

Rate Analysis & Cost of Service Study

Powder River Energy Corporation
October 28, 2015

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2015 Rate Filing Base Case Objectives

- **Sufficient margins for cash needs**
- **Revenue requirement will be determined by target RUS OTIER**
 - Minimum RUS OTIER is 1.10
 - Potential maximum RUS OTIER approved by PSC – 2.0
- **Rate filing made to have rates effective in early 2017**

Sales Adjustments

- **Test year – December 31, 2014**
- **Updated actual sales through July 31, 2015**
- **Included a few adjustments to capture known changes through the end of 2015**
 - LPT sales reductions due to idle plants and load reductions beginning mid-2015

Sales Adjustment

	<u>Actual 2014</u>	<u>Adjusted 2014</u>	<u>Change in Sales</u>	<u>Percent Change</u>
Residential	219,548,449	209,408,374	(10,140,075)	-4.62%
Seasonal	8,629,837	8,675,705	45,868	0.53%
Irrigation	3,234,036	3,381,585	147,549	4.56%
General Service	142,949,998	139,503,117	(3,446,881)	-2.41%
General Service - CBM	57,654,301	48,701,747	(8,952,554)	-15.53%
Large Power	512,994,691	535,706,517	22,711,826	4.43%
Large Power - CBM	442,524,976	409,115,473	(33,409,503)	-7.55%
LPT - Coal	1,244,870,031	1,200,539,212	(44,330,819)	-3.56%
LPT/LPC - CBM	111,861,192	116,058,618	4,197,426	3.75%
LPT - General	35,000	9,800,000	9,765,000	27900.00%
Black Hills	1,001,535	1,084,005	82,470	8.23%
Lighting	3,034,755	3,042,878	8,123	0.27%
Total	2,748,338,801	2,685,017,231	(63,321,570)	-2.30%

Income Statement – RUS OTIER: 1.5

	Test Year 12/31/14	Adjustments	Adjusted Test Year	Rate Change	Adjusted w/ Rate Change
	(a)	(b)	(c)	(d)	(e)
Operating Revenues					
Base Revenue \$	173,572,073 \$	7,402,956 \$	180,975,029 \$	11,487,639 \$	192,462,668
CCR	3,173,912	(3,173,912)	0	0	0
COPA	11,111,179	(823,244)	10,287,935	0	10,287,935
Unbilled Revenue	6,862,286	(6,862,286)	0	0	0
Deferred Revenue	(4,200,000)	4,200,000	0	0	0
Other	2,167,604	5,536	2,173,140	0	2,173,140
Total	\$ 192,687,054 \$	\$ 749,050 \$	\$ 193,436,104 \$	\$ 11,487,639 \$	\$ 204,923,743
Operating Expenses					
Purchased Power \$	151,505,092 \$	6,305,350 \$	157,810,442 \$	\$	157,810,442
Transmission O&M	1,382,603	(202,217)	1,180,386		1,180,386
Distribution-Ops	8,727,711	(509,824)	8,217,887		8,217,887
Distribution-Maint.	5,125,683	210,493	5,336,176		5,336,176
Cons Acctg	2,897,793	143,202	3,040,995		3,040,995
Cust Service	83,511	2,220	85,731		85,731
Sales	5,250	885	6,135		6,135
Admin & General	6,356,723	73,866	6,430,589		6,430,589
Depreciation	9,961,084	1,153,098	11,114,182		11,114,182
Tax	525,387	1,183,991	1,709,378		1,709,378
Total	\$ 186,570,837 \$	\$ 8,361,063 \$	\$ 194,931,900 \$	\$ 0 \$	\$ 194,931,900
Return	\$ 6,116,217 \$	\$ (7,612,013) \$	\$ (1,495,796) \$	\$ 11,487,639 \$	\$ 9,991,843
Interest & Other Deductions					
Interest on L-T Debt \$	5,771,414 \$	788,642 \$	6,560,056 \$	\$	6,560,056
Interest-Other	61,904	0	61,904		61,904
Other Deductions	246,889	(53,341)	193,548		193,548
Total	\$ 6,080,207 \$	\$ 735,301 \$	\$ 6,815,508 \$	\$ 0 \$	\$ 6,815,508
Operating Margin	\$ 36,010 \$	\$ (8,347,314) \$	\$ (8,311,304) \$	\$ 11,487,639 \$	\$ 3,176,335
Non-Operating Margins					
Interest Income \$	1,242,105 \$	1,400,000 \$	2,642,105 \$	\$	2,642,105
Other Margins	25,430		25,430		25,430
G&T Capital Credits	6,415,004		6,415,004		6,415,004
Other Capital Credits	323,624		323,624		323,624
Total	\$ 8,006,163 \$	\$ 1,400,000 \$	\$ 9,406,163 \$	\$ 0 \$	\$ 9,406,163
Net Margins	\$ 8,042,173 \$	\$ (6,947,314) \$	\$ 1,094,859 \$	\$ 11,487,639 \$	\$ 12,582,498

Financial Ratios – 1.5 RUS OTIER

	Test Year	Adjusted Test Year	Proposed Test Year	RUS Minimum
Operating TIER	1.01	(0.27)	1.48	
Net TIER	2.39	1.17	2.92	1.25
RUS OTIER	1.20	(0.25)	1.50	1.10
DSC	2.05	1.45	2.33	1.25
RUS ODSC	1.46	0.73	1.62	1.10
Rate of Return	2.95%	-0.74%	6.28%	

Revenue Requirement

	RUS OTIER			RUS Min
	1.10	1.25	1.50	1.10
Rate Change	\$8,863,616	\$9,847,624	\$11,487,638	
Percent Increase	4.58%	5.09%	5.94%	
Operating Margin	\$552,313	\$1,536,321	\$3,176,335	
Operating TIER	1.08	1.48	1.48	
Net TIER	2.52	2.92	2.92	1.25
DSC	2.13	2.33	2.33	1.25
RUS ODSC	1.41	1.61	1.62	1.10

Cost Allocation Summary

<u>Account</u>	<u>Total</u>	<u>RESIDENTIAL</u>	<u>GEN SERV</u>	<u>LARGE PWR</u>	<u>Irrigation</u>	<u>LIGHTS</u>
Rate Base	202,499,757	41,343,753	23,847,633	43,886,695	972,813	471,015
Operating Revenues	193,436,104	21,124,491	12,584,228	38,481,437	375,723	303,463
Operating Expenses	194,931,900	20,831,400	12,197,761	38,557,799	424,558	447,140
Return	-1,495,796	293,090	386,467	-76,361	-48,834	-143,677
Rate of Return	-0.739 %	0.709 %	1.621 %	-0.174 %	-5.020 %	-30.504 %
Relative ROR	1.000	-0.959	-2.194	0.235	6.796	41.277
Interest	6,815,508	1,396,896	790,421	1,439,108	32,158	16,064
Operating Margins	-8,311,304	-1,103,806	-403,954	-1,515,470	-80,993	-159,742
Margin as % Revenue	-4.297 %	-5.225 %	-3.210 %	-3.938 %	-21.557 %	-52.640 %
Operating TIER	-0.219	0.210	0.489	-0.053	-1.519	-8.944
<u>Revenue Deficiencies</u>						
Uniform ROR = 4.934249	11,487,638	1,746,912	790,234	2,241,840	96,835	166,918
Deficiency % Rev	5.939 %	8.270 %	6.280 %	5.826 %	25.773 %	55.004 %
Uniform % Mar = 1.550007	11,487,638	1,453,770	608,442	2,145,186	88,184	167,034
Deficiency % Rev	5.939 %	6.882 %	4.835 %	5.575 %	23.471 %	55.043 %

Cost Allocation Summary

<u>Account</u>	<u>Total</u>	<u>GS CBM</u>	<u>LP CBM</u>	<u>LPT CBM</u>	<u>All CBM</u>	<u>LPT</u>	<u>LPT-General</u>
Rate Base	202,499,757	9,130,298	61,769,344	2,008,900	72,908,543	19,025,547	43,754
Operating Revenues	193,436,104	4,733,047	33,025,474	6,774,375	44,532,896	75,539,074	494,788
Operating Expenses	194,931,900	5,082,344	35,379,259	6,673,499	47,135,103	74,867,174	470,962
Return	-1,495,796	-349,296	-2,353,785	100,875	-2,602,206	671,899	23,826
Rate of Return	-0.739 %	-3.826 %	-3.811 %	5.021 %	-3.569 %	3.532 %	54.456 %
Relative ROR	1.000	5.177	5.157	-6.794	4.829	-4.781	-73.722
Interest	6,815,508	302,090	2,026,151	77,562	2,405,804	733,340	1,711
Operating Margins	-8,311,304	-651,386	-4,379,936	23,312	-5,008,011	-61,440	22,115
Margin as % Revenue	-4.297 %	-13.763 %	-13.262 %	0.344 %	-11.246 %	-0.081 %	4.470 %
Operating TIER	-0.219	-1.156	-1.162	1.301	-1.082	0.916	13.922
Revenue Deficiencies							
Uniform ROR = 4.934249	11,487,638	799,808	5,401,638	-1,751	6,199,695	266,867	-21,667
Deficiency % Rev	5.939 %	16.898 %	16.356 %	-0.026 %	13.922 %	0.353 %	-4.379 %
Uniform % Mar = 1.550007	11,487,638	736,160	4,968,851	82,976	5,787,988	1,251,703	-14,673
Deficiency % Rev	5.939 %	15.554 %	15.046 %	1.225 %	12.997 %	1.657 %	-2.966 %

Cost Components

<u>Accounts</u>	<u>Total</u>	<u>RESIDENTIAL</u>	<u>GEN SERV</u>	<u>LARGE PWR</u>	<u>Irrigation</u>	<u>LIGHTS</u>
Average Consumers	30,125	18,111	5,709	1,098	215	2,806
kWh Sold	2,685,017,231	219,168,084	139,503,117	535,706,517	3,381,585	3,042,878
Metered kW		0	0	1,130,431	0	0
Billing kW/HP		0	0	1,771,885	7,448	0
System Demand	26,002,228	4,079,048	2,350,114	7,091,666	102,288	31,925
Monthly Cost per Cons	71.93	18.77	34.30	538.23	39.65	0.95
Average Cost per kWh	0.009684	0.018612	0.016846	0.013238	0.030249	0.010492
Cost per Metered kW		0.00	0.00	6.27	0.00	0.00
Cost per Billing kW/HP		0.00	0.00	4.00	13.73	0.00
Purch Pwr Demand	76,710,379	6,078,964	3,653,419	14,820,864	166,827	69,434
Monthly Cost per Cons	212.20	27.97	53.33	1,124.84	64.66	2.06
Average Cost per kWh	0.028570	0.027737	0.026189	0.027666	0.049334	0.022818
Cost per Metered kW		0.00	0.00	13.11	0.00	0.00
Cost per Billing kW/HP		0.00	0.00	8.36	22.40	0.00
Energy	81,100,063	6,698,748	4,335,029	16,400,555	105,082	94,557
Monthly Cost per Cons	224.34	30.82	63.28	1,244.73	40.73	2.81
Average Cost per kWh	0.030205	0.030564	0.031075	0.030615	0.031075	0.031075
Cost per Metered kW		0.00	0.00	14.51	0.00	0.00
Cost per Billing kW/HP		0.00	0.00	9.26	14.11	0.00
Total Customer	21,111,073	6,014,645	3,035,901	2,410,194	98,362	274,466
Monthly Cost per Cons	58.40	27.67	44.31	182.92	38.12	8.15
Average Cost per kWh	0.007863	0.027443	0.021762	0.004499	0.029088	0.090199
Cost per Metered kW		0.00	0.00	2.13	0.00	0.00
Cost per Billing kW/HP		0.00	0.00	1.36	13.21	0.00
Total Expenses	204,923,742	22,871,404	13,374,463	40,723,278	472,559	470,381
Monthly Cost per Cons	566.87	105.24	195.22	3,090.72	183.16	13.97
Average Cost per kWh	0.076321	0.104356	0.095872	0.076018	0.139745	0.154584
Cost per Metered kW		0.00	0.00	36.02	0.00	0.00
Cost per Billing kW/HP		0.00	0.00	22.98	63.45	0.00

Proposed Rates

- **All rate classes modified based on COS**
 - All rate classes receive an increase under any revenue requirement except LPT-CBM and LPT-General
- **No modification to rate structures**
 - Minimize customer impact within a class
- **Customer charges and demand charges**
 - Increased a small amount reflecting PSC direction
 - Increases supported by the COS
- **Rebase PCA to include 2016 Basin rate change**
 - 5.5% increase as % of adjusted revenue

Summary of Rate Change – 1.5 RUS OTIER

	<u>Consumers</u>	<u>kWh Sold</u>	<u>Adjusted</u>	<u>Proposed</u>	<u>Change</u>	<u>% Change</u>
Residential	14,407	201,204,772	18,683,831	20,066,508	1,382,676	7.40%
Residential ToD	131	3,384,821	252,249	272,174	19,925	7.90%
Residential Heat Rate	144	4,818,781	362,057	390,393	28,336	7.83%
Residential	14,724	209,408,374	19,298,137	20,729,074	1,430,937	7.41%
Seasonal	282	8,675,705	1,551,349	1,693,929	142,580	9.19%
Irrigation	215	3,381,585	371,442	406,633	35,190	9.47%
General Service	5,707	139,503,117	12,472,434	13,473,833	1,001,399	8.03%
General Service - CBM	950	48,701,747	4,651,304	5,450,204	798,900	17.18%
Large Power	1,098	535,706,517	38,181,158	40,487,975	2,306,817	6.04%
Large Power CBM	1,216	409,115,473	32,381,165	37,853,245	5,472,079	16.90%
Large Power Trans	13	1,200,539,212	74,769,402	75,029,825	260,423	0.35%
LP Trans CBM	5	92,224,828	5,344,071	5,348,086	4,014	0.08%
LP Trans General	1	9,800,000	491,674	487,606	-4,069	-0.83%
LP Compression CBM	2	23,833,790	1,378,987	1,379,042	54	0.00%
Black Hills	2	1,084,005	57,376	57,376	0	0.00%
Security Lighting	0	2,117,049	218,615	229,398	10,783	4.93%
Street Lighting	0	925,829	83,433	87,336	3,903	4.68%
Lighting	0	3,042,878	302,048	316,734	14,685	4.86%
Total Energy Sales	24,212	2,675,217,231	191,250,549	202,713,561	11,463,012	5.99%
Other Revenue			2,173,140	2,173,140	0	0.00%
Total Revenue			193,423,689	204,886,701	11,463,012	5.93%

Summary of Rates – 1.5 RUS OTIER

	Existing	Proposed	Change
Remainder			
Power Cost, per kWh Sold	\$0.057626	\$0.057626	\$0.000000
COPA Base Cost, per kWh Sold	\$0.055330	\$0.057626	\$0.002296
COPA Factor, per kWh	\$0.002296	\$0.000000	(\$0.002296)
Residential			
Customer Charge, Standard	\$22.50	\$25.00	\$2.50
Customer Charge, > 200 Amps	\$27.50	\$30.00	\$2.50
Energy Charge, per kWh	\$0.071080	\$0.078100	\$0.007020
Residential Time of Day			
Customer Charge, Standard	\$22.50	\$25.00	\$2.50
Customer Charge, > 200 Amps	\$27.50	\$30.00	\$2.50
Energy Charge (September - May)			
On-Peak kWh Charge, per kWh	\$0.074380	\$0.081400	\$0.007020
Off-Peak kWh Charge, per kWh	\$0.050000	\$0.057020	\$0.007020
Energy Charge (June-August), per kWh	\$0.071080	\$0.078100	\$0.007020
Residential Heat Rate			
Customer Charge, Standard	\$25.00	\$27.50	\$2.50
Customer Charge, > 200 Amps	\$30.00	\$32.50	\$2.50
Energy Charge, per kWh	\$0.071080	\$0.078100	\$0.007020
Heat Credit (October - April), per kWh	(\$0.029790)	(\$0.029790)	\$0.000000
General Service			
Customer Charge, Single Phase	\$30.00	\$35.00	\$5.00
Customer Charge, Three Phase	\$35.00	\$40.00	\$5.00
Energy Charge, per kWh	\$0.071080	\$0.078100	\$0.007020
General Service - CBM			
Customer Charge, Single Phase	\$35.00	\$35.00	\$0.00
Customer Charge, Three Phase	\$40.00	\$40.00	\$0.00
Energy Charge, per kWh	\$0.084000	\$0.102700	\$0.018700

Summary of Rates – 1.5 RUS OTIER

	Existing	Proposed	Change
Remainder			
Power Cost, per kWh Sold	\$0.057626	\$0.057626	\$0.000000
COPA Base Cost, per kWh Sold	\$0.055330	\$0.057626	\$0.002296
COPA Factor, per kWh	\$0.002296	\$0.000000	(\$0.002296)
Irrigation			
Horsepower Charge, per HP	\$18.50	\$19.50	\$1.00
Energy Charge, per kWh	\$0.066800	\$0.077300	\$0.010500
Large Power			
Customer Charge	\$132.50	\$150.00	\$17.50
Demand Charge, per Billing kW			
First 50 kW per month	\$2.75	\$3.00	\$0.25
Over 50 kW per month	\$5.45	\$6.00	\$0.55
Energy Charge, per kWh			
First 200 kWh per billing kW	\$0.061700	\$0.066400	\$0.004700
Over 200 kWh per billing kW	\$0.041700	\$0.046400	\$0.004700
Large Power - CBM			
Customer Charge, Secondary	\$142.50	\$152.50	\$10.00
Customer Charge, Primary	\$177.50	\$187.50	\$10.00
Demand Charge, per Billing kW			
First 50 kW per month	\$3.20	\$3.40	\$0.20
Over 50 kW per month	\$7.20	\$7.40	\$0.20
Energy Charge, per kWh			
First 200 kWh per billing kW	\$0.059690	\$0.074300	\$0.014610
Over 200 kWh per billing kW	\$0.039690	\$0.054300	\$0.014610
Primary Service Demand Discount, per Billing kW	\$0.43	\$0.43	
Primary Service Energy Discount	-3%	-3%	
Large Power Transmission			
Customer Charge	\$600.00	\$1,000.00	\$400.00
Retail NCP Demand Charge, per NCP Billing kW	\$0.80	\$0.88	\$0.08
Wholesale NCP Demand Charge, per NCP Billing kW	\$13.33	\$14.96	\$1.63
Energy Charge, per kWh	\$0.027410	\$0.029710	\$0.002300
COPA Charge, per kWh	\$0.005658	\$0.000000	(\$0.005658)

Summary of Rates – 1.5 RUS OTIER

Large Power Transmission - CBM				
Customer Charge		\$1,000.00	\$1,000.00	\$0.00
Retail NCP Demand Charge, per NCP Billing kW		\$1.50	\$1.50	\$0.00
Wholesale CP Demand Charge, per CP Billing kW		\$16.99	\$18.08	\$1.09
Energy Charge, per kWh		\$0.027720	\$0.029210	\$0.001490
COPA Charge, per kWh		\$0.003001	\$0.000000	(\$0.003001)
Large Power Transmission - General				
Customer Charge		\$600.00	\$1,000.00	\$400.00
Retail NCP Demand Charge, per NCP Billing kW		\$0.70	\$0.70	\$0.00
Wholesale CP Demand Charge, per CP Billing kW		\$16.99	\$16.99	\$0.00
Energy Charge, per kWh		\$0.027720	\$0.027720	\$0.000000
COPA Charge, per kWh		\$0.003001	\$0.000000	(\$0.003001)
Large Power Compression - CBM				
Customer Charge		\$1,000.00	\$1,000.00	\$0.00
Retail NCP Demand Charge, per NCP Billing kW		\$1.50	\$1.50	\$0.00
Wholesale CP Demand Charge, per CP Billing kW		\$16.99	\$18.08	\$1.09
Energy Charge, per kWh		\$0.027720	\$0.029210	\$0.001490
COPA Charge, per kWh		\$0.003001	\$0.000000	(\$0.003001)
Stree/Area Lighting				
100 Watts MV	52 kWh/Mo	\$8.20	\$8.80	\$0.60
150 Watts MV	78 kWh/Mo	\$8.20	\$8.80	\$0.60
175 Watts HPS	82 kWh/Mo	\$8.20	\$8.80	\$0.60
400 Watts HPS	172 kWh/Mo	\$14.65	\$15.75	\$1.10
400 Watts HPS	188 kWh/Mo	\$14.65	\$15.75	\$1.10

Cost of Power Adjustment (COPA)

- **COPA provides a recovery of the change in wholesale power cost**
- **Revised and filed annually**
- **COPA for 2016 will be filed with WPSC and implemented in January**
- **Wholesale rate change increase component of proposed rate change will take effect with COPA in January**
- **Remainder of proposed rate change will become effective when rates are approved at the commission**