

Table 6: 2011-12 Natural Gas DSM Program Qualifying Measures

<b>Residential: Existing Buildings</b>
Attic/Ceiling R-0 to R-49 Insulation
Attic/Ceiling R-11 to R-49 Insulation
Attic/Ceiling R-19 to R-49 Insulation
Crawlspace R-0 to R-19 Insulation
Exterior Wall R-0 to Blow-In R-13 Insulation
Slab Insulation R-0 to R-5 (4 ft)
Service Hot Water Pipe/Boiler Pipe Insulation
Water Heater Tank Insulation
Boiler Controls
Boiler Diagnostic Testing, Repair and Maintenance
Furnace Diagnostic Testing, Repair and Maintenance
Heater Diagnostic Testing, Repair and Maintenance
High Efficiency Condensing Boiler
High Efficiency Condensing Furnace
High Efficiency Gas Room Heater
High Efficiency Water Heater
Programmable Thermostat
Faucet Aerators
Low-Flow Showerheads
Self Install Weatherization
Self Install Window Treatment
<b>Residential: New Buildings</b>
Natural Gas Boiler Controls
High Efficiency Condensing Boiler
High Efficiency Condensing Furnace
Northwest Energy Star Manufactured Home (Natural Gas)
<b>Commercial: Existing Buildings</b>
Boiler Tune-Up
DHW Circulation Pump Time clock retrofit system
Heating Duct Sealing & Insulation
Energy Management System (EMS) Optimization (commissioning)
High Efficiency (power burner/premium) furnace/boiler > 90%
High Efficiency Windows (Multiple Glazed, Low Emissivity)
High Efficiency Water Heater EF > 0.62 or > 90% TE
Service Hot Water Pipe/Boiler Pipe Insulation
Infrared Fryer
Ceiling Insulation
Exterior Wall Insulation (above grade)
Stack Heat Exchanger
Domestic water heater tank insulation
<b>Commercial: New Buildings</b>
Energy Management System (EMS) Optimization
Heat Recovery from AC
High Efficiency (Power Burner/ Premium) Furnace/Boiler 90% Eff
High efficiency water heater EF equal to or greater than 0.62 or 90% thermal efficiency
Stack Heat Exchanger
Water Heater Tank Blanket/Insulation

Additional details on program participation and various rebates and incentives offered for each of these measures can be found at [www.northwesternenergy.com](http://www.northwesternenergy.com).

2. Home Energy Events sponsored by NorthWestern that are offered during the fall months at numerous community locations across the NorthWestern natural gas service territory in Montana. At these events, NorthWestern provides free home weatherization starter kits to NWE residential natural gas customers<sup>3</sup> and education to customers about energy efficiency and renewable energy. These community events are popular with customers and are well attended. Table 7 presents summary figures on locations of and participation at the Home Energy Events during the previous six years:

Table 7: E+ Residential Natural Gas Savings Program Home Energy Events

<b>Dates</b>	<b>Locations</b>	<b>Participants</b>
2005	15	5,903
2006	59	9,527
2007	39	5,255
2008	43	5,286
2009	44	6,604
2010	28	9,429

### Green Blocks Program

A new DSM pilot program that produces natural gas savings is called Green Blocks. This program is the first of its kind and is a pilot project targeted at residential dwellings. This pilot program was first initiated as a joint effort between the City of Missoula and NorthWestern, and was extended to Helena in

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<sup>3</sup> Kits included door weather-stripping, door sweeps, window plastic, insulating foam, outlet/switch plate gaskets, low-flow showerhead and faucet aerators.

2010. Green Blocks provides a comprehensive home energy audit and installation of all cost-effective weatherization, insulation and CFLs (where appropriate) in the homes of selected program participants at no direct charge to them. Funding for this project comes from both USB and energy supply DSM budgets; USB funds were used for the home energy audits and energy supply DSM funds covered the installation of the measures. In 2010, additional funding for the Missoula Green Blocks program was sourced from the American Recovery and Reinvestment Act.

During the 2009 and 2010 periods, NorthWestern also operated USB-funded DSM programs that provide energy efficiency services to NorthWestern's customers and contribute to the overall annual energy savings acquired. These programs include the E+ Free Home Weatherization Program and the E+ Energy Audit for the Home<sup>4</sup>. These two programs will be continued largely unchanged for the foreseeable future.

#### Natural Gas DSM Assessment

In 2008, NWE completed a detailed Natural Gas DSM Assessment as described in the 2008 Plan. The scope of the study included new and existing residential and commercial buildings. The focus of the study was on the ten year, 2008–2017 time period. The results of that Natural Gas DSM Assessment included natural gas DSM Supply curves showing energy efficiency potential at various levels of avoided costs.

#### Natural Gas DSM Plan: DSM Potential and Annual DSM Goals

Natural gas prices have decreased recently and the expected future natural gas prices are lower than contemplated in the 2008 Natural Gas Resource Plan. Consequently, the natural gas avoided cost that NorthWestern believes is

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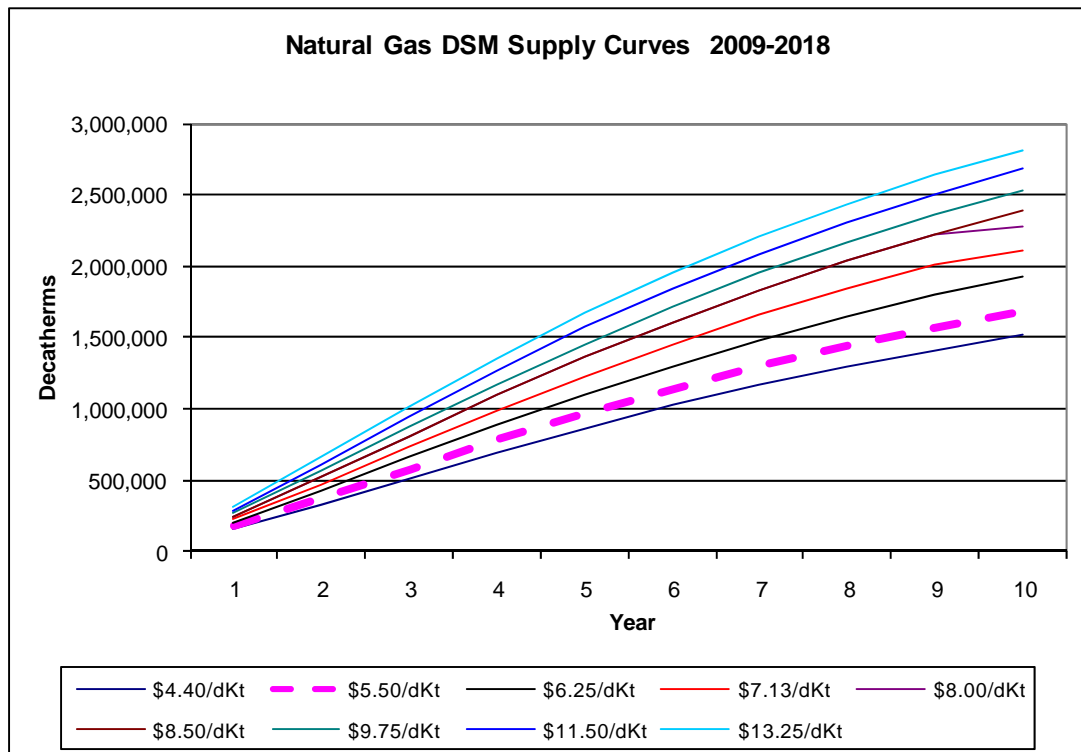
<sup>4</sup> These programs are not funded by NorthWestern's energy supply rates and, therefore, are not considered to be included in the scope of this Plan. More information on these programs is available at

[http://www.northwesternenergy.com/display.aspx?Page=Energy\\_Efficiency\\_Home\\_MT&Item=102](http://www.northwesternenergy.com/display.aspx?Page=Energy_Efficiency_Home_MT&Item=102)

appropriate for natural gas DSM Program planning in this cycle is currently calculated at \$5.57/Dkt (nominal 20 year levelized). Lower avoided costs imply less cost-effective DSM is available and achievable over the planning period covered by this Plan.

Examination of the Natural Gas DSM Supply Curves developed in the 2008 DSM Assessment and presented in Figure 1 show that, at an avoided cost level of approximately \$5.50/Dkt (refer to the dotted line on the graph), the estimated cost-effective, achievable DSM potential is approximately 1.7 million Dkt<sup>5</sup>. This amount is a revised estimate of the cost-effective natural gas DSM potential over the period covered by the Assessment using the updated (lower) avoided cost estimate for 2011.

Figure 1: Natural Gas DSM Supply Curves



<sup>5</sup> The tabular results from the Natural Gas DSM Assessment document this value more precisely at 1,679,474 dekatherms.

NorthWestern has operated successful natural gas DSM programs during the 2009-2010 period preceding this Plan, and has acquired an estimated 389,000 Dkt of natural gas energy savings. Using the results of the Natural Gas DSM Assessment, adjusting natural gas DSM potential for lower avoided costs as indicated by the Natural Gas DSM Supply Curves shown in Figure 1, and netting out the 389,000 Dkt of natural gas DSM that has been acquired through recent DSM program activity, NorthWestern estimates that approximately 1.3 million Dkt of cost-effective natural gas DSM remains available.

In the 2008 Natural Gas Resource Plan, NorthWestern established a 10 year Natural Gas DSM Plan to acquire a total of 2,100,000 Dkt of cumulative installed energy savings capability. This, in turn, resulted in establishment of annual natural gas DSM goals equal to one-tenth of that total, or 210,000 Dkt/year. Although the avoided costs have decreased, and this will consequently affect the amount of cost-effective, achievable natural gas DSM resource as well as the budget available for DSM programs (including customer rebates and incentives), NorthWestern will maintain its aggressive annual natural gas DSM target at 210,000 Dkt/year for this planning period and reevaluate this position as part of the next Natural Gas Biennial Procurement Plan.

If NorthWestern can continue to meet or exceed its annual goal despite lower avoided costs, it will require approximately 7 more years to acquire the remaining total cost-effective achievable DSM potential of 1.3 million Dkt. It is likely that a new natural Gas DSM Assessment will be performed before the end of that time period, and revised estimates of achievable DSM potential, budgets, qualifying measures will become available, and will be used to determine future DSM plans and specific program elements and activities.

In the interim, NorthWestern will strive to offer and administer effective DSM programs that produce energy savings equal to or greater than its annual goal while spending less than the annual budgeted amounts. NorthWestern hired additional DSM staff and issued a Request for Proposal in 2009-10, resulting in

retention of two additional outside services firms to promote commercial DSM and develop E+ Business Partners projects.

Table 8 summarizes NorthWestern’s annual goals and revised budgets for its Natural Gas DSM Program portfolio:

Table 8: Natural Gas DSM Plan Goals and Annual Budget

<b>Year</b>	<b>DSM Goal (dKt)</b>	<b>Budget</b>
2011	210,000	\$ 2,435,000
2012	210,000	2,532,000
2013	210,000	2,634,000
2014	210,000	2,739,000
2015	210,000	2,849,000
2016	210,000	2,963,000
2017	40,000	3,081,000
<b>Total</b>	<b>1,300,000</b>	<b>\$ 19,233,000</b>

Natural Gas DSM Programs

As noted above, in preparation for its 2011 Natural Gas DSM Program, NWE examined changes to the natural gas price outlook and the effect on Natural Gas DSM Program economics. Although natural gas supply prices have decreased, and therefore, the appropriate natural gas avoided cost used for DSM Program and measure analysis is now lower than the previous planning cycle, NorthWestern will not make any changes to rebate and incentive levels at this time.

NorthWestern will continue to offer and operate DSM programs as described below, incorporating the qualified DSM measures listed in Table 6 above. NWE

will again conduct Home Energy Events in fall 2011 in approximately 30 locations around Montana. Supporting these programs will be education, marketing and outreach campaigns that utilize mass media, targeted mailings, direct personal contact, interaction with trade allies and associations, electronic media, and other techniques to solicit customer interest and participation. These DSM programs are well-established, and will be continued with minimal changes. A brief description of these programs follows, and additional details are available at: [www.northwesternenergy.com](http://www.northwesternenergy.com).

#### Home Energy Events

NorthWestern conducts local events in communities throughout its natural gas service territory to promote energy efficiency and distribute free weatherization and energy savings kits to its natural gas customers. These events also provide consumer education on several topics, including proper installation of energy saving measures, electrical safety, renewable energy and various tax credits and incentives that are available.

#### E+ New Home Program

Residential customers building a new home may receive rebates for qualifying ENERGY STAR lighting and qualifying natural gas measures. Northwest ENERGY STAR manufactured homes also qualify for rebates. NorthWestern is considering combining the features of this program with a similar Residential Electric Program in 2011 and beyond in response to builder/contractor requests for administrative streamlining of DSM programs.

#### E+ Natural Gas Savings Rebate Program (existing homes)

This program includes REBATES to natural gas space and water heat customers for programmable thermostats, insulation improvements, and for choosing other qualifying high efficiency natural gas DSM measures. Rebates are higher when customers work with a Preferred Contractor.

#### E+ Natural Gas Savings for New Businesses

This program offers prescriptive REBATES for qualifying natural gas energy saving measures in new construction (not existing buildings). Rebates are offered for high efficiency furnace/boiler or water heater, stack heat exchanger, air conditioning heat recovery, Energy Management Control System (EMCS) optimization, and water heater tank wrap insulation.

### E+ Natural Gas Savings for Existing Businesses

This program offers prescriptive REBATES for qualifying natural gas energy saving measures in existing facilities. Eligible measures include high efficiency furnace/boiler or water heater, stack heat exchanger, infrared fryer, refrigeration heat recovery, boiler tune-up, DHW circulation pump time clock, Energy Management Control System (EMCS) optimization, water heater tank wrap insulation, boiler pipe insulation, service hot water pipe insulation, heating duct sealing and insulation, ceiling insulation, exterior wall insulation, and high efficiency windows.

### E+ Business Partners Program

Provides customized incentives to commercial and industrial customers for electric and natural gas conservation. Examples of projects include measures to improve lighting, heating and cooling (HVAC) systems, refrigeration, air handling, and pumping systems. New and retrofit facilities are eligible. NorthWestern has hired two additional outside services firms to assist with development of DSM projects related to this program.

### Green Blocks Program

NorthWestern Energy partners with the communities of Missoula and Helena to conduct a pilot energy conservation program called “Green Blocks”. A primary purpose of Green Blocks is to demonstrate basic residential resource conservation techniques in several neighborhoods or “blocks” within the cities by removing economic barriers to installation of energy conservation faced by consumers. The focus of this effort was to provide energy audits and installation of certain energy efficiency measures at no direct charge to program participants in hopes of achieving cost effective natural gas and electric savings. NorthWestern will examine the cost-effectiveness of this pilot program and make a determination whether to repeat and/or expand it in the future.

## **SECTION 7. MODELING AND ANALYSIS**

Regarding the use of modeling for portfolio planning and natural gas procurement, the Tariff Guidelines state:

- (1) “The utility's natural gas supply portfolio planning and resource procurement and decision-making processes should incorporate cost-effective computer modeling and analyses.
- (2) The modeling employed by the utility should support an informed dialogue with its advisory committee, and contribute to prudent and informed judgments in the portfolio planning and resource acquisition process.