



PUBLIC MEETING

Utah Committee of Consumer Services

September 22, 2015



Welcome & Business



Case Updates



Case Updates

- Net Metering: Commission Order issued on framework for evaluating the costs and benefits of the net metering program
- Energy Balancing Account: parties reached settlement which the Commission approved
- Questar Transportation Service (TS) Tariff: Commission Order approved new charge, but at a lower rate than Questar requested
- Wexpro II: Parties settled case allowing the new property into the Wexpro II agreement and also including new provisions for costs and management of the cost-of-service gas supply; both Utah and Wyoming commissions approved
- Solar subscription tariff: Parties reached settlement then realized we didn't have shared understanding of the agreement. After the hearing, parties reached a revised settlement, which the Commission approved.
- Emery Telecom request for Utah Universal Service Fund support: DPU and Emery settled which the Commission approved. The Office had agreed not to oppose.
- Strata Telecom request for Utah Universal Service Fund support: Parties settled, hearing upcoming



Case Updates: Ongoing Work

- Qualifying Facilities length of Power Purchase Agreement (PPA): hearing was held, now in the process of filing post-hearing briefs
- Carbon Emery request for Utah Universal Service Fund support: hearing postponed due to motions
- PacifiCorp Integrated Resource Plan: awaiting Commission order
- Rocky Mountain Power carrying charges: Parties have filed comments, hearing is upcoming
- Nucor Electric Service Agreement: Parties are in the process of filing comments on the special contract proposed for this large customer.
- PacifiCorp Multi-State Process (MSP): Parties are close to reaching a multi-state, multi-party agreement regarding allocation of costs.
- Demand-Side Management (DSM): ongoing dockets and steering/advisory committee participation
 - Current docket: RMP requested an increase of the DSM rider from 3.6% to 4.0%; the industrial customers are raising concerns.
- PacifiCorp evaluation of joining an expanded California Independent System Operator



Upcoming Cases

- Rocky Mountain Power General Rate Case
- Questar General Rate Case
- Evaluation of Kennecott leaving the Rocky Mountain Power system



2016 Legislative Session



Rocky Mountain Power STEP Legislation

- Provides customer rates as a funding source for a variety of programs that don't relate to the provision of electric utility service
 - “Economic Development” Rates
 - Incentives for electric vehicle infrastructure
 - Modify operations at certain generating plants
 - Other potential programs
- Includes complicated accounting treatment of multiple resources
 - Capitalizes energy efficiency costs (the utility will earn a return on customer investments)
 - Creates a fund that may be used to pay down coal plants earlier than currently scheduled
- Requests legislative removal of EBA sharing mechanism (imposed by the PSC during the pilot phase to recognize risk shifting)



Other Potential Bill Requests

- Independent Energy Producer Amendments (Rep. Gibson, allows 3rd party PPA for rooftop solar)
- Building Code (Rep. Cox, Rep. Wilson)
- Solar Energy Amendments (Rep. Cox)
- Electric Vehicle Infrastructure (Rep. Arent)



Discussion: Regulatory Roles



Discussion: Policy Objectives



Selection of New Generating Resources



Regulatory Processes

- Integrated Resource Plan
 - Selects a preferred portfolio for future resources
- Significant Energy Resource Decision
 - Requirements for RFP and specific processes to approve new large resources
- Evaluation of environmental upgrades vs. conversion to natural gas vs. other resource options
 - Voluntary request for pre-approval
 - Rate recovery through General Rate Case or Major Plant Addition
- Qualifying Facilities
 - Utilities required to take output of these resources at “avoided cost” without further analysis



Comparison of Resource Options

- Levelized Cost of Energy
 - Compares “all-in” costs of different energy resources. Provides a reasonable “snapshot” comparison, but doesn’t take into account specific system needs or specific operating capabilities.
 - Energy Information Administration
https://www.eia.gov/forecasts/aeo/electricity_generation.cfm
 - Lazard’s
<https://www.lazard.com/perspective/levelized-cost-of-energy-analysis-90/>
- Net Present Value analysis (PVRR) of options
 - Extensive modeling and financial analysis to evaluate specific options at the point of decision.
 - Used in many regulatory proceedings.
- Integrated Resource Planning
 - Models load forecasts, existing resources, risks and scenarios.



Integrated Resource Planning

- Additional slides and discussion as time allows.



Other Business



Adjourn



IRP slides from September



Comments filed by OCS

- Concern about level of Class 2 DSM (energy efficiency)
 - Utah accounts for 60% of DSM resources, but only 43% of system
 - Lack of detail by sector and end us of how this will be achieved
 - Recommend that the Company provide updates and more information on these issues
- Reliance on FOT
 - Power supply assessments indicate adequate reserves currently available
 - Recommend the Company monitor the market and provide annual updates
- Energy gateway Transmission Projects
 - 1300 miles of Gateway West and Gateway South
 - Recommend that in future IRPs the Company update the justification for these projects
- Capacity from QF Facilities
 - Over 1000 MW of wind and solar QFs are planned to be online in Utah by the end of 2016
 - These resources are acquired outside of the system wide planning process



Many Organizations Filed Comments

- Office of Consumer Services
- Division of Public Utilities
- Utah Association of Energy Users
- Utah Clean Energy and SWEEP
- Utah Physicians for a Healthy Environment
- Sierra Club, et. al. – HEAL Utah, Western Clean Energy Campaign, Powder River Basin Resource Council, Idaho Conservation League
- League of Women Voters
- Interwest Energy Alliance
- Matt Pacinza (HEAL Utah, et. al.)



Related Initiatives

- Sierra Club
 - “PacifiCorp’s 20-Year-Plan of Coal Dependence is Risky Business!”
 - Two different form letters submitted by hundreds of customers
- Heal Utah
 - “Brown Sky, The Truth About How Rocky Mountain Power Obstructs Renewable Energy”
 - Received little media attention
- Both initiatives provide a mix of factual and misleading information

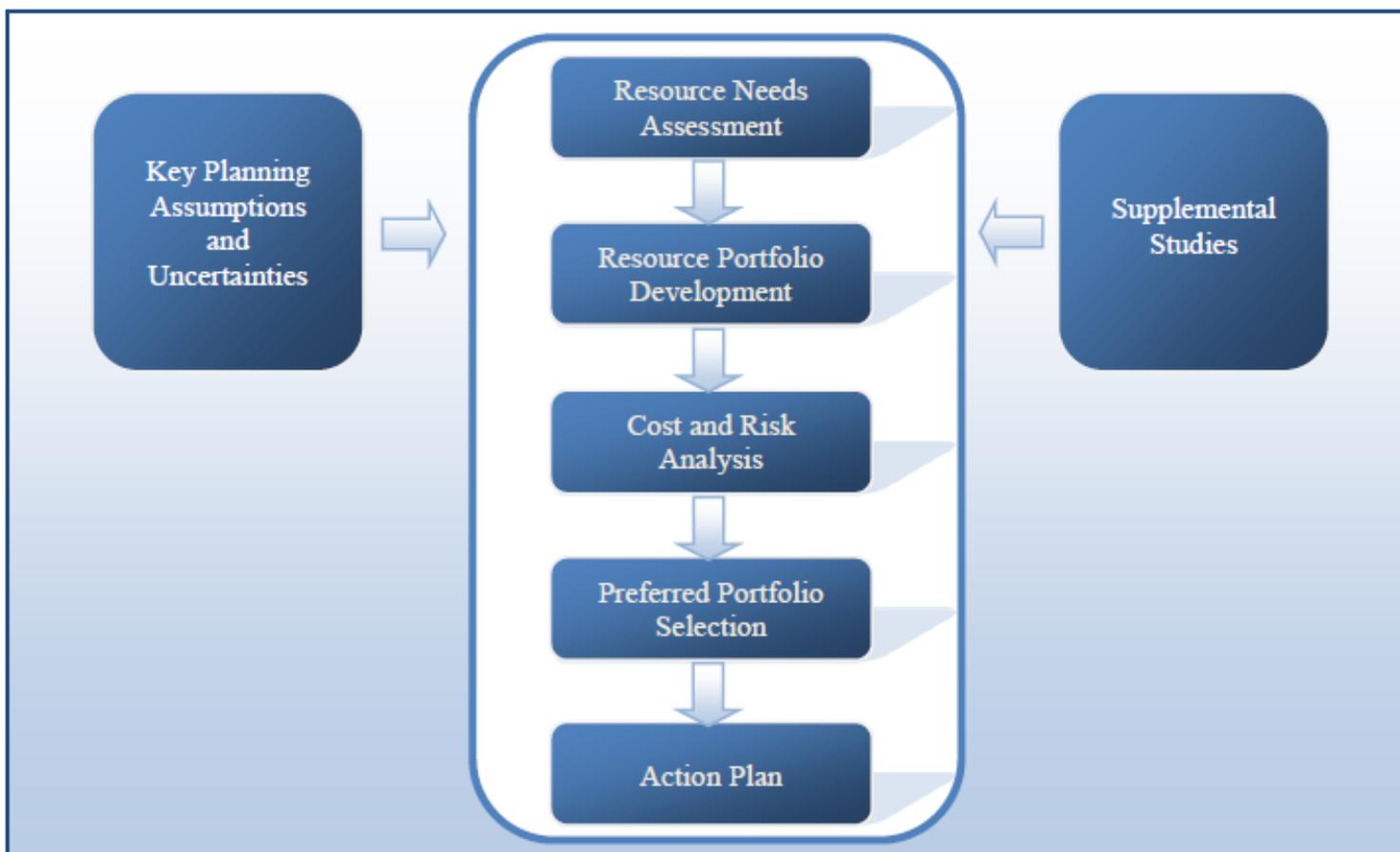


IRP slides from April



Overview of Planning Process

Figure 1.1 – Key Elements of PacifiCorp’s IRP Process





Preferred Portfolio

Table 1.1 – 2015 IRP Preferred Portfolio Summary (MW)

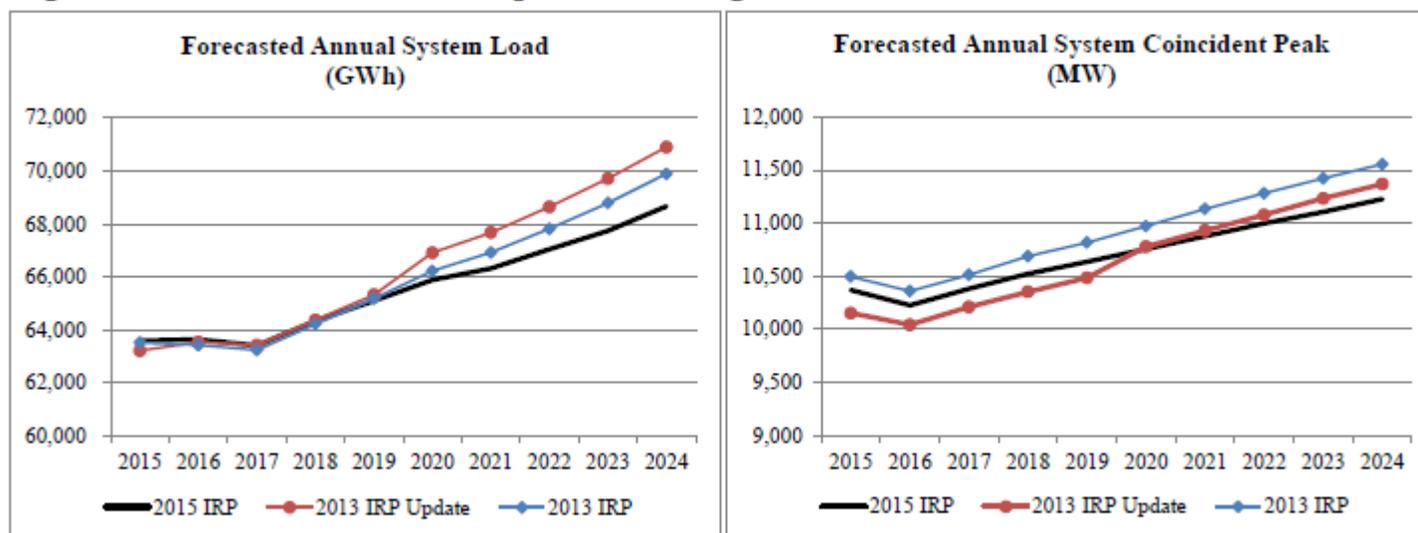
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
New Resources																					
FOTs	727	937	904	870	935	979	769	791	761	754	771	792	835	1,304	1,167	1,253	1,247	1,411	1,360	1,087	n/a
DSM - Energy Efficiency	133	139	146	146	153	135	137	144	146	149	123	126	130	132	128	125	122	122	122	120	2,678
DSM - Load Control	0	0	0	0	0	0	0	5	11	0	0	11	0	0	11	0	0	0	5	0	42
Natural Gas Combined Cycle	0	0	0	0	0	0	0	0	0	0	0	0	0	423	0	1,159	0	0	635	635	2,852
OR Solar Capacity Standard	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
Existing Unit Changes																					
Reduction in Owned Coal/Gas	(222)	0	0	(280)	0	0	0	0	0	0	(387)	0	0	(762)	0	(807)	(77)	0	(627)	0	(3,162)
Gas Conversion	0	0	0	337	0	0	0	0	0	0	387	0	0	0	0	(337)	0	0	0	0	387
Total Net Change in Resources	638	1,084	1,050	1,073	1,088	1,113	906	941	917	903	893	928	965	1,097	1,305	1,393	1,292	1,533	1,496	1,841	

- Resource needs can be met with DSM and low-cost short term firm market purchases (called front office transactions or FOTs on the chart)
- The next thermal resource is planned to be added in 2028, one year later than in previous plans
- By 2034 assumes that 1800 MW of existing coal generation will either be retired or converted to natural gas



Load Forecast Changes

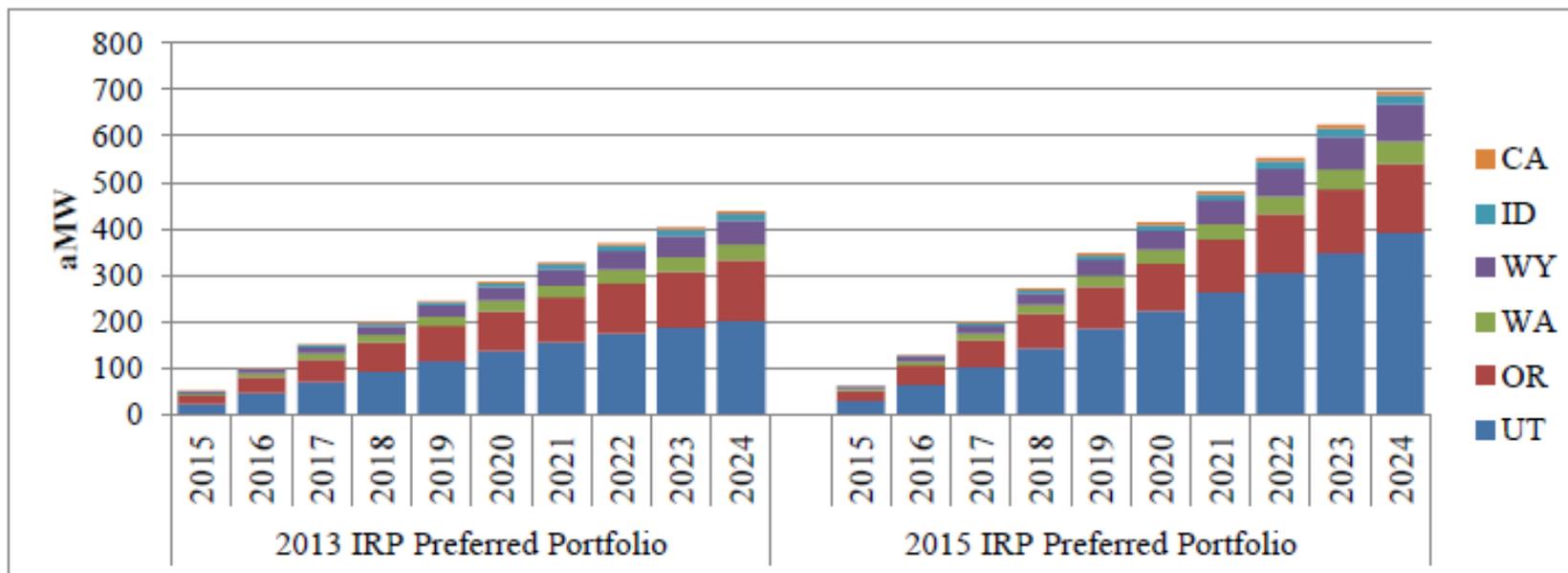
Figure 1.2 – Load Forecast Comparison among Recent IRPs





Energy Efficiency Changes

Figure 1.3 – Comparison of Total Energy Efficiency Savings between the 2015 IRP Preferred Portfolio and the 2013 IRP Preferred Portfolio





Action Plan

- Renewable Resource Actions
 - The Company will pursue unbundled REC RFPs to meet its state RPS compliance requirements
 - On a quarterly basis through 2016, issue reverse RFPs to sell vintage RECs not required to meet state RPS requirements
 - Conclude negotiations with shortlisted bids for qualifying solar to satisfy obligation under Oregon's 2020 solar capacity standard
- Front Office Transactions
 - Acquire economic short-term firm market purchases for on-peak summer deliveries from 2015 through 2017 consistent with Risk Management Policy and Front Office Procedures and Practices.
- Demand Side Management Actions
 - Pursue a west-side irrigation load control pilot beginning 2016 to test the feasibility of program design.
 - Acquire cost effective Class 2 DSM (energy efficiency) resources targeting annual system energy and capacity selections from the preferred portfolio.



Action Plan

- Coal Resource Actions
 - Naughton Unit 3: Issue an RFP to procure gas transportation and EPC contract for the natural gas conversion in the first quarter of 2016. (May include updated economic analysis of natural gas conversion)
 - Dave Johnston Unit 3: Requirement for SCR or shut-down by 2027 is under appeal. If upheld, will shut down by 2027. If modified, will evaluate alternative compliance strategies.
 - Wyodak: Continue to pursue appeal of SCR requirement. If upheld, evaluate alternative compliance strategies.
 - Cholla Unit 4: Continue permitting efforts in support of an alternative regional haze compliance that avoids SCR with a commitment to cease operating the unit as coal fueled by the end of April 2025.
- Transmission Transactions
 - Continue permitting for the Energy Gateway transmission plan



Process

- Schedule will be set for comments and reply comments
- Commission will acknowledge or not acknowledge the plan
- Typically, no hearing is held



IRP slides



Purpose of the IRP

- To select the optimal set of resources which will assure an adequate and reliable supply of electricity while balancing:
 - Cost
 - Risk
 - Public Policy Goals
- To provide long range resource planning to meet forecasted load – 20-year planning horizon



Utah Public Service Commission Guidelines

1. The Company will submit its IRP biennially for review and acknowledgment by the Commission.
2. The IRP will be developed using a public process and the Company will accommodate input from interested parties and facilitate information exchange.
3. The IRP will include:
 - a. A range of estimates or forecasts of load growth
 - b. An evaluation of all resources on a consistent and comparable basis
 - c. An analysis of competitive bidding for all types of resource acquisitions
 - d. A 20-year planning horizon
 - e. An action plan to implement the IRP consistent with the business plan
 - f. Different acquisition paths for different economic futures
 - g. Evaluation of cost from the perspective of different ratepayers and social concerns



Commission Guidelines - Continued

3. The IRP will include (cont.):
 - h. An evaluation of risks whether the ratepayer or the stockholder bears the risk
 - i. Allow flexibility so that the Company can take advantage of opportunities
 - j. An analysis of tradeoffs
 - k. A range for external costs
 - l. A description of how rate design is consistent with IRP planning goals
4. The public and all interested parties will have the opportunity to submit formal comments to the Commission
5. The IRP will be used in rate cases to evaluate utility performance related to resource acquisition.
6. Acknowledgement of the IRP will not guarantee favorable rate treatment of resource acquisitions.



Forecast of Resource Needs

Key Assumptions:

- Forecasted loads
- Existing resource levels
- Reserve Requirements



New Resource Modeling Step 1 – Inputs & Assumptions

- Key Inputs – Resource cost estimates, asset lives, fuel cost inflation, asset lives, transmission topology, etc.
- Key Assumption Alternatives – Scenario/Case Development
 1. Compliance with proposed EPA 111(d) rule and CO2 costs
 2. Natural gas costs
 3. Wholesale electricity prices and availability of FOTs
 3. Load growth
 4. Renewable energy tax credits and integration costs
 5. Renewable Portfolio Standards
 6. Demand Side Management (DSM)
 7. Distributed Generation
 8. Coal plant regional haze compliance, coal plant retirements
 9. Energy Gateway transmission buildout



New Resource Modeling Step 2 – Capacity Expansion Model

- **System Optimizer Model (PacifiCorp's CEM)**
- **Develop multiple cases using different combinations of assumptions**
 - **Core Cases** - produces different portfolios to meet future needs
 - **Sensitivity Cases** – tests the impact of specific planning assumptions on resource selection, cost and risk
- **System Optimizer solves for the least cost mix of resources for each case based on PVRR – Present Value of Revenue Requirement**



New Resource Modeling Step 3 – Risk Analysis

- Planning and Risk Model (PaR) – Monte Carlo Simulation
- Risk Analysis – Testing the ability of a portfolio to respond to random and sometimes major changes in the following variables:
 - (1) Loads
 - (2) Natural gas prices
 - (3) Wholesale electricity prices
 - (4) Hydro energy availability
- This analysis screens the top-performing portfolios based on the combination of average risk and upper-tail risk*
 - Best performing core portfolios are selected for further screening.

*Upper-tail risk reflects potential outcomes that have a low probability of occurring but are very expensive if they do materialize.



Selection of Preferred Portfolio

The preferred portfolio was selected using the following criteria:

1. Risk-adjusted Mean PVRR
2. Customer rate impact
3. CO2 emissions
4. Energy Not Served
5. Fuel source diversity
6. Using RECs for Oregon RPS compliance



Office IRP Review

The Office thoroughly reviews the Company's IRP filings focusing on the following types of issues:

- Compliance with Commission Guidelines and past Commission IRP Orders
- Reasonableness of methods, inputs, assumptions and ultimately the preferred portfolio of resources selected by the Company
- Evaluation of selected issues by experts retained by the Office
- Re-visit issues that have been problems in past IRP filings (i.e. reliance on market power, appropriate planning reserve margins, treatment of renewable resources)



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