

Appendix A

PacifiCorp Avoided Cost (GRID and Differential Revenue Requirement) Model Updates through April 2012 Case No. 03-035-14

GRID Scenario Study Period

January 1, 2013 through December 31, 2032 (20-year study)
Avoided Cost prices starting in January 2013

Official Forward Price Curve (Gas and Market Prices)

Updated to PacifiCorp's May 10, 2012 Official Forward Price Curve (1205 OFPC)

Calculation Changes from the Quarterly Filing

Using wind integration costs as listed in Appendix E
Changed fixed pipeline costs from variable O&M to fixed O&M in Appendix B Table 4
Potential wind QFs partially displace CCCT
"See IRP Partial Displacements (this filing)" below

Discount Rate

7.154% discount rate as used in the 2011 IRP Update
Discount rate is consistent with the Commission's order in Docket 11-035-T06

Fuel Prices (Coal)

Average coal cost study
2013 through 2021 – 10 Year forecast dated October 2011
Thereafter escalated at 2.5%
Incremental coal cost study dated October 2011

Hydro Resources

10 year forecast dated September 9, 2011
Hydro forecast extended past 2022 at 2022 hydro level

Inflation Rates

Consistent with the Company's most recent inflation rate study dated May 2012

IRP Resources

IRP Resources transmission, thermal, DSM, FOT, and wind resources
2011 IRP Update Dated March 30, 2012
Table 5.5 – 2012 Business Plan Portfolio

Load Forecast (Retail)

20-year load forecast dated November 2011

Long-Term Contracts

Long-term contracts which have prices that are indexed to market were updated to be consistent with the 2012 May Official Forward Price Curve (1205 OFPC)

Modeling updates include: Biomass One. OM Power I Geothermal QF was added. Blue Mountain Wind QF and Pioneer Wind Park I QF were removed.

Market Capacity

48 Months ended December 2011

Market cap HLH & LLH sales limited to 48 month average of all STF sales less monthly executed STF contracts as of April 2012

Potential Environmental Costs

Costs are consistent with the Company's forecast dated May 2012

Costs are excluded from fuel costing and are excluded from avoided costs

Costs included in incremental fuel costs for plant commitment and dispatch decisions starting in 2022

Environmental costs are for carbon dioxide

Proxy Resource (Next Deferrable Resource)

2013 through 2015 - Mona, Mead, NOB, COB, and Mid-Columbia Third Quarter (Q3)

High Load Hour (HLH) Front Office Trade (FOT) – 2011 IRP Update Table 5.5

2016 and thereafter – 597 MW Combined Cycle Combustion Turbine (CCCT)

Dry "F" 2x1 - East Side Resource (4500') – as modeled in 2011 IRP Update

Commencing operation June 1, 2016

Regulating Margin

Starting at 308 MW in 2013 and increasing as necessary to provide wind integration

Increasing at 10.4 MW of regulating reserve per 100 MW of incremental wind

Short-Term Firm (STF) Transactions

STF transactions have been updated to include executed STF contracts as of April 2012

Size of the Avoided Cost Resource

The avoided cost resource is assumed to be a 100 MW 85% CF thermal resource. The size of the avoided cost resource has not been changed.

Thermal Resources

Thermal resources operating characteristics were updated to reflect expected operations
Forced Outage, Planned Outage and Heat Rate levels reflect 48 months ended December 2011

Thermal resources updated to be consistent with 2011 IRP Update

Carbon plant was removed in 2015

Naughton 3 was refired to gas in 2015

Topology

There were no changes to the GRID model topology.

Transmission (Firm Transmission Rights)

Transmission updated to reflect current transmission rights

Energy Gateway transmission rights and times updated consistent with 2011 IRP Update

Transmission (Non-Firm and Short Term Firm)

Non-firm transmission - 48 months ended December 2011

Short term firm transmission – 48 months ended December 2011

STF and non-firm combined and modeled as a single transmission link

Modeled without incremental wheeling costs

Wind Integration Cost

Incremental wind integration costs calculated consistent with testimony in the current Utah general rate case (Docket No. 11-035-200), i.e. holding reserves at the level specified in the 2011 IRP Wind Integration Study.

IRP Partial Displacements (this filing)

Base Case - Thermal partial displacement was 329.4 MW. Included are QFs that are actively negotiating for new power purchase agreements as shown below. As directed in the Commission order dated October 31, 2005, wind QF indicative pricing is based on the Proxy and PDDRR methods used for non-wind QFs, with a few distinctions.

Queue	Thermal Resource	Partial Displacement Capacity MW	Energy – Capacity Factor
1	AG Hydro (Signed)	10.0	29.7%
2	Dorena Hydro (Signed)	6.1	28.2%
3	TMF Biofuels (Signed)	4.8	88.5%
4	Columbia Biogas (Signed)	3.0	45.7%
5	EBD Hydro (Signed)	3.0	39.1%
6	OM Power Geothermal (Signed)	10.0	64.5%
7	QF - 06 - ID - Wind *	5.9	29.8%
8	QF - 10 - UT - Biogas	3.0	95.0%
9	QF - 14 - WY - Wind *	31.2	38.3%
10	QF - 15 - WY - Wind *	31.2	38.3%
11	QF - 19 - WY - Wind *	31.2	38.3%
12	QF - 21 - UT - Gas	36.0	95.0%
13	QF - 24 - UT - Gas	50.0	85.0%
14	QF - 26 - WY - Wind *	33.9	40.0%
15	QF - 28 - UT - Wind *	26.1	33.9%
Displacement in Base Case MW		329.4 MW	

* Wind resources partially displace the proxy resource based upon the on-peak capacity factor as ordered in Docket 03-035-14 dated October 31, 2005.

Market front office trades (FOT) are displaced based upon the year the FOT is available and from highest to lowest price. FOT available in order of highest to lowest price are Mona, Mead (available in 2015), Nevada Oregon Border (NOB), California Oregon Border (COB), and Mid Columbia. FOT are listed in Table 5.5 of the 2011 IRP Update. The partial displacement is shown below.

Displacement in Base Case				
Year	Displaced Resource	2011 IRP Update	Displacement	Remaining MW
2013	FOT – Mona	150	150.0	0.0
	– Mead	0	0.0	0.0
	– NOB	100	100.0	0.0
	– COB	400	79.4	320.6
2014	FOT – Mona	300	300.0	0.0
	– Mead	0	0.0	0.0
	– NOB	100	29.4	0.0
2015	FOT – Mona	300	300.0	0.0
	– Mead	31.3	29.4	1.9
2016	597 MW CCCT Dry "F" 2x1 - East Side Resource (4500')	597	329.4	267.6

Avoided Cost Case – A 100 MW 85% capacity factor (CF) avoided cost resource is added to the thermal resource queue.

Queue	Thermal Resource	Partial Displacement Capacity MW	Energy – Capacity Factor
1	AG Hydro (Signed)	10.0	29.7%
2	Dorena Hydro (Signed)	6.1	28.2%
3	TMF Biofuels (Signed)	4.8	88.5%
4	Columbia Biogas (Signed)	3.0	45.7%
5	EBD Hydro (Signed)	3.0	39.1%
6	OM Power Geothermal (Signed)	10.0	64.5%
7	QF - 06 - ID - Wind *	5.9	29.8%
8	QF - 10 - UT - Biogas	3.0	95.0%
9	QF - 14 - WY - Wind *	31.2	38.3%
10	QF - 15 - WY - Wind *	31.2	38.3%
11	QF - 19 - WY - Wind *	31.2	38.3%
12	QF - 21 - UT - Gas	36.0	95.0%
13	QF - 24 - UT - Gas	50.0	85.0%
14	QF - 26 - WY - Wind *	33.9	40.0%
15	QF - 28 - UT - Wind *	26.1	33.9%
16	Avoided Cost Resource	100.0	85.0%
Displacement in Avoided Cost Case MW		429.4 MW	

* Wind resources partially displace the proxy resource based upon the on-peak capacity factor as ordered in Docket 03-035-14 dated October 31, 2005

The Table below shows the FOT that are displaced for the Avoided Cost Case which includes the 100 MW 85% capacity factor avoided cost resource.

Displacement in Avoided Cost Case				
Year	Displaced Resource	2011 IRP Update	Displacement	Remaining MW
2013	FOT – Mona	150	150.0	0.0
	– Mead	0	0.0	0.0
	– NOB	100	100.0	0.0
	– COB	400	179.4	220.6
2014	FOT – Mona	300	300.0	0.0
	– Mead	0	0.0	0.0
	– NOB	100	100.0	0.0
	– COB	400	29.4	370.6
2015	FOT – Mona	300	300.0	0.0
	– Mead	31.3	31.3	0.0
	– NOB	100	98.1	1.9
2016	597 MW CCCT Dry "F" 2x1 - East Side Resource (4500')	597	429.4	167.6

IRP Partial Displacements (last filing)

Thermal and Market Purchase Resources

Base Case - thermal partial displacement was 197.4 MW. Included are QFs that are actively negotiating for new power purchase agreements as shown below.

Queue	Thermal Resource	Capacity MW	Energy – Capacity Factor
1	Roseburg Dillard Biomass (Signed)	20.0	90.0%
2	Roseburg Weed Biomass (Signed)	10.0	85.0%
3	AG Hydro (Signed)	10.0	29.7%
4	Dorena Hydro (Signed)	6.1	28.2%
5	TMF Biofuels (Signed)	4.8	88.5%
6	Columbia Biogas (Signed)	3.0	45.7%
7	QF - 10 - UT - Biogas	3.0	95.0%
8	QF - 18 - UT - Biomass	10.5	94.0%
9	QF - 21 - UT - Gas	36.0	95.0%
10	QF - 23 - UT - Gas	44.0	85.0%
11	QF - 24 - UT - Gas	50.0	85.0%
Displacement in Base Case MW		197.4 MW	

Market front office trades (FOT) are displaced based upon the year the FOT is availability and from highest to lowest price. FOT available in order of highest to lowest price are Mona (Available 2013), Utah, West Main, Mid Columbia, and California Oregon Border (COB). FOT are listed in Table 8.16 of the 2011 IRP. The partial displacement is shown below.

Displacement in Base Case				
Year	Displaced Resource	2011 IRP	Displacement	Remaining MW
2013	FOT – Mona	150	150.0	0.0
	– Utah	204	47.4	156.6
2014	FOT – Mona	300	197.4	102.6
2015	FOT – Mona	300	197.4	102.6
2016	597 MW CCCT Dry "F" 2x1 - East Side Resource (4500')	597	197.4	399.6

Avoided Cost Case – A 100 MW 85% capacity factor (CF) avoided cost resource is added to the thermal resource queue.

Queue	Thermal Resource	Capacity MW	Energy – Capacity Factor
1	Roseburg Dillard Biomass (Signed)	20.0	90.0%
2	Roseburg Weed Biomass (Signed)	10.0	85.0%
3	AG Hydro (Signed)	10.0	29.7%
4	Dorena Hydro (Signed)	6.1	28.2%
5	TMF Biofuels (Signed)	4.8	88.5%
6	Columbia Biogas (Signed)	3.0	45.7%
7	QF - 10 - UT - Biogas	3.0	95.0%
8	QF - 18 - UT - Biomass	10.5	94.0%
9	QF - 21 - UT - Gas	36.0	95.0%
10	QF - 23 - UT - Gas	44.0	85.0%
11	QF - 24 - UT - Gas	50.0	85.0%
12	Avoided Cost Resource	<u>100.0</u>	85.0%
Displacement in Base Case MW		297.4 MW	

The Table below shows the FOT that are displaced for the Avoided Cost Case which includes the 100 MW 85% capacity factor avoided cost resource.

Displacement in Avoided Cost Case				
Year	Displaced Resource	2011 IRP	Displacement	Remaining MW
2013	FOT – Mona	150	150.0	0.0
	– Utah	204	147.4	56.6
2014	FOT – Mona	300	297.4	2.6
2015	FOT – Mona	300	297.4	2.6
2016	597 MW CCCT Dry "F" 2x1 - East Side Resource (4500')	597	297.4	299.6

Wind Resources

A total of 2,100 MW of wind is included in the 2011 IRP of which 489.5 MW is partially displaced by potential and signed QF Wind Resources. All IRP wind is located in Wyoming with the first proposed wind projects available in 2018. The Table below shows the potential wind resources that partially displace the 2,100 MW of wind listed in the IRP.

Potential and Signed QF Wind Resource		
Year	Displaced Resource	MW
2013	Blue Mtn Wind I (Signed)	80.0
2012	North Point Wind (Signed)	80.0
2012	Five Pine Wind (Signed)	40.0
2013	High Plateau Wind QF (Signed)	10.0
2013	Lower Ridge Wind QF (Signed)	10.0
2013	Mule Hollow Wind QF (Signed)	10.0
2013	Pine City Wind QF (Signed)	10.0
2013	QF - 14 - WY - Wind	76.5
2014	QF - 15 - WY - Wind	76.5
2014	QF - 19 - WY - Wind	76.5
2016	QF - 06 - ID - Wind	20.0
Wind Resource Partial Displacement of IRP Wind		489.5

The 489.5 MW of potential QF wind resources will displace 300 MW of IRP wind scheduled for 2018 will displace 189.5 MW of wind scheduled for 2019.