

## Appendix B

### Avoided Cost Prices \$/MWh Utah Compliance Filing 2012.Q1 - 100 MW and 85% Capacity Factor

Year	Avoided Cost at 85.0% CF (2)	2011.Q4 Compliance Filing (2)	Difference
2013	\$31.31	\$35.18	(\$3.87)
2014	\$32.85	\$37.26	(\$4.41)
2015	\$34.05	\$38.24	(\$4.19)
2016	\$41.97	\$45.89	(\$3.92)
2017	\$51.75	\$56.50	(\$4.75)
2018	\$56.37	\$59.47	(\$3.10)
2019	\$59.75	\$62.11	(\$2.36)
2020	\$58.50	\$60.65	(\$2.15)
2021	\$62.69	\$67.30	(\$4.61)
2022	\$66.82	\$67.91	(\$1.09)
2023	\$68.73	\$69.14	(\$0.41)
2024	\$68.45	\$70.78	(\$2.33)
2025	\$70.41	\$72.28	(\$1.87)
2026	\$73.38	\$76.31	(\$2.93)
2027	\$75.48	\$79.17	(\$3.69)
2028	\$77.10	\$81.06	(\$3.96)
2029	\$78.98	\$83.29	(\$4.31)
2030	\$80.27	\$84.62	(\$4.35)
2031	\$81.61	\$85.97	(\$4.36)
2032	\$83.71	\$87.32	(\$3.61)

20-Year Levelized Prices (Nominal) @ 7.17% Discount Rate (1)			
\$/MWh	\$56.37 (3)	\$59.74 (4)	(\$3.37)

Footnotes:

- (1) 2011 IRP Discount Rate
- (2) Total Avoided Costs with Capacity included at an 85.0% capacity factor
- (3) 20-Year NPC is 2013 - 2032  
Avoided Costs calculated monthly are \$56.37/MWH
- (4) 2032 extrapolated

## Appendix B

**Table 1**  
**Avoided Cost Prices**  
**Utah Compliance Filing 2012.Q1 - 100 MW and 85% Capacity Factor**  
**Partial Displacement of East Side 597 MW CCCT (Dry "F" 2x1)**

Year	Capacity Price \$/kW-yr		Energy Only Price \$/MWh <sup>(2)</sup>	Total Price @ 85.0% Capacity Factor \$/MWh
2013	\$0.00		\$31.31	\$31.31
2014	\$0.00		\$32.85	\$32.85
2015	\$0.00		\$34.05	\$34.05
2016	\$84.61	(4)	\$30.64	\$41.97
2017	\$147.80		\$31.90	\$51.75
2018	\$150.60		\$36.14	\$56.37
2019	\$153.32		\$39.16	\$59.75
2020	\$155.93		\$37.61	\$58.50
2021	\$158.73		\$41.37	\$62.69
2022	\$161.60		\$45.12	\$66.82
2023	\$164.51		\$46.63	\$68.73
2024	\$167.47		\$46.02	\$68.45
2025	\$170.50		\$47.51	\$70.41
2026	\$173.58		\$50.07	\$73.38
2027	\$176.86		\$51.73	\$75.48
2028	\$180.24		\$52.96	\$77.10
2029	\$183.65		\$54.32	\$78.98
2030	\$187.13		\$55.14	\$80.27
2031	\$190.87		\$55.98	\$81.61
2032	\$194.49		\$57.66	\$83.71

20-Year Levelized Prices (Nominal) @ 7.17% Discount Rate (1) (3)

\$/kW	\$118.16		
\$/MWh		\$40.51	\$56.37 (5)

Footnotes:

- (1) Discount Rate - Company Official Discount Rate
- (2) 'Energy Only' is the GRID calculated costs and includes some capacity costs.
- (3) 20 Year NPC is 2013 - 2032
- (4) Capacity payment for 2016 is 7/12 of annual. CCCT start 6/1/2016.
- (5) Avoided Costs calculated annually starting January 2013  
 Avoided Costs calculated monthly are \$56.37/MWH

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**Table 2**  
**Avoided Energy Costs - Scheduled Hours (\$/MWh)**  
**Utah Compliance Filing 2012.Q1 - 100 MW and 85% Capacity Factor**  
**Partial Displacement of East Side 597 MW CCCT (Dry "F" 2x1)**

Year	Annual	Winter Season					Summer Season				Winter Season			IRP Resource Energy Cost
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
<b>Energy Only</b>														
2013	\$31.31	\$29.91	\$30.57	\$28.99	\$26.29	\$24.94	\$23.93	\$40.32	\$42.16	\$40.15	\$29.94	\$28.61	\$29.63	\$0.00
2014	\$32.85	\$31.92	\$33.27	\$32.06	\$28.16	\$26.78	\$23.87	\$43.45	\$43.83	\$42.72	\$29.56	\$27.61	\$30.67	\$0.00
2015	\$34.05	\$31.08	\$30.44	\$31.71	\$29.18	\$26.92	\$26.99	\$46.95	\$46.64	\$46.48	\$32.66	\$27.99	\$31.06	\$0.00
2016	\$30.64	\$30.58	\$31.84	\$33.15	\$28.46	\$30.31	\$26.80	\$30.35	\$30.48	\$28.95	\$30.29	\$32.89	\$33.50	\$32.92
2017	\$31.90	\$34.52	\$31.92	\$32.84	\$31.51	\$29.17	\$28.32	\$32.12	\$32.34	\$31.12	\$32.78	\$32.71	\$33.33	\$34.90
2018	\$36.14	\$40.03	\$36.39	\$36.78	\$36.11	\$35.07	\$33.49	\$36.06	\$36.14	\$34.35	\$35.73	\$35.73	\$37.70	\$38.21
2019	\$39.16	\$40.24	\$38.64	\$39.63	\$37.67	\$39.37	\$38.64	\$40.23	\$40.37	\$37.69	\$37.90	\$38.99	\$40.38	\$41.52
2020	\$37.61	\$38.41	\$39.14	\$37.51	\$38.81	\$37.70	\$36.61	\$38.24	\$38.41	\$32.64	\$37.71	\$36.82	\$39.29	\$40.47
2021	\$41.37	\$40.72	\$41.46	\$40.65	\$43.34	\$40.86	\$40.00	\$40.87	\$40.79	\$40.72	\$41.51	\$42.88	\$42.71	\$42.79
2022	\$45.12	\$44.11	\$44.19	\$45.13	\$47.99	\$44.90	\$42.69	\$44.54	\$44.82	\$44.56	\$45.00	\$45.23	\$48.16	\$47.02
2023	\$46.63	\$50.24	\$46.67	\$47.69	\$50.89	\$46.28	\$45.38	\$46.75	\$46.91	\$44.11	\$44.88	\$44.66	\$45.09	\$48.50
2024	\$46.02	\$45.85	\$47.72	\$46.20	\$49.43	\$45.95	\$44.35	\$45.19	\$45.48	\$45.03	\$45.85	\$45.72	\$45.64	\$47.66
2025	\$47.51	\$48.17	\$48.04	\$47.46	\$51.59	\$46.99	\$45.18	\$46.67	\$46.76	\$46.87	\$47.36	\$47.53	\$47.63	\$49.00
2026	\$50.07	\$51.48	\$49.26	\$51.45	\$55.10	\$49.76	\$48.27	\$49.55	\$49.17	\$48.55	\$49.44	\$49.17	\$49.58	\$51.82
2027	\$51.73	\$52.23	\$51.43	\$51.37	\$57.42	\$51.63	\$50.13	\$51.61	\$51.74	\$49.86	\$51.48	\$50.74	\$51.08	\$53.65
2028	\$52.96	\$51.81	\$54.00	\$52.54	\$59.26	\$53.25	\$51.38	\$51.81	\$52.80	\$51.54	\$53.06	\$52.14	\$52.06	\$54.78
2029	\$54.32	\$54.45	\$53.52	\$54.21	\$60.50	\$53.74	\$52.67	\$53.53	\$53.56	\$52.69	\$54.29	\$54.37	\$54.30	\$55.62
2030	\$55.14	\$56.83	\$56.44	\$54.00	\$61.19	\$54.18	\$51.77	\$54.02	\$54.28	\$53.72	\$54.48	\$54.83	\$56.05	\$55.91
2031	\$55.98	\$57.24	\$57.48	\$54.08	\$60.23	\$53.77	\$52.37	\$52.80	\$52.95	\$56.99	\$59.44	\$57.57	\$57.02	\$57.18
2032	\$57.66	\$58.24	\$58.81	\$55.12	\$62.71	\$54.72	\$54.74	\$53.86	\$54.08	\$57.71	\$61.24	\$61.01	\$59.93	\$58.30

IRP Resource Energy Costs are provided for comparison purposes only.

## Appendix B

### Table 3

**Avoided Energy Costs - Unscheduled or Non-dispatch hours(\$/MWh)  
Utah Compliance Filing 2012.Q1 - 100 MW and 85% Capacity Factor  
Partial Displacement of East Side 597 MW CCCT (Dry "F" 2x1)**

Year	Annual	Winter Season					Summer Season				Winter Season			IRP Resource Energy Cost
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
<b>Energy Only</b>														
2013	\$31.31	\$29.91	\$30.57	\$28.99	\$26.29	\$24.94	\$23.93	\$40.32	\$42.16	\$40.15	\$29.94	\$28.61	\$29.63	\$0.00
2014	\$32.85	\$31.92	\$33.27	\$32.06	\$28.16	\$26.78	\$23.87	\$43.45	\$43.83	\$42.72	\$29.56	\$27.61	\$30.67	\$0.00
2015	\$34.05	\$31.08	\$30.44	\$31.71	\$29.18	\$26.92	\$26.99	\$46.95	\$46.64	\$46.48	\$32.66	\$27.99	\$31.06	\$0.00
2016	\$30.57	\$30.58	\$31.84	<b>\$32.92</b>	\$28.46	\$30.31	\$26.80	\$30.35	\$30.48	\$28.95	\$30.29	\$32.89	<b>\$32.92</b>	\$32.92
2017	\$31.90	\$34.52	\$31.92	\$32.84	\$31.51	\$29.17	\$28.32	\$32.12	\$32.34	\$31.12	\$32.78	\$32.71	\$33.33	\$34.90
2018	\$36.14	\$40.03	\$36.39	\$36.78	\$36.11	\$35.07	\$33.49	\$36.06	\$36.14	\$34.35	\$35.73	\$35.73	\$37.70	\$38.21
2019	\$39.16	\$40.24	\$38.64	\$39.63	\$37.67	\$39.37	\$38.64	\$40.23	\$40.37	\$37.69	\$37.90	\$38.99	\$40.38	\$41.52
2020	\$37.61	\$38.41	\$39.14	\$37.51	\$38.81	\$37.70	\$36.61	\$38.24	\$38.41	\$32.64	\$37.71	\$36.82	\$39.29	\$40.47
2021	\$41.32	\$40.72	\$41.46	\$40.65	<b>\$42.79</b>	\$40.86	\$40.00	\$40.87	\$40.79	\$40.72	\$41.51	<b>\$42.79</b>	\$42.71	\$42.79
2022	\$44.93	\$44.11	\$44.19	\$45.13	<b>\$47.02</b>	\$44.90	\$42.69	\$44.54	\$44.82	\$44.56	\$45.00	\$45.23	<b>\$47.02</b>	\$47.02
2023	\$46.29	<b>\$48.50</b>	\$46.67	\$47.69	<b>\$48.50</b>	\$46.28	\$45.38	\$46.75	\$46.91	\$44.11	\$44.88	\$44.66	\$45.09	\$48.50
2024	\$45.88	\$45.85	<b>\$47.66</b>	\$46.20	<b>\$47.66</b>	\$45.95	\$44.35	\$45.19	\$45.48	\$45.03	\$45.85	\$45.72	\$45.64	\$47.66
2025	\$47.31	\$48.17	\$48.04	\$47.46	<b>\$49.00</b>	\$46.99	\$45.18	\$46.67	\$46.76	\$46.87	\$47.36	\$47.53	\$47.63	\$49.00
2026	\$49.79	\$51.48	\$49.26	\$51.45	<b>\$51.82</b>	\$49.76	\$48.27	\$49.55	\$49.17	\$48.55	\$49.44	\$49.17	\$49.58	\$51.82
2027	\$51.41	\$52.23	\$51.43	\$51.37	<b>\$53.65</b>	\$51.63	\$50.13	\$51.61	\$51.74	\$49.86	\$51.48	\$50.74	\$51.08	\$53.65
2028	\$52.60	\$51.81	\$54.00	\$52.54	<b>\$54.78</b>	\$53.25	\$51.38	\$51.81	\$52.80	\$51.54	\$53.06	\$52.14	\$52.06	\$54.78
2029	\$53.91	\$54.45	\$53.52	\$54.21	<b>\$55.62</b>	\$53.74	\$52.67	\$53.53	\$53.56	\$52.69	\$54.29	\$54.37	\$54.30	\$55.62
2030	\$54.58	<b>\$55.91</b>	<b>\$55.91</b>	\$54.00	<b>\$55.91</b>	\$54.18	\$51.77	\$54.02	\$54.28	\$53.72	\$54.48	\$54.83	<b>\$55.91</b>	\$55.91
2031	\$55.49	<b>\$57.18</b>	<b>\$57.18</b>	\$54.08	<b>\$57.18</b>	\$53.77	\$52.37	\$52.80	\$52.95	\$56.99	<b>\$57.18</b>	<b>\$57.18</b>	\$57.02	\$57.18
2032	\$56.66	\$58.24	<b>\$58.30</b>	\$55.12	<b>\$58.30</b>	\$54.72	\$54.74	\$53.86	\$54.08	\$57.71	<b>\$58.30</b>	<b>\$58.30</b>	<b>\$58.30</b>	\$58.30

Energy Only costs are calculated by GRID and are capped at the IRP Resource Energy Cost

*Denotes months with capped energy prices*

**Appendix B**

**Table 4  
2011 IRP Resource Cost  
CCCT (Dry "F" 2x1) - East Side Resource (4500')**

Year	Estimated Capital Cost \$/kW	Capital Cost at Real Levelized Rate \$/kW-yr	Fixed O&M \$/kW-yr	Variable O&M \$/MWh	Total O&M at Expected CF \$/kW-yr	Total Resource Fixed Costs \$/kW-yr	Fuel Cost \$/MMBtu	Total Resource Energy Cost \$/MWh	Total Resource Costs \$/MWh
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)

**CCCT (Dry "F" 2x1) - East Side Resource (4500')**

2010	\$1,024	\$85.71	\$8.82	\$7.95	\$43.85	\$129.56			
2011		\$87.68	\$9.02	\$8.13	\$44.84	\$132.52			
2012		\$89.00	\$9.16	\$8.25	\$45.51	\$134.51			
2013		\$90.60	\$9.32	\$8.40	\$46.33	\$136.93			
2014		\$92.32	\$9.50	\$8.56	\$47.22	\$139.54			
2015		\$94.17	\$9.69	\$8.73	\$48.16	\$142.33			
2016		\$95.96	\$9.87	\$8.90	\$49.09	\$145.05	\$4.67	\$32.92	\$65.84
2017		\$97.78	\$10.06	\$9.07	\$50.02	\$147.80	\$4.95	\$34.90	\$68.44
2018		\$99.64	\$10.25	\$9.24	\$50.96	\$150.60	\$5.42	\$38.21	\$72.39
2019		\$101.43	\$10.43	\$9.41	\$51.89	\$153.32	\$5.89	\$41.52	\$76.32
2020		\$103.15	\$10.61	\$9.57	\$52.78	\$155.93	\$5.74	\$40.47	\$75.86
2021		\$105.01	\$10.80	\$9.74	\$53.72	\$158.73	\$6.07	\$42.79	\$78.81
2022		\$106.90	\$10.99	\$9.92	\$54.70	\$161.60	\$6.67	\$47.02	\$83.69
2023		\$108.82	\$11.19	\$10.10	\$55.69	\$164.51	\$6.88	\$48.50	\$85.84
2024		\$110.78	\$11.39	\$10.28	\$56.69	\$167.47	\$6.76	\$47.66	\$85.67
2025		\$112.77	\$11.60	\$10.47	\$57.73	\$170.50	\$6.95	\$49.00	\$87.69
2026		\$114.80	\$11.81	\$10.66	\$58.78	\$173.58	\$7.35	\$51.82	\$91.21
2027		\$116.98	\$12.03	\$10.86	\$59.88	\$176.86	\$7.61	\$53.65	\$93.79
2028		\$119.20	\$12.26	\$11.07	\$61.04	\$180.24	\$7.77	\$54.78	\$95.69
2029		\$121.46	\$12.49	\$11.28	\$62.19	\$183.65	\$7.89	\$55.62	\$97.30
2030		\$123.77	\$12.73	\$11.49	\$63.36	\$187.13	\$7.93	\$55.91	\$98.38
2031		\$126.25	\$12.98	\$11.72	\$64.62	\$190.87	\$8.11	\$57.18	\$100.50
2032		\$128.65	\$13.23	\$11.94	\$65.84	\$194.49	\$8.27	\$58.30	\$102.44
2033		\$131.09	\$13.48	\$12.17	\$67.10	\$198.19	\$8.43	\$59.43	\$104.41
2034		\$133.71	\$13.75	\$12.41	\$68.43	\$202.14	\$8.59	\$60.56	\$106.44
2035		\$136.25	\$14.01	\$12.65	\$69.75	\$206.00	\$8.76	\$61.76	\$108.51
2036		\$138.84	\$14.28	\$12.89	\$71.08	\$209.92	\$8.92	\$62.89	\$110.53

**Sources, Inputs and Assumptions**

- Source: (a)(c)(d) Plant Costs - 2011 IRP - [Table 6.1 & 6.3]
- (b) = (a) x 0.0837
  - (e) = (d) x (8.76 x 50.3%) + (c)
  - (f) = (b) + (e)
  - (g) Table 5 - Burnertip Natural Gas Price Forecast
  - (h) = 7050 x (g) / 1000
  - (i) = (f) / (8.76 x 'Capacity Factor') + (h)

**Appendix B**

**Table 4  
2011 IRP Resource Cost  
CCCT (Dry "F" 2x1) - East Side Resource (4500')**

<b>CCCT (Dry "F" 2x1) - East Side Resource (4500')</b>
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CCCT Statistics	MW	Percent	Cap Cost	Fixed
CCCT (Dry "F" 2x1) *	512	85.8%	\$1,104	\$10.19
CCCT Duct Firing (Dry "F" 2x1)	<u>85</u>	<u>14.2%</u>	<u>\$538</u>	<u>\$0.50</u>
Capacity Weighted	597	100.0%	\$1,024	\$8.82

CCCT Statistics	MW	CF	aMW	Percent	Variable	Heat Rate
CCCT (Dry "F" 2x1) *	512	56.0%	287	95.5%	\$8.02	6,963
CCCT Duct Firing (Dry "F" 2x1)	<u>85</u>	<u>16.0%</u>	<u>14</u>	<u>4.5%</u>	<u>6.54</u>	<u>8,934</u>
Energy Weighted	597	50.3%	300	100.0%	\$7.95	7,050

Rounded

CCCT	Duct Firing	Plant Costs - 2011 IRP - [Table 6.1 & 6.3]
512	85	MW Plant capacity
\$1,104	\$538	Plant capacity cost
\$10.19	\$0.50	Fixed O&M plus on-going capital cost
\$8.02	\$6.54	Total Variable O&M Costs in \$/MWh includes Fixed Pipeline Costs (See Below)
\$3.35	\$0.55	Variable O&M Costs in \$/MWh
\$4.67	\$5.99	Fixed Pipeline Costs in \$/MWh
6,963	8,934	Heat Rate in btu/kWh
8.37%	8.37%	Payment Factor
56%	16%	Capacity Factor
	50.3%	Energy Weighted Capacity Factor
	88.2%	Capacity Factor - On-peak 50.3% / 57% (percent of hours on-peak)

<b>Company Official Inflation Forecast Dated 2011 December</b>					
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2010	1.3%	2019	1.8%	2028	1.9%
2011	2.3%	2020	1.7%	2029	1.9%
2012	1.5%	2021	1.8%	2030	1.9%
2013	1.8%	2022	1.8%	2031	2.0%
2014	1.9%	2023	1.8%	2032	1.9%
2015	2.0%	2024	1.8%	2033	1.9%
2016	1.9%	2025	1.8%	2034	2.0%
2017	1.9%	2026	1.8%	2035	1.9%
2018	1.9%	2027	1.9%	2036	1.9%

## Appendix B

**Table 5**  
**Burnertip Natural Gas Price Forecast**  
**Utah Compliance Filing 2012.Q1 - 100 MW and 85% Capacity Factor**

Year	PacifiCorp
	Delivered East Side Natural Gas Fuel Cost

2016	\$4.67
2017	\$4.95
2018	\$5.42
2019	\$5.89
2020	\$5.74
2021	\$6.07
2022	\$6.67
2023	\$6.88
2024	\$6.76
2025	\$6.95
2026	\$7.35
2027	\$7.61
2028	\$7.77
2029	\$7.89
2030	\$7.93
2031	\$8.11
2032	\$8.27
2033	\$8.43
2034	\$8.59
2035	\$8.76
2036	\$8.92

**OFPC Forecast dated Dec 30, 2011**