



Emerging Technologies: Next Big Ideas

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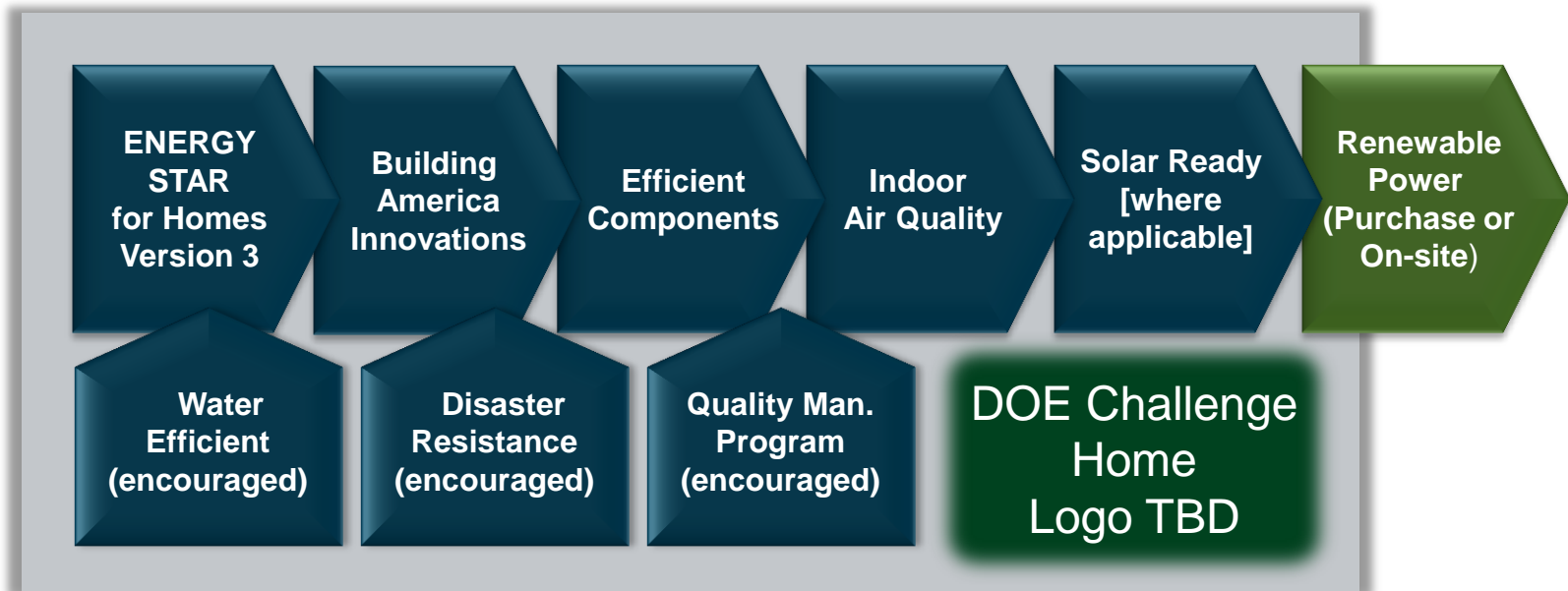
Building Technologies Program

April 3, 2012

The Right Way to do Net-Zero Ready Homes with...

- Compelling Builder Business Case
- Compelling Consumer Value Proposition

Defining Net-Zero Ready Home:



Builder Business Case for Net-Zero Ready Homes

Minimize Cost

NAHB estimates for every **\$1,000 increase** in sales price, nearly **250,000 households** fail to qualify for a mortgage on a typical new home.

[http://www.nahb.org/fileUpload_details.aspx?contentTypeID=3&contentID=40372&subContentID=112293]

Maximize Value

so homebuyers are compelled
to want new housing again.

Innovation/Value Premium

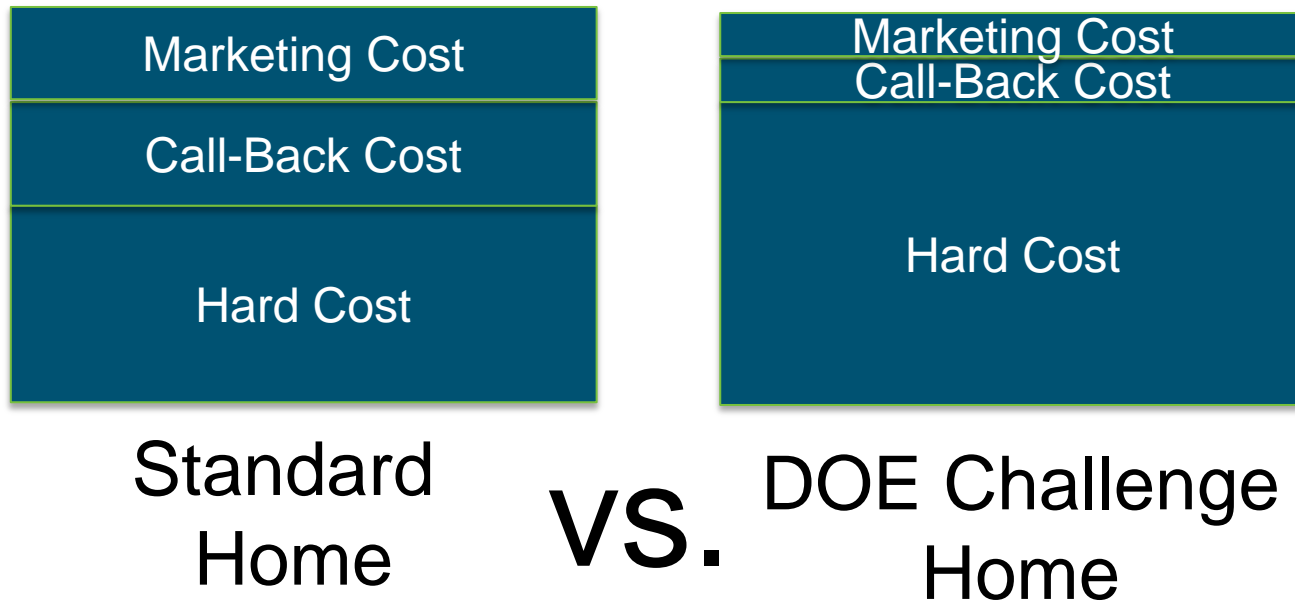
Price Based on
'Value', NOT Cost



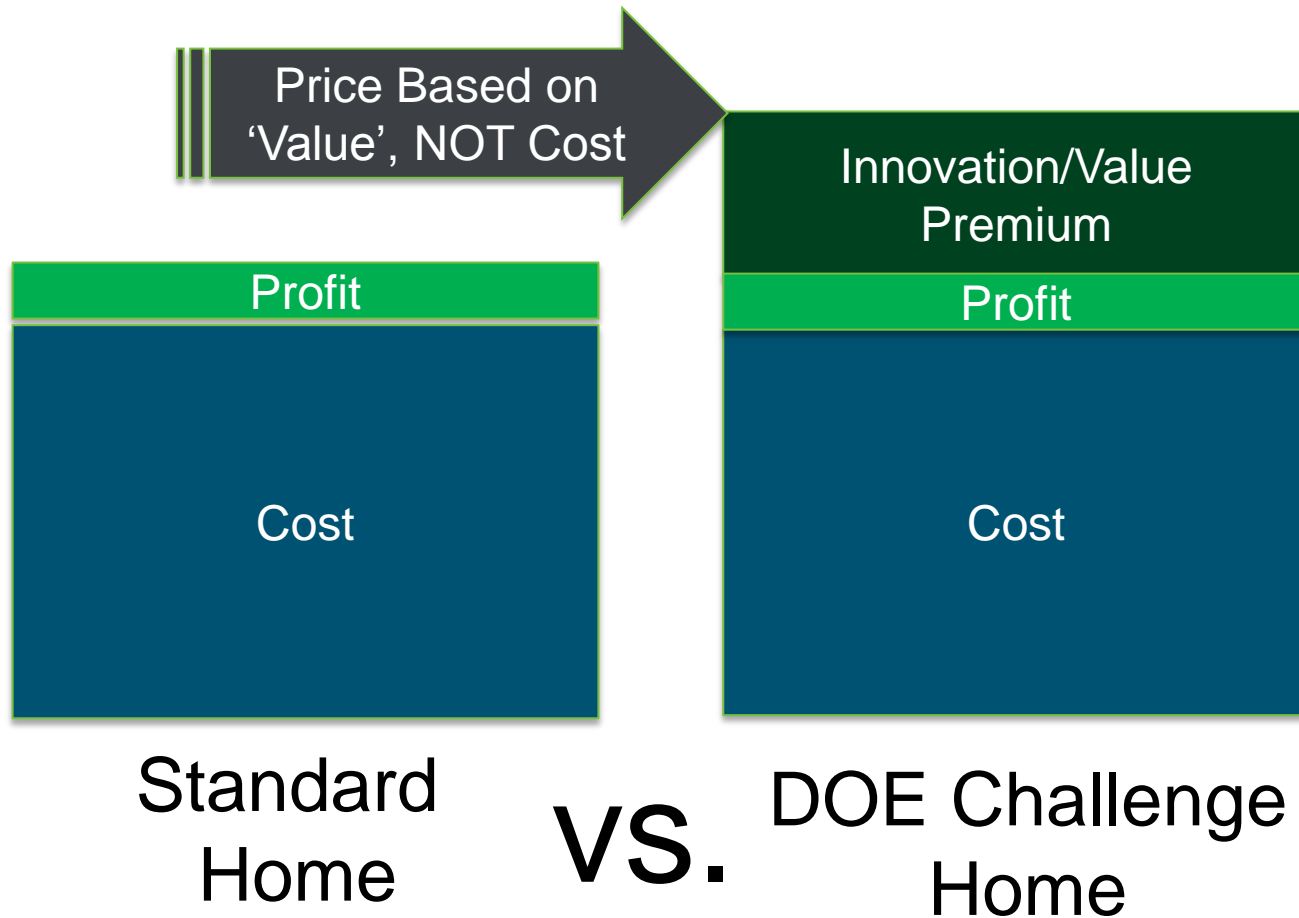
VS.



Home Innovation Real Cost



Home Innovation/Value Premium



The closer link to leadership,
the higher the innovation/value premium.

Innovation Leadership Example



Innovation option
can't look the same
as the standard option.

Innovation Looks Different



2012 Toyota Highlander



Lexus RX400



Existing Home:
Low Performance



Retrofitted Home:
High-Performance

Innovation Mark of Excellence



Consumer Value Proposition for Net-Zero Ready Homes

The story of Dyson



Root Cyclone™ technology

Root Cyclone™ technology uses powerful centrifugal forces to separate dust from the air. New Dyson cylinder machines have three distinct stages of cyclonic separation - each engineered to capture smaller and smaller particles.

Air velocity is: 20 metres per second in the outer cyclone, 50 metres per second in the core separator, 80 metres per second in the inner cyclones. Dust particles are subjected to forces of: 500G in the outer cyclone, 29,000G in the core separator and 100,000G in the inner cyclones (around 20,000 times greater than a roller-coaster ride).

**The
DOE
Challenge
Home
Story**

DOE Challenge Home
Logo TBD

Symbol of Excellence

Think of the extra confidence going to a doctor ranked in the top one percent in his or her field. Similarly, each DOE Challenge Home builder is in the top one percent of builders in the country meeting extraordinary levels of excellence and quality specified by U.S. Department of Energy (DOE) guidelines.

Feel great knowing you choose a home offered only by a select group of leading edge builders.



Strong Heritage

Every DOE Challenge Home starts with a solid foundation of building science specified by ENERGY STAR for Homes Version 3. Then each labeled home includes advanced technology solutions derived from world-class research conducted under the U.S. DOE building America Program.

**Look for the most effective and proven innovations
in every labeled home.**



Beyond Current Code

There's only one chance to build quality into a new home because it's cost prohibitive to go back and change construction and internal systems. Every DOE Challenge Home is constructed to meet forthcoming code requirements to lock in future value.

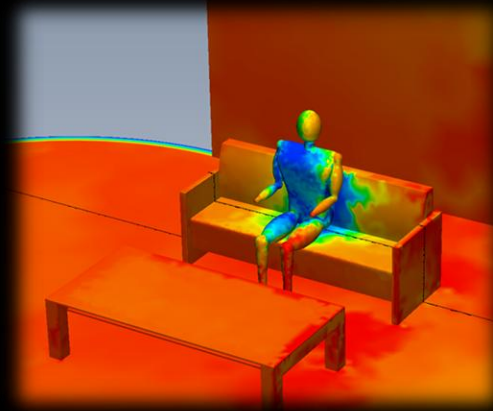
It's great peace-of-mind knowing the largest investment of a lifetime won't be obsolete in a few years!



No or Ultra-Low Utility Bills

Many experts forecast it won't be long before homebuyers insist on new homes with minimal or possibly no utility bills. There's no reason to wait. Every DOE Challenge Home is so energy efficient, a small solar system can often offset most, or all, of your utility bills. And look for important details that can save \$1,000's installing a solar system in the future.

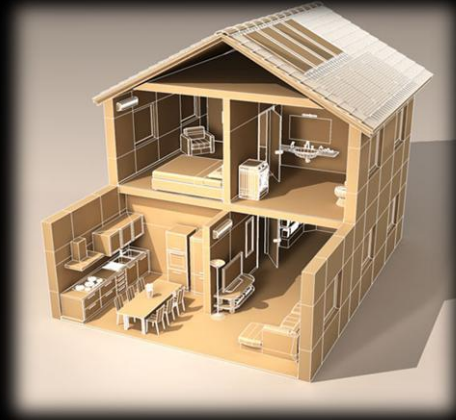
**Enjoy never having to worry
about rapidly increasing utility costs.**



Luxurious Comfort

Extraordinary attention to detail (e.g., insulation, air sealing, advanced windows and engineered systems) included in every DOE Challenge Home surround you with even temperatures and quiet in every room and floor.

It's time your next new home provides the same performance you expect in a luxury car.



Better Components

Every DOE Challenge Home is equipped with ENERGY STAR qualified appliances, lighting, fans, and space conditioning equipment. In addition, advanced water distribution helps ensure near-instant hot water at each fixture while saving 1,000's of gallons of wasted water.

**Quality products should be standard
in homes this well built.**



Breathe Better

Since we spend about two-thirds of our time each day inside our homes, every DOE Challenge Home has a comprehensive package of measures that control dangerous pollutants, provide continuous fresh air, and effectively filter the air you breathe.

Now you can provide a healthier home for your family.



Better Protection

DOE Challenge homes employ advanced construction practices that help mitigate risks of mold and moisture problems, ensure combustion safety, and minimize damaging UV radiation. In addition, builders are encouraged to include regionally appropriate disaster-resistant construction practices.

**Experience living in a home
built to last hundreds of years.**



Quality Construction

Rigorous specifications are only good if they are adequately enforced. Detailed checklists, inspections, and advanced diagnostics with independent verifiers help ensure the performance of every DOE Challenge Home. In addition, builders are encouraged employ a comprehensive quality management program.

**Now you can hold your next new home
to a higher standard.**



Sustained Value

The advanced levels of affordability, comfort, quiet, health, durability, and quality delivered in every DOE Challenge Home are too compelling to ignore. That's why DOE believes this is where all housing is headed in the future.

**Now you can feel truly confident
making one of life's largest purchase decisions.**

DOE Challenge Home
Logo
TBD

For More Information

Visit the Challenge Home web site to learn more
and find approved builder partners:

<http://www1.eere.energy.gov/buildings/challenge/>

Thank You

Questions?

For More Information:

<http://www1.eere.energy.gov/buildings/challenge/>

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