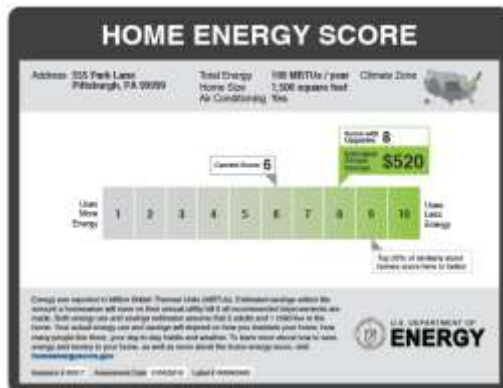


Residential Buildings Initiatives



Residential Technology Research Priorities Road-Map

Thermal Load

Resulting Research Priorities

Context:
Thermal Loads Substantially Reduced as Homes Approach Net Zero Ready

| Thermal Load | Thermal Load | Thermal Load | Thermal Load | Thermal Load | Thermal Load |
|---------------|---------------|----------------|-----------------|---------------------|--------------------------|
| 1970 - 1980 | 1980 - 1990 | 1990 - 2000 | 2000 - 2010 | 2010 - 2020 | 2020 - 2030 |
| Thermal Perf. | Thermal Perf. | Thermal Perf. | Thermal Perf. | Thermal Perf. | Thermal Perf. |
| | | Water Man. | Water Man. | Water Man. | Water Man. |
| | | Ventilat'n/IAQ | Ventilation/IAQ | Ventilation/IAQ | Ventilation/IAQ |
| | | | Low-Load HVAC | Low-Load HVAC | Low-Load HVAC |
| | | | | Eff. Comps/MEL's | Eff. Comps./MEL's |
| | | | | Transaction Process | Bldg. Integr. Renewables |
| | | | | | Transaction Process |

With advent of insulation in codes, critical research addresses effective insulation, air sealing, and windows.

As codes ramp up, critical research continues to address effective insulation, air sealing, and windows.

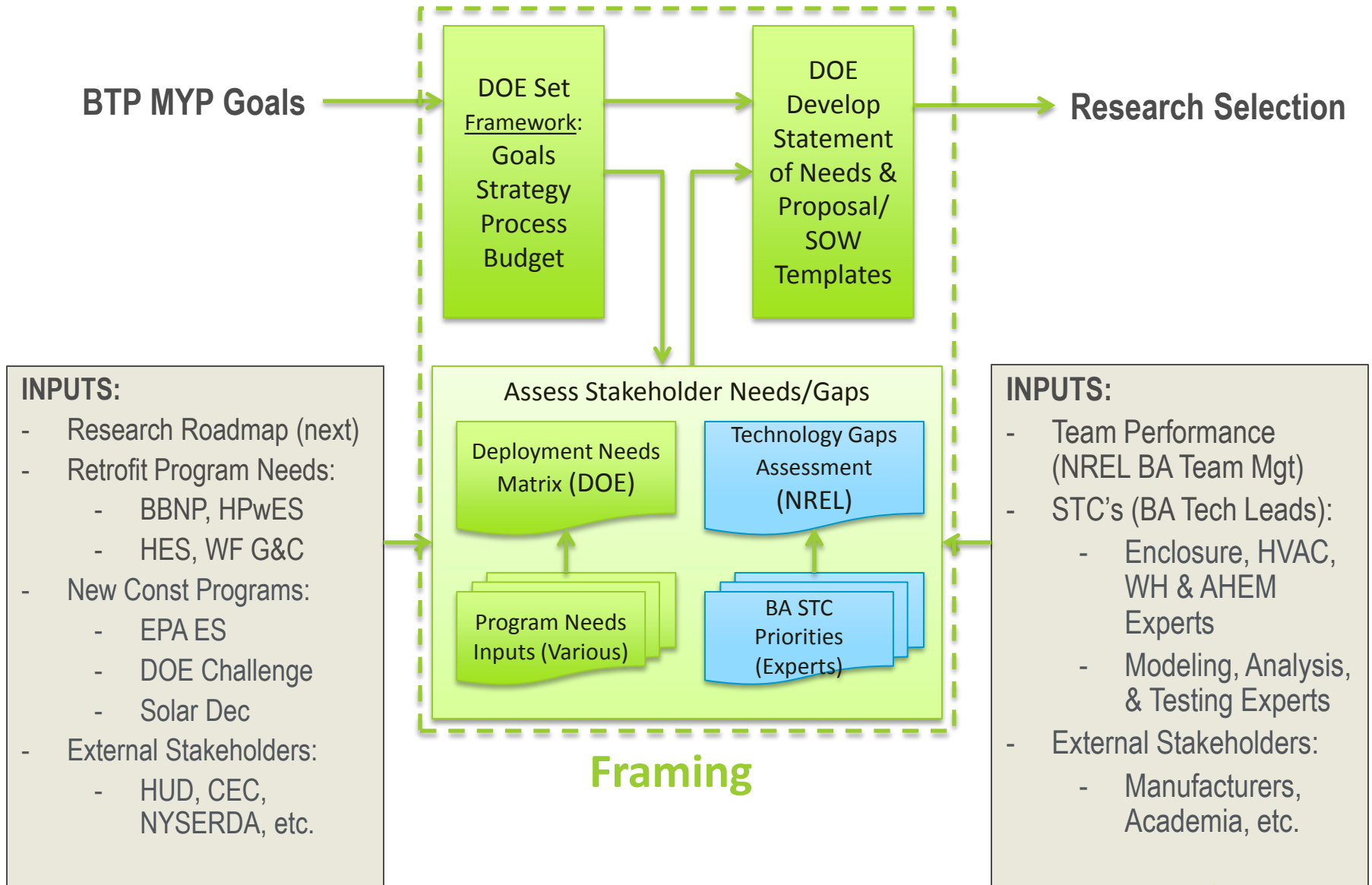
Tighter, better insulated homes demand water management, ventilation and IAQ.

Thermal loads becoming so small, need low-load HVAC and whole-house dehumid. due to longer swing seasons.

As thermal loads continue to shrink, reducing other loads become critical. Also need to address 'O' value in trans. process.

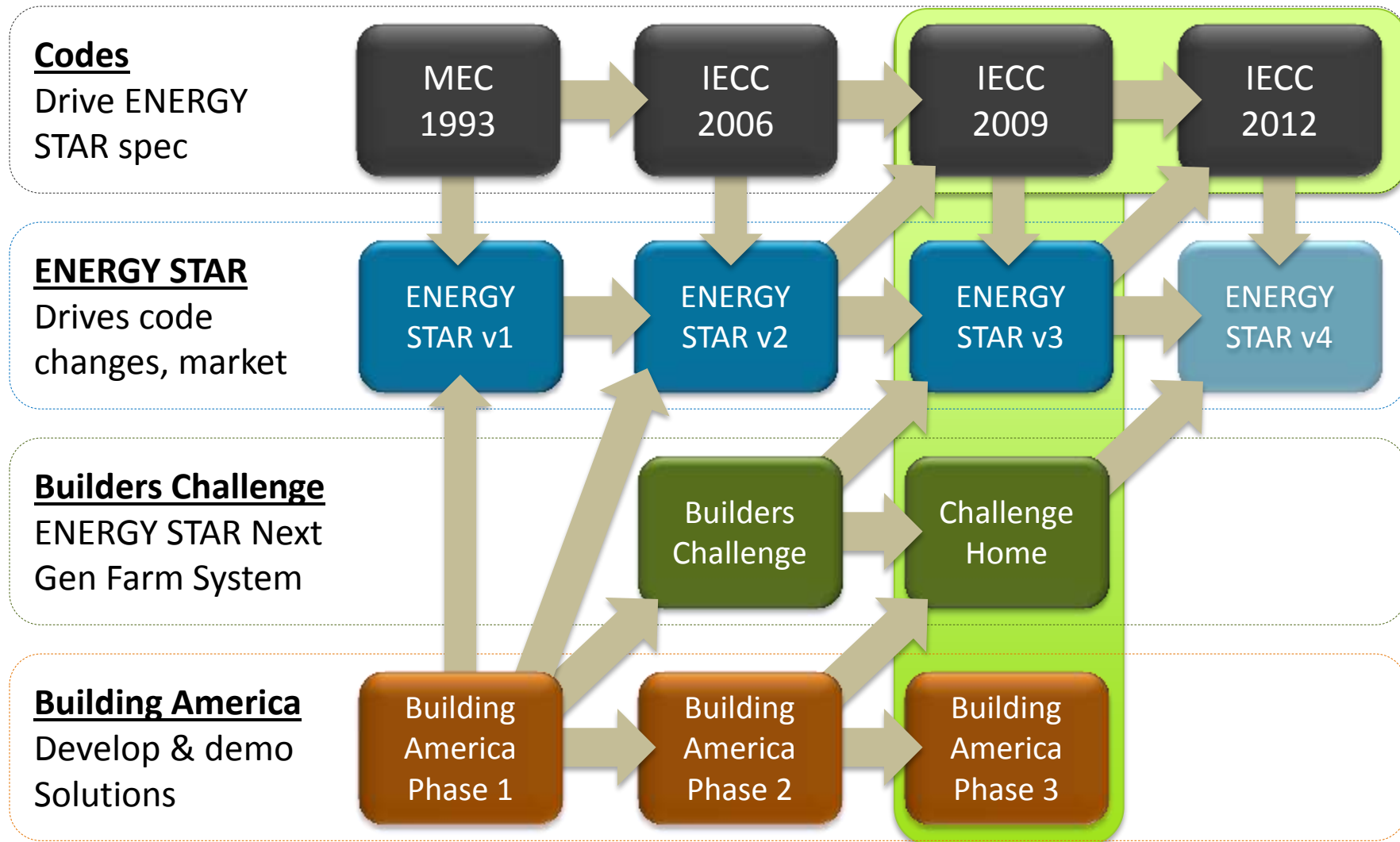
With no/ultra-low load homes, research addresses other loads, renewables, and transaction process

FY13 Building America Research Strategic Framework



Residential Integration Deployment New Homes

We Are Here



World-Class
Research...



...At Your
Fingertips

www.BASC.energy.gov





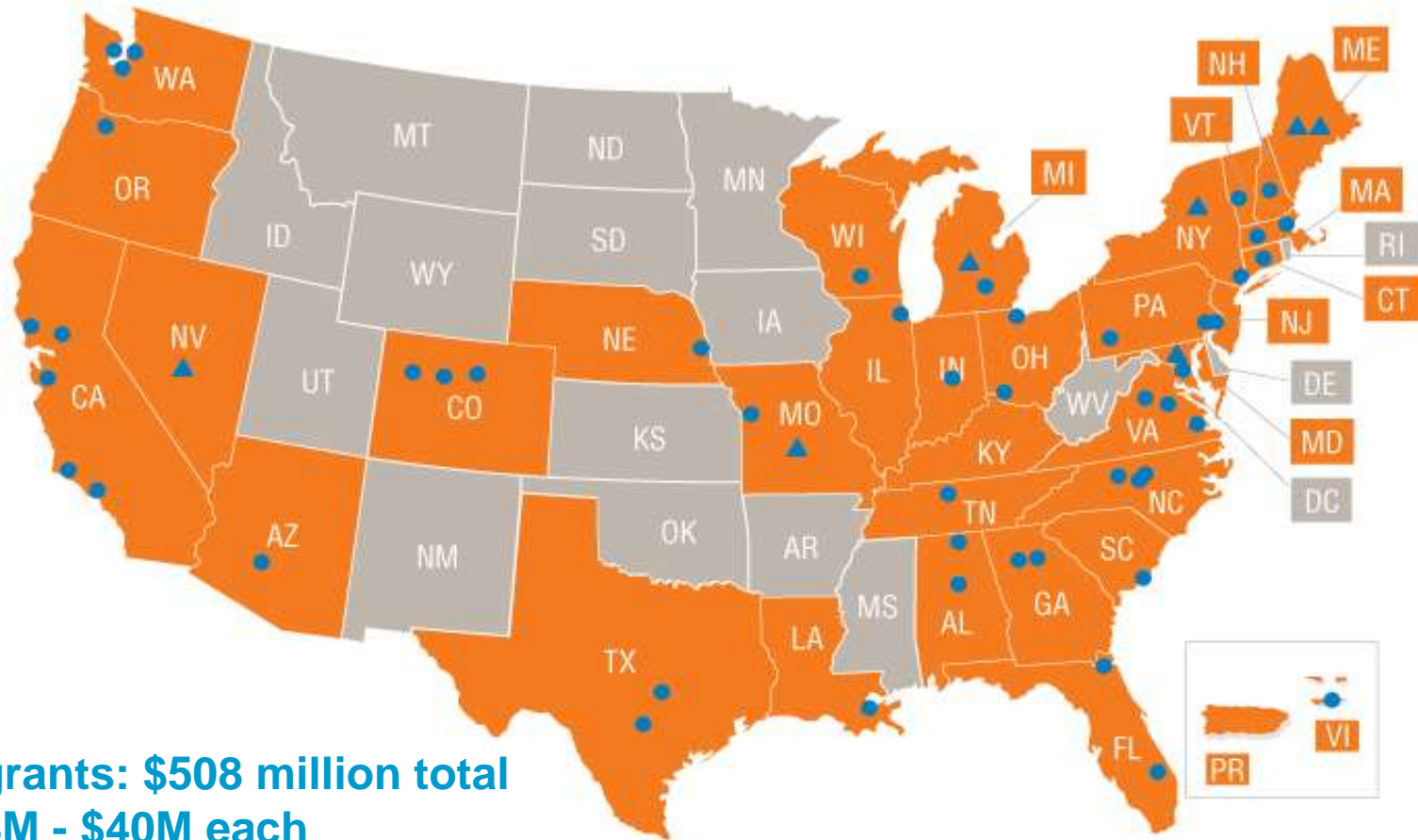
Home Performance with ENERGY STAR



 New Program since Oct. 2011

 Potential New Program

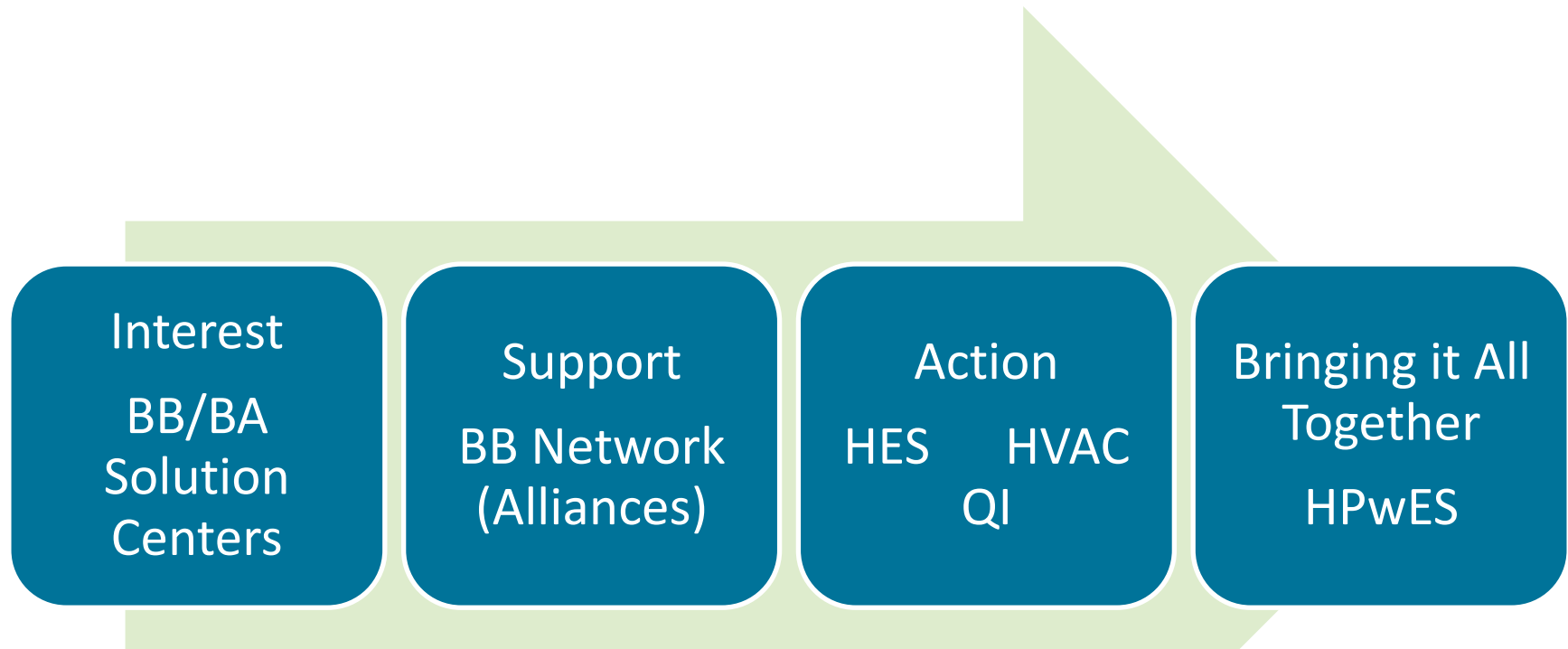
Better Buildings Neighborhood Program



- 41 grants: \$508 million total
- \$1.4M - \$40M each
- Timing: mid-2010-end 2013

- City/County Level Grant
- Statewide Grant
- States With Grant Activity

Support for Home Energy Upgrade Programs



Abbreviations

BB: Better Buildings

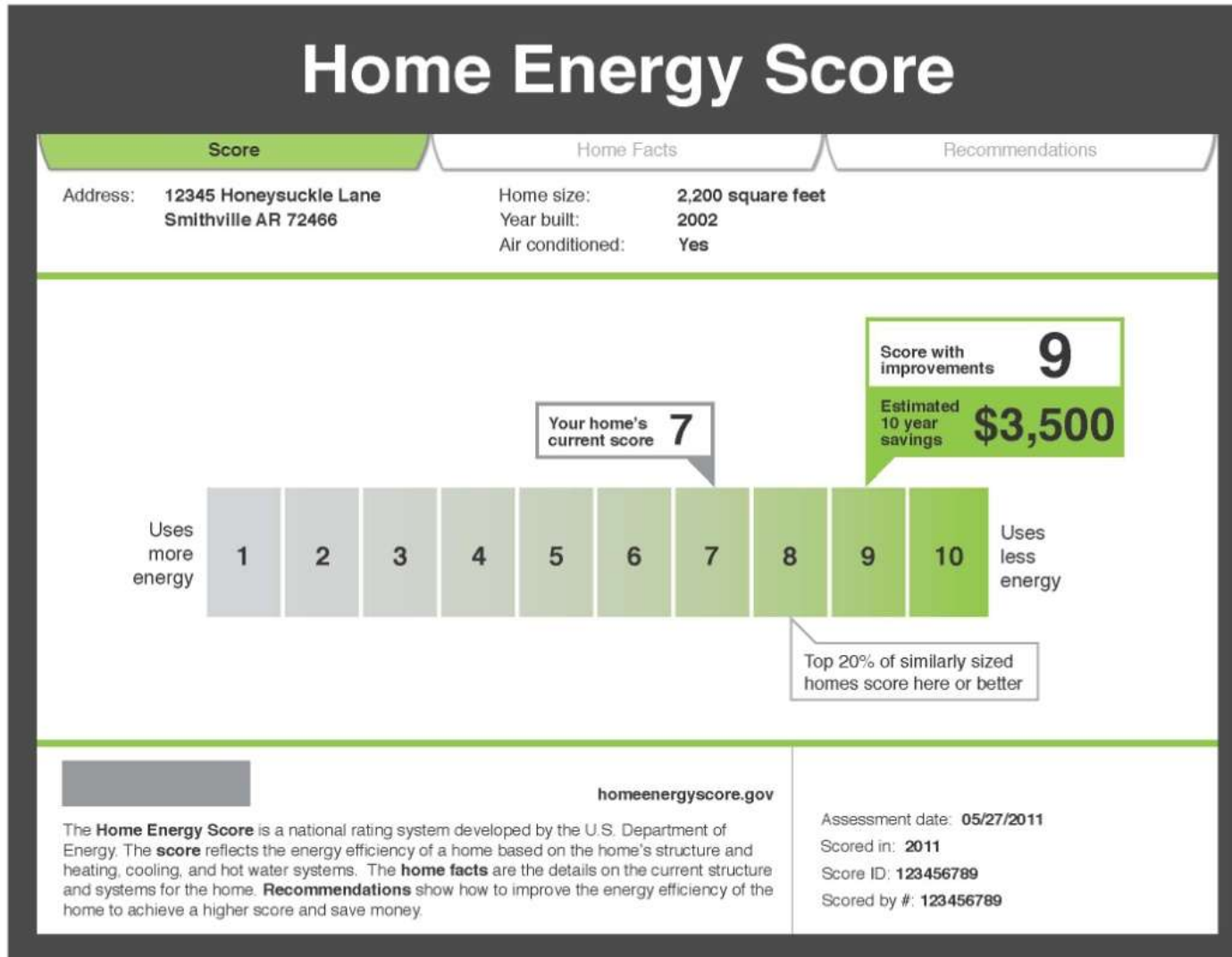
BA: Building America

HES: Home Energy Score

HVAC QA: HVAC Quality Installation

HPwES: Home Performance with ENERGY STAR

Home Energy Score





2013 Solar Decathlon and Energy XPO: October 3–13, 2013 in Irvine, CA