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STEFANIE A. BRAND
Director

April 7, 2016

Via Hand Delivery and Electronic Mail

Honorable Irene Kim Asbury, Secretary
New Jersey Board of Public Utilities
44 South Clinton Avenue
3rd Floor, Suite 314
P.O. Box 350
Trenton, NJ 08625-0350

**Re: Proposed Changes to (1) The Commercial & Industrial Direct
Install Program and (2) Various CEP Programs to Address the
New EE Sub-code
(Request by the Office of Clean Energy for Comments
dated March 24, 2016)**

Dear Secretary Asbury:

Please accept the within comments (an original and ten copies) submitted on behalf of the New Jersey Division of Rate Counsel ("Rate Counsel") in connection with the above-captioned matter. Copies of the comments are being provided to all parties on the e-service list by electronic mail and hard copies will be provided upon request to our office.

We are enclosing one additional copy of the comments. Please stamp and date the extra copy as "filed" and return it in our self-addressed stamped envelope.

The Division of Rate Counsel ("Rate Counsel") would like to thank the Board of Public Utilities ("BPU" or "the Board") for the opportunity to present comments on the proposed

changes to the Board-approved (“CEP”) Commercial and Industrial (“C&I”) energy efficiency (“EE”) program and (2) various program changes in response to the new EE sub-code which were circulated to stakeholders for comment on behalf of the Office of Clean Energy (“OCE”) in an e-mail notice issued March 24, 2016. (“Request for Comments”). Rate Counsel notes that the OCE’s proposals call for (1) an RFP process for C&I Direct Install material and labor, and (2) changes to address the adoption of the new energy efficiency sub-code, ASRAE 90.1-2013. Rate Counsel does not object to the proposed changes, as set forth below.

According to the OCE, the proposed “open and competitive bidding” RFP process for the Direct Install program was designed to reduce the overall cost of labor and materials, and increase the number of participating contractors.

The proposed short-term changes to various CEP EE programs in response to the adoption of the new EE building sub-code, ASRAE 90.1-2013, appear to be a reasonable approach to ensure that incentives are not paid for technologies that no longer meet or exceed the new sub-code, while accommodating projects approved before the effective date of the new code.


Based on the representations of the OCE, Rate Counsel does not object to the proposed program changes.

Honorable Irene Kim Asbury, Secretary
April 7, 2014
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Thank you for your consideration of the within comments.

Respectfully submitted,

STEFANIE A. BRAND
Director, Division of Rate Counsel

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April 6, 2016

Marisa Slaten
Assistant Director
Division of Economic Development & Emerging Issues
NJ Board of Public Utilities
44 South Clinton Avenue
Trenton, NJ 08625

Subject: Proposed Changes to the Direct Install Program

Dear Ms. Slaten,

On behalf of Lime Energy, I want to thank you for the opportunity to comment on the proposed changes to the Small Business Direct Install Program, which is a part of the NJ Clean Energy Program portfolio administered by the NJ Board of Public Utilities (the “NJDI program”, or “program”). Lime is the leading national firm in delivering energy efficiency solutions at scale to small and medium sized businesses. With our headquarters and leadership team based in Newark, New Jersey, this program is critically important to our company.

Lime’s comments are based on our twenty-five year history, delivering small commercial energy efficiency retrofits in New Jersey, New York, Massachusetts, California, North and South Carolina, Tennessee, Ohio, and Texas. In the last 5 years alone, Lime has implemented over 100,000 energy efficiency projects for small businesses. These projects delivered 1 million megawatt-hours of energy efficiency resources and saved small businesses more than \$1 billion. Lime has been the NJDI program’s largest contributor. Since program inception in 2010, Lime has engaged over 20,000 customers¹ and has performed over 2,000 projects in Bergen, Passaic, Essex and Hudson counties alone. Lime is fully staffed and prepared to help make the next phase of the New Jersey Small Business Program even more successful.

The proposed program changes – which seek economies of scale and standardization of equipment installed by implementers – is an important step in the direction of program efficiency. Our hope is that the program will quickly adopt the additional recommended changes we have presented to the OCE and the newly awarded NJ Clean Energy Program Administrators, such as:

- Moving to a pay-for-performance program design. In this model, incentive budgets will yield greater savings and increased customer participation.
- Adopting a variable incentive structure. This will maximize the inclusion of a broader set of highly efficient technologies.
- Leveraging 3rd party, private capital financing. Offering additional financing will enable the smallest, capital-constrained businesses to participate.

The proposed changes to the NJDI program also reference future opportunities to examine additional program enhancements. Lime welcomes the chance to participate in discussions to make such improvements. We enthusiastically support any effort to improve the effectiveness and cost efficiency of the program.

Once again, thank you for the opportunity to comment on this critically-important program policy, and we appreciate the BPU's efforts to engage the general public and clean energy industry.

Sincerely,



Adam Procell
CEO, Lime Energy

¹ Lime Energy's comprehensive outreach program includes predictive data analytics, direct mail, outbound telemarketing, inbound call center lead nurturing, street canvassing, and social media.



VIA ELECTRONIC MAIL (publiccomments@njcleanenergy.com)

April 7, 2016

Hon. Irene Kim Asbury, Secretary
N.J. Board of Public Utilities
44 South Clinton Avenue, 3rd Floor, Suite 314
P.O. Box 350
Trenton, NJ 08625-0350

Request for Comments on Proposed Modifications to the NJCEP Budget

Dear Secretary Asbury:

New Jersey Natural Gas Company ("NJNG") has reviewed the March 24, 2016 Memo from the New Jersey Board of Public Utilities Office of Clean Energy ("OCE") that requested comment of Proposed Modifications to the New Jersey's Clean Energy Program ("NJCEP") Commercial and Industrial Programs ("Proposal"). Overall, NJNG appreciates the proposals thoughtful consideration of refreshing the program as part of the transition to the new administrative structure. Through this submission, NJNG hereby provides comments related the following elements of the Proposal.

RFP Process

NJNG supports the Proposal's intent to update pricing for the Direct Install ("DI") program. We are hopeful that the DI program structure will continue to allow it to be marketed as a turnkey solution for customers. Having a specified contractor generally cover a region made it easier for us to promote the program to our customer base because it removed a customer decision barrier.

In regard to the separate RFP process for a statewide equipment supplier (for non HVAC/mechanical equipment only), NJNG encourages OCE to structure the RFP process to provide careful consideration of the geographic locations of winning suppliers. Ensuring adequate coverage across the state should enhance the ability of DI contractors to complete projects on a timely basis for participating customers.

Further, NJNG is hopeful that the RFP process can be performed in an expedited manner to enable the program to reopen by the start of the Fiscal 2017 NJCEP Program year. The SAVEGREEN Project®, NJNG's own energy efficiency program, closely supports the DI Program by offering companion On-Bill Repayment Program opportunities to eligible customers in our service territory. NJNG understands the transition considerations that have resulted in the program not being able to accept new commitments since September 30, 2015. NJNG continues to encounter customers who are great target candidates for the DI program so we are anxious to help continue to serve this market as soon as the program reopens.

Customer Use of Contractors

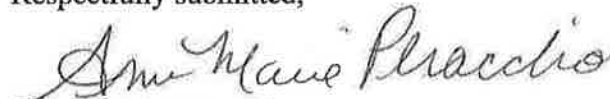
NJNG is supportive of the Proposal's interest in allowing customers to use their own contractor within the DI program, provided the contractor meets the established program requirements, pricing and training. This modification may help reach additional customers who have longstanding relationships with existing contractors and trust their guidance regarding recommendations. We believe this structure can be implemented in a manner that preserves the general turnkey nature of the program but allows for the possibility to leverage the trusted relationships of some contractors and their customers.

Updates for NJ Energy Code Changes

NJNG supports the Proposal's interest in a short term action to ensure that NJCEP funds are not being used to provide incentives for technologies that do not meet the minimum code, as well as the intention to provide a more comprehensive evaluation of changes needed for the Fiscal 2017 NJCEP Program Year.

NJNG appreciates the opportunity to provide comments on the Proposal. Please feel free to contact me if you need any additional information regarding these comments.

Respectfully submitted,



Anne-Marie Peracchio

Director- Conservation and Clean Energy

Cc: publiccomments@NJCleanEnergy.com



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April 6, 2015

Via Electronic Mail

Division of Economic Development & Emerging Issues
NJ Board of Public Utilities
44 South Clinton Ave.
Trenton, NJ 08625

Attn: Marisa Slaten, *Assistant Director*
publiccomments@NJCleanEnergy.com

Re: Direct Install Proposed Program Changes

Dear Ms. Slaten,

This letter is to provide comments from mV3 LLC d/b/a Freeaire (“**Freeaire**”) to the NJECP Commercial and Industrial Program Request for Comments, dated March 24, 2016, for “Direct Install Proposed Program Changes” (the “**RFC**”). Freeaire¹ is a turnkey provider of commercial and industrial refrigeration related energy efficiency measures.

We applaud the New Jersey Board of Public Utilities (the “**Board**”) in its continued support for commercial and industrial energy efficiency projects through the Direct Install program (the “**DI Program**”). Specifically, we are encouraged by the Board’s goal of “increas[ing] the number of contractors that participate in the program.” We believe a broad array of providers will create a robust program and generate the greatest level of cost-effective energy saving projects.

In the following letter, we will first highlight some issues or questions raised by the RFC and provide our recommendations. Next, we will address some other items that we think would benefit the program.

PROGRAM STRUCTURE

Clarification on Program Requirements

Bullet 1 of the RFC contemplates a Request for Proposal process to select Participating Contractors on the basis of meeting or exceeding certain program requirements. Bullet 2 of the RFC contemplates allowing third party vendors access to the program if requested by the customer so long as that contractor meets “the Program requirements, agree[s] to the established pricing and complete[s]”

¹ More information about Freeaire and its patented Freeaire® All Climate™ Controller, and Polar Power® Package is available at www.freeaire.com. Freeaire develops refrigeration projects through a dedicated sale force and performs all installations through our internal team of licensed electricians.

training.” Both of these bullets beg the question of what the “Program Requirements” will be.

In commentary, representatives of TRC have indicated that one Program Requirement will be that the contractor be able to provide “turnkey” services, meaning that the vendor, either directly or through subcontractors, will be able to provide all measures, including lighting, HVAC and refrigeration. This is a change to how the program was previously administered. We understand the policy rationale is to foster **comprehensive** projects with the **administrative simplicity** of one contact for both the customer and program administrator.

The result of this policy will be necessarily to create a network of general contractors and subcontractors collaborating to deliver the comprehensive measures. There is no single company that currently provides all of the enumerated measures. Specifically, there are only a limited number of companies and technologies that deliver comprehensive refrigeration solutions.² To our knowledge, Freeaire³ and National Resource Management (“NRM”) are the only competitors that have the necessary experience, technology and skills to deliver refrigeration-specific “turnkey” services. We note that prior to Freeaire’s entry into the New Jersey market, NRM was the only refrigeration provider and had been given the exclusive right to provide refrigeration measures, which prevented new entrants, such as Freeaire, from working in New Jersey.

To understand this dynamic, it is important to note that refrigeration is unique. Every cooler and freezer is different – different in the mix of size, shape, age, maintenance conditions, location in the building, cooling load, door heaters, array of novelty coolers, compressors, evaporator layout, zones, etc. As such, there are no easily generalized one size fits all solutions. Our experience is that **generalists that attempt to provide refrigeration measures tend to cherry pick one or two measures and rely on single use products. The result is that, when complete, the project will have captured only a subset of the available savings and made it financially unviable for a subsequent vendor to complete the remaining measures.** In short, contrary to the goal of comprehensive savings, focusing on one-off measures results in some amount of potential savings being lost forever.

² See “Summary of Advanced WICF Control Technologies,” Navigant Consulting, Inc., May 4, 2015, on behalf of U.S. Department of Energy Better Buildings Alliance Food Service Technology Team, p. 4. This report lists seven refrigeration technologies. Only the CoolTrol by National Resources Management and Freeaire All Climate Controller by Freeaire provide door heater, novelty and economizer controls in addition to evaporator fan cycling. The Cooltrol and All Climate Controller are proprietary to the applicable company and not offered through any distributor, reseller or third party.

³ Freeaire currently provides only refrigeration related measures, including replacement LED located in coolers, but not lighting in other parts of the store. In other states, we partner with other energy service companies to provide a comprehensive array of energy saving measures.



Recommendation: Qualified Vendors

Given this market reality, we recommend that the Board authorize the Program Administrator to create a classification for specialist vendors to apply, demonstrate their qualifications and enter the DI Program eco-system. With only two refrigeration contractors and potentially limited groups of other specialist vendors, it behooves all parties to make it as easy to deliver all of the desired services uniformly in the market.

We further recommend that these “Qualified Vendors” be given certain access to facilitate their support of the Participating Contractors.⁴

- **Approved Savings Formula** – Due to the complexity, in many states refrigeration is treated as a custom measure and often requires engineering review for every project. While understandable, this is not necessary in the context of a stable suite of measures. We recommend that the savings calculations tools be reviewed and approved as part of a qualification process. Once that review is complete, the vendors should be able to rely on the tool to accurately calculate both the anticipated savings and the eligible incentives for a given project. There are three benefits to pre-vetting the calculations. First, this substantially reduces the implementation costs of engineering reviews by eliminating the repeated review of the same formulae. Second, it increases certainty and consistency ensuring that all customers will receive the same calculated savings, rather than savings varying by the identity of the reviewing engineer. Finally, it increases the speed with which the Qualified Vendor would be able to evaluate, pitch and close projects for customers.
- **Access to Online Tools** – We recommend that Qualified Vendors be given access to any online tools being used by the Program Administrator and Participating Contractor. This will allow the Qualified Vendor, who knows its portion of a project better than the Participating Contractor, to do the data entry on its piece. This will make it easier and more accurate for both the Participating Contractor and Program Administrator.⁵ The Qualified Vendor, in turn, will have greater transparency into the status of projects and can work with the applicable Participating Contractor to set customer expectations.

⁴ We recommend that the Program Administrator reach out to Eversource in Massachusetts to see an example of this idea. Eversource recently completed an RFP requiring “comprehensive” Direct Install vendors. However, as part of that process they are currently developing a network of “Preferred Vendors” similar to the idea of the Qualified Vendor discussed above. It is scheduled to go out to RFP at the beginning of Q2 2016.

⁵ If allowed access to the online tool, Freeaire intends to create a data tool that will automate importing project data captured in Freeaire’s systems during audits and putting it directly into any online tool. This will increase speed and accuracy of data entry for the benefit of all parties.



- **Access to Customer Usage Data** – We recommend that the online tool also include access to the customer’s usage data (with the customer’s approval) so that the Participating Contractors and Qualified Vendors can (a) pre-screen measures against real world usage to confirm that expectations are reasonable, (b) set an appropriate baseline for current usage and (c) track post-installation results to confirm that all measures are operating as expected (see Digital Connected Solutions below).
- **Networking** – We recommend that the Program Administrator include Qualified Vendors in correspondence about program updates and organize sessions where vendors can network and work together on projects⁶. Given the rapid change in the industry, our expectation is that partnerships and cooperation will continue to evolve as new parties enter the market. It is in everyone’s benefit to have a forum to foster cooperation among the vendor community.

Customer Directed Program

The second bullet of the RFC suggests that Participating Contractors will be allocated specific geographic territories.⁷ It further states that the program will “[a]llow customer to use their own contractor” if that contractor meets the Program Requirements, completes training and uses the established pricing. This is conceptually similar to “customer directed option” programs used by utilities and program administrators in other states.

We suspect that many potential Participating Contractors will oppose this option. We agree with the proposal and strongly support allowing for customer choice. Customer choice will bring more vendors to the program, increase competition and increase end customer satisfaction. However, it is worth acknowledging that a customer option, with the other elements of the program, will create some complexity.

First, it is unclear whether a Participating Contractor with an allocated geographic territory will be allowed to enter and compete in another territory as the designee of a customer. For customers such as chains that cover multiple territories, it makes sense to have one provider provide services to all locations, regardless of territorial lines. However, this also creates the opportunity for conflict between Participating Contractors as one would use the program to enter and compete across territories.

⁶ Reference is made to MassSave in Massachusetts which recently organized a series of Vendor Open Houses, which specifically included a networking time.

⁷ “the applicant will be given the option to proceed using one of the approved Participating Contractors (as referenced above) *for that specified territory*. [emphasis added]” Geographic allocation, with the exception of refrigeration, is consistent with how the program was historically managed.



Second, the implication of bullet 2 and the Program Requirements, is that a vendor that would like to participate in the customer directed program must also be able to provide all measures. If that is the intended outcome, it actually increases the potential for conflict between Participating Contractors. As discussed above, no one company has the capability to provide all measures. This means that projects will be served by teams of vendors. If a specialist develops a project it will look to bring in partners to provide the other measures and such partners may include a Participating Contractor from another territory.

Recommendation: Facilitated Program Access

We expect that the Program Administrator will solve these potential conflicts by creating informal or formal expectations or rules to cover geographic territories⁸. We recommend that the Program Administrator also create an expectation in the Request for Proposal that a Participating Contractor in a given geography should be open to support applications from non-comprehensive vendors. For example, an HVAC provider with a project should be able to submit the project to the Participating Contractor in that territory and look to them and their sub contractors to provide the lighting and other measures. *The crucial element will be to create a process where the specialist will be able to trust that their lead will be protected for the services that they can offer.* This benefits all parties because the Program Administrator will have less conflict and more customers being served, the Participating Contractor will get business leads from specialists, and the specialists will be able to submit jobs without having to create a network of sub contractors or fear having their leads stolen.

Additionally, the Program Administrator should set expectations for the acceptable time required to process a job by all members of a project team and the Program Administration team. **Delays in getting incentives and approvals can create significant challenges with customers as part of the selling cycle.**

Recommendation: No Exclusive Refrigeration Geographies

We strongly recommend that the Program Administrator not create exclusive geographic territories for refrigeration. The Participating Contractors will be better served by having the right to partner with one, or the other or both of the refrigeration specialists and to change that mix over time. Fostering this flexibility is one reason that we recommend creating the Qualified Vendor concept.

⁸ For example, in Eversource's Massachusetts Direct Install program, program administrators have allowed vendors to perform up to 20-30% of their annual business outside of their respective geographic territory. In our experience, most Direct Install partners honor the spirit of these allocations and, absent a specific business tie to a customer, will push opportunities to the Direct Install partner with the rights to the territory from which the opportunity comes.



Program Pricing

Paragraph 3 of the RFC states that “the program administrator will rebid installation contractor services through [a] new RFP process (for HVAC/Mechanical equipment & labor only).” We understand the Board’s desire to ensure fair pricing through an RFP process. It is our understanding from discussion with program participants that, under the prior DI program, the Program Administrator implemented these cost levels through the use of a cost benefit screening tool.⁹ If the cost of the incentive on a project exceeded a given threshold¹⁰, the project was rejected and had to be reformulated.

For the purpose of this discussion, we will assume that the threshold was based on a simple calculation of total project cost / first year kWh saved. We recommend that the Program Administrator take the measure life of products into account when setting the target incentive level to properly reflect the benefit delivered by long lived measures.¹¹

We highlight that the categorization in the RFP should be done on an “apples to apples” basis for both labor and hardware.

With respect to labor, any pricing should be applicable to the qualifications. For example, refrigeration control related projects require installation by a licensed electrician with experience with refrigeration and control systems. In New Jersey, electrician wages are subject to prevailing wage that differs depending on the county in which the project is located. The RFP should contemplate a base rate for labor that is increased to reflect prevailing wage requirements. If one rate is used, this will either result in projects being priced at the highest rate for the entire state or vendors that may be disinclined to operate in certain portions of the state.

Within the world of refrigeration, we note that there are two broad approaches to hardware. First as systems that are designed to address multiple measures and deliver comprehensive system-wide savings. As noted earlier, there are only two competitors that currently provide comprehensive systems that can deliver 4 or 5 measures. Second, there are individual devices that deliver one measure per

⁹ The role of the calculation of kWh saved as the threshold for incentives highlights the importance of the agreed formulae as discussed in the Approved Calculation bullet above.

¹⁰ While not public, our understanding was that the cut off for the cost tool was approximately \$0.40 of incentive per kWh saved for refrigeration measures. With the assumption that going forward all refrigeration measures will be performed as subcontractors to a Participating Contractor, we assume that the applicable Participating Contractor will mark up projects 10-15%. As such, we use an assumed rate of \$.46/kWh in our example calculations in this letter. Incidentally, \$.46/kWh saved is roughly the amount provided by Eversource and National Grid in Massachusetts.

¹¹ We note that most refrigeration measures have Technical Resource Manual approved measure lives of 13-15 years. By contrast, lighting measures generally have measure lives of 2-8 years.



device.¹² We recommend that in weighing different product offerings, the Program Administrators bucket products so that they are comparing like for like.

Adding to the complexity there is also a wide variety in how products that provide a similar blend of measures are priced.¹³ As new products are developed or adapted, we expect that there will be additional changes in cost and pricing schemes.

Recommendation: Cap on \$ Incentive / kWh Saved Instead of Rejection

We recommend that the Program Administrator move away from a strict cost benefit calculation. Instead of rejecting a project that has a higher project cost, we recommend that the Program Administrator should simply cap the total incentive at a target level – the lesser of 70% of project cost and the target cost per kWh of savings.

For example, assume two projects with the following total cost and kWh Savings.

	Project A	Project B
Project Cost	\$ 7,000 100%	\$ 5,000 100%
Incentive	\$ 4,900 70%	\$ 3,500 70%
Customer Portion	\$ 2,100 30%	\$ 1,500 30%
kWh Savings	10,000	10,000
Incentive / kWh	\$ 0.49	\$ 0.35

Our understanding is that under the old program Project A would be rejected whereas Project B would not.

¹² Freeaire actually uses a mix of both approaches. For example, our All Climate Controller enables a variety of measures, including evaporator fan control, door heater control, and novelty cooler control. However, taking a holistic approach, we also use individual measure products, such as Electronically Commutated Motors and LED lights where those measures can effectively add to the system wide savings.

¹³ For example, the cost to provide Door Heater controls with Freeaire is the cost of the underlying controller that covers multiple measures plus the hardware and labor to hook up that controller to the door frames, regardless of the number of doors or door frames. Freeaire’s primary competitor by contrast charges a little less for the base controller, but instead charges more for the door heaters through an incremental fee plus labor for each door frame controlled.



Instead, we recommend that both be accepted with the allowed incentive below (representing the lesser of the incentive cap – \$.46/kWh in this example –and 70%):

	Project A	Project B
Project Cost	\$ 7,000 100%	\$ 5,000 100%
Incentive	\$ 4,600 66%	\$ 3,500 70%
Customer Portion	\$ 2,400 34%	\$ 1,500 30%
kWh Savings	10,000	10,000
Incentive / kWh	\$ 0.46	\$ 0.35

We believe that from a policy perspective, the Board and Program Administrator should be focused on the cost to the program of the kWh saved, not the cost to the customer of those savings. While we understand the need to have the customer bear some cost and have “skin in the game” in order to avoid wasteful purchases, the inverse is not true. If the cost of a project results in a lower percentage incentive, but the customer is willing to move forward, the Board and Program Administrators have delivered the savings in a cost effective way and used the rate payers’ funds in a responsible manner. By allowing the customer to consider non-energy costs and benefits related to the project (see Digitally Connected Solutions below), the program can allow market forces to work while minimizing the cost to the program.

In the interest of transparency, we recommend that the Program Administrator publically disclose the target threshold so that the formula can be incorporated into the savings calculations tools (see Approved Savings Formula above).

NEW ELEMENTS FOR CONSIDERATION

The following are two areas where we believe the Board and the Program Administrator can develop new policies that can strengthen the DI Program.

Financing

A primary barrier to many small businesses executing on energy efficiency projects is cash flow. Lacking available capital, many of these small businesses are unable to pursue even projects that offer a high internal rate of return. Applied Energy Group expressed that “NJCEP programs can make better use of financing as a tool to address some market barriers to investments in clean energy.”¹⁴ We echo this sentiment and recommend that the Board and Program Administrator consider implementing a unified approach to energy efficiency financing. A low cost financing option can have huge impact to customer adoption. Ideally financing

¹⁴ Section 4.4.3.5 of the Request for Proposal: Strategic Plan, Applied Energy Group (“Strategic Plan”), p. 3.



should be structured so that the monthly cost is less than the monthly savings – in other words, the customer will receive positive cash flow at inception.

One approach is on bill financing (also known as “on bill recovery”¹⁵) whereby the utility finances the customer portion of the project cost and collects payment from the customer on its bill. Having the financing payment as a part of the monthly utility bill minimizes the repayment risk associated with the loan. Given a target incentive rate of 70%, 12-24 months financing should be sufficient to make most projects cash flow positive.

An alternative approach is to try to use third party or private sector financing for projects. By creating clear parameters and potentially helping to pool payment risks, the Board and Program Administrator could support the entry of private financiers.

Finally, we recommend that the Board and Program Administrator begin to research what would be required to foster the development of shared savings arrangements¹⁶ for small business projects. Under a shared savings arrangement, the customer pays for an energy efficiency project by agreeing to share the savings that they will capture through the project with a party that advances the cost of the project. The financing party, and in some cases the selling vendor, share the risk of the project delivering the projected savings. These shared savings arrangements have a number of challenges that make them very difficult in the context of small business, including smaller project size, transaction costs, and tracking and calculating savings. We recommend that the Program Administrator help support the development of standards of how to calculate savings and mandating the availability by utilities of granular bill data necessary to track and calculate savings (see [Access to Customer Usage Data](#) above).

Digitally Connected Solutions

Applied Energy Group stated that the Board should support emerging technologies.¹⁷ We whole heartedly agree. We highlight for the Board one important emerging technology referred to as the “internet of things” – that is to say web enabled devices that perform and react based on the exchange of data through the web. One example of the promise of this sort of technology was demonstrated by BuildingIQ’s presentation at the March 2016 Energy Efficiency Committee

¹⁵ See National Grid in Massachusetts, Rhode Island and New York; Everource in Massachusetts and Connecticut; and United Illuminating in Connecticut. Terms vary by utility and state, but are generally 0% and range from 12-48 month in duration.

¹⁶ Renew Energy Partners, LLC based in Boston, MA and Efficiency Capital Corporation based in Toronto, ON are private companies which offer variants on this type of financing. Given transaction costs, these projects generally require a net cost of over \$200,000 to make the transaction costs worth while.

¹⁷ Strategic Plan, p.3.



meeting. These type of technologies are poised to transform the energy efficiency industry in both the ability to deliver savings through intelligent control and predictive analytics, and the ancillary benefits of live data. We will touch on some of the benefits of access to live data below.

For example, as we audit potential customers we often find energy efficiency measures that have been installed but are no longer operational. This can happen either because the measure is broken, improperly installed or, through no fault of the vendor, the customer has turned the measure off¹⁸. This means that some or all of projected savings for that location will be lost. However, in a system that incorporates digital monitoring the customer or vendor will instantly know if the system is no longer functioning and can repair it. This feedback loop improves the persistence of savings for a measure and ensures that public dollars are prudently allocated. In short, it ensures that the savings are delivered for the entire projected useful life.

Further, the existence of a live stream of data offers new ways for utilities or the Program Administrator to perform any required post-install inspections. Live or trend data from a web enabled device can be used to determine that the measure is up and executing as contemplated. Further, this can be done from the comfort of a desk with no travel and minimal time required – reducing administrative costs and capturing operational not normally tracked as part of a post-install inspection.

In addition, in the real world, underlying systems degrade and suffer performance challenges that impact energy consumption. For example, in one study, Cadmus “observed many iced-up or dirty evaporator coils... These conditions restrict air flow across the evaporator, causing evaporator fan motors to operate at higher powers and the refrigeration system to be less efficient.”¹⁹ **Trend data from digital monitoring systems can be used to identify changes in system performance and highlight maintenance requirements.** In addition, the same trend data can be used to highlight older or less efficient equipment²⁰ that can be replaced as part of a

¹⁸ As a timely anecdote, last week one of our Energy Savings Consultants did an audit of a small grocery store in Whitney Point, NY. Our competitor had just completed an installation of its system, including controls on four coolers at the store. Despite appearing to be less than three months old, through no fault of our competitor, the controller on one on the coolers had already been placed into bypass, meaning that cooler did not get any savings.

¹⁹ “Commercial Refrigeration Loadshape Project”, Cadmus Group, Inc. on behalf of the Northeast Energy Efficiency Partnership Regional Evaluation, Measurement and Verification Forum, October 9 2015, p. 88.

²⁰ By way of anecdote, by benchmarking compressor usage data, Freeaire was able to demonstrate for a customer that, by upgrading an old compressor, the customer could save approximately \$12,000 a year in energy costs. Prior to the discussion, the customer had been reluctant to invest in



capital upgrade. As a result, this data facilitates both maintaining the projected savings as well as discovering new opportunities.

Some other states are also looking at web enabled devices in the context of demand reduction and demand response.²¹ While any one project location may be small, by creating a portfolio of sites that incorporate smart web-enabled technologies, the Board can create a pool of demand that can be addressed as technologies change and improve.

In addition to the energy savings benefits, there are non-energy related benefits for customers. For example, in the refrigeration context many customers care as much about risk mitigation as they do about the related energy costs. The safety of what is in the cooler or freezer is paramount to the customer's base business. For example, a food seller that is unaware of a refrigeration problem that causes their milk to get outside of a safe temperature range risks their customers getting sick. Alternatively, a bakery whose refrigeration system goes down three days before Thanksgiving without warning will lose multiple coolers full of cakes and pies – as well as the revenue and customer loyalty associated with those products. The value to the customer of these ancillary benefits can best be measured by whether the customer is willing to move forward with a project that may be more expensive than simply a standard energy efficiency project.

Recommendation: Require Digital Monitoring for Refrigeration Measures

Based on the myriad benefits of digital monitoring, we recommend that the Board and Program Administrator encourage energy savings technologies that incorporate digital monitoring generally and require it in the context of refrigeration measures. We recommend that to qualify as a digitally monitored product that some party have an obligation to monitor the performance of the system for at least twelve months as part of the initial cost of the system.

Alternatively, the Program Administrator could provide that products that incorporate digital monitoring are subject to a different threshold or cost benefit tests as non-monitored version of the same product.

CONCLUSION

As set forth above, we thank the Board for their support of C&I Energy Efficiency projects through the Direct Install Program. The general framework for a proposed DI Program, specifically the customer directed option, marks a significant improvement. Our hope is that the Board and Program Administrator will be able to

new capital equipment because the upfront cost was greater than the maintenance cost of the existing system.

²¹ For example, the State of Connecticut DEEP/PURA Energy Efficiency Committee is currently promoting a pilot study of "smart" thermostats tied into a demand response system.

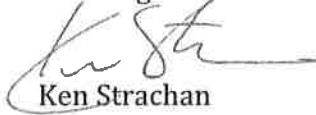


incorporate the recommendations above to further develop the Direct Install Program in its stated goal of expanding participation, increasing savings and reducing cost.

Do not hesitate to contact me at 617.658.4424 if you have any questions or require any additional materials related to the ideas discussed above.

We look forward to working in the Direct Install program in New Jersey.

Best Regards



Ken Strachan

CC: Michael Ambrosio, *Applied Energy Group*
Carl Teter, *TRC Companies, Inc.*



From: [Tejas Desai](#)
To: publiccomments@NJCleanEnergy.com
Subject: Direct Install and Energy Code Impact on C&I Programs
Date: Thursday, April 07, 2016 10:46:23 AM
Attachments: [DI-EnergyCode request for comments 3-24-16.pdf](#)

Dear Program Manager,

Please find attached our comments to the program changes.

Thank You!

Best Regards,
Tejas Desai PE, CEM, EBCP, CEA, LEED AP, CDSM
Director of Programs, Engineering



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NJCEP Commercial & Industrial Program Request for Comments

Direct Install Proposed Program Changes

Background

The Direct Install program is designed to offer small to mid-sized local government and commercial building owners the opportunity to retrofit or replace existing inefficient equipment by providing incentives that cover 70% of eligible project costs, up to \$125,000. Direct Install has been delivered statewide by multiple regional participating contractors who have been selected via an open and competitive bidding process to deliver “turnkey” installation services.

Under the new program administrator contract, the NJCEP will maintain the “turnkey” approach, incentive levels, and eligibility requirements that participants have experienced thus far. The program changes set forth below describe a new program delivery method, which is designed to reduce the overall cost of labor and materials and increase the number of contractors that participate in the program.

Program Delivery Changes

- Update program pricing: The program administrator will ¹develop Requests for Proposals (RFPs) to obtain updated program pricing for all labor and materials. All material vendors and installation contractors (referred to as Participating Contractors) will be selected via an open and competitive bidding process. The program administrator will ²rebid installation contractor services through new RFP process (for HVAC/Mechanical equipment & labor only), and release an RFP for a statewide equipment supplier (or suppliers) which will be responsible for providing all offered program equipment except the HVAC/Mechanical equipment.
- Allow customers to use their own contractor - If an applicant wishes to utilize their own contractor, that contractor must meet the ³program requirements, agree to the established pricing and complete training. If the applicant’s contractor is unable to meet these requirements, the applicant will be given the option to proceed using one of the approved Participating Contractors (as referenced above) for that specified territory.

Additional details regarding the program design, equipment and contractor selection will be available in the pending RFPs referenced above.

The Board of Public Utilities will continue to evaluate additional program changes following the re-launch of the program.

Summary of Comments on Microsoft Word - DI-EnergyCode request for comments 3-24-16

Page: 1

T Number: 1 Author: tdesai Subject: Highlight Date: 4/7/2016 10:13:13 AM
How is PM dividing the state into regions?

T Number: 2 Author: tdesai Subject: Highlight Date: 4/7/2016 10:07:33 AM
It is little confusing to understand, why would the installation be rebid. It would be good clarify the whole process of RFP. Why only Mechanical/HVAC is being rebid and not other measures?

T Number: 3 Author: tdesai Subject: Highlight Date: 4/7/2016 10:09:17 AM
It will be helpful, if PM can outline minimum Program requirements here. It does not provide a clear indication, what are those as it is critical.



NJ Energy Code Impact Proposed Program Changes

Background

On September 21, 2015 the State of New Jersey adopted a new energy efficiency code. The energy sub-code is ASHRAE 90.1-2013 ("new code") which represents a technology efficiency increase of 25% versus the former energy code (ASHRAE 90.1-2007, "old code") on average across all building types. Retail buildings and schools saw the greatest increase where ASHRAE 90.1-2013 is 35% more efficient than ASHRAE 90.1-2007.

The new code carries a six (6) month grace period which expired on **March 21, 2016**. A complete permit application must have been received by the local agencies prior to this expiration date if the applicant wished to be approved under the old ASHRAE 90.1-2007 code. The local agencies will determine if the application is complete and accepted under the former or new code guidelines.

Since the energy code change occurred mid-program year, many program structures, incentives, efficiency levels and technical requirements are based on the former code. Therefore, short term modifications are required to sustain the program through FY16 and continue forward into FY17.

These changes are necessary in order to ensure incentives are not paid for technologies that no longer meet or exceed the new energy code.

Program Impact/Recommendations

Smart Start

With the code change, some equipment efficiency levels will fall below the new energy code baseline or otherwise reference the old code (e.g. performance lighting has to be 5% better than old code, custom requires 2% better than old code).

We recommend that for those technologies that fall below the new energy code, customers may *only* apply for these incentives upon either (a) proof of equipment purchase prior to March 21st or (b) proof of complete permit application(s) submitted to the local agency prior to the code change cut-off of March 21st (if applicable).

For those technologies that continue to *meet or exceed* the new code, customers with **retrofit** projects will be able to apply for those incentives. New Construction projects will need to demonstrate that proposed equipment *exceeds* the new code.

For FY17 SmartStart efficiency requirements, incremental savings, and related incentive levels will be re-evaluated relative to the new code.

Pay for Performance

For Existing Buildings, applications received after the code change cut-off (March 21st) will need to ensure proposed equipment meets or exceeds the new code or SmartStart efficiency requirements, whichever are more stringent, where applicable. This requirement will continue into FY17.

T Number: 1 Author: tdesai Subject: Highlight Date: 4/7/2016 10:45:44 AM

How will the retrofit projects be handled for the code changes i.e. all ASHRAE 90.1 2013 consider is LPD and controls. what are the rules for lighting measures and what are the requirements to meeting code change requirements.

New Construction projects permitted under the old building code may apply to the program without any modification. Projects permitted under the *new* building code may apply to the program, but will be required to demonstrate at least 15% energy cost savings from ASHRAE 90.1-2013 baseline. Proof of permit will be required. For FY17 the Pay for Performance New Construction program will undergo a re-design to better support improvement beyond the new energy code, as requiring 15% energy cost savings from ASHRAE 90.1-2013 may not be feasible for some facilities and may significantly impact program participation.

Large Energy Users Program

Applications received after the code change cut-off (March 21st) will need to ensure proposed equipment meets or exceed the new code or SmartStart efficiency requirements, whichever are more stringent, where applicable. This requirement will continue into FY17.

Direct Install

The forthcoming Direct Install RFP for new contractors will include equipment pricing and efficiency levels modified to meet or exceed ASHRAE 90.1-2013 code. Language will be added to RFP (as needed) or subsequent contracts to enable contractors and equipment to follow new code requirements.

Local Government Energy Audit

Upon program re-launch, recommended measures identified through an audit will require that they either meet or exceed the new code, or meet SmartStart requirements, whichever is more stringent.

Comments on the proposed changes should be submitted by April 7, 2016 to:
publiccomments@NJCleanEnergy.com and reference "Proposed Changes to the Direct Install Program."

