

[Date] 3:42 PM

2015 SD DSM Plan Cost-Effectiveness Analysis

| BUSINESS SAVER'S SWITCH | | | | | | 2015 | ELECTRIC | ACTUAL | |
|--|--------------------|------------------|------------------|------------------|------------------|--|--|---------------|-----------|
| 2015 Net Present Cost Benefit Summary Analysis For All Participants | | | | | | Input Summary and Totals | | | |
| | Participant | Utility | Rate | Total | | | | | |
| | Test | Test | Impact | Resource | Societal | | | | |
| | (\$Total) | (\$Total) | (\$Total) | (\$Total) | (\$Total) | | | | |
| Benefits | | | | | | Program "Inputs" per Customer kW | | | |
| Avoided Revenue Requirements | | | | | | Lifetime (Weighted on Generator kWh) | A | 15.0 years | |
| Generation | N/A | \$54,907 | \$54,907 | \$54,907 | \$54,907 | Annual Hours | B | 8760 | |
| T & D | N/A | \$0 | \$0 | \$0 | \$0 | Gross Customer kW | C | 1 kW | |
| Marginal Energy | N/A | \$305 | \$305 | \$305 | \$305 | Generator Peak Coincidence Factor | D | 20.79% | |
| Environmental Externality | N/A | N/A | N/A | N/A | \$0 | Gross Load Factor at Customer | E | 0.02% | |
| Subtotal | N/A | \$55,212 | \$55,212 | \$55,212 | \$55,212 | Transmission Loss Factor (Energy) | F | 5.330% | |
| Participant Benefits | | | | | | Transmission Loss Factor (Demand) | G | 6.290% | |
| Bill Reduction - Electric | \$6,144 | N/A | N/A | N/A | N/A | Societal Net Benefit (Cost) | H | \$107 | |
| Rebates from Xcel Energy | \$0 | N/A | N/A | \$0 | \$0 | Program Summary per Participant | | | |
| Incremental Capital Savings | \$0 | N/A | N/A | \$0 | \$0 | Gross kW Saved at Customer | I | 35.69 kW | |
| Incremental O&M Savings | \$0 | N/A | N/A | \$0 | \$0 | Net coincident kW Saved at Generator | $(I \times D) / (1 - G)$ | | 7.92 kW |
| Subtotal | \$6,144 | N/A | N/A | \$0 | \$0 | Gross Annual kWh Saved at Customer | $(B \times E \times I)$ | | 55 kWh |
| Total Benefits | | | | | | Net Annual kWh Saved at Generator | $(B \times E \times I) / (1 - F)$ | | 58 kWh |
| | \$6,144 | \$55,212 | \$55,212 | \$55,212 | \$55,212 | Program Summary All Participants | | | |
| Costs | | | | | | Total Participants | J | 7 | |
| Utility Project Costs | | | | | | Total Budget | K | \$28,556 | |
| Customer Services | N/A | \$0 | \$0 | \$0 | \$0 | Gross kW Saved at Customer | $(J \times I)$ | | 249.80 kW |
| Utility Administration | N/A | \$28,556 | \$28,556 | \$28,556 | \$28,556 | Net coincident kW Saved at Generator | $(I \times D) / (1 - G) \times J$ | | 55.41 kW |
| Advertising & Promotion | N/A | \$0 | \$0 | \$0 | \$0 | Gross Annual kWh Saved at Customer | $(B \times E \times I) \times J$ | | 385 kWh |
| Measurement & Verification | N/A | \$0 | \$0 | \$0 | \$0 | Net Annual kWh Saved at Generator | $((B \times E \times I) / (1 - F)) \times J$ | | 407 kWh |
| Rebates | N/A | \$0 | \$0 | \$0 | \$0 | Societal Net Benefits | $(J \times I \times H)$ | | \$26,656 |
| Other | N/A | \$0 | \$0 | \$0 | \$0 | Utility Program Cost per kWh Lifetime | | | \$4.6812 |
| Subtotal | N/A | \$28,556 | \$28,556 | \$28,556 | \$28,556 | Utility Program Cost per kW at Gen | | | \$515 |
| Utility Revenue Reduction | | | | | | | | | |
| Revenue Reduction - Electric | N/A | N/A | \$6,144 | N/A | N/A | | | | |
| Subtotal | N/A | N/A | \$6,144 | N/A | N/A | | | | |
| Participant Costs | | | | | | | | | |
| Incremental Capital Costs | \$0 | N/A | N/A | \$0 | \$0 | | | | |
| Incremental O&M Costs | \$0 | N/A | N/A | \$0 | \$0 | | | | |
| Subtotal | \$0 | N/A | N/A | \$0 | \$0 | | | | |
| Total Costs | | | | | | | | | |
| | \$0 | \$28,556 | \$34,701 | \$28,556 | \$28,556 | | | | |
| Net Benefit (Cost) | \$6,144 | \$26,656 | \$20,512 | \$26,656 | \$26,656 | | | | |
| Benefit/Cost Ratio | INF | 1.93 | 1.59 | 1.93 | 1.93 | | | | |

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

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2015 SD DSM Plan Cost-Effectiveness Analysis

| BUSINESS SEGMENT TOTAL | | | | | | 2015 ELECTRIC | | | ACTUAL |
|--|--------------------|------------------|------------------|------------------|------------------|--|--|-----------|---------------|
| 2015 Net Present Cost Benefit Summary Analysis For All Participants | | | | | | Input Summary and Totals | | | |
| | Participant | Utility | Rate | Total | | Program "Inputs" per Customer kW | | | |
| | Test | Test | Impact | Resource | Societal | Lifetime (Weighted on Generator kWh) | A | 13.9 | years |
| | (\$Total) | (\$Total) | (\$Total) | (\$Total) | (\$Total) | Annual Hours | B | 8760 | |
| Benefits | | | | | | Gross Customer kW | C | 1 | kW |
| Avoided Revenue Requirements | | | | | | Generator Peak Coincidence Factor | D | 44.94% | |
| Generation | N/A | \$630,025 | \$630,025 | \$630,025 | \$630,025 | Gross Load Factor at Customer | E | 7.74% | |
| T & D | N/A | \$93,702 | \$93,702 | \$93,702 | \$93,702 | Transmission Loss Factor (Energy) | F | 5.330% | |
| Marginal Energy | N/A | \$629,877 | \$629,877 | \$629,877 | \$629,877 | Transmission Loss Factor (Demand) | G | 6.290% | |
| Environmental Externality | N/A | N/A | N/A | N/A | \$0 | Societal Net Benefit (Cost) | H | \$161 | |
| Subtotal | N/A | \$1,353,605 | \$1,353,605 | \$1,353,605 | \$1,353,605 | Program Summary per Participant | | | |
| Participant Benefits | | | | | | Gross kW Saved at Customer | I | 21.02 | kW |
| Bill Reduction - Electric | \$1,155,480 | N/A | N/A | N/A | N/A | Net coincident kW Saved at Generator | $(I \times D) / (1 - G)$ | | 10.08 |
| Rebates from Xcel Energy | \$198,799 | N/A | N/A | \$198,799 | \$198,799 | Gross Annual kWh Saved at Customer | $(B \times E \times I)$ | | 14,257 |
| Incremental Capital Savings | \$0 | N/A | N/A | \$0 | \$0 | Net Annual kWh Saved at Generator | $(B \times E \times I) / (1 - F)$ | | 15,060 |
| Incremental O&M Savings | \$0 | N/A | N/A | \$0 | \$0 | Program Summary All Participants | | | |
| Subtotal | \$1,354,279 | N/A | N/A | \$198,799 | \$198,799 | Total Participants | J | 115 | |
| Total Benefits | | | | | | Total Budget | K | \$272,015 | |
| Total Benefits | \$1,354,279 | \$1,353,605 | \$1,353,605 | \$1,552,404 | \$1,552,404 | Gross kW Saved at Customer | $(J \times I)$ | 2,417.38 | kW |
| Costs | | | | | | Net coincident kW Saved at Generator | $(I \times D) / (1 - G) \times J$ | | 1,159.16 |
| Utility Project Costs | | | | | | Gross Annual kWh Saved at Customer | $(B \times E \times I) \times J$ | | 1,639,541 |
| Customer Services | N/A | \$0 | \$0 | \$0 | \$0 | Net Annual kWh Saved at Generator | $((B \times E \times I) / (1 - F)) \times J$ | | 1,731,849 |
| Utility Administration | N/A | \$73,216 | \$73,216 | \$73,216 | \$73,216 | Societal Net Benefits | $(J \times I \times H)$ | | \$389,326 |
| Advertising & Promotion | N/A | \$0 | \$0 | \$0 | \$0 | Utility Program Cost per kWh Lifetime | | | |
| Measurement & Verification | N/A | \$0 | \$0 | \$0 | \$0 | Utility Program Cost per kW at Gen | | | |
| Rebates | N/A | \$198,799 | \$198,799 | \$198,799 | \$198,799 | \$0.0113 | | | |
| Other | N/A | \$0 | \$0 | \$0 | \$0 | \$235 | | | |
| Subtotal | N/A | \$272,015 | \$272,015 | \$272,015 | \$272,015 | | | | |
| Utility Revenue Reduction | | | | | | | | | |
| Revenue Reduction - Electric | N/A | N/A | \$1,155,480 | N/A | N/A | | | | |
| Subtotal | N/A | N/A | \$1,155,480 | N/A | N/A | | | | |
| Participant Costs | | | | | | | | | |
| Incremental Capital Costs | \$841,488 | N/A | N/A | \$841,488 | \$841,488 | | | | |
| Incremental O&M Costs | \$49,575 | N/A | N/A | \$49,575 | \$49,575 | | | | |
| Subtotal | \$891,062 | N/A | N/A | \$891,062 | \$891,062 | | | | |
| Total Costs | | | | | | | | | |
| Total Costs | \$891,062 | \$272,015 | \$1,427,495 | \$1,163,077 | \$1,163,077 | | | | |
| Net Benefit (Cost) | | | | | | | | | |
| Net Benefit (Cost) | \$463,216 | \$1,081,590 | (\$73,890) | \$389,326 | \$389,326 | | | | |
| Benefit/Cost Ratio | | | | | | | | | |
| Benefit/Cost Ratio | 1.52 | 4.98 | 0.95 | 1.33 | 1.33 | | | | |

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

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2015 SD DSM Plan Cost-Effectiveness Analysis

| LIGHTING EFFICIENCY | | | | | | 2015 ELECTRIC | | | ACTUAL | | |
|--|-----------------------------------|-------------------------------|-----------------------------------|--------------------------------------|--------------------------------|--|--|------------------|---------------|------------------|------------|
| 2015 Net Present Cost Benefit Summary Analysis For All Participants | | | | | | Input Summary and Totals | | | | | |
| | Participant Test (\$Total) | Utility Test (\$Total) | Rate Impact Test (\$Total) | Total Resource Test (\$Total) | Societal Test (\$Total) | Program "Inputs" per Customer kW | | | | | |
| Benefits | | | | | | Lifetime (Weighted on Generator kWh) | A | 14.1 | years | | |
| Avoided Revenue Requirements | | | | | | Annual Hours | B | 8760 | | | |
| Generation | N/A | \$247,140 | \$247,140 | \$247,140 | \$247,140 | Gross Customer kW | C | 1 | kW | | |
| T & D | N/A | \$93,702 | \$93,702 | \$93,702 | \$93,702 | Generator Peak Coincidence Factor | D | 58.63% | | | |
| Marginal Energy | N/A | \$616,925 | \$616,925 | \$616,925 | \$616,925 | Gross Load Factor at Customer | E | 36.58% | | | |
| Environmental Externality | N/A | N/A | N/A | N/A | \$0 | Transmission Loss Factor (Energy) | F | 5.330% | | | |
| Subtotal | N/A | \$957,768 | \$957,768 | \$957,768 | \$957,768 | Transmission Loss Factor (Demand) | G | 6.290% | | | |
| Participant Benefits | | | | | | Societal Net Benefit (Cost) | H | \$54 | | | |
| Bill Reduction - Electric | \$1,008,898 | N/A | N/A | N/A | N/A | Program Summary per Participant | | | | | |
| Rebates from Xcel Energy | \$198,799 | N/A | N/A | \$198,799 | \$198,799 | Gross kW Saved at Customer | I | 5.04 | kW | | |
| Incremental Capital Savings | \$0 | N/A | N/A | \$0 | \$0 | Net coincident kW Saved at Generator | $(I \times D) / (1 - G)$ | | | 3.15 | kW |
| Incremental O&M Savings | \$0 | N/A | N/A | \$0 | \$0 | Gross Annual kWh Saved at Customer | $(B \times E \times I)$ | | | 16,139 | kWh |
| Subtotal | \$1,207,697 | N/A | N/A | \$198,799 | \$198,799 | Net Annual kWh Saved at Generator | $(B \times E \times I) / (1 - F)$ | | | 17,048 | kWh |
| Total Benefits | \$1,207,697 | \$957,768 | \$957,768 | \$1,156,567 | \$1,156,567 | Program Summary All Participants | | | | | |
| Costs | | | | | | Total Participants | J | 99 | | | |
| Utility Project Costs | | | | | | Total Budget | K | \$238,751 | | | |
| Customer Services | N/A | \$0 | \$0 | \$0 | \$0 | Gross kW Saved at Customer | $(J \times I)$ | | | 498.58 | kW |
| Utility Administration | N/A | \$39,952 | \$39,952 | \$39,952 | \$39,952 | Net coincident kW Saved at Generator | $(I \times D) / (1 - G) \times J$ | | | 311.91 | kW |
| Advertising & Promotion | N/A | \$0 | \$0 | \$0 | \$0 | Gross Annual kWh Saved at Customer | $(B \times E \times I) \times J$ | | | 1,597,787 | kWh |
| Measurement & Verification | N/A | \$0 | \$0 | \$0 | \$0 | Net Annual kWh Saved at Generator | $((B \times E \times I) / (1 - F)) \times J$ | | | 1,687,744 | kWh |
| Rebates | N/A | \$198,799 | \$198,799 | \$198,799 | \$198,799 | Societal Net Benefits | $(J \times I \times H)$ | | | \$26,753 | |
| Other | N/A | \$0 | \$0 | \$0 | \$0 | Utility Program Cost per kWh Lifetime | | | | \$0.0100 | |
| Subtotal | N/A | \$238,751 | \$238,751 | \$238,751 | \$238,751 | Utility Program Cost per kW at Gen | | | | \$765 | |
| Utility Revenue Reduction | | | | | | | | | | | |
| Revenue Reduction - Electric | N/A | N/A | \$1,008,898 | N/A | N/A | | | | | | |
| Subtotal | N/A | N/A | \$1,008,898 | N/A | N/A | | | | | | |
| Participant Costs | | | | | | | | | | | |
| Incremental Capital Costs | \$841,488 | N/A | N/A | \$841,488 | \$841,488 | | | | | | |
| Incremental O&M Costs | \$49,575 | N/A | N/A | \$49,575 | \$49,575 | | | | | | |
| Subtotal | \$891,062 | N/A | N/A | \$891,062 | \$891,062 | | | | | | |
| Total Costs | \$891,062 | \$238,751 | \$1,247,649 | \$1,129,814 | \$1,129,814 | | | | | | |
| Net Benefit (Cost) | \$316,634 | \$719,017 | (\$289,881) | \$26,753 | \$26,753 | | | | | | |
| Benefit/Cost Ratio | 1.36 | 4.01 | 0.77 | 1.02 | 1.02 | | | | | | |

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

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2015 SD DSM Plan Cost-Effectiveness Analysis

| PEAK AND ENERGY CONTROL | | | | | | 2015 ELECTRIC | | | ACTUAL |
|--|--------------------|------------------|------------------|------------------|------------------|--|--|--|-------------------|
| 2015 Net Present Cost Benefit Summary Analysis For All Participants | | | | | | Input Summary and Totals | | | |
| | Participant | Utility | Rate | Total | | Program "Inputs" per Customer kW | | | |
| | Test | Test | Impact | Resource | Societal | Lifetime (Weighted on Generator kWh) | A | | 5.0 years |
| | (\$Total) | (\$Total) | (\$Total) | (\$Total) | (\$Total) | Annual Hours | B | | 8760 |
| Benefits | | | | | | Gross Customer kW | C | | 1 kW |
| Avoided Revenue Requirements | | | | | | Generator Peak Coincidence Factor | D | | 44.46% |
| Generation | N/A | \$327,978 | \$327,978 | \$327,978 | \$327,978 | Gross Load Factor at Customer | E | | 0.28% |
| T & D | N/A | \$0 | \$0 | \$0 | \$0 | Transmission Loss Factor (Energy) | F | | 5.330% |
| Marginal Energy | N/A | \$12,647 | \$12,647 | \$12,647 | \$12,647 | Transmission Loss Factor (Demand) | G | | 6.290% |
| Environmental Externality | N/A | N/A | N/A | N/A | \$0 | Societal Net Benefit (Cost) | H | | \$201 |
| Subtotal | N/A | \$340,625 | \$340,625 | \$340,625 | \$340,625 | Program Summary per Participant | | | |
| Participant Benefits | | | | | | Gross kW Saved at Customer | I | | 185.44 kW |
| Bill Reduction - Electric | \$140,437 | N/A | N/A | N/A | N/A | Net coincident kW Saved at Generator | $(I \times D) / (1 - G)$ | | 87.98 kW |
| Rebates from Xcel Energy | \$0 | N/A | N/A | \$0 | \$0 | Gross Annual kWh Saved at Customer | $(B \times E \times I)$ | | 4,597 kWh |
| Incremental Capital Savings | \$0 | N/A | N/A | \$0 | \$0 | Net Annual kWh Saved at Generator | $(B \times E \times I) / (1 - F)$ | | 4,855 kWh |
| Incremental O&M Savings | \$0 | N/A | N/A | \$0 | \$0 | Program Summary All Participants | | | |
| Subtotal | \$140,437 | N/A | N/A | \$0 | \$0 | Total Participants | J | | 9 |
| Total Benefits | | | | | | Total Budget | K | | \$4,708 |
| Costs | | | | | | Gross kW Saved at Customer | $(J \times I)$ | | 1,669.00 kW |
| Utility Project Costs | | | | | | Net coincident kW Saved at Generator | $(I \times D) / (1 - G) \times J$ | | 791.84 kW |
| Customer Services | N/A | \$0 | \$0 | \$0 | \$0 | Gross Annual kWh Saved at Customer | $(B \times E \times I) \times J$ | | 41,369 kWh |
| Utility Administration | N/A | \$4,708 | \$4,708 | \$4,708 | \$4,708 | Net Annual kWh Saved at Generator | $((B \times E \times I) / (1 - F)) \times J$ | | 43,698 kWh |
| Advertising & Promotion | N/A | \$0 | \$0 | \$0 | \$0 | Societal Net Benefits | $(J \times I \times H)$ | | \$335,917 |
| Measurement & Verification | N/A | \$0 | \$0 | \$0 | \$0 | Utility Program Cost per kWh Lifetime | | | |
| Rebates | N/A | \$0 | \$0 | \$0 | \$0 | \$0.0215 | | | |
| Other | N/A | \$0 | \$0 | \$0 | \$0 | Utility Program Cost per kW at Gen | | | |
| Subtotal | N/A | \$4,708 | \$4,708 | \$4,708 | \$4,708 | \$6 | | | |
| Utility Revenue Reduction | | | | | | | | | |
| Revenue Reduction - Electric | N/A | N/A | \$140,437 | N/A | N/A | | | | |
| Subtotal | N/A | N/A | \$140,437 | N/A | N/A | | | | |
| Participant Costs | | | | | | | | | |
| Incremental Capital Costs | \$0 | N/A | N/A | \$0 | \$0 | | | | |
| Incremental O&M Costs | \$0 | N/A | N/A | \$0 | \$0 | | | | |
| Subtotal | \$0 | N/A | N/A | \$0 | \$0 | | | | |
| Total Costs | | | | | | | | | |
| | \$0 | \$4,708 | \$145,145 | \$4,708 | \$4,708 | | | | |
| Net Benefit (Cost) | | | | | | | | | |
| | \$140,437 | \$335,917 | \$195,480 | \$335,917 | \$335,917 | | | | |
| Benefit/Cost Ratio | | | | | | | | | |
| | INF | 72.36 | 2.35 | 72.36 | 72.36 | | | | |

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

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2015 SD DSM Plan Cost-Effectiveness Analysis

| PORTFOLIO TOTAL | | | | | | 2015 ELECTRIC | | | ACTUAL |
|--|--------------------|------------------|------------------|------------------|------------------|--|--|-------------|---------------|
| 2015 Net Present Cost Benefit Summary Analysis For All Participants | | | | | | Input Summary and Totals | | | |
| | Participant | Utility | Rate | Total | | Program "Inputs" per Customer kW | | | |
| | Test | Test | Impact | Resource | Societal | Lifetime (Weighted on Generator kWh) | A | 12.9 | years |
| | (\$Total) | (\$Total) | (\$Total) | (\$Total) | (\$Total) | Annual Hours | B | 8760 | |
| Benefits | | | | | | Gross Customer kW | C | 1 | kW |
| Avoided Revenue Requirements | | | | | | Generator Peak Coincidence Factor | D | 26.23% | |
| Generation | N/A | \$1,591,208 | \$1,591,208 | \$1,591,208 | \$1,591,208 | Gross Load Factor at Customer | E | 6.10% | |
| T & D | N/A | \$185,854 | \$185,854 | \$185,854 | \$185,854 | Transmission Loss Factor (Energy) | F | 6.282% | |
| Marginal Energy | N/A | \$1,674,190 | \$1,674,190 | \$1,674,190 | \$1,674,190 | Transmission Loss Factor (Demand) | G | 7.658% | |
| Environmental Externality | N/A | N/A | N/A | N/A | \$0 | Societal Net Benefit (Cost) | H | \$202 | |
| Subtotal | N/A | \$3,451,253 | \$3,451,253 | \$3,451,253 | \$3,451,253 | Program Summary per Participant | | | |
| Participant Benefits | | | | | | Gross kW Saved at Customer | I | 0.06 | kW |
| Bill Reduction - Electric | \$4,569,049 | N/A | N/A | N/A | N/A | Net coincident kW Saved at Generator | $(I \times D) / (1 - G)$ | 0.02 | kW |
| Rebates from Xcel Energy | \$345,473 | N/A | N/A | \$345,473 | \$345,473 | Gross Annual kWh Saved at Customer | $(B \times E \times I)$ | 32 | kWh |
| Incremental Capital Savings | \$0 | N/A | N/A | \$0 | \$0 | Net Annual kWh Saved at Generator | $(B \times E \times I) / (1 - F)$ | 34 | kWh |
| Incremental O&M Savings | \$0 | N/A | N/A | \$0 | \$0 | Program Summary All Participants | | | |
| Subtotal | \$4,914,522 | N/A | N/A | \$345,473 | \$345,473 | Total Participants | J | 133,123 | |
| Total Benefits | | | | | | Total Budget | K | \$844,973 | |
| Costs | | | | | | Gross kW Saved at Customer | $(J \times I)$ | 7,914.89 | kW |
| Utility Project Costs | | | | | | Net coincident kW Saved at Generator | $(I \times D) / (1 - G) \times J$ | 2,247.88 | kW |
| Customer Services | N/A | \$0 | \$0 | \$0 | \$0 | Gross Annual kWh Saved at Customer | $(B \times E \times I) \times J$ | 4,226,568 | kWh |
| Utility Administration | N/A | \$499,500 | \$499,500 | \$499,500 | \$499,500 | Net Annual kWh Saved at Generator | $((B \times E \times I) / (1 - F)) \times J$ | 4,509,870 | kWh |
| Advertising & Promotion | N/A | \$0 | \$0 | \$0 | \$0 | Societal Net Benefits | $(J \times I \times H)$ | \$1,596,220 | |
| Measurement & Verification | N/A | \$0 | \$0 | \$0 | \$0 | Utility Program Cost per kWh Lifetime | | | |
| Rebates | N/A | \$345,473 | \$345,473 | \$345,473 | \$345,473 | Utility Program Cost per kW at Gen | | | |
| Other | N/A | \$0 | \$0 | \$0 | \$0 | \$0.0145 | | | |
| Subtotal | N/A | \$844,973 | \$844,973 | \$844,973 | \$844,973 | \$376 | | | |
| Utility Revenue Reduction | | | | | | | | | |
| Revenue Reduction - Electric | N/A | N/A | \$4,569,049 | N/A | N/A | | | | |
| Subtotal | N/A | N/A | \$4,569,049 | N/A | N/A | | | | |
| Participant Costs | | | | | | | | | |
| Incremental Capital Costs | \$1,305,957 | N/A | N/A | \$1,305,957 | \$1,305,957 | | | | |
| Incremental O&M Costs | \$49,575 | N/A | N/A | \$49,575 | \$49,575 | | | | |
| Subtotal | \$1,355,532 | N/A | N/A | \$1,355,532 | \$1,355,532 | | | | |
| Total Costs | | | | | | | | | |
| | \$1,355,532 | \$844,973 | \$5,414,023 | \$2,200,505 | \$2,200,505 | | | | |
| Net Benefit (Cost) | | | | | | | | | |
| | \$3,558,990 | \$2,606,279 | (\$1,962,770) | \$1,596,220 | \$1,596,220 | | | | |
| Benefit/Cost Ratio | | | | | | | | | |
| | 3.63 | 4.08 | 0.64 | 1.73 | 1.73 | | | | |

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

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2015 SD DSM Plan Cost-Effectiveness Analysis

| GROUND SOURCE HEAT PUMP | | | | | | 2015 | ELECTRIC | ACTUAL |
|--|--------------------|------------------|------------------|------------------|------------------|--|-----------------------------------|-------------------|
| 2015 Net Present Cost Benefit Summary Analysis For All Participants | | | | | | Input Summary and Totals | | |
| | Participant | Utility | Rate | Total | | Program "Inputs" per Customer kW | | |
| | Test | Test | Impact | Resource | Societal | Lifetime (Weighted on Generator kWh) | A | 20.0 years |
| | (\$Total) | (\$Total) | (\$Total) | (\$Total) | (\$Total) | Annual Hours | B | 8760 |
| Benefits | | | | | | Gross Customer kW | C | 1 kW |
| Avoided Revenue Requirements | | | | | | Generator Peak Coincidence Factor | D | 89.99% |
| Generation | N/A | \$18,848 | \$18,848 | \$18,848 | \$18,848 | Gross Load Factor at Customer | E | 18.22% |
| T & D | N/A | \$7,146 | \$7,146 | \$7,146 | \$7,146 | Transmission Loss Factor (Energy) | F | 7.280% |
| Marginal Energy | N/A | \$18,738 | \$18,738 | \$18,738 | \$18,738 | Transmission Loss Factor (Demand) | G | 8.300% |
| Environmental Externality | N/A | N/A | N/A | N/A | \$0 | Societal Net Benefit (Cost) | H | (\$1,334) |
| Subtotal | N/A | \$44,733 | \$44,733 | \$44,733 | \$44,733 | Program Summary per Participant | | |
| Participant Benefits | | | | | | Gross kW Saved at Customer | I | 2.89 kW |
| Bill Reduction - Electric | \$53,536 | N/A | N/A | N/A | N/A | Net coincident kW Saved at Generator | (I x D) / (1 - G) | 2.84 kW |
| Rebates from Xcel Energy | \$12,771 | N/A | N/A | \$12,771 | \$12,771 | Gross Annual kWh Saved at Customer | (B x E x I) | 4,615 kWh |
| Incremental Capital Savings | \$0 | N/A | N/A | \$0 | \$0 | Net Annual kWh Saved at Generator | (B x E x I) / (1 - F) | 4,978 kWh |
| Incremental O&M Savings | \$0 | N/A | N/A | \$0 | \$0 | Program Summary All Participants | | |
| Subtotal | \$66,307 | N/A | N/A | \$12,771 | \$12,771 | Total Participants | J | 9 |
| Total Benefits | | | | | | Total Budget | K | \$14,361 |
| Costs | | | | | | Gross kW Saved at Customer | (J x I) | 26.03 kW |
| Utility Project Costs | | | | | | Net coincident kW Saved at Generator | (I x D) / (1 - G) x J | 25.54 kW |
| Customer Services | N/A | \$0 | \$0 | \$0 | \$0 | Gross Annual kWh Saved at Customer | (B x E x I) x J | 41,538 kWh |
| Utility Administration | N/A | \$1,590 | \$1,590 | \$1,590 | \$1,590 | Net Annual kWh Saved at Generator | ((B x E x I) / (1 - F)) x J | 44,799 kWh |
| Advertising & Promotion | N/A | \$0 | \$0 | \$0 | \$0 | Societal Net Benefits | (J x I x H) | (\$34,716) |
| Measurement & Verification | N/A | \$0 | \$0 | \$0 | \$0 | Utility Program Cost per kWh Lifetime | | |
| Rebates | N/A | \$12,771 | \$12,771 | \$12,771 | \$12,771 | Utility Program Cost per kW at Gen | | |
| Other | N/A | \$0 | \$0 | \$0 | \$0 | \$0.0160 | | |
| Subtotal | N/A | \$14,361 | \$14,361 | \$14,361 | \$14,361 | \$562 | | |
| Utility Revenue Reduction | | | | | | | | |
| Revenue Reduction - Electric | N/A | N/A | \$53,536 | N/A | N/A | | | |
| Subtotal | N/A | N/A | \$53,536 | N/A | N/A | | | |
| Participant Costs | | | | | | | | |
| Incremental Capital Costs | \$77,859 | N/A | N/A | \$77,859 | \$77,859 | | | |
| Incremental O&M Costs | \$0 | N/A | N/A | \$0 | \$0 | | | |
| Subtotal | \$77,859 | N/A | N/A | \$77,859 | \$77,859 | | | |
| Total Costs | | | | | | | | |
| | \$77,859 | \$14,361 | \$67,898 | \$92,220 | \$92,220 | | | |
| Net Benefit (Cost) | | | | | | | | |
| | (\$11,551) | \$30,372 | (\$23,165) | (\$34,716) | (\$34,716) | | | |
| Benefit/Cost Ratio | | | | | | | | |
| | 0.85 | 3.11 | 0.66 | 0.62 | 0.62 | | | |

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

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2015 SD DSM Plan Cost-Effectiveness Analysis

| RESIDENTIAL HOME LIGHTING | | | | | | 2015 ELECTRIC | | | ACTUAL | |
|--|--------------------|------------------|------------------|------------------|------------------|--|--|-------------|----------------------|-----------|
| 2015 Net Present Cost Benefit Summary Analysis For All Participants | | | | | | Input Summary and Totals | | | | |
| | Participant | Utility | Rate | Total | | Program "Inputs" per Customer kW | | | | |
| | Test | Test | Impact | Resource | Societal | Lifetime (Weighted on Generator kWh) | A | | 12.2 years | |
| | (\$Total) | (\$Total) | (\$Total) | (\$Total) | (\$Total) | Annual Hours | B | | 8760 | |
| Benefits | | | | | | Gross Customer kW | C | | 1 kW | |
| Avoided Revenue Requirements | | | | | | Generator Peak Coincidence Factor | D | | 12.48% | |
| Generation | N/A | \$223,350 | \$223,350 | \$223,350 | \$223,350 | Gross Load Factor at Customer | E | | 11.67% | |
| T & D | N/A | \$85,006 | \$85,006 | \$85,006 | \$85,006 | Transmission Loss Factor (Energy) | F | | 6.868% | |
| Marginal Energy | N/A | \$1,021,934 | \$1,021,934 | \$1,021,934 | \$1,021,934 | Transmission Loss Factor (Demand) | G | | 8.184% | |
| Environmental Externality | N/A | N/A | N/A | N/A | \$0 | Societal Net Benefit (Cost) | H | | \$351 | |
| Subtotal | N/A | \$1,330,290 | \$1,330,290 | \$1,330,290 | \$1,330,290 | Program Summary per Participant | | | | |
| Participant Benefits | | | | | | Gross kW Saved at Customer | I | | 0.06 kW | |
| Bill Reduction - Electric | \$2,916,582 | N/A | N/A | N/A | N/A | Net coincident kW Saved at Generator | $(I \times D) / (1 - G)$ | | 0.01 kW | |
| Rebates from Xcel Energy | \$133,903 | N/A | N/A | \$133,903 | \$133,903 | Gross Annual kWh Saved at Customer | $(B \times E \times I)$ | | 65 kWh | |
| Incremental Capital Savings | \$0 | N/A | N/A | \$0 | \$0 | Net Annual kWh Saved at Generator | $(B \times E \times I) / (1 - F)$ | | 70 kWh | |
| Incremental O&M Savings | \$0 | N/A | N/A | \$0 | \$0 | Program Summary All Participants | | | | |
| Subtotal | \$3,050,485 | N/A | N/A | \$133,903 | \$133,903 | Total Participants | J | | 38,919 | |
| Total Benefits | | | | | | Total Budget | K | | \$204,700 | |
| | \$3,050,485 | \$1,330,290 | \$1,330,290 | \$1,464,193 | \$1,464,193 | Gross kW Saved at Customer | $(J \times I)$ | | 2,484.13 kW | |
| Costs | | | | | | Net coincident kW Saved at Generator | $(I \times D) / (1 - G) \times J$ | | 337.65 kW | |
| Utility Project Costs | | | | | | Gross Annual kWh Saved at Customer | $(B \times E \times I) \times J$ | | 2,540,040 kWh | |
| Customer Services | N/A | \$0 | \$0 | \$0 | \$0 | Net Annual kWh Saved at Generator | $((B \times E \times I) / (1 - F)) \times J$ | | 2,727,345 kWh | |
| Utility Administration | N/A | \$70,797 | \$70,797 | \$70,797 | \$70,797 | Societal Net Benefits | $(J \times I \times H)$ | | \$872,882 | |
| Advertising & Promotion | N/A | \$0 | \$0 | \$0 | \$0 | Utility Program Cost per kWh Lifetime | | | | |
| Measurement & Verification | N/A | \$0 | \$0 | \$0 | \$0 | Utility Program Cost per kW at Gen | | | | |
| Rebates | N/A | \$133,903 | \$133,903 | \$133,903 | \$133,903 | | | | \$0.0061 | |
| Other | N/A | \$0 | \$0 | \$0 | \$0 | | | | \$606 | |
| Subtotal | N/A | \$204,700 | \$204,700 | \$204,700 | \$204,700 | Participant Costs | | | | |
| Utility Revenue Reduction | | | | | | Incremental Capital Costs | \$386,611 | N/A | N/A | \$386,611 |
| Revenue Reduction - Electric | N/A | N/A | \$2,916,582 | N/A | N/A | Incremental O&M Costs | \$0 | N/A | N/A | \$0 |
| Subtotal | N/A | N/A | \$2,916,582 | N/A | N/A | Subtotal | \$386,611 | N/A | N/A | \$386,611 |
| Participant Costs | | | | | | Total Costs | | | | |
| Incremental Capital Costs | \$386,611 | N/A | N/A | \$386,611 | \$386,611 | | \$386,611 | \$204,700 | \$3,121,282 | \$591,311 |
| Incremental O&M Costs | \$0 | N/A | N/A | \$0 | \$0 | Net Benefit (Cost) | | | | |
| Subtotal | \$386,611 | N/A | N/A | \$386,611 | \$386,611 | | \$2,663,874 | \$1,125,590 | (\$1,790,992) | \$872,882 |
| Total Costs | | | | | | Benefit/Cost Ratio | | | | |
| | \$386,611 | \$204,700 | \$3,121,282 | \$591,311 | \$591,311 | | 7.89 | 6.50 | 0.43 | 2.48 |
| Net Benefit (Cost) | | | | | | Benefit/Cost Ratio | | | | |
| | \$2,663,874 | \$1,125,590 | (\$1,790,992) | \$872,882 | \$872,882 | | 7.89 | 6.50 | 0.43 | 2.48 |
| Benefit/Cost Ratio | | | | | | | | | | |
| | 7.89 | 6.50 | 0.43 | 2.48 | 2.48 | | | | | |

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

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2015 SD DSM Plan Cost-Effectiveness Analysis

| RESIDENTIAL SAVER'S SWITCH | | | | | | 2015 | ELECTRIC | ACTUAL |
|--|-----------------------------------|-------------------------------|-----------------------------------|--------------------------------------|--------------------------------|--|--|------------------|
| 2015 Net Present Cost Benefit Summary Analysis For All Participants | | | | | | Input Summary and Totals | | |
| | Participant Test (\$Total) | Utility Test (\$Total) | Rate Impact Test (\$Total) | Total Resource Test (\$Total) | Societal Test (\$Total) | Program "Inputs" per Customer kW | | |
| Benefits | | | | | | Lifetime (Weighted on Generator kWh) | A | 15.0 years |
| Avoided Revenue Requirements | | | | | | Annual Hours | B | 8760 |
| Generation | N/A | \$718,984 | \$718,984 | \$718,984 | \$718,984 | Gross Customer kW | C | 1 kW |
| T & D | N/A | \$0 | \$0 | \$0 | \$0 | Generator Peak Coincidence Factor | D | 22.27% |
| Marginal Energy | N/A | \$3,640 | \$3,640 | \$3,640 | \$3,640 | Gross Load Factor at Customer | E | 0.02% |
| Environmental Externality | N/A | N/A | N/A | N/A | \$0 | Transmission Loss Factor (Energy) | F | 7.280% |
| Subtotal | N/A | \$722,625 | \$722,625 | \$722,625 | \$722,625 | Transmission Loss Factor (Demand) | G | 8.300% |
| | | | | | | Societal Net Benefit (Cost) | H | \$151 |
| Participant Benefits | | | | | | Program Summary per Participant | | |
| Bill Reduction - Electric | \$443,451 | N/A | N/A | N/A | N/A | Gross kW Saved at Customer | I | 2.92 kW |
| Rebates from Xcel Energy | \$0 | N/A | N/A | \$0 | \$0 | Net coincident kW Saved at Generator | (I x D) / (1 - G) | 0.71 kW |
| Incremental Capital Savings | \$0 | N/A | N/A | \$0 | \$0 | Gross Annual kWh Saved at Customer | (B x E x I) | 5 kWh |
| Incremental O&M Savings | \$0 | N/A | N/A | \$0 | \$0 | Net Annual kWh Saved at Generator | (B x E x I) / (1 - F) | 6 kWh |
| Subtotal | \$443,451 | N/A | N/A | \$0 | \$0 | Program Summary All Participants | | |
| Total Benefits | \$443,451 | \$722,625 | \$722,625 | \$722,625 | \$722,625 | Total Participants | J | 1,024 |
| Costs | | | | | | Total Budget | K | \$270,775 |
| Utility Project Costs | | | | | | Gross kW Saved at Customer | (J x I) | 2,987.37 kW |
| Customer Services | N/A | \$0 | \$0 | \$0 | \$0 | Net coincident kW Saved at Generator | (I x D) / (1 - G) x J | 725.52 kW |
| Utility Administration | N/A | \$270,775 | \$270,775 | \$270,775 | \$270,775 | Gross Annual kWh Saved at Customer | (B x E x I) x J | 5,449 kWh |
| Advertising & Promotion | N/A | \$0 | \$0 | \$0 | \$0 | Net Annual kWh Saved at Generator | ((B x E x I) / (1 - F)) x J | 5,877 kWh |
| Measurement & Verification | N/A | \$0 | \$0 | \$0 | \$0 | Societal Net Benefits | (J x I x H) | \$451,850 |
| Rebates | N/A | \$0 | \$0 | \$0 | \$0 | Utility Program Cost per kWh Lifetime | | |
| Other | N/A | \$0 | \$0 | \$0 | \$0 | Utility Program Cost per kW at Gen | | |
| Subtotal | N/A | \$270,775 | \$270,775 | \$270,775 | \$270,775 | | | \$3.0717 |
| | | | | | | | | \$373 |
| Utility Revenue Reduction | | | | | | Net Benefit (Cost) | | |
| Revenue Reduction - Electric | N/A | N/A | \$443,451 | N/A | N/A | | | \$443,451 |
| Subtotal | N/A | N/A | \$443,451 | N/A | N/A | Benefit/Cost Ratio | | |
| | | | | | | | | INF |
| Participant Costs | | | | | | | | 2.67 |
| Incremental Capital Costs | \$0 | N/A | N/A | \$0 | \$0 | | | 1.01 |
| Incremental O&M Costs | \$0 | N/A | N/A | \$0 | \$0 | | | 2.67 |
| Subtotal | \$0 | N/A | N/A | \$0 | \$0 | | | 2.67 |
| Total Costs | \$0 | \$270,775 | \$714,227 | \$270,775 | \$270,775 | | | |
| Net Benefit (Cost) | \$443,451 | \$451,850 | \$8,398 | \$451,850 | \$451,850 | | | |
| Benefit/Cost Ratio | INF | 2.67 | 1.01 | 2.67 | 2.67 | | | |

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

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2015 SD DSM Plan Cost-Effectiveness Analysis

| RESIDENTIAL SEGMENT TOTAL | | | | | | 2015 ELECTRIC ACTUAL | | |
|--|--------------------|------------------|------------------|------------------|------------------|--|--|----------------------|
| 2015 Net Present Cost Benefit Summary Analysis For All Participants | | | | | | Input Summary and Totals | | |
| | Participant | Utility | Rate | Total | Societal | Program "Inputs" per Customer kW | | |
| | Test | Test | Impact | Resource | Test | Lifetime (Weighted on Generator kWh) | A | 12.4 years |
| | (\$Total) | (\$Total) | (\$Total) | (\$Total) | (\$Total) | Annual Hours | B | 8760 |
| Benefits | | | | | | Gross Customer kW | C | 1 kW |
| Avoided Revenue Requirements | | | | | | Generator Peak Coincidence Factor | D | 18.17% |
| Generation | N/A | \$961,183 | \$961,183 | \$961,183 | \$961,183 | Gross Load Factor at Customer | E | 5.37% |
| T & D | N/A | \$92,152 | \$92,152 | \$92,152 | \$92,152 | Transmission Loss Factor (Energy) | F | 6.875% |
| Marginal Energy | N/A | \$1,044,313 | \$1,044,313 | \$1,044,313 | \$1,044,313 | Transmission Loss Factor (Demand) | G | 8.248% |
| Environmental Externality | N/A | N/A | N/A | N/A | \$0 | Societal Net Benefit (Cost) | H | \$223 |
| Subtotal | N/A | \$2,097,648 | \$2,097,648 | \$2,097,648 | \$2,097,648 | Program Summary per Participant | | |
| Participant Benefits | | | | | | Gross kW Saved at Customer | I | 0.04 kW |
| Bill Reduction - Electric | \$3,413,570 | N/A | N/A | N/A | N/A | Net coincident kW Saved at Generator | $(I \times D) / (1 - G)$ | 0.01 kW |
| Rebates from Xcel Energy | \$146,674 | N/A | N/A | \$146,674 | \$146,674 | Gross Annual kWh Saved at Customer | $(B \times E \times I)$ | 19 kWh |
| Incremental Capital Savings | \$0 | N/A | N/A | \$0 | \$0 | Net Annual kWh Saved at Generator | $(B \times E \times I) / (1 - F)$ | 21 kWh |
| Incremental O&M Savings | \$0 | N/A | N/A | \$0 | \$0 | Program Summary All Participants | | |
| Subtotal | \$3,560,244 | N/A | N/A | \$146,674 | \$146,674 | Total Participants | J | 133,008 |
| Total Benefits | | | | | | Total Budget | K | \$552,841 |
| Costs | | | | | | Gross kW Saved at Customer | $(J \times I)$ | 5,497.52 kW |
| Utility Project Costs | | | | | | Net coincident kW Saved at Generator | $(I \times D) / (1 - G) \times J$ | 1,088.71 kW |
| Customer Services | N/A | \$0 | \$0 | \$0 | \$0 | Gross Annual kWh Saved at Customer | $(B \times E \times I) \times J$ | 2,587,027 kWh |
| Utility Administration | N/A | \$406,168 | \$406,168 | \$406,168 | \$406,168 | Net Annual kWh Saved at Generator | $((B \times E \times I) / (1 - F)) \times J$ | 2,778,021 kWh |
| Advertising & Promotion | N/A | \$0 | \$0 | \$0 | \$0 | Societal Net Benefits | $(J \times I \times H)$ | \$1,227,011 |
| Measurement & Verification | N/A | \$0 | \$0 | \$0 | \$0 | Utility Program Cost per kWh Lifetime | | |
| Rebates | N/A | \$146,674 | \$146,674 | \$146,674 | \$146,674 | Utility Program Cost per kW at Gen | | |
| Other | N/A | \$0 | \$0 | \$0 | \$0 | \$0.0161 | | |
| Subtotal | N/A | \$552,841 | \$552,841 | \$552,841 | \$552,841 | \$508 | | |
| Utility Revenue Reduction | | | | | | | | |
| Revenue Reduction - Electric | N/A | N/A | \$3,413,570 | N/A | N/A | | | |
| Subtotal | N/A | N/A | \$3,413,570 | N/A | N/A | | | |
| Participant Costs | | | | | | | | |
| Incremental Capital Costs | \$464,470 | N/A | N/A | \$464,470 | \$464,470 | | | |
| Incremental O&M Costs | \$0 | N/A | N/A | \$0 | \$0 | | | |
| Subtotal | \$464,470 | N/A | N/A | \$464,470 | \$464,470 | | | |
| Total Costs | | | | | | | | |
| | \$464,470 | \$552,841 | \$3,966,411 | \$1,017,311 | \$1,017,311 | | | |
| Net Benefit (Cost) | | | | | | | | |
| | \$3,095,774 | \$1,544,807 | (\$1,868,763) | \$1,227,011 | \$1,227,011 | | | |
| Benefit/Cost Ratio | | | | | | | | |
| | 7.67 | 3.79 | 0.53 | 2.21 | 2.21 | | | |

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.