

Derivation of Metering Costs - State of South Dakota

OCCASIONAL DELIVERY ENERGY SERVICE

STANDARD KWH METER

Single Phase

| | |
|------------------------------------|---------|
| (1) Installed Cost | \$98.67 |
| (2) L.A.R.R. | 8.92% |
| (3) Levelized Cost (1)*(2) | \$8.80 |
| (4) Accounting Expenses \$/Cust/Yr | \$37.73 |
| (5) Total Annual (3)+(4) | \$46.53 |
| (6) Total Monthly (5)/12 | \$3.88 |

| | |
|----------|--------|
| Proposed | \$3.75 |
| Current | \$3.75 |

TIME OF DELIVERY ENERGY SERVICE

TOD KW/KWH METER

Single Phase

| | |
|----------------------------|----------|
| (7) Installed Cost | \$172.53 |
| (8) Levelized Cost (7)*(2) | \$15.39 |
| (9) Total Annual (8)+(4) | \$53.12 |
| (10) Total Monthly (9)/12 | \$4.43 |

| | |
|----------|--------|
| 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. EL22-017).

Derivation of Energy Payments - State of South Dakota

OCCASIONAL DELIVERY ENERGY SERVICE

| | Annual Average |
|---|---------------------------|
| (1) Estimated System Average Incremental Energy Costs for 2023 (¢/kWh) | 3.478 |
| (2) Energy Loss Factors | 0.96516 |
| (3) Estimated System Average Incremental Energy Costs Adjusted for Losses (1)/(2) | 3.60 |
| (4) In \$/KWh (3)/100 | \$0.0360 |

TIME OF DAY PURCHASE SERVICE

| | Annual On Peak | Annual Off Peak |
|--|---------------------------|----------------------------|
| (1) Estimated System Average Incremental Energy Costs for 2023 (¢/kWh) | 4.528 | 2.917 |
| (2) Energy Loss Factors | 0.9613 | 0.9672 |
| (3) Estimated System Average Incremental Energy Costs Adjusted for Losses(1)/(2) | 4.71 | 3.02 |
| (4) In \$/KWh (3)/100 | \$0.0471 | \$0.0302 |

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. EL23-___
Attachment B
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Calculation of Net Annual Avoided Capacity Costs

[TRADE SECRET BEGINS

Table with 3 columns: Description, Value, and Unit. Rows include: (1) Completed Cost of C.T. Unit (2023 \$) /kW, (2) Inflation Net of Technical Progress 2.00%, (3) Average Service Life 40 Years, (4) Discount Rate (After Tax), Calculation of Marginal Capital Carry Charge Rate, (5) Present Value of Revenue Requirements (2023) /kW, (6) Annuity Factor Adjustment for Inflation ** 5.72%, (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 6.82% for 0 years /kW, (11) Present Value of Average Annual Fuel Savings /kW, (12) Annual Avoided Capacity Cost (10)-(11) /kW, (13) Adjusted for 15% Reserve Margin (12)*1.15 /kW, (14) Plus Fixed O & M \$/kW (2023 \$) (13)+O&M /kW, (15) Adjusted for losses (14)*(1+(1-0.9652)) /kW, (16) NET ANNUAL AVOIDED CAPACITY COST \$48.82 /kW, (17) Net Annual Avoided Capacity Cost Average Over All Hours 0.557 ¢/kWh (16)*100/8760, (18) In \$/KWh (17)/100 \$0.0056 /kWh

** 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) (6.82%)
j = Inflation Rate Net of Technology Progress (2.00%)
n = Expected Service Life of Investment (40 Years)

O&M



TRADE SECRET ENDS]

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 Electric Operations - State of South Dakota
 COGENERATION AND SMALL POWER PRODUCTION FILING

Docket No. EL23-____
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Marginal Cost of Capital

| <i>(Before Tax)</i> | Capitalization Ratio (%) | Cost (%) | Weighted (%) |
|------------------------------|-----------------------------|----------|--------------|
| [TRADE SECRET BEGINS] | | | |
| Debt | | | |
| Preferred Equity | | | |
| Common Equity | | | |
| TRADE SECRET ENDS] | | | |
| Weighted Average | 100.00% | | 6.82% * |

| <i>(After Tax)</i> | 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).