



2011 IRP Public Input Meeting

October 5, 2010



Pacific Power | Rocky Mountain Power | PacifiCorp Energy

Agenda

- **Morning Session**
 - IRP Schedule Update
 - Energy Gateway Transmission Construction Update and Evaluation
 - Load Forecast
- **Lunch 11:30 -12:00 Pacific / 12:30-1:00 Mountain**
- **Afternoon Session**
 - Hedging Strategy
 - Market Reliance Analysis
 - Capacity Load & Resource Balance
 - Portfolio Development Cases



IRP Schedule Update

Recent Milestones

- Geothermal resource study completed on August 10, 2010, and posted to the PacifiCorp IRP Web site
 - Addressed comments on the draft made by the Utah Division of Public Utilities and Utah Geological Survey (Utah State Energy Program)
- Wind integration study distributed September 1, 2010
- September 2010 Load Forecast
- Received preliminary DSM and distributed generation supply curves from The Cadmus Group; PacifiCorp continues to validate them

Next Steps...

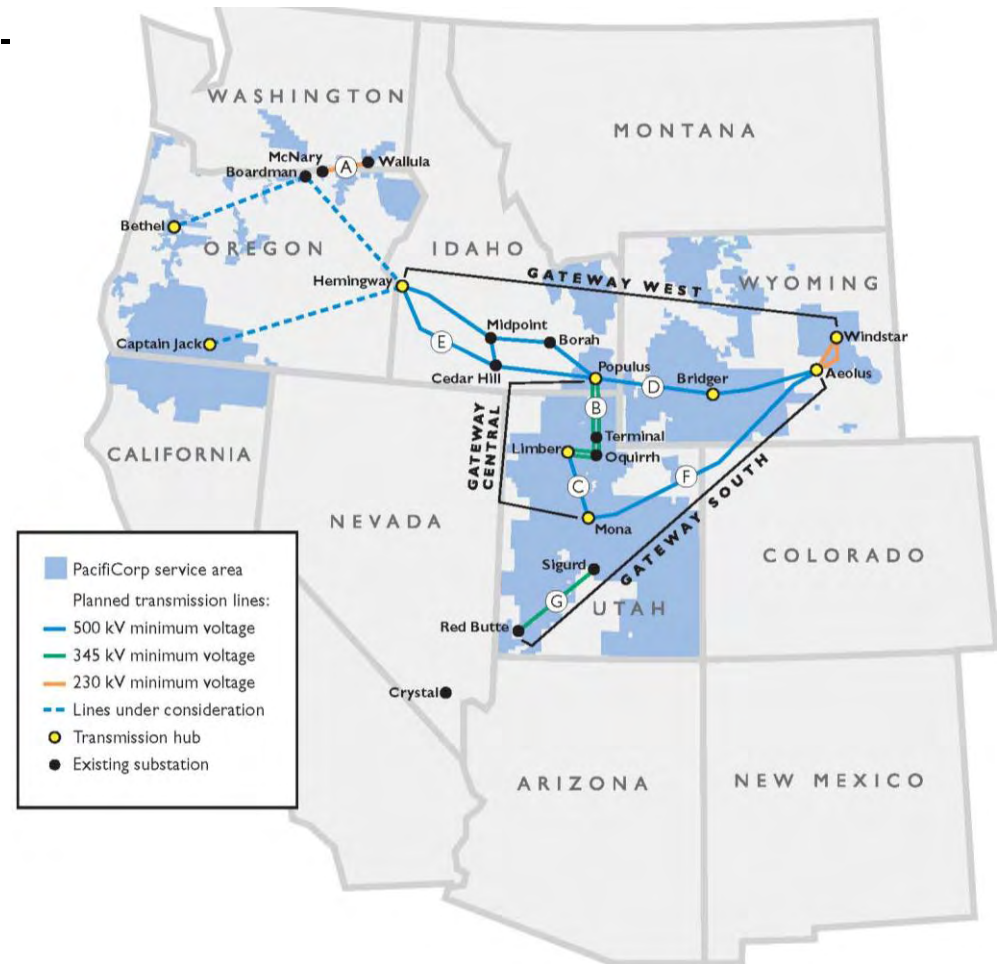
- Distribute report on the Loss of Load Probability (LOLP) study
- Preliminary date for a December 2010 public Meeting: topics - scenario price forecasts, portfolio development



Energy Gateway Transmission Construction Update and Evaluation

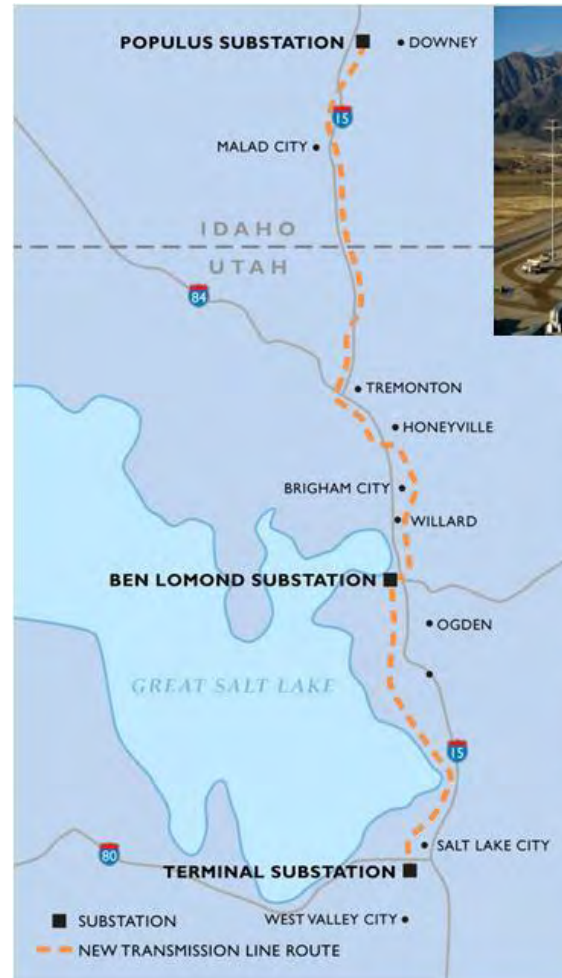
Key Principles

- Secure capacity for the long-term benefit of customers
- Load service first, regional need second
- Support multiple resource scenarios
- Secure regulatory and community support
- Build it



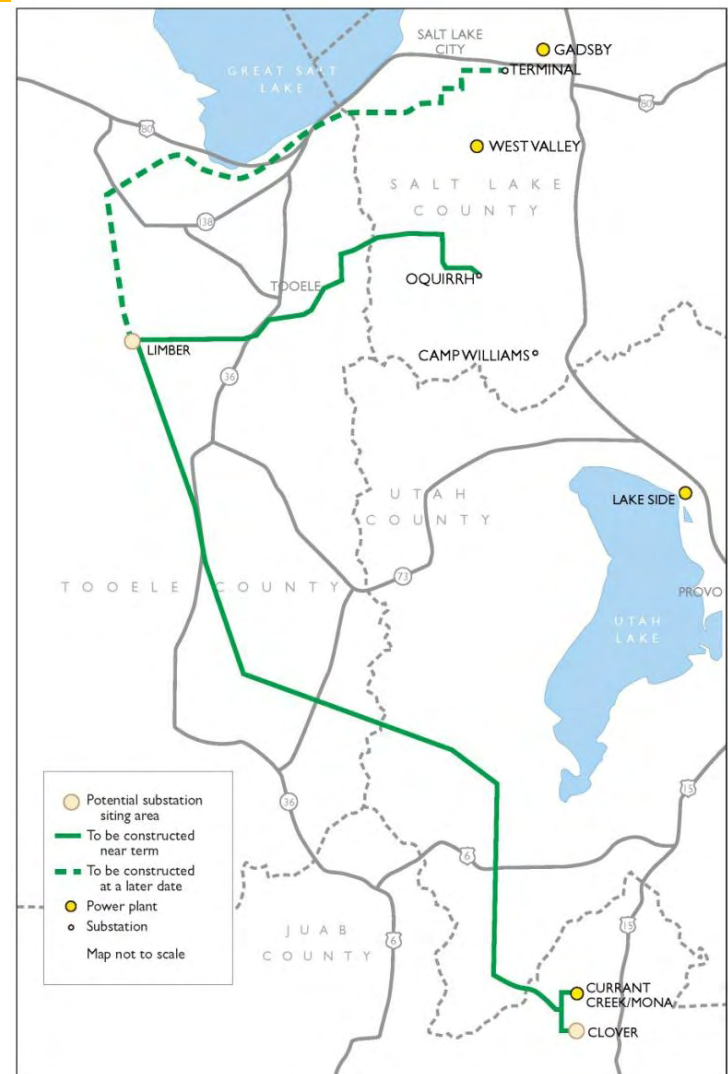
Gateway Central

- Populus to Terminal (Segment B)
 - 135 miles – double-circuit 345 kV
 - Energized Ben Lomond to Terminal: March 2010
 - Populus to Ben Lomond: November 2010
 - Regulatory recovery process nearing completion



Gateway Central

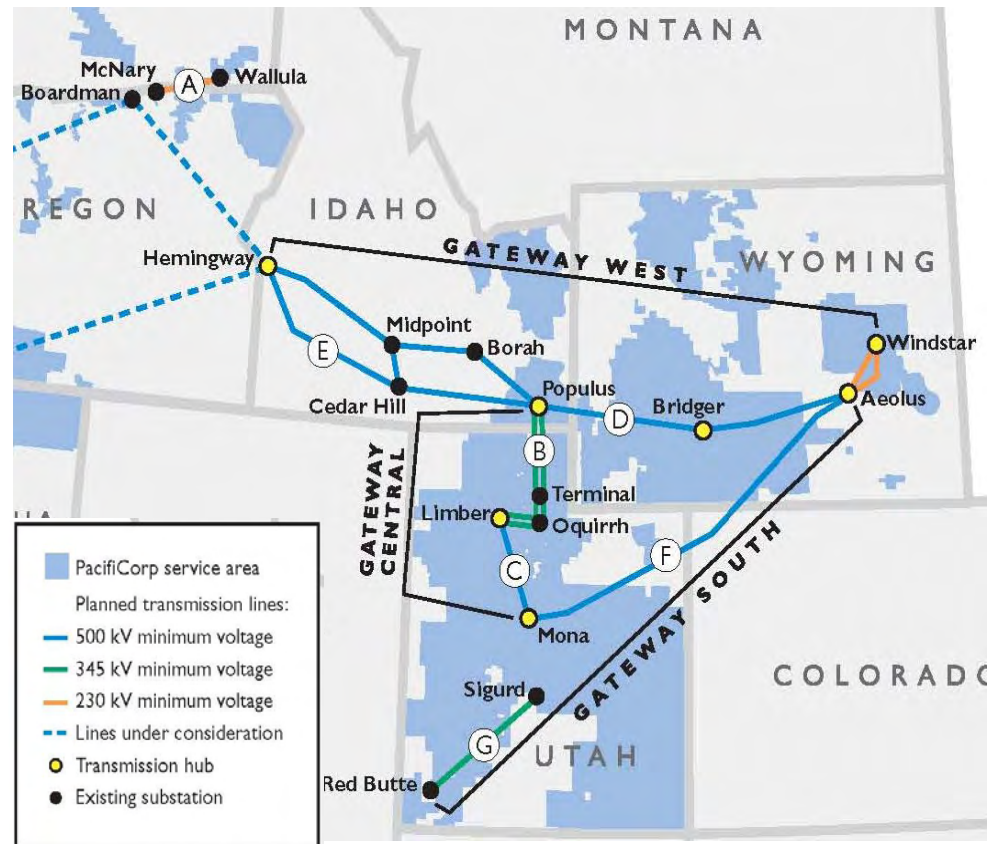
- Mona to Oquirrh (Segment C)
 - 114 miles – double-circuit 345 kV & single-circuit 500 kV
 - In-service target: Summer 2013
 - Final EIS record of decision target - Fall 2010
 - One local permitting issue pending
 - Current project scope Mona-Limber-Oquirrh
 - Limber-Terminal segment under consideration



This map is for general reference only, it may not reflect the final routes or specific substation siting areas.

Other Gateway Segments

- **Sigurd to Red Butte**
 - 165 miles
 - In-service target: June 2014
 - Key Milestone: Draft EIS January 2011
 - Permitting underway
- **Gateway West**
 - 1,050 miles
 - In-service target: 2014 – 2018
 - Key Milestone: Draft EIS December 2010
 - Permitting underway
- **Gateway South**
 - 425 miles
 - In-service target: 2017 – 2019
 - Permitting underway



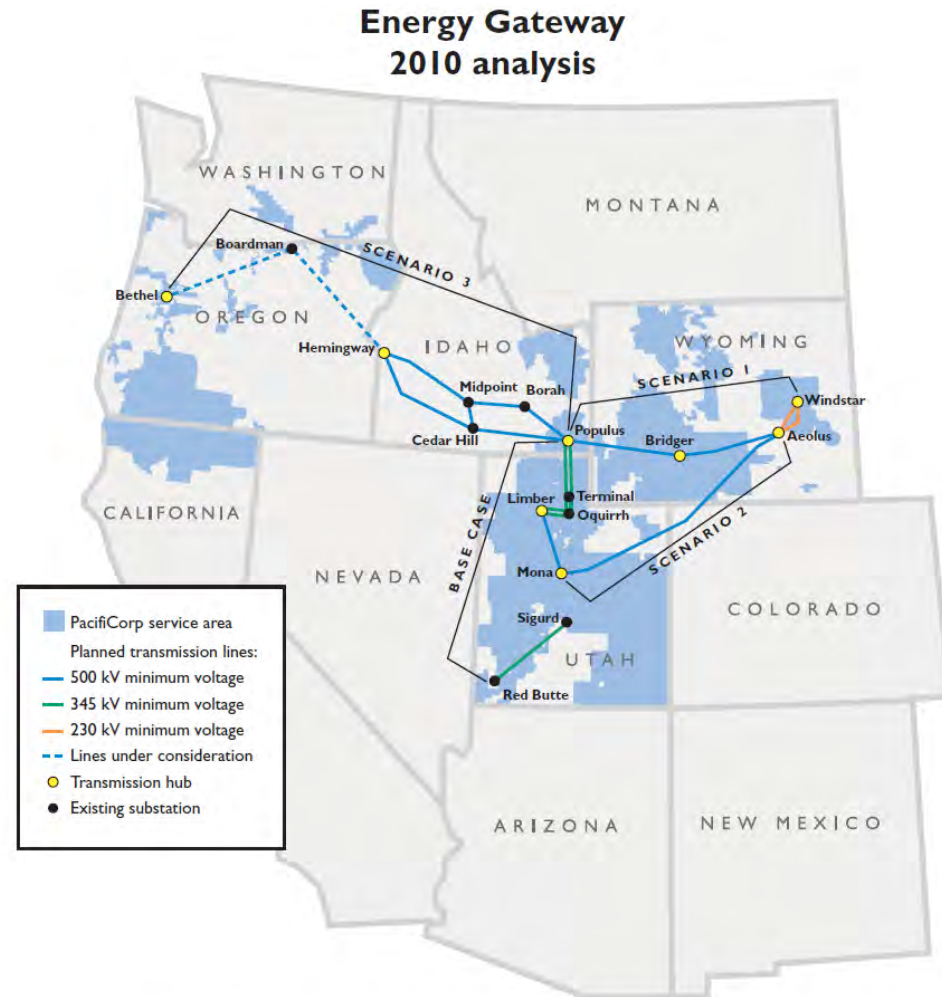
Westside Plan

- **Wallula to McNary (portion of Segment A)**
 - In Service target: December 2011-2012
- **MOU signed with Idaho Power, March 2010**
 - Joint development of new assets
 - Use of existing assets
 - Facilitates participation in other projects
- **MOU signed with Portland General, July 2010**
 - Joint development of new assets



Analysis

- Energy Gateway transmission segments have been subject to annual review since 2007
- Prior analysis relied heavily on variable power cost savings and least cost options as justification
- 2010 analysis activities:
 - analyzing different Energy Gateway scenarios (combinations of Energy Gateway segments that account for line rating dependencies) to determine relative cost-effectiveness
- 2011 IRP
 - Extending Energy Gateway scenario analysis approach to the IRP (will be discussed this afternoon)
 - this analysis does not factor in reliability and non-PacifiCorp benefits



This map is for general reference only. It may not reflect the final routes or construction sequence.



September 2010 Load Forecast

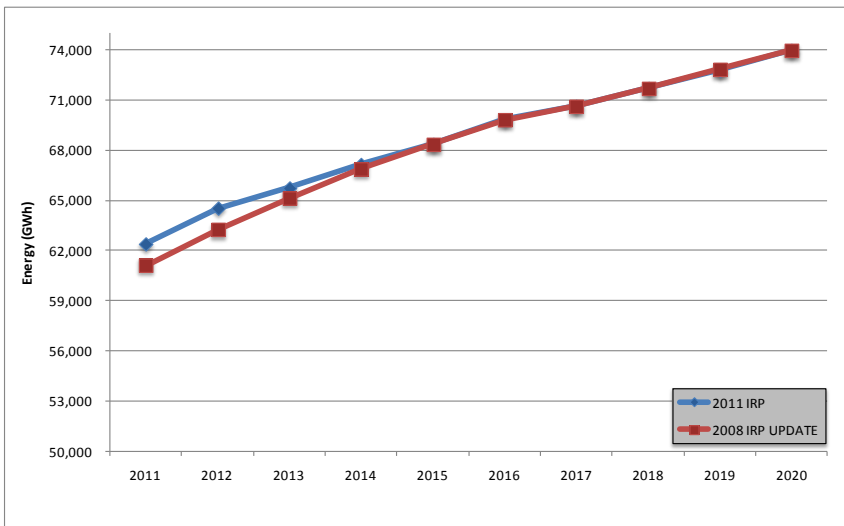
What changed from the 2008 IRP Update?

- Preliminary 2011 IRP load forecast prepared September 2010
- Assumption changes from 2008 IRP Update
 - State and county level forecasts from Global Insight updated in June 2010
 - Households, population, total employment, manufacturing employment, gross county product, personal income
 - 12 months of recent retail sales history added (2009 August – 2010 July)
 - Industrial forecast from customer account managers updated August 2010
 - Statistically adjusted end-use model inputs for Residential class updated by information from Energy Information Administration's 2009 Annual Energy Outlook released in April 2009
 - Normal weather updated based on average of 1990-2009
 - 2008 & 2009 load research data added and weather variables updated
 - 2009 peak and hourly data added
 - Line losses updated to the most recent five year average (2005-2009)

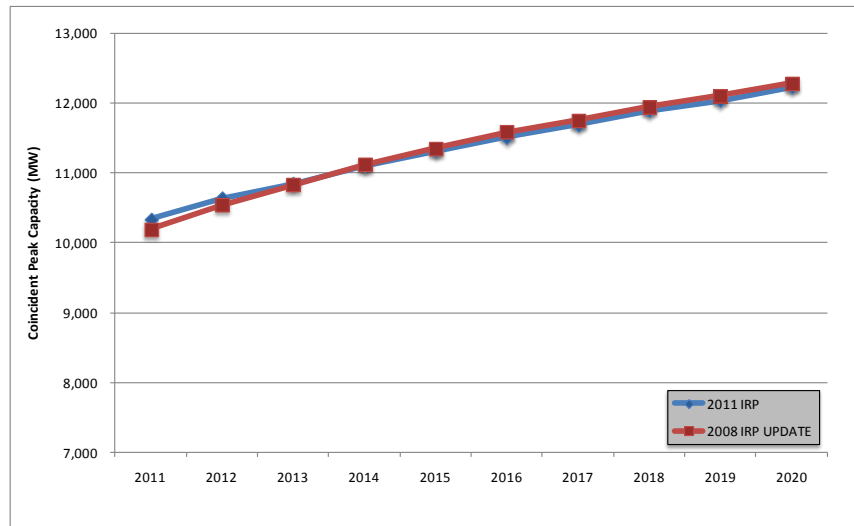
System – Energy and Peak

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	AAG '11-20
Coincident Peak Capacity (MW)											
2011 IRP	10,340	10,640	10,847	11,101	11,312	11,514	11,696	11,892	12,038	12,231	1.9%
2008 IRP UPDATE	10,198	10,539	10,831	11,122	11,355	11,585	11,755	11,951	12,112	12,284	2.1%
DIFFERENCE	142	102	16	(21)	(43)	(71)	(59)	(59)	(73)	(53)	(0.2%)
Energy (MWh)											
2011 IRP	62,403,664	64,534,367	65,752,196	67,187,043	68,381,949	69,838,846	70,667,153	71,727,966	72,805,432	74,016,298	1.9%
2008 IRP UPDATE	61,110,064	63,264,583	65,126,386	66,912,337	68,375,219	69,814,947	70,674,381	71,745,215	72,870,856	74,005,306	2.2%
DIFFERENCE	1,293,599	1,269,784	625,810	274,706	6,730	23,899	(7,228)	(17,249)	(65,425)	10,992	(0.2%)

Energy (GWh)



Coincident Peak Capacity (MW)

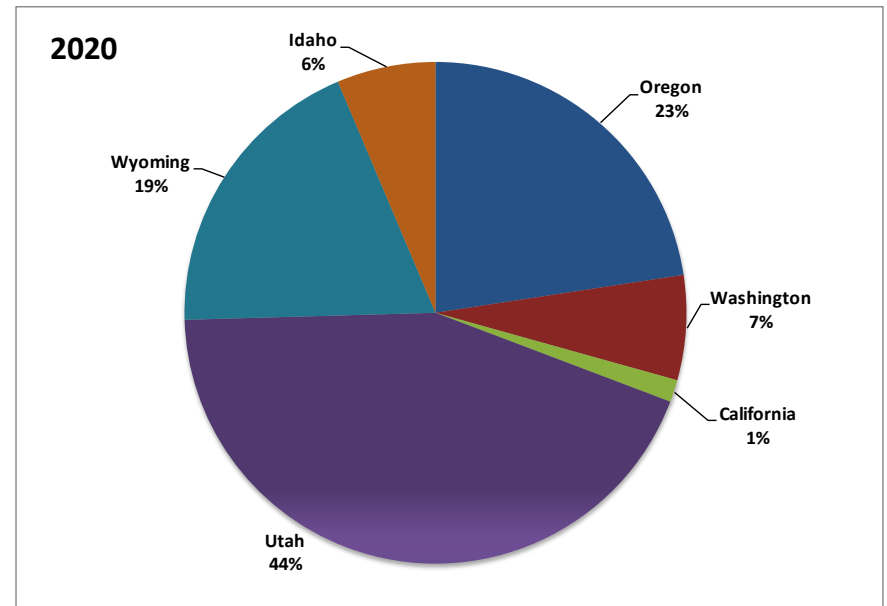
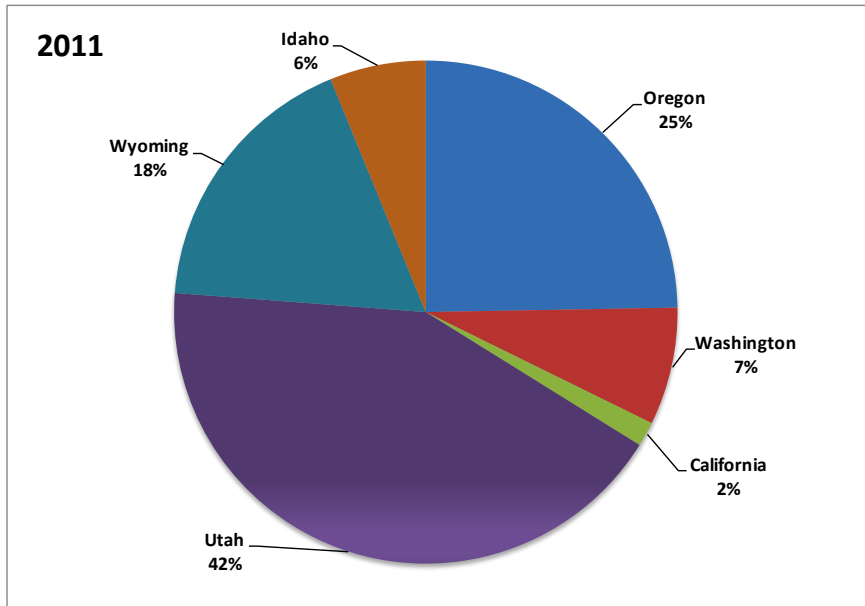


System energy and peak values include Southeast Idaho. Southeast Idaho is a contractual exchange agreement with another utility and not to be considered part of PacifiCorp's Idaho load.

System – Energy and Peak

- West side growth primarily attributed to
 - new data centers in Oregon
 - positive outlook in Washington
 - partially offset by continuing pessimism in wood product industry in all states
- East side growth primarily attributed to
 - new data centers in Utah
 - some new industrial customers in both Utah and Wyoming
 - partially offset by pessimistic outlook about load materialization by existing and new industrial customers for both Utah and Wyoming in the outer years

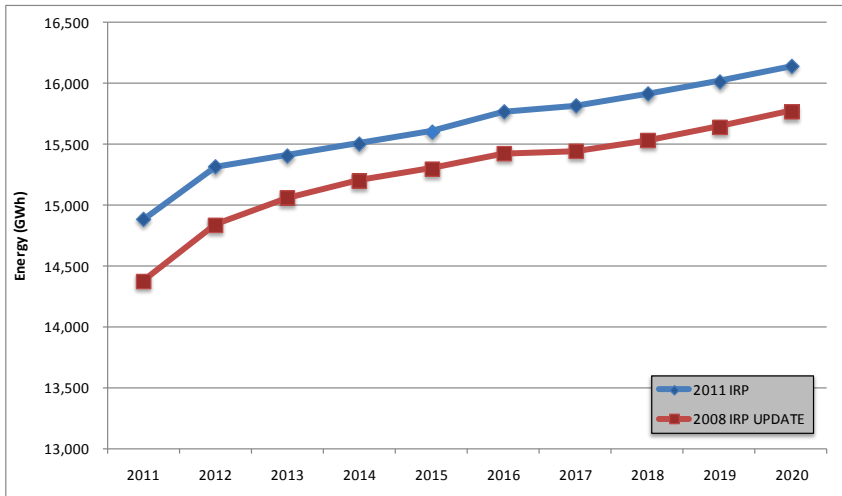
States' Contribution to System Energy



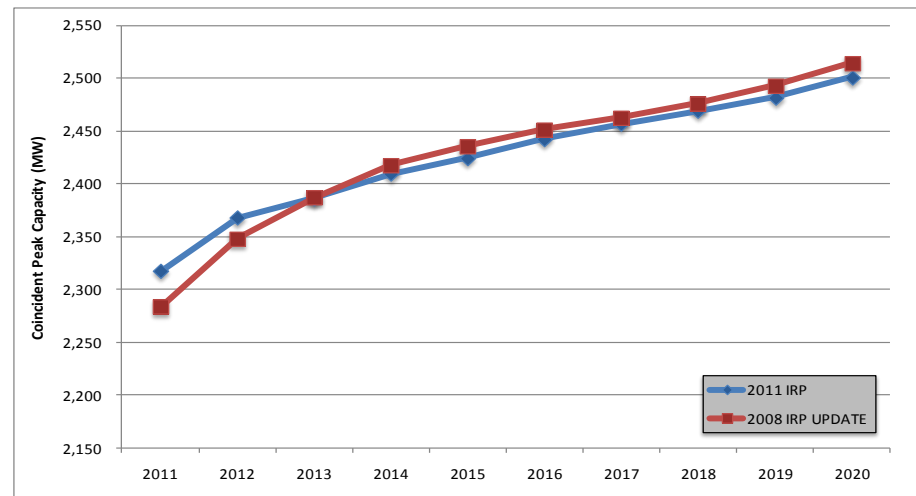
Oregon – Energy and Peak

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	AAG '11-20
Coincident Peak Capacity (MW)											
2011 IRP	2,317	2,368	2,386	2,409	2,424	2,443	2,456	2,469	2,482	2,501	0.8%
2008 IRP UPDATE	2,284	2,348	2,387	2,418	2,436	2,452	2,463	2,476	2,493	2,515	1.1%
DIFFERENCE	34	20	(1)	(9)	(12)	(9)	(6)	(7)	(11)	(14)	(0.2%)
Energy (MWh)											
2011 IRP	14,883,261	15,316,444	15,412,017	15,511,136	15,610,093	15,769,620	15,819,472	15,916,638	16,018,157	16,141,931	0.9%
2008 IRP UPDATE	14,380,455	14,843,483	15,062,869	15,205,085	15,303,232	15,423,718	15,446,754	15,535,683	15,648,922	15,772,374	1.0%
DIFFERENCE	502,806	472,962	349,148	306,051	306,861	345,901	372,718	380,955	369,236	369,556	(0.1%)

Energy (GWh)



Coincident Peak Capacity (MW)



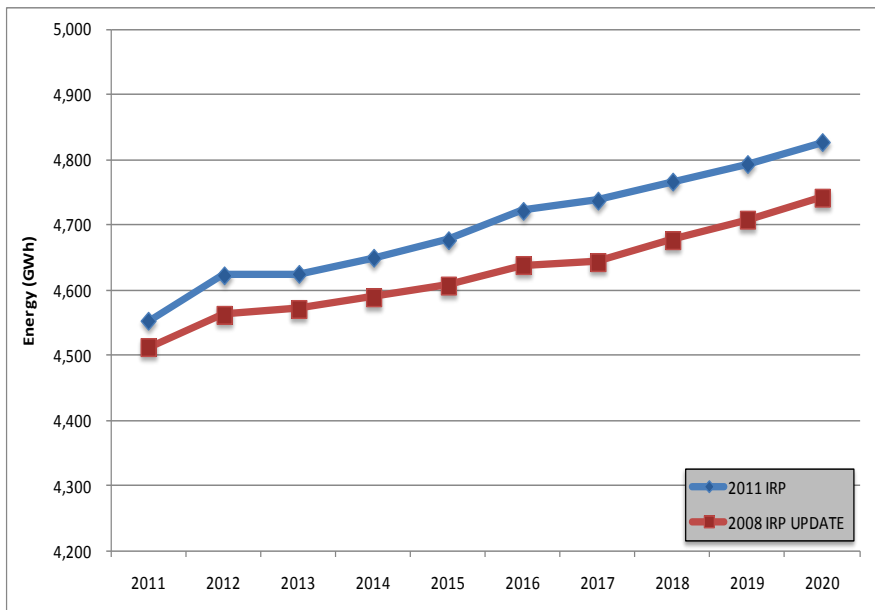
Oregon – Energy and Peak

- Oregon energy and peak forecast have a mixed outlook in 2011 IRP
 - Positive outlook from new data centers and residential sales
 - partially offset by continuing effects of recession from shutdowns and closures in industrial sector as a result of continuing housing market crisis

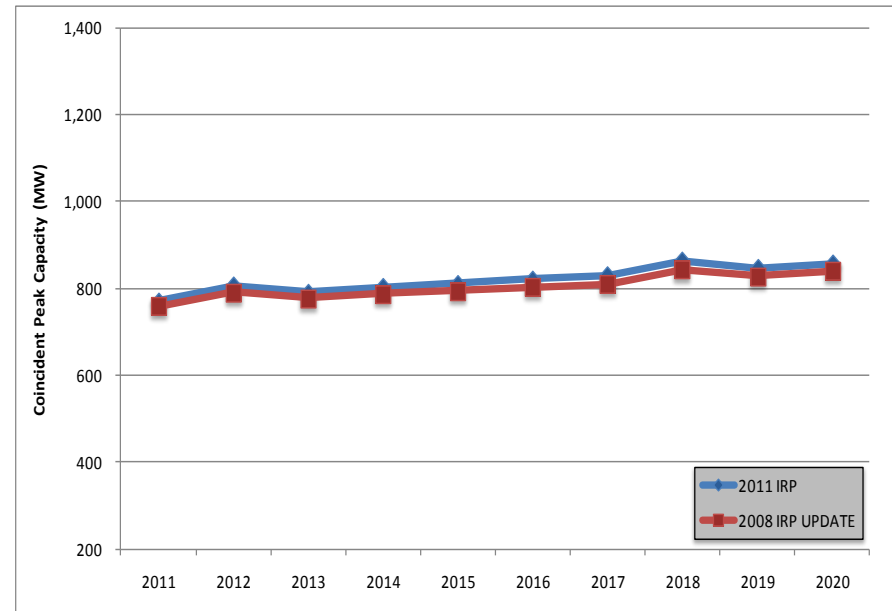
Washington – Energy and Peak

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	AAG '11-20
Coincident Peak Capacity (MW)											
2011 IRP	771	806	791	802	812	821	830	864	847	858	1.2%
2008 IRP UPDATE	759	792	777	788	795	803	809	844	828	839	1.1%
DIFFERENCE	12	14	14	14	16	18	20	20	19	18	0.1%
Energy (MWh)											
2011 IRP	4,553,217	4,623,782	4,624,063	4,648,987	4,677,786	4,722,599	4,737,508	4,766,223	4,793,293	4,826,450	0.6%
2008 IRP UPDATE	4,512,495	4,563,202	4,571,700	4,590,154	4,607,980	4,637,827	4,643,972	4,676,978	4,708,154	4,742,626	0.6%
DIFFERENCE	40,723	60,581	52,363	58,833	69,807	84,772	93,537	89,245	85,139	83,824	0.1%

Energy (GWh)



Coincident Peak Capacity (MW)



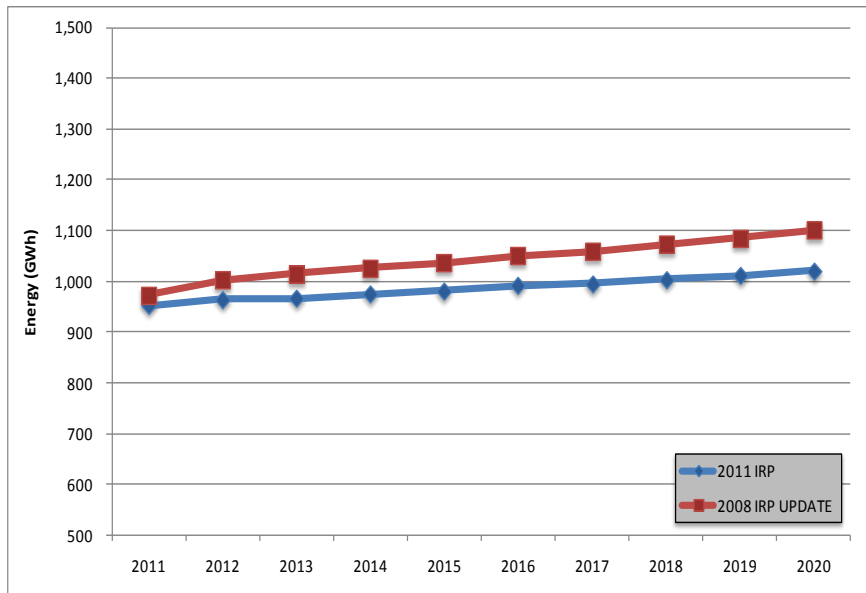
Washington – Energy and Peak

- Washington energy and peak forecast have increased in 2011 IRP
 - Growth in residential sales attributed to trend from relatively strong actual sales and revised household forecast from Global Insight
 - Industrial sales are optimistic with some positive news from new customers

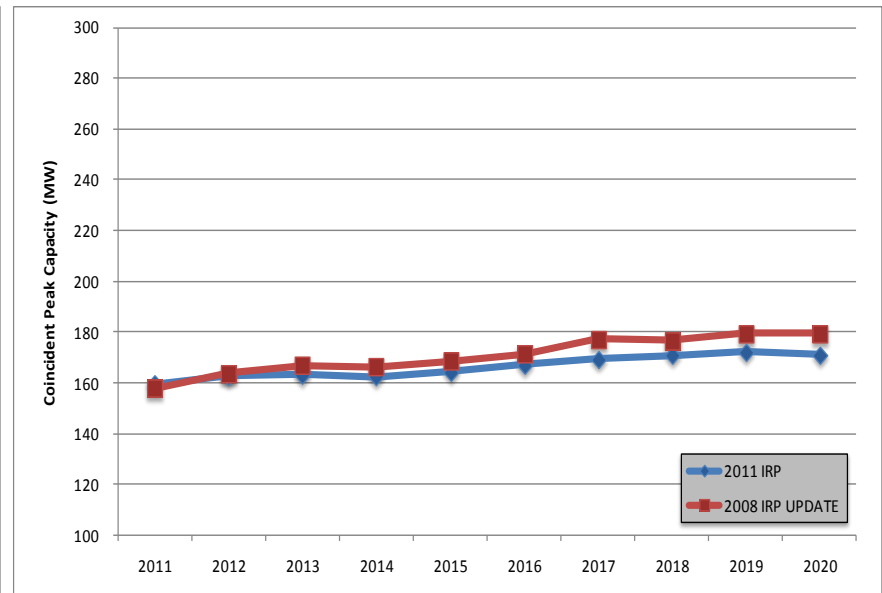
California – Energy and Peak

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	AAG '11-20
Coincident Peak Capacity (MW)											
2011 IRP	160	163	163	162	164	167	169	171	172	171	0.8%
2008 IRP UPDATE	158	164	167	166	169	171	177	177	179	179	1.4%
DIFFERENCE	2	(1)	(4)	(4)	(4)	(4)	(8)	(6)	(7)	(8)	(0.7%)
Energy (MWh)											
2011 IRP	952,751	965,361	966,721	974,752	981,910	991,202	996,138	1,003,892	1,011,654	1,020,718	0.8%
2008 IRP UPDATE	972,669	1,002,346	1,015,802	1,026,562	1,036,984	1,050,642	1,058,194	1,072,219	1,086,040	1,101,339	1.4%
DIFFERENCE	(19,918)	(36,985)	(49,081)	(51,810)	(55,074)	(59,440)	(62,056)	(68,327)	(74,386)	(80,621)	(0.6%)

Energy (GWh)



Coincident Peak Capacity (MW)



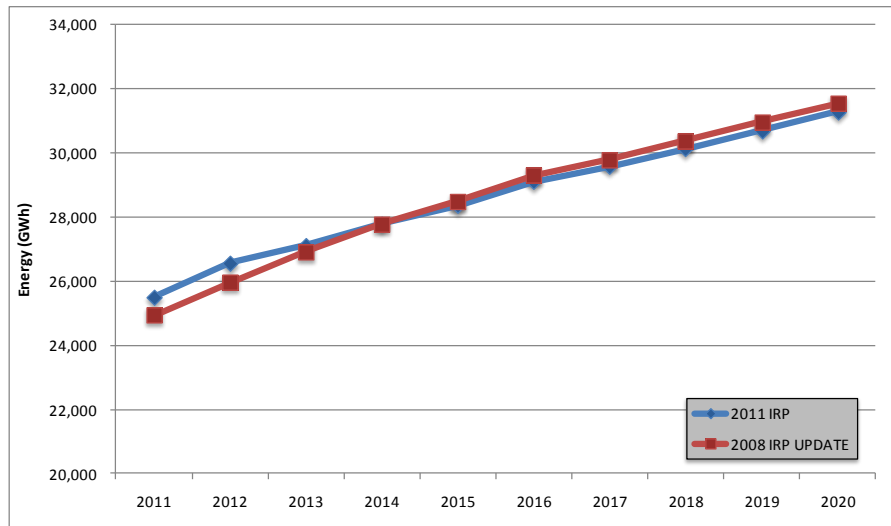
California – Energy and Peak

- California energy and peak forecast have decreased in 2011 IRP
 - Pessimistic outlook in commercial sector as a result of lagged recovery from the economic slowdown
 - Continuing pessimism and closures in industrial sector as a result of economic slowdown

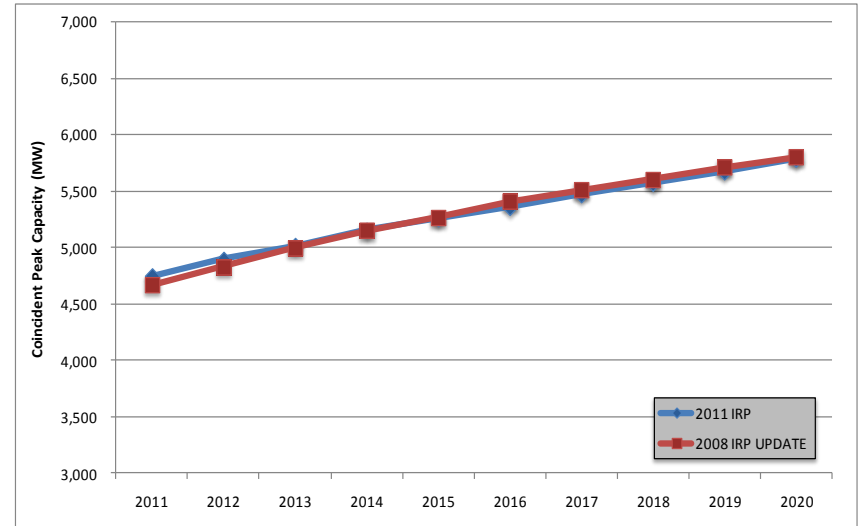
Utah – Energy and Peak

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	AAG '11-20
Coincident Peak Capacity (MW)											
2011 IRP	4,749	4,898	5,018	5,157	5,261	5,362	5,472	5,577	5,677	5,789	2.2%
2008 IRP UPDATE	4,667	4,834	5,004	5,153	5,271	5,411	5,511	5,610	5,715	5,803	2.4%
DIFFERENCE	82	65	14	4	(11)	(49)	(40)	(34)	(37)	(14)	(0.2%)
Energy (MWh)											
2011 IRP	25,502,316	26,568,515	27,122,650	27,795,453	28,361,113	29,116,527	29,573,952	30,128,778	30,690,844	31,298,386	2.3%
2008 IRP UPDATE	24,943,199	25,968,093	26,918,298	27,795,597	28,508,281	29,306,675	29,804,384	30,382,350	30,966,450	31,537,941	2.6%
DIFFERENCE	559,118	600,423	204,353	(144)	(147,168)	(190,148)	(230,432)	(253,571)	(275,607)	(239,555)	(0.3%)

Energy (GWh)



Coincident Peak Capacity (MW)



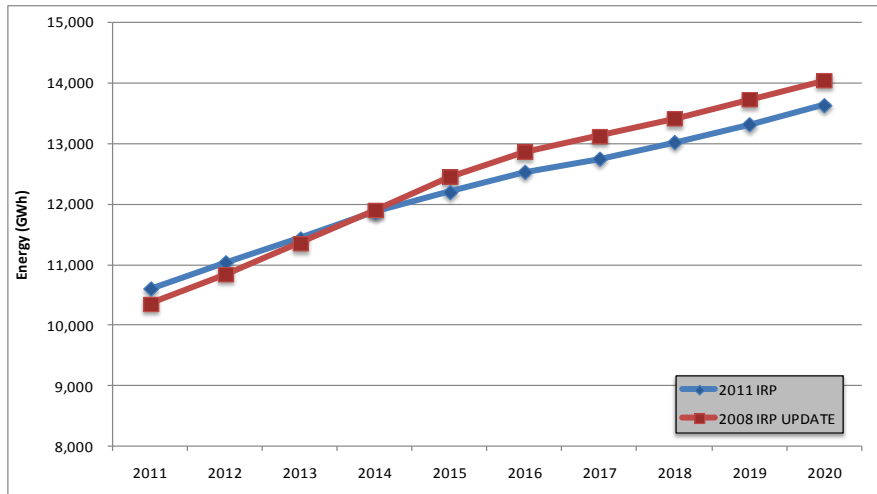
Utah – Energy and Peak

- Utah energy and peak forecast show a mixed scenario in 2011 IRP
 - Positive outlook from new data centers and residential growth
 - Partially offset by
 - Lagged recovery in commercial sector
 - Pessimism by new and existing industrial customers during the planning period resulting from project cancellation and reduced probability for load materialization

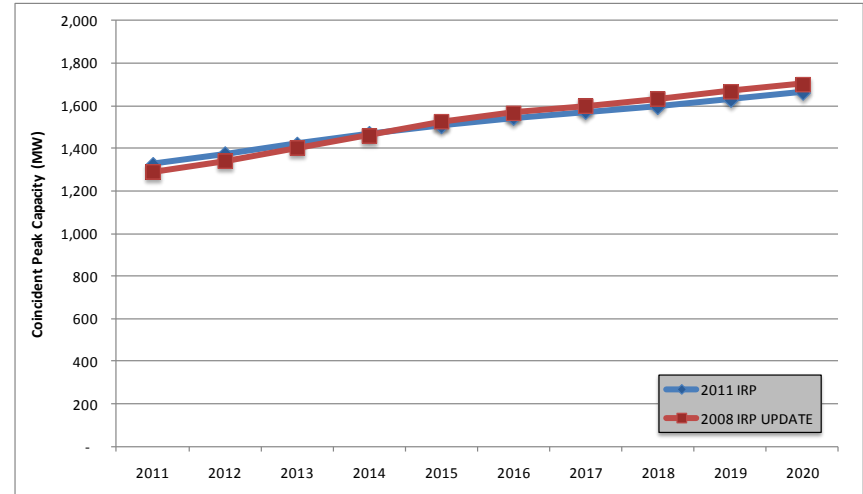
Wyoming – Energy and Peak

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	AAG '11-20
Coincident Peak Capacity (MW)											
2011 IRP	1,329	1,375	1,422	1,470	1,507	1,543	1,571	1,598	1,629	1,664	2.5%
2008 IRP UPDATE	1,292	1,342	1,402	1,463	1,525	1,569	1,601	1,633	1,669	1,704	3.1%
DIFFERENCE	37	33	20	6	(18)	(27)	(30)	(35)	(39)	(40)	(0.6%)
Energy (MWh)											
2011 IRP	10,607,565	11,032,778	11,440,172	11,868,552	12,201,292	12,525,908	12,743,403	13,024,793	13,312,148	13,642,334	2.8%
2008 IRP UPDATE	10,352,917	10,837,133	11,357,516	11,896,327	12,454,198	12,861,601	13,128,929	13,412,924	13,723,600	14,038,511	3.4%
DIFFERENCE	254,647	195,645	82,656	(27,775)	(252,906)	(335,693)	(385,527)	(388,131)	(411,452)	(396,177)	(0.6%)

Energy (GWh)



Coincident Peak Capacity (MW)



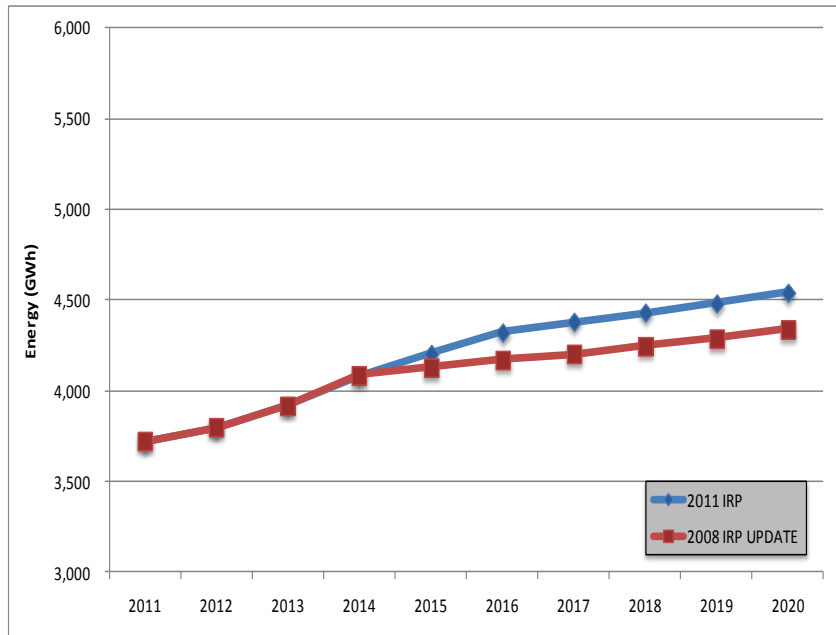
Wyoming – Energy and Peak

- Wyoming energy and peak forecast show a mixed scenario in 2011 IRP
 - Positive outlook from new industrial customers and residential growth
 - Partially offset by pessimism in new and existing industrial customers during the planning period resulting from project cancellation and reduced probability for load materialization

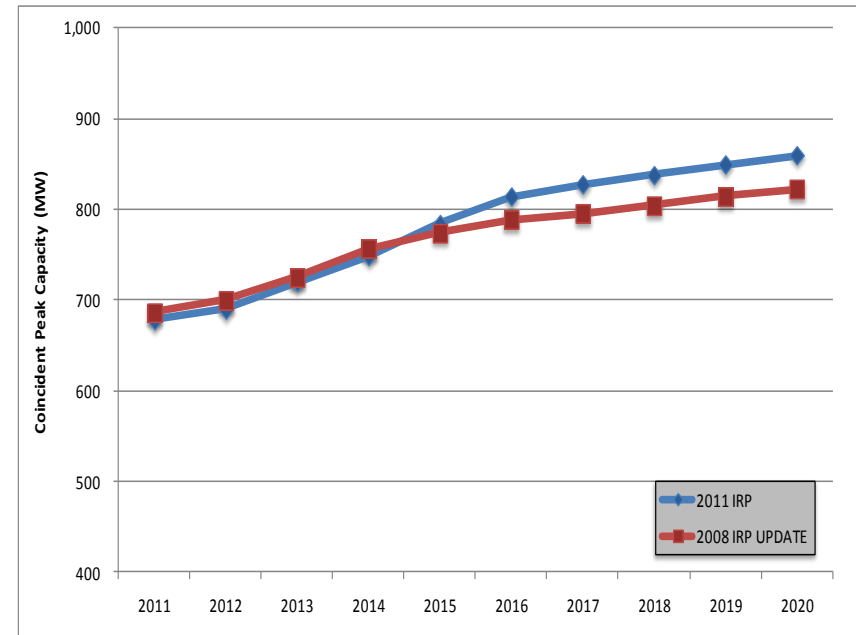
Idaho – Energy and Peak

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	AAG '11-20
Coincident Peak Capacity (MW)											
2011 IRP	678	690	720	748	785	814	827	838	849	859	2.7%
2008 IRP UPDATE	686	700	725	757	774	788	795	805	814	822	2.0%
DIFFERENCE	(8)	(10)	(5)	(9)	10	26	32	33	35	37	0.6%
Energy (MWh)											
2011 IRP	3,716,351	3,793,602	3,921,695	4,085,020	4,208,331	4,325,579	4,378,682	4,431,344	4,484,723	4,545,326	2.3%
2008 IRP UPDATE	3,722,405	3,796,971	3,919,407	4,090,398	4,128,899	4,171,422	4,201,648	4,247,146	4,292,333	4,339,732	1.7%
DIFFERENCE	(6,054)	(3,370)	2,288	(5,378)	79,432	154,157	177,034	184,198	192,391	205,594	0.5%

Energy (GWh)



Coincident Peak Capacity (MW)



Idaho – Energy and Peak

- Idaho energy and peak forecast show a mixed scenario in 2011 IRP
 - Positive outlook from new and existing industrial customers and residential growth
 - Partially offset by revision of forecast by upcoming new industrial customer (lower forecast in earlier years, and higher forecast in outer years for 2011 IRP)



Hedging Strategy Analysis

Hedging – Analysis Requirement

- Utah Commission 2008 IRP acknowledgment requirement:

“At a minimum, we direct the Company to include the costs of hedging in its IRP analysis of resources that rely on fuels subject to volatile prices. We also direct the Company to perform sensitivity analysis to determine a hedging strategy which minimizes costs and risks for customers.”

Hedging – Terminology

- What are hedges?
 - Fixed price products: physicals and swaps
 - Refer to “PacifiCorp Balancing and Hedging Products” paper
 - Options (not currently used by PacifiCorp)
- What are “hedging costs”?
 - Could refer to the outcome of hedging a position (gain or loss)
 - Not appropriate to include in IRP resource costs because they are known only after settlement has occurred
 - Could refer to hedging program costs: bid/ask spreads, broker fees, collateral funding costs
 - Although currently small, these costs will be included as fixed O&M costs in the Planning and Risk model
 - Research needed to determine if reasonable to include in System Optimizer; issue of how to treat as a resource-specific cost

Cost Minimization versus Risk Minimization

- Hedging is intended to reduce risk, not cost
 - Specifically, reduce the risk of high cost outcomes due to significant adverse price movements (not to reduce cost in a normal market)
 - Cannot predict market prices
 - Must give up upside to mitigate downside
- Optimum level of hedges is subjective and is dependent on risk tolerance
 - There is no method to objectively optimize a hedging level
 - Levers are term, hedge level, and instruments used

Evaluating Hedging Programs

- Potential criteria for evaluating the success of the hedging program:
 - Quantitative
 - Has the current hedging program reduced risk?
 - Has the Company successfully followed its hedging program?
 - Qualitative
 - Is the Company's hedge program risk tolerance level in line with customer and regulator expectations?
- What triggers changes to the Company's hedging strategy?
 - Change in hedge costs (bid/ask spread due to liquidity, broker fees, collateral costs) and liquidity
 - Change in risk tolerance level
 - Change in resources

Sensitivity Analysis

- Discussion on hedging analysis and Utah commission expectations



Market Reliance Analysis

Market Reliance Analysis

- Purpose of the analysis: determine the risk of relying on firm market purchases given a worst-case scenario
- Suggest developing an “illiquid market” scenario simulated using the stochastic Planning and Risk model
 - Select two or three top-performing portfolios with differing levels of front office transaction (FOT) reliance
 - Assume FOT availability is sharply curtailed in the PaR simulation for two years prior to the in-service date of the next gas plant
 - Assume FOT prices escalate dramatically, reflecting both reduced liquidity and other adverse market dynamics occurring simultaneously

Market Reliance Analysis

- Include emergency generators in the PaR model, reflecting the temporary lease cost for mobile gas turbines
- For the portfolio simulations, compare the stochastic average cost, stochastic upper-tail cost, and cost distributions for the 100 Monte Carlo iterations
- Other suggestions on the study?

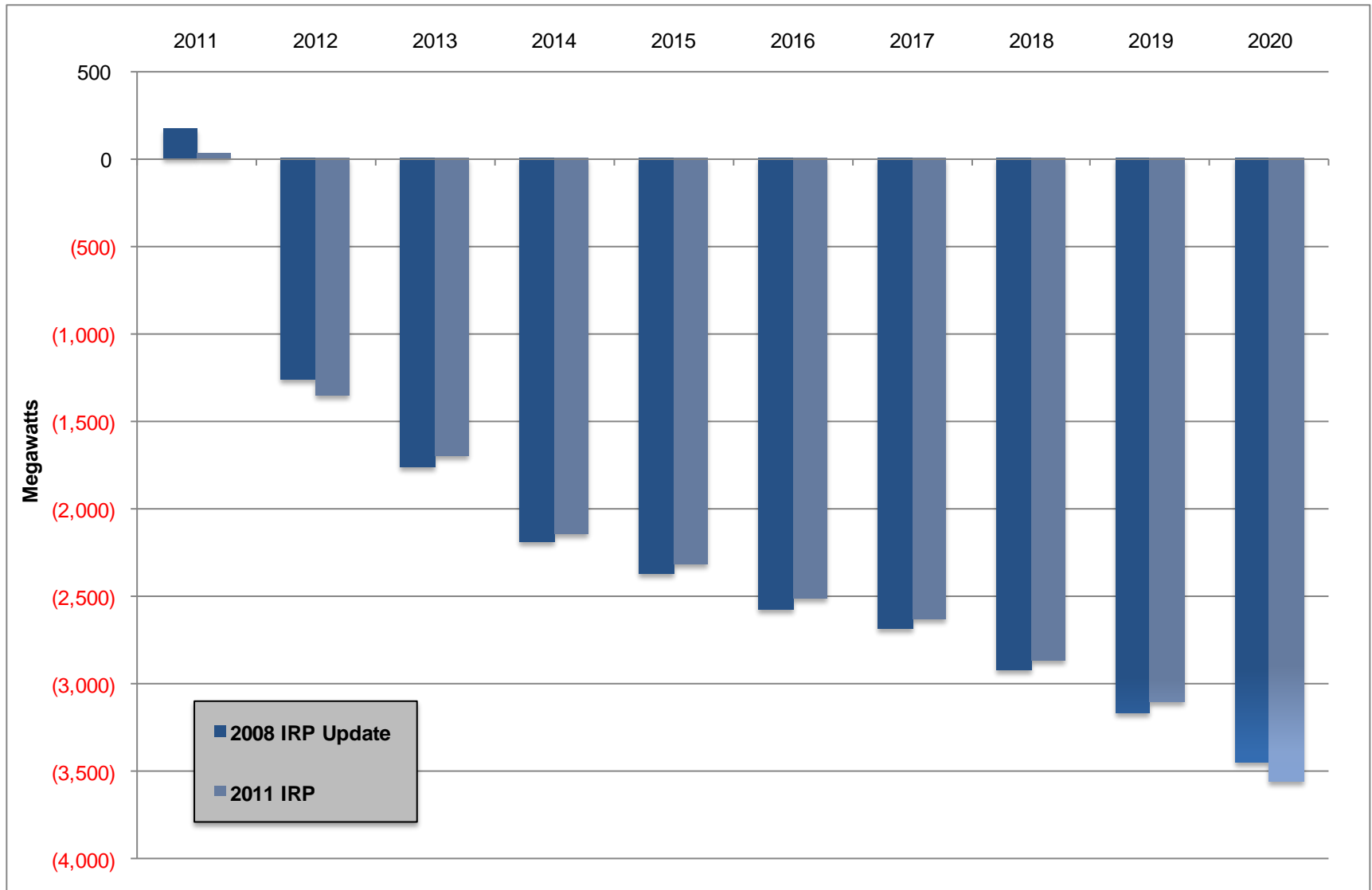
Market Reliance Analysis

- Western market assessment
 - Evaluate the findings and underlying assumptions for the 2010 WECC *Power Supply Assessment* (PSA) and the 2009 NERC *Long Term Reliability Assessment* (LTRA)
 - Evaluate other resource adequacy assessments: e.g., Pacific Northwest Resource Adequacy Forum’s “Adequacy Reassessment for 2015”

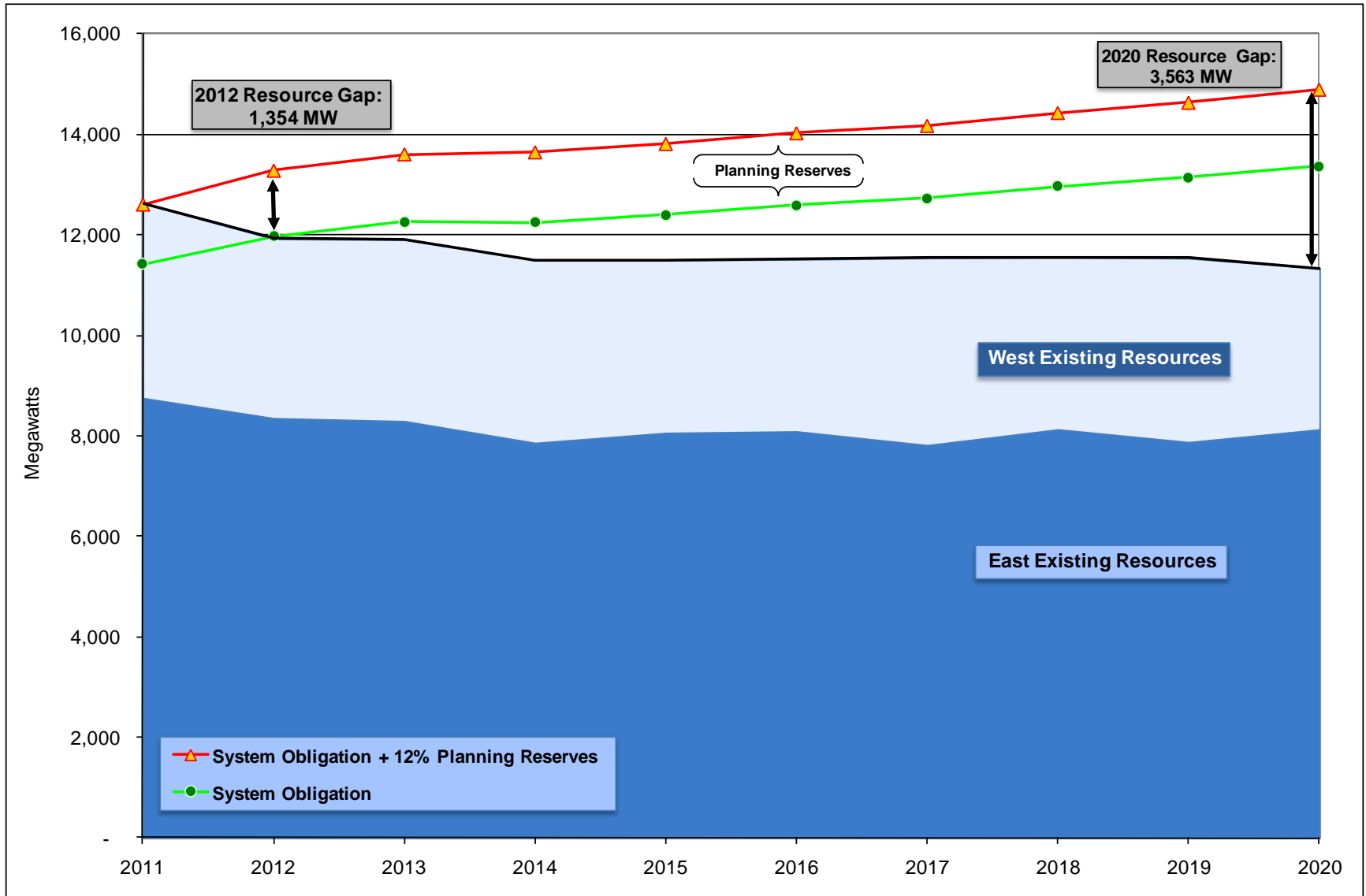


Capacity Load and Resource Balance

System Capacity Position Comparison



Initial Capacity Load and Resource Balance



Capacity Load and Resource Balance Changes

- September 2010 Coincident Peak Forecast
- Update to Turbine Upgrades for East and West
- Wind Additions for 2010:
 - Dunlap 1 (111 MW) and Top of the World (200.5 MW)
- Modeling change to Monsanto curtailment/reserves contract: 47 MW reduction in non-spin contingency reserves available for the peak hour; this amount now assumed to be non-firm (available only in the event of double-contingency outages)
- Klamath dams assumed to be removed January 2020 rather than year-end 2020

2011 IRP Initial Capacity L&R Balance, Line Item Details

Calendar Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
East										
Thermal	6,019	6,026	6,028	6,028	6,029	6,047	6,047	6,047	6,047	6,047
Hydro	132	132	132	132	132	132	132	132	132	132
Class 1 DSM	463	468	468	468	468	468	468	468	468	468
Renewable	179	179	179	178	176	176	176	176	176	176
Purchase	655	705	604	304	304	283	283	283	283	283
Qualifying Facilities	152	152	152	152	152	152	152	152	152	152
Interruptible	281	281	281	281	281	281	281	281	281	281
Transfers	869	404	444	309	511	544	269	584	330	584
East Existing Resources	8,750	8,347	8,288	7,853	8,053	8,083	7,808	8,123	7,869	8,123
Load	7,111	7,343	7,565	7,805	8,009	8,200	8,378	8,544	8,712	8,895
Sale	758	997	1,045	745	745	745	659	659	659	659
East Obligation	7,869	8,340	8,610	8,550	8,754	8,945	9,037	9,203	9,371	9,554
Planning reserves	776	826	871	900	924	950	961	981	1,001	1,023
Non-owned reserves	70	70	70	70	70	70	70	70	70	70
East Reserves	847	897	941	970	995	1,020	1,031	1,051	1,071	1,093
East Obligation + Reserves	8,715	9,236	9,551	9,520	9,749	9,965	10,068	10,254	10,442	10,647
East Position	34	(890)	(1,264)	(1,667)	(1,696)	(1,882)	(2,260)	(2,131)	(2,573)	(2,524)
East Reserve Margin	12%	1%	(3%)	(8%)	(7%)	(9%)	(13%)	(11%)	(15%)	(14%)
West										
Thermal	2,552	2,552	2,552	2,552	2,552	2,564	2,562	2,570	2,582	2,582
Hydro	1,135	977	976	976	982	982	982	978	925	770
Class 1 DSM	-	-	-	-	-	-	-	-	-	-
Renewable	77	71	71	71	71	71	71	71	71	71
Purchase	856	247	331	226	221	225	255	269	285	242
Qualifying Facilities	136	136	136	136	136	136	136	136	136	136
Transfers	(870)	(404)	(443)	(307)	(512)	(545)	(269)	(584)	(329)	(584)
West Existing Resources	3,886	3,580	3,624	3,654	3,450	3,433	3,736	3,440	3,670	3,217
Load	3,267	3,373	3,394	3,447	3,492	3,540	3,583	3,650	3,666	3,712
Sale	290	258	258	258	158	108	108	108	108	108
West Obligation	3,557	3,631	3,652	3,705	3,650	3,648	3,691	3,758	3,774	3,820
Planning reserves	324	406	399	418	412	411	412	419	419	429
Non-owned reserves	7	7	7	7	7	7	7	7	7	7
West Reserves	331	413	405	424	418	417	419	425	425	436
West Obligation + Reserves	3,887	4,044	4,057	4,129	4,068	4,065	4,110	4,183	4,199	4,256
West Position	(1)	(464)	(434)	(475)	(618)	(632)	(374)	(743)	(529)	(1,039)
West Reserve Margin	12%	(1%)	0%	(1%)	(5%)	(5%)	2%	(8%)	(2%)	(15%)
System										
Total Resources	12,636	11,926	11,911	11,507	11,503	11,516	11,544	11,563	11,539	11,339
System Obligation	11,425	11,971	12,262	12,255	12,404	12,593	12,728	12,961	13,145	13,374
Reserves	1,177	1,309	1,346	1,394	1,413	1,437	1,450	1,476	1,496	1,529
Obligation + 12% Planning Reserves	12,603	13,280	13,609	13,649	13,816	14,030	14,178	14,437	14,641	14,903
System Position	33	(1,354)	(1,697)	(2,142)	(2,314)	(2,514)	(2,634)	(2,874)	(3,103)	(3,563)
Reserve Margin	12%	1%	(2%)	(5%)	(7%)	(8%)	(9%)	(10%)	(12%)	(15%)

Initial L&R Balance: Line Item Differences, 2011 IRP less 2008 IRP Update

Calendar Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
East										
Thermal	10	17	17	17	7	(12)	(12)	(12)	(12)	(12)
Hydro	-	-	-	-	-	-	-	-	-	-
Class 1 DSM	-	-	-	-	-	-	-	-	-	-
Renewable	21	21	21	21	21	21	21	21	21	21
Purchase	-	-	-	-	-	-	-	-	-	-
Qualifying Facilities	0	0	0	0	0	0	0	0	0	0
Interruptible	(46)	(46)	(46)	(46)	(46)	(46)	(46)	(46)	(46)	(46)
Transfers	131	186	12	(21)	(13)	284	(320)	261	(254)	2
East Existing Resources	117	179	5	(28)	(30)	248	(356)	225	(290)	(34)
Load	75	51	(12)	(41)	(61)	(95)	(83)	(84)	(92)	(67)
Sale	-	-	-	-	-	-	-	-	-	-
East Obligation	75	51	(12)	(41)	(61)	(95)	(83)	(84)	(92)	(67)
Planning reserves	15	12	4	1	(2)	(6)	(4)	(5)	(6)	(3)
Non-owned reserves	-	-	-	-	-	-	-	-	-	-
East Reserves	15	12	4	1	(2)	(6)	(4)	(5)	(6)	(3)
East Obligation + Reserves	90	63	(8)	(40)	(63)	(101)	(87)	(89)	(98)	(70)
East Position	27	116	13	12	32	348	(269)	313	(193)	35
East Reserve Margin	0%	1%	0%	0%	0%	4%	(3%)	3%	(2%)	0%
West										
Thermal	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
Hydro	-	-	-	-	-	-	-	-	-	(155)
Class 1 DSM	-	-	-	-	-	-	-	-	-	-
Renewable	-	-	-	-	-	-	-	-	-	-
Purchase	-	-	50	-	-	-	-	-	-	-
Qualifying Facilities	(1)	2	2	2	2	2	2	2	2	2
Transfers	(131)	(185)	(11)	22	11	(285)	319	(261)	256	(2)
West Existing Resources	(134)	(186)	38	21	10	(286)	318	(262)	255	(158)
Load	31	18	(6)	(12)	(12)	(6)	(5)	(3)	(8)	(12)
Sale	-	-	-	-	-	-	-	-	-	-
West Obligation	31	18	(6)	(12)	(12)	(6)	(5)	(3)	(8)	(12)
Planning reserves	4	2	(7)	(1)	(1)	(1)	(1)	(0)	(1)	(1)
Non-owned reserves	-	-	-	-	-	-	-	-	-	-
West Reserves	4	2	(7)	(1)	(1)	(1)	(1)	(0)	(1)	(1)
West Obligation + Reserves	35	20	(13)	(13)	(13)	(7)	(6)	(3)	(9)	(13)
West Position	(169)	(206)	51	35	24	(279)	324	(258)	264	(144)
West Reserve Margin	(5%)	(6%)	1%	1%	1%	(8%)	9%	(7%)	7%	(4%)
System										
Total Resources	(18)	(7)	43	(7)	(20)	(38)	(38)	(37)	(35)	(192)
System Obligation	106	69	(18)	(53)	(73)	(101)	(88)	(87)	(100)	(79)
Reserves	18	14	(3)	(1)	(3)	(7)	(5)	(5)	(6)	(4)
Obligation + 12% Planning Reserves	124	83	(21)	(54)	(76)	(108)	(93)	(92)	(106)	(83)
System Position	(142)	(90)	64	47	56	70	55	55	71	(109)
Reserve Margin	(1%)	(1%)	0%	0%	0%	0%	0%	0%	0%	(1%)



Portfolio Development Cases

Portfolio Development Cases

- 61 cases listed in the Case Definitions hand-out
- Response to stakeholder comments:
 - Include a distributed solar case with a buy-down program and medium input assumptions
 - *Response:* See case 44
 - How will Energy Gateway projects be handled via sensitivity analysis?
 - 16 sensitivity cases added to evaluate four Energy Gateway scenarios as part of economic/risk analysis (not reliability)

Energy Gateway Scenarios			
Base	Scenario 1	Scenario 2	Scenario 3
Gateway Central*	Gateway Central	Gateway Central	Gateway Central
Sigurd - Red Butte	Sigurd - Red Butte	Sigurd - Red Butte	Sigurd - Red Butte
Harry Allen Upgrade	Harry Allen Upgrade	Harry Allen Upgrade	Harry Allen Upgrade
	Windstar - Populus	Windstar - Populus	Windstar - Populus
		Aeolus - Mona	Aeolus - Mona
			Populus - Hemingway
			H - B - CC **

* Populus - Terminal, Mona-Oquirrh

** Hemingway - Boardman - Cascade Crossing. Treated as a resource option in System Optimizer.

Portfolio Development Cases

- What case definitions will be used to support the Utah Commission’s requirements to analyze hedging strategies, western power markets, and stochastic analysis of market reliance?
 - *Response:*
 - Hedging analysis to be conducted by PacifiCorp’s risk management department; IRP models will not be used
 - Analysis of western power markets is not an IRP modeling exercise; will evaluate WECC Power Supply Assessment, NERC Long-term Reliability Assessment, etc.
 - As discussed earlier, will select portfolios with a range of front office transactions for a stochastic production cost analysis of an “illiquid market” scenario

Portfolio Development Cases

- Will any of these cases be used to evaluate the Company's hydro adequacy per the Utah Commission's requirement to review the 2008 IRP hydro capacity accounting methodology?
 - *Response:* PacifiCorp's hydro operations planning group will do the analysis; no IRP portfolio modeling is planned
- Recommend that alternative load growth and other cases be subjected to stochastic analysis to ensure a variety of resource types are tested for risk assessment
 - *Response:* PacifiCorp will review portfolio results to ensure that a broad array of resource types and quantities will be simulated in the Planning and Risk model. Initial candidates for stochastic analysis are identified in the Case Definitions hand-out

Portfolio Development Cases

- Run the coal plant retirement evaluation cases first; eliminate duplicative core cases and/or fix early coal plant retirements in all the core cases
 - *Response:* The Company will treat coal plant retirement evaluation as a sensitivity analysis that will inform the IRP action plan; Core cases will reflect the results of underlying assumptions to achieve risk-adjusted, least-cost portfolio outcome
- Request that the Company clarify why it thinks modeling a carbon cost along with a hard cap is appropriate (cases 31 and 32)
 - *Response:* The carbon costs for these cases reflect the assumed federal cap & trade CO₂ allowance prices that impact wholesale electricity and natural gas commodity prices used for portfolio modeling.

Portfolio Development Cases

- Why do the DSM potential cases (42 through 47) assume low gas prices and economic growth?
 - *Response:* This was an error as mentioned at the August 4th public meeting; the cases have been corrected to reflect medium gas price and load forecast assumptions
- Recommend including at least one low gas price case to the set designed to evaluate coal plant retirements
 - *Response:* New Case #27 incorporates low gas prices
- Explain the rationale behind Core Cases 4, 13, and 22, which assume high carbon costs and low gas prices; it is unlikely that gas prices will remain low in a high carbon cost scenario
 - *Response:* These cases were intended to capture a scenario where clean generation technologies reduce gas demand and/or more favorable gas supply fundamentals offset upward price pressure caused by high CO₂ costs. Core cases with high CO₂ /low gas prices have been removed.