National Residential HVAC Opportunities

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Topics for Today

• Who is CEE

• Some HVAC Energy Saving Opportunities
  - High-efficiency equipment
  - Quality installation
  - Proper maintenance

• What National Efforts are Underway

• How They May Affect Your Programs
  - And, opportunities to participate
CEE has 73 members in 24 states and Canada (including 53 efficiency program administrators)
Why Do We Care About HVAC?

- Heating and Cooling Use a Lot of Energy
  - Residential buildings account for 19% of CO2
  - Residential buildings use 35% of total U.S. energy
  - HVAC uses 45% of residential building energy

- Central AC Use Coincides with Peak Demand
The Ultimate Objective:
Efficient In-Field Performance!
Efficient In-Field Performance

1. High Efficiency Equipment

2. A Quality Installation

3. Proper Maintenance
# National Equipment Requirements

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<th>Split or Packaged</th>
<th>SEER</th>
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<th>HSPF</th>
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$300 Credit →

Together We Can Change National Markets
Equipment Is Not Enough!
What is a Quality HVAC Installation?

Agreement on Complete Definition Didn’t Exist

- CEE members developed specification
- Lacked full industry support
- ACCA, CEE and other stakeholders developing specification

1. “Matched System”
2. Proper Equipment Sizing/Selection
3. Refrigerant Charge and Air Flow are Correct
4. Ducts Sealed and Well-Designed
Why Promote Quality Installation?

- Get Expected Energy Savings/Peak Demand Reduction
- Health, Comfort, Safety, Lower Costs
- Minimize Warranty Claims and Exposure

Who Benefits:
Manufacturers, Quality Contractors, Skilled Technicians, Utilities, Environment, Grid, and Consumers!
Who are the Key Market Players?

• Direct Market Participants: Manufacturers → Consumer
• Supporting Industry Organizations
  – Trade organizations (ACCA, ARI, PHCC, RSES, SMACNA)
  – Testing and Certification (NATE)
  – Training
  – Diagnostic/Verification Tools Companies
• Efficiency Program Administrators
• Federal Government (DOE and EPA)
• Local Government (Building Code Offices)
Why Aren’t Quality Installations the Norm?

- Substantial Market Barriers:
  - Consumers Don’t Understand Benefits of QI
  - No Brand or Symbol for QI
  - HVAC Purchases are Unexpected & Unplanned
  - Shortage of Techs; Surplus of Contractors
The Sufficient Market Conditions Don’t Exist Nationally

Several efforts by individual stakeholders

- Most on a local or regional level
- Seldom coordinated with other industries

Multiple industries working together is effective!
What Are the Desired Market Conditions?

1. Stakeholder Agreement on the Definition of “QI”
2. QI can be verified and measured in the field
3. Supply-side is able and willing to deliver QI
4. Consumers understand benefits of QI
   • Can identify and select QI in the marketplace
## ACCA Quality Installation Specification

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<td>• Certification Bodies</td>
<td>• Acceptable Evidence</td>
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Provide Credible Definition and Platform for Efficiency Programs
HVAC Maintenance & Tune Ups

- 15 Year Lifespan for Equipment
  - Limited opportunities to influence equipment and installation
- Existing Equipment Performance is Suboptimal
- Increasing Number of “Clean & Tune” Programs
- Energy Bill Maintenance Awareness Campaign
  - Increased consumer awareness may spark program opportunity
Equipment, Installation, & Maintenance

Programs are becoming more holistic
1. Consumer education +
2. Equipment rebate +
3. Trained and certified technician +
4. Verification by credible third party +
5. Maintenance agreement incentive +
6. Tune-up incentive

Health, Comfort, Safety, Energy Savings, & Peak Demand Reduction!
National HVAC Developments--Review

• Increasing Federal Minimum Standard
• Increasing ENERGY STAR Requirements
• Possible ENERGY STAR Installation Program
• Increasing CEE Requirements
• CEE Directory of ARI-Verified Equipment
• ACCA Quality Installation Specification
• Federal Energy Bill
  ○ Tax credits for equipment
  ○ HVAC maintenance public awareness campaign
Opportunities to Get Involved

1. Participate in the ENERGY STAR Process
   - Monitor and comment on “Installed to ENERGY STAR Guidelines”

2. Attend a CEE Program Meeting
   - December 13th and 14th -- San Francisco, CA
   - Become a member

3. Leverage Maintenance Awareness Campaign