Who Needs the Homework?
Tools to Calculate Energy Saving During the Home Performance Assessment

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Gotta Show the Savings!

- National Home Performance with ENERGY STAR Program requirement
- Program Sponsors: what they're in it for
- Potential tax credits
  - Remaining lead candidates for President for both Parties say they are committed to battling the threat of climate change
- Increasing awareness from customers

Contractor vs. Program: What's Best for Both Worlds?

- Home Performance contractors face high overheads
  - Comprehensive sales and projects are not as easily to manage
  - Testing in and Testing out
  - Compliance with health and safety standards can cost money
- Program reporting requirements add to overhead
  - Home performance analyst usually collects the data on paper
    - Completes report after hours – or has to hire staff just to report
  - Contractors are competing with the mainstream market and need to sell
    - Because of lag time contractors usually don't use results as sales tool
    - Then it becomes a reporting requirement rather than a sales tool
      - "You don't pay me enough to collect your %@$# data for you!"
    - Consultants not necessarily as stressed: paid to produce the report
- Best tool: satisfy the wonks with as little work as possible

Pathways to In-Home Energy Savings

- Good to start with bill disaggregation
  - National Program is finishing up a bill disaggregation tool
  - Covers many different fuels and end uses that often confound the analysis
    - All-electric homes
    - Pool pumps and heaters
    - Supplemental electric heat
- If you are going to disaggregate, normalize
  - To be reliable, disaggregation should estimate usage in a “normal” year, not the actual period covered by the data
    - An individual season in an individual area can deviate from norm by >30%
      - National program tool covers this function as well

Keep Inputs as Simple as Possible

- Keep to what contractor really needs to estimate/sell the job
  - Try not to add to many new data points
  - Measure out existing home dimensions
  - Describe existing conditions as simply as possible
    - Use fuzzy logic for some inputs (e.g., DHW temp setting)
- Disaggregation and normalizations peg the energy consumption
  - Simulation tools relying JUST on ASHRAE U-values can overestimate
    - Unless made sophisticated enough to pick up all internal loads – unwieldy
  - Use the R-values and U-values to spread the consumption proportionally
- Important issue: what if you can't get consumption data?
  - Use sophisticated simulation model – won't get it done in the home
  - Use another index of consumption such as RECS consumption data
    - Key – if you don't have the consumption, you should be as conservative as possible

Let the Market Sort It Out

- Program can set the guidelines
  - Accuracy
  - Comprehensiveness (i.e., ability to handle comprehensive set of measurs)
- Market can then determine which tools comply with the least amount of effort

- [At this point the presenter opened up a draft bill dissaggregation tool ICF is developing for EPA, as well as a energy savings calculation tool that uses the energy consumption as its basis, also under development]
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