

**Montana-Dakota Utilities Co.
 Gas Utility - South Dakota
 Conservation Portfolio Summary
 2012 - 2014 Program Years**

| <u>Programs</u> | <u>Total Participants</u> | <u>Total Energy Reduction</u> | <u>Total Cost</u> | <u>Lifetime Cost/Dk</u> |
|------------------------------------|-------------------------------|---------------------------------------|-------------------------|-----------------------------|
| Conservation Programs | | | | |
| Residential Program | | | | |
| Furnaces - 92-94% AFUE | 21 | 4,464 | \$3,943 | \$0.88 |
| Furnaces - 95+% AFUE - New | 57 | 7,290 | 21,114 | 2.90 |
| Furnaces - 95+% AFUE - Replacement | 585 | 137,952 | 217,736 | 1.58 |
| Furnace Tune-Up | 195 | 1,132 | 10,038 | 8.87 |
| Water Heating (.62 EF) | 78 | 1,090 | 4,962 | 4.55 |
| Water Heating (.67 EF) | 20 | 720 | 2,493 | 3.46 |
| Programmable Thermostats | 300 | 13,050 | 8,094 | 0.62 |
| | <u>1,256</u> | <u>165,698</u> | <u>\$268,380</u> | <u>1.62</u> |
| Commercial Program | | | | |
| Furnaces - 92-94% AFUE | 18 | 6,732 | \$3,304 | \$0.49 |
| Furnaces - 95+% AFUE - New | 23 | 5,130 | 8,476 | 1.65 |
| Furnaces - 95+% AFUE - Replacement | 30 | 12,420 | 11,049 | 0.89 |
| Custom Efficiency | 18 | 27,000 | 13,218 | 0.49 |
| | <u>89</u> | <u>51,282</u> | <u>\$36,047</u> | <u>0.70</u> |
| Energy Audit Program Costs | | | \$33,000 | |
| Total Programs | <u><u>1,345</u></u> | <u><u>216,980</u></u> | <u><u>\$337,427</u></u> | <u><u>\$1.56</u></u> |

**Montana-Dakota Utilities Co.
Gas Utility - South Dakota
Conservation Portfolio Summary
2012 - 2014 Program Years**

| Programs | 2012 | | | 2013 | | | 2014 | | | Lifetime |
|-----------------------------------|--------------|-----------------|--------------|--------------|------------------|--------------|--------------|------------------|--------------|----------------|
| | Participants | Cost | Dk Savings | Participants | Cost | Dk Savings | Participants | Cost | Dk Savings | Dk Savings |
| Residential Program | | | | | | | | | | |
| Furnaces - 92-94% AFUE | 7 | \$1,354 | 83 | 7 | \$1,314 | 83 | 7 | \$1,275 | 83 | 4,464 |
| Furnaces - 95+% AFUE - New | 12 | 4,613 | 85 | 19 | 7,091 | 135 | 26 | 9,410 | 185 | 7,290 |
| Furnaces - 95+% AFUE - Repl. | 170 | 65,345 | 2,227 | 195 | 72,772 | 2,555 | 220 | 79,619 | 2,882 | 137,952 |
| Furnace Tune-Up | 50 | 2,661 | 145 | 65 | 3,361 | 189 | 80 | 4,016 | 232 | 1,132 |
| Water Heating (.62 EF) | 17 | 1,121 | 24 | 25 | 1,602 | 35 | 36 | 2,239 | 50 | 1,090 |
| Water Heating (.67 EF) | 3 | 389 | 11 | 7 | 882 | 25 | 10 | 1,222 | 36 | 720 |
| Programmable Thermostats | 100 | 2,773 | 290 | 100 | 2,698 | 290 | 100 | 2,623 | 290 | 13,050 |
| Total Residential | 359 | \$78,256 | 2,865 | 418 | \$89,720 | 3,312 | 479 | \$100,404 | 3,758 | 165,698 |
| Commercial Program | | | | | | | | | | |
| Furnaces - 92-94% AFUE | 3 | \$573 | 62 | 6 | \$1,113 | 125 | 9 | \$1,618 | 187 | 6,732 |
| Furnaces - 95+% AFUE - New | 5 | 1,911 | 62 | 8 | 2,968 | 99 | 10 | 3,597 | 124 | 5,130 |
| Furnaces - 95+% AFUE - Repl. | 7 | 2,675 | 161 | 9 | 3,339 | 207 | 14 | 5,035 | 322 | 12,420 |
| Custom Efficiency | 3 | 2,293 | 300 | 6 | 4,451 | 600 | 9 | 6,474 | 900 | 27,000 |
| Total Commercial | 18 | \$7,452 | 585 | 29 | \$11,871 | 1,031 | 42 | \$16,724 | 1,533 | 51,282 |
| Energy Audit Program Costs | | \$7,000 | | | \$12,000 | | | \$14,000 | | |
| Total Programs | 377 | \$92,708 | 3,450 | 447 | \$113,591 | 4,343 | 521 | \$131,128 | 5,291 | 216,980 |

Montana-Dakota Utilities Co.
 South Dakota Gas DSM Program Summary

Benefit/Cost Ratios

| Program | Customer Class | RIM | Utility | Societal | Participant | Total Resource Cost |
|------------------------------|----------------|------|---------|----------|-------------|---------------------|
| Total Portfolio | | 1.80 | 2.81 | 2.63 | 3.73 | 1.67 |
| Furnace (92-94%) | Residential | 2.28 | 4.38 | 2.50 | 2.50 | 1.53 |
| Furnace (95+%) - New | Residential | 1.05 | 1.35 | 1.57 | 2.90 | 1.00 |
| Furnace (95+%) - Replacement | Residential | 1.62 | 2.46 | 2.54 | 3.78 | 1.59 |
| Furnace Tune-Up | Residential | 0.58 | 0.66 | 0.45 | 1.08 | 0.37 |
| Water Heating (.62 EF) | Residential | 0.86 | 1.04 | 1.47 | 2.80 | 1.04 |
| Water Heating (.67 EF) | Residential | 1.06 | 1.37 | 1.93 | 3.32 | 1.37 |
| Programmable Thermostats | Residential | 2.78 | 6.69 | 5.26 | 8.35 | 3.50 |
| Furnace (92-94%) | Commercial | 3.44 | 7.94 | 4.47 | 4.01 | 2.74 |
| Furnace (95+%) - New | Commercial | 1.70 | 2.36 | 2.45 | 3.62 | 1.54 |
| Furnace (95+%) - Replacement | Commercial | 2.54 | 4.38 | 4.22 | 5.14 | 2.62 |
| Custom Efficiency | Commercial | 3.56 | 8.56 | 3.11 | 2.88 | 2.01 |

**NATURAL GAS CONSERVATION PROGRAMS/DEMAND-SIDE MANAGEMENT
BEN/COST ANALYSIS FOR GAS CONSERVATION**

Company: **Montana-Dakota Utilities Co.**
Project: **Total South Dakota Program**
Program Years: **2012 - 2014**

| Input Data | First Year | Second Year | Third Year |
|---|------------|-------------|------------|
| 1) Retail Rate (\$/Dk) = | | | |
| Escalation Rate = | | | |
| 2) Non-Gas Fuel Retail Rate (\$/Fuel Unit) = | | | |
| Escalation Rate = | | | |
| Non-Gas Fuel Units (ie. kWh, Gallons, etc) = | | | |
| 3) Commodity Cost (\$/Dk) = | | | |
| Escalation Rate = | | | |
| 4) Demand Cost (\$/Unit/Yr) = | | | |
| Escalation Rate = | | | |
| 5) Peak Reduction Factor = | | | |
| 6) Variable O&M (\$/Dk) = | | | |
| Escalation Rate = | | | |
| 7) Non-Gas Fuel Cost (\$/Fuel Unit) = | | | |
| Escalation Rate = | | | |
| 8) Non-Gas Fuel Loss Factor | | | |
| 9) Gas Environmental Damage Factor = | | | |
| Escalation Rate = | | | |
| 10) Non Gas Fuel Environmental Damage Factor = | | | |
| Escalation Rate = | | | |
| 11) Participant Discount Rate = | 10.00% | | |
| 12) Utility Discount Rate = | 8.94% | | |
| 13) Societal Discount Rate = | 4.25% | | |
| 14) General Input Data Year = | 2011 | | |
| 15) Project Analysis Year 1 = | 2012 | | |
| Project Analysis Year 2 = | 2013 | | |
| Project Analysis Year 3 = | 2014 | | |
| 16) Utility Project Costs | | | |
| 16a) Administrative & Operating Costs = 1/ | \$26,058 | \$32,191 | \$34,328 |
| 16b) Incentive Costs = | 66,650 | 81,400 | 96,800 |
| 16c) Total Utility Project Costs = | \$92,708 | \$113,591 | \$131,128 |
| 17) Direct Participant Costs (\$/Part.) = | | | |
| 18) Participant Non-Energy Costs (Annual \$/Part.) = | | | |
| Escalation Rate = | | | |
| 19) Participant Non-Energy Savings (Annual \$/Part) = | | | |
| Escalation Rate = | | | |
| 20) Project Life (Years) = | | | |
| 21) Avg. Dk/Part. Saved = | | | |
| 22) Avg Non-Gas Fuel Units/Part. Saved = | | | |
| 22a) Avg Additional Non-Gas Fuel Units/ Part. Used = | | | |
| 23) Number of Participants = | 377 | 447 | 521 |
| 24) Total Annual Dk Saved = | 3,450 | 4,343 | 5,291 |
| 25) Incentive/Participant = | | | |
| 26) Distribution Delivery Charge | | | |
| 27) Effective Income Tax Rate = | | | |
| (Federal & State Taxes) | | | |

| Test Results | NPV | B/C |
|-------------------------------|-------------|------|
| Ratepayer Impact Measure Test | \$347,411 | 1.80 |
| Utility Cost Test | \$503,373 | 2.81 |
| Societal Test | \$941,872 | 2.63 |
| Participant Test | \$1,334,757 | 3.73 |
| Total Resource Cost Test | \$366,073 | 1.67 |

1/ Energy Audit program costs of \$7,000, \$12,000, and \$14,000 per year included with Total Program tests only.

**Table 1
Ratepayer Impact Measure Test**

Company: **Montana-Dakota Utilities Co.**
Project: **Total South Dakota Program**

| t | Year | Benefits | | | | | | | | Costs | | | | | Annual Benefits Less Costs (P) | |
|----------------------|------|----------------------------|---------------------------|---------------------------|----------------------------|----------------------------|--------------------------|------------------------------|------------------------|--------------------------|-------------------|----------------------------------|-----------------|-------------------------|--------------------------------|---------------------|
| | | Total Energy Reduction (A) | Gas Commodity Cost/Dk (B) | Gas Commodity Savings (C) | Variable O & M Cost/Dk (D) | Variable O & M Savings (E) | Total Energy Savings (F) | Peak Dk Demand Reduction (G) | Dmd Savings / Unit (H) | Total Demand Savings (I) | Total Savings (J) | Distribution Delivery Charge (K) | Lost Margin (L) | Program Admin Costs (M) | | Incentive Costs (N) |
| 1 | 2012 | 3,450 | | \$15,747 | | \$0 | \$15,747 | 35.0 | \$4,277 | \$20,024 | | \$3,916 | \$19,058 | \$66,650 | \$89,624 | (\$69,600) |
| 2 | 2013 | 7,792 | | 36,809 | | 0 | 36,809 | 78.0 | 9,828 | 46,637 | | 9,077 | 20,191 | 81,400 | 110,668 | (64,031) |
| 3 | 2014 | 12,938 | | 63,251 | | 0 | 63,251 | 129.0 | 16,434 | 79,685 | | 15,474 | 20,328 | 96,800 | 132,602 | (52,917) |
| 4 | 2015 | 12,749 | | 64,523 | | 0 | 64,523 | 128.0 | 16,321 | 80,844 | | 15,769 | 0 | 0 | 15,769 | 65,075 |
| 5 | 2016 | 12,517 | | 65,563 | | 0 | 65,563 | 125.0 | 16,150 | 81,713 | | 16,004 | 0 | 0 | 16,004 | 65,709 |
| 6 | 2017 | 12,517 | | 67,854 | | 0 | 67,854 | 125.0 | 16,403 | 84,257 | | 16,565 | 0 | 0 | 16,565 | 67,692 |
| 7 | 2018 | 12,517 | | 70,235 | | 0 | 70,235 | 125.0 | 16,525 | 86,760 | | 17,139 | 0 | 0 | 17,139 | 69,621 |
| 8 | 2019 | 12,517 | | 72,687 | | 0 | 72,687 | 125.0 | 16,652 | 89,339 | | 17,742 | 0 | 0 | 17,742 | 71,597 |
| 9 | 2020 | 12,517 | | 75,228 | | 0 | 75,228 | 125.0 | 16,906 | 92,134 | | 18,362 | 0 | 0 | 18,362 | 73,772 |
| 10 | 2021 | 12,517 | | 77,869 | | 0 | 77,869 | 125.0 | 17,027 | 94,896 | | 19,009 | 0 | 0 | 19,009 | 75,887 |
| 11 | 2022 | 12,482 | | 80,359 | | 0 | 80,359 | 125.0 | 17,111 | 97,470 | | 19,611 | 0 | 0 | 19,611 | 77,859 |
| 12 | 2023 | 12,422 | | 82,780 | | 0 | 82,780 | 124.0 | 17,278 | 100,058 | | 20,196 | 0 | 0 | 20,196 | 79,862 |
| 13 | 2024 | 12,336 | | 85,081 | | 0 | 85,081 | 123.0 | 17,276 | 102,357 | | 20,753 | 0 | 0 | 20,753 | 81,604 |
| 14 | 2025 | 12,336 | | 88,054 | | 0 | 88,054 | 123.0 | 17,522 | 105,576 | | 21,478 | 0 | 0 | 21,478 | 84,098 |
| 15 | 2026 | 12,336 | | 91,139 | | 0 | 91,139 | 123.0 | 17,647 | 108,786 | | 22,230 | 0 | 0 | 22,230 | 86,556 |
| 16 | 2027 | 11,746 | | 89,821 | | 0 | 89,821 | 118.0 | 16,920 | 106,741 | | 21,973 | 0 | 0 | 21,973 | 84,768 |
| 17 | 2028 | 10,856 | | 85,926 | | 0 | 85,926 | 109.0 | 15,855 | 101,781 | | 21,189 | 0 | 0 | 21,189 | 80,592 |
| 18 | 2029 | 9,666 | | 79,184 | | 0 | 79,184 | 97.0 | 14,215 | 93,399 | | 19,831 | 0 | 0 | 19,831 | 73,568 |
| 19 | 2030 | 6,986 | | 59,228 | | 0 | 59,228 | 70.0 | 10,416 | 69,644 | | 14,790 | 0 | 0 | 14,790 | 54,854 |
| 20 | 2031 | 3,783 | | 33,196 | | 0 | 33,196 | 38.0 | 5,670 | 38,866 | | 8,261 | 0 | 0 | 8,261 | 30,605 |
| 21 | 2032 | 0 | | 0 | | 0 | 0 | 0.0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 22 | 2033 | 0 | | 0 | | 0 | 0 | 0.0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| Total = | | 216,980 | | | | | | | | \$1,680,967 | | | | | \$643,796 | \$1,037,171 |
| NPV = | | | | | | | | | | \$781,028 | | | | | \$433,618 | \$347,411 |
| Total NPV = | | | | | | | | | | | | | | | | \$347,411 |
| Benefit/Cost Ratio = | | | | | | | | | | | | | | | | 1.80 |

| Worksheet Calculations | |
|---|--|
| (A) = Average Dk/Participant Saved (21) x Number of Participants (23) for Project Life (20) | (I) = (G) x (H) |
| (B) = Commodity Cost (3) escalated | (J) = (F) + (I) |
| (C) = (A) x (B) | (K) = Distribution Delivery Charge (26) escalated. |
| (D) = Variable O&M Cost (6), escalated | (L) = (A) x (K) x (1-Inverse of Tax Rate (27)) |
| (E) = (A) x (D) | (M) = Admin & Operating Costs (16a) |
| (F) = (C) + (E) | (N) = Incentive Costs (16b) |
| (G) = (A) x Peak Reduction Factor (5) | (O) = (L) + (M) + (N) |
| (H) = Demand Cost (4) escalated. | (P) = (J) - (O) |

**Table 2
Utility Cost Test**

Company: **Montana-Dakota Utilities Co.**
Project: **Total South Dakota Program**

| Year | Benefits | | | Costs | | | Annual Benefits Less Costs (G) |
|----------------------|--------------------------|--------------------------|--------------------------|-------------------------|---------------------|---------------------------|--------------------------------|
| | Total Energy Savings (A) | Total Demand Savings (B) | Annual Total Savings (C) | Program Admin Costs (D) | Incentive Costs (E) | Utility Program Costs (F) | |
| 2012 | \$15,747 | \$4,277 | \$20,024 | \$19,058 | \$66,650 | \$85,708 | (\$65,684) |
| 2013 | 36,809 | 9,828 | 46,637 | 20,191 | 81,400 | 101,591 | (54,954) |
| 2014 | 63,251 | 16,434 | 79,685 | 20,328 | 96,800 | 117,128 | (37,443) |
| 2015 | 64,523 | 16,321 | 80,844 | 0 | 0 | 0 | 80,844 |
| 2016 | 65,563 | 16,150 | 81,713 | 0 | 0 | 0 | 81,713 |
| 2017 | 67,854 | 16,403 | 84,257 | 0 | 0 | 0 | 84,257 |
| 2018 | 70,235 | 16,525 | 86,760 | 0 | 0 | 0 | 86,760 |
| 2019 | 72,687 | 16,652 | 89,339 | 0 | 0 | 0 | 89,339 |
| 2020 | 75,228 | 16,906 | 92,134 | 0 | 0 | 0 | 92,134 |
| 2021 | 77,869 | 17,027 | 94,896 | 0 | 0 | 0 | 94,896 |
| 2022 | 80,359 | 17,111 | 97,470 | 0 | 0 | 0 | 97,470 |
| 2023 | 82,780 | 17,278 | 100,058 | 0 | 0 | 0 | 100,058 |
| 2024 | 85,081 | 17,276 | 102,357 | 0 | 0 | 0 | 102,357 |
| 2025 | 88,054 | 17,522 | 105,576 | 0 | 0 | 0 | 105,576 |
| 2026 | 91,139 | 17,647 | 108,786 | 0 | 0 | 0 | 108,786 |
| 2027 | 89,821 | 16,920 | 106,741 | 0 | 0 | 0 | 106,741 |
| 2028 | 85,926 | 15,855 | 101,781 | 0 | 0 | 0 | 101,781 |
| 2029 | 79,184 | 14,215 | 93,399 | 0 | 0 | 0 | 93,399 |
| 2030 | 59,228 | 10,416 | 69,644 | 0 | 0 | 0 | 69,644 |
| 2031 | 33,196 | 5,670 | 38,866 | 0 | 0 | 0 | 38,866 |
| 2032 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2033 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total = | | | \$1,680,967 | | | \$304,427 | \$1,376,540 |
| | | NPV = | \$781,028 | | | \$277,655 | \$503,373 |
| Total NPV = | | | \$503,373 | | | | |
| Benefit/Cost Ratio = | | | <u>2.81</u> | | | | |

| Worksheet Calculations |
|------------------------|
| (A) = Table 1 (F) |
| (B) = Table 1 (I) |
| (C) = Table 1 (J) |
| (D) = Table 1 (M) |
| (E) = Table 1 (N) |
| (F) = (D) + (E) |
| (G) = (C) - (F) |

**Table 3
Societal Test**

Company: **Montana-Dakota Utilities Co.**
Project: **Total South Dakota Program**

| Year | Benefits | | | | | | | Costs | | | Annual Benefits Less Costs (K) |
|---------|--------------------------|--------------------------|---------------------------------------|----------------------------|-------------------------------------|----------------------------------|--------------------------|---------------------------|---------------------------------------|------------------------|--------------------------------|
| | Total Energy Savings (A) | Total Demand Savings (B) | Non-Gas Energy Savings (\$/Part.) (C) | Non-Gas Energy Savings (D) | Environmental Damage Savings/Dk (E) | Environmental Damage Savings (F) | Annual Total Savings (G) | Utility Program Costs (H) | Participants' Costs Net of Rebate (I) | Annual Total Costs (J) | |
| 2012 | \$15,747 | \$4,277 | | \$3,331 | | \$3,591 | \$26,946 | \$85,708 | \$78,780 | \$164,488 | (\$137,542) |
| 2013 | 36,809 | 9,828 | | 7,533 | | 8,299 | 62,469 | 101,591 | 99,470 | 201,061 | (138,592) |
| 2014 | 63,251 | 16,434 | | 12,714 | | 14,102 | 106,501 | 117,128 | 120,800 | 237,928 | (131,427) |
| 2015 | 64,523 | 16,321 | | 13,244 | | 14,216 | 108,304 | 0 | 0 | 0 | 108,304 |
| 2016 | 65,563 | 16,150 | | 13,773 | | 14,282 | 109,768 | 0 | 0 | 0 | 109,768 |
| 2017 | 67,854 | 16,403 | | 14,304 | | 14,607 | 113,168 | 0 | 0 | 0 | 113,168 |
| 2018 | 70,235 | 16,525 | | 14,833 | | 14,946 | 116,539 | 0 | 0 | 0 | 116,539 |
| 2019 | 72,687 | 16,652 | | 15,363 | | 15,284 | 119,986 | 0 | 0 | 0 | 119,986 |
| 2020 | 75,228 | 16,906 | | 15,893 | | 15,634 | 123,661 | 0 | 0 | 0 | 123,661 |
| 2021 | 77,869 | 17,027 | | 16,422 | | 15,997 | 127,315 | 0 | 0 | 0 | 127,315 |
| 2022 | 80,359 | 17,111 | | 16,952 | | 16,314 | 130,736 | 0 | 0 | 0 | 130,736 |
| 2023 | 82,780 | 17,278 | | 17,481 | | 16,609 | 134,148 | 0 | 0 | 0 | 134,148 |
| 2024 | 85,081 | 17,276 | | 18,011 | | 16,875 | 137,243 | 0 | 0 | 0 | 137,243 |
| 2025 | 88,054 | 17,522 | | 18,542 | | 17,271 | 141,389 | 0 | 0 | 0 | 141,389 |
| 2026 | 91,139 | 17,647 | | 19,072 | | 17,666 | 145,524 | 0 | 0 | 0 | 145,524 |
| 2027 | 89,821 | 16,920 | | 19,311 | | 17,209 | 143,261 | 0 | 0 | 0 | 143,261 |
| 2028 | 85,926 | 15,855 | | 18,975 | | 16,263 | 137,019 | 0 | 0 | 0 | 137,019 |
| 2029 | 79,184 | 14,215 | | 18,598 | | 14,818 | 126,815 | 0 | 0 | 0 | 126,815 |
| 2030 | 59,228 | 10,416 | | 14,077 | | 10,954 | 94,675 | 0 | 0 | 0 | 94,675 |
| 2031 | 33,196 | 5,670 | | 7,768 | | 6,068 | 52,702 | 0 | 0 | 0 | 52,702 |
| 2032 | 0 | 0 | | 0 | | 0 | 0 | 0 | 0 | 0 | 0 |
| 2033 | 0 | 0 | | 0 | | 0 | 0 | 0 | 0 | 0 | 0 |
| Total = | | | | | | | \$2,258,169 | | | \$603,477 | \$1,654,692 |
| | | | | | | | NPV = \$1,518,148 | | | \$576,276 | \$941,872 |

Total NPV = \$941,872
Benefit/Cost Ratio = 2.63

| Worksheet Calculations | |
|---|---|
| (A) = Table 1 (F) | (H) = Table 2 (F) |
| (G) = Table 1 (I) | (I) = Direct Part. Costs (17) x No. of Part. (23) - Table 1 (N) |
| (C) = Non-Gas Fuel Cost (7), adjusted for losses (8), escalated.. | (J) = (H) + (I) |
| (D) = (C) x [Avg. Non-Gas Fuel Units/Part.Saved (22) x No. of Part. (23)] | (K) = (G) - (J) |
| (E) = Gas Environmental Damage Factor (9), escalated | |
| (F) = Table 1 (A) x (E) | |
| (G) = (A) + (B) + (D) + (F) | |

**Table 4
Participant Test**

Company: **Montana-Dakota Utilities Co.**
Project: **Total South Dakota Program**

| Year | Benefits | | | | | | Costs | Annual Benefits Less Costs (I) | |
|-----------------------------|-------------------------|----------------------------|-----------------|----------------------|------------------------------|----------------------------|---------------------------|--------------------------------|------------------------------|
| | Incentives Received (A) | Total Energy Reduction (B) | Retail Rate (C) | Gas Bill Savings (D) | Non-Gas Fuel Retail Rate (E) | Non-Gas Energy Savings (F) | Total Annual Benefits (G) | | Direct Participant Costs (H) |
| 2012 | \$66,650 | 3,450 | | \$27,309 | | \$16,055 | \$110,014 | \$145,430 | (\$35,416) |
| 2013 | 81,400 | 7,792 | | 63,712 | | 35,739 | 180,851 | 180,870 | (19) |
| 2014 | 96,800 | 12,938 | | 109,302 | | 59,933 | 266,035 | 217,600 | 48,435 |
| 2015 | 0 | 12,749 | | 111,449 | | 62,053 | 173,502 | 0 | 173,502 |
| 2016 | 0 | 12,517 | | 113,226 | | 64,172 | 177,398 | 0 | 177,398 |
| 2017 | 0 | 12,517 | | 117,183 | | 66,291 | 183,474 | 0 | 183,474 |
| 2018 | 0 | 12,517 | | 121,287 | | 68,938 | 190,225 | 0 | 190,225 |
| 2019 | 0 | 12,517 | | 125,539 | | 71,059 | 196,598 | 0 | 196,598 |
| 2020 | 0 | 12,517 | | 129,925 | | 73,707 | 203,632 | 0 | 203,632 |
| 2021 | 0 | 12,517 | | 134,475 | | 76,356 | 210,831 | 0 | 210,831 |
| 2022 | 0 | 12,482 | | 138,789 | | 79,004 | 217,793 | 0 | 217,793 |
| 2023 | 0 | 12,422 | | 142,945 | | 81,652 | 224,597 | 0 | 224,597 |
| 2024 | 0 | 12,336 | | 146,914 | | 84,831 | 231,745 | 0 | 231,745 |
| 2025 | 0 | 12,336 | | 152,053 | | 87,481 | 239,534 | 0 | 239,534 |
| 2026 | 0 | 12,336 | | 157,375 | | 90,659 | 248,034 | 0 | 248,034 |
| 2027 | 0 | 11,746 | | 155,190 | | 90,015 | 245,205 | 0 | 245,205 |
| 2028 | 0 | 10,856 | | 148,714 | | 89,146 | 237,860 | 0 | 237,860 |
| 2029 | 0 | 9,666 | | 137,519 | | 87,982 | 225,501 | 0 | 225,501 |
| 2030 | 0 | 6,986 | | 102,802 | | 65,775 | 168,577 | 0 | 168,577 |
| 2031 | 0 | 3,783 | | 57,573 | | 36,716 | 94,289 | 0 | 94,289 |
| 2032 | 0 | 0 | | 0 | | 0 | 0 | 0 | 0 |
| 2033 | 10 | 0 | | 0 | | 0 | 10 | 0 | 10 |
| Total = | | 216,980 | | | | | \$4,025,705 | \$543,900 | \$3,481,805 |
| | | | | | | NPV = | \$1,824,449 | \$489,692 | 1,334,757 |
| Total NPV = | | \$1,334,757 | | | | | | | |
| Benefit/Cost Ratio = | | 3.73 | | | | | | | |

| Worksheet Calculations |
|---|
| (A) = Table 1 (N) |
| (B) = Table 1 (A) |
| (C) = Retail Rate (1) escalated. |
| (D) = (B) x (C) |
| (E) = Non-Gas Fuel Retail Rate (2), escalated. |
| (F) = (C) x [Avg. Non-Gas Fuel Units/Part.Saved (22) x No. of Part. (23)] |
| (G) = (A) + (D) + (F) |
| (H) = Direct Participant Costs (17) x Number of Participants (23) |
| (I) = (G) - (H) |

Table 5
Total Resource Cost Test

Compa **Montana-Dakota Utilities Co.**
Project: **Total South Dakota Program**

| Year | Benefits | | | | Costs | | | Annual Benefits Less Costs (H) |
|------|--------------------------|--------------------------|----------------------------|---------------------------|---------------------------|---------------------------------------|-----------------|--------------------------------|
| | Total Energy Savings (A) | Total Demand Savings (B) | Non-Gas Energy Savings (C) | Total Annual Benefits (D) | Utility Program Costs (E) | Participants' Costs Net of Rebate (F) | Total Costs (G) | |
| 2012 | \$15,747 | \$4,277 | \$3,331 | \$23,355 | \$85,708 | \$78,780 | \$164,488 | (\$141,133) |
| 2013 | 36,809 | 9,828 | 7,533 | 54,170 | 101,591 | 99,470 | 201,061 | (146,891) |
| 2014 | 63,251 | 16,434 | 12,714 | 92,399 | 117,128 | 120,800 | 237,928 | (145,529) |
| 2015 | 64,523 | 16,321 | 13,244 | 94,088 | 0 | 0 | 0 | 94,088 |
| 2016 | 65,563 | 16,150 | 13,773 | 95,486 | 0 | 0 | 0 | 95,486 |
| 2017 | 67,854 | 16,403 | 14,304 | 98,561 | 0 | 0 | 0 | 98,561 |
| 2018 | 70,235 | 16,525 | 14,833 | 101,593 | 0 | 0 | 0 | 101,593 |
| 2019 | 72,687 | 16,652 | 15,363 | 104,702 | 0 | 0 | 0 | 104,702 |
| 2020 | 75,228 | 16,906 | 15,893 | 108,027 | 0 | 0 | 0 | 108,027 |
| 2021 | 77,869 | 17,027 | 16,422 | 111,318 | 0 | 0 | 0 | 111,318 |
| 2022 | 80,359 | 17,111 | 16,952 | 114,422 | 0 | 0 | 0 | 114,422 |
| 2023 | 82,780 | 17,278 | 17,481 | 117,539 | 0 | 0 | 0 | 117,539 |
| 2024 | 85,081 | 17,276 | 18,011 | 120,368 | 0 | 0 | 0 | 120,368 |
| 2025 | 88,054 | 17,522 | 18,542 | 124,118 | 0 | 0 | 0 | 124,118 |
| 2026 | 91,139 | 17,647 | 19,072 | 127,858 | 0 | 0 | 0 | 127,858 |
| 2027 | 89,821 | 16,920 | 19,311 | 126,052 | 0 | 0 | 0 | 126,052 |
| 2028 | 85,926 | 15,855 | 18,975 | 120,756 | 0 | 0 | 0 | 120,756 |
| 2029 | 79,184 | 14,215 | 18,598 | 111,997 | 0 | 0 | 0 | 111,997 |
| 2030 | 59,228 | 10,416 | 14,077 | 83,721 | 0 | 0 | 0 | 83,721 |
| 2031 | 33,196 | 5,670 | 7,768 | 46,634 | 0 | 0 | 0 | 46,634 |
| 2032 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2033 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | Total = | \$1,977,164 | | | \$603,477 | \$1,373,687 |
| | | | NPV = | \$915,602 | | | \$549,529 | 366,073 |

Total NPV = \$366,073
Benefit/Cost Ratio = 1.67

| Worksheet Calculations |
|------------------------|
| (A) = Table 1 (F) |
| (B) = Table 1 (T) |
| (C) = Table 3 (D) |
| (D) = (A) + (B) + (C) |
| (E) = Table 3 (H) |
| (F) = Table 3 (I) |
| (G) = (E) + (F) |
| (H) = (D) - (G) |