

## Residential Energy Efficiency Program Comparison for Existing Buildings

<b>Program Parameters</b>	<b>Weatherization Assistance Program (WAP)</b>	<b>Home Performance with Energy Star (HPwES)</b>	<b>Recovery Through Retrofit</b>	<b>Home Star</b>	<b>Home Energy Rating System (HERS)</b>	<b>Leadership in Energy &amp; Environmental Design (LEED)</b>
<b>Program Sponsor</b>	DOE	EPA & DOE	White House Council on Environmental Quality (CEQ)	Not yet determined.	Residential Energy Service Network (RESNET)	U.S. Green Buildings Council (USGBC)
<b>Target Recipients</b>	Low-Income Households	Middle and Upper-Income Households	Middle-Income Households	Middle-Income Households	All-Income Households	New and Existing Buildings
<b>Program Availability</b>	All 50 states and territories	Parts of 29 states	Not yet available. Currently in planning stage. Requires local municipal participation.	Not yet available. Currently in planning stage.	Anywhere in the US where energy improvement mortgages are offered.	All 50 States. Buildings must meet LEED eligibility requirements.
<b>Program Approach</b>	Whole-House energy efficiency with Health & Safety addressed.	Whole-House energy efficiency with Health & Safety addressed.	To create an energy performance label for homes, and to create financing options that drive consumers to retrofit with a focus on energy efficiency and healthy homes.	Offers either a core set of straightforward energy retrofits for rebates or a whole-house energy audit approach to reach desired energy savings levels.	A rating provides a measure of a dwelling's energy efficiency. A HERS rating involves an on-site inspection of a dwelling's energy characteristics which usually includes performance testing. The home receives a score between 1-100.	Award points for a variety of sustainable measures implemented in a dwelling. Points are then totaled so that the building is awarded a certain "green certification" status.
<b>Program Funding</b>	Congressionally mandated Federal funding. Average dollar cost per unit of installed materials determined by DOE.	Various financing options for home owners.	Various financing options for home owners such as energy efficient mortgages and Property Assessed Clean Energy.	Possible Federal funding to get Program up and running. Various tiered financing options such as rebates for consumers. Incentive rebates will be capped at 50% of project costs. For every 5% reduction in energy over 20%, an extra \$1,500 could be rebated to the consumer.	No direct program funding, but financing options are available. Unlike an energy audit or general weatherization, HERS ratings are a recognized tool in the mortgage industry.	No specified funding beyond homeowner's or contractor's own means.

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<b>Measure Implementation</b>	Auditor and Installer are separate entities. Measures only approved by Program (Appendix A) may be installed.	Auditor and Installer MAY be the same entity. Diagnostic testing for air infiltration, duct leakage, and combustion safety conducted at the end of implementing measures.	Measures to be installed by certified contractors, but no mention if Auditor is separate from the Installer	Measures installed by contractors, but no mention if Auditor is separate from the Installer.	A HERS Rater simply provides an independent analysis of a dwelling. The HERS Rater is not a contractor who performs measure installation. The home owner is responsible for hiring a contractor, but a Rater can offer guidance.	Measure installation can be done without an audit.
<b>Measure Verification</b>	100% on-site inspections are required by subgrantee Inspectors.	Program administrator will inspect on-site no less than 15% of a specific contractor's jobs.	Not specifically stated.	Independent Inspectors inspect jobs to make sure quality work was done and that energy savings will be realized. No percentage of inspections was noted.	RESNET conducts a limited review of accredited providers' files during the course of the year.	All installed measures claiming a LEED point must be verified by an approved LEED Green Rater who will confirm that the measures meets the LEED for Homes Rating System requirements. LEED certification provides independent, third-party verification that a building project meets the highest green building and performance measures.

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<b>Training Requirements</b>	No uniform training standard. Each Grantee provides trainings for new staff that usually require passing an exam for Auditors/Inspectors. Additional trainings on specific topics are conducted by each Grantee's program throughout the year.	Training should include classroom and field sessions. Topics addressed should include: building science principles, diagnostic testing and installation best practices. Training may also include sales and business process training.	Creation of model training programs that address energy efficiency, healthy homes, and environmentally friendly homes. <i>(Specific training courses or methods are not as yet stated).</i>	Not specifically stated. Program seems to rely on existing, experienced installation contractors.	No training classes offered. Candidates must pass a test through self study. RESNET offers a test study guide outline.	No required training per se, but trainings are available for persons wishing to pass various LEED exams: online courses, in-person seminars, study guides, etc.
<b>Certification Requirements</b>	No program-wide certification standard currently in effect, but several states issue "certifications" for completion of training courses and the successful passing of exams.	BPI certification or from a similar organization with equivalent standards is recommended. Written exams and field testing should be utilized to ensure program material is understood.	Creation of a uniform set of national certification standards to qualify energy efficiency and retrofit workers. Such standards should incorporate healthy and environmentally friendly housing principles.	Installers would need to be certified to perform work under the Program. Contractors implementing Gold Star need to be BPI accredited.	To be a HERS Rater or Rater Field Inspector, an individual must pass a test administered by a RESNET accredited training entity.	LEED accredited persons must pass a LEED exam to become certified by USGBC.
<b>Contractor Incentives</b>	No standard incentives.	Possible reimbursement of training costs and diagnostic equipment costs. Awards and public recognition.	Business development training included.	Not specifically stated.	Not specifically stated.	Not specifically stated.

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<b>Consumer Incentives</b>	All installed materials are free to consumers based on a stated unit dollar average per dwelling.	Financial loans and rebates available to consumers.	Energy efficient mortgages, revolving loans, and property assessed financing which ties retrofits to the property as opposed to the owner. For PACE, home owners will need to save more on their monthly energy bills than they pay in increased housing tax for Program	50% Silver Star rebates for various energy efficient measures that gets installed in the home (up to \$3,000 per home). \$3,000 Gold Star rebates to achieve 20% energy savings in home.	An Energy Improvement Mortgage finances the energy upgrades of an existing dwelling in the mortgage loan using monthly energy savings. The owner does not have to pay for the retrofit work upfront, but rather over the course of time.	Personal incentive to create a more sustainable dwelling.
<b>Cost Effectiveness</b>	Measures installed must have a savings to investment ratio (SIR) greater than 1.	Average energy cost savings of 20% expected.	Average energy cost savings up to 40% per dwelling.	Potential 20%-40% energy savings per home. Between \$200-\$500 savings per home per year.	The Appraisal Journal documented that the market value of a home increases \$20 for every \$1 decrease in annual energy costs.	Not specifically stated.