

MidAmerican Energy Company



2013 ACEEE Market Transformation

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On behalf of MidAmerican Energy



What is SAVE?



- *System Adjustment and Verified Efficiency*
- Designed by MEEA, ESI based on NCI training
- HVAC not being installed or run correctly
- Lots of therms and kWh are being lost
- Nameplate efficiency NOT equal to operating efficiency
 - National research suggests ~59% efficient systems
- Gas utility in Midwest need for programs
- Works on existing systems and new installs
- Applicable to residential and light commercial



HVAC SAVE Overview

1. Contractors take initial system measurements

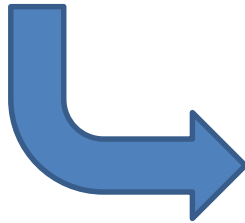


5. Contractor tests out work completed

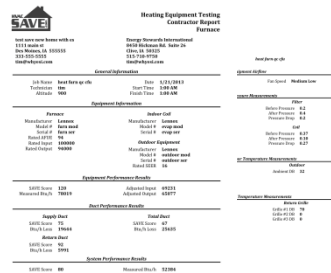


4. Contractor makes repairs

2. Measurements recorded into CommonCents



3. CommonCents provides printouts for homeowners and contractors on recommended repairs



SAVE Energy Savings Data

Energy Savings n=800 furnaces

- Conversion Efficiency: average of 25% improvement for existing systems
- System Efficiency: average of 13% improvement for existing systems and 20% for equipment replacement
- Average SAVE score of 95.9



What is SAVE?



- *As a utility program...*
- Pilot HVAC quality installation initiative with an emphasis on tested and verified savings
- 'Quality' installation on new replacement equipment, performance tune ups, ductwork improvements, new construction homes
- Two day training course subsidized by grants and utilities
- HVAC performance testing resulting in system performance feedback at the time of installation using program software



MidAmerican Rollout

- Discussions around quality install/system performance began in 2005
 - ✓ Market transformation requires patience
 - ✓ Focus groups with HVAC dealers on QI in 12/2008
 - ✓ COSC training in 2009
- Actual SAVE program with MEEA
 - ✓ Current National Comfort Institute training 10/2010
 - ✓ Ongoing HVAC focus groups
 - ✓ Trade Ally outreach program to recruit participants
 - ✓ Training scholarships
 - ✓ Dealer spiff
 - ✓ Included in 2014 Iowa plan pending approval



SAVE in Iowa

- Developed and administered by MEEA, ESI and NCI
- Cooperative effort among many Iowa stakeholders
 - Sponsored by MidAmerican Energy Company and other IOU's (Alliant and Black Hills)
 - Cedar Falls Utilities (muni) and cooperatives
 - Iowa Energy Center
 - Iowa Utilities Board
 - Office Consumer Advocate

HVAC SAVE Objectives

- ✓ Provide quality contractors with a set of practices and tools to verify a quality install
- ✓ Achieve and verify claimed energy savings for utility programs
- ✓ Elevate the work performance standards of the HVAC community
- ✓ Create a screening tool for homeowners to identify quality contractors
- ✓ Get better data on installations, system performance and tune-ups
- ✓ Change the contractor culture to promote doing their job better



SAVE Quality Installation

- Using proper sizing, tuning, and airflow, the installer optimizes the installation
- Installed equipment must test out at 85+ percent of nameplate rated capacity to rate as 'Excellent' and qualify for program
- Measurements are taken at the equipment level, excluding the ductwork (to date)
- Typical remedies involve air flow and combustion:
 - Combustion tuning
 - Adjust fan speed
 - Modify filtration
 - Add an additional return drop
- System SAVE score accounts for ductwork losses



SAVE Training

- Current National Comfort Institute training 10/2010
- \$750 tuition cost per person
- SESP grant
- Utility scholarship upon successful completion of test
- 2 day training and certification- technical skills, contractor mindset, and practical applications
- Continuing education- fulfilling state licensing requirements
- HVAC performance testing resulting in system diagnostic data



SAVE Software

- CommonCents software developed by Des Moines-based Energy Stewards International
- Initially offered to contractors at \$100 per month
- Now sponsored by utilities, free to contractors
- Provides HVAC performance feedback to dealer during installation
- Internet based and can be used on multiple devices
- Speeds the spiff and rebate process
- Auto-fills some ENERGY STAR forms



SAVE Quality Assurance

- In-field mentoring and quality assurance are vital to ensure a level playing field among HVAC professionals
- Require pre-enrollment to allow for on-site quality assurance and mentoring
- On-site mentoring is required for the first three jobs
- Sampling after three jobs for on-site quality assurance similar to ACCA sampling protocol
- 100 percent paper review

SAVE Success in Iowa

Program Participation

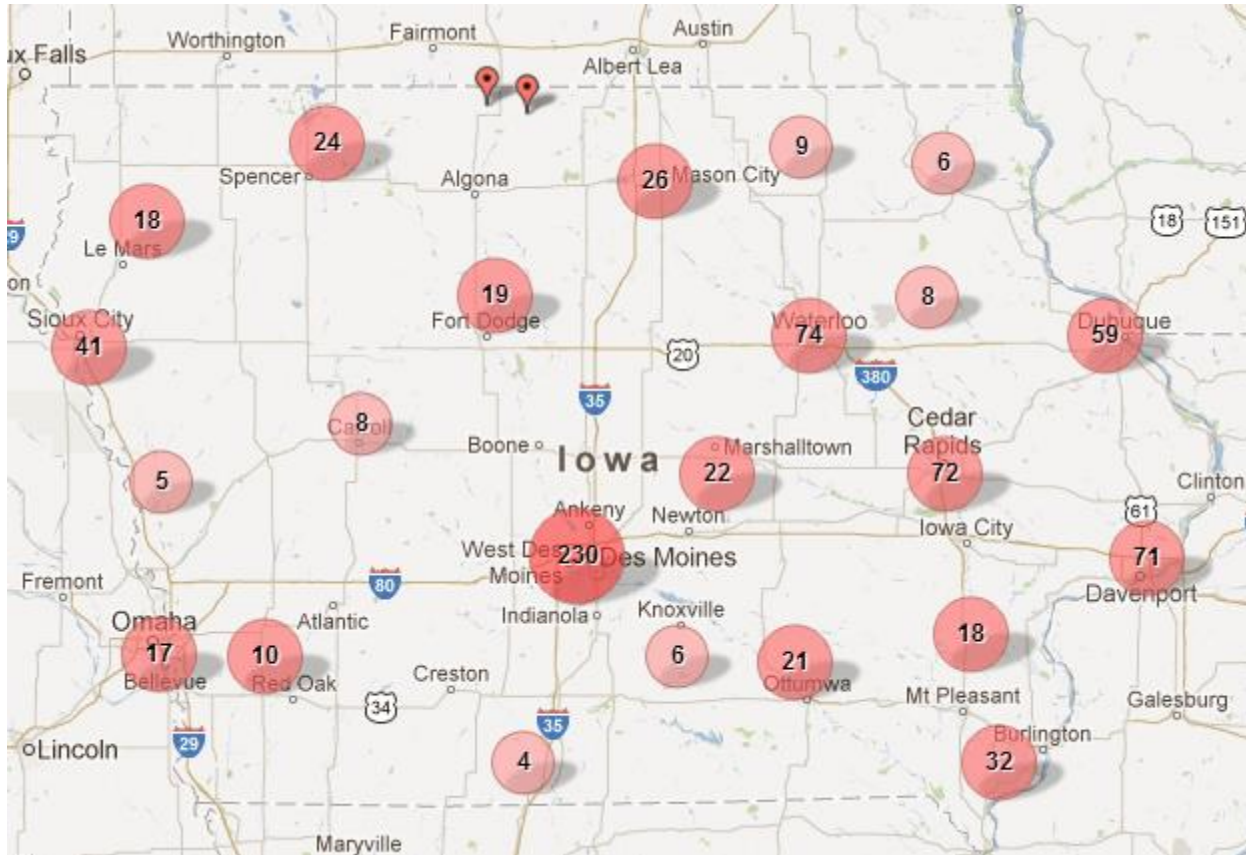
- 54 Trainings
- Over 400 HVAC companies
- Over 774 certified individuals
- Over 1500 quality installations

Equipment only rebates for SAVE Installation by MidAm

- 2011 312
- 2012 1,116



Contractors Trained Statewide



Contractor Reaction

Market Transformation takes time but...

- ✓ Initial reaction was very vocal and negative
- ✓ Timing was difficult; followed new State of Iowa contractor licensing requirements
- ✓ Software licensing
- ✓ ‘We already do a quality installation, but the other guys cut corners’
- ✓ Training essential to obtain buy in of concept
- ✓ Slow adoption of program following initial training due to fear of competitive disadvantage.
- ✓ ‘Wait until we have to.’



Contractor Benefits and Testimonials

- Reputation building
- Utility promotion
- Reduce warranty costs
- Rebate income
- Enables a system-level ‘whole house’ look

“When we started it was an eye opening experience. Now we have performance information that tells us when our installation process is truly complete.”

“We perform these tests for our new homes programs anyway. The software makes it a lot more convenient and the rebate income is gravy.”



Upcoming MidAmerican programs

SAVE serves as a platform for three separate residential programs

1. Residential Equipment
 - Transitioning to requiring SAVE for all equipment installs in 2014
2. New Homes
 - System SAVE requirement for equipment and ductwork performance in a program path
3. Residential Tune Up (new in 2014)
 - Rebate available for improvement in equipment SAVE score
 - Separate rebate available for improvement in System SAVE score



SAVE Cost Effectiveness

- Furnace
 - Measure life 15 years
 - Cost for SAVE install \$300
 - NPV \$412
 - Societal B/C is 1.37
- Central Air Conditioner
 - Measure life 11 years
 - Cost for SAVE install \$300
 - NPV \$593
 - Societal B/C is 1.98



Next Steps in Iowa

1. Continue to prepare contractors for 2014
2. Expand program to tune-up and new homes
3. Emphasis on consumer messaging
4. Obtain clearance to leverage ENERGY STAR label for Quality Installation or Home Performance with ENERGY STAR 2.0
5. Gather more pre and post data in 2014 HVAC tune-up program



Thank You!

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