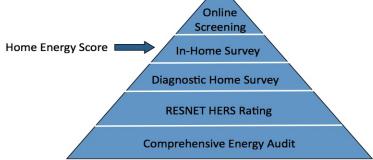
## Residential Building Energy Rating Options for Vermont (9/13/11)

| Feature                     |   | Online Screening   |   |   | In Home Survey / Diagnostic Home Survey   |  |  |
|-----------------------------|---|--|---|---|---|--|--|
| Tool                        | EPA Home<br>Energy Yardstick  | EnergySavvy  | Energy Measure<br>(EM) View   | Energy Measure (EM)<br>Home   | Home Energy Score<br>(HES)  | Energy Performance<br>Score (EPS)  | REM/Rate   |
| Company                     | U.S. EPA  | EnergySavvy  | Conservation Services Group   | Conservation Services Group   | U.S. Department of<br>Energy  | Earth Advantage  | Architectural Energy Corp.   |
| Web Site                    | http://www.ener<br>gystar.gov/index.<br>cfm?c=home_im<br>provement.hm_i<br>mprovement_ind<br>ex_tools | www.energysavv<br>y.com  | www.energymeasu<br>re.com   | www.energymeasure.  | www1.eere.energy.go<br>v/buildings/homeener<br>gyscore  | www.earthadvantage.o<br>rg/programs/homes/en<br>ergy-performance-<br>score/  | www.archenergy.co<br>m/products/remrat<br>e  |
| Description                 | Simple, on-line tool that provides a score and options for goal-setting and recommendation s          | On-line, simple tool that provides score, recommendation s, links to local contractors and immediate follow-up | New integrated suite of tools starting with simple on-line tool with ability for assessor to pick up from initial customer inputs and drill deeper in any area. Offers score and recommendations. | New integrated suite of tools starting with simple on-line tool with ability for assessor to pick up from initial customer inputs and drill deeper in any area. Offers score and recommendations. | Simplified national tool being piloted in 11 communities (with mixed results) delivered by qualified assessors. Offers score and recommendations. | Simplified inputs with integrated website makes recommendations, leads to on-line bids. Closest scoring to MPG equivalent. | Detailed comprehensive assessment of home, typically used with new construction. 0 = zero energy home, 100 = 2004 code home, >100 scores for homes that use more than 2004 code home |
| Number of Inputs            | ~10   | ~30  | ~30   | ~100?   | ~40   | ~35  | ~150   |
| Scale                       | 1-10  | Customizable, 0-<br>100  | Customizable, 1-10  | Customizable, 1-10  | 1-10  | 0-200+ (actual<br>MMBTUs)  | 0-200+   |
| Typical 1970 House<br>Score | 4   | 50   | 4   | 4   | 5   | 150  | 130  |
| Typical New Home            | 9   | 80   | 8   | 8   | 9   | 70   | 80   |

| Feature   | Online Screening   |  |   | In Home Survey / Diagnostic Home Survey  |   |   | RESNET HERS Rating  |
|---|--|--|---|--|---|---|---|
| Tool  | EPA Home<br>Energy Yardstick   | EnergySavvy  | Energy Measure<br>(EM) View   | Energy Measure (EM)<br>Home  | Home Energy Score<br>(HES)  | Energy Performance<br>Score (EPS)                 | REM/Rate  |
| Score Basis   | Compares your<br>energy use to<br>other "similar<br>homes across the<br>country" | Energy analysis<br>engine allows for<br>any score type<br>generation | Sophisticated<br>energy analysis<br>engine allows for<br>any score type<br>generation | Sophisticated energy<br>analysis engine allows<br>for any score type<br>generation | Compares rated home<br>to energy use of<br>regional homes<br>broken into bins from<br>RECS database | Absolute score of total<br>MMBtu consumption      | Normalized<br>comparison of rated<br>home to a reference<br>home that is the<br>geometric twin with<br>2004 code energy<br>features |
| Site or Source Based                                  | Source   | Site   | Site  | Site   | Source  | Site  | Site  |
| Normalized Based on<br>Home Size or<br>Absolute       | Unknown  | Unknown  | User has the choice   | User has the choice  | Normalized  | Absolute  | Normalized  |
| Accuracy  | Unknown  | Blasnik-advised,<br>so it should be<br>pretty accurate               | Blasnik-advised, so it should be pretty accurate                                      | Blasnik-advised, so it should be pretty accurate                                   | Questionable results are being fixed  | Blasnik-advised, so it should be pretty accurate  | Reasonable for new homes, deviates for existing buildings   |
| Diagnostics (i.e., use of blower door / duct blaster) | None   | None   | None required, but can be added for more accuracy                                     | None required, but can be added for more accuracy                                  | Blower door required  | None required, but can be added for more accuracy | Blower door/duct<br>blaster required to<br>override default<br>values   |
| Asset or Operational                                  | Operational  | Asset  | Asset   | Asset  | Asset   | Asset   | Asset   |
| Who completes   | Homeowner  | Homeowner  | Homeowner,<br>assessor or<br>contractor   | Trained assessor   | Qualified assessor  | Qualified assessor                                | HERS Rater  |
| Capable of Generating a HERS Score                    | No   | No   | No  | Not now, but maybe later   | No  | No  | Yes   |
| Local Control   | No   | Somewhat (can embed in existing website such as                      | Somewhat  | Somewhat   | No  | Somewhat  | No  |

| Feature   |  | efficiencyvermon  |  |  |                            |  |                           |
|---|--|---|--|--|----------------------------|--|---------------------------|
|   | t.com) Online Screening                                      |   |  | In Home Survey / Diagnostic Home Survey  |                            |  | RESNET HERS Rating        |
| Tool  | EPA Home<br>Energy Yardstick                                 | EnergySavvy   | Energy Measure<br>(EM) View  | Energy Measure (EM)<br>Home  | Home Energy Score<br>(HES) | Energy Performance<br>Score (EPS)  | REM/Rate                  |
| Flexible/layered  | No   | No  | Yes, significantly   | Yes, significantly   | No                         | No   | Detailed or Simple        |
| Recommends Improvements?  | Not automatically, but will provide generic recommendation s | Yes   | Yes  | Yes  | Yes                        | Yes  | No                        |
| Integrated System from Assessment to Recommendations            | No   | Yes   | Yes  | Yes  | No                         | Yes  | No                        |
| Cost to User Note: does not include professional assessor fees) | Free to web user   | Free to web user  | Free to web user   | Program (EVT) would<br>need to determine   | Free                       | Program (EVT) would need to determine  | \$800                     |
| Program Costs   | N/A  | \$15-\$100k+,<br>depending on<br>set-up factors,<br>plus on-going<br>maintenance<br>fees, as needed | If just EMView,<br>would be less than<br>full suite cost (see<br>EMHome) | \$200-\$300k initial set-<br>up cost, \$10k/month<br>service fee for full<br>suite | Free (?)                   | \$120k for set-up, plus ~\$100k/year (based on volume, number of auditors and transactions; could potentially negotiate) | EVT owns local<br>license |
| Greenhouse Gas<br>Rating  | Yes  | No  | Optional   | Optional   | No                         | Yes  | Optional                  |

## HEST vs. HERS Granularity Online Screening



Time of Sale Energy Labeling of Homes: A Concept Paper, Philip Fairey (FSEC), Home Energy Magazine, July 2010 Issue.