing case(s) and BAU case(s)
  - High load
  - Low load
  - 1-in-20 load
  - High private generation
  - Low private generation
  - High customer preference
  - No customer preference
  - Business plan (per UT requirement)
  - Technology specific (i.e., pumped storage, carbon capture)
  - Other



# State Policy Update





# Wyoming Legislative Update

- **Senate File 159 – New Opportunities for Wyoming Coal-Fired Generation (2019)**

- Requires Rocky Mountain Power to attempt to sell certain coal-fired generation units
- Customer protection language requires the Public Service Commission to determine if accepting an offer would reduce costs/risks to customers as compared to retiring the facility
- If the Public Service Commission determines that the public utility did not make a good faith effort to sell the retired coal fired generation plant, a public utility can not include any recovery of or earnings on specific new capital costs



- **Senate File 21 - Coal Fired Electric Generation Facilities (2020)**

- This bill amends S.F. 159 to allow the purchaser to sell the output directly to a Rocky Mountain Power customer with load greater than 1 MW



# Wyoming Legislative Update

- **House Bill 200 – Reliable and Dispatchable Low-Carbon Energy Standards (2020)**
  - The Wyoming Public Service Commission is required to put in place a standard specifying a percentage of PacifiCorp’s electricity to be generated from coal-fired generation utilizing carbon capture technology by 2030
  - This requirement would only apply to generation allocated to Wyoming customers
  - Cost caps specified in the legislation limited to 2% total customer impact





# Utah Legislative Update

- **House Bill 411, Community Renewable Energy Act (2019)**
  - Creates 100% net renewable energy program for cities that choose to participate
  - Participating cities required to adopt a 100% renewable energy resolution before Dec 31, 2019
  - Customers within a participating community may opt out of the program and maintain existing rates
  - The legislation outlines the roles and rule making authority for the Public Service Commission including the setting of rates to avoid cost shifting to other customers.





# Clean Energy Transformation Act (CETA) Update





# Washington Clean Energy Transformation Act



- Enacted in 2019 as Senate Bill 5116; establishes three primary standards:

## 2025 – No coal in Washington allocation of electricity

Coal-fired resources cannot be included in customer rates as of December 31, 2025

## 2030 – Greenhouse Gas Neutral

Retail sales of electricity must be GHG neutral by January 1, 2030

Multi-year compliance periods:

- January 1, 2030 – December 31, 2033
- January 1, 2034 – December 31, 2037
- January 1, 2038 – December 31, 2041
- January 1, 2042 – December 31, 2044

## 2045 – 100% Renewable and non-emitting

100% of Washington retail load must be met by renewable and non-emitting resources by January 1, 2045

CETA also directs equitable distribution of energy and non-energy benefits and reduction of burden to vulnerable populations and highly impacted communities



# Implementation Plan

## Phase I

(to complete by December 31, 2020)

- Electric IRP Updates Rulemaking (includes Clean Energy Action Plan)
- Used and Useful Policy Statement
- Energy Independence Act Rulemaking
- Clean Energy Implementation Plan (CEIP) Rulemaking
- Acquisition (RFP) Rulemaking

## Phase II

(to complete by June 30, 2022)

- Cumulative Impact Analysis Rulemaking
- Carbon and Electricity Markets Rulemaking
- Natural Gas Conservation Rulemaking
- Natural Gas IRP Rulemaking

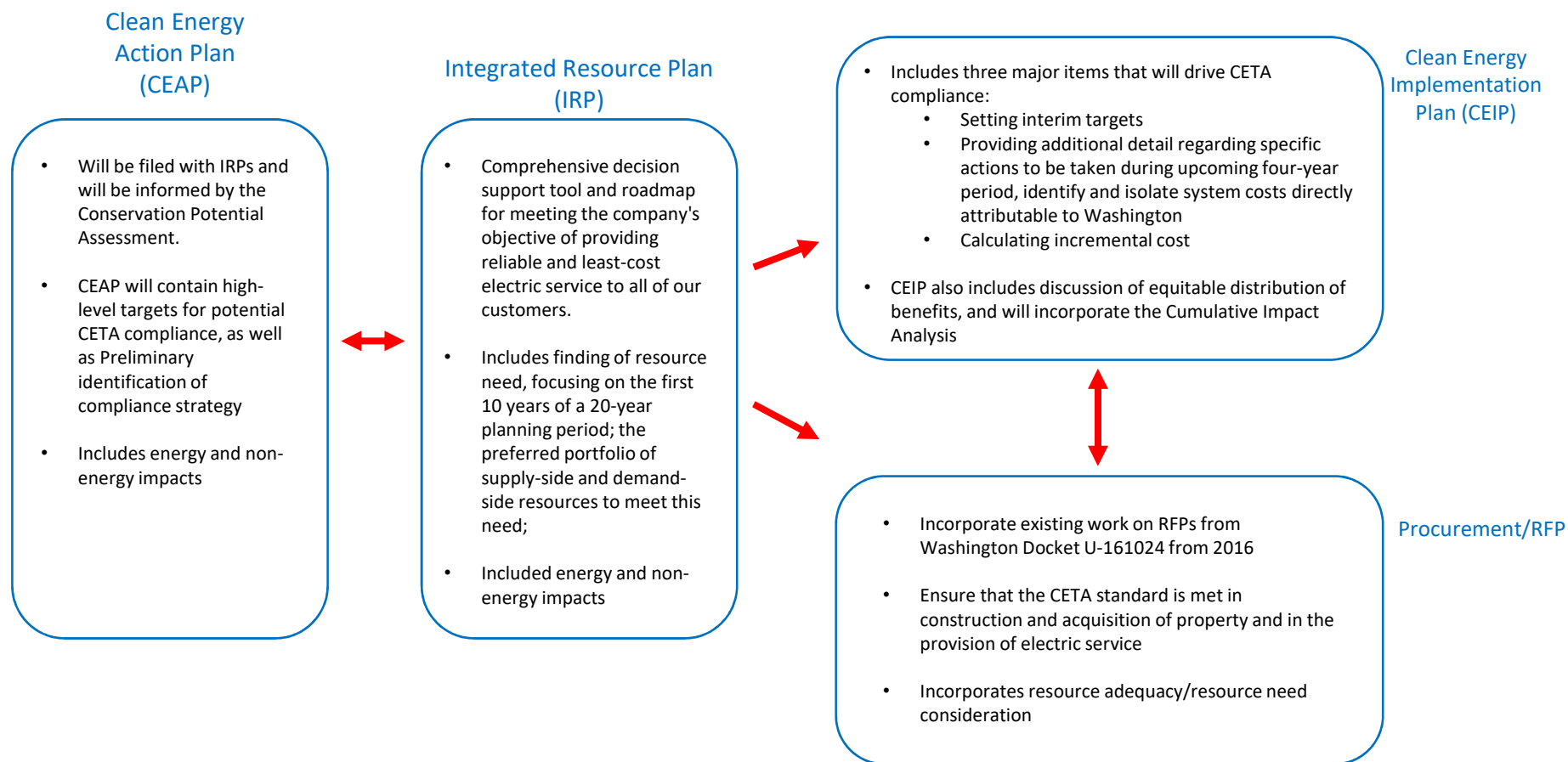
## Phase III

(to complete by December 31, 2023)

- Interconnection Standard Rulemaking
- Capital Budgeting Rulemaking
- Distribution System Planning Rulemaking
- Reliability and Resiliency Rulemaking
- Pricing Signals Policy Statement



# CETA components of long-term planning (rulemakings in progress)

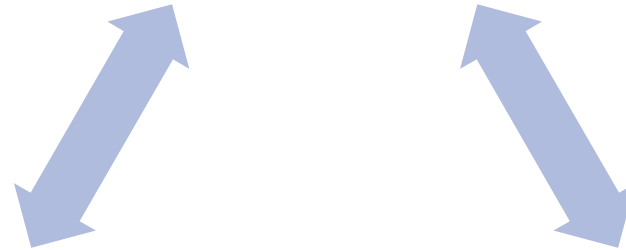




# Compliance Pathways

Hydro, wind, solar, geothermal,  
renewable natural gas, renewable  
hydrogen, wave, ocean or tidal,  
biodiesel (with qualifications), biomass

Eligible Resources



Alternative Compliance

Penalties for non-compliance

Utility is considered in compliance if the  
incremental cost exceeds legislative  
thresholds

**OR**

Utility is able to pursue energy  
transformation Projects to count toward  
compliance



\$100/MWh with a multiplier if utility is  
unable to otherwise comply



# Next Steps

## Planning Activities

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- IRP due April 2021
- First CEAP due April 2021 (filed with IRP)
- First CEIP due late 2021

## Rulemaking Activities

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- Phase I rulemakings complete and rules adopted by December 31, 2020.
- Phase II rulemakings begin early 2021



# Conservation Potential Assessment Update



# Updates



- August 28, 2020 Draft Results Workshop
- Measure Database of Draft EE results posted on website:
  - [pacificorp.com/energy/integrated-resource-plan/support](https://pacificorp.com/energy/integrated-resource-plan/support)
- Display of results by state by year included in database file
- PacifiCorp is working to respond to feedback forms received
- Presentation of Final CPA Results at Oct 22-23, 2020 IRP meeting

# Key Changes Relative to the 2019 CPA



Change Area	Detail
State-Specific Adjustments	RMP and PP specific measure* and market data sourcing
	Updated residential survey and load forecast data by state
	Major market profile data sourcing overhaul
	Codes & Standards
Forecasting Methodology	Ramp Rates – Refreshed to 2021 Plan and participation analysis results
	Treatment of equipment measures for technical potential
	Max achievability (some measures above 85%)
	No Streetlighting Model – market is transformed in the Load Forecast
	Residential Low Income segments added for WA
Other	Lighting savings methods (market baseline and EISA)
	Other updated secondary sources (AEO purchase shares and trends)
	New emerging technologies (higher SEER AC, more HP Dryer options)
	Applicability and Saturation Sourcing Updates (RBSA II, CBSA, 2021 Plan)
	Incremental HERs for all states, including OR***

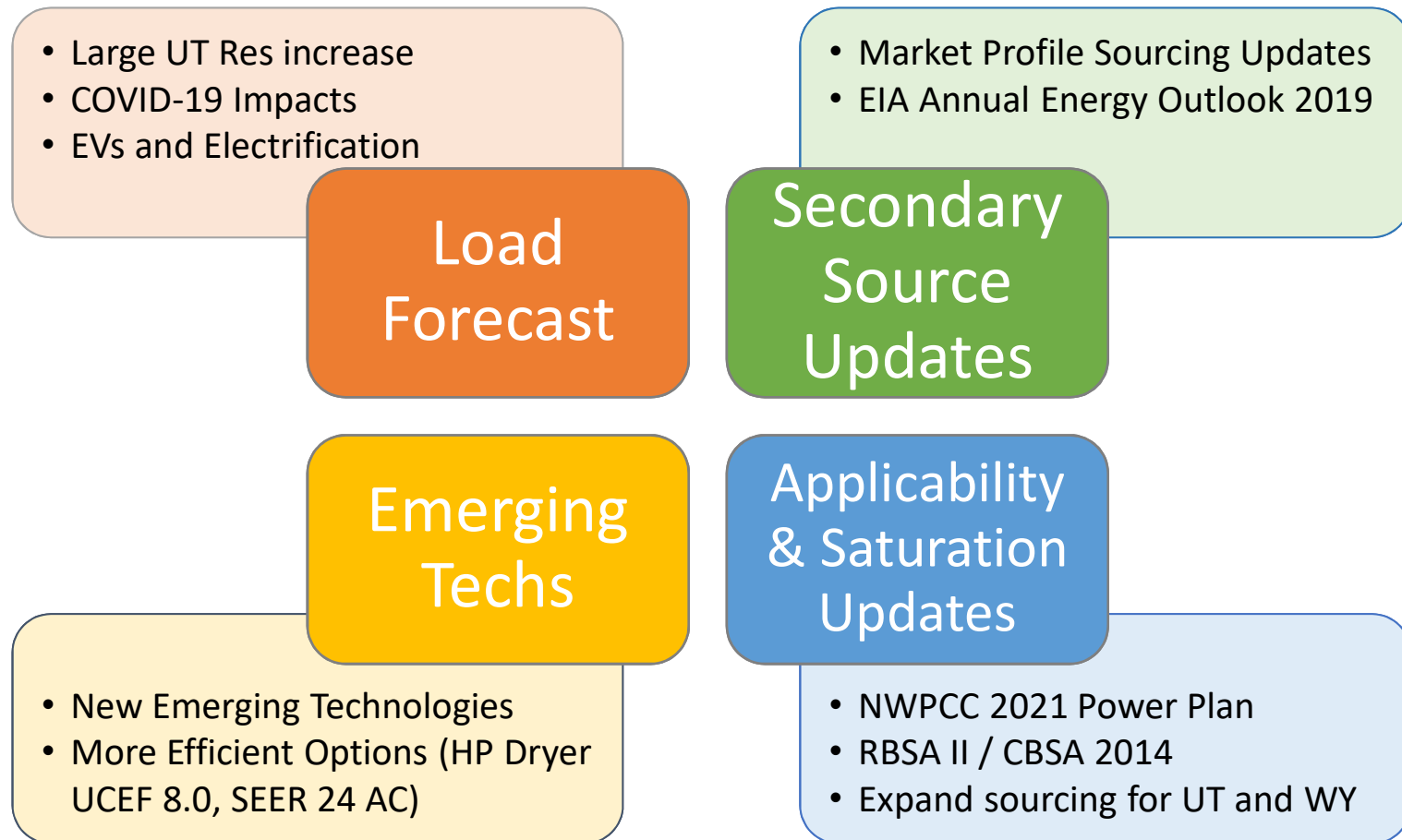
\* State-specific measure adjustments are for weather-dependent and major measures only

\*\* Ramp Rates were refreshed based on the 2021 Power Plan then adjusted based on the Participation Analysis

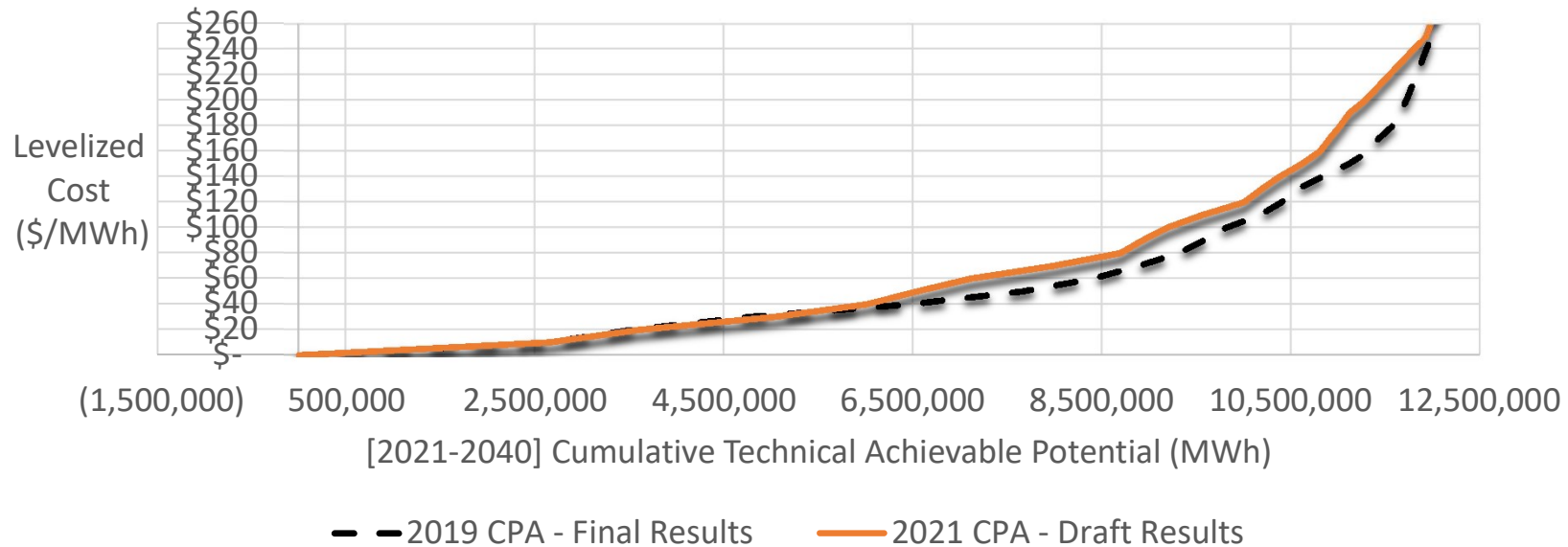
\*\*\* Incremental HERs to existing program savings are still being finalized and will be included in the final results



# Other Notable CPA Changes



# Draft Technical Achievable Potential Supply Curve Comparison



Draft 2021 CPA	2019 CPA	% Difference
13,516,192	13,163,531	+2.7%

Total 20-year cumulative potential is slightly higher than the previous study, but savings are more expensive because of the decrease in cheaper lighting savings

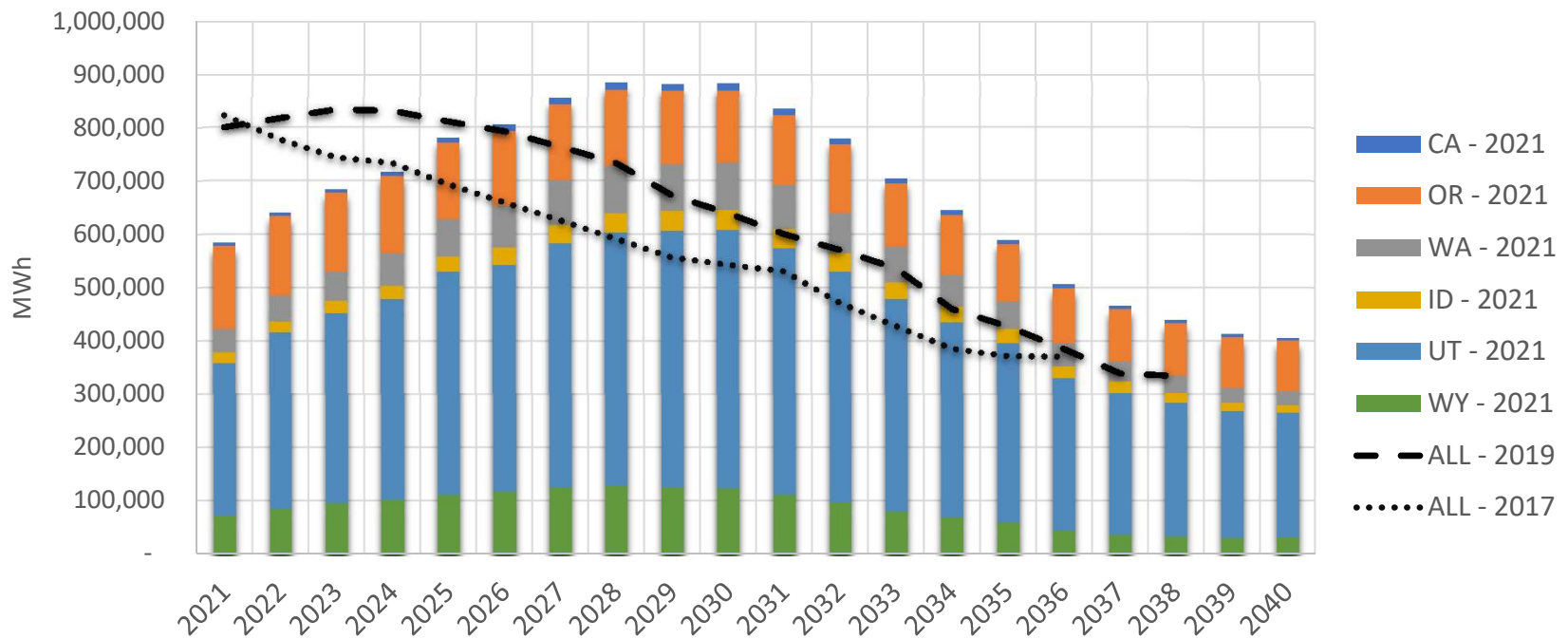
Cost bundles represent the technical achievable potential, *not economic potential*

Each cost bundle represents a different weighted average load shape based on the measures within it.

Cost bundles are selected in the IRP based on economics and their ability to contribute to the system in competition with all other supply-side resources.

# Draft Technical Achievable Potential Comparison

Incremental Technical Achievable Potential



- Incremental savings opportunities have been moved out in time
  - Lighting savings decreases and ramp rate adjustments
- LEDs have a large impact on early year savings opportunities compared to previous
  - Similar trend in NWPCC 2021 Plan (next slide)
- Graph illustrates the dynamic nature of energy efficiency and forecasting

# DRAFT 20-Year DR Potential Summary - Summer



MW Impacts – Sustained Duration					
State	Residential	Commercial and Industrial	Irrigation	Total	% Peak Reduction
UT	191	127	12	330	5%
ID	5	8	120	133	28%
WY	5	39	1	44	3%
OR	89	56	9	154	5%
WA	24	19	3	46	5%
CA	3	2	2	7	6%
<b>System</b>	<b>318</b>	<b>252</b>	<b>146</b>	<b>715</b>	<b>6%</b>
<b>2019 CPA</b>	<b>359</b>	<b>325</b>	<b>211</b>	<b>896</b>	

MW Impacts – Short-Duration					
State	Residential	Commercial and Industrial	Irrigation	Total	% Peak Reduction
UT	395	141	12	548	9%
ID	9	9	120	139	29%
WY	9	33	1	43	3%
OR	159	62	9	229	8%
WA	44	20	3	67	7%
CA	5	3	2	10	7%
<b>System</b>	<b>622</b>	<b>268</b>	<b>146</b>	<b>1,035</b>	<b>9%</b>

# DRAFT 20-Year DR Potential Summary - Winter



MW Impacts – Sustained Duration					
State	Residential	Commercial and Industrial	Irrigation	Total	% Peak Reduction
UT	120	99	0	219	5%
ID	9	6	0	15	4%
WY	9	36	0	44	3%
OR	107	50	0	157	5%
WA	30	16	0	46	5%
CA	7	2	0	8	5%
<b>System</b>	<b>283</b>	<b>207</b>	<b>0</b>	<b>490</b>	<b>5%</b>
<b>2019 CPA</b>	<b>286</b>	<b>173</b>	<b>0</b>	<b>459</b>	

MW Impacts – Short-Duration					
State	Residential	Commercial and Industrial	Irrigation	Total	% Peak Reduction
UT	145	98	0	243	5%
ID	12	6	0	18	5%
WY	11	28	0	40	3%
OR	167	51	0	218	6%
WA	38	15	0	53	5%
CA	8	2	0	10	6%
<b>System</b>	<b>382</b>	<b>200</b>	<b>0</b>	<b>583</b>	<b>5%</b>

# Next Steps



- Stakeholder feedback on draft results requested by 9/18/20
- PacifiCorp to respond to Stakeholder Feedback Forms
- Presentation of Final CPA Results at Oct 22-23, 2020 IRP meeting



# Stakeholder Feedback Form Update



# Stakeholder Feedback Form Update



- 33 stakeholder feedback forms submitted to date.
- The stakeholder feedback form process was updated July 20, 2020 to include a web-based form.
- Stakeholder feedback forms and responses can be located at [pacificorp.com/energy/integrated-resource-plan/comments](https://pacificorp.com/energy/integrated-resource-plan/comments)
- Depending on the type and complexity of the stakeholder feedback received responses may be provided in a variety of ways including, but not limited to, a written response, a follow-up conversation, or incorporation into subsequent public input meeting material.
- Stakeholder feedback following the previous public input meetings is summarized on the following slides for reference.



# Summary - Recent Stakeholder Feedback Forms



Stakeholder	Date	Topic	Brief Summary (complete form available online)	Response (posted online when available)
Utah Clean Energy	August 6, 2020	July PIM	Questions related to topics presented in the July 30-31, 2020 public input meeting: EV Forecast, building electrification forecast, air-source heat pumps, DER impact tool, CSP, and solar technology.	PacifiCorp provided responses and will consider recommendations made on specific topics.
Washington Utilities and Transportation commission	August 7, 2020	July PIM	Questions related to topics presented in the June 18-19, 2020 public input meeting: climate change, electric vehicles, distribution planning, DER impact tool, demand response, grid modernization, GHG, and the Washington Clean Energy Transformation Act.	PacifiCorp provided responses and will consider recommendations made on specific topics.
City of Kemmerer	August 28, 2020	Energy Efficiency	Recommending holding a technical conference discussing supply-side energy efficiency.	PacifiCorp will consider incorporating this recommendation.
City of Kemmerer	August 28, 2020	IRP Resource	We request that in addition to your plan to put the smaller nuclear reactors into your IRP, that given the proven technology to make coal even cleaner (carbon capture and coal gasification) that you also put coal-fired power back into your IRP.	PacifiCorp will consider incorporating these recommendations.
City of Kemmerer	August 28, 2020	Natural Gas	Given the uncertainty and unproven technology of battery storage for baseload power, new proven clean coal technologies should be given a fair consideration with your data analysis.	PacifiCorp will consider incorporating these recommendations.

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Stakeholder	Date	Topic	Brief Summary (complete form available online)	Response (posted online when available)
City of Kemmerer	August 28, 2020	WY Legislation	Just as legislation on the West Coast and in Utah is being considered in the IRP 2021, we want Wyoming's Senate File 159 and House Bill 200 considered.	This topic will be addressed at the September 17, 2020 public input meeting.
City of Kemmerer	August 28, 2020	Carbon Capture	Factor in what carbon capture and coal gassification can factor into the PacifiCorp IRP, given that the IRS gules have now been established.	This topic will be addressed at the September 17, 2020 public input meeting.
City of Kemmerer	August 28, 2020	Economic Power Grid	Request for a scenario to remove HYDRO power and replace it with coal-fired power.	PacifiCorp will consider incorporating these recommendations.
City of Kemmerer	August 28, 2020	Tax Credits	Recommend changing assumptions regarding to add coal-fired power and smaller nuclear modular reactors to the portfolio.	PacifiCorp will consider incorporating these recommendations.
City of Kemmerer	August 28, 2020	Social Cost of Carbon	Stressed the important of being transparent about what coal-fired and natural gas power actual do to both our wealth and the wealth of impoverished nations.	PacifiCorp will consider incorporating these recommendations.

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Stakeholder	Date	Topic	Brief Summary (complete form available online)	Response (posted online when available)
Oregon Public Utility Commission staff	Sept 3, 2020	June public input meeting	Questions related to topics presented in the June 18-19, 2020 public input meeting: 2019 IRP Action Item Updates, and transmission.	Targeted response the week of September 21, 2020.
Washington Utilities and Transportation commission	Sept 4, 2020	CPA Workshop	Questions related to topics presented in the August 28, 2020 CPA technical workshop.	Targeted response the week of September 21, 2020.
Oregon Citizen's Utility Board	Sept 9, 2020	Battery Storage & Demand Response	Will PacifiCorp perform a battery storage assessment by State or is it only the system as a whole? Will the IRP account for interactive effects of Direct Load Control and Price-based Demand Response programs?	Targeted response the week of September 21, 2020.
Oregon Public Utility Commission staff	Sept 10, 2020	June public input meeting	Questions related to topics presented in the June 18-19, 2020 public input meeting: Conservation Potential Assessment and battery storage.	Targeted response the week of September 28, 2020.
Oregon Public Utility Commission staff	Sept 10, 2020	July public input meeting	Questions related to topics presented in the June 18-19, 2020 public input meeting: Load Forecasting, Supply-side resources, and distribution system planning.	Targeted response the week of September 28, 2020.



# Additional Information/ Next Steps



# Additional Information



- Public Input Meeting and Workshop Presentation and Materials:
  - [pacificorp.com/energy/integrated-resource-plan/public-input-process](https://pacificorp.com/energy/integrated-resource-plan/public-input-process)
- 2021 IRP Stakeholder Feedback Forms:
  - [pacificorp.com/energy/integrated-resource-plan/comments](https://pacificorp.com/energy/integrated-resource-plan/comments)
- IRP Email / Distribution List Contact Information:
  - [IRP@PacifiCorp.com](mailto:IRP@PacifiCorp.com)
- IRP Support and Studies – CPA Draft Documents
  - [pacificorp.com/energy/integrated-resource-plan/support](https://pacificorp.com/energy/integrated-resource-plan/support)

# Next Steps



- Upcoming Public Input Meeting Dates:
  - October 22-23, 2020 – Public Input Meeting
  - December 3-4, 2020 – Public Input Meeting
  - January 14-15, 2021 – Public Input Meeting
  - February 25-26, 2021 – Public Input Meeting
  - April 1, 2021 – File the 2021 IRP

*\*meeting dates are subject to change*