Set back and set up when possible
- This is very simple to track, but very hard to know if its really saving energy
- Could also look to see if the unit is known about occupancy and day/night
- Could also check for intelligent recovery from setback

Keep controlled AC and HP in lower capacity states when possible
- "When possible" can be tricky
  - In some cases, may not save energy, but usually will
  - Related to temperature at which system starts turning on/off for long periods of time, not including defrost

Avoid short cycling
- Related when cycling to maintain energy come back on at low capacity
- Related, evaluating design for multiple: Can compressor switch on "immediately" or "after a while"? Do lower needs consider it?

Fan control

Lockout temperatures

Anything missing?

Prioritize Savings Mechanisms
What's important to include in recognition?

Issues to consider with Mechanisms to Explore Further?
- Energy Savings
- "Kickers" between vendors
- Flexibility / Inflation
- Different mechanisms for different equipment types may be necessary
- Can identify a reasonable baseline to compare data to

Candidate Savings Mechanisms

3 set back and set up when possible
4 keep controlled AC and HP in lower capacity states when possible
5 avoid short cycling
6 Fan control
7 Lockout Temperatures
8 Zoned Systems
9 Humidity Control

Short Cycling
Should a unit be shown to be in operation instead of cycling?
- Avoid overcool, avoid oscillation in delivered capacity
- Demand limits on compressor
- Could be some savings for multichannel if the system is not properly sized. Overcooling can use more energy if the homeowner sees the thermostat to counteract short cycling.

Fan Control
Fan control may be related to humidity control. Too much air does not remove humidity. Humidity and Fan control can go hand in hand. Good humidity control can provide similar comfort at higher CFM set points. Airflow should be well matched to system operation/capacity to provide humidity control.

The fan on every system affects humidity control. Changes in savings mechanism - Good humidity control
Main Themes & Follow-ups

Background, System Types, Available Data

1A

Could you help me better understand how the draft version of this specification will separate itself from the connected controls being proposed in 4.8 of the workplan? I also would like to better understand if it's needed to understand the draft version of the draft version, if it's needed to understand the draft version of the draft version, if it's needed to understand the draft version of the draft version, if it's needed to understand the draft version of the draft version.

CVP Questions

2

1B

Discussion: Other specification adjustments

Device Criteria, Products, Challenges & Additions

"Which of these are likely to be problematic?"

- Device Criteria
  - Standby Power
  - Static Temperature Accuracy
  - Disconnected Performance (be like a "smart" thermostat)
- Product (control device + service)
  - Provides mechanisms for scheduling
  - Energy feedback to consumer
  - Data collection as needed for field savings evaluation
  - HVI capacity (AHR 1808 for communicating controls)
- Anything else to add specific to communicating controllers?

Program Design Discussion

Questions for Whole Systems: Product Families

FIRST LEVEL OF GROUPING

Number of combinations that must be considered: what would be covered under one certification?

Comments

- Which things need to be specified for each?
- How many of each thing are there?
- For each, what products are the variations?

Comments

- How is it going to be difficult to design where there may be the pressure of the AC, and competitor's addition to the implementation of the 306 spec on any of the wall thermostats?
- How does climate impact the performance of the HVAC system, the effectiveness of savings, the type of savings, the type of participants who could be a potential for these communications?
- What's currently used for energy feedback to HVAC? Look at the number of examples from remotely monitored HVAC systems.

- How will Energy Star differentiate between local energy vs. national energy savings? I'm concerned that with 56% of the HVAC equipment being in a single zone, it will be difficult to achieve one of these 306 derived savings.

- How/where are commentors on energy feedback to HVAC?

- Is there any more to be known as to the current options for the HVAC systems?

SECOND LEVEL OF GROUPING

Different products can be grouped into one population for field data analysis, determined by product similarity in terms of the metric(s) chosen

See discussion below