

**New Jersey's Clean Energy Program
Energy Efficiency Committee Meeting
September 9, 2014
9:30 to 12:00**

AGENDA

Presentations

U.S. DOE Home Energy Score

Joan Glickman (JG) with the U.S. Department of Energy presented on the DOE Home Energy Score.

- Emanated from the White House – initiative by Vice President Biden “Recovery through Retrofit” initiative. The US Dept. Of Energy (DOE) created the Home Energy Score (HES) as an effort to create a nationally standardized home score similar to a “Miles per Gallon” scoring system that automobiles are given. Offers homeowners an affordable, reliable, and easy way to understand a home’s energy performance. It is available at **no-cost** to program providers.
- To calculate the score, a contractor collects data on the envelope, roof, basement, crawl space, windows, ducts, levels of insulation & the 3 major systems (Heating/cooling/water heating) under standard operating conditions. Score is calculated on a 1 to 10 scale. Then looks at what would be cost effective in terms of improvements and how much you would save if you did them with an estimated “after-improvement” final score.
- The US DOE has entered into partnerships with Non-profits, local governments, utilities, etc. and Qualified Assessors do the assessment.
From Inception to date: 13,000 homes scored since 2012 with New Jersey Natural Gas a leader among all their partners. There are 215+ Qualified Assessors. Statewide adoption planned in CT and VT, with other states seriously considering it.
- The score can be easily integrated into existing residential programs as it is a simple data collection mechanism and a useful analytical tool for program administrators.
- The DOE provides logos, consistent messaging and 3rd party software companies can license the HES API to build apps that exchange data with the tool (examples: Energy Savvy, Energy Soft, Optimizer, United Illuminating, Cake Systems)
- Connecticut - The Department of Energy and Environmental Protection and state utilities have integrated the HES into their statewide Home Energy Solutions (HPwES) program. They are using it to track progress toward their 80% weatherization goal for 2030 and they plan to score 11,000 homes annually.
- Vermont - Vermont is launching in early 2015 and will be adopting HES as a key component of the state’s voluntary labeling program, generating a customized label for their state.
- New Jersey Natural Gas - Provides HES to customers as part of their mandatory equipment rebate no-cost audit and is utilized to encourage homeowners to undertake additional upgrades. Helps collect and track data with little or no additional cost. 6,841 Homes have been scored to date.
- Columbia Water & Light (Missouri) - HES is offered as part of HPwES program. Used to motivate investment and estimate energy savings. Improved “Final” Score serves as a form of recognition for homeowner’s actions. 3,455 homes scored to date

- Colorado Energy Office - Linking Score to incentives for buying an efficient home or upgrading to an efficient one. Motivate home sellers to make efficient upgrades prior to selling the house.
- The score capitalizes on social norming principles to help drive demand for energy efficiency.

Question by Betsy Ackerman (BA): Has DOE worked with Realtors to see if they would be interested in posting these scores to MLS? JG replied that National Association of Realtors didn't like the score persay as it could potentially undercut a transaction.

Question by Mike Ambrosio (MA): It could lead to biases by Realtors because say someone has an efficient house they will want to show it versus if someone has an "energy – hog" they wouldn't don't want to show it. Have you seen biases? JG replied it could lead to that.

- The Score helps translate investment in energy efficiency into a tangible value.
- Shelton Group conducted a recent poll whereby 81% of respondents said that higher energy efficiency would cause them to choose one new home over another. Cosmetic improvements will make my home more attractive at resale than efficiency improvements will (37%).
- HES starting to become integrated with FHA/other HUD programs - Tying the Score to Financing Opportunities such as provide a 2% stretch on the qualifying debt to income ratio provided to borrowers purchasing or refinancing an "efficient" home or improving an inefficient one.

Question Carl Teter (CT): Seems like a flexible tool. Have you seen any data with uptick in activity from folks who participated in the program? JG replied they are examining NJNG data.

Follow-up by CT: This is similar to the EPA benchmark tool for Commercial Buildings.

Comment by Anne-Marie Perachio (AMP) of NJNG: The lead time in getting people to make decisions to enter the program. Repeated touches via email/followup phone calls.

BA asked AMP: Do you offer the Home Energy Score when you do an audit? AMP replied: It is provided as part of the audit. Contractors are already gathering that data. The customer signs a release and then they put it out to bid for contractors to bid on the EE work.

Followup by BA: Your opportunity is when you have someone upgrading their HVAC equipment or participating in the HPwES program? Reply from AMP: There is a segment of customers that want an independent audit. This is the tool that we use to score them.

BA Comment: No cross-pollination with HPwES. If we can't get realtor adoption, then I have this score to demonstrate the efficiency of the home.

Comments by MA/BA: Honeywell team, since you are doing the HPwES audit, you have everything you need to create the score. Can you give them 2 scores a "pre" and "post" score? AMP replied: We are using the API to score the home as it exists, with HPwES recommendations, and then re-score the home afterwards.

CSG commented: All the HPwES contractors would have to train and learn this. It is in addition to BPI. There is a test, but there isn't a certification.

Comment by JG: The program would be generating the API. Who needs to be trained and how that training needs to occur? We would want total adoption – but another certification would be cumbersome.

Question to JG about how Quality Control is done on the assessors: JG replied: Partners oversee the Qualified Assessors. 5% of homes are re-scored by Partners to ensure score is correct.

Janja Lypse (JL) asked: How long does it take to score a home? Answer: Up to an hour.

NJIT HPwES Study

Christine Liaukus (CL) R.A. of NJIT will be discussing her DOE funded research on the NJ HPwES program. She works at the Center for Building Knowledge on N.J.I.T's campus. The center has existed for 25 years and Energy Efficiency weaves through all their work.

- Some Center successes:
Launched National Benchmarking Certification Program
Developed Saving Energy in Leased Space Program
Developed Utility Program Web Interface using zip code, facility type to guide users to approximate utility programs
- She studied the HPwES program with an over-arching goal of identifying Which Measures Get You 30% Savings? Background - Savings from HPwES typically range from 10 to 30%. Can Building America formulate a prescriptive package based on HPwES to reliably achieve 30% source energy savings in existing homes? NJIT worked with NJCEP and culled the top 50 projects in 2011 for projected energy savings. 42 had modelled savings of at least 25%. 17 provided utility data.
- NJ Housing Stock – 3.5 Million Units. Among the 42 homes with savings, the high was 42% and the average achieved 29%. Project cost ranged from \$36K with average of \$14K. Most common measures – air sealing, heating systems replaced, insulation of attic hatch, central A/C, insulate attic floor, water heaters, wall insulation, duct insulations.

Pre Air Sealing – High of 25 ACH (air changes per hour) the average was 13.8 ACH. Post Air Sealing – Reduced to a High of 20.4, with average of 10.4. Homes are still relatively “leaky.” Contractors are doing the air sealing in attic and basement.

Heating System Replacement – Most had a 71% efficient furnace and upgraded to a 95%.

Pre A/C – Most had no Central A/C before and ones that had it, a 10 SEER was existing unit. Post A/C – SEER 16. Most homes had 0.63 EF Storage Water Heater.

16 Combinations of Measures. 17 Homes with Utility Data. Predictive modeling was fairly close to actual savings. Looked at utility bills and fluctuations for climate/weather were normalized.

Kevin Burke Asked: Do you know if there were any behavioral changes? CL replied: Out of scope and out of my budget to study that.

Most common package was air sealing, heating & cooling, insulation of attic hatch or stair, attic floor, and replaced a water heater. Average cost was \$15,460. Modelled Savings 27%, Source Savings 33%.

Question from audience: Did you calculate payback on any of these homes? CL replied: No.

From Building America's Perspective, attic and foundation air sealing only goes so far. Can other cost effective air sealing measures be introduced? Wall insulation – can the envelope be more emphasized. Building America's perspective – goal would be achieved with envelope measures.

Prescriptive Package – Seal the Envelope and replace HVAC systems, if HVAC is at end of useful life or below 80% AFUE or poor electrical resistance.

Re-Side Tight – Opportunity to improve insulation while a home is being re-sided.

Worked with PSE&G. Reduced air infiltration up to 38%. Offer Savings of up to \$250 per year. Simple payback of 6 years. Lifetime savings of \$5K or more.

1.1 Million Homes are re-sided annually in US. Can this be an opportunity to drive customers into HPwES? If even 1 in 10 siding jobs are re-sided tight, an additional 110,000 homes will be air sealed.

Q&A:

Doug Wong of BC Express: It seems like you get more savings from just the Tyvek alone than with the insulation in the floor and attic. CL responded: This can be part of the insulation package. Followup: Instead of Tyvek wouldn't it be better with rigid foam board? CL replied: Yes.

Rebecca Foster (RF) of VEIC asked: On the siding topic, did you include the combustion safety cost in the "payback costs"? CL replied: Yes.

Joe G. asked: Other than taping/sealing – what was different here other than what a typical siding contractor would use? CL Replied: The taping and sealing of joints/seams made the difference. Created online training to show what was expected of them.

BA asked: We are taking a look at all of our programs. This is a timely discussion. I've expressed previously that this is the bulk of the work that is going on. Existing homes having renovations done. Think there are a lot of benefits to siding contractors being BPI Certified.

CSG team added: Underlying principle for a customer to have a 1-stop shop to participate in HPwES. Realize that different trades are involved. We need to think that through carefully. Trying to take a siding contractor and make him get BPI certified with little to no uptake.

BA commented: Even where we are doing HPwES, isn't that most times requiring more than 2 contractors? Usually there is a GC and sub involved. JL said: Majority is HVAC Contractors doing HP. JG commented – Program is successful in NJ because of that. JG stated: Long term view is that siding is important. The Home Energy Score mentions it.

Energy Resiliency Bank Update – Tom Walker (TW)

- **Background/Overview of ERB** - To realize energy resilience in NJ. To act as a "one-stop" shop meaning fund and provide technical support from design through to commissioning. The bank is focusing on CHP, solar, fuel-cells, battery backup, and micro-grids. Target audience is critical facilities, while utilities bring rest of state back up to speed. Push distributed energy resources. Program is funded by HUD by a CDBG and SBC charges from BPU.
- A stakeholder meeting was held on 8/27 with water/wastewater facilities who will be the first tier. 2nd Tier – Hospitals/critical care facilities and schools/campuses. Goal is to roll out a product by end of 2014.

A mid-October launch is planned. The goal was to have one project lined up by the end of the year but there may be as many as 6/7. The ERB could fund solar inverters to get some quick wins and low-hanging fruit. The application process will be launched soon. EDA will provide the financial assistance while BPU provides the technical aspect.

- **Q&A:**
BA – Reminder that Federal funds have to be spent in 3 years. TW confirmed the funds have to be spent by 9/30/19. A developer has to have the project up and running within 2 years, and are permitted (2) 6 month extensions.

Idea of Bank itself is to meet 100% of unmet funding. Requirement of funding is that the project would have to meet the entire critical load for the facility. If program flourishes, they may want to fund beyond the critical load and to the grid itself to surrounding area.

MA: We need a mechanism in place for the 2 programs (ERB & Clean Energy) to talk to each other to make sure there is no double dipping. JL added: We should also discuss for the Renewable side to ensure there is no double dipping.

Program Coordinator and Regulatory Updates

Betsy Ackerman (BA), Mike Ambrosio (MA)

BA introduced Marisa Slaten, who is now the Assistant Director at the OCE.

Discussion of NJCEP Program Administrator RFP / Transition Status – BA stated that the RFP will be out before end of 2014.

BA said that the draft results of Clean Energy economy study are forthcoming. BA has asked MA to get the contract mods and CRA budgets on the October 19th Board agenda.

MA said: He has reached out to Carl (TRC) and Joe (Honeywell) re: contract mods. Additional \$58M was lapsed and will have to be in the true-up budget. Waiting on the final FY 2014 budget.

Compliance filings went out for comment with a target of going before the Board on September 30th.

Staff is forming a new Work Group to look at the entire portfolio of CEP programs. Are there programs that should be added/modified/deleted? BA is hoping to have an outline of the process and proposal on membership next month.

FY15 CRA Budget – Board has approved the proposal of adopting Investor's Confidence protocols into the existing programs.

Staff would like to revisit the metrics to meet or exceed our goals, and Betsy has asked the Market Managers to redesign their graphs based on budget and energy savings associated with those budgets. The message is Energy Savings. We need to ultimately look at how much we are spending and the energy savings with those dollars spent. We will be looking at those on a monthly basis. The Work Group will be looking at how to improve the energy savings per dollar spent. That may drive the changes that we make to the programs.

Residential Programs

Honeywell Team, Kevin Burke (KB) Residential Programs Manager

KB displayed a chart showing the 2014 budget and Savings vs. the FY 2015 budget and savings. 2014 savings was taken from the Compliance filings.

Question by MA: For RNC the electric savings go up triple but the gas savings down. KB: Yes, this is due to changes in estimation of housing mix (multi-family). Rebecca Foster (VEIC) added: there was a code change between 2006-2009. MA: Do we need to update the protocols to account for this? Rebecca replied: No, we do not. We're just getting more accurate.

MA: We need to be aware of this with code changes/base lines changing. For example, CFLs to LEDs. It could appear that budget/savings are going down but in reality the baseline has increased.

The Work Group needs to have these types of conversations. Recognize HPwES savings per dollar is off the scale relative to the other programs. The HPwES incentives are not sustainable - Janja Lupse commented but: At that time, we were driving enrollment.

Bruce Grossman (BG) of South Jersey Gas: There are other key values such as Health & Safety or Public Policy. BA: Then we need to reach for deeper savings. BG added: Energy isn't the only thing we save.

Joe G. – if you look at HVAC, it's a very mature program. The AC baseline has increased. The market has transformed. HPwES is still a very young program. BA: Under ESTAR products, the budget is flat but the annual savings in therm drops by almost 25%. Joe G replied: That is due to product mix. Moving from CFLs to LEDs. Much larger initial costs. KB added: Some of it is also due to mid-stream washers.

Commercial & Industrial Programs

TRC Team, Carl Teter (CT)

TRC showed a new chart with the FY 2014 Budget and Savings versus the projected 2015 budget and goals. He also reviewed the installed vs committed standpoint, and notes that in Direct Install some larger facilities are starting to come through and the P4P composition of projects are starting to change.

BA: When budgets changed in 2014, did the Savings goal change accordingly? CT: No. MA: I'll add this as a topic for the PC Meeting – we should have some process to adjust the savings accordingly when the budgets change.

Utility Updates

Anne Marie Peracchio of NJNG shared that there are Energy Assistance Days throughout September, the school contact has begun and there is a sweepstakes planned for October.

PSE&G – extension filing for 3 programs in August. Proceeding thru regulatory process now and approval slated for January agenda meeting. The Hospital/Multi-family program will be the same and Direct Install will match the CEP program. PSEG is also proposing a participant fee of 1.5% of the investment. Partial offset due to lost revenue due to energy savings.

Bruce of South Jersey Gas reported that the launch of residential financing programs has gone well so far especially in HPwES, and they have launched non-residential programs as well.

Other Business, Next Meeting

The next meeting is Tuesday, October 14. At this time there are no presentations scheduled.

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Name	Company	Please check off	
		In Person	By Phone
Ackerman, Elizabeth	BPU	X	
Adams, Ben	MaGrann Assoc.		
Ambrosio, Mike	AEG	X	
Bovio, Brian	Bovio Heating		
Boyd, Mary Jo	CSG	X	
Burke, Kevin	Honeywell	X	
Carpenter, Joseph	NJ DEP	X	
Colander, Brandi	Opower		
DelPino, Kristin	CSG		
DeLuca, Brian	TRC	X	
Dempsey, Peter	South Jersey Energy Service Plus		
Desimpel, Tom	CMC Energy	X	
Dolan, Brian	Intellidyne		
Donadio, Tom	JCP&L		
Donohue, John	On behalf of Fuel Merchants Assoc		
Ellman, Susan	NJNG	X	
Evans, Deane	NJIT		
Evans, Frank	Willdan Energy Solutions		X
Fisk, Andrew	CSG	X	
Flannery, Mike	MaGrann Assoc.		
Flynn, Don	Nexant, Inc.		
Foster, Rebecca	VEIC	X	
Gennello, Joe	Honeywell	X	
Georgi, Anthony	Honeywell	X	
Grossman, Bruce	SJG	X	
Haddock, Kyle	EIC, Comfort Home		
Haider, Renne	Sustainable Jersey		
Hauber, Fred	Eastern Energy Services, Inc.		
Hayes, James	The Stone House Group		
Heise, Dani	Techniart – Energy Saving Outlet	X	
Hendricks, Mahogany	BPU	X	
Hoff, Kim	CSG		
Holland, Dave	Honeywell		
Holmes, Bill	SJG		
Hutchinson, Ed	Hutchinson Mech. Services		
Janowiak, Ed	Eastern Heating and Cooling Council		
Jones, Sherri	BPU	X	
Kaplan, Matthew	Revireo		
Kleuver, Amanda	EFS		
Lewandowski, Kurt	NJ Rate Counsel		
Liaukus, Christine	Center for Building Knowledge		
Lupse, Janja	CSG	X	
Markwood, Scott	O&R		
Marx, Rick	EAM Assoc.		X
Miller, Ashley	TRC		
Mitchell, Allison	BPU		
Napoleon, Alice	Synapse Energy Economics Representing Rate Counsel		

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Name	Company	Please check off	
		In Person	By Phone
O'Donnell, Tony	Sustainable Jersey	X	
Palmer, Bill	Kamson Corp		
Perracchio, Anne-Marie	NJNG	X	
Rozanova, Valerie	TRC		
Ryan, Jerry	NJNG		
Sherako, Jill	Eastern Heating and Cooling Council		
Slaten, Marisa	BPU		
Sparrow-Hood, Walt	PSE&G	X	
Steindel, Sarah	NJ Division of Rate Counsel		
Stewart, Patrick	ACCA NJ	X	
Stone, Gordon	BPCA - NJ / Home Energy Matters		X
Takahashi, Kenji	Synapse -Energy		
Tantillo, Cheryl	Elizabethtown Gas		X
Teng, Elizabeth	BPU		
Teter, Carl	TRC	X	
Valora, Sam	SJG		
Wetzel, Linda	AEG	X	
Winka, Mike	BPU		
Wong, Douglas	BC Express Inc		X
Zukas, Diane	TRC		

Add names below:

Company

Joan Glickman	US DOE	X	
Dan Rogers	ICF International	X	
Jeff Stanish	O-Power	X	
Tom Walker	BPU - ERB	X	
Mark Magrann	Magrann Associates	X	
Anthony Barnes	Energy Saavy		X
Julie De Seve	CSG		X
Marianne Graham	ICF International		X
Richard Ingelido	ConEdison		X
Jay Murdoch	Owens Corning		X
Peter Smith	Renewable Power		X
Tom Reichert	CSG		X
Robbie Acampora	Phoenix Advisors, LLC		X
Andy Skok	Fuel Cell Energy		X
Thomas Schuster	Sierra Club		X

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