

November, 2010 Northern Virginia Home Performance with ENERGY STAR Pilot Program Update

The current HPwES program model relies on local sponsorship by utilities, state energy offices and other organizations that develop a network of participating contractors to deliver whole house retrofits. Sponsor activities typically include contractor recruitment, training, mentoring and certification, marketing, third-party quality assurance and reporting, as well as offering incentives to participating homeowners and contractors who improve energy performance of homes. Because programs have not been established in all markets, contractors are limited to participating only where a program exists and expansion of the program is limited by sponsors' resources to establish programs in new markets.

To address this problem and help reduce the cost of program implementation, DOE and EPA are piloting a new approach that proposes a direct HPwES relationship with home performance contractors.

Under the pilot, EPA and DOE are testing the logistical and financial feasibility of working directly with home performance contractors. The purpose is to define a set of national standards and protocols for contractors, and create a sustainable quality assurance infrastructure, which will reduce the administrative cost for utilities, states and municipal governments to sponsor programs. A sustainable quality assurance infrastructure will offer risk protection value to program administrators and constructive feedback to contractors at a cost both will accept. Accomplishing these goals will allow HPwES to expand to meet market demand instead of relying heavily on public funding.

Since the original proposal in July 2009, the Northern Virginia Home Performance with ENERGY STAR pilot program (NoVA HPwES) has undergone some significant developments. The following is an overview of major changes, events and issues that have transpired over the program's first eight months.

Program Status

As of November 30, 2010, the NoVA HPwES Pilot Program had 14 contractors, 3 approved jobs and over 75 jobs in progress.

Timeline



Program Events

NoVA HPwES officially kicked-off on March 15, 2010. For five months prior to the kick-off, EPA and DOE held a series of meetings, webinars and training to prepare participating contractors to meet program requirements and provide best practices for successful Home Performance contracting. The schedule for these meetings is in Table 1.

Table 1: Schedule of Contractor Meetings, Trainings and Webinars

Title	Event	Date(s)	Attendance (Final Registration)
Contractor Informational Meeting	Meeting	November 18, 2009	36
BPI Building Analyst	Training	January 1-21, 2010	9
BPI Building Envelope	Training	February 1-4, 2010	10
Contractor Planning Meeting	Webinar	February 16, 2010	NA
BPI Building Analyst	Training	March 1-11, 2010	9
"Accounting Basics," preliminary to "Forum"	Webinar	March 2, 2010	55
"Sales Training"	On-site Workshop, Vienna, Virginia	March 31, 2010	20
"Dynamics of Leadership," preliminary to "Forum"	Webinar	April 1, 2010	65
"Capitol Region Home Performance Contractor Forum" with next step in "Dynamics of Leadership" and "Accounting" Training	On-site Forum, Manassas, Virginia	April 6-7, 2010	80
BPI Building Envelope	Training	April 1-5, 2010	9
"Reporting Process Improvement and Marketing Opportunity" and Contractor Survey	On-site Workshop, McLean, Virginia	July 29, 2010	32

Throughout the program implementation process EPA, DOE, and their contractors Navigant, Sentech, ICF and BPI had weekly conference calls to discuss progress and resolve issues. After the program kick-

off, these calls continued bi-weekly as a means to get timely program updates and discuss any challenges that have come up.

Program Developments

Quality Assurance Protocols

Through a competitive solicitation process, the Building Performance Institute (BPI) was awarded a contract to verify that participating contractors are qualified to complete home energy improvements and provide quality assurance for the pilot. Since the contract was awarded, EPA has worked closely with BPI to more clearly define the role of the QA provider and the QA process. This effort resulted in clearly defined contractor participation requirements and protocols to ensure that each job meets program standards. The current system for both allowing contractors into the program and the QC/QA on their work is as follows:

- EPA requires that NoVA HPwES contractors receive BPI accreditation as a condition to participate in the NoVA HPwES program. Each NoVA HPwES contractor must have employees who are certified in at least two BPI “whole house performance” professional categories, and the contractors are subject to regular on-site office audits, and on-site audits of their professional work.
- For initial accreditation, contractors must pass an on-site visit. This pre-accreditation on-site office visit is to verify the contractor’s readiness for accreditation and to establish communications for developing enhanced contractor quality control systems.
- Contractors report their jobs to EPA and EPA performs a file review of the work to make sure the job report passes minimum requirements. BPI performs random on-site audits of the completed jobs. In addition, all contractors’ customers receive customer satisfaction surveys and a completion certificate.
- BPI provides special guidance, education and oversight for participating contractors. BPI presents special forums and workshops to enhance their skills and business processes. The schedule for these meetings is located above in Table 1.

Reporting Form

To streamline the quality assurance monitoring for the pilot program, EPA created an editable PDF form to collect job information from each home improved under the program (Appendix A). To submit a job for review, a participating contractor must login to an online database, Green Energy Compass, enter preliminary data about the building, and upload the completed PDF. The data from the form is fed to and stored in Green Energy Compass, and is accessible to EPA and BPI for job tracking and quality assurance.

Homeowner Certificate

The NoVA HPwES Homeowner Certificate was created and an example is shown below.

Home Performance with ENERGY STAR Summary of Energy Improvements Performed

Home Address:

123 Main Street
Alexandria, VA 22311

Work Performed by:

Ardently Green

Work Verified by:

Rebecca Stewart

Work Completed on:

December, 2010

Home Performance Improvements:

- Attic Insulation increased from R-10 to R-49
- Air Leakage reduced by 25%
- Front and back walls were dense packed, insulation increased from an R-0 to R-19
- Rim/Band joists were air sealed and insulated



HOME PERFORMANCE WITH
ENERGY STAR

Home Performance with ENERGY STAR® offers a comprehensive, whole-house approach to home improvement that results in better energy efficiency, greater comfort, and lower energy bills.
ENERGY STAR is a voluntary partnership sponsored by the U.S. EPA and U.S. DOE to protect the environment through superior energy efficiency.

Marketing

Market survey

Before initiating the NoVA marketing campaign, the Shelton Group did an analysis of survey data to identify a target customer for HPwES. This information was then used to design the messaging and creative for the marketing campaign and select best-fit media options.

Website

The novahomeperformance.com website launched in coordination with the official pilot kick-off on March 15th, 2010. The front page is shown below.




NORTHERN VIRGINIA

[FIND A CONTRACTOR](#)
[TYPICAL IMPROVEMENTS](#)
[WHAT TO EXPECT](#)

[HOME](#)
[FAMILY STORIES](#)
[WHY A HOME PERFORMANCE CONTRACTOR](#)

Home Performance with ENERGY STAR®

It's the difference between a [home](#) and a [comfortable home](#).

- A difference you'll feel throughout your home,
- A difference you'll see when you open your utility bill each month, and
- A difference you'll experience working with a specially-trained Home Performance with ENERGY STAR contractor.

Choose a home improvement contractor who uses the comprehensive, "whole-house approach" recommended by the government's Home Performance with ENERGY STAR program. These contractors are dedicated to helping you maximize energy efficiency and comfort, while minimizing wasteful spending.

Typical improvements include sealing air leaks and adding insulation; improving heating and cooling systems; repairing ductwork; replacing windows, upgrading lighting, appliances and water heating equipment; and installing renewable energy systems.

This program is available in Northern Virginia. See if you are in our [service area](#). You can also learn more about the national Home Performance with ENERGY STAR program at www.energystar.gov.


Discover the ENERGY STAR difference in your home.

- Utility bill savings of 20% or more
- Fewer drafts and more comfortable rooms
- Work performed by specially trained contractors
- Third-party quality assurance to make sure work gets done right



Find A Contractor


See list of participating Home Performance contractors in Northern Virginia.



What to Expect

This short video answers many of the questions you may have about Home Performance with ENERGY STAR.

[7-MINUTE VIDEO](#)
[30-SECOND SPOT](#)



What's Your Score?

Compare your household's energy use to others around the country and get recommendations for improvement.

[LAUNCH](#)



Virginia Energy Efficient Appliance Rebate Program

Learn more about rebates available in Virginia.



Local Governments

Learn more about your local government and their initiatives to 'go green.'

Campaigns

The marketing for the NoVA HPwES pilot was divided into different phases. The first phase of the marketing campaign ran approximately 3 months starting in mid-March, in coordination with the Pilot kick-off.

The first phase included a mix of the following advertising media:

- Radio (NPR, talk and leading stations),
- Online (Google Paid Search)
- METRO stations (posters at select metro stops)

Details on this campaign can be found in Appendix B.

During the first phase of marketing, the website had 5,500 visitors which led to 1,000 clicks through to contractor pages. The Google paid search generated an additional 2,500 clicks which led to over 400 more clicks through for contractors. The overall conversion rate of 18% is more than five times the industry average conversion rate of 2.9%. We have received very positive feedback from the contractors due to the leads generated from these efforts.

The second phase of marketing ran from mid-September to mid-November, 2010 and was very similar to the initial advertising campaign. The second phase included the same radio ads and the online paid search as the first phase.

Home Energy Makeover

DOE and EPA co-sponsored an ABC7 organized Home Energy Makeover Contest in the National Capital area. Throughout the contest entry period and selection of finalists, the contest was heavily advertised on local television. EPA received 46 commercial placements to promote the NoVA HPwES program on WJLA from April 26 to May 29.

This contest generated roughly 1,000 leads in the NoVA HPwES pilot area which were then passed along to the contractors in the program.

Learning Opportunities

Modeling Software Requirements

The NoVA HPwES pilot program defines Home Performance as a package of improvements that saves 20% over existing conditions. To ensure that savings estimated by the modeling software are credible, the software tool must model and estimate whole building energy usage for pre- and post-energy retrofit work in existing single-family homes. The software must also calculate individual energy savings associated with improvements to the typical systems and components of a home performance job. EPA and DOE created broad software approval criteria thus allowing most contractors to use software they are already familiar with. To be used in this pilot, the software must be approved for use in the DOE weatherization program or currently be used in a HPwES program that has a comparable climate. A Home Energy Rating may also be used to demonstrate a 20% reduction in energy use. EPA and DOE created a list of software that meets the approval criteria, including the following:

Beacon Home Energy Advisor	NEAT Version 8.4
Energy Gauge Version 2.8	REM/Rate Version 12.7
EnergyInsights Version 5.0	REM/Design Version 12.8
Energy Pro Version 5.0	TREAT Version 3.1

Our experience is that many contractors are using the software Beacon since they are already familiar with it as it is the required tool in the nearby Maryland HPwES program.

Job Reporting

EPA, working with BPI, created an editable PDF form for contractors to submit information about each job. EPA solicited reporting forms from contractors in order to create a form that resembles forms

already in use; however, EPA did not receive any. After reviewing the first version of the form, EPA realized that some of the data points were unclear and some contractors had difficulties filling out the form. Some of these difficulties were a result of technical glitches and some were a result of the contractor's reporting process. Many contractors have their own test-out forms that they fill out in the field and then they have an administrative assistant transfer the data to the EPA reporting form. This resulted in many data entry errors since the person transferring the data did not really understand what the data points were. EPA has edited the language on the form and fixed the technical glitches. Some contractors have also had difficulty using Green Energy Compass, the database where the job forms are submitted. To help increase contractor efficiency when using the form and reduce the data entry errors, EPA scheduled individual mentoring sessions with contractors to help them use the reporting form and the Green Energy Compass database. EPA will continue to monitor contractor feedback on the reporting process.

File Review

After creating the reporting form, EPA wanted to evaluate the data points on the form and how well it suited both EPA and the contractors' needs. A review of submitted job forms revealed many difficulties in performing a file review. Completing a review required significant knowledge of building science to interpret the different data points. Furthermore, some data points were not vital to whether a job passed (e.g. contractor phone number) and some data points did not always need to be filled in (e.g. if the house is all electric combustion safety tests are not necessary.) EPA is creating a schematic to give appropriate ranges for answers and identifying which data points are mandatory and which are conditionally mandatory. Since many of the flaws on submitted job forms are due to data entry errors (as described above), EPA is considering incorporating logic into the form or pop-up help menus containing the appropriate ranges for the data points. Furthermore, while performing file reviews, EPA is also assessing which data points are necessary to determine if the job is a HPwES job, and thus if it would be helpful to add or remove data points from the form. If it becomes clear that certain data points should be added or deleted, EPA will update the form.

Job Ownership

On many jobs that were reported, more than one contractor completed the work. For example, one contractor may do the test in and test out but other contractors may complete the upgrades. Contractors desired to get credit for all jobs they participated on because they are reimbursed 50% of training and accreditation fees once they complete 10 jobs. To encourage collaboration, more than one contractor can get credit for completing a job. On the website, the total number of jobs may be less than the sum of the jobs listed since jobs may be listed twice. While two contractors may get credit for one job, EPA will only count each job once in its report of upgraded homes.

Conclusion

The pilot has had a slow start, with some administrative challenges. These challenges are being resolved and the program should see an increase in reported jobs in 2011.

Appendix A: Reporting form

OMB Control No. 2060-0586

Northern Virginia Home Performance with ENERGY STAR

Post-Installation Tests and Inspections v1.1.2



Customer Info

First Name	<input type="text"/>	Last Name	<input type="text"/>
Address	<input type="text"/>		
City	<input type="text"/>	State	<input type="text" value="Virginia"/>
Primary Phone	<input type="text"/>	Home	<input type="text"/>
Alternate Phone	<input type="text"/>	Home	<input type="text"/>
E-mail	<input type="text"/>		
Preferred Contact Method	<input type="text"/>		

Building Info (before Retrofit)

Floor Area (sq.ft.)	<input type="text"/>	Building Type	<input type="text"/>	Number of Occupants	<input type="text"/>
Year Built	<input type="text"/>	Foundation Type	<input type="text"/>	Number of Stories	<input type="text"/>
Primary Htg Sys.	<input type="text"/>	Primary Htg Fuel	<input type="text"/>	% Heat from Primary	<input type="text" value="100"/>
Secondary Htg Fuel	<input type="text"/>	Air Conditioning Sys.	<input type="text"/>		
Hot Water Fuel	<input type="text"/>	Hot Water System	<input type="text"/>		

Test In Info

Analyst Name	<input type="text"/>	Analysis Company	<input type="text"/>
Building Leakage	<input type="text"/>	Building Leakage Unit	<input type="text"/>
Outside Temp	<input type="text"/>	Test In Date	<input type="text"/>

Test Out Info

Analyst Name	<input type="text"/>	Analysis Company	<input type="text"/>
Building Leakage	<input type="text"/>	Building Leakage Unit	<input type="text"/>
Outside Temp	<input type="text"/>	Test Out Date	<input type="text"/>
Building Leakage Method	<input type="text"/>		
House Pressure (Pa)	<input type="text"/>	Fan Pressure (Pa)	<input type="text"/>
Building Airflow Standard	<input type="text"/>	Fan Ring Used	<input type="text"/>
Blower Door Test Result	<input type="text"/>	Air Sealing Work	<input type="text"/>
Company Performing Work	<input type="text"/>	Category	<input type="text"/>

Combustion Appliance Zone Test

	Baseline (Pa)	Worst Case (Pa)	Net Depress.	CAZ Limit	CO Ambient (ppm)	CAZ Result	Required Action
CAZ1	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
CAZ2	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Flue Inspection

	Worst Case Results			Natural Condition Results			Result	Action Required
	Spillage	CO (ppm)	Draft (Pa)	Spillage	CO (ppm)	Draft (Pa)		
Primary Heating System	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Secondary Heating System	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Water Heater	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Other	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Stove and Ambient Carbon Monoxide

Stove Fuel	<input type="text"/>	Stove CO (ppm)	<input type="text"/>	<input type="checkbox"/> Vent Out	Stove Action	<input type="text"/>
CO (ppm):	Kitchen <input type="text"/>	Living Room <input type="text"/>	Other <input type="text"/>	CO Action	<input type="text"/>	

Other Health and Safety Measurements

Primary Heating Venting Type	<input type="text"/>	DHW Venting Type	<input type="text"/>
Gas Dryer Flue	<input type="text"/>	<input type="checkbox"/> Gas Leaks Detected	Gas Leak Notes <input type="text"/>
Dryer Vent	<input type="text"/>	Dryer Vent Corrective Action	<input type="text"/>
Other Health Safety Issue	<input type="text"/>		

Airflow and Duct Leakage

Airflow Test Results	<input type="text"/>	Air Flow Action	<input type="text"/>
Duct Leakage (CFM 25)	<input type="text"/>	Duct Leakage Test	<input type="text"/>
Pressure Pan Avg Test In (Pa)	<input type="text"/>	Pressure Pan Avg Test Out (Pa)	<input type="text"/>

Savings Estimate

Savings Estimation Software (include ver.)	<input type="text"/>	Estimated Savings %	<input type="text"/>
--	----------------------	---------------------	----------------------

Comments

Improvements

Total Cost of Energy Efficiency Improvements

Category Improvement

Description

Characteristic Initial Value Final Value

Add Improvement

Delete Improvement

Appendix B: Actual Marketing Plan for Northern Virginia Home Performance with ENERGY STAR Program

- **Out of Home: Northern Virginia Transit Posters**
 - 12 consecutive weeks beginning March 15th and running through June 6th
 - One two-sheet poster in 4 Northern Virginia transit stations
METRO
 - West Falls Church
 - Vienna
 - Franconia-Springfield
 - Franconia-Springfield VRE
- **Local paid search with Google**
 - Timing: Three Months, March – May
 - Internet Platform: Google
 - Geography: Arlington Co., Fairfax Co., Prince William Co., Loudoun Co., City of Alexandria, City of Falls Church
 - The top 10 headlines (responsible for 623 clicks, 26% of the overall clicks)
 - Energy Star Program
 - Home Inspection in VA
 - High Efficiency AC
 - Energy Efficient AC
 - Insulation Services in VA
 - Weather Stripping Home
 - Energy Star Home
 - Efficient Home Insulation
 - Virginia Home Insulation
 - Virginia Home Inspection
- **Radio: Washington Metro, which covers Northern Virginia**
 - **Media Vehicle: WAMU-FM/88.5 NPR**
 - **Timing: 6 weeks**
 - March 15th & March 22nd
 - April 12th & April 19th
 - May 10th & May 17th
 - **Format: :15 live reads**
 - **Daypart: M–F, 8AM–5PM (includes Morning Edition, Diane Rehm, Kojo, Tell Me More & All Things Considered)**
 - **Quantity: 48 paid spots, 48 online streaming spots (24 BONUS spots)**
 - **Script**

Support for WAMU 88.5 fm comes from home performance with energy star - helping northern Virginia homeowners maximize energy efficiency and reduce wasteful spending. Listings of specially trained home improvement contractors at N-O-V-A home performance dot com.
 - **Media Vehicle: Metro Networks – Opinion Leader Network – WTOP-FM (103.5/News format), WMAL-AM (630/News/Talk format) and WJFK-FM (106.7/Sports)**
 - **Timing: 6 weeks recommended:**

- March 29th
- April 5th & April 26th
- May 5th, May 24th & May 31st
- **Format:** :10 live reads on WTOP & WMAL & :15 live reads on WJFK
- **Dayparts:** Primetime (AM & PM drive primarily) when listenership is highest and information (about news/traffic/weather) is pertinent
- **Quantity:** 120 paid spots over 6 weeks (plus BONUS spots TBD)
24: 10-second mentions per week
- **Script**

10 SECOND METRO RADIO NETWORK:

Home Performance with ENERGY STAR®—it's the difference between a home and a comfortable home. To find a specially-trained contractor, visit NoVAHomePerformance.com.

15 SECOND METRO RADIO NETWORK:

Home Performance with ENERGY STAR®—it's the difference between a home and a comfortable home. Discover the difference in your home by finding a specially-trained home improvement contractor at NoVAHomePerformance.com.