

SECTION 6. RESOURCE ACQUISITION

To serve ratepayers' natural gas needs, NWE enters into agreements to both buy natural gas and operate natural gas demand side management programs that moderate natural gas demand.

Natural Gas Demand Side Management (DSM) Program

NorthWestern continued its Natural Gas DSM Program activities during the 2007 and 2008 periods using the services of KEMA, Inc., for ongoing program implementation. Funding for Natural Gas DSM Program activities comes primarily from energy supply rates. The associated DSM Program activities are the main focus of this DSM Plan. Other natural gas DSM activities that are funded from the Universal System Benefits (USB) Charge are noted but not extensively detailed in this Plan.

There are two components to the energy supply-funded E+ Natural Gas Savings Rebate Program:

1. Mail-in rebates for programmable thermostats and increased insulation levels for attics, above-grade walls, basement walls and crawl space walls³ are available to NorthWestern natural gas heating customers. The program includes a list of preferred installation contractors that program participants may use. A list of qualifying measures and rebates that were in effect during the time period January 2007-August 2008 is presented in Table 6.

Table 6: NWE 2007-2008 Gas DSM Measures and Rebates

NWE 2007-2008 Gas DSM Measures and Rebates				
Measures	Rebates		Unit	Qualifiers
	Preferred Contractor Installed (\$/unit)	Self Installed (\$/unit)		
Attic/ceiling Insulation R-0 to R-38	0.29	0.23	square foot	Existing R-0
Attic/ceiling Insulation R-0 to R-49	0.34	0.27	square foot	Existing R-0
Attic/ceiling Insulation R-11 to R-38	0.20	0.16	square foot	Existing R-11
Attic/ceiling Insulation R-11 to R-49	0.24	0.19	square foot	Existing R-11
Attic/ceiling Insulation R-19 to R-38	0.14	0.11	square foot	Existing R-19
Basement Wall Insulation R-0 to R-11	0.29	0.23	square foot	Existing R-0, includes rim joist insulation
Crawlspace Wall Insulation R-0 to R-19	0.28	0.22	square foot	Existing R-0, for conditioned crawlspaces
Exterior Above Grade Wall Insulation R-0 to R-11	0.41	0.33	square foot	Existing R-0
ENERGY STAR Programmable Thermostat	30.00	30.00	each	Maximum 2 per customer
Low Flow Showerhead	Free	Free	each	Maximum 2 per customer
Low Flow Faucet Aerator (Kitchen)	Free	Free	each	Maximum 1 per customer
Low Flow Faucet Aerator (Bathroom)	Free	Free	each	Maximum 2 per customer
Window Shrink Wrap Kit	Free	Free	each	Maximum 2 per customer per year
Weather Stripping Kit	Free	Free	each	Maximum 1 per customer

³ Certain restrictions apply based on existing insulation levels. Details on qualifying beginning and ending insulation levels are available at http://www.northwesternenergy.com/display.aspx?Page=Insulation_Rebate&Item=102

In the summer of 2008, concerns arose regarding impending increases in natural gas supply prices and the potential impact on utility bills of natural gas consumers. NorthWestern responded with a significant expansion of its E+ Natural Gas Savings Rebate Program in early September 2008. Preliminary results of a Natural Gas DSM Assessment Study (discussed in greater detail below) that were available in the summer of 2008 indicated that additional DSM measures would qualify for program rebates and higher natural gas avoided costs would allow higher levels of rebates that could be offered to consumers. Calculations supporting the inclusion of additional program measures and increased rebates are presented in Attachment 2.

Table 7 presents the expanded list of qualifying measures and the updated rebates that are currently in effect.

Table 7: NWE 2008-2009 Gas DSM Measures and Rebates

NWE 2008-2009 Gas DSM Measures and Rebates				
Measures	Rebates		Unit	Qualifiers
	Preferred Contractor Installed (\$/unit)	Self Installed (\$/unit)		
Attic/ceiling Insulation R-0 to R-38	0.45	0.36	square foot	Existing R-0
Attic/ceiling Insulation R-0 to R-49	0.50	0.40	square foot	Existing R-0
Attic/ceiling Insulation R-11 to R-38	0.30	0.24	square foot	Existing R-11
Attic/ceiling Insulation R-11 to R-49	0.35	0.28	square foot	Existing R-11
Attic/ceiling Insulation R-19 to R-38	0.22	0.18	square foot	Existing R-19
Attic/ceiling Insulation R-19 to R-49	0.30	0.24	square foot	Existing R-19
Basement Wall Insulation R-0 to R-13	0.45	0.36	square foot	Existing R-0, includes rim joist insulation
Crawlspace Wall Insulation R-0 to R-19	0.43	0.34	square foot	Existing R-0, for conditioned crawlspaces
Exterior Above Grade Wall Insulation R-0 to R-13	0.62	0.50	square foot	Existing R-0
Slab Insulation R-0 to R-5 (4 feet)	0.27	0.22	square foot	Existing R-0, 4 feet minimum
Heating Duct Insulation R-0 to R-11 Supply, R-6 Return	0.67	0.54	linear foot	Existing R-0, for non-conditioned spaces
Service Hot Water Pipe Insulation R-0 to R-4	1.41	1.13	linear foot	Existing R-0, first 10' or pipe in unconditioned space
Boiler Pipe Insulation R-0 to R-4	0.18	0.14	linear foot	Existing R-0, first 10' or pipe in unconditioned space
Water Heater Tank Insulation R-0 to R-11	7.00	7.00	each	Existing R-0, insulation added to tank exterior
Boiler Controls	290.00	232.00	each	Varies boiler temp based on OA temp or usage
High Efficiency Condensing Boiler (AFUE \geq 90%)	200.00	160.00	each	Replaces a standard AFUE \leq 82% boiler
High Efficiency Condensing Furnace (AFUE \geq 90%)	135.00	180.00	each	Replaces a standard AFUE \leq 80% furnace
High Efficiency Gas Room Heater (AFUE \geq 82%)	150.00	120.00	each	Replaces a standard AFUE \leq 75% room heater
High Efficiency Water Heater (EF = 0.62)	75.00	60.00	each	Replaces a standard EF \leq 0.59 water heater
High Efficiency Water Heater (EF = 0.71)	190.00	152.00	each	Replaces a standard EF \leq 0.59 water heater
Gas Fired Tankless Water Heater	310.00	248.00	each	Replaces a standard EF \leq 0.59 water heater
ENERGY STAR Labeled Programmable Thermostat	30.00	30.00	each	Maximum 2 per customer
Convection Oven	100.00	100.00	each	Replaces existing gas-fired oven
Low Flow Showerhead	Free	Free	each	Maximum 2 per customer
Low Flow Faucet Aerator (Kitchen)	Free	Free	each	Maximum 1 per customer
Low Flow Faucet Aerator (Bathroom)	Free	Free	each	Maximum 2 per customer
Window Shrink Wrap Kit	Free	Free	each	Maximum 2 per customer per year
Weather Stripping Kit	Free	Free	each	Maximum 1 kit per customer

Comparison of Table 6 to Table 7 above shows the substantial expansion of qualifying DSM Program measures and higher rebates made possible and supported by the Natural Gas DSM Assessment findings. Notably, heating system replacement⁴ is now a qualified measure in the program.

⁴ Restrictions apply. Refer to program guidelines for specific details.

To direct consumers' attention to the expanded E+ Natural Gas Savings Rebate Program, NorthWestern initiated an aggressive marketing campaign in September 2008 that includes television, print advertising, and radio and direct mail media techniques to promote the benefits of and solicit participation in the program.

2. Home Energy Events were again offered in the fall at various community locations across the NorthWestern service territory in Montana. At these events, NorthWestern provided free home weatherization starter kits to NWE residential natural gas customers⁵ and education to customers about energy efficiency and renewable energy. These community events remain popular with consumers and are well attended. Table 8 presents summary figures on locations of and attendance at the Home Energy Events during the previous four years.

Table 8: E+ Residential Gas Savings Program Home Energy Events

Dates	Locations	Participants
2005	15	5903
2006	59	9527
2007	39	5255
2008	43	5,286

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 is a joint effort between the City of Missoula and NorthWestern that provides a comprehensive home energy audit and installation of all cost-effective weatherization and energy efficiency measures (both electric and natural gas) in the homes of selected program

⁵ Kits included door weather-stripping, door sweeps, window plastic, insulating foam, outlet/switch plate gaskets, low-flow showerhead and faucet aerators.

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.

The pilot project was conducted during the time period March–October 2008. At the conclusion of project activities, 91 residential dwellings had been audited and received weatherization and energy efficiency measures. NorthWestern will monitor the ex post energy consumption of the pilot project homes for one year and publish a report on the project results, including observed energy savings and calculated cost-effectiveness of 2008 Green Blocks in Missoula. A more complete description of the Missoula Green Blocks pilot program is provided as Attachment 3.

During the 2007 and 2008 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 Home⁶.

Natural Gas DSM Assessment

In 2008, NWE completed a detailed Natural Gas DSM Assessment similar to the Electric DSM Assessment done in 2003. The major objective of this study was to identify and characterize the remaining cost-effective natural gas efficiency-potential in NorthWestern's service territory and to estimate the amount of savings achievable through energy efficiency programs. In addition, scenario analysis was conducted to examine how economic natural gas efficiency potential varies in response to changing avoided natural gas costs.

⁶ 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

Once an estimate of the natural gas DSM potential that is both economic and achievable was made, NorthWestern established a 10-year budget, annual DSM acquisition goals and plans for continuation or expansion of existing programs and introduction of new programs to meet those goals. The final report on this study of natural gas DSM potential, *NorthWestern Energy Natural Gas Energy Efficiency Potential Study*, is included as Attachment 4.

Summary of Results of Natural Gas DSM Potential Assessment

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 period⁷. Given the near to mid-term focus, the study was restricted to energy-efficiency measures that are presently commercially available. In the study, three types of energy-efficiency potential are estimated:

1. Technical potential, defined as the complete penetration of all measures analyzed in applications where they were deemed technically feasible;
2. Economic potential, defined as the technical potential of those energy-efficiency measures that are cost-effective when compared to supply-side alternatives; and
3. Achievable program potential, defined as the amount of savings that would occur in response to specific program funding and measure incentive levels. Program interventions include end user awareness and education activities and various levels of funding (rebates) to reduce the cost of energy efficiency measures in order to encourage investment in these efficient equipment and practices. This achievable potential is the basis for DSM acquisition goals.

⁷ Because the study results were received by NorthWestern in mid-2008, the time frame for the Natural Gas DSM Plan will be shifted forward one year, with Year 1 of the Plan beginning in 2009.

In addition, naturally occurring energy efficiency impacts are estimated. These are savings that result from normal market forces. Achievable program potential reflects savings that are projected beyond those that would occur naturally in the absence of any market intervention.

For this study, three different energy-efficiency funding scenarios were constructed:

1. The first scenario assumes 33% of incremental measure costs are paid out in customer incentives.
2. The second scenario allows for incentives covering 50% of incremental measure costs.
3. The final scenario allows for incentives covering 75% of incremental measure costs.

The study contractor also examined a 100% incentives scenario, but rejected it because the level of confidence in this scenario was considerably lower than for the other three scenarios. There are a number of key areas of uncertainty that led to this decision:

- Savings uncertainty: it is greatest for this scenario, since there is little experience with programs that run with 100% incentives over an extended period of time. The analytical model used in the study predicts almost complete penetration of all cost effective measures, but there is little evidence to support the outcome that all customers will choose to install measures just because they have zero cost.
- Cost uncertainty: this is also an unknown because it is highly uncertain what the cost structure will look like when programs are reaching maximum and whether there will be significant increases in program administration or in delivery costs under a tighter labor market that would result with very high penetration levels.

- Cost effectiveness uncertainty: when customers must pay some portion of incremental measure cost, one can expect that measures are generally being installed in the most cost effective applications. However, when the program pays 100% of the incremental measure cost, it is likely that customers will install measures in applications that are not cost effective, just because the measures are free. This is especially true for the testing and repair measures, where it was determined that only a fraction of customers really need the service. If free, many more customers than included in the modeling analysis are likely to adopt these measures.

Program marketing and education expenditures were held constant across scenarios. Program energy savings, as well as program cost effectiveness, were assessed under these three funding scenarios. In addition to program funding scenarios, 11 natural gas avoided cost scenarios were investigated, utilizing costs ranging from \$4.40 per dekatherm (dKt) to \$20.00 per dKt. This analysis produced the data necessary to construct DSM Supply Curves that enable review and/or revision of DSM Program acquisition goals against changing natural gas avoided costs in the future.

Results – Base Avoided Cost Scenario

The base avoided gas cost scenario assumed an avoided gas cost of \$8.50 per dekatherm in 2008 with an average nominal growth rate of 2.3% over the next 20 years. This was the natural gas avoided cost value in use by NorthWestern at the time the DSM Assessment work was being performed. Following are energy efficiency potential results for the cost scenario.

Estimates of energy savings potential are presented in Figure 1. Technical potential is estimated at 90.5 million therms (Mth) per year. Over half of this potential, 49.5 Mth per year, is estimated to be economically viable. Net

achievable program potentials in 2018 range from 23.9 Mth per year in the 75% incentive scenario to 11.1 Mth per year for the 50% incentive scenario to 7.1 Mth per year for the 33% incentive scenario. These savings represent the results of program activity for the entire 2009-2018 period⁸.

Figure 1: Estimated Annual Energy Saving Potentials in 2018 Due to Program Activity from 2009-2018

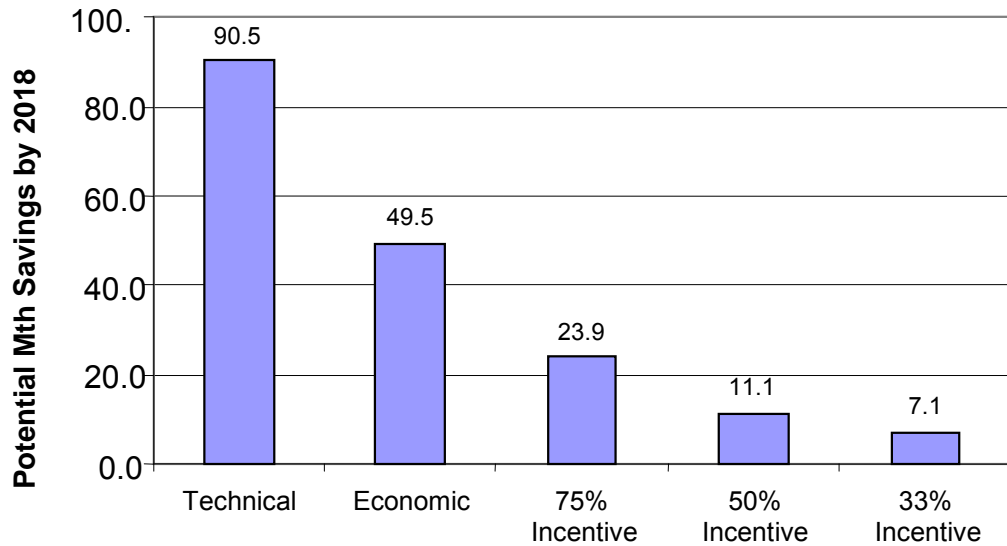
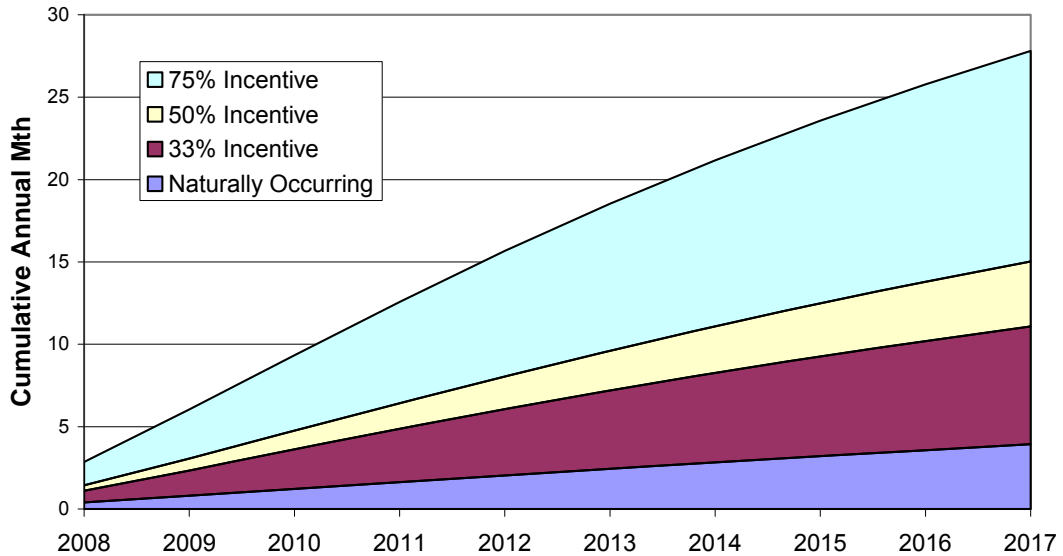


Figure 2 below shows estimates of achievable potential energy savings over time. Note that this figure also includes naturally occurring savings that are expected to proceed in the absence of NWE programs, in addition to the incremental savings from each program scenario that was developed for the study. As shown, savings potential (especially in the higher incentive cases) tends to increase at a decreasing rate over time. In the early years, programs can target the most cost-effective and easy-to-achieve measures and markets. Over time, the supply of these opportunities is expected to decline (in the absence of significant new technologies), and the programs must penetrate harder-to-reach markets and influence end users to adopt less attractive measures.

⁸ Ibid.

Figure 2: Achievable Energy Savings: All Sectors (\$8.50/dKt Base Scenario)



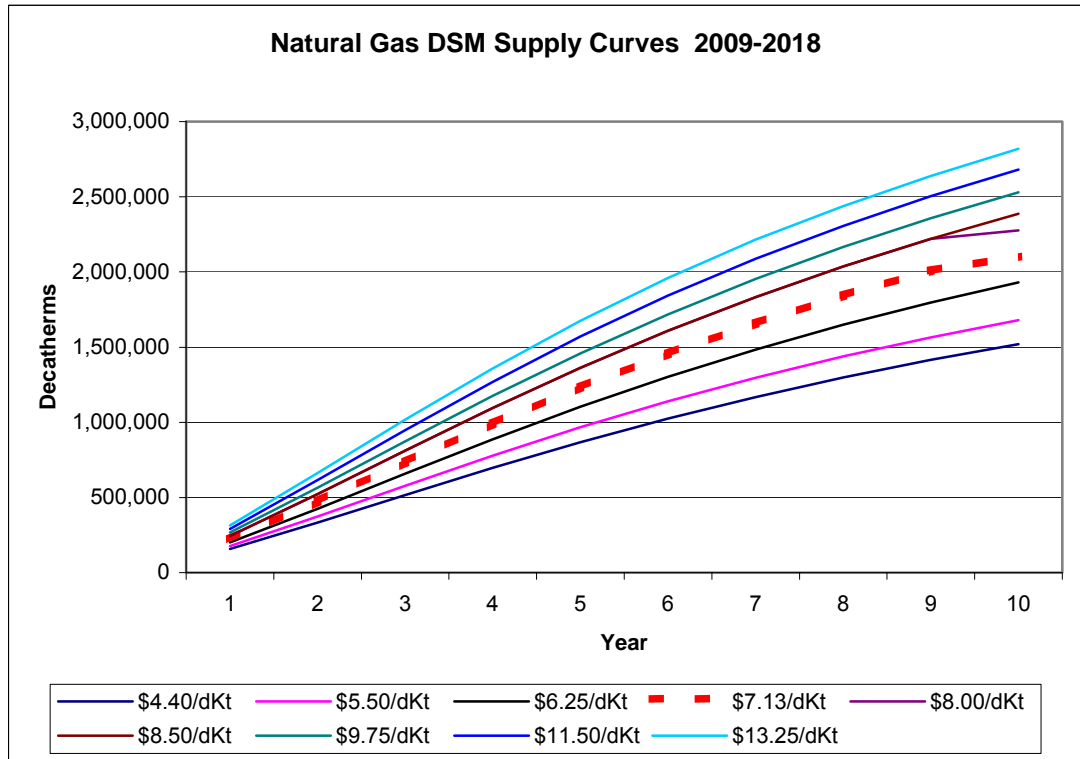
10-Year Natural Gas DSM Plan

The figures above use a natural gas avoided cost of \$8.50/dKt. In the several months prior to final publication of this plan, NorthWestern’s natural gas supply costs have decreased and the expected future natural gas prices are somewhat lower than contemplated earlier this year. Consequently, the natural gas avoided cost that NorthWestern believes is appropriate for natural gas DSM Program planning in this cycle is currently calculated at \$7.04/dKt (nominal 20-year levelized). Somewhat lower avoided costs imply slightly less cost-effective DSM is available and achievable over the planning horizon.

Examination of the Natural Gas DSM Supply Curves in Figure 3 show that, at an avoided cost level of approximately \$7.00/dKt (refer to the dotted line on the graph), the estimated cost-effective, achievable DSM potential is approximately 2.1 million dKt⁹.

⁹ The tabular results from the Natural Gas DSM Assessment document this value more precisely at 21,035,711 therms, or 2,103,571 dekatherms.

Figure 3: Natural Gas DSM Supply Curves



Using the results of the Natural Gas DSM Assessment and the Gas DSM Supply Curves, NorthWestern has established a 10-year Natural Gas DSM Plan to acquire a total of 2,100,000 dKt¹⁰ of cumulative installed energy savings capability.

The Natural Gas DSM Assessment also produced budget estimates for each of the three Incentive Scenarios that were analyzed. Additional detail on yearly estimated annual budget amounts for the 50% and 75% Incentive Scenarios are presented in Attachment 5.

NorthWestern is currently offering 50% incentives to participating customers in its E+ Residential Gas Savings Rebate Program. Interest and participation in the program is strong and NorthWestern believes that continuation of this incentive

¹⁰ Ibid.

level is appropriate at this time and should produce good DSM Program results for the next several years. It is not yet necessary to increase incentive amounts to the 75% level until program participation indicates that to be necessary to sustain adequate participation to reach the annual goal.

To derive a total 10-year budget, the 50% Incentive Scenario budget amounts were used for years 1-5 of the Natural Gas DSM Plan and the 75% Incentive Scenario budget amounts were used for years 6-10. For the 10-year period of the Natural Gas DSM Plan, the total budget amount is approximately \$30 million. Annual budget amounts were assigned a starting point of \$2.5 million and were scaled judgmentally to reflect expected increases in program spending. NorthWestern will strive to operate effective DSM programs that produce energy savings equal to or greater than the annual goal while spending less than the annual budgeted amounts. Table 9 summarizes the annual goals and budgets for the Natural Gas DSM Plan.

Table 9: Natural Gas DSM Plan Goals and Annual Budget

Year	DSM Goal (dKt)	Budget
2009	210,000	\$ 2,500,000
2010	210,000	2,601,960
2011	210,000	2,708,079
2012	210,000	2,818,525
2013	210,000	2,933,476
2014	210,000	3,053,115
2015	210,000	3,177,634
2016	210,000	3,307,231
2017	210,000	3,442,113
2018	210,000	3,582,497
Total	2,100,000	\$ 30,124,630

Specific Natural Gas DSM Programs

In preparation for its 2009 Natural Gas DSM Program, NWE will examine changes to the natural gas price outlook and the effect on avoided costs used to qualify measures currently included in its 2008 program and will, as before, make appropriate changes to rebate and incentive levels if necessary. For 2009, rebates and incentives will be held at approximately the 50% level, although changes in natural gas avoided costs may warrant adjustment of the specific amounts.

NorthWestern will continue the E+ Residential Gas Savings Rebate Program, offering rebates (as adjusted for any updated avoided costs) for the measures listed in Table 7 above. NWE expects to again conduct Home Energy Events in Fall 2009 in at least 40 locations around Montana.

The final determination on cost-effectiveness of the Green Blocks Program will not be known for another year. If preliminary evaluation of this program using energy consumption data at the end of the 2008-09 winter heating season suggests this program is cost effective, NorthWestern will consider doing another Green Blocks project in 2009.

NorthWestern DSM staff are preparing the E+ Commercial Gas Savings Program for introduction in the second quarter of 2009. Supporting all these programs will be annual 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.

Natural Gas Acquisition

NWE's Plan separates physical supply decisions from fixed price decisions. The majority of purchases that are made for physical supply are index purchases priced by reference to the AECO index.

NWE enters into indexed based agreements to insure that reliable gas supply is available during both the injection season and the heating season. During the injection season, the index priced gas will be used to serve load and fill storage (which provides reliability and a measure of price stability). During the heating season, the index priced gas will be used primarily to serve load and be available to help meet peak day requirements. Purchases of on-system gas supplies are usually index based, and the decision to fix the price is made independently. As stated above, the decision to buy this gas on-system provides reliability to the system (filling storage, serving load, and meeting the peak day requirement). This flowing gas can be purchased evenly throughout the year, or to some extent, can be weighted seasonally (example 40,000 Dkt per day during the injection season and 50,000 Dkt per day during the heating season).

Requests For Proposals

NWE was asked to provide further analysis concerning its use of RFPs to acquire natural gas supplies. NWE understands why RFPs are appealing to many, especially in those circumstances where limited price information or unique products are sought.

NWE, however, also accesses the real-time price of gas at AECO, a liquid market, through the use of various subscription services. Given this price transparency NWE believes it can get the best price and terms by negotiating one-on-one with an established counterparty with which NWE has developed a solid working relationship. RFPs allow the buyer to request price certainty for a standard product that all counterparties must bid on. If the price is known, flexibility in terms (i.e. delivery points, fixed quantity versus variable, peak versus base load, credit, etc.) is where the value can be differentiated between contracts. Fundamentally, a RFP should provide the best possible price on a given day. The question that remains is “was it the best day to conduct the RFP”? Given the characteristics of natural gas commodity markets, namely very good price transparency coupled with high volatility, NWE believes it can best serve its customers by using its information and market intelligence to determine when to lock-in or fix prices. In doing so, NWE must be able to transact in a very short period of time, as prices can and do move very quickly. Hence, NWE believes one-on-one negotiation is superior to RFPs as the preferred methodology for locking in or fixing natural gas prices.

NWE has a close working relationship with a number of counterparties and the knowledge of exactly what each counterparty has to offer. NWE believes that the optimum deal will be gained by negotiating with the counterparties that best fit each purchasing situation. Thus, at the current time, fixed price RFPs will not be utilized since there is a liquid and transparent natural gas market at AECO.