

1. MidAmerican EnergyAdvantage® New Homes Program Background

MidAmerican Energy Company (MidAmerican) is the largest utility in Iowa and is strategically located in the middle of several major markets in the Midwest. MidAmerican provides service to more than 681,000 electric customers and 660,000 natural gas customers in a 10,600 square-mile area from Sioux Falls, South Dakota to the Quad Cities area of Iowa and Illinois. MidAmerican has offered a residential new construction program to Iowa home builders since 1997. The name of the program is EnergyAdvantage New Homes. The program offers financial incentives to home builders for adopting a prescriptive list of energy efficiency upgrades in the construction of new homes. Field audit verification by MidAmerican is used to ensure compliance prior to payment of the rebate.

In 1997, MidAmerican developed a set of program specifications, incentives, and procedures that were understandable, achievable, cost effective and easy for the builder to participate. Since MidAmerican began the current program structure, the number of participants in the EnergyAdvantage New Homes program has increased from 57 homes in 1997 to 3,008 homes in 2004. On December 15, 2000, MidAmerican's New Homes Program became affiliated with ENERGY STAR'S BOP (Builder's Option Package) Program. In 2004, MidAmerican awarded the 10,000th incentive and ENERGY STAR label. Beginning in 2002, this program was awarded three consecutive annual ENERGY STAR Outstanding Achievement Awards, and most recently the Excellence in Energy Efficiency and Environmental Education 2005 Award.

MidAmerican considers the ENERGY STAR affiliation very valuable to the marketing of its New Homes Program. MidAmerican and ENERGY STAR have worked together to promote energy efficiency in residential new construction in Iowa. Success in this sector is critical to minimize "lost opportunities" in new construction, since improvements made during construction pay back energy-saving dividends for the life of the home. Likewise, improvements not made during construction represent savings lost during the life of the home, and retrofit fixes are more costly than building it right the first time. MidAmerican estimates the EnergyAdvantage New Homes Program market penetration is currently around 30 percent of new homes constructed in our service territory. According to EPA estimates, the market penetration of ENERGY STAR labeled homes in the state of Iowa is among the highest in the nation.

MidAmerican believes this high participation rate is due to acceptance by the large production builders. The program's simplicity and achievability has allowed production builders an opportunity to participate by incorporating the new building practices as a part of their standard offering. MidAmerican's program is also simple enough for first time participants and custom builders to understand the requirements. Because production builders are working with their subcontractors to meet program requirements, custom builders are more easily able to find qualifying products on the shelves and locate qualified subcontractors to meet the straight-forward list of program requirements.

From past experience, MidAmerican has found that a six to nine month learning curve occurs while trade allies adapt to simple program changes. MidAmerican understands that its current program affects a large portion of the local home building industry and is generally reluctant to make large changes that may lower program participation or create hardships for trade allies. MidAmerican considers the proposed ENERGY STAR changes to be major changes that fundamentally alter the administration of the program, and the company is evaluating future options.

2. General Comments

1. ENERGY STAR's proposed timeframe with implementation beginning on June 1, 2005, and the end of the transition period being Jan 1, 2006, is very short. MidAmerican's program has been built over time after gathering input from various stakeholders. It requires time and manpower to gather input from homebuilders, HVAC dealers, retailers, distributors, and possibly manufacturers. Program changes of the magnitude suggested by ENERGY STAR will require extensive changes to MidAmerican's current program and verification procedures. It would require an extensive builder and sub-contractor educational effort to incorporate ENERGY STAR's proposed changes in the proposed time frame. Additionally, it will take time for the supply chain to locate and stock qualifying products.
2. MidAmerican's current program success with Builder Option Packages is due to the program design that emphasizes that the program be: understandable, achievable, cost effective and easy for the builder to participate. MidAmerican believes that the proposed specifications make drastic changes in the administrative and verification costs to certify ENERGY STAR homes and do not provide an increase in energy savings. These factors make a future ENERGY STAR affiliated program less cost effective, more complicated, and more difficult for builders to participate.
3. The proposed prescriptive approach will not differ in many practical ways from the individual HERS rating approach. MidAmerican finds that HERS ratings are not nearly as cost effective as our current BOP approach. While HERS ratings may be more accurate in determining the exact characteristics of a home, the verification costs are more expensive and the HERS approach may actually provide fewer verifiable impacts than the BOP due to builder choices. Under the new prescriptive approach, multiple site visits will need to be scheduled and performed. This will serve as a major barrier to participation for builders who operate in a time sensitive environment.

3. MidAmerican Comments/Concerns Regarding Proposed Changes for 2006 ENERGY STAR Homes Program

Change #1: Central Air Conditioners and furnaces must be “right-sized.” The specification notes state that Manual S, Manual D, and Manual J methods be used.

MidAmerican recognizes that proper sizing of equipment is a decision process that must account for user comfort and preferences. This ‘right-sizing’ requirement places MidAmerican in an awkward position where enforcing ENERGY STAR program guidelines may conflict with the customer’s comfort requirements. MidAmerican is concerned about how to interpret and enforce this ‘right-sizing’ requirement.

- Overall, the term “right-sized” appears to be subject to interpretation and is at least somewhat subjective, based on the preference of the builder or owner.
- On page A1-1, Section A1-3, Manual J contains a paragraph stating: “The recommendations in this manual establish the default values for indoor temperature and humidity. Also refer to applicable codes and regulations because any design condition specified by a regulatory document has a priority over a Manual J recommendation. Also discuss the design conditions with the builder or owner. (Make sure that the owner has no unusual preferences regarding temperature and humidity or a need to use a design condition that can provide relief from a health problem)...Make sure everyone agrees on the indoor design conditions and records them on the survey form.”
- Manual J proposes a 15-degree temperature difference be used as the basis for calculating the cooling load on homes in the central Iowa market. The current practice in much of MidAmerican’s service territory is to use a 20-degree temperature difference when calculating cooling loads. This practice may account for contractor sizing recommendation differences from Manual J based on customer comfort concerns. MidAmerican does not wish to arbitrate differences between Manual J and industry practices because it will add to the administration burden of the program and potentially cause customer comfort concerns.
- Manual S states in Section 2, 2-2 Sizing Guidelines: “Over sizing is not recommended because comfort may be compromised when a furnace or boiler short-cycles. (This may be less of a problem when variable speed equipment is involved.) Ideally, the output capacity of the furnace or boiler must be greater than the design heating load, but not more than 40% larger than the design heating load”. Manual S goes on to state: “Over sizing is not an issue as far as fuel efficiency is concerned. Laboratory tests sponsored by the Department of Energy indicate that modern furnaces and boilers can be oversized by as much as 100 percent without causing a significant increase in the operating cost”.
- Manual S, Manual D and Manual J are not the only methods currently used in the marketplace to determine proper sizing for heating and cooling equipment. Some HVAC dealers currently are using other software provided by manufacturers/distributors for calculating these loads. Other available software may utilize Manual J or ASHRAE 90.2 as a basis for calculating residential heating/cooling loads.
- It is not known as to how sampling methods might apply to verifying load calculations provided by builders and HVAC dealers.

Change #2: Five or more ENERGY STAR qualified light fixtures, ceiling fans, and/or appliances must be installed.

Currently, MidAmerican is concerned that the products, especially lighting fixtures, are not available in the supply chain to accommodate the current ENERGY STAR timeframes.

- This is a significant change and will effect program participation dramatically if rolled out too quickly.
- ENERGY STAR qualified fixtures and appliances will be difficult to field verify and may increase administration costs. Currently, MidAmerican's program is a builder program not geared toward the homeowner. The homeowner typically is the one to purchase and install the washer, dryer, refrigerator. Verification would require an additional trip to the home to verify these items since currently the testing and inspection is done pre-occupancy.
- Many builders provide a lighting allowance so that customers can personalize their lighting choices. The limited availability and selection for light fixtures and/or ceiling fans from suppliers in MEC's service territory will be a significant obstacle to participation. It will take a significant time period for the industry to adopt qualified lighting fixtures and overcome this obstacle.

Change #3: Thermal Bypass Inspection Checklist must be completed on every home.

MidAmerican believes that the Thermal Bypass Inspection will increase administration costs and will not add value for the homeowner or ratepayer. In addition, this requirement may hinder the builder's schedule, causing builders not to participate in the program.

- This is another significant change and will require an additional site visit for every home even those that are currently sampled. This will increase program administration costs and be an additional inconvenience and potential scheduling conflict for the builder.
- Builders will be required to notify MEC prior to installing sheetrock, showers, fireplaces, etc. so that the insulation inspection can be completed and the typical construction timeframe to complete these tasks can be kept short. Extensive builder education will need to take place prior to implementation.
- MidAmerican's current program serves not only production builders, but also smaller custom and first-time homebuilders. Through education and training, it is possible to get program changes out to our current production builders more quickly than to other builders. Currently, builders will not contact us until the home is ready for final inspection, and it will not be possible for us to contact homebuilders who are aware of our current program and then call us when the home is completed. Sometimes the building process for smaller and first-time builders is longer than for the typical production builder. For this reason, MidAmerican anticipates custom and first-time homebuilders will be identifying themselves as program participants after the opportunity to complete the Thermal Bypass Inspection has passed. MidAmerican believes that these builders will not participate in the ENERGY STAR Program as a result. Realistically, the transition period to adopt an additional site visit should be at least through the 2006 calendar year.
- According to the EPA, the Thermal Bypass Inspection Checklist is being implemented because of consumer complaints of poor insulation installations. MidAmerican does not hear this type of complaints from its customers. MidAmerican does not believe that insulation installation is a major (or even a minor) problem in its Iowa service territory and does not want to bear additional costs for little, if any, verifiable benefit.

Change #4: IECC insulation requirements will specify R-21 side walls (2x6 walls or R-15+R-5)

MidAmerican finds this requirement very difficult to implement because the benefits do not justify the costs. This requirement may decrease the number of program participants.

- This requirement will add significant additional participation costs to the builders and homeowners with very little additional benefit. There will be additional costs for 2x6 walls, additional insulation and more expensive doors and windows.
- The simple payback for this requirement is estimated to be 40 years in northern zones. (*An Analysis of Floor Modifications to IECC Code Change #C48-03/04*, February 23, 2005, prepared by DOE).

Change #5: Sampling methods are not allowed for Thermal Bypass Checklist and the RESNET sampling methods are being revised.

MidAmerican's New Homes program uses a sampling method that allows production builders, who prove to reliably pass inspections every time, to have a percentage of homes inspected. This process allows MidAmerican to hold down program costs and provides an incentive to the builder to continue to pass every single inspection. MidAmerican strongly recommends that the EPA continue to allow MidAmerican to allow proven production builders to participate in the program while minimizing possible scheduling conflicts through a sampling methodology.

- Eliminating sampling will increase program costs by causing MidAmerican to inspect every home.
- The Thermal Bypass Inspection Checklist is required for every site, how will this affect the sampling?
- What is the sampling methodology for "right sized" heating and cooling equipment?

Change #6: IECC insulation requirements will specify that either R-38 or R-49 ceiling insulation be used depending upon where home is built in the state of Iowa.

Currently, MidAmerican BOP requirements are the same throughout the service territory. MidAmerican prefers to have a uniform program throughout its service territory.

- Most of MidAmerican's customer base resides in the southern R-38 territory.
- This will add additional costs for customers in the northern part of MEC's service area.

Change #7: IECC insulation requirements specify R-30 insulation level on 'floor over unconditioned space'.

MidAmerican's current BOP specifies R-25 for 'floor over unconditioned space'.

- This is a low impact issue and will cause minimal implementation problems

Change #8: The minimum efficiency for central air conditioners is moving from 10 to 13 SEER.

MidAmerican's current BOP is 12 SEER.

- This is a low impact issue since it is an industry wide standard and would need to be adopted regardless.
- MidAmerican will increase the program requirement from 12 to 13 SEER.

Change #9: ENERGY STAR qualified Thermostats required.

MidAmerican does not currently specify thermostats to be ENERGY STAR, MidAmerican only requires that thermostats be programmable set-backs with two or more temperature settings. This is the definition of an ENERGY STAR thermostat.

- This will have very low impact on MidAmerican's program.

Change #10: Gas water heater requirement becomes 0.60 EF

MidAmerican's current BOP requires .62 EF for gas water heaters.

- This requirement is less stringent than MidAmerican's current program.
- This will have a low impact on MidAmerican's program.

Change #11: Windows will not have the SHGC requirement.

MidAmerican's current BOP requires windows to have less than or equal to .40 SHGC.

- This requirement is less stringent than MidAmerican's current program.
- This will have a low impact on MidAmerican's program.

Change #12: Heat pump requirements will be 13 SEER.

MidAmerican's current ENERGY STAR BOP does not currently have a requirement for heat pumps. MidAmerican allows 12 SEER heat pumps in its program but issues an EnergyAdvantage certificate that is not ENERGY STAR labeled.

- This change will allow heat pumps to earn the ENERGY STAR label. This will be more inclusive than MEC's current program.
- There are very few heat pumps installed with new construction in MidAmerican's territory, so this requirement will have a low impact upon MidAmerican's program.

4. Recommendations

1. MidAmerican requests that ENERGY STAR allow MidAmerican to grandfather the existing ENERGY STAR Builder Option Package in its Iowa service territory through December 31, 2006. During this transition period, MidAmerican will incorporate the changes outlined above that have minimal impact on the current program structure.
2. MidAmerican would like to work with ENERGY STAR to model an approach that is specific to the needs of the Iowa marketplace and meets ENERGY STAR's energy saving goals.