

Unlocking Energy Efficiency in U.S. Homes

A Framework for Change

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Impact

Occupant behavior is responsible for 30% of a building's energy performance?

A 30% reduction in energy per home would power 63 million U.S. Homes for an entire year.

What's Stopping People...

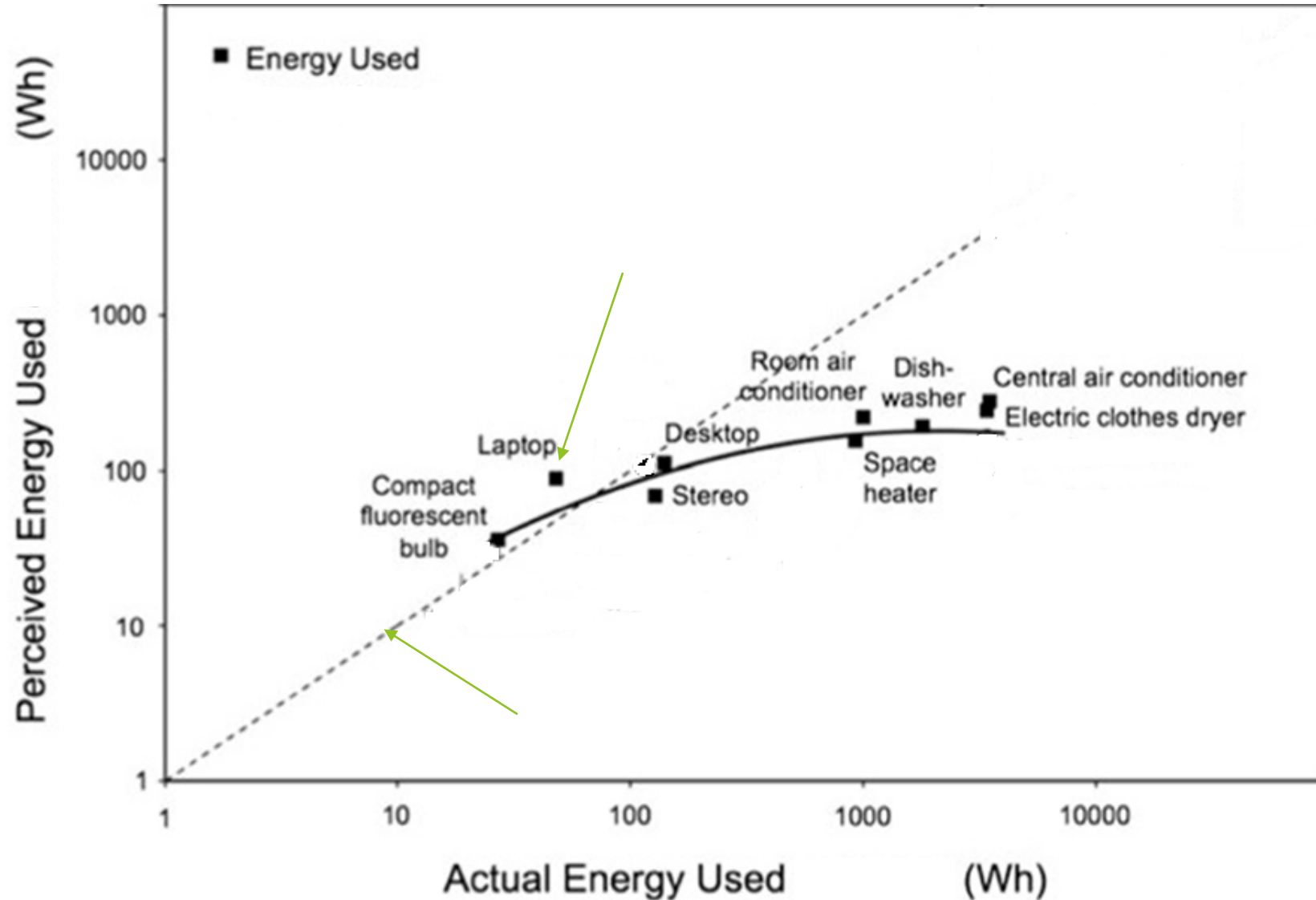
Information Deficit

- ▶ How much will I save?
- ▶ How do I save?
- ▶ How do I validate saving?

Motivation Deficit

- ▶ Who else is doing it?
- ▶ Is it worth the time?
- ▶ Is it worth the cost?

Perceptions of Energy Use





100 Wh

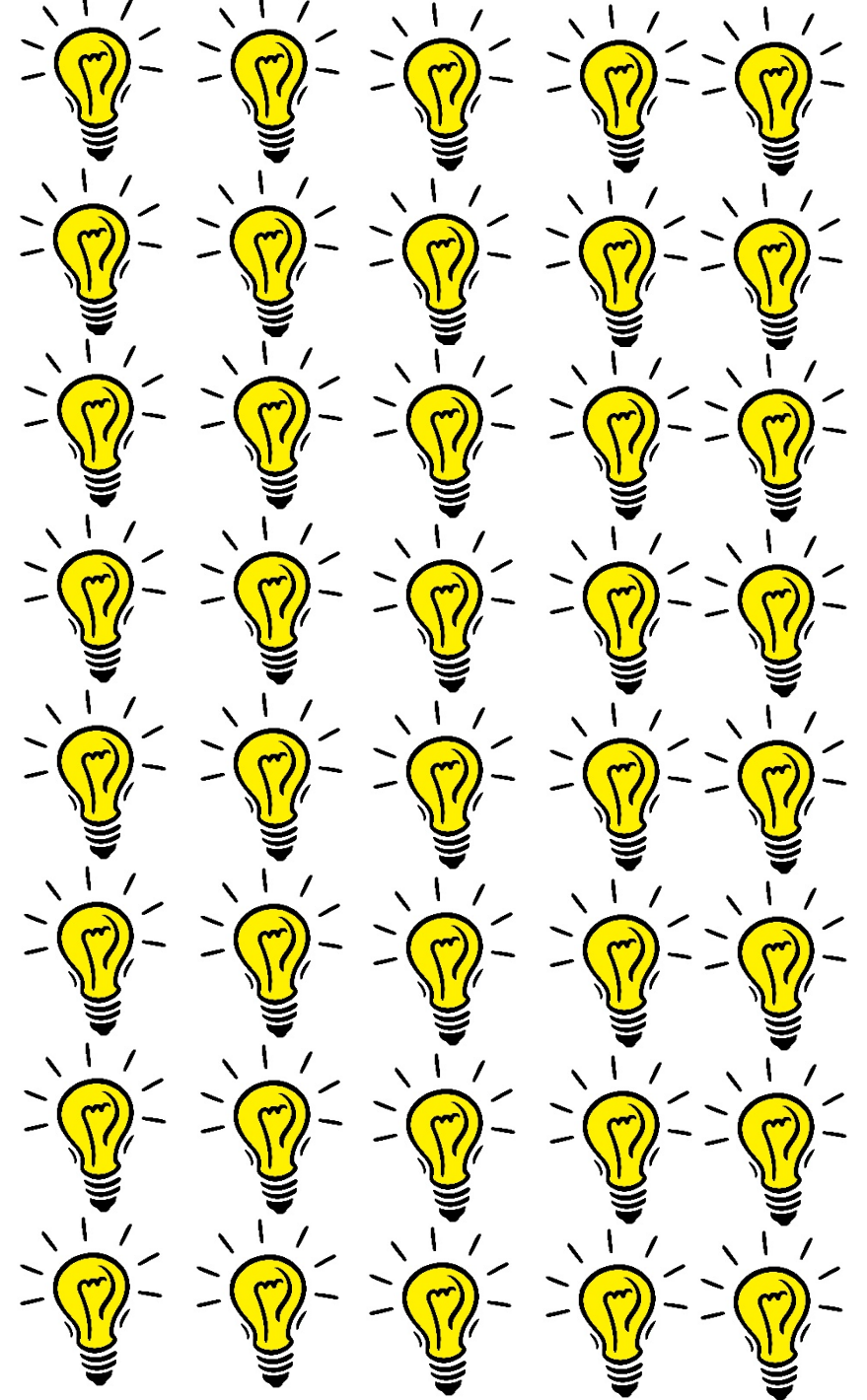


50 Wh

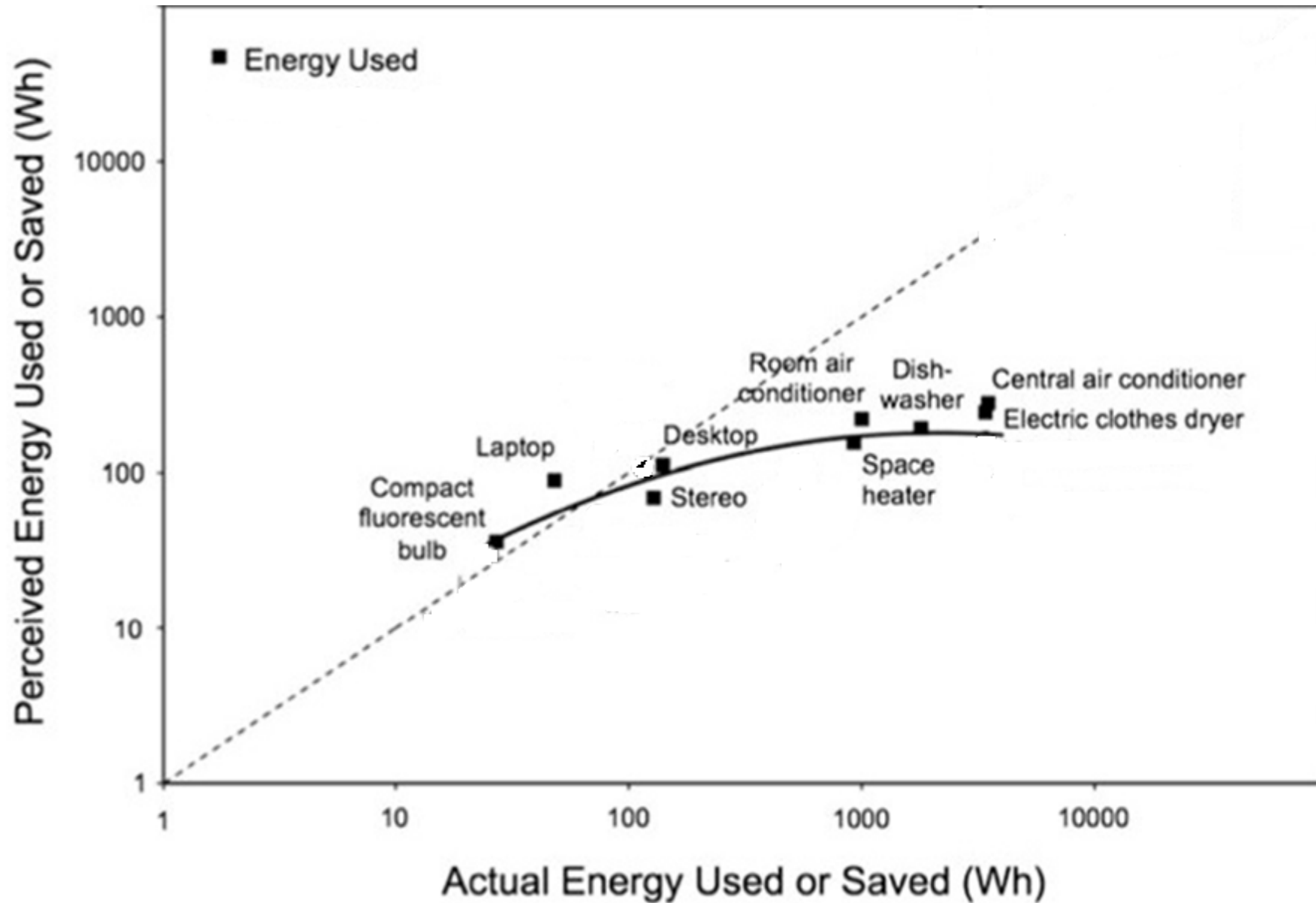
People Think a laptop Uses 100 Wh When it Actually Uses 50 Wh



$$\times 20 = 40$$



Perceptions of Energy Use



How is This Being Addressed Today

 Home Energy Ratings

 LEED

 Green Globes




 Energy Star

 Smart Homes

Problem Areas

- 🏠 Market confusion due to a vast number of ratings available.
- 🏠 Ratings don't offer residents what they want.
- 🏠 Right now smart homes are uncommon, misunderstood and thought of as more of a hobby.

Three Recommendations

-  A standard measurement system for home energy ratings
-  A home energy performance rating
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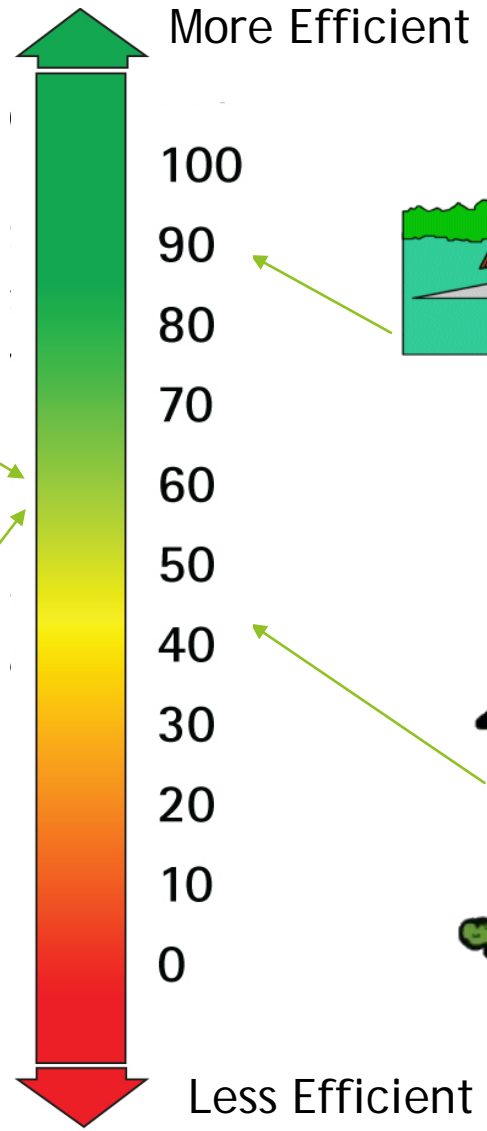
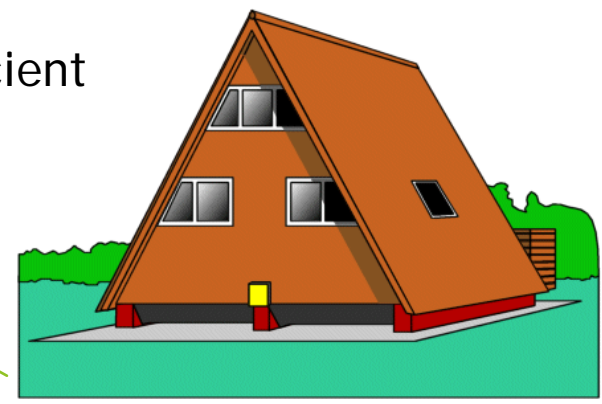
Standard Measurement System



Home Energy Performance Rating



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More Efficient

100

90

80

70

60

50

40

30



20

10



0

Less Efficient

Pending Legislation

-  Energy Savings and Industrial Competitiveness (ESIC) Act, commonly known as Shaheen-Portman.
-  Access to Consumer Energy Information (E-Access) Act.

Policy Recommendations

-  Incorporate a bill into Shaheen-Portman before it is reintroduced in the Senate of the 114th Congress.
-  Have Senator Mark Udall (D-CO) and Senator Ed Mackey (D-MA) cosponsor the bill.

Conclusion

- 🏠 Collaboration between technical organizations, private rating programs, federal agencies.
- 🏠 Standard for determining and expressing building energy performance in a rating program.
- 🏠 Introduce a new home energy performance rating to account for smart meter data

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