Derivation of Metering Costs - State of South Dakota

STANDARD KWH METER	Single Phase
(1) Installed Cost	\$140.00
(2) L.A.R.R.	9.90%
(3) Levelized Cost (1)*(2)	\$13.86
(4) Accounting Expenses \$/Cust/Yr	\$45.66
(5) Total Annual (3)+(4)	\$59.52
(6) Total Monthly (5)/12	\$4.96
	Proposed \$3.75
TIME OF DELIVERY ENERGY SERVICE	Current \$3.75
	Single Phase
TIME OF DELIVERY ENERGY SERVICE TOD KW/KWH METER (7) Installed Cost	
TOD KW/KWH METER	Single Phase
TOD KW/KWH METER (7) Installed Cost	Single Phase \$350.00
TOD KW/KWH METER (7) Installed Cost (8) Levelized Cost (7)*(2)	Single Phase \$350.00 \$34.65

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).

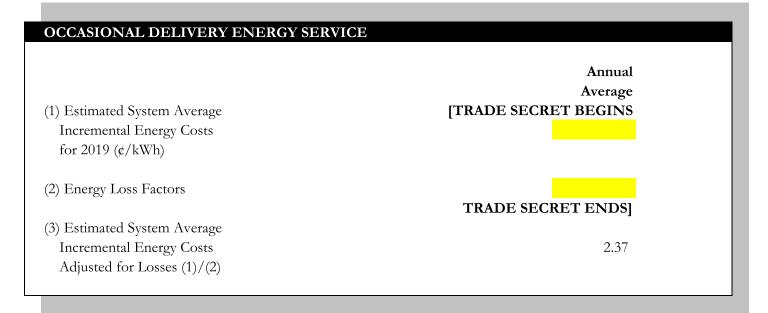
PUBLIC DOCUMENT

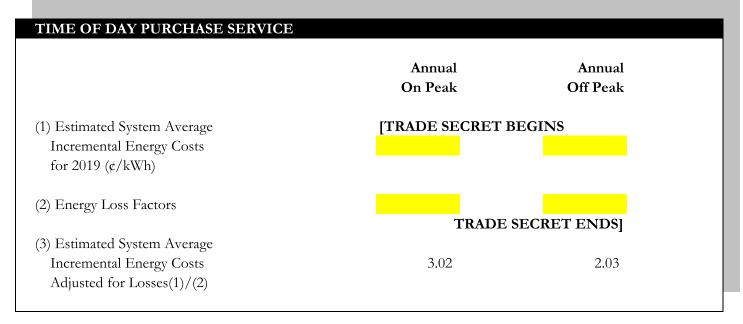
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Northern States Power Company
Electric Operations - State of South Dakota
COGENERATION AND SMALL POWER PRODUCTION FILING

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Derivation of Energy Payments - State of South Dakota





Source:

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Calculation of Net Annual Avoided Capacity Costs

Calculation of Net Annual Avoided Capacity Costs		
[TRADE SECRET BEGIN		
(1) Completed Cost of Planned C.T. Unit (2019 \$)	\$/kW	
(2) Inflation Net of Technical Progress		
(3) Average Service Life	Years	
(4) Discount Rate (After Tax)		
Calculation of Manning I Carried Commercial Parts		
Calculation of Marginal Capital Carry Charge Rate		
(5) Present Value of Revenue Requirements		
(6) Annuity Factor Adjustment for Inflation **		
(7) Present Value of Revenue Requirements		
Adjusted for Inflation (5)*(6)		
(8) Marginal Capital Carrying Charge Rate		
(7)/(1)		
(9) First Year Revenue Requirement (2019 \$) (1)*(8)	\$/kW	
(10) Present Value at 6.45% for 0 years	\$/kW	
(11) Present Value of Average Annual Fuel Savings	\$/kW	
(12) Annual Avoided Capacity Cost	\$/kW	
(10)-(11)		
(13) Adjusted for 15.00% Reserve Margin***	\$/kW	
(12)*15.00%		
(14) Plus \$/kW Fixed O & M (2019 \$)	\$/kW	
(13)+\$2.61		
(15) Adjusted for Losses (14)/0.9348	\$/kW	
(16) NET ANNUAL AVOIDED CAPACITY COST	\$/kW	
(17) Net Annual Avoided Capacity Cost	\$0.59 ¢/kWh	
Average Over All Hours	φ0.39 ¢/ KWII	
Average Over All Flours		

TRADE SECRET ENDS]

	TRADE SECRET ENDS
** $AC = (r-j)*(1+j)^{(t-1)}*[1/(1-(1+j)^n/(1+r)^n)]$	
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) (6.44%)	
j = Inflation Rate Net of Technology Progress (2.64%)	
n = Expected Service Life of Investment (40 Years)	

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Northern States Power Company, a Minnesota corporation

Docket No. EL19-___

Electric Operations - State of South Dakota

COGENERATION AND SMALL POWER PRODUCTION FILING

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% *		

	0 1 11 1				
(After Tax)	Capitalization				
	Ratio (%)	Cost (%)	Weighted (%)		
[TRADE SECRET BEGINS					
Debt					
Preferred Equity					
Common Equity					
TRADE SECRET ENDS					
Weighted Average	100.00%		6.44%		
Preferred Equity Common Equity Weighted Average	100.00%	TR			

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

Source:

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