

ENERGY STAR HVAC

CEE Winter Meeting

Costa Mesa, CA

January 27, 2011

Abigail Daken, EPA

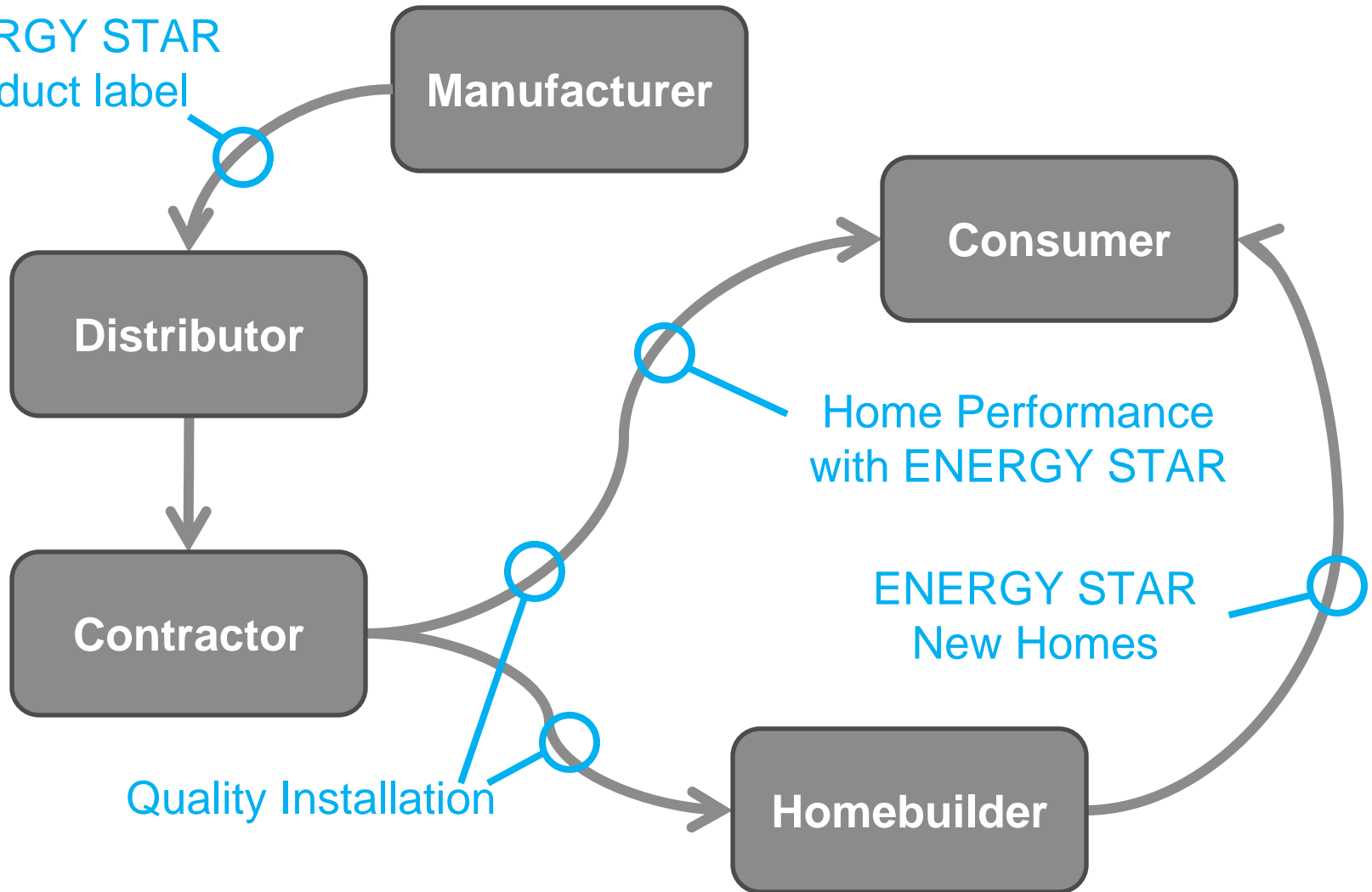


Learn more at energystar.gov

Multiple points of influence



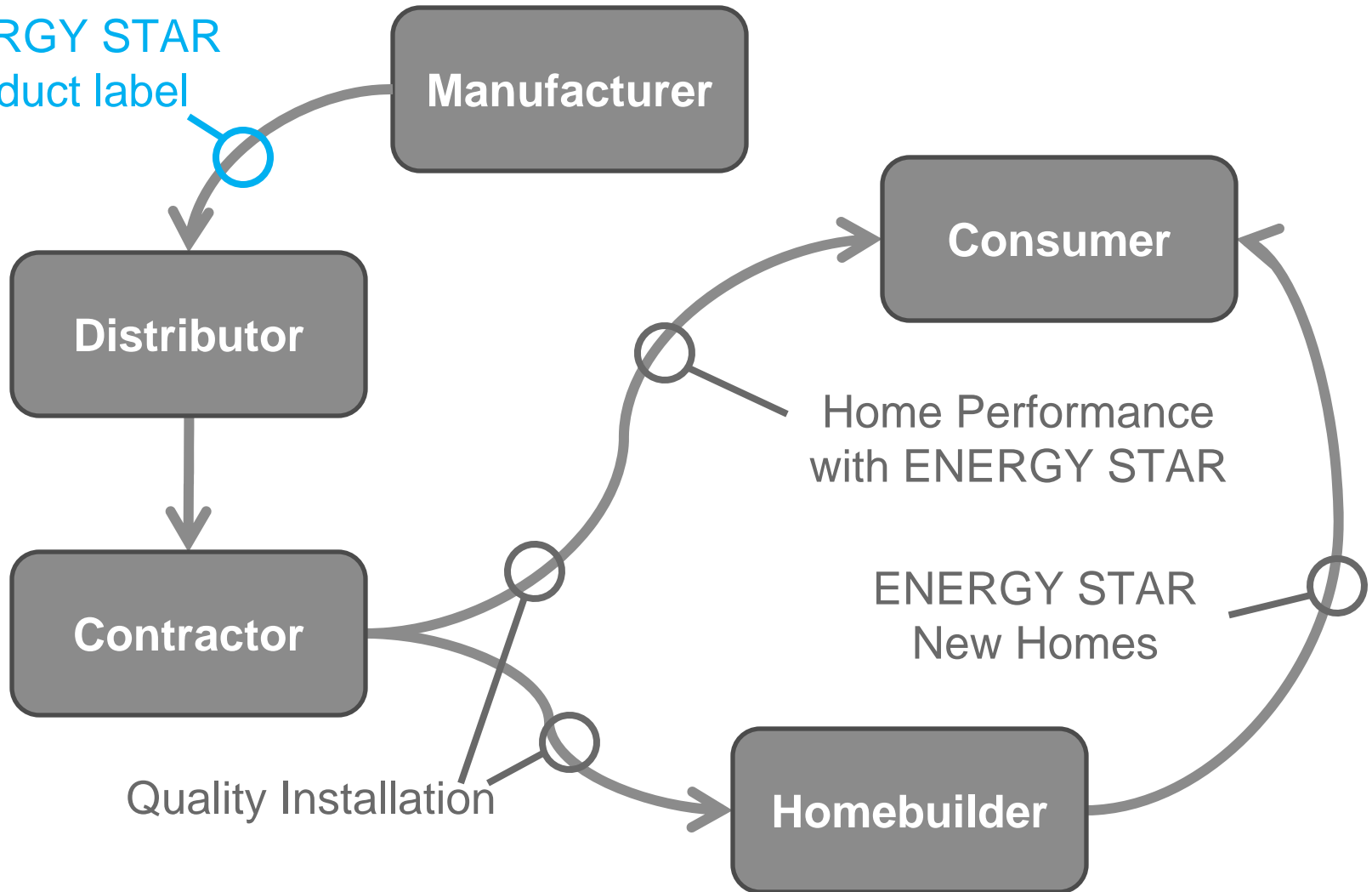
ENERGY STAR
product label



Multiple points of influence



ENERGY STAR
product label

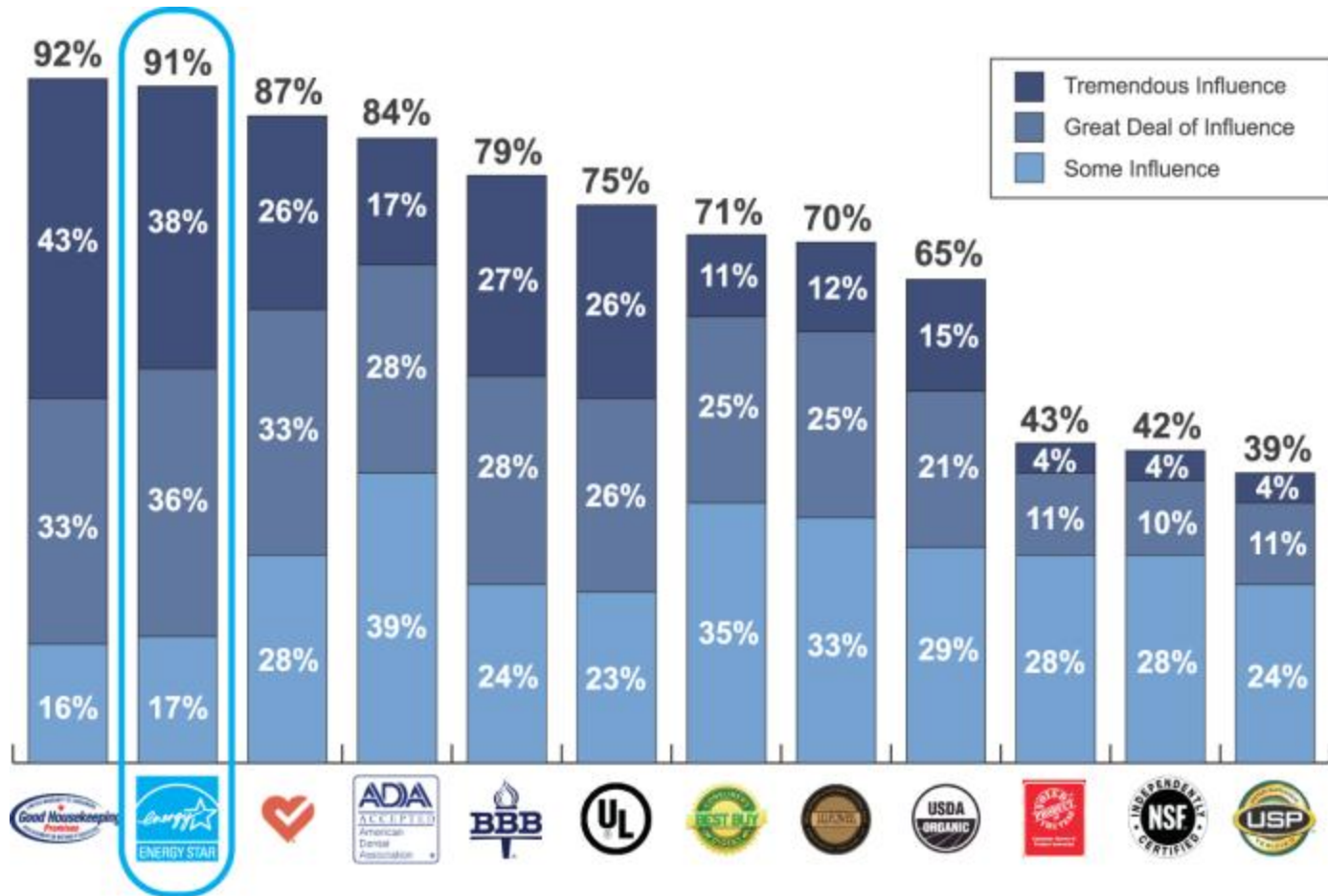


HVAC Products



- Furnaces
- Boilers
- CAC/ASHP
- GHP
- Vent and ceiling fans
- Dehumidifiers
- Light commercial HVAC
- Residential climate controls

ENERGY STAR: Recognized Brand



Source: Fairfield Research, July 2009

The ENERGY STAR mark ranks among the highest level of influence on product purchase among all consumer emblems, similar in ranking to the *Good Housekeeping* Seal.

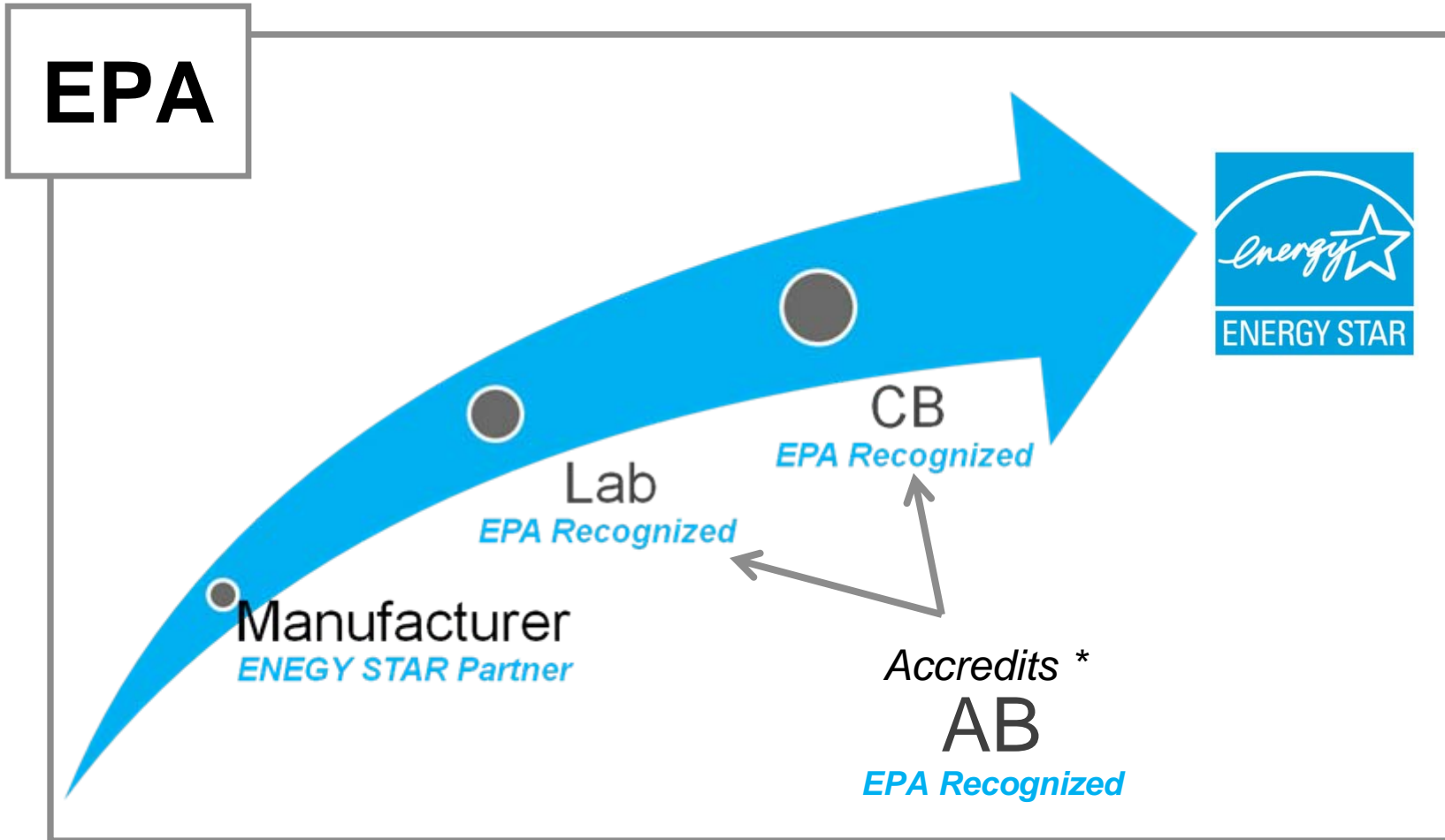


ENERGY STAR Guiding Principles



- ENERGY STAR criteria are designed to balance a varied set of objectives, including:
 - Significant energy and/or water savings
 - Cost effectiveness
 - Energy consumption that can be measured and verified with testing
 - Equivalent or enhanced functionality and performance
 - Efficiency improvements available via several technology options; at least one of which is non-proprietary
 - Meaningful product differentiation through labeling

Products – getting the ENERGY STAR



*Note: non-accredited labs may work directly with a CB in a S/WMTLP

Products – using the ENERGY STAR



- Consumers – purchase decisions
- Manufacturers – product promotion, PR
- Retailers – product promotion (upselling)
- Contractors – product promotion (upselling)
- EEPS – product evaluation for rebates

Top Tier



- Piloting a “Most Efficient” award for a few product categories, including CAC/ASHP and furnaces.
- Criteria to be released shortly, comment period to follow
- Pilot program launch April 2011
- Performance requirements set each year, equivalent to top few products on the market in December (likely above CEE Tier 2)
- Products can qualify throughout the year

The future of HVAC products



- Modest improvements in AFUE, SEER, EER...
- ... made practical by regional specifications
- The big energy efficiency bang for the buck is in installation and maintenance, so look for product features to address these issues
 - Sensors
 - Self-diagnostics
 - Communications, to get alerts to costumers' eyes
- Fan energy use

Regional requirements enforcement



- ENERGY STAR is a consumer information program.
- Enforcement = accurate information to the consumer.
- Enforcing the regional requirement is similar to our current enforcement.
- Burden for distributors similar to that with utility or state rebate programs.
- All furnaces of a particular model leave the factory with the same label. (see next slide)

Regional requirements - examples



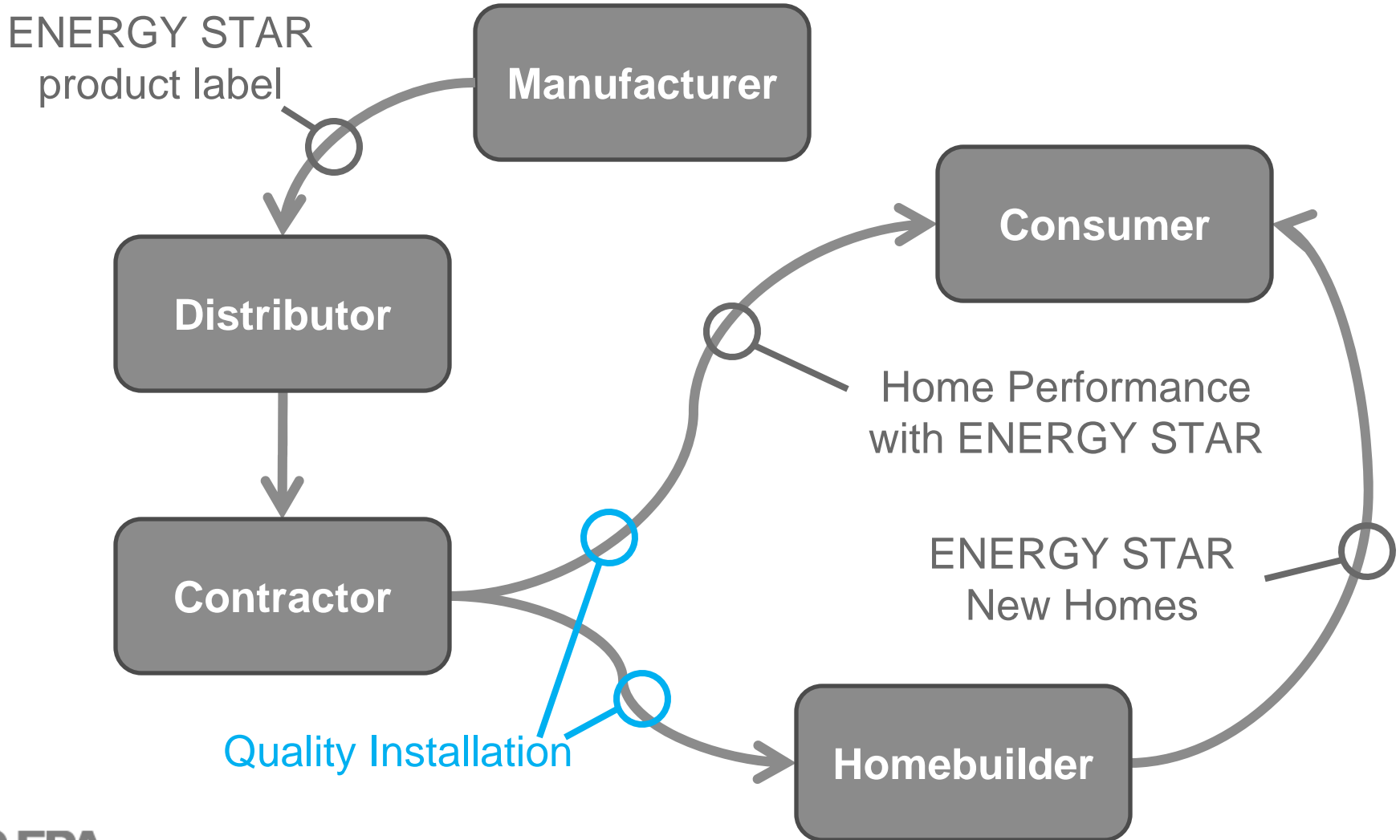
- Furnace which meets South requirements



- Furnace which meets US North requirements



Multiple points of influence



ENERGY STAR HVAC Quality Installation



- Residential program offered by EPA in conjunction with a local program sponsor
- Participating contractors install systems in accordance with the ES Quality Installation guidelines. (ACCA/ANSI 5 QI – 2007)
- Third party verification provided by program sponsor
 - 100% file review
 - Sample of on-site inspection
- ES certificate provided to Homeowner

ESQI Program



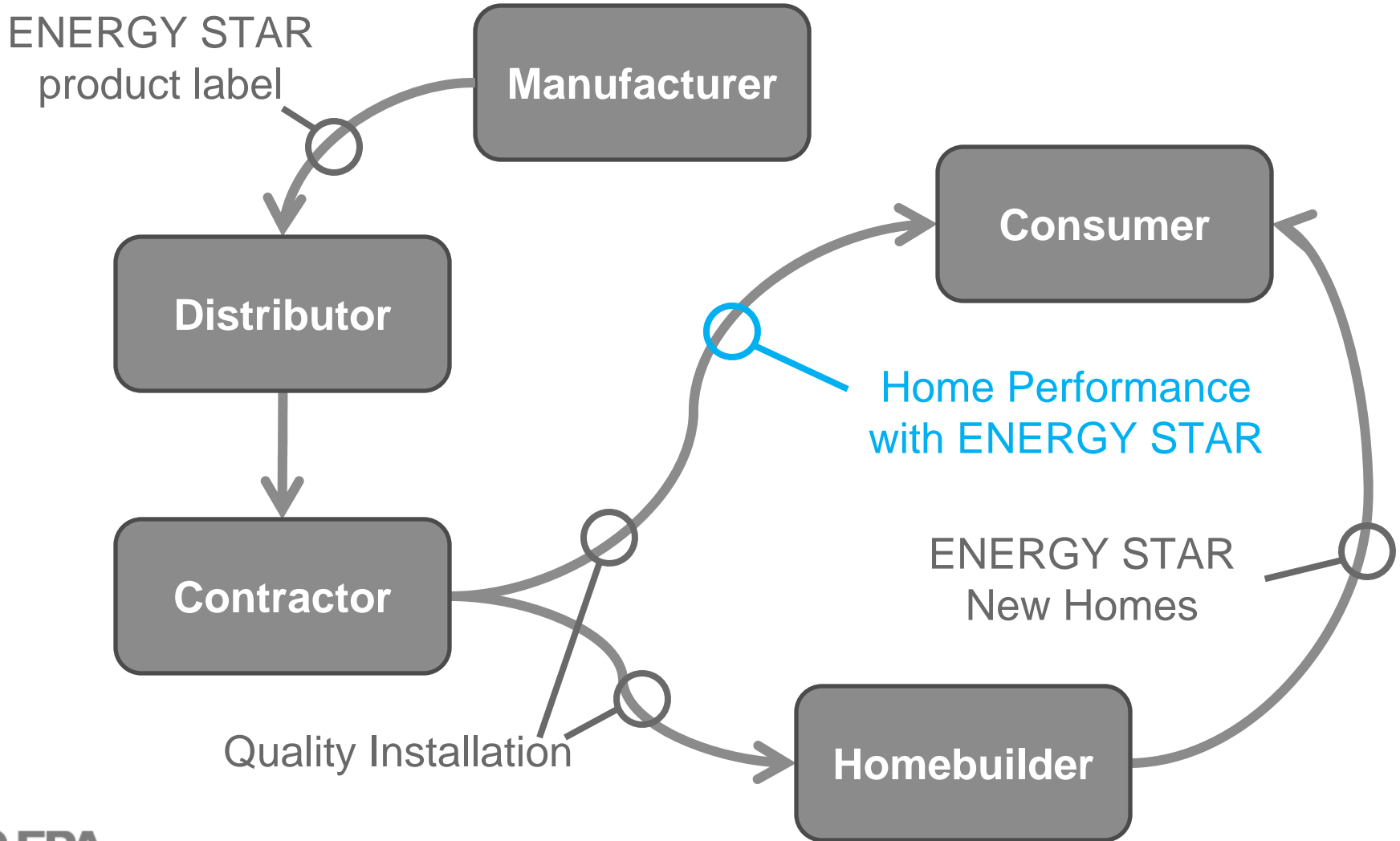
- Current Programs



- Program Highlight

- In 2010, Southern California Edison successfully completed over 1,100 ESQI jobs

Multiple points of influence



Home Performance with ENERGY STAR



- Sponsored by a utility, state or local gov't
- A network of specially trained contractors
 - Comprehensive audit with diagnostic tools
 - Recommend a package of improvements that typically save 20% total energy use
 - Ready to complete work – or provide contacts
 - Homeowner chooses and pays for work
 - Post work performance test, report to sponsor
- Sponsored delivered quality assurance and reports back to EPA

HPwES to the Rescue!



- Whole-house energy inspection
 - Energy specialist trained in building science
- Diagnose why performance is poor
 - Connect the comfort dots
- Summary report
 - Findings
 - Recommendations
 - Estimated costs and savings

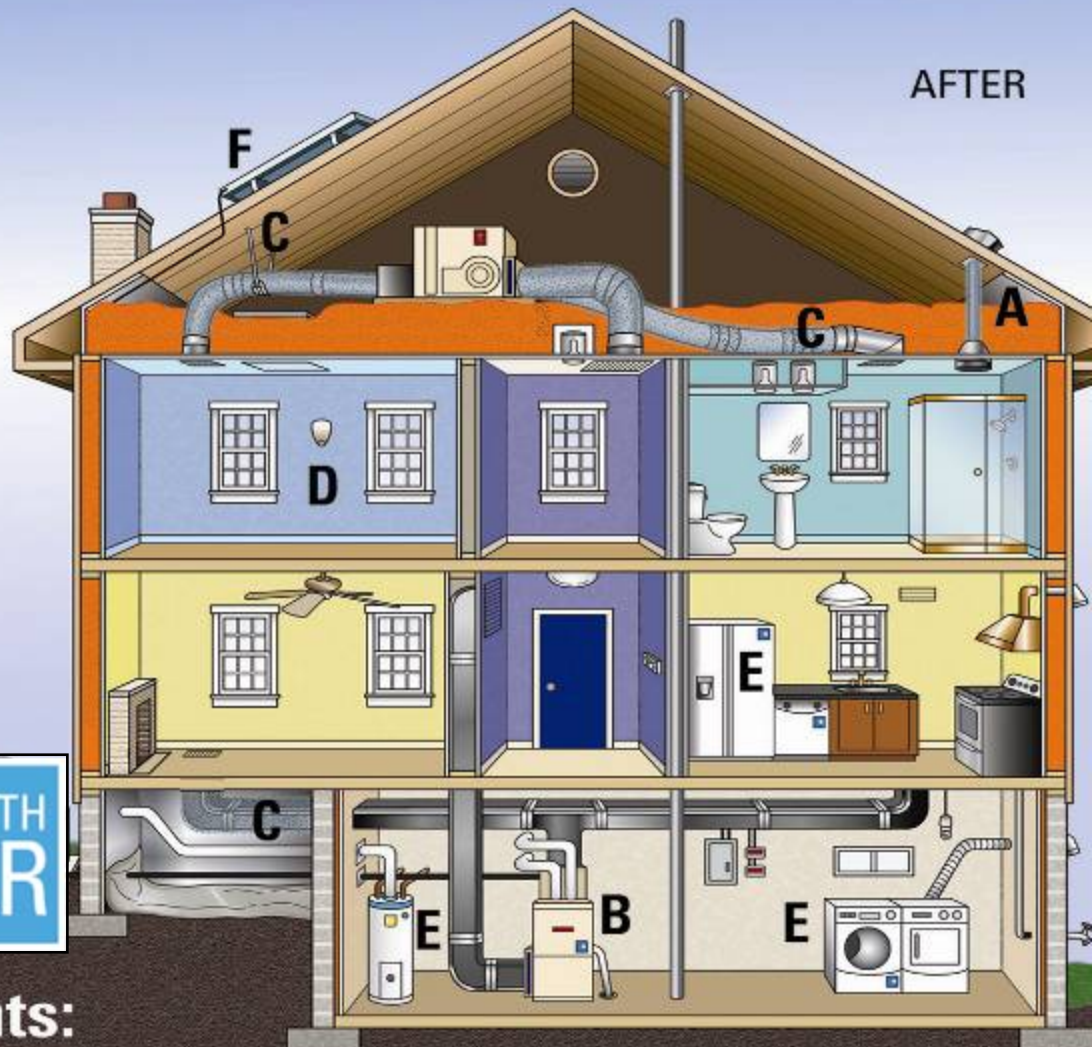
SELL THE JOB – NOT THE AUDIT
DO WORK – TEST OUT



BEFORE



AFTER



Typical Home Improvements:

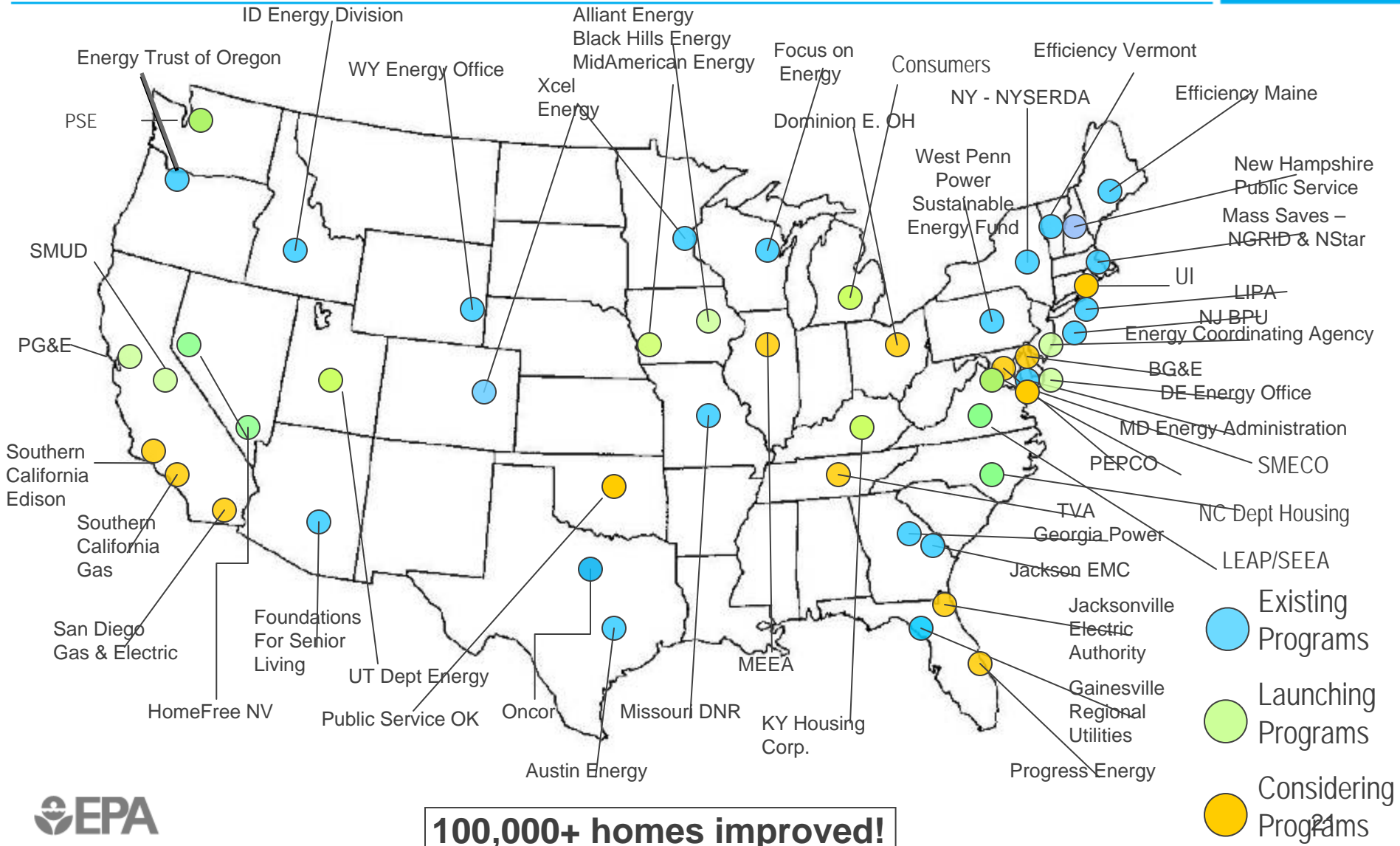
- A** Sealing Air Leaks and Adding Insulation
- B** Improving Heating and Cooling Systems
- C** Sealing Ductwork
- D** Replacing Windows
- E** Upgrading Lighting, Appliances, and Water Heating Equipment
- F** Installing Renewable Energy Systems

No HPwES without QA



- **Essential to contractor's long term success**
 - Energy savings are real
 - Credibility/reputation demonstrated
- **Requirements**
 - Contractor participation agreement
 - QA starts with reporting, no program w/o it
 - 100% job report review
 - 5% onsite inspection (1 in every 20 jobs)
 - Customer satisfaction survey
 - Sell QA upfront !

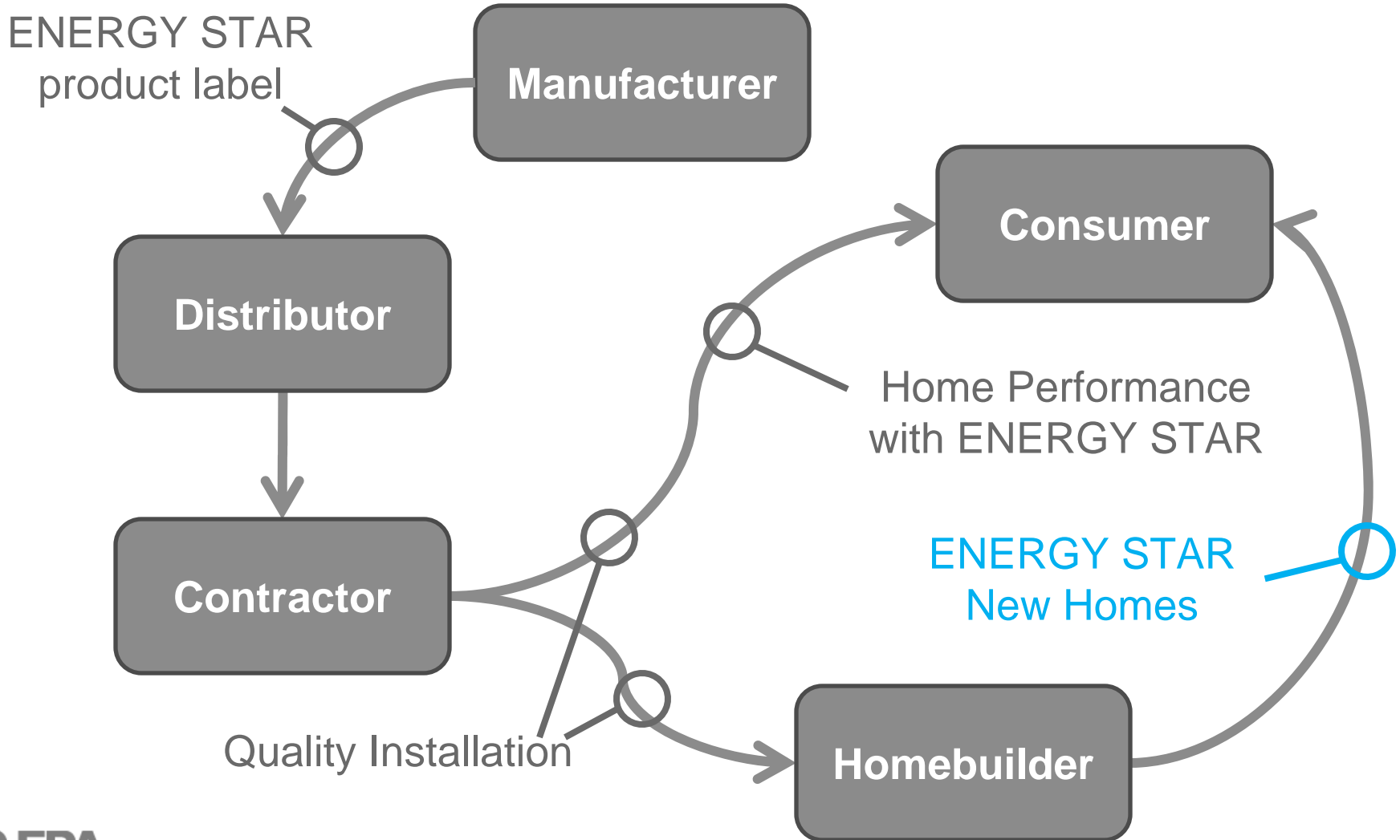
HPwES 2010 - Becoming a Known Program



100,000+ homes improved!



Multiple points of influence



ENERGY STAR for New Homes

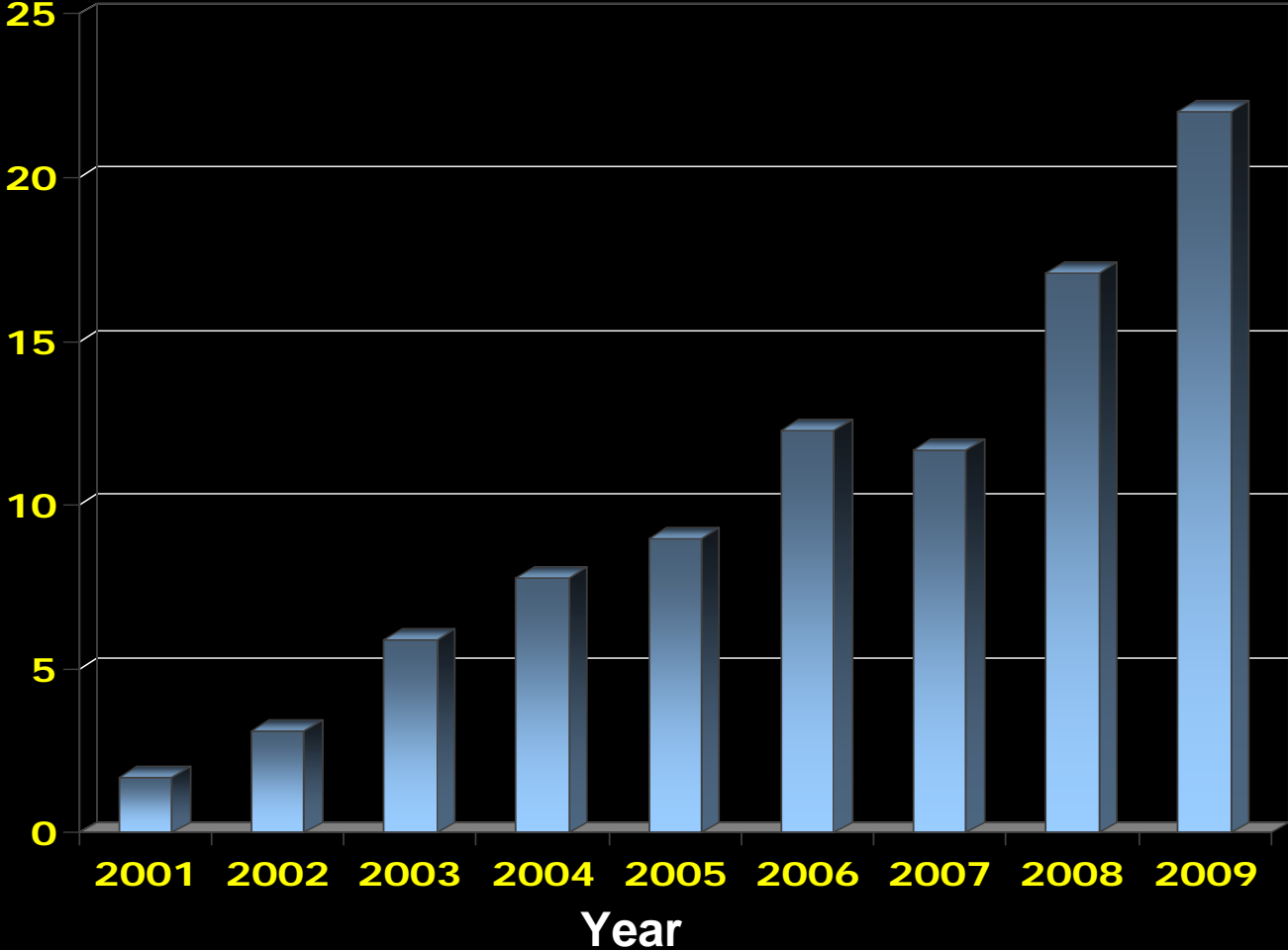


- Labels new homes that meet ENERGY STAR guidelines
- Requires test and inspection by 3rd party home energy rater
- Work with homebuilders (8,500 partners)
- EEPS may sponsor and/or incent

ENERGY STAR FOR HOMES ONE IN FIVE HOMES IN 2009



% Market Penetration



ES Homes Version 3.0



- Effective January 2012
- Option to qualify by following baseline design
 - Baseline includes ENERGY STAR heating equipment in the North, cooling equipment in the South. Or an ENERGY STAR GHP anywhere.
 - May instead demonstrate equivalent performance according to HERS-approved simulation
- Quality Installation credentialed contractors will be required for both options, including QI checklists by both contractor and rater.

ENERGY STAR HVAC wish list



- Access to product POS, through contractors
- Equipment that is easier to install and maintain correctly (including guaranteeing appropriate system design)
- Synergistic cooperation between DR and EE communities
- Incentives for non-equipment energy savings measures – Home Performance and Quality Installation
- More educated consumers, with more information about their homes and contractors



Questions?

ENERGY STAR
HVAC products

Abigail Daken
Daken.Abigail@epa.gov
202-343-9375

Home Performance with
ENERGY STAR

Chandler Von Schrader
Vonschrader.Chandler@epa.gov
202-343-9096

ENERGY STAR for New
Homes

Sam Rashkin
Rashkin.Sam@epa.gov
202-343-9786

ENERGY STAR Quality
Installation

Ted Leopkey
Loepkey.Ted@epa.gov
202-343-9659
