Money Isn't All You're Saving

ENERGY STAR 'Brand' Awareness

- ***Recognized*** *by 40% of U.S. households*
- ***Understood*** *by 50% of households (including those seeing it for the first time)*
- *Of households reporting an ENERGY STAR purchase, half were* ***influenced*** *by the label*

Found on U.S. Congress Report

One could argue, that since the builder is providing documentation on what the building is supposed to contain, that sooner or later events will catch up with the builder and so he will be motivated to provide quality assurance. This argument has been tested a number of times in practice, and, in my experience and that of the experts I have consulted, always fails.

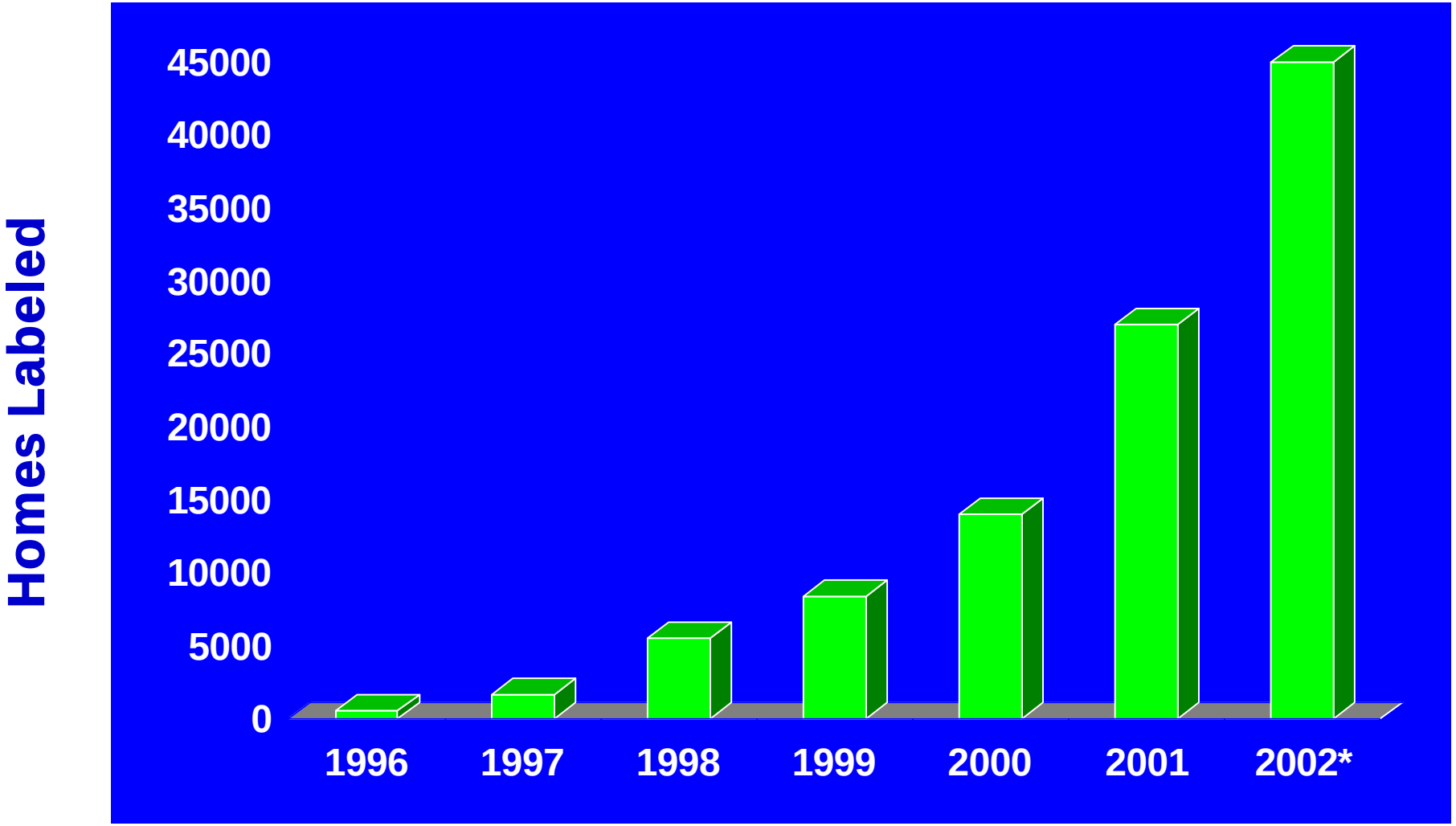
The first example was the Hood River Conservation Project, run by Pacific Power and Light in the early 1980's. The project established prescriptive check lists for measures to be installed in homes, and provided 20% random sampling to inspect as to whether the materials were actually installed and installed properly. It was believed, especially in a small town with stable contracting businesses, that contractors would recognize their self-interest in quality control and that 20% inspection should be sufficient to catch and rectify the problems. Experience proved definitively otherwise. Eventually, PP&L decided, at great expense, to require 100% inspection because they found that they simply could not deliver reliable installations without it.

Pacific Gas & Electric went through a similar demonstration project in the Delta area in the mid-90's. They reached exactly the same conclusion: without inspection, subcontractors wound up failing to install the promised levels of energy efficiency.

In theory, this problem eventually could be solved through construction defects litigation. But this is not a desirable solution.

In the early 1980's, California builders found that a tax credit for energy efficiency that was available in theory was unavailable in practice due to uncertainties caused by litigation. That is why the California Building Industry Association strongly supports third-party certification with physical inspections.

ENERGY STAR for Homes Program Growth



** 2002 projected based on data from January through June*

What is an Energy Star Labeled Home?

- 30% More Efficient than the Model Energy Code (MEC) and 15-20% More Efficient than the IRC and IECC Code
- Performance Tested – Blower Door/Duct Test
- Third Party Verified
- Yes/No, Consumer Decision

Who is Guaranteed Watt Saver

Engineers - Consultants - Inspectors

Guaranteed Watt Saver Systems, - West, Inc.

- A Professional Engineering Firm with Over 20 Years of Experience
- Certified Energy Star Provider and Rater
- Master Certified Inspectors and Building Science Professionals (*Energy Star*, *Engineered For Life*, *Environments For Living*)
- Recipient of the EPA Partner of the Year Award in 2000 and ??? for Energy Efficiency
- No. 1 Provider in Texas with Over 3000 Homes labeled

Your Energy Star Partner!

Typical Features of an Energy Star Home

- Efficient Envelope – *Insulation, Tight Construction, Advanced Windows*
- Efficient Construction – *Tight, Insulated Ducts or Internal Ducts*
- Efficient Equipment – *Heating, Cooling and Hot Water*

What is the process?

- Plan Analysis
  - Must score 86 points
- Third Party On-Site Verifications
  - First Inspection (pre drywall)
  - Final Inspection (completion)
- Certification

Plan Analysis

- HVAC Sizing
  - The HVAC system is sized for the builder
    - Know all the components
    - Look at sizing from a system's view
    - Do not oversize

BENEFITS OF HVAC SIZING

Plan	Current HVAC Tonnages	Total Cost	GWSSI HVAC Tonnages	Total Cost Installed by HVAC Contractor	Cost Savings
18303	4	$3,288.00	3	$2,692.00	-$596.00
78909	3.5/3.5	$5,690.00	3.5/4	$6,111.00	+$421.00
25000	5.0	$3,526.00	2/2.5	$4,766.00	+$1,240.00
33202	3/3	$5,384.00	2.5/2.5	$4,652.00	-$732.00
36606	5	$3,526.00	3.5	$2,845.00	-$681.00
39101	3/3	$5,537.00	2.5/2.5	$4,652.00	-$885.00
61303	3/5	$6,371.00	2.5/3.5	$5,171.00	-$1,200.00
62909	2.5/5	$5,852.00	5	$3,526.00	-$2,326.00
64808	2/4/5	$9,036.00	3.5/4	$6,133.00	-$2,903.00
Totals	**58.5**	**$46,046.00**	**43.5**	**$37,725.00**	**($7,662.00)** / 9 plans = $851.00 savings per plan

Chart shows a sample of what the builder actually saved.

WHAT IS H.E.R.S.?
(Home Energy Rating System)

- Rating Scale is from 0 to 100
- Model Energy Code, 1993 (MEC) – 80 points
- IECC = 81–83
- Energy Star Rating = 86
- Each Rating Point is Equal to 5% decrease in consumption for heating/cooling/water heating
- 80 to 86 = 6 points = 30% More Efficient than the MEC

Plan Analysis

How do you score a house?

Third Party Verification

- First Inspection
- Final Inspection

First Inspection

Performed at Pre-Sheetrock Stage

- Visual Inspection
- Passed: Continue With Construction
- Suggested by EPA but Not Required for Energy Star certification

Final Inspection

- House Stage: Weather Stripped, Insulated, Power, Heating & Cooling Units Set
- Blower Door Test = .35 ACH
- Duct Blast Test each A/C System = 10% Leakage Maximum
- Passing Inspection

Labeled Home

Blower Door Testing

What?

The Blower Door is a diagnostic instrument used to measure air leakage in a building shell and its ductwork

How?

The instrument consists of a temporary door covering installed in an outside doorway. A blower forces air into or out of the building. The Blower Door temporarily duplicates wind speeds up to 25 mph on all sides of the building.

Why?

- Document the construction air tightness of new houses.
- Measure the effectiveness of weatherization work performed on a building.
- Measure duct leakage in forced air systems.
- Identify the location of the most significant leaks.

Who?

Energy Consultants such as *Guaranteed Watt Saver Systems-West, Inc.*

Weatherization contractors

Raters – www.natresnet.org

Certification