ACEEE
American Council for an Energy-Efficient Economy

Expanding Energy Efficiency in Buildings

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The American Council for an Energy-Efficient Economy (ACEEE)

- ACEEE is a 501(c)(3) nonprofit that acts as a catalyst to advance energy efficiency policies, programs, technologies, investments, & behaviors
- 50 staff; headquarters in Washington, D.C.
- Focus on end-use efficiency in industry, buildings, & transportation
- Other research in economic analysis; behavior; energy efficiency programs; national policy; utilities, state, & local policy
- Funding:
  - Foundation Grants (52%)
  - Contract Work & Gov't. Grants (20%)
  - Conferences & Publications (20%)
  - Contributions & Other (8%)

Why energy efficiency?

- Lowers costs to all customers
- Lowers risks
- Reduces emissions
- Improves utility system reliability
- Improves customer satisfaction
- Promotes local economic development, energy affordability, and resilience
- Participant benefits: comfort, affordability, property values

Why buildings?

- ~40% of U.S. energy consumption:

  split almost evenly between residential and commercial
- >70% of electricity consumption
- Cost-effective energy efficiency potential of 30% to 50% with existing technologies

Capture savings potential by:

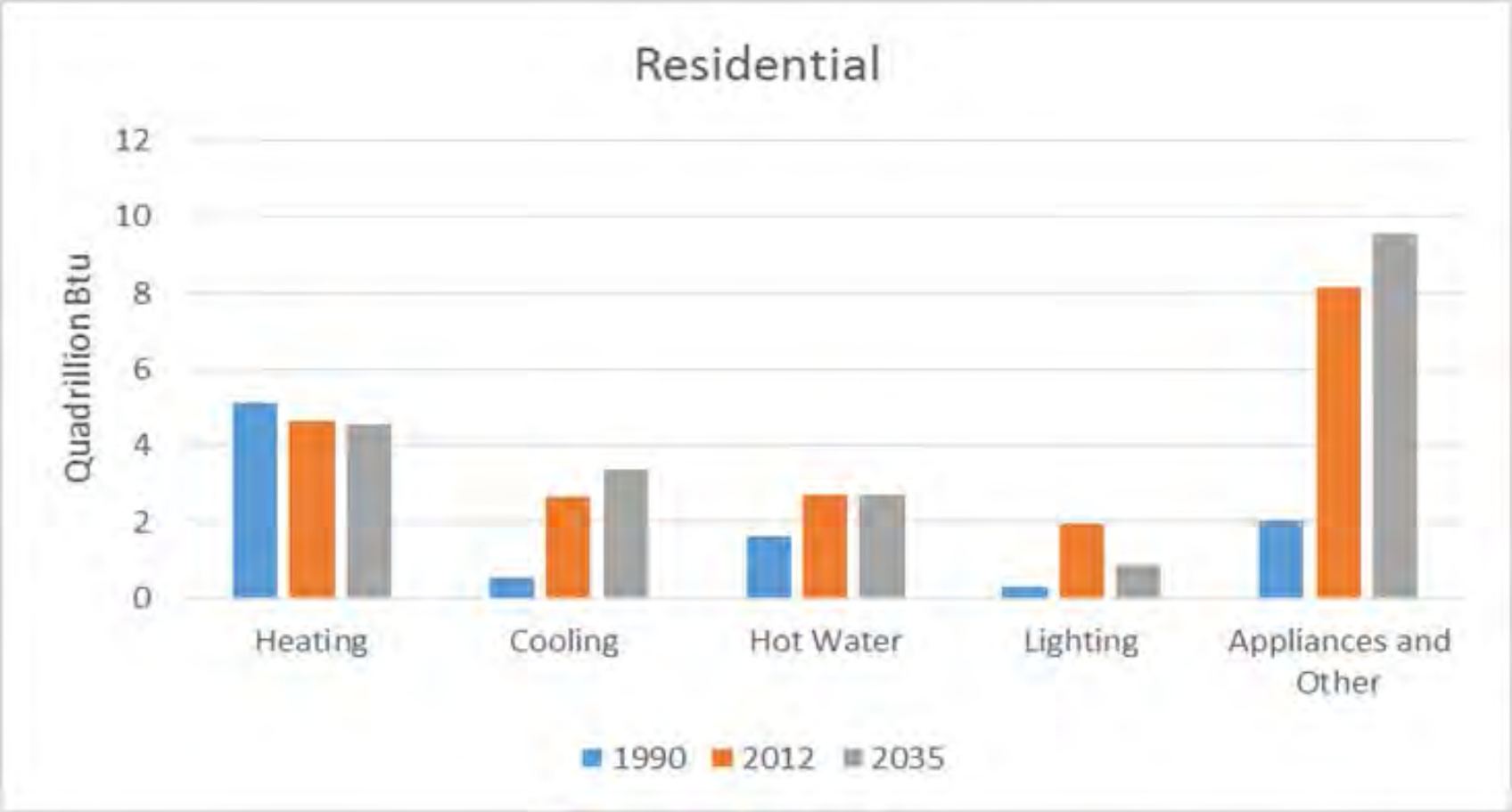
Identifying the best opportunities

Implementing strong programs

Lock in savings with codes and standards

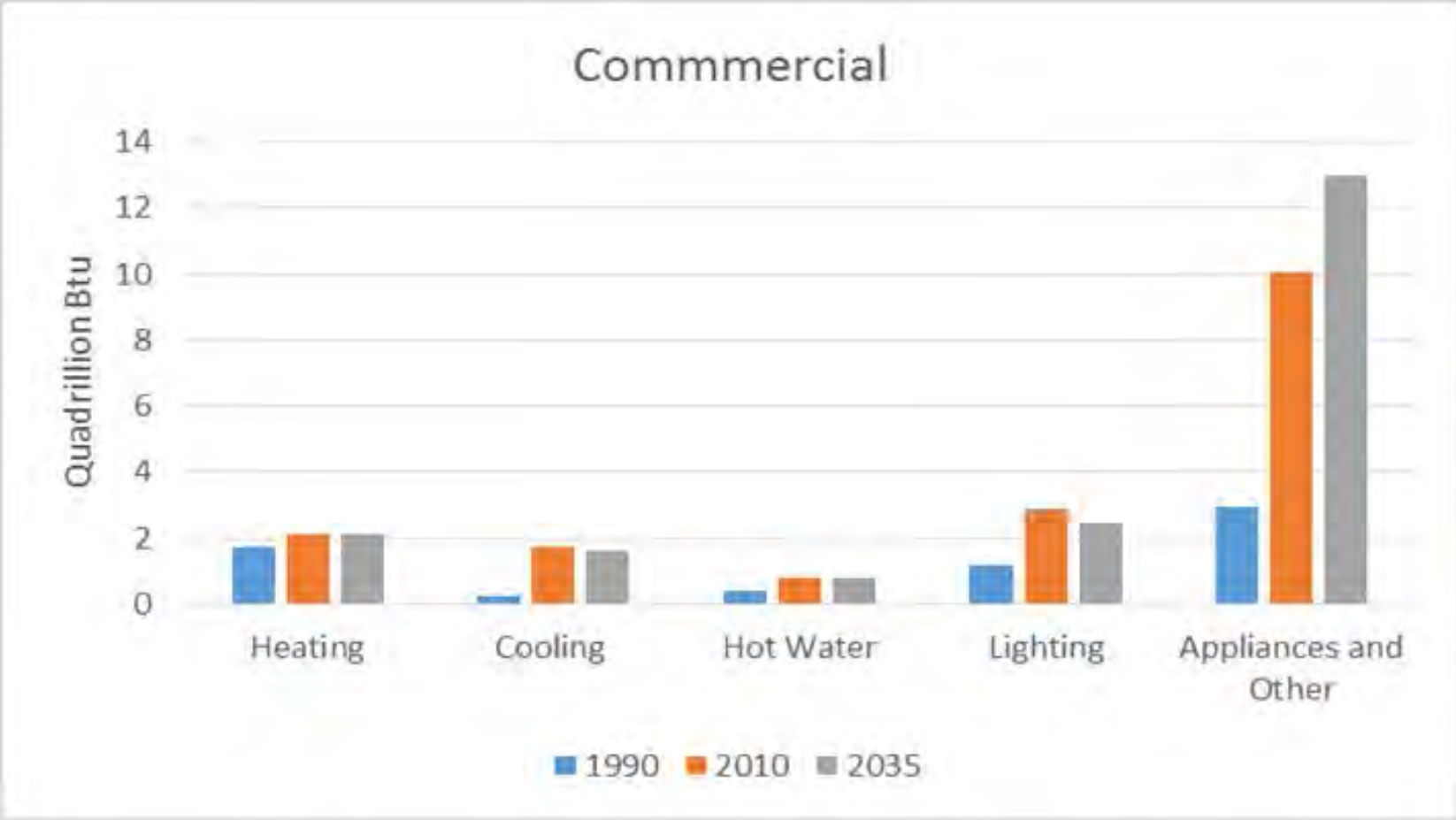
Get the utility business models and rules right

Identifying efficiency opportunities in the building stock : residential



Source: Annual Energy Outlook 1994 and 2014

Identifying efficiency opportunities in the building stock : commercial



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ACEEE Next Big Things Study
(Summer 2015)

1. Appliances (RF, CW, CD)
2. New construction
3. Advanced lighting design & controls
4. Very efficient packaged AC (res'l & comm'l)
5. Smart manufacturing and buildings
6. Strategic energy mgmt for large C&I
7. Reduce key plug loads
8. Real-time feedback & advanced thermostats
9. Whole building retrofits
10. Combined heat & power
11. Conservation voltage reduction
12. Advanced water heaters
13. Residential LEDs

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Develop a strong portfolio of programs and policies

- Diversify: customer classes, program strategies, fuels, water
- Support emerging tech and practices
  - EPRI, BPA, other sources
- Boost participation rates
- Provide financing as a complementary strategy where needed
- Offer support for codes and standards

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Residential product programs: appliances, consumer electronics

- Broad participation, typically lower savings per participant
- Program participation targets: % of sales meeting program levels
- Build on well-known national efficiency “brands”
- Match incentive structure and level to market: consumer, mid-stream, or upstream?
- Effective marketing strategy: in-store, diverse media, don’t forget the web
- Strong retailer/manufacturer partnerships

Whole-home retrofits

- Narrow participation, big savings potential: requires long-term program commitment
- Turning audits into retrofits is a BIG challenge
- Expand eligible measures, direct install opps
- Community-based approaches can drive up participation/conversions
- One-stop shopping can offset complexity
- Contractors key to savings
- Promote multiple benefits: comfort, durability, IAQ, etc. and energy savings

Whole-home retrofits

- Count electricity and gas savings (ideally with program coordination across utilities)
- Cost is a major barrier for programs and participants
  - Engage contractors in program marketing
  - Offer a variety of incentives and financing options to meet specific customer needs: rebates, loans/financing support, on-bill repayment
- New shift to Measured HP to increase consumer confidence, improve contractor performance, enhance EM&V

Program Spotlight: Help My House

WHAT: On-bill financing program with eight participating cooperatives in South Carolina

HOW: Whole-house approach

RESULTS:

- Average home cut electricity use by 34%
- Average net savings of $288 per year
- High degree of customer satisfaction (even among non-participants)

The role of codes & standards

- Lock in savings for all consumers
- Free up program funds for other opportunities
- Present a cost-effective program option for utilities (but requires convincing regulators)
  - Code compliance: lots of room for improvement
  - Training: prepare workforce for advanced codes
  - Support for code development and adoption
- Gaining support by public service commissions; potential role in Clean Power Plan compliance

Implement a comprehensive strategy to scale up EE as a resource

- Get the utility business model right:
  - Program cost recovery
  - Address throughput incentive, i.e. decoupling
  - Allow earnings opportunity, i.e. performance incentives
- Set specific EE targets that align with business model

Current status of utility business model and EE targets

- Most states have program cost recovery
- 25 states with EE performance incentives (2 more pending); only 3 of these have penalties
- 12 states with electric decoupling; 14 states with lost revenue adjustment mechanisms
- 24 states with electric EE targets

In addition to targets and utility business models…

- Clear, stable, long-term regulatory support
- Proper cost-effectiveness test(s) for screening programs, EM&V practices
- Proper estimation of avoided costs
- Sound integrated resource planning practices
- Meaningful stakeholder engagement

Thank You!

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