

Putting the Pieces Together: Incentives for High Performance Homes in Arizona

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Overview

- Incentive goals
- Federal and state tax credits
- Utility incentives
 - energy efficiency
 - renewable energy
- Examples
 - High Performance Home (EE only)
 - Zero-Energy Home (EE and RE)
- Incentive options for high performance homes

Incentive Goals

Government

- Help overcome market barriers to new building practices and technologies
- Enhance energy independence / energy security
- Address global climate change and improve air quality

Homebuilders and homeowners

- Reduce risk and lower initial costs to investment in more efficient homes

Utilities

- Lower on-peak electricity demand and natural gas consumption
- Reduce energy use and system costs

Federal and State Tax Credits

	Tax Credit To / Amount	
	Builder	Homeowner
<i>Federal Tax Credits</i> (scheduled to expire 12/31/08)		
Energy efficient new homes	\$2,000	
Solar PV systems		\$2,000
Solar thermal systems		\$2,000
<i>State Tax Credits / Exemptions</i>		
Solar systems (PV or solar thermal)		25% of cost (max \$1,000)
Property Tax Exemption – solar systems		RE systems not included in assessment values
Sales tax exemption – solar systems	No sales tax	

For more information, see:

www.dsireusa.org , www.seia.org and www.azcommerce.com/energy

Utility Programs and Incentives: Current Structure

- Energy Efficiency
 - Utility rebates
 - **APS**: \$400 per home (ENERGY STAR)
 - **TEP**: \$400 per home (Guarantee Home)
 - **SRP**: PowerWise Homes – Tier 1 and new Tier 2
 - **Southwest Gas**: ENERGY STAR Homes
 - Technical assistance and training
 - Sales and marketing support
- Renewable energy
 - PV: \$3.00/watt (grid connected)
 - 2 kW system = \$6,000 rebate (approx. 40% of cost)
 - Net metering: retail or time of use rates
 - Solar hot water: \$0.50 per kWh
 - Typical system (3,000 kWh/year) = \$1,500 rebate

Example 1: High Performance Home (EE only)

- 40% or greater energy savings (versus 2006 IECC) from energy efficiency measures
- Incremental cost to builder
 - Incremental cost: \$3,500 - \$4,000
 - Federal tax credit (\$2,000)
 - Utility rebate (current) (\$400)
 - Net incremental cost: \$1,100 - 1,600
- Annual savings versus a typical home
 - Grid electricity: 7,000 kWh (40% reduction)
 - Peak electricity demand reduced by 50%
 - Natural gas: 280 therms (57% reduction)
 - Annual energy cost savings: \$1,170

*Also meets ENERGY STAR new homes qualification requirements.

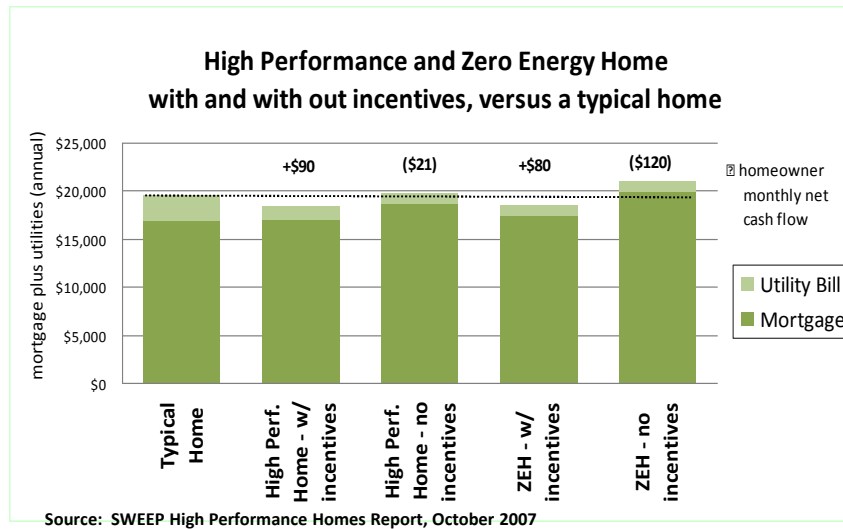
Example 2: Zero-Energy Home (EE and RE)

- 50% or greater energy savings
 - EE measures plus 2 kW PV and solar thermal hot water
- Incremental cost to builder
 - Incremental cost: \$22,000 - \$24,000
 - Federal tax credit (\$2,000)
 - Utility rebates – EE (\$1,000)
 - Utility rebates – RE (\$7,500)
 - Net incremental cost (builder): ~\$12,000 – 14,000
- Annual savings versus a typical home
 - Grid electricity: 10,000 kWh (54% reduction)
 - Peak electricity demand reduced by 70-75%
 - Natural gas: 310 therms (63% reduction)
 - Annual energy cost savings: \$1,241
 - Value of PV generation: \$260 per year

Summary: current incentive structure

	High Performance Home (EE only)	Zero Energy Home (EE and RE)
Incremental cost to builder	\$4,000	\$22,000
Federal EE tax credit	\$2,000	\$2,000
Utility incentives	\$400	\$7,900
Total incentives	\$2,400	\$9,900
Net cost to builder	\$1,600	\$12,100
Homeowner tax credits (federal and state)		\$5,000
Annual energy savings, homeowner	\$1,170	\$1,500
Net savings, homeowner (mortgage + utilities)	\$91 / month	\$84 / month

Incentives and Homeowner Cashflow



Incentive levels: Illustrative examples

- **Incentive Tier 1 – ENERGY STAR qualified**
 - \$350 – 500 per home
- **Incentive Tier 2 – minimum 40% energy savings***
 - Utility Incentive amount: **\$800 - \$1,200** per home
 - Meet ENERGY STAR, Federal Tax Credit guidelines (Utah)
 - HERS Score: 70 or lower
 - Plus 'measure bundle'?
 - e.g., ENERGY STAR Lighting (>50%) and appliances
- **Incentive Tier 3 – Net-zero energy home – 50% or > energy savings**
 - Utility Incentive amount: **\$8,000 - 10,000** per home
 - HERS Score: 60 or lower (New Mexico)
 - Includes Tier 2 plus solar PV, solar thermal
 - Optional incentives for additional measures, e.g.,
 - Higher SEER AC (or evaporative cooling)
 - ENERGY STAR Lighting (per fixture)
 - Additional PV (per kW): \$3.00/watt

* Versus 2006 IECC code-compliant home.

Summary

- Incentives help achieve multiple goals
 - Remove market barriers to more efficient homes
 - Save energy and reduce peak electricity demand
 - Reduce GHGs and improve air quality
- High performance / ZEHs are cost-effective with incentives
 - Incentives support introduction of advanced technologies
 - Costs also offset by changes in design practices, e.g., advanced framing, downsizing HVAC systems
 - Achieves positive net cash flow for homebuyer
- Issues and next steps
 - Developing incentive programs for high performance homes, including ZEH
 - Providing technical support, marketing, sales, education to homebuilding industry, homebuyers
 - Streamlining incentive process and leveraging federal, state tax credits, and municipal programs (e.g., permit fee rebates)

SWEEP:

Dedicated to More Efficient Energy Use in the Southwest

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