

Using behavior change principles to increase the performance of “traditional” residential energy efficiency programs

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Presentation Objectives

- Review most common type of residential behavior programs
- Highlight some relevant insights from behavior change literature
- Present an example of how these insights can be used to increase performance of “traditional” utility programs

CURRENT BEHAVIOR-BASED PROGRAMS (RESIDENTIAL)

Common meaning of “behavior change programs”

Programs that encourage no-cost actions that save energy; and through statistical methods, this savings is measured and claimed by utilities to meet energy efficiency goals

Features of “indirect feedback” model of behavior change program

- Provide “indirect” feedback on energy usage; compare with other similar homes or benchmark
- Encourage low-cost / no-cost actions
- Savings \approx 1% – 3% for monthly feedback platforms; more possible for more frequent feedback and among “opt-in” segments

However – “behavior change” theory has broader application to utility energy efficiency programs

Behavior change is a hybrid social science theory
(**psychology, economics, sociology,**
anthropology) focused on methods to
encourage adoption of desirable habits or
desirable actions

Behavior change theory has strong basis in experimental data

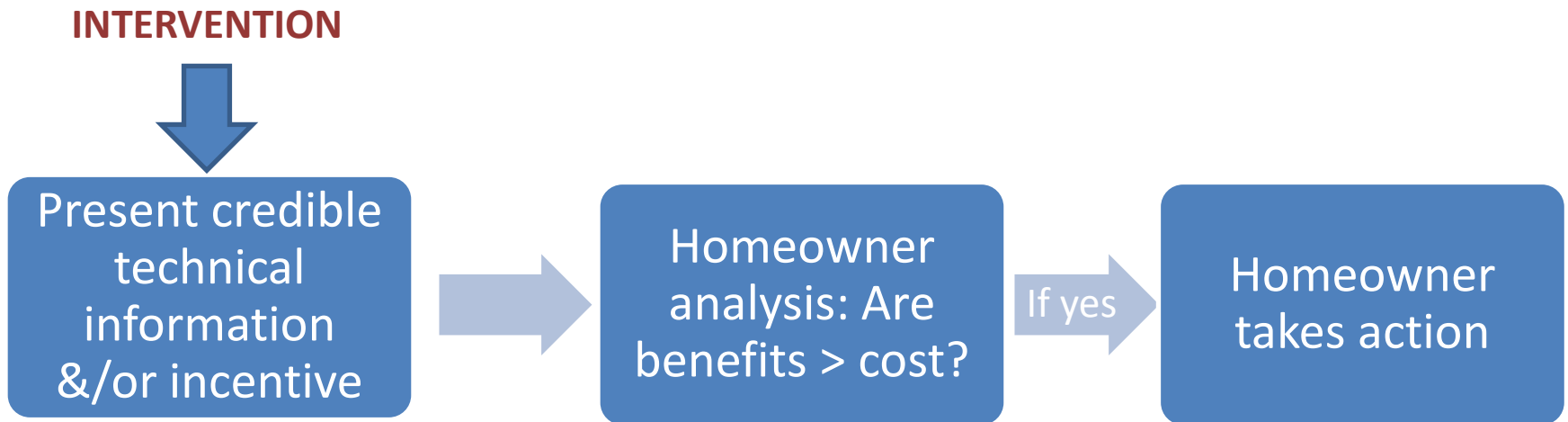
Not what people SAY they think or do, but what their ACTUAL behavior is, and what influences this behavior



KEY INSIGHTS FROM BEHAVIOR CHANGE LITERATURE

Challenges theory of the rational economic decision maker

Traditional view – people will make rational decisions if presented with the correct information



Behavioral view: People are not rational in their decision making

- Emotions play a strong role in decisions
- Decisions are strongly shaped by larger social context, such as social norms
- Other environmental factors can play a large role, such as convenience (or lack thereof), competition, and rewards

Compendium of behavior change research

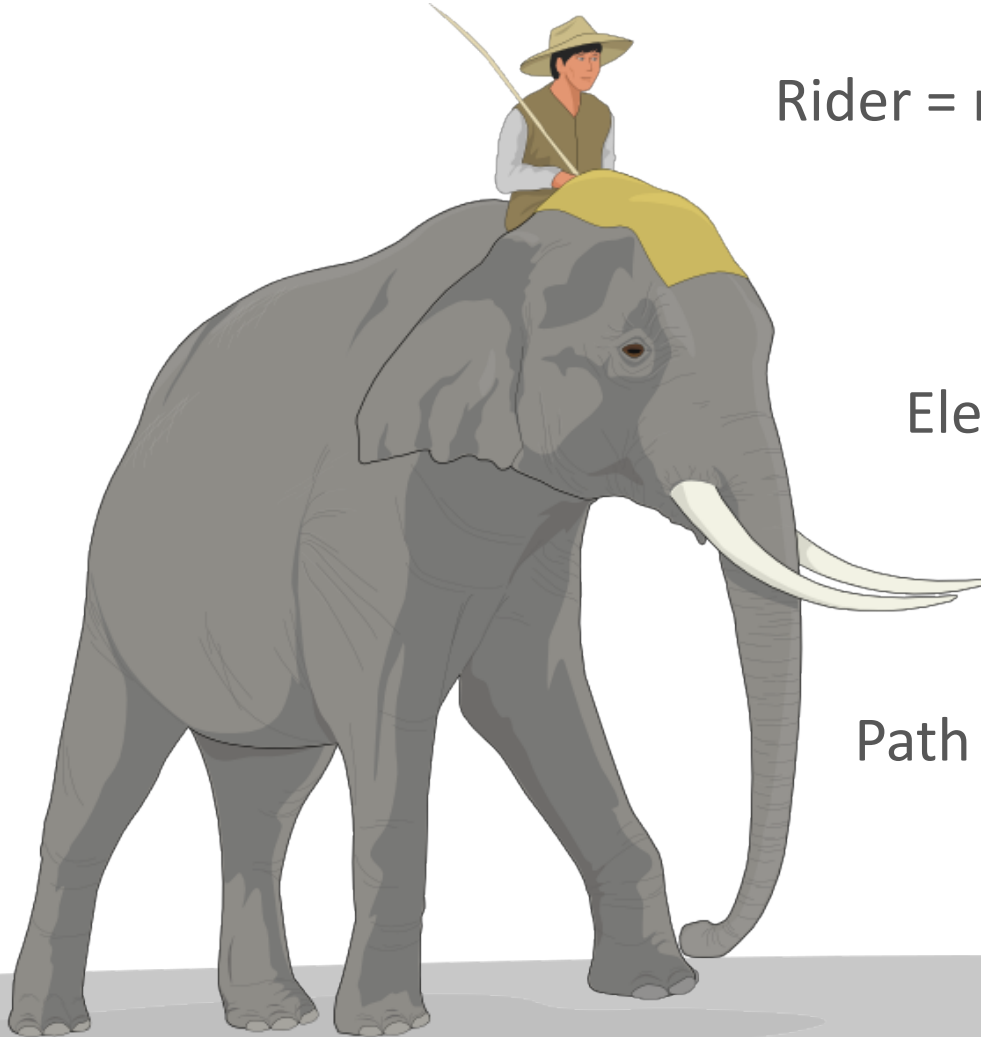


The elephant metaphor

Rider = rational mind

Elephant = emotional mind

Path = environmental factors



3 keys to behavior change

Direct the rider

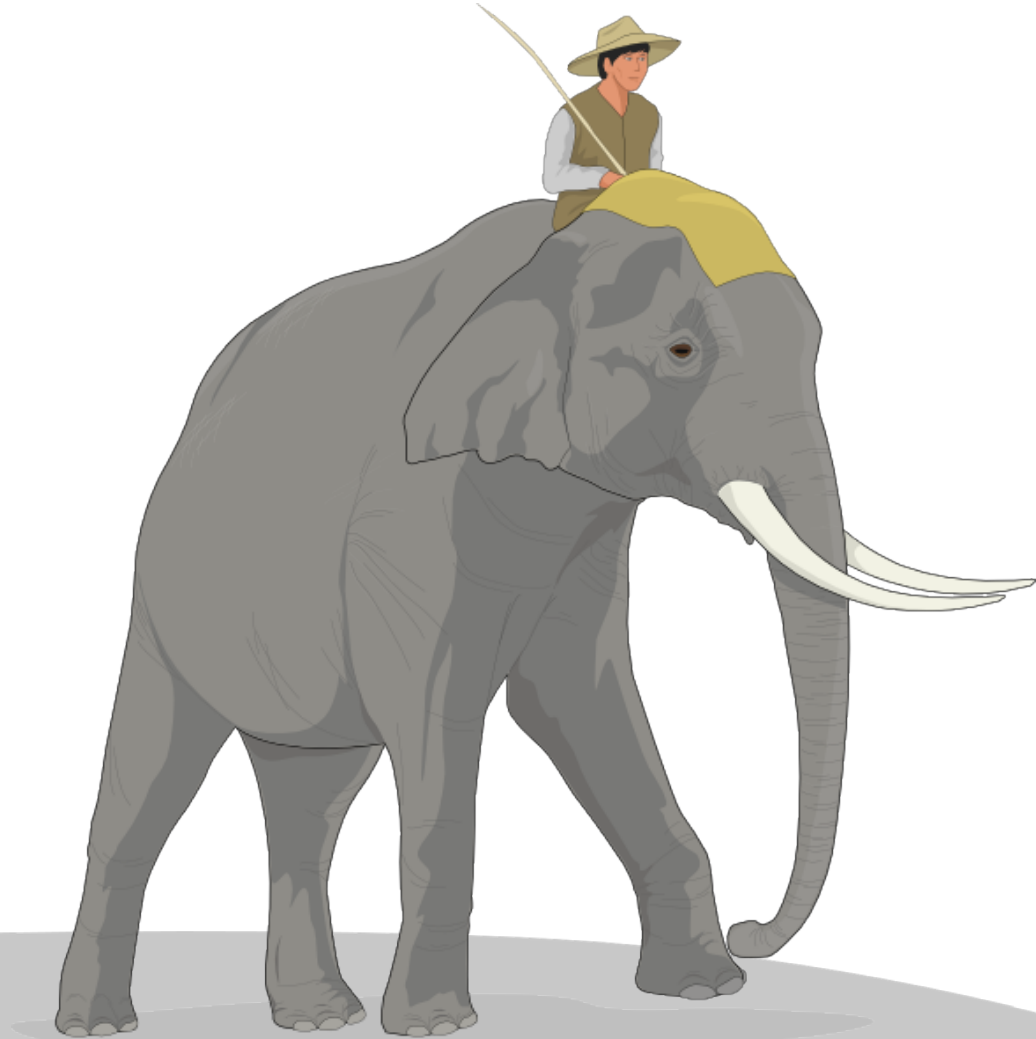
- give clear direction, reduce mental paralysis

Motivate the elephant

- find the emotional connection

Shape the path

- Reduce obstacles, tweak the environment, make the journey go downhill



EXAMPLE: IMPROVING PRESENTATION OF RECOMMENDATIONS AT HOME ENERGY ASSESSMENTS

Wanted to improve presentation of recommendations to homeowners

- Benchmark how energy efficient participant's home was compared to an efficient home
- Demonstrate pathway to energy efficient home
- Help motivate homeowners to complete upgrades



Old report



Home Energy Reduction Plan

N, Minneapolis

Date: 02/19/2013

Recommended Improvements

- ✓ **Air Sealing and Attic Insulation** - Excessive energy is escaping through air leaks and insufficient attic insulation. Adding insulation to your attic can not only save you money, but help prevent ice dams and improve your home's durability as well. Call one of our approved contractors to ensure that you reap the benefits of the CES quality control program. Cost is estimated at \$1,700.00 to \$2,100.00

Your current water heater and furnace:

- You have a natural draft, gas water heater that is 10 years or older.
- You have a power vent, forced air furnace (gas) that is less than 20 years old.

Future Improvements

- ✓ **Heating System** - When it's time to replace your furnace, replace it with a 95% Annual Fuel Utilization Efficiency (AFUE) model equipped with a Brushless Permanent Magnet (BPM) motor.
- ✓ **Appliances** - When it's time to get new appliances (especially dishwashers and refrigerators) purchase an ENERGY STAR model.

Maintain Good Energy Habits

Congratulations on your commitment to saving energy in your home! You have pledged to do the following:

- ✓ Turn heat down two degrees
- ✓ Turn off lights behind you
- ✓ Sign up for Savers Switch

For even more practical and cost-effective energy saving ideas, join the more than 27,000 Minnesotans who are part of the Minnesota Energy Challenge at mnenergychallenge.org!

Next steps

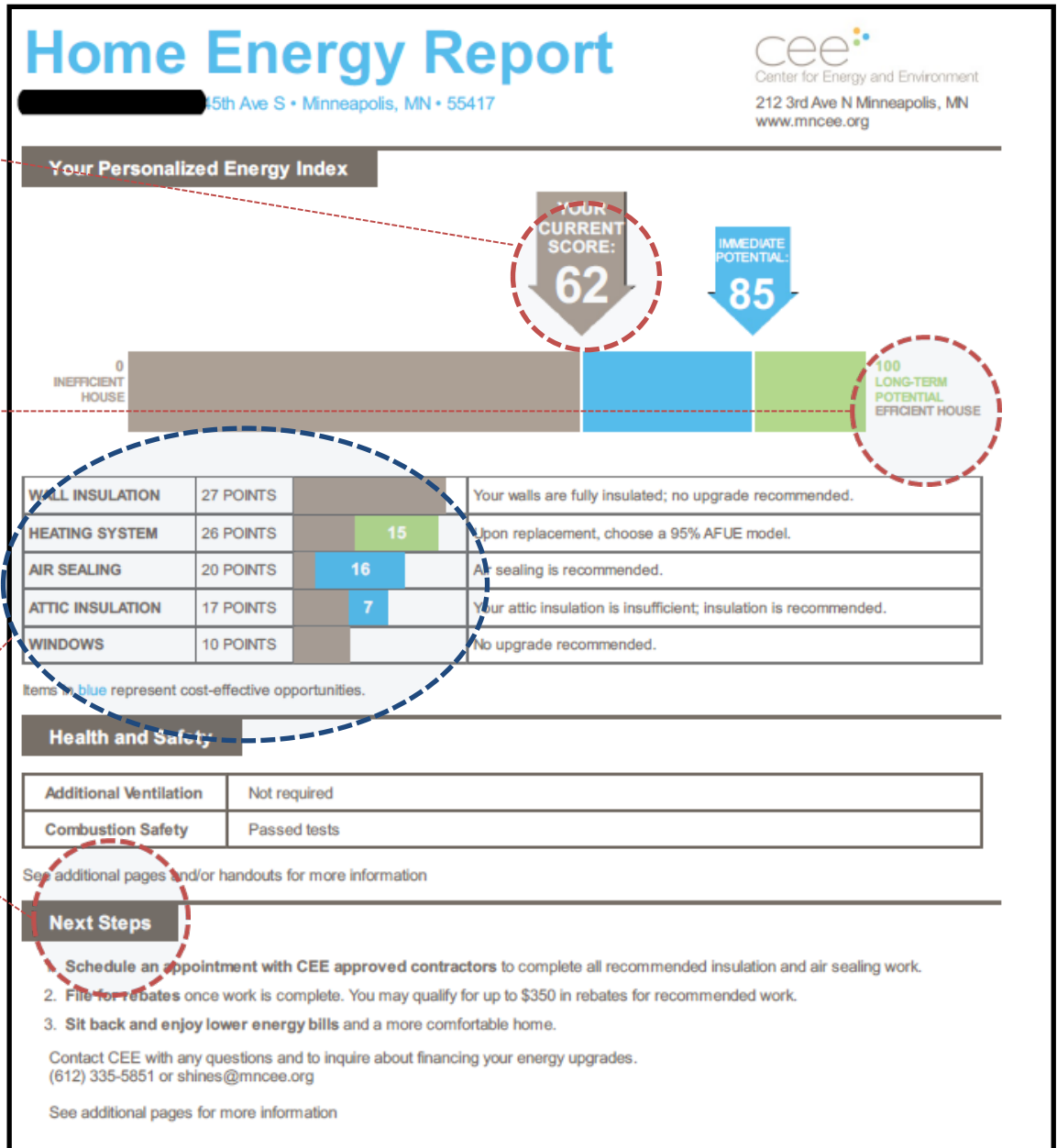
1. CALL our office at the number below to find out more about the **REBATES AND FINANCIAL INCENTIVES** available.
2. Make an **APPOINTMENT** with a contractor. (For insulation and air sealing work, refer to the CES preferred contractor list.)
3. **COMPLETE WORK and RECEIVE** your rebate.
4. Sit back and **ENJOY** a more energy efficient and comfortable home.

Solution: Home Energy Improvement Index

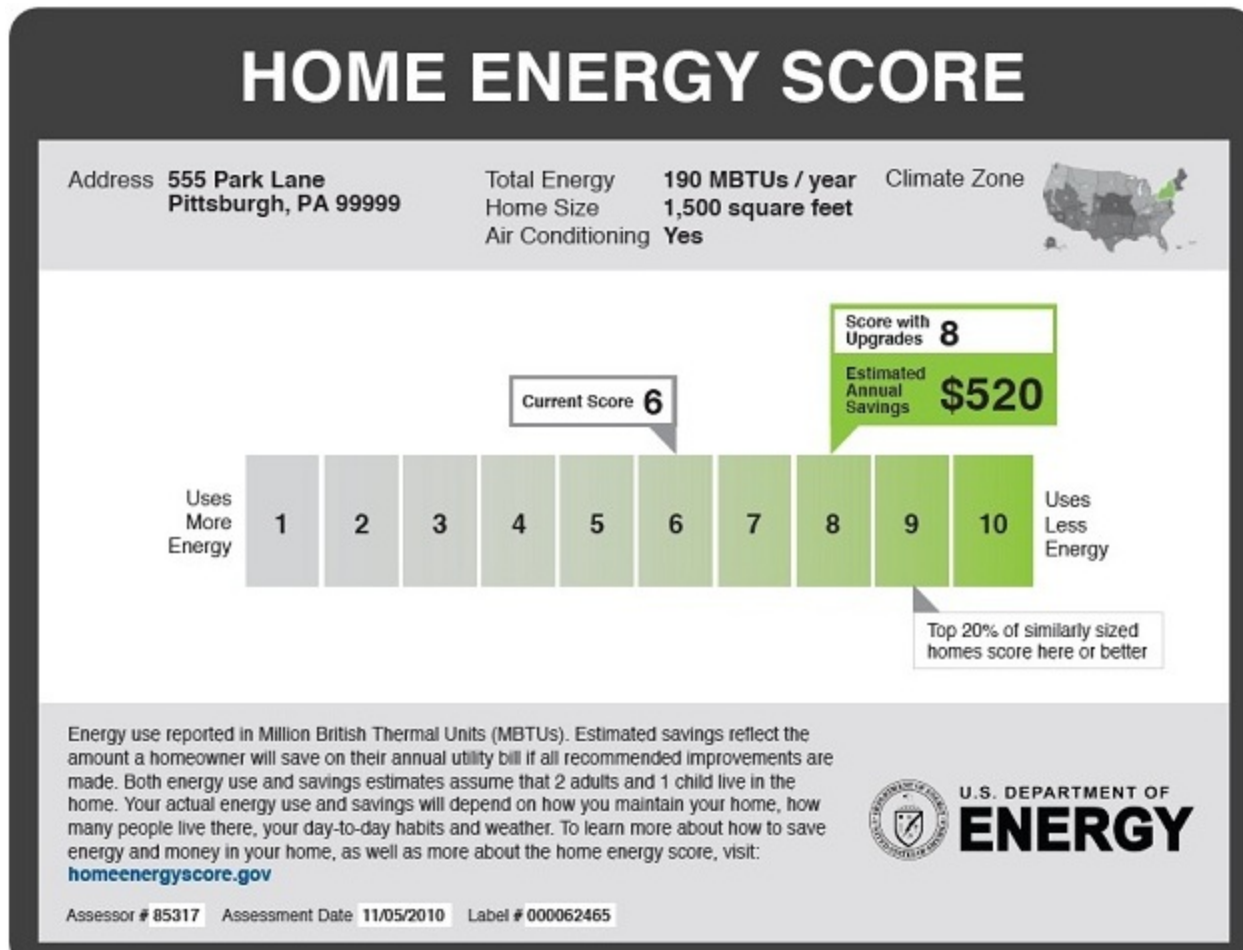
Scoring method provides rigor in prioritizing upgrades for homeowner

Ability to achieve “perfect” score – motivational to participants

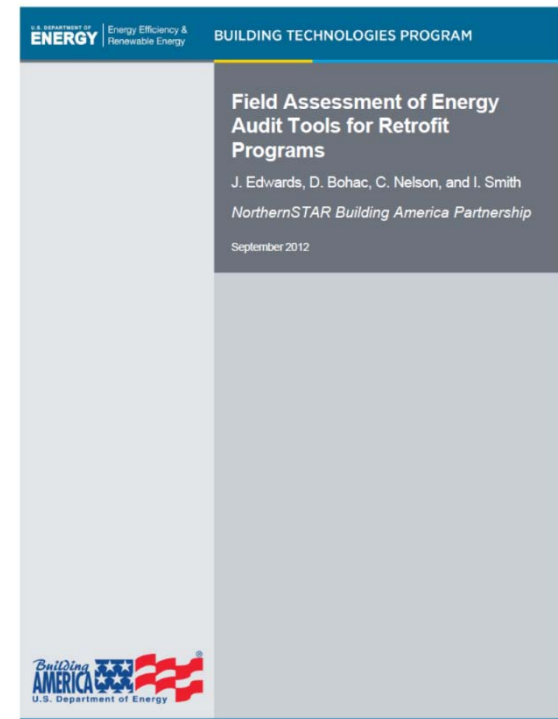
Breakdown of score and next steps gives clear pathway for action



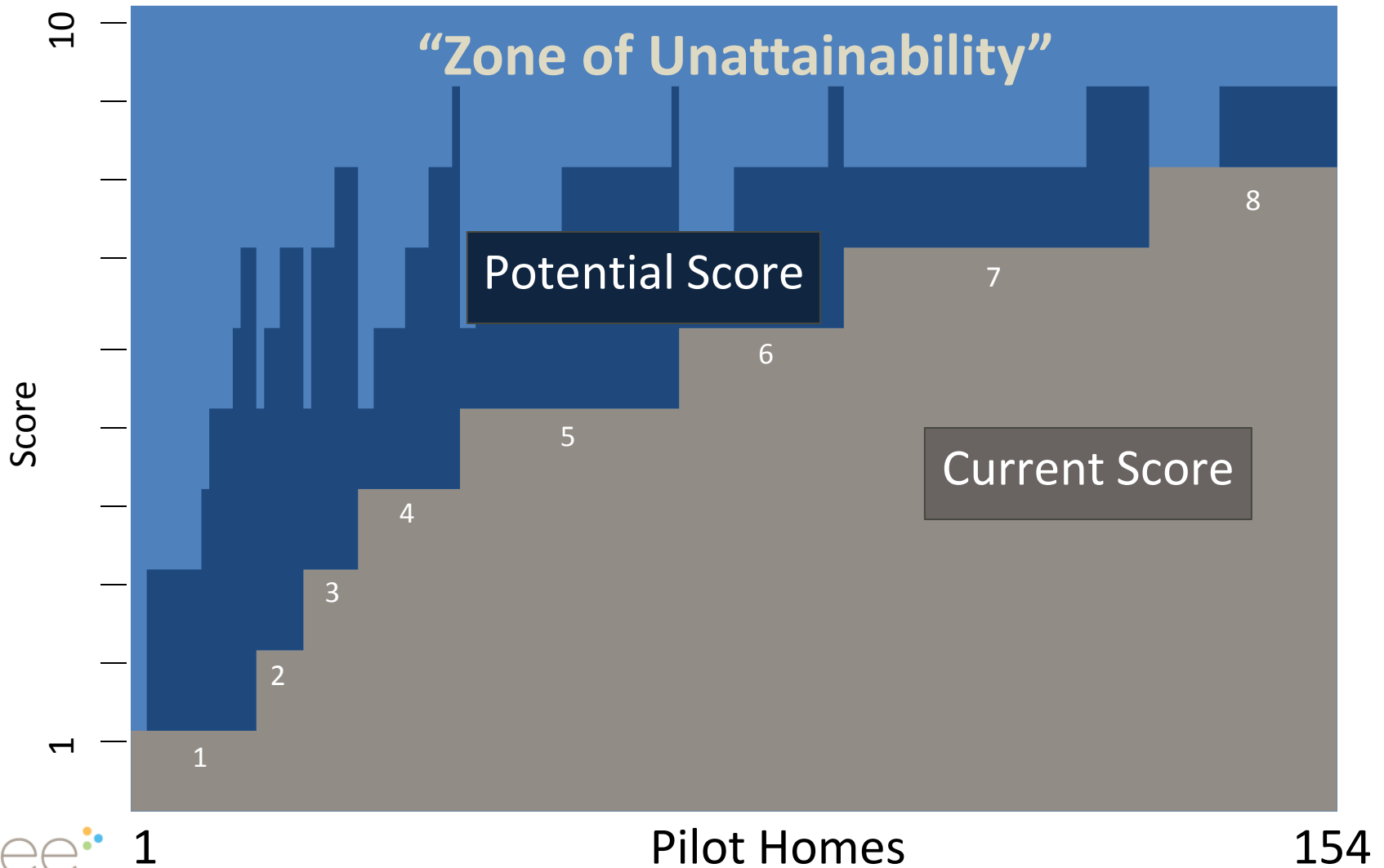
Contrast with another method: DOE Home Energy Score



CEE report on pilot program
of 157 homes scored with
DOE method



CEE experience with DOE Score: Not motivating for homeowners (few can get to 10)



Other behavior change principles that have been applied to residential programs

- Challenges and competitions
- Goal setting
- Engaging community leaders
- Personal contact with peers
- Foot-in-the door technique
- Public commitments
- Reciprocity rule

Conclusion

- Behavior change insights have been most successfully applied in indirect feedback programs to-date
- Although not a silver bullet, “traditional” energy efficiency programs also can benefit through the application of behavior change principles
- “Usability” is another common theme in improving performance of efficiency programs

Thank you!

