

Montana-Dakota Utilities Co.

South Dakota Lambda and Capacity Costs
July 2011 through June 2012
Revised July 2011

Month	Year	Lambda		Total \$/MWh
		On-Peak \$/MWh	Off-Peak \$/MWh	
July	2011	\$30.41	\$28.49	\$28.92
August	2011	30.33	28.21	28.73
September	2011	25.09	25.53	25.42
October	2011		25.41	25.41
November	2011		25.61	25.61
December	2011		33.75	33.75
January	2012		33.91	33.91
February	2012		35.21	35.21
March	2012		26.61	26.61
April	2012		26.87	26.87
May	2012		26.16	26.16
June	2012	31.94	26.94	28.11
Average		\$29.44	\$28.56	\$28.73

Rate 96 Monthly Capacity Payments:
\$8.837 \$/kW-Month
[Cost of an installed peaking combustion turbine]

Rate 97 Monthly Capacity Payments:
\$23.424 \$/kW-Month
[Cost of an installed baseload unit]

Montana-Dakota Utilities Co.

**South Dakota Capacity
July 2011 through June 2012
Revised July 2011**

Rate 96

Monthly Capacity Payments: \$8.837 \$/kW-Month Cost of an installed peaking combustion turbine

Capital cost of combustion turbine \$857
Escalation rate 3%
Levelized Fixed Charge 12.014% 1/

Rate 96 Capacity Payment formula: = $\$857 \times (1.03) \times .12.014 / 12$

Rate 97

Monthly Capacity Payments: \$23.424 \$/kW-Month Cost of an installed baseload unit

Capital cost of installed baseload unit \$2,560
Escalation rate 3%
Levelized Fixed Charge 10.660% 2/

Rate 97 Capacity Payment formula: = $\$2,560 \times (1.03) \times .10660 / 12$

1/ See Attachment A pages 3-5. Turbine with 25-year book life

2/ See Attachment A pages 6-8. Base load unit with 40-year book life.

* LEVELIZED FIXED CHARGE PROGRAM *

TURBINE UNIT

Computation of Levelized Fixed Charges

Title1 Fixed Charge Rate For Combustion Turbine
Title2

Basic assumptions used in this calculation are shown below

Capitalization Ratios (as percentages)

Long Term Debt	50
Preferred Stock	0
Common Stock	50

Interest Rates (as percentages)

Bonds	4.4
Preferred Stock	0
Common Stock	10.75

Tax Rates (as percentages)

Income Taxes	38.4
Investment Credit	0
Deferred Federal Income Taxes	35

Book Life (in years)	25
Tax Life (in years - 5, 7, 10, 15, 20 , or 39)	20

Depreciation Method used for tax purposes is:	MDU-MACRS Declining Balance/STRT-LINE
Deferred federal income tax reflects normalixation	
General tax rate (as percent)	1.157
Salvage Value =	

Operations and Maintenance Method used is:

Weighted Cost of Capital =

Debt	0.02200
PFD	0.00000
Common	0.05375
Composite	0.07575
WACC reflecting tax deduction of debt interest	0.06730

The results obtained based on the foregoing assumptions are as follows

Sum of P.W. Values	Capital Recovery Factor	Levelized Fixed Charge
133.038	0.09030	12.014
Levelized Income Tax	Levelized Return on Capital	
2.076	4.781	

 * LEVELIZED FIXED CHARGE PROGRAM *

 Base Load Unit
Computation of Levelized Fixed Charges

Title1 Fixed Charge Rate For Baseload
 Title2

Basic assumptions used in this calculation are shown below

Capitalization Ratios (as percentages)

Long Term Debt	50
Preferred Stock	0
Common Stock	50

Interest Rates (as percentages)

Bonds	4.4
Preferred Stock	0
Common Stock	10.75

Tax Rates (as percentages)

Income Taxes	38.4
Investment Credit	0
Deferred Federal Income Taxes	35

Book Life (in years)

40

Tax Life (in years - 5, 7, 10, 15, 20 , or 39)

20

Depreciation Method used for tax purposes is:

MDU-MACRS Declining Balance/STRT-LINE

Deferred federal income tax reflects normalixation

General tax rate (as percent)

1.157

Salvage Value =

Operations and Maintenance Method used is:

Weighted Cost of Capital =

Debt	0.02200
PFD	0.00000
Common	0.05375
Composite	0.07575
WACC reflecting tax deduction of debt interest	0.06730

The results obtained based on the foregoing assumptions are as follows

Sum of P.W. Values	Capital Recovery Factor	Levelized Fixed Charge
133.138	0.08007	10.660
Levelized Income Tax	Levelized Return on Capital	
2.083	4.919	

Computation of Levelized Fixed Charges

Base Load Unit

Year	Debt	Preferred	Common	Book Deprectn	O&M and Insurance	General Tax Rate	Gross Income Tax	Total Chg	Present Worth Factor	Present Worth Value	Levelized	
											Levelized Income Tax Sum	Return on Capital Sum
1	2.2000	0.0000	5.3750	2.5000	0.0000	1.1570	3.2817	14.5137	0.9296	13.4917	3.0506	7.0416
2	2.1354	0.0000	5.2171	2.5000	0.0000	1.1570	2.9918	14.0012	0.8641	12.0988	5.6358	13.3951
3	2.0440	0.0000	4.9940	2.5000	0.0000	1.1570	2.8826	13.5776	0.8033	10.9066	7.9513	19.0485
4	1.9569	0.0000	4.7810	2.5000	0.0000	1.1570	2.7774	13.1723	0.7467	9.8359	10.0253	24.0798
5	1.8736	0.0000	4.5775	2.5000	0.0000	1.1570	2.6761	12.7842	0.6941	8.8739	11.8829	28.5577
6	1.7938	0.0000	4.3826	2.5000	0.0000	1.1570	2.5783	12.4118	0.6453	8.0088	13.5465	32.5431
7	1.7174	0.0000	4.1959	2.5000	0.0000	1.1570	2.4838	12.0540	0.5998	7.2303	15.0364	36.0900
8	1.6440	0.0000	4.0166	2.5000	0.0000	1.1570	2.3922	11.7098	0.5576	6.5292	16.3702	39.2462
9	1.5734	0.0000	3.8442	2.5000	0.0000	1.1570	2.2881	11.3626	0.5183	5.8895	17.5562	42.0542
10	1.5033	0.0000	3.6729	2.5000	0.0000	1.1570	2.1813	11.0145	0.4818	5.3070	18.6072	44.5482
11	1.4332	0.0000	3.5016	2.5000	0.0000	1.1570	2.0745	10.6663	0.4479	4.7774	19.5364	46.7585
12	1.3631	0.0000	3.3303	2.5000	0.0000	1.1570	1.9678	10.3182	0.4164	4.2960	20.3557	48.7126
13	1.2930	0.0000	3.1591	2.5000	0.0000	1.1570	1.8610	9.9700	0.3870	3.8588	21.0760	50.4357
14	1.2229	0.0000	2.9878	2.5000	0.0000	1.1570	1.7543	9.6219	0.3598	3.4618	21.7071	51.9507
15	1.1528	0.0000	2.8165	2.5000	0.0000	1.1570	1.6474	9.2737	0.3344	3.1016	22.2581	53.2782
16	1.0827	0.0000	2.6452	2.5000	0.0000	1.1570	1.5407	8.9256	0.3109	2.7750	22.7371	54.4372
17	1.0126	0.0000	2.4739	2.5000	0.0000	1.1570	1.4339	8.5775	0.2890	2.4789	23.1515	55.4448
18	0.9425	0.0000	2.3027	2.5000	0.0000	1.1570	1.3272	8.2293	0.2687	2.2109	23.5081	56.3167
19	0.8724	0.0000	2.1314	2.5000	0.0000	1.1570	1.2204	7.8812	0.2497	1.9682	23.8128	57.0668
20	0.8023	0.0000	1.9601	2.5000	0.0000	1.1570	1.1137	7.5330	0.2322	1.7488	24.0714	57.7081
21	0.7322	0.0000	1.7888	2.5000	0.0000	1.1570	1.1300	7.3080	0.2158	1.5771	24.3152	58.2522
22	0.6793	0.0000	1.6595	2.5000	0.0000	1.1570	1.1725	7.1683	0.2006	1.4380	24.5504	58.7213
23	0.6435	0.0000	1.5722	2.5000	0.0000	1.1570	1.1181	6.9907	0.1865	1.3037	24.7589	59.1345
24	0.6078	0.0000	1.4848	2.5000	0.0000	1.1570	1.0636	6.8132	0.1734	1.1811	24.9433	59.4973
25	0.5720	0.0000	1.3975	2.5000	0.0000	1.1570	1.0092	6.6357	0.1611	1.0693	25.1059	59.8147
26	0.5363	0.0000	1.3102	2.5000	0.0000	1.1570	0.9547	6.4581	0.1498	0.9674	25.2490	60.0912
27	0.5005	0.0000	1.2228	2.5000	0.0000	1.1570	0.9003	6.2806	0.1392	0.8746	25.3743	60.3312
28	0.4648	0.0000	1.1355	2.5000	0.0000	1.1570	0.8458	6.1030	0.1294	0.7900	25.4838	60.5383
29	0.4290	0.0000	1.0481	2.5000	0.0000	1.1570	0.7914	5.9255	0.1203	0.7130	25.5790	60.7161
30	0.3933	0.0000	0.9608	2.5000	0.0000	1.1570	0.7369	5.7479	0.1119	0.6429	25.6615	60.8675
31	0.3575	0.0000	0.8734	2.5000	0.0000	1.1570	0.6825	5.5704	0.1040	0.5792	25.7324	60.9955
32	0.3218	0.0000	0.7861	2.5000	0.0000	1.1570	0.6280	5.3929	0.0967	0.5213	25.7931	61.1026
33	0.2860	0.0000	0.6987	2.5000	0.0000	1.1570	0.5736	5.2153	0.0899	0.4686	25.8447	61.1911
34	0.2503	0.0000	0.6114	2.5000	0.0000	1.1570	0.5191	5.0378	0.0835	0.4208	25.8880	61.2631
35	0.2145	0.0000	0.5241	2.5000	0.0000	1.1570	0.4647	4.8602	0.0776	0.3774	25.9241	61.3204
36	0.1788	0.0000	0.4367	2.5000	0.0000	1.1570	0.4102	4.6827	0.0722	0.3380	25.9537	61.3648
37	0.1430	0.0000	0.3494	2.5000	0.0000	1.1570	0.3558	4.5052	0.0671	0.3023	25.9776	61.3979
38	0.1073	0.0000	0.2620	2.5000	0.0000	1.1570	0.3013	4.3276	0.0624	0.2699	25.9964	61.4209
39	0.0715	0.0000	0.1747	2.5000	0.0000	1.1570	0.2469	4.1501	0.0580	0.2406	26.0107	61.4352
40	0.0357	0.0000	0.0873	2.5000	0.0000	1.1570	0.1924	3.9725	0.0539	0.2141	26.0211	61.4418

Computation of Levelized Fixed Charges

Base Load Unit

Period	Tax Depreciatn Accel	Tax Depreciatn Normal	Deferred Federal Income Tax	Amortized Investment Tax Credit	Net Investment	ACC PW	Y LFCR
1	3.7500	5.0000	0.4375	0.0000	100.0000	13.4917	14.5137
2	7.2190	5.0000	1.6517	0.0000	97.0625	25.5905	14.2668
3	6.6770	5.0000	1.4620	0.0000	92.9109	36.4971	14.0536
4	6.1770	5.0000	1.2870	0.0000	88.9489	46.3330	13.8568
5	5.7130	5.0000	1.1246	0.0000	85.1620	55.2069	13.6724
6	5.2850	5.0000	0.9748	0.0000	81.5374	63.2157	13.4987
7	4.8880	5.0000	0.8358	0.0000	78.0627	70.4459	13.3347
8	4.5220	5.0000	0.7077	0.0000	74.7269	76.9751	13.1796
9	4.4620	5.0000	0.6867	0.0000	71.5192	82.8646	13.0315
10	4.4610	5.0000	0.6864	0.0000	68.3325	88.1716	12.8894
11	4.4620	5.0000	0.6867	0.0000	65.1461	92.9490	12.7528
12	4.4610	5.0000	0.6864	0.0000	61.9594	97.2451	12.6212
13	4.4620	5.0000	0.6867	0.0000	58.7731	101.1038	12.4944
14	4.4610	5.0000	0.6864	0.0000	55.5864	104.5657	12.3721
15	4.4620	5.0000	0.6867	0.0000	52.4000	107.6673	12.2542
16	4.4610	5.0000	0.6864	0.0000	49.2133	110.4422	12.1404
17	4.4620	5.0000	0.6867	0.0000	46.0270	112.9212	12.0307
18	4.4610	5.0000	0.6864	0.0000	42.8403	115.1320	11.9250
19	4.4620	5.0000	0.6867	0.0000	39.6539	117.1002	11.8230
20	4.4610	5.0000	0.6864	0.0000	36.4672	118.8490	11.7247
21	2.2310		-0.0942	0.0000	33.2809	120.4261	11.6327
22	0.0000		-0.8750	0.0000	30.8750	121.8642	11.5478
23	0.0000		-0.8750	0.0000	29.2500	123.1678	11.4687
24	0.0000		-0.8750	0.0000	27.6250	124.3489	11.3947
25	0.0000		-0.8750	0.0000	26.0000	125.4182	11.3255
26	0.0000		-0.8750	0.0000	24.3750	126.3856	11.2605
27	0.0000		-0.8750	0.0000	22.7500	127.2602	11.1995
28	0.0000		-0.8750	0.0000	21.1250	128.0502	11.1421
29	0.0000		-0.8750	0.0000	19.5000	128.7632	11.0880
30	0.0000		-0.8750	0.0000	17.8750	129.4061	11.0371
31	0.0000		-0.8750	0.0000	16.2500	129.9853	10.9890
32	0.0000		-0.8750	0.0000	14.6250	130.5066	10.9437
33	0.0000		-0.8750	0.0000	13.0000	130.9752	10.9008
34	0.0000		-0.8750	0.0000	11.3750	131.3960	10.8604
35	0.0000		-0.8750	0.0000	9.7500	131.7733	10.8221
36	0.0000		-0.8750	0.0000	8.1250	132.1113	10.7859
37	0.0000		-0.8750	0.0000	6.5000	132.4136	10.7517
38	0.0000		-0.8750	0.0000	4.8750	132.6835	10.7193
39	0.0000		-0.8750	0.0000	3.2500	132.9241	10.6887
40	0.0000		-0.8750	0.0000	1.6250	133.1382	10.6597