

## SOUTH DAKOTA ENERGY EFFICIENCY PLAN - 2016 Otter Tail Power Company

| Air Source Heat Pumps Geothermal Heat Pumps Lighting Stanton S |                                       | Durland                                      | Danifalia affair | Proposed<br>Energy Savings | Proposed Demand Savings |
|--|---------------------------------------|--|------------------|----------------------------|-------------------------|
| Residential  | Direct house of Business              | Buaget                                       | Participation    | (KVVN)                     | (KVV)                   |
| Air Conditioning Control Air Source Heat Pumps Sign,000 S |                                       |  |                  |                            |                         |
| Air Source Heat Pumps       \$19,000       25       222,277         Geothermal Heat Pumps       \$23,000       10       206,583       1         Lighting       \$4,000       340       24,098       1         Total Residential       \$60,000       405       454,404       4         Commercial       4ir Source Heat Pumps       \$13,000       15       134,044       1         Custom Efficiency Projects       \$71,000       5       968,760       13       13       10       10       10       10       10       10       10       10       20       10       24,098       10       10       20       24,098       10       10       24,098       10       40       11       10       10       <  | 11001010111                           | <b>*</b> * * * * * * * * * * * * * * * * * * |                  |                            |                         |
| Geothermal Heat Pumps  | <u> </u>                              | · · ·  |                  | ,                          | 21.3                    |
| Lighting   | ·                                     | · · ·  | -                | · ·                        | 6.5                     |
| Total Residential   \$60,000   405   454,404   4   |                                       | ' '  |                  | ,                          | 17.4                    |
| Commercial <ul> <li>Air Source Heat Pumps</li> <li>Custom Efficiency Projects</li> <li>\$71,000</li> <li>\$968,760</li> <li>13</li> <li>\$63,000</li> <li>482,713</li> <li>Geothermal Heat Pumps</li> <li>\$57,000</li> <li>5523,938</li> <li>4</li> <li>Lighting</li> <li>\$54,000</li> <li>23</li> <li>244,790</li> <li>7</li> </ul> Total Commercial         \$258,000             Total Direct Impact         \$318,000       504         2,808,649         41           Indirect Impact Projects         \$10,000         400         400           Total Indirect Impact Projects         \$10,000         400         400           Total Without Development Costs         \$328,000         904         2,808,649         41           Development         \$25,000         \$2500         \$  |                                       |  |                  | '                          | 2.2                     |
| Air Source Heat Pumps Custom Efficiency Projects S71,000 S 968,760 13 Drive Power S63,000 S1 482,713 S57,000 S5 523,938 At 482,713 S52,000 S52,0 | Total Residential                     | \$60,000                                     | 405              | 454,404                    | 47.4                    |
| Custom Efficiency Projects       \$71,000       5       968,760       13         Drive Power       \$63,000       31       482,713       10         Geothermal Heat Pumps       \$57,000       25       523,938       4         Lighting       \$54,000       23       244,790       7         Total Commercial       \$258,000       99       2,354,244       36         Total Direct Impact       \$318,000       504       2,808,649       41         Indirect Impact Projects       \$10,000       400         Advertising & Education       \$10,000       400         Total Indirect Impact Projects       \$10,000       400         Total Without Development Costs       \$328,000       904       2,808,649       41         Development       \$25,000<  | Commercial                            |  |                  |                            |                         |
| Custom Efficiency Projects       \$71,000       5       968,760       13         Drive Power       \$63,000       31       482,713       10         Geothermal Heat Pumps       \$57,000       25       523,938       4         Lighting       \$54,000       23       244,790       7         Total Commercial       \$258,000       99       2,354,244       36         Total Direct Impact       \$318,000       504       2,808,649       41         Indirect Impact Projects       \$10,000       400       400         Total Indirect Impact Projects       \$10,000       400       400         Total Without Development Costs       \$328,000       904       2,808,649       41         Development EEP Development       \$25,000       \$25,000       \$25,000       400       400   | Air Source Heat Pumps                 | \$13,000                                     | 15               | 134,044                    | 3.9                     |
| Drive Power   \$63,000   31   482,713   10   Geothermal Heat Pumps   \$57,000   25   523,938   4   4   4   4   4   4   4   4   4   | ·                                     | \$71,000                                     | 5                | 968,760                    | 134.6                   |
| Lighting   |                                       | \$63,000                                     | 31               | 482,713                    | 106.4                   |
| Lighting   \$54,000   23   244,790   7   Total Commercial   \$258,000   99   2,354,244   36   Total Direct Impact   \$318,000   504   2,808,649   41   Indirect Impact Projects   Advertising & Education   \$10,000   400   | Geothermal Heat Pumps                 | \$57,000                                     | 25               | 523,938                    | 43.6                    |
| Total Commercial   \$258,000   99   2,354,244   36   | ·                                     | \$54,000                                     | 23               | 244,790                    | 75.0                    |
| Indirect Impact Projects   | Total Commercial                      | \$258,000                                    | 99               | 2,354,244                  | 363.4                   |
| Advertising & Education \$10,000 400  Total Indirect Impact Projects \$10,000 400  Total Without Development Costs \$328,000 904 2,808,649 41  Development EEP Development \$25,000  | Total Direct Impact                   | \$318,000                                    | 504              | 2,808,649                  | 410.8                   |
| Advertising & Education \$10,000 400  Total Indirect Impact Projects \$10,000 400  Total Without Development Costs \$328,000 904 2,808,649 41  Development EEP Development \$25,000  | Indirect Impact Projects              |  |                  |                            |                         |
| Total Indirect Impact Projects         \$10,000         400           Total Without Development Costs         \$328,000         904         2,808,649         41           Development EEP Development         \$25,000         \$25  |                                       | \$10,000                                     | 400              |                            |                         |
| Development \$25,000   | S S                                   |  | 400              |                            |                         |
| EEP Development \$25,000   | Total Without Development Costs       | \$328,000                                    | 904              | 2,808,649                  | 410.8                   |
| EEP Development \$25,000   |                                       |  |                  |                            |                         |
| · · · · · · · · · · · · · · · · · · ·  | <u>.</u>                              | *  |                  |                            |                         |
| Total Development \$25,000   | ·                                     |  |                  |                            |                         |
|  | Total Development                     | \$25,000                                     |                  |                            |                         |
| Total - All Programs (Including Development) \$353,000 904 2,808,649 41  | Tatal All Draggers (Including Daysley | ¢252.000                                     | 004              | 2 202 242                  | 410.8                   |

## SOUTH DAKOTA ENERGY EFFICIENCY PLAN, 2016 Only OTTER TAIL POWER COMPANY

**Benefit Cost Ratios** 

|                                | APPROVED BENEFIT / COST TEST RESULTS |                        |                           |                  |                  |  |  |
|--------------------------------|--------------------------------------|------------------------|---------------------------|------------------|------------------|--|--|
|                                | Utility<br>Test                      | Total Resource<br>Test | Raterpayer<br>Impact Test | Societal<br>Test | Participant Test |  |  |
| Direct Impact Projects         |                                      |                        | •                         |                  | ·                |  |  |
| Residential                    |                                      |                        |                           |                  |                  |  |  |
| Air Conditioning Control       | 4.50                                 | 6.50                   | 4.12                      | 6.50             | inf.             |  |  |
| Air Source Heat Pumps          | 6.79                                 | 2.86                   | 0.68                      | 2.86             | 5.01             |  |  |
| Geothermal Heat Pumps          | 7.63                                 | 2.16                   | 0.85                      | 2.16             | 2.72             |  |  |
| Lighting                       | 3.58                                 | 4.10                   | 0.73                      | 4.10             | 16.15            |  |  |
| Total Residential              | 6.37                                 | 2.72                   | 0.88                      | 2.72             | 3.57             |  |  |
| Commercial                     |                                      |                        |                           |                  |                  |  |  |
| Air Source Heat Pumps          | 6.26                                 | 2.88                   | 0.73                      | 2.88             | 3.69             |  |  |
| Customer Efficiency Projects   | 13.65                                | 4.59                   | 1.71                      | 4.59             | 2.12             |  |  |
| Drive Power                    | 9.48                                 | 3.94                   | 1.79                      | 3.94             | 1.72             |  |  |
| Geothermal Heat Pumps          | 8.08                                 | 2.27                   | 0.93                      | 2.27             | 1.87             |  |  |
| Lighting                       | 5.69                                 | 3.14                   | 1.35                      | 3.14             | 2.05             |  |  |
| Total Commercial               | 9.36                                 | 3.50                   | 1.39                      | 3.50             | 2.00             |  |  |
| Total Direct Impact            |                                      |                        |                           |                  |                  |  |  |
| Indirect Impact Projects       |                                      |                        |                           |                  |                  |  |  |
| Advertising & Education        |                                      |                        |                           |                  |                  |  |  |
| Total Indirect Impact Projects |                                      |                        |                           |                  |                  |  |  |
| TOTAL - ALL PROGRAMS           | 7.92                                 | 3.27                   | 1.27                      | 3.27             | 2.25             |  |  |
|                                |                                      |                        |                           |                  |                  |  |  |