



Unlocking Energy Efficiency in the U.S. Economy

October 5, 2009

Recent McKinsey report on energy efficiency addressed opportunity, barriers, and potential solutions

Report approach

- Stationary uses of energy
- 675 existing technologies
- Productivity, not conservation
- NPV-positive excluding program costs
- Discounted at 7 percent
- Potential for energy efficiency – no attempt to declare how much is achievable

Sponsors of the report



DTE Energy

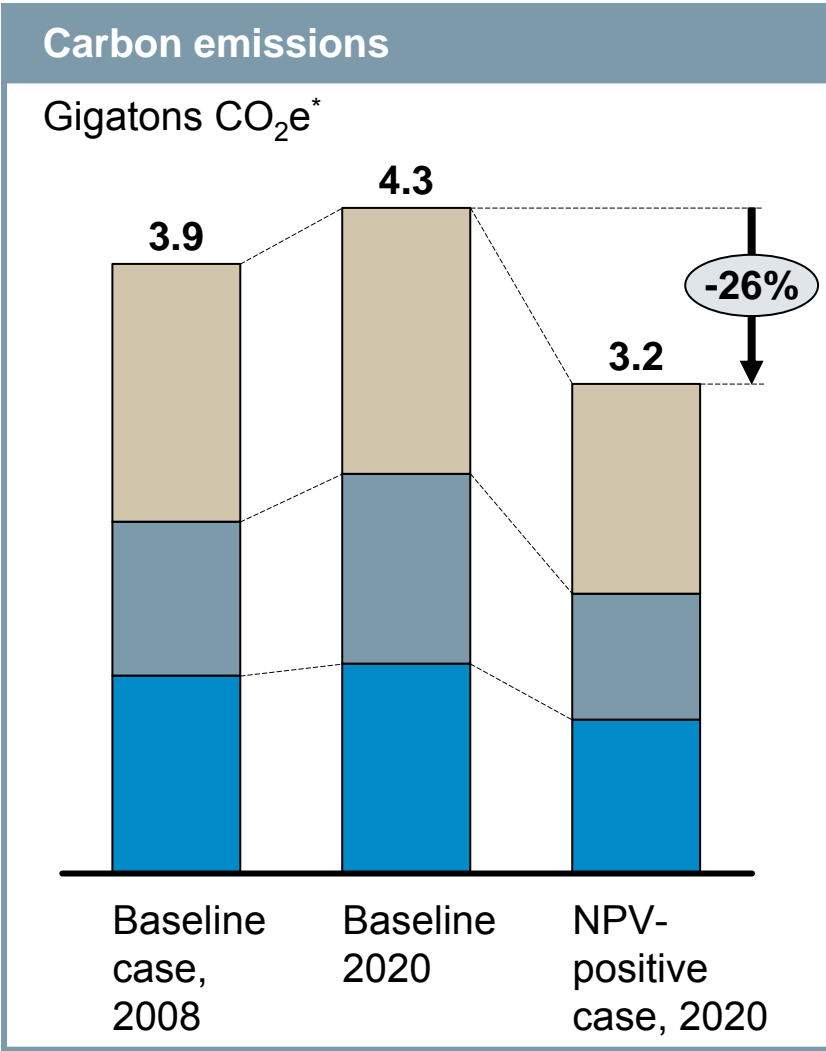
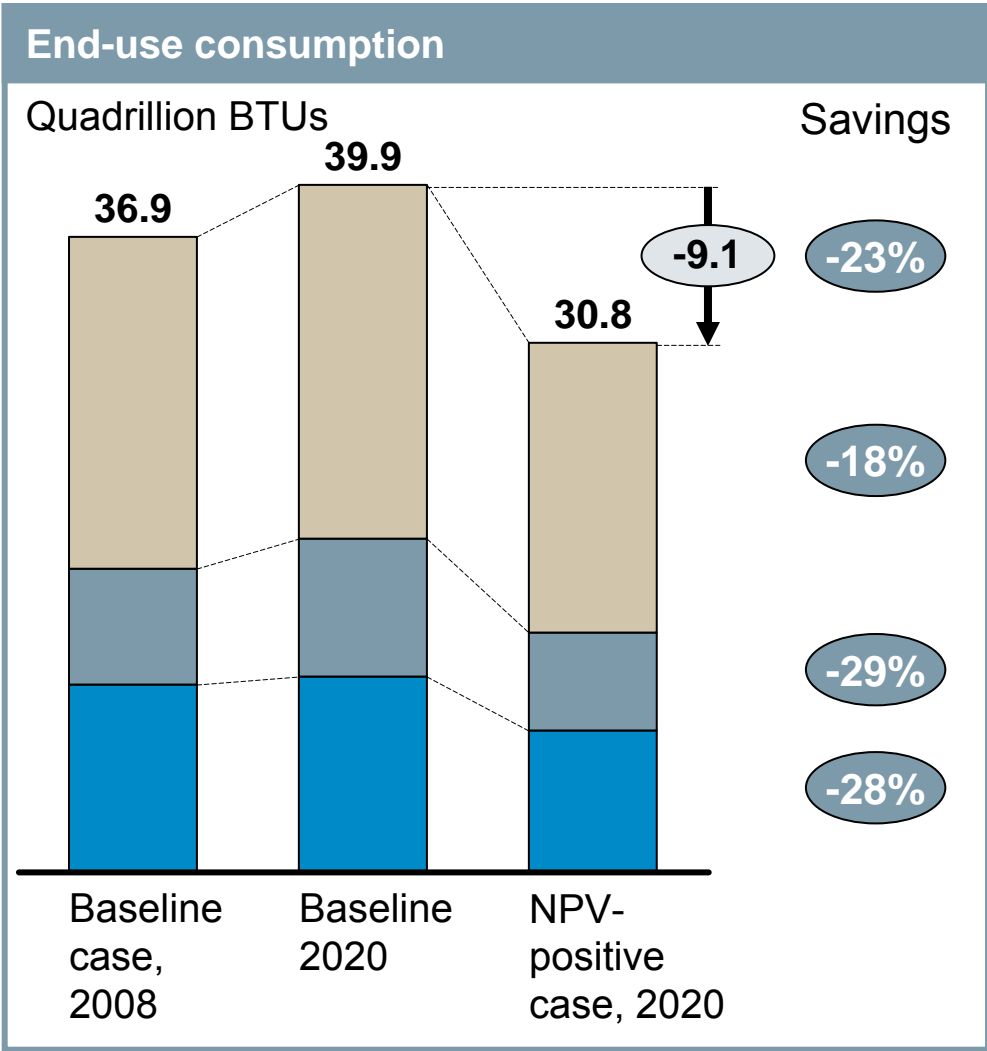


Exelon



Significant energy efficiency potential exists in the U.S. economy

- Industrial
- Commercial
- Residential



* Includes carbon emission abatement potential from CHP

The fundamental nature of energy efficiency creates challenges

FUNDAMENTAL ATTRIBUTES OF ENERGY EFFICIENCY

Requires outlay

Full capture would require upfront outlay of about \$50 billion per year, plus program costs

Fragmented

Potential is spread across more than 100 million locations and billions of devices

Low mind-share

Improving efficiency is rarely the primary focus of any in the economy

Difficult to measure

Evaluating, measuring and verifying savings, is more difficult than measuring consumption

Additional opportunity-specific barriers inhibit energy efficiency

OPPORTUNITY-SPECIFIC BARRIERS

Structural

Behavioral

Availability

Agency

Incentives split between parties, impeding capture of potential

Ownership transfer issue

Owner expects to leave before payback time

Transaction barriers

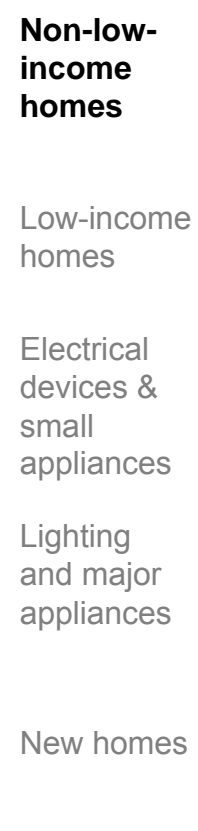
Unquantifiable incidental costs of deployment

Pricing distortions

Regulatory, tax, or other distortions

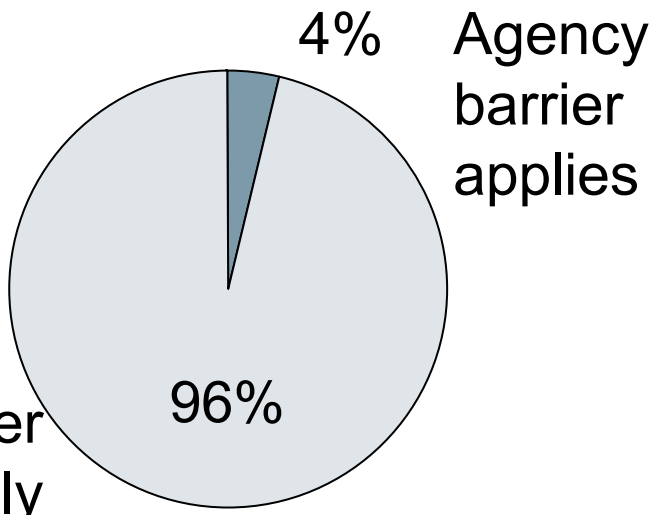
Ownership transfer is a significant barrier in non-low-income homes

End-use energy
Trillion BTUs

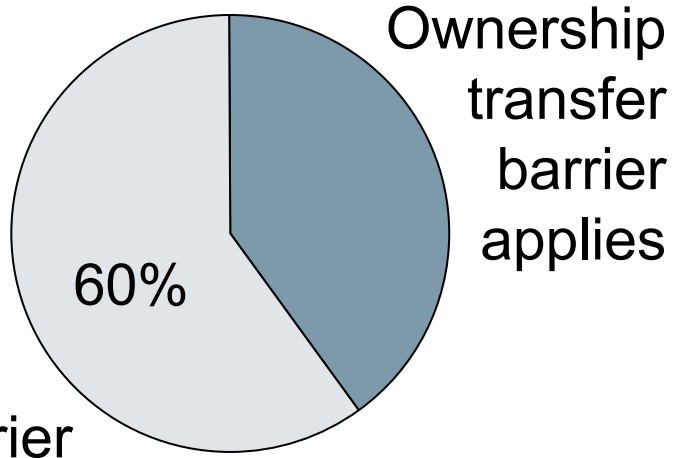


Barriers

Agency barrier does not apply



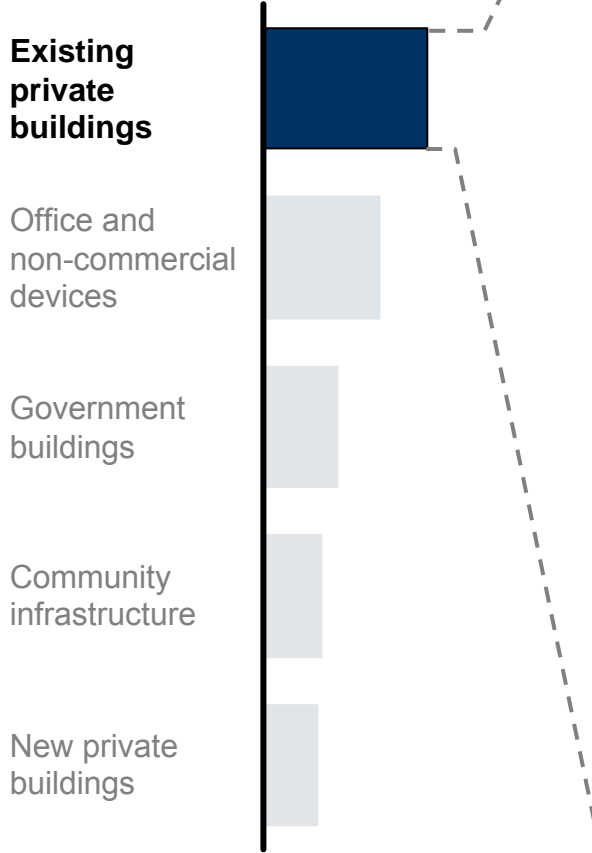
Ownership transfer barrier does not apply



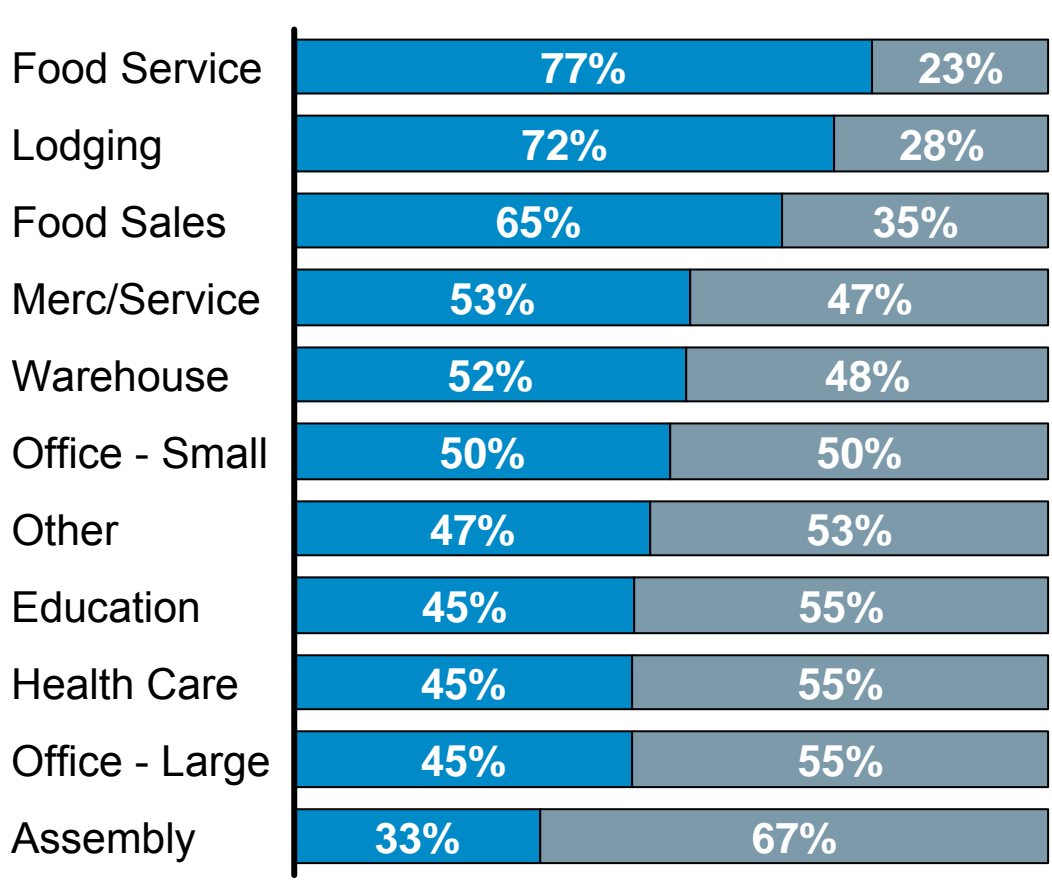
The agency barrier plays a much larger role in commercial buildings

■ Tenant Occupied
■ Owner Occupied

End-use energy
Trillion BTUs



Potential affected by agency barrier Percent of end-use potential



Additional opportunity-specific barriers inhibit energy efficiency

OPPORTUNITY-SPECIFIC BARRIERS

Structural

Behavioral

Availability

Risk and uncertainty

Regarding ability to capture benefit of the investment

Lack of awareness

About product efficiency and own consumption behavior

Custom and habit

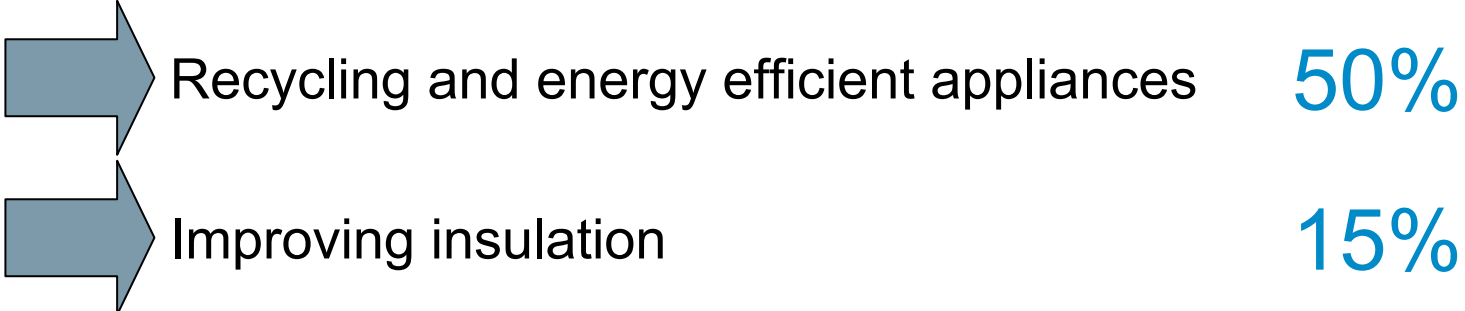
Practices that prevent capture of potential

Elevated hurdle rate

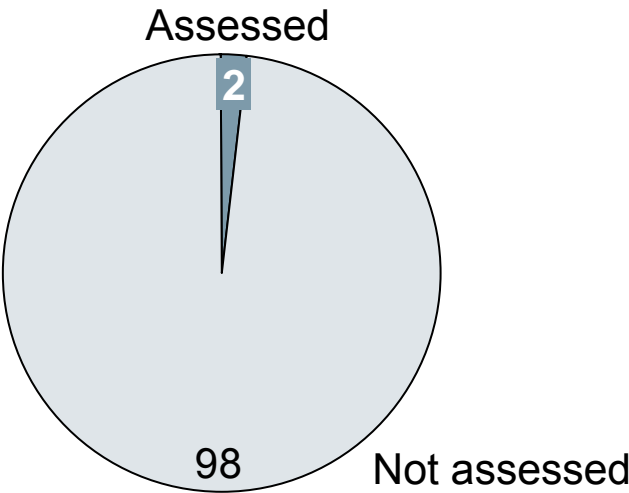
Similar options treated differently

Few end users are aware of their consumption drivers and opportunities for efficiency

Homeowners view on effective ways to reduce GHG emissions



Homes having an energy efficiency rating or assessment



Additional opportunity-specific barriers inhibit energy efficiency

OPPORTUNITY-SPECIFIC BARRIERS

Structural

Behavioral

Availability

Adverse bundling

Combining efficiency savings with costly options

Capital constraints

Inability to finance initial outlay

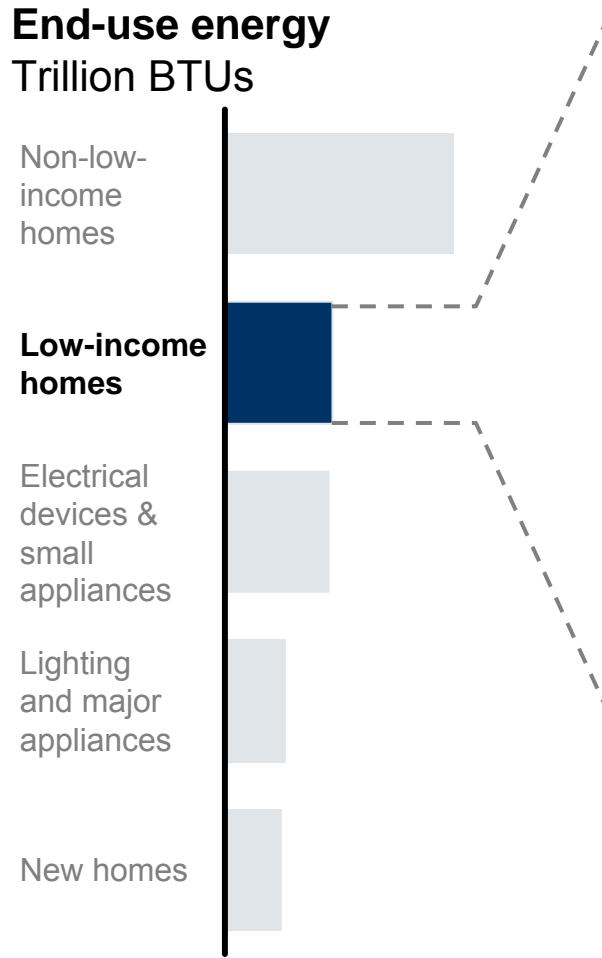
Product availability

Insufficient supply or channels to market

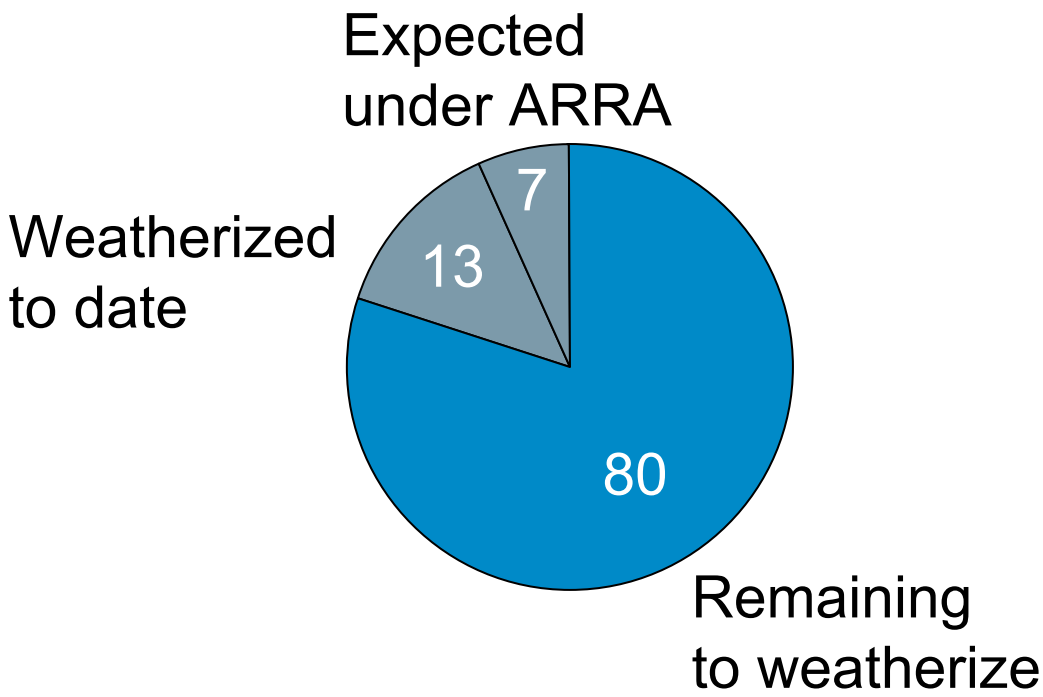
Installation and use

Improperly installed and/or operated

Access to capital presents a significant barrier to low-income homes



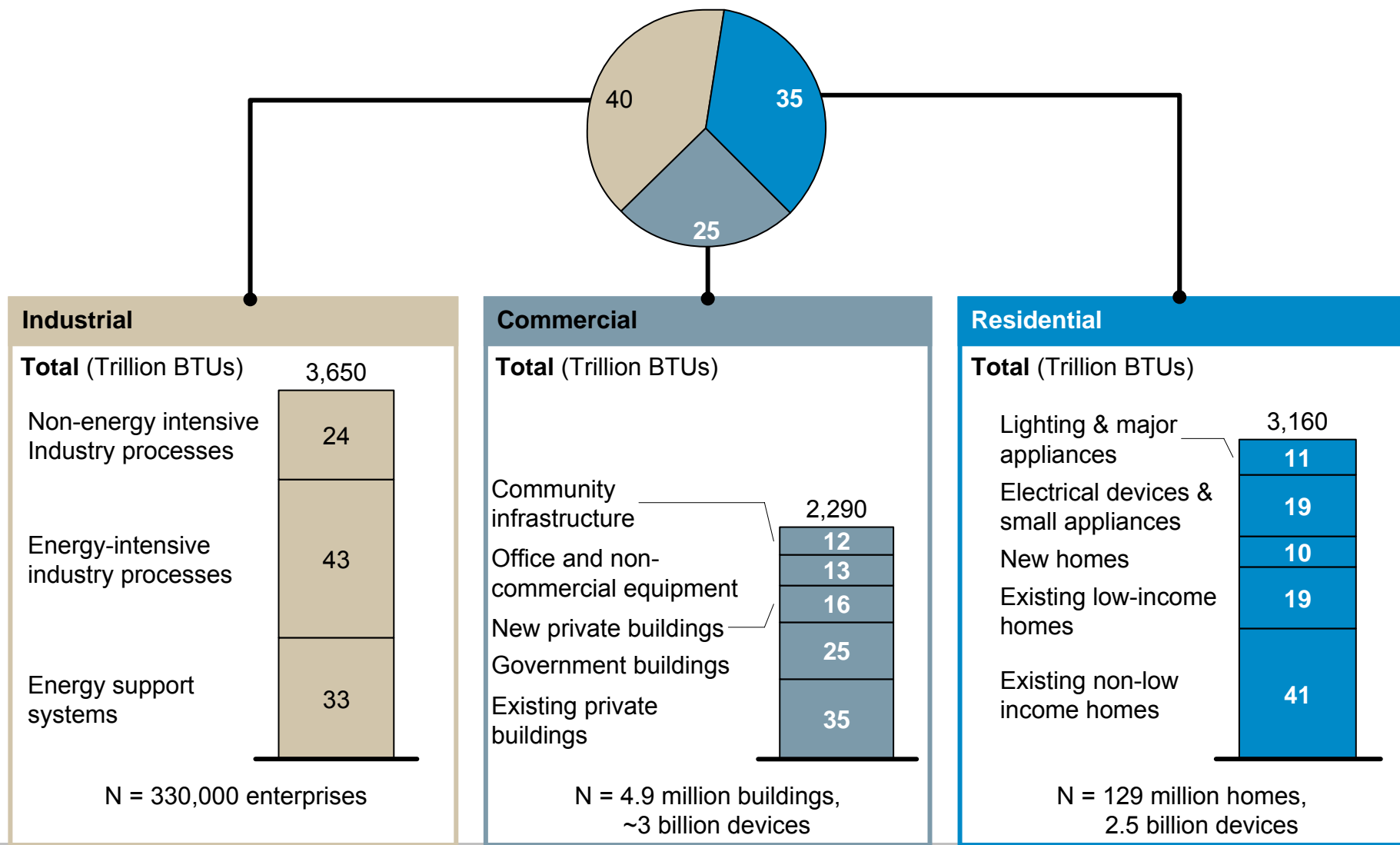
Percent of homes (N=45 million)



Allocating capital would require at least half of a household's annual non-core budget

Clusters of opportunity emerge

Percent, 100% = 9,100 trillion BTUs of end-use energy efficiency potential



Source: Energy Information Agency's Annual Energy Outlook 2008; McKinsey analysis

Four categories of solutions emerge

Information flow

- Increase **education** about energy consumption and efficiency opportunities
- Promote **transparency** through labeling and reporting
- Provide **immediate signals** through pricing or real-time information flow

Financing and incentives

- Provide **access to financing**
- Provide grants or incentive payments to “**buy-down**” upfront investment

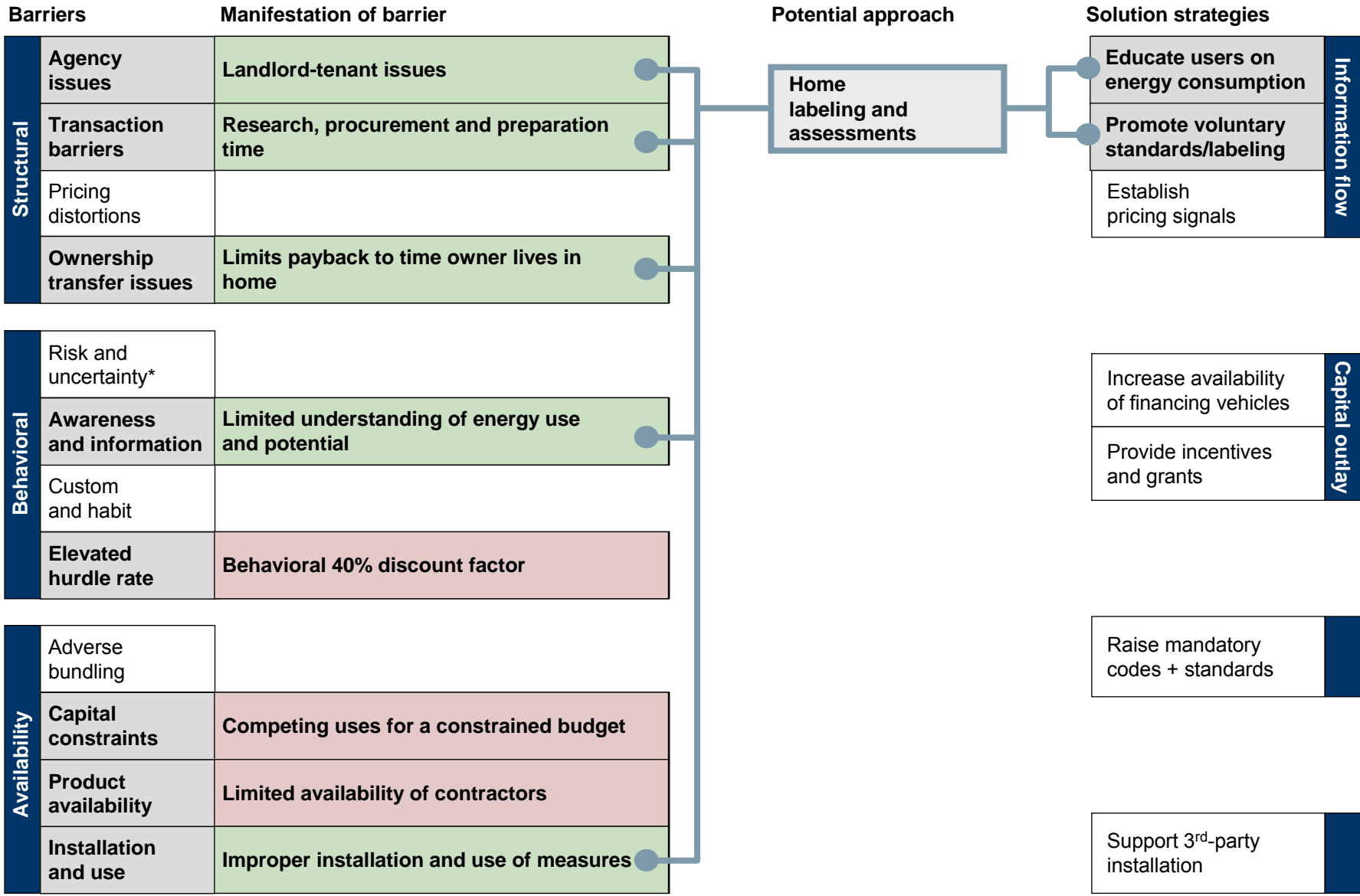
Codes and standards

- Raise levels of mandatory codes and standards

Third party deployment

- Expand “**do-it-for-me**” programs that provide full solutions to end users

Addressing barriers in non-low income homes



Addressing barriers in non-low income homes

