



**SOUTH DAKOTA**

**Demand Side Management Plan**

**July 6, 2015**

## **Introduction**

NorthWestern Energy's (NorthWestern's) South Dakota Demand Side Management ("DSM") Program Plan was approved by the South Dakota Public Utility Commission ("Commission") with its order issued on June 16, 2014 in Docket No. GE12-001. The two-year plan allows for a program ramp-up period to allow the DSM program portfolio to become fully operational and the customer base to become better informed about program features and availability.

This report outlines Year 1 activities completed or anticipated as complete through June 30, 2015, provides updates to the Year 2 plan proposed for July 1, 2015 through June 30, 2016, and requests tariff changes to true up rates based on Year 1 results and the Year 2 budget.

The electric and natural gas program offerings were introduced under the NorthWestern sub-brand of Efficiency Plus ("E+"). As outlined in the DSM Plan, Year 1 program offerings were limited to the E+ Audits for the Home, instant rebates through coupons for compact fluorescent lamps ("CFLs"), and lighting, insulation, and equipment rebates for existing homes and businesses. This set of programs was introduced to allow for the staging of program offerings and the development of relationships with trade allies and retailers required to support additional program offerings in Year 2.

The start-up of NorthWestern's E+ programs in South Dakota lagged as a result of challenges in hiring qualified personnel. The hiring delay resulted in a shorter timeframe for customers and trade allies to respond to rebates, especially in the commercial sector. Participation in the rebate programs in Year 1, ending June 30, 2015, was less than anticipated.

Overall, the expenditures for Year 1 are estimated to be \$1,099,115 against a budget of \$2,042,780 for program start-up, home energy audits, rebates, rebate implementation, travel, and advertising. Home energy audits, program start-up costs, and contractor expenses associated with rebates are within budget. However, rebates for Year 1 totaled \$104,743 or approximately 12% of the rebate budget of \$900,000.

The Year 1 results based on the Total Resource Cost (“TRC”) are substantially below the 0.9 TRC level represented in the plan as the start-up and implementation costs are spread over fewer kilowatt hours (“kWh”) of electricity and dekatherms (“dKt”) of natural gas savings. Achieving energy savings through the rebate programs was the primary basis for the projected TRC in the plan. Those savings were not achieved in Year 1. As noted in the initial plan, home energy audits do not have a TRC of 0.9 or greater. Therefore, even though NorthWestern met its goal in the number of home energy audits completed in Year 1, that achievement along with rebate participation did not provide sufficient energy savings to meet an overall TRC of 0.9 or greater. The home energy audit program plays an important role in NorthWestern’s DSM portfolio because it serves as a platform to build customer awareness and future participation in the rebate offerings. Customer satisfaction with the home energy audit program offering is high.

Necessary infrastructure and staffing are now in place for NorthWestern to move forward with a modified Year 2 Plan. NorthWestern proposes reducing the Year 2 rebate budget and eliminating CFL coupon offerings while maintaining the other budget components and expanding program offerings to include custom incentives for non-residential customers and limited rebates for new home and business construction.

This report also provides a revised tariff to reconcile Year 1 revenues collected with actual expenditures (through May 31, 2015) and estimated expenditures (through June 30, 2015), a revised budget for Year 2, and the electric and natural gas Lost Margin adjustments.

Moving forward, NorthWestern proposes providing the Commission with quarterly updates on the Year 2 program progress.

### **Program Startup**

Following approval by the Commission, NorthWestern entered into a contract with DNV GL to implement the programs in South Dakota effective July 15, 2014. DNV GL quickly deployed local, regional, and national recruitment strategies and found that hiring qualified employees to support the implementation of the energy efficiency

programs proved difficult. Two home energy auditors were hired in October and their training commenced. A third position for the recruitment of trade allies and to promote rebate offerings with commercial customers was filled in December. The delays in hiring, combined with the new employees' arrival at the end of the calendar year, condensed the timeframe to cultivate customer interest and participation until late in Year 1.

Retailers were enlisted to support the Fall Residential In-Store Lighting Coupon offering, and preferred contractors were recruited to install residential heating equipment and insulation. Rebates were offered effective October 1, 2014 with customers accessing information from NorthWestern's website, bill insert, or through a preferred contractor.

Residential audits commenced in late November after the newly hired auditors completed their training, and, with supplemental staffing, the fully-budgeted quantity of 466 E+ Audits for the Home has been completed as of June 30, 2015. In early March, trade allies (i.e. distributors, electrical contractors, engineers, architects, HVAC contractors, insulation contractors, building contractors) were invited to attend any of four workshops in Aberdeen and Mitchell. The workshops provided information about the E+ program offerings so that trade allies may successfully market the programs to their customers. Additional recruitment of trade allies continues, as do interactions with individual commercial customers to identify and develop commercial rebate projects. Customer awareness is growing, and a number of commercial projects are in process which will generate energy savings through the programs in Year 2.

Program promotion activities in Year 1 included supplemental bill inserts, content in the Energy Connections newsletter which accompanies customer billing statements, direct mail for the CFL coupon offering to all residential electric customers in October 2014 and April 2015, direct mail to subsets of residential heating customers promoting the energy audit between January and June, newspaper ads for the CFL coupon offers, and targeted mass media. These activities were in addition to the trade ally recruitment efforts.

The full promotion budget was not spent in Year 1 as the infrastructure to support the rebate programs was not fully in place until late in the year. With staff now in place and a growing trade ally network developing, it is anticipated that the Year 2 promotion budget will be spent in full to generate greater customer participation in the Year 2 program offerings.

### **Year 1 Results**

Since approval in 2014, customer participation in the Year 1 E+ programs resulted in 1,422,975 kWh of electric savings and 3,102 dKt of natural gas savings.

A total of 466 E+ Audits for the Home have been completed generating 161,789 kWh of electric and 1,765 dKt of natural gas savings. Customer satisfaction with the E+ Audit for the Home has been high as customers value learning more about how their homes use energy and actions they can take to manage energy use and, in some cases, improve the natural gas safety of their homes.

Electric savings in Year 1 have primarily been driven through commercial lighting rebates with a single project resulting in 415,347 kWh of savings. With this project, the customer replaced 267 metal halide lamps with high efficiency fluorescent lamps and fixtures. Smaller commercial rebates included a small business that replaced six fixtures to save approximately 1,100 kWh. These two examples illustrate the range of size for individual customer projects. Commercial customers have also taken advantage of the rebates for variable frequency drives (“VFDs”). High efficiency lighting and VFDs represent substantial energy-saving opportunities in the commercial electric sector and are applicable to many types of commercial facilities. Residential electric savings in Year 1 have been primarily generated through the purchase of 6,827 CFLs through the Fall and Spring In-Store CFL Coupon offerings. Nearly 900 coupons were redeemed through more than 50 participating retailers. Sixteen rebates were provided to residential electric customers for ENERGY STAR® refrigerator/freezers.

Customer participation in the residential high efficiency furnace and boiler rebates generated the most natural gas savings through 103 rebates resulting in 1,038 dKt of savings. Only one commercial natural gas project has received a rebate to date.

In total, 58 electric and 153 natural gas rebates have been processed for measures installed in homes and businesses. The calculated annual savings associated with these rebates and the CFL coupon offering total 1,261,186 kWh of electricity and 1,337 dKt of natural gas.

Participation in the rebate programs was lower than budgeted and while awareness is growing, NorthWestern, working with its contractor, will continue its efforts to increase customer participation in its DSM program in anticipation of reaching revised Year 2 targets. Indications are that a number of commercial projects are developing for future savings which signals increased customer awareness and progress toward growing participation. As noted by the single project representing close to 40% of the total electric savings in Year 1, results are driven by a mix of the size of individual projects as well as the volume of projects.

Table 1 shows the number of rebates and the total calculated energy savings by measure paid through Year 1. Additional rebate applications may be in process as customers have 90 days after completing a project to submit the rebate application. The Year 1 rebate schedule is in effect for projects completed as of June 30, 2015. Also included on Table 1 are the savings associated with the 6,827 CFLs purchased through 871 coupons during the Fall and Spring CFL coupon offerings. Additional savings and expenses may result from these offerings as retailers submit their final sales information; however, NorthWestern does not expect additional savings or expenses to be significant.

**Table 1: Year 1 Energy Savings and Rebates by Measure**

<b>NorthWestern Energy Year 1 Energy Savings and Rebates by Measure</b>		
	<b>Savings</b>	<b># Rebates</b>
<b>Commercial Electric</b>		
Lighting retrofits	716,854 kWh	14
Energy Star - Computer	133 kWh	1
Motor - Fan System - Variable Speed Control	168,955 kWh	4
Motor - Pump System - Variable Speed Control	159,688 kWh	1
Server (Early Retirement)	1,465 kWh	1
<b>Commercial Electric TOTAL</b>	<b>1,047,095 kWh</b>	<b>21</b>
<b>Residential Electric</b>		
CFL Mail-in Rebate	908 kWh	16
Attic Insulation R-0 to R-49	5320 kWh	1
Basement or Crawl Space Wall Insulation	2426 kWh	1
Energy Star Refrigerator/Freezer	1883 kWh	16
Programmable Thermostat	415 kWh	1
Proper Sizing - Heat Pump	754 kWh	1
Water Heater Thermostat Setback	134 kWh	1
CFL In-Store Coupon offer (Fall and Spring)	202,251 kWh	871
<b>Residential Electric TOTAL</b>	<b>214,092 kWh</b>	<b>908</b>
<b>Commercial Natural Gas</b>		
High Efficiency Water Heater	16 dkt	1
<b>Commercial Natural Gas TOTAL</b>	<b>16 dkt</b>	<b>1</b>
<b>Residential Natural Gas</b>		
Basement Wall Insulation	112 dkt	4
Boiler Pipe Insulation	1 dkt	1
ENERGY STAR Convection Oven	25 dkt	2
High Efficiency Condensing Boiler	61 dkt	5
High Efficiency Condensing Furnace	977 dkt	98
Low Flow Showerhead (2.0 GPM max)	2 dkt	2
Programmable Thermostat	143 dkt	38
Residential Foam Sealant	1 dkt	2
<b>Residential Natural Gas TOTAL</b>	<b>1,322 dkt</b>	<b>152</b>

Table 2 shows the total savings for Year 1 from the E+ Audit for the Home and all Rebates/Incentives.

**Table 2: Year 1 Cumulative Savings**

<b>NorthWestern Energy Year 1 Cumulative Savings</b>		
	<b>Electric Savings</b>	<b>Natural Gas Savings</b>
E+ Audit for the Home	161,789 kWh	1,765 dKt
Commercial Rebates	1,047,094 kWh	16 dKt
Residential Rebates	214,091 kWh	1,322 dKt
<b>TOTAL SAVING</b>	<b>1,422,975 kWh</b>	<b>3,103 dKt</b>

**Year 1 Costs**

NorthWestern incurred \$1,099,115 of estimated costs to establish and deliver the energy efficiency programs in Year 1. Program start-up costs as well as the implementation costs associated with the E+ Audit for the Home and rebate offerings total \$851,939. Customer rebates/incentives total \$104,743. The remaining expenses of \$142,432 were NorthWestern’s advertising and administrative costs for Year 1 offerings. Table 3 shows a comparison of the Year 1 Budget to the Year 1 expenditures.



**Table 3: Year 1 Budget Compared to Expenditures**

<b>NorthWestern Energy South Dakota DSM Program Budget and Spending Actual + Estimate</b>			
	<b>2014-15 Budget</b>	<b>2014-15 Actual + Estimated<sup>1</sup></b>	<b>Total Unspent</b>
<b>Contractor Expenses (DNV GL)</b>			
<b>Residential Audit Program</b>			
Program Startup (contractor cost):			
Two vehicles (approximate, at cost)	\$ 66,000	\$ 43,884	\$ 22,116
RECAP & Database Development (T&M, not to exceed)	\$ 50,000	\$ 71,825	\$ (21,825)
In-home audits	<u>\$ 482,638</u>	<u>\$ 482,638</u>	<u>\$ -</u>
Program Subtotal	\$ 598,638	\$ 598,347	\$ 291
<b>Residential/Commercial Electric &amp; Natural Gas Rebate Programs</b>			
Program Startup (contractor cost)	\$ 16,692	\$ 16,692	\$ -
Outside Services:	<u>\$ 236,900</u>	<u>\$ 236,900</u>	<u>\$ -</u>
Program Subtotal	\$ 253,592	\$ 253,592	\$ -
Contractor Expenses (DNV GL) Total	\$ 852,230	\$ 851,939	\$ 291
<b>NorthWestern Energy Expenses:</b>			
Rebates	\$ 900,000	\$ 104,743	\$ 795,257
Admin/non-labor (Travel, office supplies, etc.)	\$ 16,000	\$ 14,090	\$ 1,910
Advertising	\$ 274,550	\$ 128,342	\$ 146,208
NorthWestern Energy Expenses Total	\$ 2,042,780	\$ 1,099,115	\$ 943,665
<b>Total Estimated Budget</b>	<b>\$ 2,042,780</b>	<b>\$ 1,099,115</b>	<b>\$ 943,665</b>
<b>1. Spending is actual through May 31, 2015 and estimated through June 30, 2015</b>			

Overall, contractor expenses for start-up, energy audits, and rebate program costs are within budget. Funds remaining from the vehicle budget were reallocated to other program start-up costs associated with the Residential Audit Program.

## **Year 2 Modifications**

NorthWestern's budget for the two-year plan approved by the Commission split costs equally between electric and natural gas programs with the understanding that adjustments would be made based upon actual expenditures and that the Year 2 budget would be adjusted accordingly. While Year 1 actual expenses resulted in a 62% electric and 38% natural gas split, NorthWestern proposes that the Year 2 budget be adjusted to allocate 60% of the costs to the electric program and 40% to natural gas program.

Consistent with the DSM Plan, NorthWestern has evaluated the programs proposed for Year 2 and is making adjustments. Based on additional evaluation of the South Dakota market conditions and the 2015 avoided costs used to determine cost effectiveness of individual programs and measures, 14 electric and 6 natural gas measures are being removed while 25 electric and 2 natural gas measures are being added in Year 2 program offerings. Additional adjustments have been made to some measures as a result of the cost effectiveness analysis.

The following programs are proposed to be added effective July 1, 2015:

- The E+ Business Partners Program provides custom incentives to NorthWestern commercial and industrial electric or natural gas customers for new or existing facilities. NorthWestern evaluates proposals for projects that incorporate conservation measures. Project proposals must demonstrate the cost effectiveness of the project; prove the availability of qualified design services, contractors, and maintenance service; and describe the project's use of reliable and available equipment.
- The E+ Residential and Commercial New Construction Electric Rebate programs provide rebates for new construction measures that cost effectively exceed code on qualifying measures.

Complete listings of the Year 2 (July 1, 2015 – June 30, 2016) rebates are included in Appendix A and are also posted at [NorthWesternEnergy.com/Eplus](http://NorthWesternEnergy.com/Eplus).

The E+ Audit for the Home program will serve approximately 675 customers in Year 2 as supported with the original Year 2 plan.

NorthWestern proposes the Year 2 rebate budget be reduced from \$900,000 to \$400,000 and that all other budget components remain unchanged from the original Year 2 budget. Table 4 shows the Revised Budget for the 2-Year Plan based upon the Actual/Estimated Year 1 Expenditures and Revised Year 2 Budget.

**Table 4: Revised 2-Year Plan Budget**

<b>NorthWestern Energy South Dakota DSM Program Spending Actual + Estimate and Revised Plan Budget</b>			
	<b>2014-15 Actual + Estimated<sup>1</sup></b>	<b>2015-16 Revised Budget</b>	<b>2-Year Revised Total</b>
<b>Contractor Expenses (DNV GL)</b>			
<b>Residential Audit Program</b>			
Program Startup (contractor cost):			
Two vehicles (approximate, at cost)	\$ 43,884	\$ -	\$ 43,884
RECAP & Database Development (T&M, not to exceed)	\$ 71,825	\$ -	\$ 71,825
In-home audits	<u>\$ 482,638</u>	<u>\$ 433,440</u>	<u>\$ 916,078</u>
Program Subtotal	\$ 598,347	\$ 433,440	\$ 1,031,787
<b>Residential/Commercial Electric &amp; Natural Gas Rebate Programs</b>			
Program Startup (contractor cost)	\$ 16,692	\$ 11,692	\$ 28,384
Outside Services:	<u>\$ 236,900</u>	<u>\$ 266,150</u>	<u>\$ 503,050</u>
Program Subtotal	\$ 253,592	\$ 277,842	\$ 531,434
Contractor Expenses (DNV GL) Total	\$ 851,939	\$ 711,282	\$ 1,563,221
<b>NorthWestern Energy Expenses:</b>			
Rebates	\$ 104,743	\$ 400,000	\$ 504,743
Admin/non-labor (Travel, office supplies, etc.)	\$ 14,090	\$ 8,000	\$ 22,090
Advertising	\$ 128,342	\$ 267,550	\$ 395,892
NorthWestern Energy Expenses Total	\$ 247,176	\$ 675,550	\$ 922,726
<b>Total Estimated Budget</b>	<b>\$ 1,099,115</b>	<b>\$ 1,386,832</b>	<b>\$ 2,485,947</b>
<b>1. Spending is actual through May 31, 2015 and estimated through June 30, 2015</b>			

**Tariff Modifications**

NorthWestern is proposing changes to its DSM Adjustment Tariff with an effective date of August 1, 2015. NorthWestern seeks to modify its DSM tariff to remove “Demand Side Management or DSM” language and replace it with “Energy Efficiency or EE”.

Customers more readily identify with Energy Efficiency than they do with Demand Side Management as it is our belief that this tariff change will make the overall tariff more understandable to customers.

NorthWestern is also submitting a revised DSM tracker calculation in Appendix B. NorthWestern proposes that the new DSM tracker calculations become effective August 1, 2015. Year 2 calculations are based on Year 1 results that reflect a 62% electric and 38% natural gas split for budget and program participation and a Year 2 budget split of 60% electric and 40% natural gas. This replaces the 50/50 estimated cost split approved for Year 1. The tracker also includes the NorthWestern Energy lost margin recovery at a rate of 30% on electric expenditures and 7.79% on natural gas expenditures.

The Commission will note a reduction in the DSM tracker for both electric and natural gas customers in Year 2. Electric customers will see a reduction from \$0.0008 to \$0.0003 per kWh. Natural customers will see their DSM rate decrease from \$0.0167 to \$0.0002 per therm.

### **Conclusion**

NorthWestern is committed to providing a DSM program that helps customers to reduce energy usage while meeting the expectations of the Commission in realizing a cost-effective DSM portfolio of offerings. As discussed previously, Year 1 provided unexpected challenges that impacted NorthWestern's ability to meet its projected TRC. It is the NorthWestern's belief that a continued focus on education and outreach efforts in Year 2 will provide more satisfying results. NorthWestern respectfully requests the Commission's favorable consideration of the proposed Year 2 DSM plan and budget for South Dakota customers.