Northern States Power Company Electric Operations - State of South Dakota COGENERATION AND SMALL POWER PRODUCTION FILING

Derivation of Metering Costs - State of South Dakota

OCCASIONAL DELIVERY ENERGY SERVIC	E
STANDARD KWH METER	Single Phase
(1) Installed Cost	\$91.95
(2) L.A.R.R.	9.59%
(3) Levelized Cost (1)*(2)	\$8.82
(4) Accounting Expenses \$/Cust/Yr	\$51.71
(5) Total Annual (3)+(4)	\$60.53
(6) Total Monthly (5)/12	\$5.04
	Proposed \$3.75 Current \$3.75
TIME OF DELIVERY ENERGY SERVICE	
TOD KW/KWH METER	Single Phase
(7) Installed Cost	\$157.03
(8) Levelized Cost (7)*(2)	\$15.06
(9) Total Annual (8)+(4)	\$66.77
(10) Total Monthly (9)/12	\$5.56
	Proposed \$4.75 Current \$4.75

Source:

(1)(7) Data provided by NSP Metering Dept.

(2) Based on cost of capital on page 4

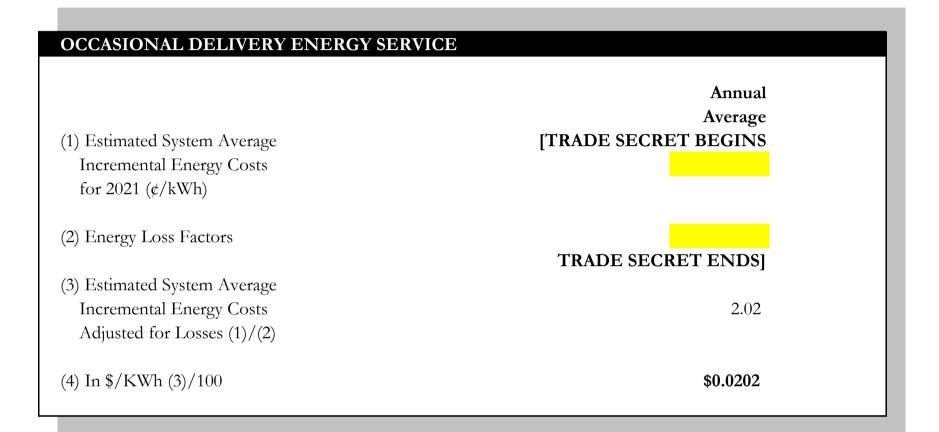
(4) Based on NSP ECCOSS Workpapers (Docket No. EL14-058).

PUBLIC DOCUMENT

CONFIDENTIAL INFORMATION HAS BEEN EXCISED

Northern States Power Company Electric Operations - State of South Dakota COGENERATION AND SMALL POWER PRODUCTION FILING Docket No. EL21-____ Attachment B Page 2 of 4

Derivation of Energy Payments - State of South Dakota



	Annual On Peak	Annual Off Peak		
(1) Estimated System Average	[TRADE SECRET	TRADE SECRET BEGINS		
Incremental Energy Costs for 2021 (¢/kWh)				
(2) Energy Loss Factors		SECRET ENDS		
(3) Estimated System Average	TMDL	SECKET ENDOJ		
Incremental Energy Costs Adjusted for Losses(1)/(2)	2.55	1.73		
4) In \$/KWh (3)/100	\$0.0255	\$0.0173		

Source:

Incremental Energy Cost Data provided by Xcel Energy's Generation Modeling Services.

PUBLIC DOCUMENT

CONFIDENTIAL INFORMATION HAS BEEN EXCISED

Northern States Power Company Electric Operations - State of South Dakota COGENERATION AND SMALL POWER PRODUCTION FILING

Docket No. EL21-____ Attachment B Page 3 of 4

Calculation of Net Annual Avoided Capacity Costs

[]	TRADE SECRET BEGINS	5
(1) Completed Cost of C.T. Unit (2021 \$)		/kW
(2) Inflation Net of Technical Progress	2.00%	
(3) Average Service Life	40	Years
(4) Discount Rate (After Tax)	6.75%	
Calculation of Marginal Capital Carry Charge Rate		
(5) Present Value of Revenue Requirements (2021)		/kW
(6) Annuity Factor Adjustment for Inflation **	5.67%)
(7) Present Value of Revenue Requirements		
Adjusted for Inflation (5)*(6)		/kW
(8) Marginal Capital Carrying Charge Rate		
(7)/(1)		
(9) First Year Revenue Requirement (1)*(8)		/kW
(10) Present Value at 6.75% for 0 years		/kW
(11) Present Value of Average Annual Fuel Savings		/kW
(12) Annual Avoided Capacity Cost		/kW
(10)-(11)		
(13) Adjusted for 15% Reserve Margin		/kW
(12)*1.15		
(14) Plus Fixed O & M \$/kW (2021 \$)		/kW
(13)+O&M		
(15) Adjusted for losses $(14)/0.9652$		/kW
(16) NET ANNUAL AVOIDED CAPACITY COST	\$56.78	/kW
		14
(17) Net Annual Avoided Capacity Cost	0.65	¢/kWh
Average Over All Hours		

(18) In \$/KWh (17)/100

** AC = $(r-j)*(1+j)^{(t-1)*[1/(1-(1+j)^n/(1+r)^n)]}$
Where $AC = Annual Charge in year t$
t = Year (=1)
K = Total Present Value Cost of Original Investment
r = Discount Rate (Overall Marginal Cost of Capital) (6.75%)
j = Inflation Rate Net of Technology Progress (2.00%)
n = Expected Service Life of Investment (40 Years)

PUBLIC DOCUMENT CONFIDENTIAL INFORMATION HAS BEEN EXCISED

Northern States Power Company	Docket No. EL21
Electric Operations - State of South Dakota	Attachment B
COGENERATION AND SMALL POWER PRODUCTION FILM	NG Page 4 of 4

Marginal Cost of Capital

(Before Tax)	Capitalization		
	Ratio (%)	Cost (%)	Weighted (%)
[TRADE SECRET BEGINS			
Debt			
Preferred Equity			
Common Equity			
TRADE SECRET ENDS]			
Weighted Average	100.00%		7.22% *

<u>(After Tax)</u>	Capitalization		
	Ratio (%)	Cost (%)	Weighted (%)
[TRADE SECRET BEGINS			
Debt			
Preferred Equity			
Common Equity			
TRADE SECRET ENDS]			
Weighted Average	100.00%		6.75%

* SD Commission approval of settlement in Docket No. EL14-058.

Source:

Information based on Company's 2014 Rate Case settlement (Confidential).