

Conservation Improvement Program (CIP)
 BENCOST FOR GAS CIPS-- Cost-Effectiveness Analysis

Company: **Minnesota Energy Resources**
Global Inputs

| Input Data | Escalation Rate |
|---|---|
| 1) Retail Rate (\$/Dth) = | \$17.22 Residential 4.00% \$15.90 Commercial |
| 2) Non-Gas Fuel Retail Rate (\$/Fuel Unit) = Non-Gas Fuel Units (ie. kWh,Gallons, etc) = | \$0.00 2.16% |
| 3) Commodity Cost (\$/Dth) = | \$4.27 4.00% |
| 4) Demand Cost (\$/Unit/Yr) = | \$129.27 4.00% |
| 5) Peak Reduction Factor = | 1.00% |
| 6) Variable O&M (\$/Dth) = | \$0.05 4.00% |
| 7) Non-Gas Fuel Cost (\$/Fuel Unit) = | \$0.00 2.16% |
| 8) Non-Gas Fuel Loss Factor | 0.00% |
| 9) Gas Environmental Damage Factor = | \$0.3800 2.16% |
| 10) Non Gas Fuel Environmental Damage Factor = | \$0.00 0.00% |
| 11) Participant Discount Rate = | 2.55% Residential 7.30% Commercial |
| 12) Utility Discount Rate = | 7.30% |
| 13) Societal Discount Rate = | 2.55% |
| 14) General Input Data Year = | 2016 |
| 15) Project Analysis Year 1 = | 2017 |
| 15a) Project Analysis Year 2 = | 2018 |
| 15b) Project Analysis Year 3 = | 2019 |

| | A | B | C | D | E | F | G | H |
|----|--|--|---------------|--|---|----------------------|----------------------|---|
| 1 | | | | | | | | |
| 2 | Conservation Improvement Program (CIP) | | | BENEFIT COST FOR GAS CIPS-- Cost-Effectiveness Analysis | | | | |
| 3 | | | | Approved by Minnesota Department of Commerce, January 26, 2006 | | | | |
| 4 | | Company: Minnesota Energy Resources | | | | | | |
| 5 | | Project: TOTAL CIP - 2018 | | | | | | |
| 6 | | | | R | | | | |
| 7 | Input Data | | | | | Second Year | | |
| 8 | | | | | | | | |
| 9 | 1) Retail Rate (\$/Dth) = | | \$17.22 | | 16) Utility Project Costs | | | |
| 10 | Escalation Rate = | | 4.00% | | 16a) Administrative & Operating Costs = | | \$6,295,432 | |
| 11 | | | | | 16b) Incentive Costs = | | \$5,319,888 | |
| 12 | 2) Non-Gas Fuel Retail Rate (\$/Fuel Unit) = | | \$0.00 | | 16c) Total Utility Project Costs = | | \$11,615,320 | |
| 13 | Escalation Rate = | | 2.16% | | | | | |
| 14 | Non-Gas Fuel Units (ie. kWh,Gallons, etc) = | | | | 17) Direct Participant Costs (\$/Part.) = | | \$252 | |
| 15 | | | | | | | | |
| 16 | 3) Commodity Cost (\$/Dth) = | | \$4.27 | | 18) Participant Non-Energy Costs (Annual \$/Part.) = | | \$0 | |
| 17 | Escalation Rate = | | 4.00% | | Escalation Rate = | | 0.00% | |
| 18 | | | | | | | | |
| 19 | 4) Demand Cost (\$/Unit/Yr) = | | \$129.27 | | 19) Participant Non-Energy Savings (Annual \$/Part) = | | \$0 | |
| 20 | Escalation Rate = | | 4.00% | | Escalation Rate = | | 0.00% | |
| 21 | | | | | | | | |
| 22 | 5) Peak Reduction Factor = | | 1.00% | | 20) Project Life (Years) = | | 11.5 | |
| 23 | | | | | | | | |
| 24 | 6) Variable O&M (\$/Dth) = | | \$0.05 | | 21) Avg. Dth/Part. Saved = | | 5.44 | |
| 25 | Escalation Rate = | | 4.00% | | | | | |
| 26 | | | | | 22) Avg Non-Gas Fuel Units/Part. Saved = | | 0.00 | |
| 27 | 7) Non-Gas Fuel Cost (\$/Fuel Unit) = | | \$0.00 | | 22a) Avg Additional Non-Gas Fuel Units/ Part. Used = | | 0.00 | |
| 28 | Escalation Rate = | | 2.16% | | | | | |
| 29 | | | | | 23) Number of Participants = | | 93,777 | |
| 30 | 8) Non-Gas Fuel Loss Factor | | 0.00% | | 24) Total Annual Dth Saved = | | 509,758 | |
| 31 | | | | | | | | |
| 32 | 9) Gas Environmental Damage Factor = | | \$0.3800 | | 25) Incentive/Participant = | | \$57 | |
| 33 | Escalation Rate = | | 2.16% | | | | | |
| 34 | | | | | | | | |
| 35 | 10) Non Gas Fuel Environmental Damage Factor = | | \$0.00 | | | | | |
| 36 | Escalation Rate = | | 0.00% | | | | | |
| 37 | | | | | | | | |
| 38 | 11) Participant Discount Rate = | | 2.55% | | | | | |
| 39 | | | | | | | | |
| 40 | 12) Utility Discount Rate = | | 7.30% | | | | | |
| 41 | | | | | | | | |
| 42 | 13) Societal Discount Rate = | | 2.55% | | | | | |
| 43 | | | | | | | | |
| 44 | 14) General Input Data Year = | | 2016 | | | | | |
| 45 | | | | | | | | |
| 46 | 15) Project Analysis Year 1 = | | 2017 | | | | | |
| 47 | 15a) Project Analysis Year 2 = | | 2018 | | | | | |
| 48 | 15c) Project Analysis Year 3 = | | 2019 | | | | | |
| 49 | | | | | | | | |
| 50 | | | | | | | | |
| 51 | | | | | | | | |
| 52 | Cost Summary | | 2nd Yr | | Test Results | Triennial NPV | Triennial B/C | |
| 53 | | | | | | | | |
| 54 | Utility Cost per Participant = | | \$123.86 | | Ratepayer Impact Measure Test | (\$71,476,052) | 0.29 | |
| 55 | Cost per Participant per Dth = | | \$69.09 | | | | | |
| 56 | | | | | Utility Cost Test | \$18,463,890 | 2.71 | |
| 57 | Lifetime Energy Reduction (Dth) | 6,117,099 | | | | | | |
| 58 | | | | | Societal Test | \$12,288,665 | 1.42 | |
| 59 | Societal Cost per Dth | \$4.77 | | | | | | |
| 60 | | | | | Participant Test | \$102,327,627 | 5.45 | |

| | A | B | C | D | E | F | G | H |
|----|--|---------|------------|--|-------------------------------|---------------|-----------|-------------|
| 1 | | | | | | | | |
| 2 | Conservation Improvement Program (CIP) | | | BENEFIT COST FOR GAS CIPS-- Cost-Effectiveness Analysis | | | | |
| 3 | | | | Approved by Minnesota Department of Commerce, January 26, 2006 | | | | |
| 4 | Company: Minnesota Energy Resources | | | | | | | |
| 5 | Project: TOTAL LOW INCOME | | | | | | | |
| 6 | | | | R | | | | |
| 7 | Input Data | | | Second Year | | | | |
| 8 | | | | | | | | |
| 9 | 1) Retail Rate (\$/Dth) = | | \$17.22 | 16) Utility Project Costs | | | | |
| 10 | Escalation Rate = | | 4.00% | 16a) Administrative & Operating Costs = | | | | \$1,535,530 |
| 11 | | | | 16b) Incentive Costs = | | | | \$0 |
| 12 | 2) Non-Gas Fuel Retail Rate (\$/Fuel Unit) = | | \$0.00 | 16c) Total Utility Project Costs = | | | | \$1,535,530 |
| 13 | Escalation Rate = | | 2.16% | | | | | |
| 14 | Non-Gas Fuel Units (ie. kWh,Gallons, etc) = | | | 17) Direct Participant Costs (\$/Part.) = | | | | \$0 |
| 15 | | | | | | | | |
| 16 | 3) Commodity Cost (\$/Dth) = | | \$4.27 | 18) Participant Non-Energy Costs (Annual \$/Part.) = | | | | \$0 |
| 17 | Escalation Rate = | | 4.00% | Escalation Rate = | | | | 0.00% |
| 18 | | | | | | | | |
| 19 | 4) Demand Cost (\$/Unit/Yr) = | | \$129.27 | 19) Participant Non-Energy Savings (Annual \$/Part) = | | | | \$0 |
| 20 | Escalation Rate = | | 4.00% | Escalation Rate = | | | | 0.00% |
| 21 | | | | | | | | |
| 22 | 5) Peak Reduction Factor = | | 1.00% | 20) Project Life (Years) = | | | | 14.6 |
| 23 | | | | | | | | |
| 24 | 6) Variable O&M (\$/Dth) = | | \$0.05 | 21) Avg. Dth/Part. Saved = | | | | 10.80 |
| 25 | Escalation Rate = | | 4.00% | | | | | |
| 26 | | | | 22) Avg Non-Gas Fuel Units/Part. Saved = | | | | 0.00 |
| 27 | 7) Non-Gas Fuel Cost (\$/Fuel Unit) = | | \$0.00 | 22a) Avg Additional Non-Gas Fuel Units/ Part. Used = | | | | 0.00 |
| 28 | Escalation Rate = | | 2.16% | | | | | |
| 29 | | | | 23) Number of Participants = | | | | 888 |
| 30 | 8) Non-Gas Fuel Loss Factor | | 0.00% | 24) Total Annual Dth Saved = | | | | 9,592 |
| 31 | | | | | | | | |
| 32 | 9) Gas Environmental Damage Factor = | | \$0.3800 | 25) Incentive/Participant = | | | | \$0 |
| 33 | Escalation Rate = | | 2.16% | | | | | |
| 34 | | | | | | | | |
| 35 | 10) Non Gas Fuel Environmental Damage Factor = | | \$0.00 | | | | | |
| 36 | Escalation Rate = | | 0.00% | | | | | |
| 37 | | | | | | | | |
| 38 | 11) Participant Discount Rate = | | 2.55% | | | | | |
| 39 | | | | | | | | |
| 40 | 12) Utility Discount Rate = | | 7.30% | | | | | |
| 41 | | | | | | | | |
| 42 | 13) Societal Discount Rate = | | 2.55% | | | | | |
| 43 | | | | | | | | |
| 44 | 14) General Input Data Year = | | 2016 | | | | | |
| 45 | | | | | | | | |
| 46 | 15) Project Analysis Year 1 = | | 2017 | | | | | |
| 47 | 15a) Project Analysis Year 2 = | | 2018 | | | | | |
| 48 | 15c) Project Analysis Year 3 = | | 2019 | | | | | |
| 49 | | | | | | | | |
| 50 | | | | | | | | |
| 51 | | | | | | | Triennial | Triennial |
| 52 | Cost Summary | 1st Yr | 2nd Yr | 3rd Yr | Test Results | NPV | B/C | |
| 53 | | | | | | | | |
| 54 | Utility Cost per Participant = | #DIV/0! | \$1,729.20 | #DIV/0! | Ratepayer Impact Measure Test | (\$2,796,784) | 0.19 | |
| 55 | Cost per Participant per Dth = | #DIV/0! | \$160.09 | #DIV/0! | | | | |
| 56 | | | | | Utility Cost Test | (\$771,541) | 0.46 | |
| 57 | Lifetime Energy Reduction (Dth) | 143,878 | | | | | | |
| 58 | | | | | Societal Test | (\$502,591) | 0.66 | |
| 59 | Societal Cost per Dth | \$10.41 | | | | | | |
| 60 | | | | | Participant Test | \$2,888,287 | n/a | |

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| 3 | | | | Approved by Minnesota Department of Commerce, January 26, 2006 | | | | |
| 4 | Company: Minnesota Energy Resources | | | | | | | |
| 5 | Project: TOTAL RESIDENTIAL | | | | | | | |
| 6 | | | | R | | | | |
| 7 | Input Data | | | | Second Year | | | |
| 8 | | | | | | | | |
| 9 | 1) Retail Rate (\$/Dth) = | | \$17.22 | | 16) Utility Project Costs | | | |
| 10 | Escalation Rate = | | 4.00% | | 16a) Administrative & Operating Costs = | | \$2,393,539 | |
| 11 | | | | | 16b) Incentive Costs = | | \$2,709,384 | |
| 12 | 2) Non-Gas Fuel Retail Rate (\$/Fuel Unit) = | | \$0.00 | | 16c) Total Utility Project Costs = | | \$5,102,923 | |
| 13 | Escalation Rate = | | 2.16% | | | | | |
| 14 | Non-Gas Fuel Units (ie. kWh,Gallons, etc) = | | | | 17) Direct Participant Costs (\$/Part.) = | | \$98 | |
| 15 | | | | | | | | |
| 16 | 3) Commodity Cost (\$/Dth) = | | \$4.27 | | 18) Participant Non-Energy Costs (Annual \$/Part.) = | | \$0 | |
| 17 | Escalation Rate = | | 4.00% | | Escalation Rate = | | 0.00% | |
| 18 | | | | | | | | |
| 19 | 4) Demand Cost (\$/Unit/Yr) = | | \$129.27 | | 19) Participant Non-Energy Savings (Annual \$/Part) = | | \$0 | |
| 20 | Escalation Rate = | | 4.00% | | Escalation Rate = | | 0.00% | |
| 21 | | | | | | | | |
| 22 | 5) Peak Reduction Factor = | | 1.00% | | 20) Project Life (Years) = | | 12.7 | |
| 23 | | | | | | | | |
| 24 | 6) Variable O&M (\$/Dth) = | | \$0.05 | | 21) Avg. Dth/Part. Saved = | | 2.06 | |
| 25 | Escalation Rate = | | 4.00% | | | | | |
| 26 | | | | | 22) Avg Non-Gas Fuel Units/Part. Saved = | | 0.00 | |
| 27 | 7) Non-Gas Fuel Cost (\$/Fuel Unit) = | | \$0.00 | | 22a) Avg Additional Non-Gas Fuel Units/ Part. Used = | | 0.00 | |
| 28 | Escalation Rate = | | 2.16% | | | | | |
| 29 | | | | | 23) Number of Participants = | | 86,552 | |
| 30 | 8) Non-Gas Fuel Loss Factor | | 0.00% | | | | | |
| 31 | | | | | 24) Total Annual Dth Saved = | | 178,053 | |
| 32 | 9) Gas Environmental Damage Factor = | | \$0.3800 | | | | | |
| 33 | Escalation Rate = | | 2.16% | | 25) Incentive/Participant = | | \$31 | |
| 34 | | | | | | | | |
| 35 | 10) Non Gas Fuel Environmental Damage Factor = | | \$0.00 | | | | | |
| 36 | Escalation Rate = | | 0.00% | | | | | |
| 37 | | | | | | | | |
| 38 | 11) Participant Discount Rate = | | 2.55% | | | | | |
| 39 | | | | | | | | |
| 40 | 12) Utility Discount Rate = | | 7.30% | | | | | |
| 41 | | | | | | | | |
| 42 | 13) Societal Discount Rate = | | 2.55% | | | | | |
| 43 | | | | | | | | |
| 44 | 14) General Input Data Year = | | 2016 | | | | | |
| 45 | | | | | | | | |
| 46 | 15) Project Analysis Year 1 = | | 2017 | | | | | |
| 47 | 15a) Project Analysis Year 2 = | | 2018 | | | | | |
| 48 | 15c) Project Analysis Year 3 = | | 2019 | | | | | |
| 49 | | | | | | | | |
| 50 | | | | | | | | |
| 51 | | | | | | | | |
| 52 | Cost Summary | 1st Yr | 2nd Yr | 3rd Yr | Test Results | Triennial NPV | Triennial B/C | |
| 53 | | | | | | | | |
| 54 | Utility Cost per Participant = | #DIV/0! | \$58.96 | #DIV/0! | Ratepayer Impact Measure Test | (\$27,373,166) | 0.29 | |
| 55 | Cost per Participant per Dth = | #DIV/0! | \$76.29 | #DIV/0! | | | | |
| 56 | | | | | Utility Cost Test | \$6,166,430 | 2.30 | |
| 57 | Lifetime Energy Reduction (Dth) | 2,314,694 | | | | | | |
| 58 | | | | | Societal Test | \$5,184,493 | 1.49 | |
| 59 | Societal Cost per Dth | \$4.58 | | | | | | |
| 60 | | | | | Participant Test | \$40,169,115 | 5.86 | |

| | A | B | C | D | E | F | G | H |
|----|--|-----------|----------|---|---|----------------|-------------|-----------|
| 1 | | | | | | | | |
| 2 | Conservation Improvement Program (CIP) | | | BENEFIT COST FOR GAS CIPS-- Cost-Effectiveness Analysis | | | | |
| 3 | Approved by Minnesota Department of Commerce, January 26, 2006 | | | | | | | |
| 4 | Company: Minnesota Energy Resources | | | | | | | |
| 5 | Project: TOTAL COMMERCIAL / INDUSTRIAL | | | | | | | |
| 6 | C | | | | | | | |
| 7 | Input Data | | | | Second Year | | | |
| 8 | | | | | | | | |
| 9 | 1) Retail Rate (\$/Dth) = | | \$15.90 | | 16) Utility Project Costs | | | |
| 10 | Escalation Rate = | | 4.00% | | 16a) Administrative & Operating Costs = | | \$976,846 | |
| 11 | | | | | 16b) Incentive Costs = | | \$2,610,504 | |
| 12 | 2) Non-Gas Fuel Retail Rate (\$/Fuel Unit) = | | \$0.00 | | 16c) Total Utility Project Costs = | | \$3,587,350 | |
| 13 | Escalation Rate = | | 2.16% | | | | | |
| 14 | Non-Gas Fuel Units (ie. kWh,Gallons, etc) = | | | | 17) Direct Participant Costs (\$/Part.) = | | \$2,387 | |
| 15 | | | | | | | | |
| 16 | 3) Commodity Cost (\$/Dth) = | | \$4.27 | | 18) Participant Non-Energy Costs (Annual \$/Part.) = | | \$0 | |
| 17 | Escalation Rate = | | 4.00% | | Escalation Rate = | | 0.00% | |
| 18 | | | | | | | | |
| 19 | 4) Demand Cost (\$/Unit/Yr) = | | \$129.27 | | 19) Participant Non-Energy Savings (Annual \$/Part) = | | \$0 | |
| 20 | Escalation Rate = | | 4.00% | | Escalation Rate = | | 0.00% | |
| 21 | | | | | | | | |
| 22 | 5) Peak Reduction Factor = | | 1.00% | | 20) Project Life (Years) = | | 10.8 | |
| 23 | | | | | | | | |
| 24 | 6) Variable O&M (\$/Dth) = | | \$0.05 | | 21) Avg. Dth/Part. Saved = | | 50.83 | |
| 25 | Escalation Rate = | | 4.00% | | | | | |
| 26 | | | | | 22) Avg Non-Gas Fuel Units/Part. Saved = | | 0.00 | |
| 27 | 7) Non-Gas Fuel Cost (\$/Fuel Unit) = | | \$0.00 | | 22a) Avg Additional Non-Gas Fuel Units/ Part. Used = | | 0.00 | |
| 28 | Escalation Rate = | | 2.16% | | | | | |
| 29 | | | | | 23) Number of Participants = | | 6,337 | |
| 30 | 8) Non-Gas Fuel Loss Factor | | 0.00% | | | | | |
| 31 | | | | | 24) Total Annual Dth Saved = | | 322,113 | |
| 32 | 9) Gas Environmental Damage Factor = | | \$0.3800 | | | | | |
| 33 | Escalation Rate = | | 2.16% | | 25) Incentive/Participant = | | \$412 | |
| 34 | | | | | | | | |
| 35 | 10) Non Gas Fuel Environmental Damage Factor = | | \$0.00 | | | | | |
| 36 | Escalation Rate = | | 0.00% | | | | | |
| 37 | | | | | | | | |
| 38 | 11) Participant Discount Rate = | | 7.30% | | | | | |
| 39 | | | | | | | | |
| 40 | 12) Utility Discount Rate = | | 7.30% | | | | | |
| 41 | | | | | | | | |
| 42 | 13) Societal Discount Rate = | | 2.55% | | | | | |
| 43 | | | | | | | | |
| 44 | 14) General Input Data Year = | | 2016 | | | | | |
| 45 | | | | | | | | |
| 46 | 15) Project Analysis Year 1 = | | 2017 | | | | | |
| 47 | 15a) Project Analysis Year 2 = | | 2018 | | | | | |
| 48 | 15c) Project Analysis Year 3 = | | 2019 | | | | | |
| 49 | | | | | | | | |
| 50 | | | | | | | | |
| 51 | | | | | | | Triennial | Triennial |
| 52 | Cost Summary | 1st Yr | 2nd Yr | 3rd Yr | Test Results | NPV | B/C | |
| 53 | | | | | | | | |
| 54 | Utility Cost per Participant = | #DIV/0! | \$566.10 | #DIV/0! | Ratepayer Impact Measure Test | (\$34,941,704) | 0.33 | |
| 55 | Cost per Participant per Dth = | #DIV/0! | \$58.09 | #DIV/0! | | | | |
| 56 | | | | | Utility Cost Test | \$13,872,922 | 5.15 | |
| 57 | Lifetime Energy Reduction (Dth) | 3,543,243 | | | | | | |
| 58 | | | | | Societal Test | \$8,145,970 | 1.52 | |
| 59 | Societal Cost per Dth | \$4.43 | | | | | | |
| 60 | | | | | Participant Test | \$37,151,807 | 3.64 | |

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| 3 | | | | Approved by Minnesota Department of Commerce, January 26, 2006 | | | | |
| 4 | Company: Minnesota Energy Resources | | | | | | | |
| 5 | Project: LIW | | | | | | | |
| 6 | | | | R | | | | |
| 7 | Input Data | | | | Second Year | | | |
| 8 | | | | | | | | |
| 9 | 1) Retail Rate (\$/Dth) = | | \$17.22 | | 16) Utility Project Costs | | | |
| 10 | Escalation Rate = | | 4.00% | | 16a) Administrative & Operating Costs = | | \$535,865 | |
| 11 | | | | | 16b) Incentive Costs = | | \$0 | |
| 12 | 2) Non-Gas Fuel Retail Rate (\$/Fuel Unit) = | | \$0.00 | | 16c) Total Utility Project Costs = | | \$535,865 | |
| 13 | Escalation Rate = | | 2.16% | | | | | |
| 14 | Non-Gas Fuel Units (ie. kWh,Gallons, etc) = | | | | 17) Direct Participant Costs (\$/Part.) = | | \$0 | |
| 15 | | | | | | | | |
| 16 | 3) Commodity Cost (\$/Dth) = | | \$4.27 | | 18) Participant Non-Energy Costs (Annual \$/Part.) = | | \$0 | |
| 17 | Escalation Rate = | | 4.00% | | Escalation Rate = | | 0.00% | |
| 18 | | | | | | | | |
| 19 | 4) Demand Cost (\$/Unit/Yr) = | | \$129.27 | | 19) Participant Non-Energy Savings (Annual \$/Part) = | | \$0 | |
| 20 | Escalation Rate = | | 4.00% | | Escalation Rate = | | 0.00% | |
| 21 | | | | | | | | |
| 22 | 5) Peak Reduction Factor = | | 1.00% | | 20) Project Life (Years) = | | 19.1 | |
| 23 | | | | | | | | |
| 24 | 6) Variable O&M (\$/Dth) = | | \$0.05 | | 21) Avg. Dth/Part. Saved = | | 21.24 | |
| 25 | Escalation Rate = | | 4.00% | | | | | |
| 26 | | | | | 22) Avg Non-Gas Fuel Units/Part. Saved = | | 0.00 | |
| 27 | 7) Non-Gas Fuel Cost (\$/Fuel Unit) = | | \$0.00 | | 22a) Avg Additional Non-Gas Fuel Units/ Part. Used = | | 0.00 | |
| 28 | Escalation Rate = | | 2.16% | | | | | |
| 29 | | | | | 23) Number of Participants = | | 190 | |
| 30 | 8) Non-Gas Fuel Loss Factor | | 0.00% | | 24) Total Annual Dth Saved = | | 4,035 | |
| 31 | | | | | | | | |
| 32 | 9) Gas Environmental Damage Factor = | | \$0.3800 | | 25) Incentive/Participant = | | \$0 | |
| 33 | Escalation Rate = | | 2.16% | | | | | |
| 34 | | | | | | | | |
| 35 | 10) Non Gas Fuel Environmental Damage Factor = | | \$0.00 | | | | | |
| 36 | Escalation Rate = | | 0.00% | | | | | |
| 37 | | | | | | | | |
| 38 | 11) Participant Discount Rate = | | 2.55% | | | | | |
| 39 | | | | | | | | |
| 40 | 12) Utility Discount Rate = | | 7.30% | | | | | |
| 41 | | | | | | | | |
| 42 | 13) Societal Discount Rate = | | 2.55% | | | | | |
| 43 | | | | | | | | |
| 44 | 14) General Input Data Year = | | 2016 | | | | | |
| 45 | | | | | | | | |
| 46 | 15) Project Analysis Year 1 = | | 2017 | | | | | |
| 47 | 15a) Project Analysis Year 2 = | | 2018 | | | | | |
| 48 | 15c) Project Analysis Year 3 = | | 2019 | | | | | |
| 49 | | | | | | | | |
| 50 | | | | | | | | |
| 51 | | | | | | | Triennial | Triennial |
| 52 | Cost Summary | 1st Yr | 2nd Yr | 3rd Yr | Test Results | NPV | B/C | |
| 53 | | | | | | | | |
| 54 | Utility Cost per Participant = | #DIV/0! | \$2,820.34 | #DIV/0! | Ratepayer Impact Measure Test | (\$1,212,990) | 0.22 | |
| 55 | Cost per Participant per Dth = | #DIV/0! | \$132.79 | #DIV/0! | | | | |
| 56 | | | | | Utility Cost Test | (\$154,812) | 0.69 | |
| 57 | Lifetime Energy Reduction (Dth) | 80,708 | | | | | | |
| 58 | | | | | Societal Test | \$54,816 | 1.10 | |
| 59 | Societal Cost per Dth | \$6.47 | | | | | | |
| 60 | | | | | Participant Test | \$1,680,471 | n/a | |

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| 3 | | | | Approved by Minnesota Department of Commerce, January 26, 2006 | | | | |
| 4 | Company: Minnesota Energy Resources | | | | | | | |
| 5 | Project: 4U2 | | | | | | | |
| 6 | | | | R | | | | |
| 7 | Input Data | | | Second Year | | | | |
| 8 | | | | | | | | |
| 9 | 1) Retail Rate (\$/Dth) = | | \$17.22 | 16) Utility Project Costs | | | | |
| 10 | Escalation Rate = | | 4.00% | 16a) Administrative & Operating Costs = | | | | \$999,665 |
| 11 | | | | 16b) Incentive Costs = | | | | \$0 |
| 12 | 2) Non-Gas Fuel Retail Rate (\$/Fuel Unit) = | | \$0.00 | 16c) Total Utility Project Costs = | | | | \$999,665 |
| 13 | Escalation Rate = | | 2.16% | | | | | |
| 14 | Non-Gas Fuel Units (ie. kWh,Gallons, etc) = | | | 17) Direct Participant Costs (\$/Part.) = | | | | \$0 |
| 15 | | | | | | | | |
| 16 | 3) Commodity Cost (\$/Dth) = | | \$4.27 | 18) Participant Non-Energy Costs (Annual \$/Part.) = | | | | \$0 |
| 17 | Escalation Rate = | | 4.00% | Escalation Rate = | | | | 0.00% |
| 18 | | | | | | | | |
| 19 | 4) Demand Cost (\$/Unit/Yr) = | | \$129.27 | 19) Participant Non-Energy Savings (Annual \$/Part) = | | | | \$0 |
| 20 | Escalation Rate = | | 4.00% | Escalation Rate = | | | | 0.00% |
| 21 | | | | | | | | |
| 22 | 5) Peak Reduction Factor = | | 1.00% | 20) Project Life (Years) = | | | | 11.4 |
| 23 | | | | | | | | |
| 24 | 6) Variable O&M (\$/Dth) = | | \$0.05 | 21) Avg. Dth/Part. Saved = | | | | 7.96 |
| 25 | Escalation Rate = | | 4.00% | | | | | |
| 26 | | | | 22) Avg Non-Gas Fuel Units/Part. Saved = | | | | 0.00 |
| 27 | 7) Non-Gas Fuel Cost (\$/Fuel Unit) = | | \$0.00 | 22a) Avg Additional Non-Gas Fuel Units/ Part. Used = | | | | 0.00 |
| 28 | Escalation Rate = | | 2.16% | | | | | |
| 29 | | | | 23) Number of Participants = | | | | 698 |
| 30 | 8) Non-Gas Fuel Loss Factor | | 0.00% | 24) Total Annual Dth Saved = | | | | 5,556 |
| 31 | | | | | | | | |
| 32 | 9) Gas Environmental Damage Factor = | | \$0.3800 | 25) Incentive/Participant = | | | | \$0 |
| 33 | Escalation Rate = | | 2.16% | | | | | |
| 34 | | | | | | | | |
| 35 | 10) Non Gas Fuel Environmental Damage Factor = | | \$0.00 | | | | | |
| 36 | Escalation Rate = | | 0.00% | | | | | |
| 37 | | | | | | | | |
| 38 | 11) Participant Discount Rate = | | 2.55% | | | | | |
| 39 | | | | | | | | |
| 40 | 12) Utility Discount Rate = | | 7.30% | | | | | |
| 41 | | | | | | | | |
| 42 | 13) Societal Discount Rate = | | 2.55% | | | | | |
| 43 | | | | | | | | |
| 44 | 14) General Input Data Year = | | 2016 | | | | | |
| 45 | | | | | | | | |
| 46 | 15) Project Analysis Year 1 = | | 2017 | | | | | |
| 47 | 15a) Project Analysis Year 2 = | | 2018 | | | | | |
| 48 | 15c) Project Analysis Year 3 = | | 2019 | | | | | |
| 49 | | | | | | | | |
| 50 | | | | | | | | |
| 51 | | | | | | Triennial | Triennial | |
| 52 | Cost Summary | 1st Yr | 2nd Yr | 3rd Yr | Test Results | NPV | B/C | |
| 53 | | | | | | | | |
| 54 | Utility Cost per Participant = | #DIV/0! | \$1,432.19 | #DIV/0! | Ratepayer Impact Measure Test | (\$1,592,760) | 0.17 | |
| 55 | Cost per Participant per Dth = | #DIV/0! | \$179.91 | #DIV/0! | | | | |
| 56 | | | | | Utility Cost Test | (\$612,400) | 0.34 | |
| 57 | Lifetime Energy Reduction (Dth) | 66,677 | | | | | | |
| 58 | | | | | Societal Test | (\$523,032) | 0.46 | |
| 59 | Societal Cost per Dth | \$14.62 | | | | | | |
| 60 | | | | | Participant Test | \$1,309,755 | n/a | |

| | A | B | C | D | E | F | G | H |
|----|--|---------------|---------------|--|---|----------------------|----------------------|---|
| 1 | | | | | | | | |
| 2 | Conservation Improvement Program (CIP) | | | BENEFIT COST FOR GAS CIPS-- Cost-Effectiveness Analysis | | | | |
| 3 | | | | Approved by Minnesota Department of Commerce, January 26, 2006 | | | | |
| 4 | Company: Minnesota Energy Resources | | | | | | | |
| 5 | Project: Res Rebates | | | | | | | |
| 6 | | | | R | | | | |
| 7 | Input Data | | | | Second Year | | | |
| 8 | | | | | | | | |
| 9 | 1) Retail Rate (\$/Dth) = | | \$17.22 | | 16) Utility Project Costs | | | |
| 10 | Escalation Rate = | | 4.00% | | 16a) Administrative & Operating Costs = | | \$891,574 | |
| 11 | | | | | 16b) Incentive Costs = | | \$2,087,384 | |
| 12 | 2) Non-Gas Fuel Retail Rate (\$/Fuel Unit) = | | \$0.00 | | 16c) Total Utility Project Costs = | | \$2,978,958 | |
| 13 | Escalation Rate = | | 2.16% | | | | | |
| 14 | Non-Gas Fuel Units (ie. kWh,Gallons, etc) = | | | | 17) Direct Participant Costs (\$/Part.) = | | \$365 | |
| 15 | | | | | | | | |
| 16 | 3) Commodity Cost (\$/Dth) = | | \$4.27 | | 18) Participant Non-Energy Costs (Annual \$/Part.) = | | \$0 | |
| 17 | Escalation Rate = | | 4.00% | | Escalation Rate = | | 0.00% | |
| 18 | | | | | | | | |
| 19 | 4) Demand Cost (\$/Unit/Yr) = | | \$129.27 | | 19) Participant Non-Energy Savings (Annual \$/Part) = | | \$0 | |
| 20 | Escalation Rate = | | 4.00% | | Escalation Rate = | | 0.00% | |
| 21 | | | | | | | | |
| 22 | 5) Peak Reduction Factor = | | 1.00% | | 20) Project Life (Years) = | | 11.1 | |
| 23 | | | | | | | | |
| 24 | 6) Variable O&M (\$/Dth) = | | \$0.05 | | 21) Avg. Dth/Part. Saved = | | 6.97 | |
| 25 | Escalation Rate = | | 4.00% | | | | | |
| 26 | | | | | 22) Avg Non-Gas Fuel Units/Part. Saved = | | 0.00 | |
| 27 | 7) Non-Gas Fuel Cost (\$/Fuel Unit) = | | \$0.00 | | 22a) Avg Additional Non-Gas Fuel Units/ Part. Used = | | 0.00 | |
| 28 | Escalation Rate = | | 2.16% | | | | | |
| 29 | | | | | 23) Number of Participants = | | 20,432 | |
| 30 | 8) Non-Gas Fuel Loss Factor | | 0.00% | | 24) Total Annual Dth Saved = | | 142,428 | |
| 31 | | | | | | | | |
| 32 | 9) Gas Environmental Damage Factor = | | \$0.3800 | | 25) Incentive/Participant = | | \$102 | |
| 33 | Escalation Rate = | | 2.16% | | | | | |
| 34 | | | | | | | | |
| 35 | 10) Non Gas Fuel Environmental Damage Factor = | | \$0.00 | | | | | |
| 36 | Escalation Rate = | | 0.00% | | | | | |
| 37 | | | | | | | | |
| 38 | 11) Participant Discount Rate = | | 2.55% | | | | | |
| 39 | | | | | | | | |
| 40 | 12) Utility Discount Rate = | | 7.30% | | | | | |
| 41 | | | | | | | | |
| 42 | 13) Societal Discount Rate = | | 2.55% | | | | | |
| 43 | | | | | | | | |
| 44 | 14) General Input Data Year = | | 2016 | | | | | |
| 45 | | | | | | | | |
| 46 | 15) Project Analysis Year 1 = | | 2017 | | | | | |
| 47 | 15a) Project Analysis Year 2 = | | 2018 | | | | | |
| 48 | 15c) Project Analysis Year 3 = | | 2019 | | | | | |
| 49 | | | | | | | | |
| 50 | | | | | | | | |
| 51 | | | | | | | | |
| 52 | Cost Summary | 1st Yr | 2nd Yr | 3rd Yr | Test Results | Triennial NPV | Triennial B/C | |
| 53 | | | | | | | | |
| 54 | Utility Cost per Participant = | #DIV/0! | \$145.80 | #DIV/0! | Ratepayer Impact Measure Test | (\$19,722,326) | 0.29 | |
| 55 | Cost per Participant per Dth = | #DIV/0! | \$73.24 | #DIV/0! | | | | |
| 56 | | | | | Utility Cost Test | \$5,407,129 | 2.95 | |
| 57 | Lifetime Energy Reduction (Dth) | 1,709,134 | | | | | | |
| 58 | | | | | Societal Test | \$3,443,182 | 1.42 | |
| 59 | Societal Cost per Dth | \$4.76 | | | | | | |
| 60 | | | | | Participant Test | \$28,340,534 | 4.90 | |

| | A | B | C | D | E | F | G | H |
|----|--|---------|------------|--|-------------------------------|---------------|------------|-------------|
| 1 | | | | | | | | |
| 2 | Conservation Improvement Program (CIP) | | | BENEFIT COST FOR GAS CIPS-- Cost-Effectiveness Analysis | | | | |
| 3 | | | | Approved by Minnesota Department of Commerce, January 26, 2006 | | | | |
| 4 | Company: Minnesota Energy Resources | | | | | | | |
| 5 | Project: Home Energy Excellence | | | | | | | |
| 6 | | | | R | | | | |
| 7 | Input Data | | | Second Year | | | | |
| 8 | | | | | | | | |
| 9 | 1) Retail Rate (\$/Dth) = | | \$17.22 | 16) Utility Project Costs | | | | |
| 10 | Escalation Rate = | | 4.00% | 16a) Administrative & Operating Costs = | | | | \$1,090,629 |
| 11 | | | | 16b) Incentive Costs = | | | | \$622,000 |
| 12 | 2) Non-Gas Fuel Retail Rate (\$/Fuel Unit) = | | \$0.00 | 16c) Total Utility Project Costs = | | | | \$1,712,629 |
| 13 | Escalation Rate = | | 2.16% | | | | | |
| 14 | Non-Gas Fuel Units (ie. kWh,Gallons, etc) = | | | 17) Direct Participant Costs (\$/Part.) = | | | | \$975 |
| 15 | | | | | | | | |
| 16 | 3) Commodity Cost (\$/Dth) = | | \$4.27 | 18) Participant Non-Energy Costs (Annual \$/Part.) = | | | | \$0 |
| 17 | Escalation Rate = | | 4.00% | Escalation Rate = | | | | 0.00% |
| 18 | | | | | | | | |
| 19 | 4) Demand Cost (\$/Unit/Yr) = | | \$129.27 | 19) Participant Non-Energy Savings (Annual \$/Part) = | | | | \$0 |
| 20 | Escalation Rate = | | 4.00% | Escalation Rate = | | | | 0.00% |
| 21 | | | | | | | | |
| 22 | 5) Peak Reduction Factor = | | 1.00% | 20) Project Life (Years) = | | | | 20.0 |
| 23 | | | | | | | | |
| 24 | 6) Variable O&M (\$/Dth) = | | \$0.05 | 21) Avg. Dth/Part. Saved = | | | | 30.43 |
| 25 | Escalation Rate = | | 4.00% | | | | | |
| 26 | | | | 22) Avg Non-Gas Fuel Units/Part. Saved = | | | | 0.00 |
| 27 | 7) Non-Gas Fuel Cost (\$/Fuel Unit) = | | \$0.00 | 22a) Avg Additional Non-Gas Fuel Units/ Part. Used = | | | | 0.00 |
| 28 | Escalation Rate = | | 2.16% | | | | | |
| 29 | | | | 23) Number of Participants = | | | | 1,055 |
| 30 | 8) Non-Gas Fuel Loss Factor | | 0.00% | | | | | |
| 31 | | | | 24) Total Annual Dth Saved = | | | | 32,100 |
| 32 | 9) Gas Environmental Damage Factor = | | \$0.3800 | | | | | |
| 33 | Escalation Rate = | | 2.16% | 25) Incentive/Participant = | | | | \$590 |
| 34 | | | | | | | | |
| 35 | 10) Non Gas Fuel Environmental Damage Factor = | | \$0.00 | | | | | |
| 36 | Escalation Rate = | | 0.00% | | | | | |
| 37 | | | | | | | | |
| 38 | 11) Participant Discount Rate = | | 2.55% | | | | | |
| 39 | | | | | | | | |
| 40 | 12) Utility Discount Rate = | | 7.30% | | | | | |
| 41 | | | | | | | | |
| 42 | 13) Societal Discount Rate = | | 2.55% | | | | | |
| 43 | | | | | | | | |
| 44 | 14) General Input Data Year = | | 2016 | | | | | |
| 45 | | | | | | | | |
| 46 | 15) Project Analysis Year 1 = | | 2017 | | | | | |
| 47 | 15a) Project Analysis Year 2 = | | 2018 | | | | | |
| 48 | 15c) Project Analysis Year 3 = | | 2019 | | | | | |
| 49 | | | | | | | | |
| 50 | | | | | | | | |
| 51 | | | | | | Triennial | Triennial | |
| 52 | Cost Summary | 1st Yr | 2nd Yr | 3rd Yr | Test Results | NPV | B/C | |
| 53 | | | | | | | | |
| 54 | Utility Cost per Participant = | #DIV/0! | \$1,623.35 | #DIV/0! | Ratepayer Impact Measure Test | (\$7,272,424) | 0.27 | |
| 55 | Cost per Participant per Dth = | #DIV/0! | \$85.39 | #DIV/0! | | | | |
| 56 | | | | | Utility Cost Test | \$1,145,037 | 1.72 | |
| 57 | Lifetime Energy Reduction (Dth) | 642,006 | | | | | | |
| 58 | | | | | Societal Test | \$2,526,378 | 2.22 | |
| 59 | Societal Cost per Dth | \$3.22 | | | | | | |
| 60 | | | | | Participant Test | \$12,971,344 | 13.9352187 | |

| | A | B | C | D | E | F | G | H |
|----|--|-----------|------------|--|-------------------------------|----------------|-----------|---|
| 1 | | | | | | | | |
| 2 | Conservation Improvement Program (CIP) | | | BENEFIT COST FOR GAS CIPS-- Cost-Effectiveness Analysis | | | | |
| 3 | | | | Approved by Minnesota Department of Commerce, January 26, 2006 | | | | |
| 4 | Company: Minnesota Energy Resources | | | | | | | |
| 5 | Project: CI Rebate | | | | | | | |
| 6 | | | | C | | | | |
| 7 | Input Data | | | Second Year | | | | |
| 8 | | | | | | | | |
| 9 | 1) Retail Rate (\$/Dth) = | | \$15.90 | 16) Utility Project Costs | | | | |
| 10 | Escalation Rate = | | 4.00% | 16a) Administrative & Operating Costs = | | \$808,408 | | |
| 11 | | | | 16b) Incentive Costs = | | \$2,475,606 | | |
| 12 | 2) Non-Gas Fuel Retail Rate (\$/Fuel Unit) = | | \$0.00 | 16c) Total Utility Project Costs = | | \$3,284,014 | | |
| 13 | Escalation Rate = | | 2.16% | | | | | |
| 14 | Non-Gas Fuel Units (ie. kWh,Gallons, etc) = | | | 17) Direct Participant Costs (\$/Part.) = | | \$10,411 | | |
| 15 | | | | | | | | |
| 16 | 3) Commodity Cost (\$/Dth) = | | \$4.27 | 18) Participant Non-Energy Costs (Annual \$/Part.) = | | \$0 | | |
| 17 | Escalation Rate = | | 4.00% | Escalation Rate = | | 0.00% | | |
| 18 | | | | | | | | |
| 19 | 4) Demand Cost (\$/Unit/Yr) = | | \$129.27 | 19) Participant Non-Energy Savings (Annual \$/Part) = | | \$0 | | |
| 20 | Escalation Rate = | | 4.00% | Escalation Rate = | | 0.00% | | |
| 21 | | | | | | | | |
| 22 | 5) Peak Reduction Factor = | | 1.00% | 20) Project Life (Years) = | | 11.0 | | |
| 23 | | | | | | | | |
| 24 | 6) Variable O&M (\$/Dth) = | | \$0.05 | 21) Avg. Dth/Part. Saved = | | 215.42 | | |
| 25 | Escalation Rate = | | 4.00% | | | | | |
| 26 | | | | 22) Avg Non-Gas Fuel Units/Part. Saved = | | 0.00 | | |
| 27 | 7) Non-Gas Fuel Cost (\$/Fuel Unit) = | | \$0.00 | 22a) Avg Additional Non-Gas Fuel Units/ Part. Used = | | 0.00 | | |
| 28 | Escalation Rate = | | 2.16% | | | | | |
| 29 | | | | 23) Number of Participants = | | 1,432 | | |
| 30 | 8) Non-Gas Fuel Loss Factor | | 0.00% | 24) Total Annual Dth Saved = | | 308,488 | | |
| 31 | | | | 25) Incentive/Participant = | | \$1,729 | | |
| 32 | 9) Gas Environmental Damage Factor = | | \$0.3800 | | | | | |
| 33 | Escalation Rate = | | 2.16% | | | | | |
| 34 | | | | | | | | |
| 35 | 10) Non Gas Fuel Environmental Damage Factor = | | \$0.00 | | | | | |
| 36 | Escalation Rate = | | 0.00% | | | | | |
| 37 | | | | | | | | |
| 38 | 11) Participant Discount Rate = | | 7.30% | | | | | |
| 39 | | | | | | | | |
| 40 | 12) Utility Discount Rate = | | 7.30% | | | | | |
| 41 | | | | | | | | |
| 42 | 13) Societal Discount Rate = | | 2.55% | | | | | |
| 43 | | | | | | | | |
| 44 | 14) General Input Data Year = | | 2016 | | | | | |
| 45 | | | | | | | | |
| 46 | 15) Project Analysis Year 1 = | | 2017 | | | | | |
| 47 | 15a) Project Analysis Year 2 = | | 2018 | | | | | |
| 48 | 15c) Project Analysis Year 3 = | | 2019 | | | | | |
| 49 | | | | | | | | |
| 50 | | | | | | | | |
| 51 | | | | | | Triennial | Triennial | |
| 52 | Cost Summary | 1st Yr | 2nd Yr | 3rd Yr | Test Results | NPV | B/C | |
| 53 | | | | | | | | |
| 54 | Utility Cost per Participant = | #DIV/0! | \$2,293.31 | #DIV/0! | Ratepayer Impact Measure Test | (\$33,322,407) | 0.33 | |
| 55 | Cost per Participant per Dth = | #DIV/0! | \$58.97 | #DIV/0! | Utility Cost Test | \$13,427,385 | 5.39 | |
| 56 | | | | | Societal Test | \$7,512,330 | 1.49 | |
| 57 | Lifetime Energy Reduction (Dth) | 3,393,366 | | | Participant Test | \$35,162,751 | 3.53 | |
| 58 | | | | | | | | |
| 59 | Societal Cost per Dth | \$4.52 | | | | | | |
| 60 | | | | | | | | |

| | A | B | C | D | E | F | G | H |
|----|--|---------------|---------------|--|---|----------------------|----------------------|---|
| 1 | | | | | | | | |
| 2 | Conservation Improvement Program (CIP) | | | BENEFIT COST FOR GAS CIPS-- Cost-Effectiveness Analysis | | | | |
| 3 | | | | Approved by Minnesota Department of Commerce, January 26, 2006 | | | | |
| 4 | Company: Minnesota Energy Resources | | | | | | | |
| 5 | Project: Multifamily | | | | | | | |
| 6 | | | | C | | | | |
| 7 | Input Data | | | | Second Year | | | |
| 8 | | | | | | | | |
| 9 | 1) Retail Rate (\$/Dth) = | | \$15.90 | | 16) Utility Project Costs | | | |
| 10 | Escalation Rate = | | 4.00% | | 16a) Administrative & Operating Costs = | | \$133,392 | |
| 11 | | | | | 16b) Incentive Costs = | | \$131,648 | |
| 12 | 2) Non-Gas Fuel Retail Rate (\$/Fuel Unit) = | | \$0.00 | | 16c) Total Utility Project Costs = | | \$265,041 | |
| 13 | Escalation Rate = | | 2.16% | | | | | |
| 14 | Non-Gas Fuel Units (ie. kWh,Gallons, etc) = | | | | 17) Direct Participant Costs (\$/Part.) = | | \$45 | |
| 15 | | | | | | | | |
| 16 | 3) Commodity Cost (\$/Dth) = | | \$4.27 | | 18) Participant Non-Energy Costs (Annual \$/Part.) = | | \$0 | |
| 17 | Escalation Rate = | | 4.00% | | Escalation Rate = | | 0.00% | |
| 18 | | | | | | | | |
| 19 | 4) Demand Cost (\$/Unit/Yr) = | | \$129.27 | | 19) Participant Non-Energy Savings (Annual \$/Part) = | | \$0 | |
| 20 | Escalation Rate = | | 4.00% | | Escalation Rate = | | 0.00% | |
| 21 | | | | | | | | |
| 22 | 5) Peak Reduction Factor = | | 1.00% | | 20) Project Life (Years) = | | 8.1 | |
| 23 | | | | | | | | |
| 24 | 6) Variable O&M (\$/Dth) = | | \$0.05 | | 21) Avg. Dth/Part. Saved = | | 2.28 | |
| 25 | Escalation Rate = | | 4.00% | | | | | |
| 26 | | | | | 22) Avg Non-Gas Fuel Units/Part. Saved = | | 0.00 | |
| 27 | 7) Non-Gas Fuel Cost (\$/Fuel Unit) = | | \$0.00 | | 22a) Avg Additional Non-Gas Fuel Units/ Part. Used = | | 0.00 | |
| 28 | Escalation Rate = | | 2.16% | | | | | |
| 29 | | | | | 23) Number of Participants = | | 4,827 | |
| 30 | 8) Non-Gas Fuel Loss Factor | | 0.00% | | 24) Total Annual Dth Saved = | | 11,022 | |
| 31 | | | | | | | | |
| 32 | 9) Gas Environmental Damage Factor = | | \$0.3800 | | 25) Incentive/Participant = | | \$27.27 | |
| 33 | Escalation Rate = | | 2.16% | | | | | |
| 34 | | | | | | | | |
| 35 | 10) Non Gas Fuel Environmental Damage Factor = | | \$0.00 | | | | | |
| 36 | Escalation Rate = | | 0.00% | | | | | |
| 37 | | | | | | | | |
| 38 | 11) Participant Discount Rate = | | 7.30% | | | | | |
| 39 | | | | | | | | |
| 40 | 12) Utility Discount Rate = | | 7.30% | | | | | |
| 41 | | | | | | | | |
| 42 | 13) Societal Discount Rate = | | 2.55% | | | | | |
| 43 | | | | | | | | |
| 44 | 14) General Input Data Year = | | 2016 | | | | | |
| 45 | | | | | | | | |
| 46 | 15) Project Analysis Year 1 = | | 2017 | | | | | |
| 47 | 15a) Project Analysis Year 2 = | | 2018 | | | | | |
| 48 | 15c) Project Analysis Year 3 = | | 2019 | | | | | |
| 49 | | | | | | | | |
| 50 | | | | | | | | |
| 51 | | | | | | | | |
| 52 | Cost Summary | 1st Yr | 2nd Yr | 3rd Yr | Test Results | Triennial NPV | Triennial B/C | |
| 53 | | | | | | | | |
| 54 | Utility Cost per Participant = | #DIV/0! | \$54.91 | #DIV/0! | Ratepayer Impact Measure Test | (\$1,158,239) | 0.30 | |
| 55 | Cost per Participant per Dth = | #DIV/0! | \$43.66 | #DIV/0! | | | | |
| 56 | | | | | Utility Cost Test | \$249,469 | 2.01 | |
| 57 | Lifetime Energy Reduction (Dth) | 99,198 | | | | | | |
| 58 | | | | | Societal Test | \$317,880 | 1.93 | |
| 59 | Societal Cost per Dth | \$3.44 | | | | | | |
| 60 | | | | | Participant Test | \$1,328,901 | 7.60 | |

| | A | B | C | D | E | F | G | H |
|----|--|--|---------------|--|---|----------------------|----------------------|---|
| 1 | | | | | | | | |
| 2 | Conservation Improvement Program (CIP) | | | BENEFIT COST FOR GAS CIPS-- Cost-Effectiveness Analysis | | | | |
| 3 | | | | Approved by Minnesota Department of Commerce, January 26, 2006 | | | | |
| 4 | | Company: Minnesota Energy Resources | | | | | | |
| 5 | | Project: 0 | | | | | | |
| 6 | | | | R | | | | |
| 7 | Input Data | | | | Second Year | | | |
| 8 | | | | | | | | |
| 9 | 1) Retail Rate (\$/MCF) = | | \$17.22 | | 16) Utility Project Costs | | | |
| 10 | Escalation Rate = | | 4.00% | | 16a) Administrative & Operating Costs = | | \$199,276 | |
| 11 | | | | | 16b) Incentive Costs = | | \$0 | |
| 12 | 2) Non-Gas Fuel Retail Rate (\$/Fuel Unit) = | | \$0.00 | | 16c) Total Utility Project Costs = | | \$199,276 | |
| 13 | Escalation Rate = | | 2.16% | | | | | |
| 14 | Non-Gas Fuel Units (ie. kWh,Gallons, etc) = | | | | 17) Direct Participant Costs (\$/Part.) = | | \$0 | |
| 15 | | | | | | | | |
| 16 | 3) Commodity Cost (\$/MCF) = | | \$4.27 | | 18) Participant Non-Energy Costs (Annual \$/Part.) = | | \$0 | |
| 17 | Escalation Rate = | | 4.00% | | Escalation Rate = | | 0.00% | |
| 18 | | | | | | | | |
| 19 | 4) Demand Cost (\$/Unit/Yr) = | | \$129.27 | | 19) Participant Non-Energy Savings (Annual \$/Part) = | | \$0 | |
| 20 | Escalation Rate = | | 4.00% | | Escalation Rate = | | 0.00% | |
| 21 | | | | | | | | |
| 22 | 5) Peak Reduction Factor = | | 1.00% | | 20) Project Life (Years) = | | 3 | |
| 23 | | | | | | | | |
| 24 | 6) Variable O&M (\$/MCF) = | | \$0.05 | | 21) Avg. MCF/Part. Saved = | | 0.03 | |
| 25 | Escalation Rate = | | 4.00% | | | | | |
| 26 | | | | | 22) Avg Non-Gas Fuel Units/Part. Saved = | | 0.00 | |
| 27 | 7) Non-Gas Fuel Cost (\$/Fuel Unit) = | | \$0.00 | | 22a) Avg Additional Non-Gas Fuel Units/ Part. Used = | | 0.00 | |
| 28 | Escalation Rate = | | 2.16% | | | | | |
| 29 | | | | | 23) Number of Participants = | | 63,128 | |
| 30 | 8) Non-Gas Fuel Loss Factor | | 0.00% | | | | | |
| 31 | | | | | 24) Total Annual Dth Saved = | | 1,827 | |
| 32 | 9) Gas Environmental Damage Factor = | | \$0.3800 | | | | | |
| 33 | Escalation Rate = | | 2.16% | | 25) Incentive/Participant = | | \$0 | |
| 34 | | | | | | | | |
| 35 | 10) Non Gas Fuel Environmental Damage Factor = | | \$0.00 | | | | | |
| 36 | Escalation Rate = | | 0.00% | | | | | |
| 37 | | | | | | | | |
| 38 | 11) Participant Discount Rate = | | 2.55% | | | | | |
| 39 | | | | | | | | |
| 40 | 12) Utility Discount Rate = | | 7.30% | | | | | |
| 41 | | | | | | | | |
| 42 | 13) Societal Discount Rate = | | 2.55% | | | | | |
| 43 | | | | | | | | |
| 44 | 14) General Input Data Year = | | 2016 | | | | | |
| 45 | | | | | | | | |
| 46 | 15) Project Analysis Year 1 = | | 2017 | | | | | |
| 47 | 15a) Project Analysis Year 2 = | | 2018 | | | | | |
| 48 | 15c) Project Analysis Year 3 = | | 2019 | | | | | |
| 49 | | | | | | | | |
| 50 | | | | | | | | |
| 51 | | | | | | | | |
| 52 | Cost Summary | 1st Yr | 2nd Yr | 3rd Yr | Test Results | Triennial NPV | Triennial B/C | |
| 53 | | | | | | | | |
| 54 | Utility Cost per Participant = | #DIV/0! | \$3.16 | #DIV/0! | Ratepayer Impact Measure Test | (\$247,912) | 0.11 | |
| 55 | Cost per Participant per MCF = | #DIV/0! | \$109.09 | #DIV/0! | | | | |
| 56 | | | | | Utility Cost Test | (\$155,685) | 0.16 | |
| 57 | Lifetime Energy Reduction (MCF) | 5,480 | | | | | | |
| 58 | | | | | Societal Test | (\$159,338) | 0.18 | |
| 59 | Societal Cost per MCF | \$35.46 | | | | | | |
| 60 | | | | | Participant Test | \$100,942 | n/a | |