New Jersey's Clean Energy Program
Energy Efficiency Committee Meeting
BPU, Trenton
March 24, 2016

Mike Ambrosio opened the meeting by announcing that this is Honeywell's last meeting, as they will no longer be managing the Residential and Renewable aspects of the NJCEP. He thanked them for their hard work and support during transition.

Carl Teter introduced the guest presenter, and explained that guest speakers are occasionally featured the EE meetings as a way provide information about new/different technologies available in the marketplace.

Presentation
Kevin Dabasitis from Building IQ

Automated Energy Savings & Demand Reduction Utilizing Cloud Based HVAC Optimization Technology

Introduction

The technology uses a collection of data to remotely optimize the air side of HVAC in buildings. A few of the BMS set points are read from existing systems (in commercial buildings, hospitals, higher education etc.) and that information is used to continuously optimize the HVAC for improved energy savings and comfort.

Technologies in the energy management landscape tend to fall within 3 groups:

- Analytical firms create a report based on collected data to present to a building's facility team, allowing them to make value-based decisions.
- Fault detection and diagnosis technology monitors thousands of points on an equipment level, creating a report of suggestions that ultimately becomes a technician work order.
- Predictive optimization falls somewhere between the above groups—data is being collected and analyzed, but within the closed-loop system of an existing BMS. Any tweaks made for optimization occur within the parameters of the BMS.

Overview

Analytics performed by the technology looks at set points already in place by the BMS and also—using a thermodynamic model created by the system—takes into consideration time-of-use impact, demand response, and weather.

How the model works:

- The building model creates a historical baseline to use for comparison. Analysis compares the building against itself (there is no Benchmarking component).
- It can identify hot and cold spots in the building for a focus on comfort, as well as spot opportunities for efficiency upgrades.
- The software has a level of intelligence (it will fluctuate based on any implemented upgrades).
- The facility operator is still in control. Any tweaks can be overridden by the BMS.
- Fault detection is not the goal, but operational inconsistencies can be recognized by the system in order to alert the facility management team.

Question by attendee: Is this an automated process?

Answer by Kevin Dabasitis (paraphrased): Yes—a new set point occurs at 4 hour intervals, and the model tweaks itself based on these set points. The system becomes "smarter" as it learns the building, and buildings can begin to see efficiency increased within as little as ~30 days. All of the system operations are be looked at by optimization engineers (for a "pair of human eyes" component). The savings is tracked every day; when optimization isn't effective, an alert is put into place.

Question by attendee: How does the customer feel about you taking control of the system?

Answer by Kevin Dabasitis (paraphrased): We try to emphasize that our system is not "in control"—it relies on intelligent optimization and works with the BMS. Although opportunities are identified, the software does not place any fixes by itself.

Question by attendee: What kind of payback/ROI is normally seen with the optimization technology in place?

Answer by Kevin Dabasitis (paraphrased): Typically, the payback can be measured in months rather than years and the ROI ranges from 150-300%, depending on the building, HVAC system, and what is being paid per kWh.

Pricing/Savings Goals:

- Due to the easy integration, there is no up-front capital cost.
- The monthly fee tends to be ~10 cents per square foot, per year.
- Goal is to save 25-30 cents per square foot, per year.

<u>Points of Consideration & Recap</u>

Some facilities' BMS may not be capable of integrating the system. In these cases, other services to make recommendations (such as meter reading analysis) is offered.

There is no exact estimate of buildings in the state that cannot function with the predictive optimization software, but it is becoming common knowledge that outdated BMS is causing energy inefficiency.

Buildings that upgrade their management system can implement and take advantage of the predictive optimization technology, resulting in:

- Capability of responding automatically and immediately to demand response.
- Measurement and verification (M&V) that is built-in.
- Reports of that can show daily, weekly, or monthly energy savings.
- Improved comfort as occupants can report hot/cold spots in the building on a phone app which relays to an engineer who can make adjustments.

Four buildings in New York will be implementing the system and working with NYSERDA in a pilot study.

Question by attendee: Can this be used residentially?

Answer by Kevin Dabasitis: No, software is meant to work with a central commercial HVAC system.

Question by attendee: How do you address the system working against itself? If it's a central system, reducing air on one side could adversely affect another side of the building.

*Answer by Kevin Dabasitis (*paraphrased*)*: Any issues like that can be identified by an optimization engineer and worked out with facilities team.

Question by attendee: Can the software work in facilities using CHP?

Answer by Kevin Dabasitis: Yes.

Program Coordinator and Regulatory Updates
Marisa Slaten, Sherri Jones, Mike Ambrosio

<u>Updates on Filings, Board Orders and Regulatory Items</u>

- Program changes were approved at this month's Board meeting:
  -RNC enrollment and re-allocation.
  -LGEA new Program.
- Existing LGEA projects remaining with the audit firms should be completed by June.
  New LGEA projects will be audited by TRC as part of the new program design.
- DI - A request for comments on the new program design was released on 3/24/16, comments are due by April 7th .

FY17 Planning Process

- A 4-year strategic plan is under development for the NJCEP.
- Changes made to CHP are being looked at to ensure effectiveness.

Question by attendee: So there is no movement on DI, other than the upcoming Board meeting?

Answer by Board Staff: A notice requesting public comments did go out, and currently the RFP is being drafted (which will not go out for public comment). The purpose of the Board meeting is to approve any program modifications, such as the master pricing list for equipment and perhaps a wider list of contractors.

Question by attendee: What is the timeline for CHP?

Answer by Board Staff: The goal is May.

Residential Programs

Honeywell Team
FY 16 Program Results through February

HPwES:

- Single family completions at 3,791 with a goal of 3,750.
- Multifamily completions at 353 with a goal of 1,250.

RNC:

- Enrollments at 3,186 with a goal of 5,525.
- Completions at 2,686 with a goal of 2,665.

Comment by Mike Ambrosio: Participants were on hold from applying due to budget constraints, but whoever has shown interest during the hold (and, at this point, sent in their applications) should be identified and fast-tracked.

EEP:

- Lighting and Refrigerator Recycling stopped mid-year.
  -Recycling company went out of business.
- Washer completions at 12,236 with a goal of 26,498.
- Dryer completions at 3,048 with a goal of 2,500.
- Refrigerator completions at 5,673 with a goal of 5,300.
- Lighting completions at 2,247,400 with a goal of 4,422,700.
- Fridge recycling at 4,819 with a goal of 10,250.

Question by Mike Ambrosio: Both the lighting and the fridge recycling were reopened in March, yes?

Answer (via phone Nick Plouffe/ICF): Refrigeration recycling will relaunch on April 1. For lighting, we are finalizing MOUs with several retailers and discounted products and signage should appear in those locations in mid-April.

Warm/CoolAdvantage:

- Cool completions at 3,099 with a goal of 10,818.
- Warm completions at 13,620 with a goal of 16,123.
- HVAC completions at 16,719 with a goal of 26,941.

SEP:

- 14 cool completions and 526 warm completions.

cuGreenLoans:

- 74% of all enrollments eligible for HPwES financing took advantage of it.

Commercial & Industrial Programs

TRC Team
FY 16 Program Results

Retrofit:

- Installed electric savings 88% of goal/Committed electric savings 103% of goal.
- Installed thermal savings 87% of goal/Committed thermal savings 110% of goal.
- 83.6% of incentive budget committed/paid.

NC:

- Behind on installed goals.
- Installed electric savings 31% of goal/Committed electric savings 111% of goal.
- 81.1% of incentive budget committed/paid.

Direct Install:

- All projects that were committed have now moved through the pipeline.
- Final incentive checks sent out; all projects closed.

CHP – FC:

- Program management transferred to ICF.

P4P EB:

- Installed electric savings 78% of goal/Committed savings 45% of goal.
- Installed thermal savings 93% of goal/Committed savings 62% of goal.
- 73% of budget committed/paid.

P4P NC:

- Installed electric savings 81% of goal/Committed savings 48% of goal.
- Installed electric savings 36% of goal/Committed savings 69% of goal.
- 77% of incentive budget committed/paid.

LGEA:

- The new program is beginning while a backlog of old projects are closed out.
- 166 applications were received fiscal year (FY) to date.
- 191 audit reports were approved FY to date.
- 52% of the incentive budget is committed/paid.

LEUP:

- Installed electric savings 31% of goal/Committed electric savings 31% of goal.
- Installed electric savings 2250% of goal/Committed thermal savings 10% of goal.
- Large project received (all thermal).

SEP NON-IOU:

- Waiting for DI to re-open.

Question by attendee on pricing: For DI, what is the criteria of material supplied by a contractor? Does every contractor buy based on best price?

Answer by Carl Teter: DI material pricing will be handled through an RFP process. SmartStart and other programs rely on vendor negotiations with suppliers to determine pricing.

Utility Updates

Bruce Grossman of SJG, representing Comfort Partners, delivers a brief presentation for discussion purposes showing how the Program is currently facing issues due to the financial hardship of southern NJ, particularly Atlantic City.

Money is being spent on projects for homes/systems in serious disrepair, but projects are not recognized in the IMS system until they are complete. This is causing reporting issues with expenses, where it's appearing that the 30 million dollar budget has not been spent. Project costs, however, will likely exceed the budget.

Other Business, Next Meeting

- April Meeting Date (4/12).

		Please check off	
Name	Company	In Person	By Phone
Alafina, Jack	Facility Solutions Group	X	
Ambrosio, Mike	AEG	X	
Barber, Mary	EDF		X
Bowen, Mark	Franklin Energy Services LLC		X
Brenner, Marybeth	TRC	X	
Burger, Jeffrey	Willdan Energy Solutions		X
Burke, Kevin	Honeywell	X	
Carpenter, Joseph	NJ DEP	X	
Cassidy, Brendan	ICF Int'l		X
Cucci, Peter	V3 Power/Building IQ	X	
Dabasitis, Kevin	Building IQ	X	
Desai, Tejas	Willdan Energy Solutions	X	
Desimpel, Tom	CMC Energy	X	
Donohue, John	Fuel Merchants Association of NJ		X
Dougherty, Mike	Broadley's		X
Edelstein, Chris	McGrann Associates	X	
Ellman, Susan	NJNG	X	
Fisk, Andrew	CLEAResult	X	
Flynn, Don	CLEAResult	X	
Fournier, Gary	Sustainable Jersey	X	
Georgi, Anthony	Honeywell	X	
Grossman, Bruce	SJG	X	
Harron, Kate	Clean Markets		X
Hoff, Kim	CSG	X	
Kass, Lloyd	Lime Energy	X	
Koksal, Huseym	Delta Four Energy	X	
Latal, Kenneth	ICF Int'l		X
Lupse, Janja	Clearesult	X	
Lutz, Ellen	Clean Markets	X	
Mastropasquo, Mike	Lime Energy	X	
McShea, Anne	BPU	X	
Meredith Nole	American Efficient Lighting	X	
Miller, Ashley	TRC		X
Miller, Eric	Noresco		

Onat, Secil	BPU	X	
Palmer, Bill	Kamson Corp	X	
Rahikainen, Anne	GreenFaith		X
Ruff, Mike	Intellidyne		X
Ryan, Jerry	NJNG	X	
Schmidt, Edward	MCR Performance Solutions		X
Seelaus, Andy	EMC		X
Slaten, Marisa	BPU	X	
Sparrow-Hood, Walt	PSE&G	X	
Strachan, Ken	Freeaire	X	
Swift, Don	Clearesult	X	
Teng, Elizabeth	BPU	X	
Teter, Carl	TRC	X	
Thomas-Friel, Felicia	NJ Division of Rate Counsel		X
Tobian, Carol	National Resource Management, Inc.		X
Valora, Sam	SJG	X	
Vasquez, Esteban	Willdan Energy Solutions	X	
Wetzel, Linda	AEG	X	
Wise, James	DEP		X