



June 10th, 2016

New Jersey's Clean Energy Program
New Jersey Board of Public Utilities
44 South Clinton Avenue
Trenton, New Jersey 08625

Re: Restore the 200kW Exemption threshold for Public Entities to participate in the Pay for Performance Program

The Pay for Performance program has been very successful at helping incentivize and deliver comprehensive energy efficiency projects under the Energy Savings Improvement Program (ESIP) over the past several years. The synergy between the two programs has allowed public entities, and hence taxpayers, to benefit from comprehensive solutions first identified in the Local Government Energy Audits (LGEA). With the assurance of financial support from the LGEA through the development of ESIP projects, the P4P program has provided a pathway for public entities to save energy in a fiscally responsible manner, while reducing future capital expenses, and becoming significantly and consistently more energy efficient. Dozens of school districts and municipalities have participated in the ESIP and P4P program resulting in tens of thousands of Megawatt-hours (mWh) saved. From the start of the P4P program through FY 2015, there was always an exemption for public entities (schools, universities, city buildings, etc.) from the P4P eligibility requirement of a 200kW monthly demand minimum. For FY16, that exemption was removed, creating many unintended consequences that will negatively affect virtually all public entities that go through the ESIP program. We ask that the NJ Clean Energy Program restore the exemption of public entities from the 200kW threshold.

Although the Direct Install and Smart Start programs provide incentives for energy efficient measures, they do not support a whole building comprehensive approach as the ESIP program promotes. Therefore, public buildings that meet the 15% savings threshold, and no longer qualify due to the 200kW minimum are being unfairly disadvantaged, we believe, counter to the stated goals and intentions of the ESIP concept. Those projects that meet the 15% threshold, but are not able to participate in the P4P program due to the 200kW threshold are impacted, reducing the comprehensiveness of energy efficient scope within the ESIP program. Even more than the 15% energy savings threshold, the 200kW threshold becomes the most limiting factor in determining whether a public building will be eligible to obtain financial support through the P4P program. In one school district alone, this one added criterion eliminated 15 out of 20 buildings from consideration for P4P incentive money. Thus, despite a proposed comprehensive solution under the ESIP program a smaller building would not enjoy the same opportunity

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to be incentivized as another building in the same district/municipality due strictly to its size and not the merits of the proposed comprehensive energy savings approach. Additionally public entities such as school districts and municipalities are very challenged for available dollars in both operating costs and capital. Therefore even though the Direct Install program is a very worthwhile program, most of these smaller entities still struggle to pay their portion of the upgrades due to lack of funds. Within the ESIP program, funding is part of the solution and the out of pocket costs are eliminated while implementing an efficiency solution.

When evaluating energy conservation measures, economics plays a major role. To date, Honeywell's 80 successful ESIP projects have all been incentivized through the P4P program, the exception being a few buildings that went through the Smart Start program due to utility billing issues or were too small (less than 75kW) to economically develop an Energy Reduction Plan. This represents the vast majority of approved P4P projects to date. This has been very beneficial for the ESIP program, the public entities, and most importantly the taxpayers. P4P incentive funding has allowed fiscally strapped public entities to avoid public referendums and has eliminated a tremendous amount of deferred maintenance. With the restoration of the exemption from the 200kW minimum demand requirement, we would continue to see the trend of nearly all buildings within ESIP projects qualifying for P4P. This restoration of the 200kW exemption goes beyond Honeywell's projects, as all ESIP projects are affected. We believe that part of the ESIP programs success has been tethered to the generous rebate opportunity provided by the P4P program, which is one of the best in the country.

The P4P program has been a very strong marketing tool for public entities to participate in the ESIP program. In fact, the P4P program is discussed with every potential customer to show that the NJ Clean Energy Fund offers high levels of incentivizes for inclusive, comprehensive energy savings projects. This has allowed customers to further validate the benefits that the ESIP program can provide.

Furthermore, it becomes a difficult conversation to have with a municipality or school district that despite the inclusive nature of the LGEA and ESIP program; and the proposed comprehensive scope through the ESIP project, some schools/buildings within their district that meet the 15% savings threshold would not qualify for the higher level of incentives simply due to the 200kW threshold, resulting in, on average, only about 25 – 35% of the incentive value that could have been obtained for that building in the absence of the 200 kW minimum demand requirement.

Honeywell has found through experience over the past few years that buildings under 75kW are not economically advantageous to participate in the P4P program, due to the increased amount of



documentation and time to get an approved Energy Reduction Plan. Moving forward Honeywell will steer projects 75kW or under to the Direct Install and Smart Start programs. We believe this is the right kW threshold for public entities, to balance the rebate opportunity to the amount of resources required to achieve an approved Energy Reduction Plan.

To conclude, excluding previously eligible buildings with a peak demand of less than 200kW results in a tremendous amount of lost opportunity for savings that disproportionately impacts smaller public buildings such as elementary schools from participating in the P4P program. This directly results in smaller energy efficiency scope due to the reduced incentive. The P4P program recently removed the 10% IRR requirement which allows a more inclusive energy efficiency scope and allows P4P projects to include more capital heavy measures, helping to offset future capital expenditures. We laud this change and believe that our present request will help to further encourage increasing the energy efficiency of a large portion of our public buildings.

Below are a few current projects within the ESIP program that will be completed within the next six months. These projects would be adversely affected if the 200kW threshold were to remain for public entities.

Denville Board of Education

- If 200kW exemption was restored – three (3) schools would participate in the P4P program
- If 200kW threshold remains in place – one (1) school would participate in the P4P program
- Honeywell estimates that approximately \$65,000 - \$75,000 would be lost opportunity of incentivizes for the school district. This translates to roughly 40% of the incentive previously available. This is the estimated difference between the Smart Start, Direct Install program compared to the P4P program

Clinton Township Board of Education

- If 200kW exemption was restored – six (6) schools would participate in the P4P program
- If 200kW threshold remains in place – one (1) school would participate in the P4P program
- Honeywell estimates that approximately \$200,000 - \$250,000 of incentive money would be lost to the school district. This translates to roughly 30% of the incentive previously available. This is the estimated difference between the Smart Start, Direct Install program compared to the P4P program

Old Bridge Board of Education

- If 200kW exemption was restored – twenty (20) buildings would participate in the P4P program

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- If 200kW threshold remains in place – five (5) buildings would participate in the P4P program
- Honeywell estimates that approximately \$600,000 - \$700,000 of incentive money would be lost to the school district. This translates to roughly 55% of the incentive previously available. This is the estimated difference between the Smart Start, Direct Install program compared to the P4P program

Bloomfield School District


- If 200kW exemption was restored – nine (9) schools would participate in the P4P program
- If 200kW threshold remains in place – no schools would participate in the P4P program
- Honeywell estimates that approximately \$250,000 - \$350,000 of incentive money would be lost to the school district. This translates to roughly 35% of the incentive previously available. This is the estimated difference between the Smart Start, Direct Install program compared to the P4P program

City of Perth Amboy

- If 200kW exemption was restored – three (3) buildings would participate in the P4P program
- If 200kW threshold remains in place – one (1) building would participate in the P4P program
- Honeywell estimates that approximately \$50,000 - \$75,000 of incentive money would be lost to the school district. This translates to roughly 30% of the incentive previously available. This is the estimated difference between the Smart Start, Direct Install program compared to the P4P program

We greatly appreciate the NJ Clean Energy Program's consideration in this matter and strongly believe that the restoration of the 200kW exemption for public entities is good for the NJ Clean Energy program, the ESIP program/participation, for public entities, and for the taxpayers of the State of New Jersey.

Sincerely,



Joseph J. Coscia
Sr. Business Consultant
Honeywell International

Wetzel, Linda

From: James Pfeiffer <pfeifferjr@aol.com>
Sent: Wednesday, June 01, 2016 1:31 PM
To: publiccomments@njcleanenergy.com
Subject: Straw CRA Proposal FY17

Sirs:

I'd like to make a recommendation to the FY17 NJ Clean Energy Program.

The New Jersey Clean Energy Program has been a model for promoting clean energy. However, there are new avenues of clean energy in development that NJ should plan to foster so as to become a leader in all aspects of clean energy and to promote job growth. One of these budding areas is waste to energy, but without incineration. There are already some avenues in the Clean Energy Program for this in the Biopower program. The objectives of the Biopower program are:

- Turn waste into resources
- Provides a renewable source of electricity
- Reduces use of fossil fuels
- Promotes biopower industries

Why limit the feedstock to vegetative material? How about expanding this to plastics, used wood, old carpeting, etc.? If we can turn waste products that have a calorific value into a synthetic gas (syngas) that can be used in lieu of natural gas, we can:

- Greatly reduce the waste that is burned or dumped into landfills,
- Provide a continuous source of fuel for electricity generation,
- Reduce use of fossil fuels, and
- Promote growth and employment of a new industry.

Please give consideration to opening the door for new technologies that could transform that way the world develops energy and deals with waste. Consider allocating funds for new technologies that can convert waste into a fuel for electrical generation. Thank you!

Regards,

James Pfeiffer, CEM
EnGeneration, LLC
201-251-3815 office
201-264-5361 mobile



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

Re: Straw CRA Proposal FY17

Dear Secretary Asbury:

In accordance with the Notice dated May 31, 2016 in the above referenced matter, and on behalf of Direct Energy, among the nation's largest third party supply and energy service companies, I am submitting the following comments specifically with regard to that part of the Straw CRA Proposal FY17 which recommends suspension of all-electric fuel cell technologies from being eligible for incentives.

Many parties, including Direct Energy, were gearing up for the anticipated 2017 Fiscal Year program. The New Jersey Board of Public Utilities ("NJBPU" or "Board") Staff's proposal thus comes as a surprise to interested parties like ourselves who have multiple interested clients who believe their load profile and circumstances may warrant the all-electric fuel cell solutions that Staff proposes to exclude.

Board Staff's proposal is devoid of any apparent analysis that would justify the proposed suspension. Specifically, it is unclear if Board Staff included available federal Income Tax Credits or other valuable inputs (like high capacity factors of all-electric fuel cells, the value of avoided air pollution impacts, the value of avoided water use, investments made in NJ by the supply chain, etc.) that would likely place all-electric fuel cells without heat recovery comparable to or even ahead of other DER solutions.

Further, Board Staff's reference to California's proceedings is misplaced given that the California PUC subsequently issued a Proposed Decision which includes all-electric fuel cells because of their GHG reductions and elimination of criteria pollutants. See page 57, Section 12 of <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M162/K005/162005693.PDF>.

Thus, before the NJBPU suspends a program that obviously was quite popular in 2015 (as evidenced by the NJBPU's closing of the program in 2015 due to more applications for projects than there was available funding), the NJBPU should permit the FY 2017 program to proceed while in parallel engaging the industry to explore the parameters in which future incentive programs may be offered.



Direct Energy appreciates the opportunity to comment on the Straw CRA Proposal FY17 and looks forward to working with the Board and Staff on creating incentive programs that achieve the State's Energy Master Plan goals and providing value that can reduce energy consumption and Greenhouse Gas emissions.

Respectfully submitted,

Robert L. Gibbs

Robert L. Gibbs, Esq.
Director, Government & Regulatory Affairs
Direct Energy
194 Wood Avenue South, Floor 2
Iselin, New Jersey 08830

June 14, 2016

Dear Secretary Asbury:

I have several questions regarding the proposed NJCEP FY 2017 budget.

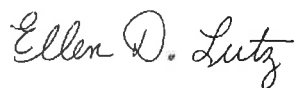
In the Request for Comments sent out by Marisa Slaten on May 31, there was an attached revised budget that showed a line item for "New Marketing Contract" of \$374,155. Yet in the presentation given by AEG on June 14th at the EE Committee Meeting, there was a line item in the program budget of \$3,750,000 for Marketing. At that same meeting, ICF presented their "Enhanced Outreach Plan", which included "outbound communications", which is a marketing function. Outbound communications was not listed within the scope of the Program Outreach function, detailed in Section 3.10 of the NJCEP Program Administration RFP.

My questions are the following:

1. Is the \$3,750,000 program Marketing line item for a new Marketing contract, for which the RFP has not been released, or is it for ICF to do its "Enhanced Outreach Plan"?
2. What is the purpose of the \$374,155 line item under "New Marketing Contract" Table 3, Revised Budgets that Ms. Slaten sent out? Is that the value of the new marketing RFP that has yet to be released?
3. If the "Enhanced Outreach Plan" that is being implemented contains marketing activities such as outbound communications, is that not in conflict with the NJCEP Program Administration's RFP language, which stated that any company that was successful in winning the Program Administration contract may not win subsequent contracts under the NJCEP program? At the time the Program Administration RFP was issued last year, the NJBPU publicly announced at an EE Monthly Meeting that it would be issuing a follow-on Marketing RFP. Will the Marketing RFP still be released, or is it being incorporated into the Program Administration function?

Your responses to these questions would be greatly appreciated. Should you need clarification, I can be reached at 215-518-7130 or elutz@clean-markets.com.

Best Regards,



Ellen Lutz
CEO, Clean Markets



Shoreline Energy Advisors, LLC

Shoreline Energy Advisors, LLC would like to thank the BPU for soliciting industry input relating to next energy year funding for the Clean Energy Program. We submit the following comments for your consideration.

Suggested Program to Accelerate Resiliency with Micro Grids

The BPU should consider ways of lowering the cost of electric production from potential micro grids. This can be done with a series of programs and practices that will both lower the cost of fuel and capacity, and will enable other sources of revenue, for critical and resilient micro grid installations. Shoreline urges the Board to consider the development and implementation of an integrated program of assistance that includes:

- *A grant of up to \$50,000 per project* (depending upon size, facilities served, etc.) to study a facility's, or collection of facilities, suitability for development of a micro grid. This study should focus on qualifying loads as critical, site characteristics, budget costs and technical and economic feasibility.
- *A grant of at least \$500 per KW of capacity* to defray the necessary increased capital cost of developing and operating micro grids. This grant is higher when compared to past cogeneration or distributed generation assistance programs in order to recognize the increased cost of resiliency. The grant should not be limited to only distribution related assets but should include new generation if it is included as part of the project.
- *Implementation of Virtual Net Metering (VNM) for electric production produced by micro grids.* VNM would assign and qualify excess electric production from the micro grid going to both "affiliated accounts" (accounts which are owned and paid for by the same people served by the micro grid) **and "non-affiliated" accounts** (accounts owned by anyone in the service territory of the utility where the micro grid is located) as eligible for VNM treatment. If an emergency or outage situation were to occur, virtual "supply" to these VNM non-critical loads would cease and the installed generation would merely serve those loads originally identified as critical. While it is likely and reasonable to assume that the Local Distribution Company serving these loads would expect some level of compensation for lost accounts, accounting for some level of their lost capital recovery in utility tariffs, and spreading it over their entire customer base who by definition would benefit from resilient energy facilities would seem reasonable and justified. As with current VNM programs affecting solar photovoltaic generation, the amount of non-critical VNM KWH from micro grids should not exceed the annual volume of KWH usage at the accounts (affiliated and non-affiliated) being served by the micro grid and should be reconciled at year end. VNM will allow the micro grid to absorb its capacity costs much faster than if there were no VNM, with a significant reduction in the cost per KWH of production from the micro grid, making it easier to sell to public entities who are the likely host sites for these types of installations.
- *Establishment of a preferred firm gas distribution tariffs* for micro grids that allows for gas distribution charges that are at least 25% less than the distribution charges a cogeneration, fuel cell generator or interruptible gas tariff currently offers. Connecticut offers a tariff that waives local distribution costs for cogeneration which is another alternative worth considering.

- *Implementation of a program that requires electric utilities to achieve a gradually increasing percentage of the generation servicing customers in their territory with “resilient generation”.* This is analogous to the existing Renewable Portfolio Standard but it applies to resiliency as opposed to renewable fuels or generation. This resilient generation need not be owned, acquired or supplied by the utility but could be financed by them or their affiliates if they are interested in participating. The utility supplied debt should be traditional debt with interest rates low enough to encourage resiliency development. The generation would need to be located in the utilities territory. Each MWH of production from a resilient facility would create one “Electric Resiliency Credit” which would be a marketable financial instrument similar to Solar REC’s. Failure of a utility to provide proof of achieving gradually increasing annual targets of resiliency in their territory would require them to purchase an Electric Resiliency Certificate from the owner of the micro grid or distributed resource.
- *If cogenerated thermal is required to qualify for “Electric Resiliency Credits” or any incentive / market development benefit, required efficiencies (if any) should be relaxed from customary 70% levels to the 40% of 50% level.*
- *A loosening of current regulatory requirements effecting the distribution of thermal energy to customers who may not be the facilities served by the critical and resilient electric service from the micro grid. Thermal credits from cogeneration are an important component in bringing the costs of production down however it is likely that thermal needs from a micro grid running VNM will not approach what the micro grid is capable of producing, particularly at public facilities (city halls, public works facilities, police, fire or emergency services facilities, etc.) so any regulation aimed at making thermal utilization easier would be helpful to the development of these assets.*

Re-consider Flexibility with Diesel Generation as Backup for Resilient Micro Grids

With regard to security of fuel supply, current thinking seems to infer that natural gas will always be an uninterrupted source of fuel. While this is probably a safe bet the great majority of the time, it is possible that pipeline operations could be disturbed with a wide-spread power failure in which case natural gas fueled power generation from facilities in this proposed program would not be able to meet their energy resiliency objectives. New Jersey may want to re-consider its treatment on the use of diesel fuels as part of micro grids where they are part of critical facilities. While diesel generators are not built to run for prolonged periods of time, during Sandy many emergency generators were forced to operate for this length of time and did so without incident although they are not designed to do so. Allowing diesel generation as an “emergency” component of the “n+1” requirements for micro grids should be considered and will lower the overall cost of these projects as diesel prime movers are much less expensive than natural gas prime movers.

Utilizing of Thermal Storage to Facilitate Resiliency

Another commercially proven technology that has been noticeably absent in being addressed by prior Energy Master Plans is Thermal Energy Storage (either in single buildings, in district settings or in combination with renewable technologies). Thermal Energy Storage, a simple technology that has been around for years, has the ability to reduce electric capacity requirements and save energy cost in jurisdictions where there are material differences in commercial on-peak and off-peak demand charges. Thermal Energy Storage should also be recognized as a technology which actually saves energy.

Energy savings from the use of Thermal Energy Storage come from several areas:

- Nighttime chiller operations take advantage of lower dry-bulb or wet-bulb temperatures relative to daytime values and because of this, the delta T required from chiller operation is lower at night, requiring less energy to achieve operating goals.
- Base load power plants which operate at night to supply electricity to chillers, have higher electrical generating efficiencies than the peak load plants which must operate during the day to meet increased daytime demand.
- Line losses decrease in the cooler temperatures of the evening when there is also less congestion and resistance in distribution and transmission lines.
- Thermal energy storage enables existing chillers to operate at their highest efficiencies for the majority of the day when their discharge rates are controlled. Required chiller output is correlated with the chillers' most efficient loading (saving energy because when there are part load operating regimes, chillers require significantly more energy per ton of cooling).

New Jersey still has a significant office, laboratory or institution based economy with hundreds of thousands of jobs in industries like insurance, banking, pharmaceuticals, education, health care and entertainment. Incentives that address the energy needs of these industries more would seem to have a large universe of potential participants. These vibrant New Jersey industries all share the common need for conditioned space in their offices, laboratories, classrooms, venues or hospitals. Programs geared toward lowering the costs of conditioning this space can create and sustain jobs by keeping the operating costs for these facilities competitive with other sections of the country.

When one considers the number of suburban or urban facilities in our state which house office, hospitals, colleges, universities, K-12 schools, laboratories, etc., and look at when they are using large amounts of energy, the potential value for Thermal Energy Storage should be readily apparent. None the less, current and past energy programs offer little assistance for the development of these systems. The only place Thermal Energy Storage could be offered financial assistance is in the custom measures portion of the Clean Energy programs or as a component of a Pay for Performance integrated program. The ill-defined and subjective nature of Custom Measures makes it very difficult to factor this technology into a capital budget. Pay for Performance has its own obstacles in terms of ease of implementation related to the extraordinary engineering and energy modeling efforts required and the fact that building owners must front the capital required in total before receiving any financial assistance.

While Thermal Energy Storage doesn't offer the panache and sexiness of renewable energy programs, there are many host sites which offer viable locations for these installations while having a minimal amount of collateral retrofitting, permitting or activist issues or hurdles to overcome.

When one looks at the cost of implementing thermal storage as opposed to building new generation, transmission and distribution capacity, there is a clear cut advantage for thermal storage. As an example consider the well-publicized case of a Texas VA Medical Facility which built a thermal storage system offering 24,628 ton hours of cooling. This system reduced the VA's peak demand by 2,934KW or almost 3MW. Built at an all-in cost of \$2.2 million, or about \$750/KW of capacity, this is comparable, or arguably much less than, the cost of adding generation and transmission capacity on a utility scale. While Texas has a bigger discrepancy between on peak and off peak demand rates than we currently do here in New Jersey, it is clear that both PJM and NJ BPU policy are pushing larger electric users toward a real time pricing structure which will undoubtedly result in higher demand components in electrical pricing.

When considering: 1) Energy cost saving potential to electric users; 2) Energy conservation potential; 3) Effects on facility operating costs; 4) Effects on job retention and creation, and; 5) Increased efficiency of utility capital employed when measured against other methods of assuring electric capacity, Thermal Energy Storage should be given more prominence in the overall energy policy than it has received in the past.

The New Jersey BPU should build strategies incorporating Thermal Energy Storage into future programs it initiates. Consider that a program with total funding of only \$75 million over three years, incorporating both a grant and interest free loan component for developed Thermal Energy Systems would offset the need to build an additional 100MW of conventional generating and T&D capacity.

A program offering a grant incentive of \$30 per ton of TES capacity with a loan for the balance of the cost of system development would be an effective way to encourage implementation of this technology and it would both reduce peak capacity requirements and lessen the occasion for transmission congestion and higher LMP's. The loan could be paid off over seven to ten years either interest free or with a subsidized interest rate similar to those offered by the EDA's Infrastructure Trust Fund. In either case the program would offer economy to the facility owner or occupant, energy conservation and a net cost per KW of capacity that is lower than costs for generating, transmission and distribution infrastructure capacity.

Any incentive program for Thermal Energy Storage needs to be coupled with rate making that incentivizes energy users to peak shave or reduce demand, i.e. time of day electric rates with meaningful rate differences for commercial rate classes.

Wind Initiatives

The recent difficulty Fisherman's Energy has experienced in trying to get approvals for their demonstration offshore wind project off Atlantic City is disappointing and provides the Board with an opportunity to re-think how these necessary components of a renewable energy strategy should be developed. Simplifying the process necessary to develop offshore wind generation should be given more emphasis. Not only would this proven technology provide renewable generation on a much larger and more democratic scale than photovoltaics, it would also provide significant volumes of renewable energy at times when solar cannot. Additionally, transmission of offshore wind electric from east to west, as opposed to west to east, should mitigate transmission congestion and the need for higher capacity charges. Efforts in this regard are not necessarily dependent on state-assisted funding from Clean Energy but more dependent on an easing of state regulatory and permitting requirements.

Phased Elimination of Diesel-Fueled Vehicles in the Public Sector

we would like to see some type of phasing out of diesel fueled trucks used in the public sector and a phasing in of trucks fueled with natural gas. The negative aspects of particulate emissions from diesel vehicles has been under emphasized by media and clean air advocates. A legislative/ regulatory mandated phasing away from diesel to natural gas as a fuel for state, county and municipal vehicles will provide a baseload of users to facilitate the further development of natural gas refueling stations, and will also positively affect New Jersey air quality. The Board should consider a phasing in of this type of initiative perhaps driven by a "Portfolio Standard" and REC-type approach that government entities would have to adhere to. The implementation period should be long enough that it coincides with the timing of customary replacement time frames so that

the negative effect on towns, cities, counties and other government entities with these types of vehicles is minimal.

De-Emphasis of BPU-Initiated Development of Non-Commercialized Technologies

While we recognize the inclusion of desires to develop emerging energy technologies as articulated in the Energy Master Plan, we continue to question whether state, or public initiated funding of these efforts is the highest and best use of funds collected from New Jersey rate payers. These efforts are speculative in nature and the amount of time and money spent on them when compared to the benefits received for the general public (as opposed to special interests) is questionable at best. As an example, we would refer to recent efforts at designing an incentive program to facilitate the development of battery storage to work in concert with photo voltaic generation. The BPU has directed state employees and expended funds in the millions of dollars toward studying this market. It has made available funding in the amount of \$3 million per year, over the past few years, not including administrative costs, to further the development of these technologies. Based on the conclusions from the Rutgers folks in their efforts to design an incentive program, it is not a stretch to say it is the equivalent of using a bazooka to kill a mosquito when a simple fly-swatter would have sufficed. Our point is that "basic research" and seed funding for efforts like this are not state government's strong suit and should be left to private industry particularly when there is a higher and more immediate needs for scarce societal benefit funds.

Conclusion

Shoreline Energy Advisors appreciates the opportunity to offer its comments on the funding for Clean Energy initiatives in the upcoming budget. If there are any questions on our perspective, or the need for clarification, we would be happy to address them.



SHORELINE ENERGY ADVISORS, LLC.

Fred Fastiggi, CEM, DGCP
Principal and Managing Director



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June 17th, 2016

VIA ELECTRONIC MAIL: publiccomments@njcleanenergy.com

Irene Kim Asbury, Secretary of the Board
New Jersey Board of Public Utilities
44 South Clinton Avenue, 3rd Floor, Suite 314
Post Office Box 350
Trenton, New Jersey 08625-0350

Re: Straw CRA Proposal FT17 Request for Comments

Airtech Vacuum is a thirty-five year old New Jersey-born company employing over 135 workers in Rutherford, New Jersey. Airtech executives have carefully reviewed the New Jersey Board of Public Utilities' FY17 CRA straw proposal and agree any decision to prohibit all-electric fuel cells from the Clean Energy Program will have serious negative economic and human capital consequences. Airtech does not support the proposal and urges the Board to reject it.

All-electric fuel cell companies are one of Airtech's largest client bases. We develop and manufacture extremely high-tech air and fuel delivery systems, the work of which is entirely performed within New Jersey. These manufactured components are used within each all-electric fuel cell module built and installed all over the world, it does not make sense that the state we call home would want to prevent their use.

Over the last 10 years, Airtech has experienced tremendous growth as a result of providing our quality product to the all-electric fuel cell industry. Today, Airtech has become the country's LEADING supplier of gas-management systems to the fuel-cell industry.

Our cutting-edge technology product, based on high-efficiency and long-term reliability, are vital components for Bloom Energy's all-electric fuel cells. It is Airtech's cutting-edge components - manufactured right here in New Jersey - that allow Bloom's fuel cells to utilize their internal heat so efficiently. These fuel cells are the most efficient form of distributed generation in existence today for the majority of customers that do not have a matching thermal and electric load.

This is a fact the New Jersey Board of Public Utilities could be highlighting and proudly supporting, and instead we find ourselves being threatened by this suspension. 50 people out of our total employment are high-paid engineers and manufacturing professionals who work directly on all-electric fuel cell parts right here in New Jersey.

As a stable, responsible and highly-respected employer in the state, it is our strongest hope that the Board of Public Utilities Staff will NOT suspend and NOT eliminate all-electric fuel cells from their Clean Energy Program.

We urge you with the very strongest of sentiment to consider the impact this would have on the lives and livelihood of so many New Jersey families. Such a negative outcome of the vote before you would have a devastating effect on our company and the livelihood of many of our employees.

It puts in jeopardy Airtech's stability and ability to continue to employ New Jersey's well-educated manpower. It puts in jeopardy the reputation and manufacturing future of this strong and proud New Jersey industrial company.

Respectfully we request the Board continue to include an all-electric fuel cell incentive within the Clean Energy Program while this issue is further considered.

Sincerely,

Jakob Mieritz
Vice President, Airtech Vacuum, Inc.

A handwritten signature in cursive script, appearing to read 'Jakob Mieritz', written in dark ink.

Jakob Mieritz

BEFORE THE NEW JERSEY BOARD OF PUBLIC UTILITIES

In the Matter of the Comprehensive Energy Efficiency and Renewable Energy Resource Analysis for Fiscal Year 2017 Clean Energy Program

Docket No. QO16040352

In the Matter of the Clean Energy Programs and Budget for Fiscal Year 2017

Docket No. QO16040353

JOHNSON MATTHEY FUEL CELLS INC.'S COMMENTS ON THE NEW JERSEY CLEAN ENERGY PROGRAM COMPREHENSIVE ENERGY EFFICIENCY AND RENEWABLE ENERGY RESOURCE ANALYSIS FOR FISCAL YEAR 2017

Johnson Matthey Fuel Cells Inc. (JMFC) submits the following comments in response to the New Jersey Clean Energy Program (NJCEP) Comprehensive Energy Efficiency and Renewable Energy Resource Analysis for Fiscal Year 2017 (FY17 CRA Straw Proposal).

I. Introduction

JMFC¹ is a business unit of Johnson Matthey,² a leading specialty chemicals and advanced materials and sustainable technology company, focused on enhancing the quality of life for people around the world. With over 13,000 employees globally (over 3,300 employees in the U.S.), over 85% of our company sales are from products providing sustainable benefits: environment (products and technologies addressing both climate change and air quality), resource efficiency and health. Johnson Matthey has many years of experience with fuel cell technologies, having supplied fuel cell catalysts for NASA's space

¹ www.jmfuelcells.com

² www.matthey.com

programs since the 1960s.

JMFC is a global business dedicated to the supply of high quality fuel cell components, in particular catalyzed components such as Membrane Electrode Assemblies (MEAs), electrodes, catalysts, and hydrogen generation and purification materials for use in several types of fuel cell technologies and applications. JMFC is headquartered in Swindon, United Kingdom, with sales offices around the world and manufacturing facilities in UK (MEAs, catalyst), New Jersey and Ohio (catalyst and coated components).

More specifically, in New Jersey, Johnson Matthey processes and refines Platinum Group Metals (PGMs), a key constituent for fuel cell applications. JM has had PGM refining operations in West Deptford, NJ since 1983 and we have continued to grow since that time. Over the last few years, we have invested over \$20 million to expand manufacturing capacity and upgrade research and development facilities at the site. We have been growing steadily and now have over 500 employees in West Deptford.

II. Comments

Fuel cells offer value to New Jersey's energy system, and will continue to bring benefits, via NJCEP in the next years, and in the future with the increased availability of renewable fuels and with the penetration of hydrogen energy storage. As a supplier of components that benefit the environment, Johnson Matthey values multiple environmental technologies. In the Straw Proposal,

Staff recommends that the Board suspend incentives for fuel cells without heat recovery pending further analysis. Staff recommends that an independent evaluation of the costs, emissions and benefits of various distributed generation technologies, including fuel cells without heat recovery, be performed. Once the evaluation is complete, Staff can utilize those findings to develop recommendations regarding incentive levels and performance standards, etc. for fuel cells without heat recovery, as well as the value of FCs and other forms of distributed generation in building resilience and present those findings to the Board.³

JMFC recommends that changes in NJCEP eligibility/ participation be based on the

³ Summary of Proposed Modification, May 31, 2016, at p. 23.

technical program requirements which need to be met (e.g. environmental: GHG reduction, criteria air pollutant reduction, grid support: efficiency, reliability, etc.), rather than on the technology classification itself. This would allow the continuing participation of all technologies, with eligibility based on program requirement, and would also prevent a drastic change in the program which could negatively affect the New Jersey market at this stage.

As pointed out by other stakeholders, Staff at the California Public Utility Commission (CPUC) studied whether fuel cells without heat recovery should continue to receive incentives as part of California's Self Generation Incentive Program (SGIP). In May 2016, the CPUC issued a Proposed Decision that allows these types of fuel cells to continue in the SGIP.

In parallel with performance and efficiency increase, cost reduction has been addressed and achieved for fuel cells. While fuel cell and related components need further cost reduction, significant cost reduction has been demonstrated (for example, for one electrode technology relevant to NJCEP, JMFC has achieved, for a significant number of years, 20% cost reduction year-on-year, based on raw materials cost, higher performing components and volume manufacturing). Further cost reductions are feasible and will continued to be pursued. However, significant technology and manufacturing investments are necessary and will only be justified by market demand. A dramatic shift in the type of fuel cell technologies that are allowed to participate in the program (as proposed in the Straw Proposal) will undermine and possibly lead to a significant stranded R&D investment. This regulatory signal will certainly chill future R&D investment and innovation in the space for companies like JMFC. Such a negative outcome justifies keeping the level of incentive for fuel cells. As such, JMFC does not support the Staff Proposal recommendation to eliminate incentives for fuels cells without heat recovery. Such a reduction in funding would have a detrimental effect for the fuel cell industry and market for fuel cells in New Jersey. While fuel cells are deployed in commercial installations, the fuel cell industry is currently maturing, thus still requiring the incentive support.

III. Conclusion

JMFC appreciates the opportunity to provide comments and encourages the Board, for the reasons presented herein, to continue to allow fuel cells without heat recovery to participate in the program.

Respectfully submitted,
JOHNSON MATTHEY FUEL CELLS INC.

/s/ David A. Cetola

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Dated: June 16, 2016

June 15, 2016

Hon. Irene Kim Asbury, Secretary
New Jersey Board of Public Utilities
44 South Clinton Ave., 7th Floor
P.O. Box 350
Trenton, NJ 08625-0350

Dear Mr. Ambrosio:

Energy efficiency is the most cost-effective way to lower energy costs, but it still requires up front investment, market availability of the most efficient products and services, clear identification of systemic efficiency, and confidence regarding appropriate evaluation techniques for one's situation.

Doing the research needed to understand these matters, then influencing market actors is prohibitively expensive for a single entity, even a whole state. However, when efficiency programs pool their resources, share information, and act with a single voice, market changes occur, sophisticated energy efficiency programs can be carried out with confidence, and higher savings targets can be achieved to regulatory satisfaction.

As New Jersey commences its strategic planning process and transitions to a multiyear CRA, the Consortium for Energy Efficiency provides the program industry's forum for advancing shared interests.

- **Advance the future of efficiency for the United States and Canada.** Member organizations construct binational strategies for local impact through committee work. Over thirty committees address residential, commercial, and industrial sector opportunities as well as entertain cross cutting topics such as evaluation, behavior, and connectivity. Each CEE committee leverages its participants' knowledge and experience to provide ongoing member support. Product, system, and whole structure committees concentrate on major end uses such as HVAC, lighting, motors, appliances, and consumer electronics. Member contributions consider kWh, kW, and carbon in work areas for high performance products, system support, buildings, and the transition of emerging technologies into programs. CEE stays in touch with each member to make sure you are aware of relevant opportunities and skill sets required.
- **Shape the binational platform for connected products and systems.** CEE began work on connectivity to provide the program industry consensus position on the ENERGY STAR "connected" component. Today, the Connected Committee's work transcends the original scope, as it works in tandem with the leadership of AHRI to specify communication pathways and open architecture protocols so that air conditioning, pool pumps, water heaters, and other key product categories have standardized capabilities for DR and load management engineered into their design. Simultaneously, on the customer front, CEE is working to identify common elements and strategies associated with energy information that helps members achieve greater behavioral and maintenance savings and contributes to greater overall

customer satisfaction. By defining the minimum informational components that are significant across service territories, portfolios will be better positioned to meet the evolving needs of both utility and customer.

- **Adopt credible, well-vetted market initiatives.** Member organizations are licensed to use 16 CEE binational market initiatives along with supporting specifications, qualifying product lists, and program summaries. Voluntary adoption across the United States and Canada triggers market transformation. A standing committee, known as the Program Advisory Committee, comprised of CEE Board Members and representatives at the same level of responsibility, guides the binational portfolio for program administrators. Committees assess and refine strategies relative to the obligations of those entrusted to invest ratepayer funds for public purpose. After a process of due consideration across the program community, the exposure to market stakeholders, trade associations, and other market actors provides a thorough vetting and enables CEE initiatives to be considered by the CEE Board for approval.
- **Network with peers to share perspectives, lessons learned, and brainstorm solutions.** CEE was created by, of, and for program administrators. Because CEE serves this constituency, member representatives participate in a trusted work environment, where team play is the norm, and with an acknowledgement of and respect for the drivers, obstacles, and successes of peers. The CEE culture allows for sharing of best practices and professional growth.
- **Share evaluation techniques and experiences.** The Evaluation Committee shares resources and information such as evaluation guides, cost-effectiveness case studies, and national standardization efforts.
- **Incorporate information from the social sciences into your programs.** CEE developed the Behavior Insights and Tools framework, which first identified and structured research from the social sciences pertinent for programs. This group develops case studies, looks at the interface of connected devices and behavior, and is exploring persistence of behavior change for evaluation and program design purposes.

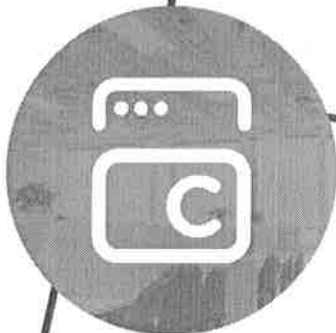
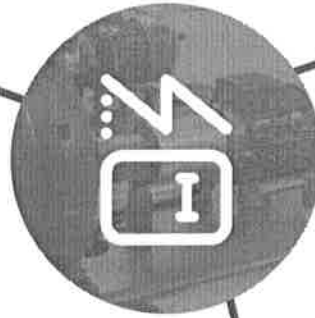
The CEE process, established by and for program administrators, takes care to unearth and vet multiple aspects of each energy saving opportunity. Through research, detailed assessments, market characterizations, and thorough review by stakeholders, CEE initiatives and positions chart the course to advance efficiency in the marketplace. The organization's relationships with manufacturers and other key trade allies are also enlisted early in the process, to steer clear of obstacles and myths of the day. By helping such players understand the basis for and desired outcomes of national initiatives, these players become important allies for our shared cause. Regulators also recognize the credibility of CEE products. **Through participation in the Consortium, the New Jersey Clean Energy Program can take advantage of the time and financial investment made by those investing almost 80% of the \$9 billion across the energy efficiency program industry.**

Attached, please find a brief brochure titled, "CEE has Efficiency Covered." The piece summarizes the breadth of measures and topics addressed by the Consortium on an ongoing basis. We welcome the New Jersey Clean Energy Program to join with your colleagues across the US and Canada.

Sincerely,

Ed Wisniewski
Executive Director

CEE HAS EFFICIENCY COVERED





CEE MISSION

As the US and Canadian consortium of gas and electric efficiency program administrators, CEE works to accelerate the development and availability of energy efficient products and services, encourage market uptake, and attain lasting public benefit.

CEE HAS EFFICIENCY COVERED

To achieve the CEE mission, CEE members foster and participate in market scale initiatives that address key end uses of energy. Definitions, specifications, and approaches embedded in the initiatives come about from member consensus on the best way to meet program administrator needs in a feasible, cost-effective manner.

The market initiatives described in this pamphlet provide clear scope, strategy, and goals for member adoption. As members incorporate them into programs, they achieve their goals to influence binational markets, messaging, and behavior change. Relationships with regulatory bodies frequently improve with adoption of recognized CEE initiatives. Several initiatives also form a conduit to water savings.

WHAT DOES CEE CONSIDER?

As initiatives develop, CEE considers energy savings potential, readiness of the market, availability of industry-endorsed test procedures, cost-effectiveness, other market forces, and input from industry stakeholders. Ultimately, an initiative must present strategies that will gain market traction to bring about the desired change. Once an initiative is approved, CEE continually reconsiders market trajectory and updates plans accordingly.

WE INVITE YOU TO EXPLORE how 16 CEE initiatives and three explorations target areas where efficiency adds value cost-effectively for major energy end uses in Canadian and US markets.

RESIDENTIAL



HOME APPLIANCES INITIATIVE ⚡ 🔥 🌊

Covers clothes washers, room air conditioners, dishwashers, and refrigerators

STRATEGIES

Household Awareness of ENERGY STAR® Survey
Binational specification
Bundled product mass market approach
ENERGY STAR® and higher tier differentiation

84 members participating

1993



SPACE HEATING & COOLING INITIATIVE ⚡ 🔥

Replacing separate air-conditioning and gas heating initiatives, this initiative works through a whole systems approach across fuel types to achieve in-field efficiency

STRATEGIES

Binational specification
Binational database of qualifying products
ANSI-ACCA installation standard
ENERGY STAR and higher tier promotion

25 members participating

1996



LIGHTING INITIATIVE ⚡

Works through every point of the distribution chain to promote energy efficient lighting products in a technology neutral manner

STRATEGIES

Mass market replacement approach
Technology neutral specification
Design competition
Controls and systems
ENERGY STAR

61 members participating

1996



CONSUMER ELECTRONICS INITIATIVE ⚡

Works to identify and increase market share of energy efficient consumer electronics

STRATEGIES

Data analysis
Information sharing
ENERGY STAR

16 members participating

2007



GAS WATER HEATING INITIATIVE 🔥 🌊

Raises awareness among contractors, builders and developers; distributors, wholesalers, and retailers; and consumers about how to identify efficient products

STRATEGIES

Contractor outreach
Binational specification
ENERGY STAR
Binational database of qualifying products

48 members participating

2008



SWIMMING POOL INITIATIVE ⚡

Aims to increase purchase and proper installation of high efficiency swimming pool equipment and to deliver energy savings in residential swimming pools

STRATEGIES

Binational specification
Systems approach
Installer education
ENERGY STAR

30 members participating

2012



UNDER CONSIDERATION
Connected
Additional product inclusion

2016

UNDER CONSIDERATION
Connected
Communicating thermostats
Heating performance of efficient heat pumps
Behavior

2016

UNDER CONSIDERATION
Connected
Controls
Niche marketing
Daylighting and design

2016

UNDER CONSIDERATION
Connected
Behavior

2016

UNDER CONSIDERATION
Systems approach

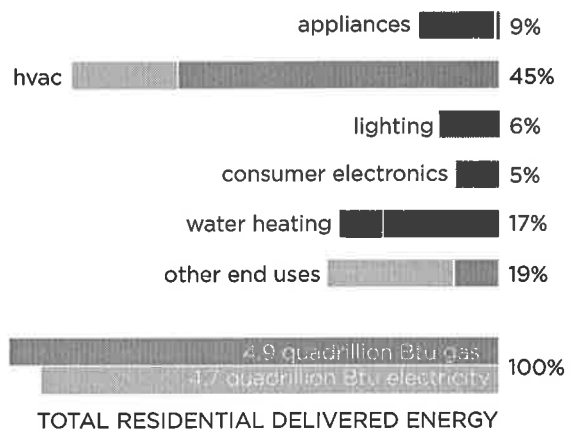
2016

UNDER CONSIDERATION
Connected
Product expansion

2016

THE WHOLE HOUSE

The Whole House Exploration seeks to identify savings opportunities in new and existing homes through analysis of current programs and national efforts, and to evaluate products and services that do not consume energy or that reduce energy use.



COMMERCIAL



UNITARY AIR-CONDITIONING & HEAT PUMP INITIATIVE ⚡

Promotes market availability of high efficiency air-conditioning and heat pump equipment

STRATEGIES
Binational specification
Mass market approach
Higher tier differentiation

56 members participating

1993



KITCHENS INITIATIVE ⚡ ⚡ ⚡

Provides definitions of highly efficient energy and water performance in cooking, refrigeration, and sanitation equipment

STRATEGIES
Binational specification
ENERGY STAR®
Bundled product approach

99 members participating

2002



LIGHTING SYSTEMS INITIATIVE ⚡

Grounds CEE savings strategy in market conditions and program baselines, spanning programs from one-for-one lamp replacements to those that target deeper savings during full lighting system design

STRATEGIES
Binational specification
Mass market approach
Higher tier differentiation

67 members on committee

2004



DATA CENTERS & SERVERS INITIATIVE ⚡

Allows CEE to serve as a clearinghouse for relevant resources and information, clarifies and helps validate energy efficiency opportunities, identifies recommended program strategies, and mobilizes the efficiency program community to respond to industry and government proposals

STRATEGIES
ENERGY STAR
Information dissemination

52 members on committee

2007



GAS WATER HEATING INITIATIVE ⚡ ⚡

Establishes tiers of efficiency and works to raise awareness of the benefits of efficiency throughout the distribution chain

STRATEGIES
Distribution channel
Qualifying product database

28 members participating

2012



BOILER SYSTEMS INITIATIVE ⚡

Features guidance to help programs capture savings based on a variety of applications and system designs

STRATEGIES
Systems approach
Installation
Operations and maintenance
Strategic partnership

70 members participating

2012

2016
 UNDER CONSIDERATION
 Systems approach
 Connected
 Higher tier differentiation

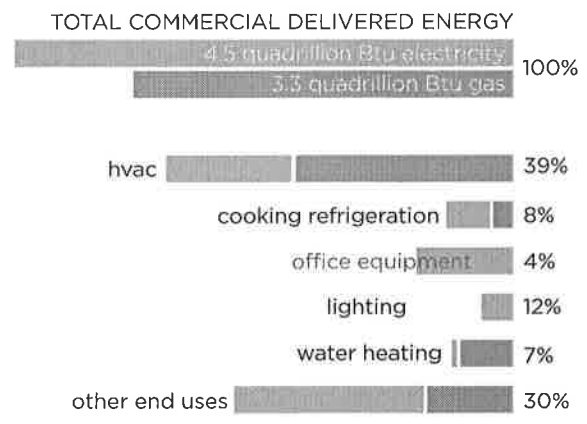
2016
 UNDER CONSIDERATION
 Systems approach
 Binational market platform
 for emerging technologies

2016
 UNDER CONSIDERATION
 Systems approach
 Connected

2016
 UNDER CONSIDERATION
 Customer engagement approaches
 Systems approach

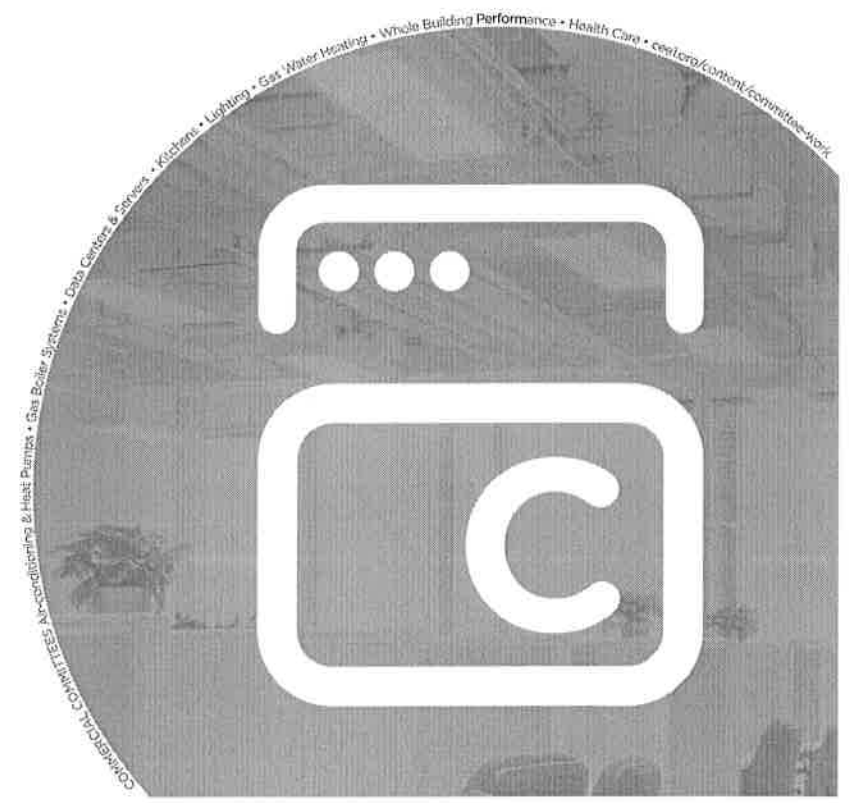
2016
 UNDER CONSIDERATION
 ENERGY STAR

2016
 UNDER CONSIDERATION
 Behavior
 National platforms



WHOLE BUILDING PERFORMANCE EXPLORATION

The Building Performance Exploration shares information among members on the metrics and methods of commercial building programs.



INDUSTRIAL



MOTOR SYSTEMS INITIATIVE ⚡

Creates a common platform for CEE activities related to high efficiency motor and motor systems optimization and customer outreach and education

STRATEGIES
Consumer education
Operations and maintenance
Information dissemination
Strategic partnership

87 members participating

1999



MUNICIPAL WATER AND WASTEWATER INITIATIVE ⚡

Addresses this opportunity-rich segment by raising awareness among municipal decision makers, focusing on key motor system and process opportunities, and building cooperative relationships with the water and wastewater industry and associations

STRATEGIES
Small facilities EE checklists
RFP guidance

22 members participating

2010



STRATEGIC ENERGY MANAGEMENT INITIATIVE ⚡

Defines strategic energy management from an energy efficiency program industry perspective, collects SEM program design and delivery strategies, and highlights key roles for industrial energy management technologies

STRATEGIES
SEM Minimum Elements
Program case studies report

21 members participating

2014



INDUSTRIAL PROGRAM PLANNING ⚡

Through the Industrial Program Planning Exploration, members exchange insights on program designs that target specific industrial market segments, systems, and processes, and monitor the development of comprehensive, whole plant program approaches. For example, the committee has explored energy management program designs, methodologies for machine tool energy baselines, industrial natural gas savings measures, and combined heat and power systems.

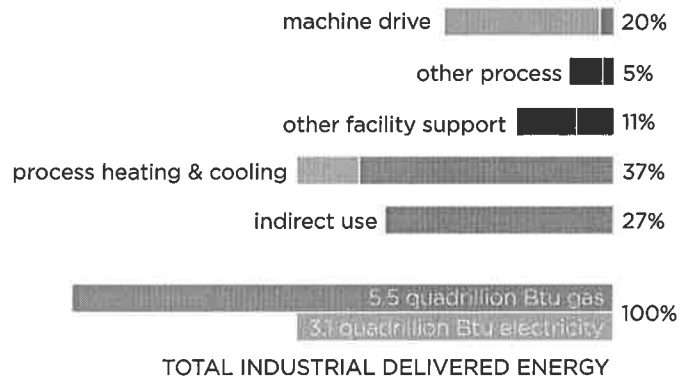
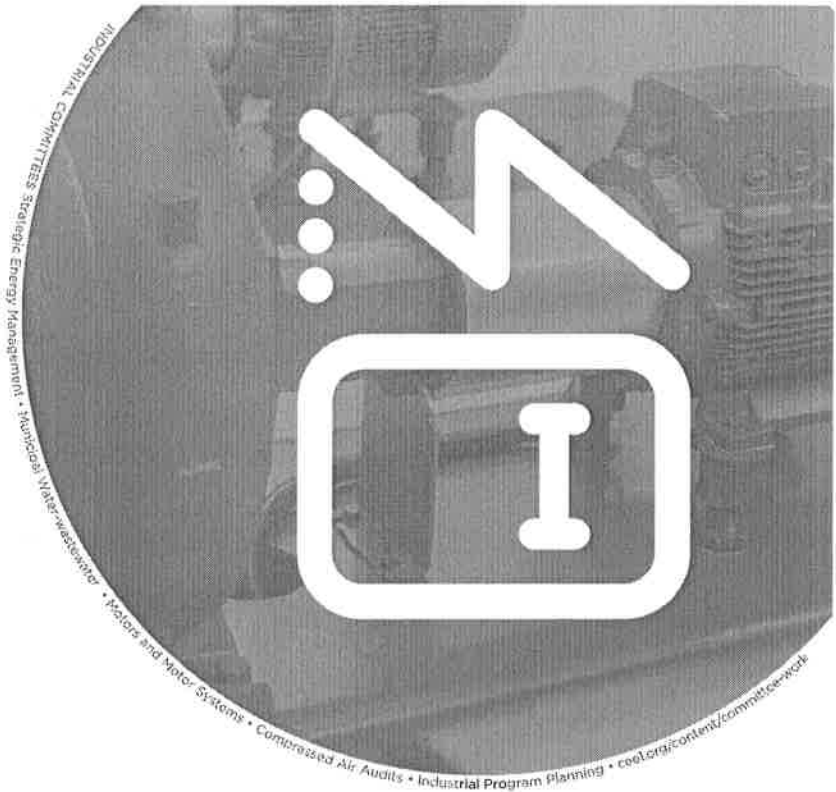
C&I HEALTH CARE ⚡

CEE C&I Health Care Exploration is advancing member electric and gas efficiency objectives with hospitals and smaller healthcare facilities. Based on program and end use research in 2015, exploration members are working with industry and government partners to advance a consistent, strategic energy management approach, and engaging strategic partners from industry and government to enhance program impact in the market.

2016
 UNDER CONSIDERATION
 Common specification
 Higher tier differentiation
 Packaged products
 Systems approach

2016
 UNDER CONSIDERATION
 New technologies
 Energy management

2016
 UNDER CONSIDERATION
 SEM technology types and use cases
 Program framework
 Segment focus on health care



CONNECTED

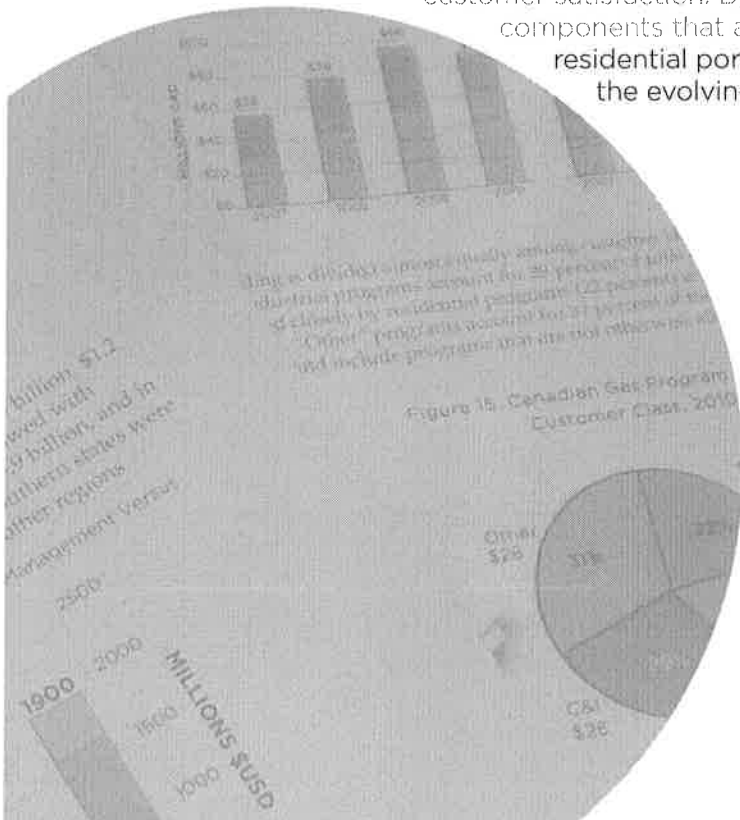
Work on connectivity began when a group of CEE members identified the need to send a clear message about the minimum communication requirements necessary for a connected product to leverage DSM programs across the United States and Canada. Today, CEE works in tandem with the federal government as well as the HVAC, water heating, lighting, appliance, and pool pump industries to specify communication pathways, standard load management capabilities, data sharing, and other product elements that yield benefits to utilities, consumers, and the environment.

CONSUMER ENGAGEMENT

CEE is working to identify common elements and strategies associated with energy information that will help members achieve greater savings and increase overall customer satisfaction. By defining the minimum informational components that are effective across service territories, residential portfolios will be better positioned to meet the evolving needs of both utility and customer.

RESEARCH

Since 2006, the Annual Industry Report documents the impact of ratepayer funded efficiency programs. The latest report found that CEE members directed over 80% of program expenditures in 2013. Visit cee1.org/annual-industry-reports for more information.





BEHAVIOR

Behavior Working Group applies lessons from the social sciences to help members better design behavior change programs. This group develops case studies, looks at the interface of connected devices and behavior, and is exploring persistence of behavior change for evaluation and program design purposes.

EMERGING TECHNOLOGIES COLLABORATIVE

Members assessing new products, services, and program approaches work together through the Emerging Technologies Collaborative to accelerate consideration and adoption of new opportunities into energy efficiency programs and the market. The Collaborative has developed a framework for sharing information about new opportunity assessments and maintains a catalog of hundreds of ongoing and completed assessments. CEE members and committees can leverage the catalog to inform future research and advance new opportunities into CEE initiatives and programs.

GRAPH DATA SOURCES: Residential delivered energy data extract from DOE, US Energy Information Administration (EIA), The Annual Energy Outlook 2014 (AEO2014), downloaded March 25, 2015, <http://www.eia.gov/forecasts/aeo/>; Commercial delivered energy data extract from DOE, US Energy Information Administration (EIA), The Annual Energy Outlook 2014 (AEO2014), downloaded March 25, 2015, <http://www.eia.gov/forecasts/aeo/>; Industrial delivered energy totals from DOE, US Energy Information Administration (EIA), The Annual Energy Outlook 2014 (AEO 2014), downloaded March 25, 2015, <http://www.eia.gov/forecasts/aeo/>; Industrial end use data is projected based on the AEO delivered energy totals, and the end use energy distribution identified in the EIA, Office of Energy Consumption and Efficiency Statistics Form EIA-S46, 2010 Manufacturing Energy Consumption Survey (MECS), downloaded March 25, 2015, <http://www.eia.gov/consumption/manufacturing/index.cfm>



WHO IS CEE?

CEE is an award-winning consortium of efficiency program administrators from the United States and Canada. Members work to unify program approaches across jurisdictions to increase the success of efficiency in markets. The CEE role is to influence national players—product distribution chains, efficiency stakeholders, and government agencies—to maximize the impact of efficiency programs. Working together, administrators leverage the effect of their ratepayer funding, exchange information on successful practices and, by doing so, achieve greater energy efficiency for the public good.

STRATEGIC PARTNERSHIPS

Over the years, CEE has worked closely with US DOE and EPA, manufacturing trade associations, and key partners in lighting, HVAC, motors, consumer electronics, and other relevant industries. Collaborative partnerships between CEE and industry partners create more effective platforms to support greater energy efficiency and market needs. By working together at CEE, all stakeholders enhance individual efforts to advance energy efficiency in the market.

For more information, visit cee1.org.

Here are our comments to the 2017 Residential HVAC program:

1. Geothermal Heat Pumps, as well as their air-to-air counterparts, continue to be included only in the CoolAdvantage program even though they are also highly efficient home heating systems. The program essentially ignores this capability. Because of their high performance, energy saving heating capability **Geothermal Heat Pumps in particular should also be eligible for a WarmAdvantage incentive.** NJ is a heating dominant climate: we have about 4400 heating degree days (some northerly parts of the state even more) versus about 2500 cooling degree days. The heating season stretches almost 6 months; the cooling season only about 3 months. Potential energy savings on the heating side would be considerably more than those achieved on the cooling side. These heating energy savings are not recognized by the program.
2. The program continues to require geothermal heat pumps to be sized like a central air conditioning system within plus or minus 15% of the Manual J calculated cooling load. In our experience Manual J's typically report a 30% to 60% higher heating load than the cooling load in most NJ homes. **This policy virtually guarantees that the selected equipment will be too small to handle the heating load and will require an excessive amount of auxiliary heat to make up the difference.** Invariably the auxiliary heat is electric resistance heat with a COP of 1 while the geothermal heat pump could provide this heat with a COP of between 4 and 6. We suggest that geothermal heat pumps be sized with the heating load in mind. If this were done, it would also permit a multi-speed geothermal heat pump to provide cooling virtually all of the cooling season at less than Full Load Mode. Partial Load Modes achieve very high performance gains over Full Load – in the 30% range. This would substantially reduce the seasonal electrical consumption during the summer.
3. We agree that the use of Manual J load calculations is a “best practice” in designing systems for new construction (which the CoolAdvantage program does not cover) and for most retrofits. The need for those calculations for replacement systems – many that have been in place for 15 to 20 years - just adds to the cost of the installation and dilutes the actual rebate to the homeowner. Even modest Manual J's can cost the installer half of the current rebate level to perform. The program also continues to treat the Manual J's in a very parochial way by seeming to believe they produce exact results. In fact they are highly dependent on the design condition assumptions and mostly “guestimates” about air infiltration levels, ductwork losses, window and door performance, and actual home insulation levels in place, much of which cannot even be inspected. In our experience the Manual J's for existing homes can be off more than the

15% equipment rating variation allowed under the program. **For replacement equipment installations we have found the real world, measurable performance of the existing installation is a better indicator of correct equipment selection than Manual J's and would save time and money.**

4. Verification of the equipment selected against the Manual J's provided to the program seems to be left over from an era where the incentive level was directly dependent on the number of "tons" installed. It was important that larger, generally less efficient systems were not installed just to receive a larger incentive. The incentive is now fixed. The fact that the program regularly passes judgment on the equipment sizing using the Manual J's and the AHRI Certificates provided during processing gives the homeowner the false impression that the program is also approving it. In reality the program has no way of determining whether the submitted Manual J's are correct. **In light of the new HVAC/R Board of Examiners and the Master HVAC/R licensing in the state, the properly licensed installer should certify that the equipment and geothermal well field sizing is correct. .**

5. The incentive for geothermal heat pumps is the same as for conventional air conditioning equipment and does not take into account either the immensely greater efficiencies of geothermal heat pumps or the significant extra first time costs required to install a geothermal well field. While the incentivized high efficiency air conditioning units may achieve a 20% to 30% over standard equipment, geothermal heat pumps can attain 200% to 300% gains – this is nothing short of game changing on energy demand. **The \$500 geothermal heat pump incentive level is not commensurate with the energy savings that comes with using the technology.**

6. **The program does not further recognize the added benefits of state-of-the art geothermal equipment;** there are no additional incentives for relatively new technology that allows geothermal heat pump units to run in as many as 12 individual capacity steps or have continuously variable capacity of 20% to 100%. This technology achieves ultra-high efficiencies and energy savings: heating COPs as high as 6 and cooling EERs as high as 40. They also include true Domestic Hot Water (DHW) heating capabilities at heat pump efficiencies that would normally replace electric hot water heating with a COP of 1. Note: This suggestion does not include "desuperheater" options that have generally anemic performance in our NJ climate and should not be incentivized.

7. Shifting more of our heating towards geothermal heat pumps with the help of incentives would help reduce peak demand on the electric utilities and help seasonally balance the grid electrical load.

8. The Strawman talks about Net Zero Energy homes. This can easily occur when a home is both heated and cooled by an appliance like a geothermal heat pump that uses electricity generated on the property. About 80% to 90% of the heating and cooling energy in a geothermal system is exchanged with the ground; the electricity is used only to run the pumps, blowers, and compressors to move the heat energy. **Geothermal Heat Pumps should be a key technology to help achieve the goals of this program.**

Here are our additional comments to the 2017 Residential HVAC program:

The International Residential Code (IRC) has updated guidance in 2015 IRC Section M1401.3 regarding equipment and appliance sizing that makes exceptions for multi-stage technology that we believe should be adopted by the program for FY17. The current CoolAdvantage program allows equipment sizing as if it was single stage and limits the unit size to with 15% of the calculated Manual J load even though a multi-stage unit could better meet the heating load while not being oversized for cooling. This change would encourage the use of more energy efficient multi-stage equipment while not jeopardizing the incentive or requiring excessive amounts of auxiliary heat because of equipment heat capacity that is otherwise too small. The paragraph is quoted below:

M1401.3 Equipment and appliance sizing. Heating and cooling equipment and appliances shall be sized in accordance with ***ACCA Manual S*** or other approved sizing methodologies based on building loads calculated in accordance with ***ACCA Manual J*** or other approved heating and cooling calculation methodologies.

Exception: Heating and cooling equipment and appliance sizing shall not be limited to the capacities determined in accordance with Manual S where either of the following conditions applies:

- 1. The specified equipment or appliance utilizes multistage technology or variable refrigerant flow technology and the loads calculated in accordance with the approved heating and cooling calculation methodology are within the range of the manufacturer's published capacities for that equipment or appliance.*
- 2. The specified equipment or appliance manufacturer's published capacities cannot satisfy both the total and sensible heat gains calculated in accordance with the approved heating and cooling calculation methodology and the next larger standard size unit is specified.*



June 17, 2016

VIA ELECTRONIC MAIL

The Honorable Irene Kim Asbury
Secretary, New Jersey Board of Public Utilities
44 South Clinton Avenue, 9th Floor
Post Office Box 350
Trenton, NJ 08625-0350
publiccomments@njcleanenergy.com

Re: CRA Straw Proposal and Proposed Fiscal Year 2017 Budgets

Dear Secretary Asbury:

Please accept these comments from Bloom Energy Corporation (“Bloom Energy”) regarding the New Jersey Clean Energy Program (“NJCEP”) CRA Straw Proposal, Proposed Fiscal Year (“FY”) 2017 Budget, and Proposed Program Modifications released for public comment on May 31, 2016.

The Proposed Program Modifications recommended by Staff involve extraordinary changes to the Combined Heat and Power(“CHP”)/Fuel Cell program that will entail adverse impacts on New Jersey businesses, residents, and electric customers. The recommended modifications appear to have been made without supporting study, analysis, data collection, or the traditional working group process - and they are being advanced to the Board of Public Utilities (Board”) just two days prior to the start of the 2017 program year. We urge a more deliberate and data driven process that will result in an optimal outcome for the electric customers and for the environment and air quality of the state of New Jersey.

1. Proposed Suspension of Incentives for Fuel Cells without Heat Recovery

Staff recommends that the Board suspend incentives for fuel cells without heat recovery and then, *afterwards*, it proposes to conduct “an independent evaluation of the costs, emissions and benefits of various distributed generation technologies, including fuel cells without heat recovery.” Bloom Energy welcomes an independent evaluation of the costs, emissions and benefits of various distributed generation technologies because we believe that an independent study would provide a forum for the assessment of important factors that are excluded from consideration under either the current program or the proposed FY 2017 program, including;

- Avoided criteria pollutant emissions
- Avoided water consumption and discharges
- Locational benefits
- Voltage support and ancillary services
- System and customer resiliency
- Job creation and retention
- Levels of outside investment attracted to New Jersey
- Electric Vehicle charging capabilities
- Actual thermal energy utilization
- Actual capacity factor

The last two points are particularly important since there have been repeated comparisons of combustion CHP projects and all-electric fuel cells during recent Board meetings and Staff has cited those discussions as a basis for its recommendation to exclude all-electric fuel cells from the program. These comparisons have been made based upon the *design* efficiencies and *design* thermal utilization presented to the Board without consideration of the degree

to which various project types, once in operation, tend to achieve – or not achieve - the design parameters presented in the application process.

To be clear, Bloom Energy supports any technology or application, including combustion CHP, that can reduce carbon emissions, increase resiliency, and save customers money when used in the right applications. In fact, we believe it is simply inappropriate to compare all-electric fuel cell projects with combustion CHP projects since they involve completely different customer energy profiles. Nevertheless, since that comparison is one of the bases for the proposal to exclude SBC paying customers without a thermal load from the CHP/Fuel Cell program, then it should take into account that notable authorities have already concluded that, in many cases, combustion CHP projects exhibit actual performance that is less than claimed at the time of system design. To quote a 2015 Rutgers study, *“under-performance of existing CHPs, as demonstrated by low and volatile capacity factors, also suggest that the emissions and associated environmental benefits and higher efficiencies are not translated into reality.”*¹

The performance of multiple distributed generation technologies supported by the California Self Generation Incentive Program (SGIP) was studied extensively and the results of that study do not support the proposition that CO₂ emissions from all-electric fuel cells are higher than CO₂ reductions from other technologies, nor do they support the proposition that *design efficiency* is the correct yardstick by which to measure CO₂ emission reductions or cost effectiveness – the current practice in the NJ CHP/FC program.

¹ Do Combined Heat and Power Projects Perform? Case Study of Publicly Funded Projects in New York, November 2015. <http://ceeep.rutgers.edu/wp-content/uploads/2016/02/WP2-Do-CHPs-Perform-Case-Study-of-NYSERDA-funded-Projects-11302015.pdf>

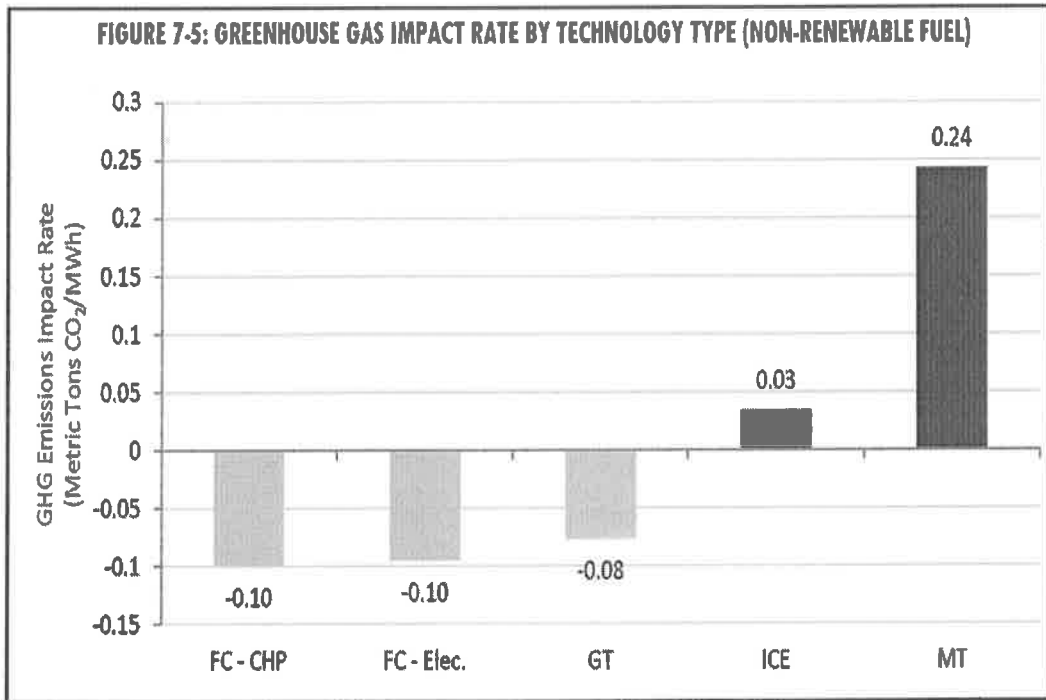


Figure 1 - SGIP Impact Evaluation, Issued April 2015 at p. 7-6
 ("FC" = fuel cell, "ICE" = internal combustion engine, "MT" = microturbine)

The Board staff proposal to exclude all customers without matching thermal and electric loads from the CHP/FC program is expressly based upon a "recent report by California Public Utility Commission (CPUC) staff," which Staff presented as its basis for recommendation. However, two critical points must be considered before the Board acts on this staff recommendation;

- (1) After the California PUC evaluated the performance and capabilities of all-electric fuel cells, the Commission rejected the PUC staff proposal and determined that any technology that can reduce GHGs in the state, *including all-electric fuel cells*, should remain eligible for the SGIP.²

² California Public Utilities Commission, DECISION REVISING THE SELF-GENERATION INCENTIVE PROGRAM PURSUANT TO SENATE BILL 861, ASSEMBLY BILL 1478, AND

(2) Carbon Dioxide emissions from the centralized power plants that would be displaced by distributed fuel cell projects in New Jersey are approximately 30% higher on a per MWhr basis as compared to California, so any distributed generation technology that reduces emissions in California will reduce CO₂ very significantly in New Jersey.

If the Board Staff proposal is adopted, New Jersey would become the only state, nationwide, that specifically excludes all-electric fuel from its fuel cell program. We urge the Board to follow take a more data driven approach before making program changes of this magnitude.

Bloom Energy is a company that is working hard to grow in New Jersey, and in doing so we are creating jobs and attracting investment. Bloom Energy itself now has over 27 employees that live in the state. When Bloom installs projects in New Jersey we hire local electricians and other contractors. Our projects in New Jersey and elsewhere are designed and engineered by people who live and work in New Jersey. Bloom Energy buys component parts from New Jersey companies, including one supplier that supports fifty (50) jobs in Rutherford, NJ manufacturing parts specifically for Bloom.³ There are real jobs at stake in this decision, jobs that real New Jersey families rely on; the BPU's decision should be based on facts and have the support of a record.

2. Incentive levels for fuel cells

IMPLEMENTING OTHER CHANGES, issued May 16, 2016,
<http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=162005693>, pp. 64.

³ Please see separate Comments submitted by Airtech Vacuum of Rutherford, NJ

The changes to incentive levels proposed by Staff should be viewed in comparison to the other states in the region that are, in many respects, competing against New Jersey to attract investment, expand their tax base, and create job opportunities. The clean energy industry is scaling up and increasingly moving to a business model that involves projects with customers that have multiple facilities funded by third parties capable of quickly redirecting capital across state lines. This trend is happening in solar, energy efficiency, and in the fuel cell industry.

A review of fuel cell programs in other states in and around the New York Metropolitan region appears to indicate that the proposed FY 2017 program in New Jersey would be an outlier on the low side in terms of incentive level, particularly when the much lower delivered costs of electricity (COEs) in New Jersey are taken into account.

Connecticut	New Jersey (Proposed)	New York
\$60M annual fuel cell program	\$15.7 M CHP and fuel cell program	\$153.5M annual fuel cell program(s)
Fuel Cell Net Metering at Retail Rate	No Fuel Cell Net Metering	Fuel Cell Net Metering at Wholesale Rate
Standby charge exemption	No standby charge exemption	Standby charge exemption
\$56.28/MWhr (last weighted average price for reverse auction based incentive 15 year contract)	\$1.00/W (>500kW-1MW) \$2.00/W (<500kW)	NY RPS - \$24.57/MWhr (last weighed average price for reverse auction based incentive 20 year contract) NY PON – \$2100 grid parallel, \$5,000kW grid islanding assuming 200kw 15 year contract. Program closed 2/16

Figure 2 - State Fuel Cell Programs in the NY Metropolitan Region

The proposal to reduce incentive levels could also have the perverse effect of literally dis-incentivizing grid islanding projects at a moment in time when the State of New Jersey is particularly interested in encouraging resiliency and the adoption of micro-grid projects.⁴ There is a record, established over years of public comment before the Board, indicating that there are additional costs associated with grid islanding capabilities.⁵ Staff have indicated an intent to collect information associated with the costs of island mode operations, a positive step forward for this important issue. In the meantime, however, existing incentive levels should not be reduced. Doing so would likely have the effect of discouraging grid islanding projects that would otherwise be pursued if the program remains in its current form.

3. Budget

As the CHP/Fuel Cell Program has become progressively popular over the past few years, its funding level has been progressively decreased by the Board. In Calendar Year 2012, the Board approved a total budget of \$75M for CHP/Fuel Cell projects, which was later reduced to \$30M. During the next budget cycle for Fiscal Year 2014, the Board originally approved a \$65.6M budget, which was later reduced to \$38 million. In Fiscal Year 2015, the Board originally budgeted \$40.4 million to the program, which was later reduced to \$24.5 million and then to \$19.5 million. Last year in Fiscal Year 2016, the Board originally approved a

⁴ Bloom Energy is an active developer of microgrid projects in other jurisdictions and would like to pursue similar projects in New Jersey. See, e.g. <http://www.constellation.com/about-us/news/archive/2016/Hartford-constellation-bloom-energy-micro-grid.html>

⁵ The terms “grid islanding” and “black start” are distinct. A “black start” capable system does not necessarily operate during a grid outage whereas “grid islanding” projects are designed to isolate themselves from the grid in the event of an outage.

budget of \$20.6 million, \$14 million of which was already committed, and then added another \$19.6 million in January.

In approving each of these budgets and subsequent modifications thereto, the Board has consistently indicated that the funding levels are designed and modified to match anticipated and actual program subscription. When fewer applications than originally anticipated were submitted to the CHP/Fuel Cell program during 2012-2015, the Board reduced program funding accordingly and moved the funds into other Clean Energy Programs that required additional funding. Likewise, when more applications than originally anticipated were submitted to the CHP/Fuel Cell program in Fiscal Year 2016, the Board moved funds from under-subscribed Clean Energy programs to the CHP/Fuel Cell program to accommodate more projects. Despite the transfer of funds to create a total program budget of more than \$40 million for FY 2016, the program could not accommodate many projects that would otherwise have gone forward. Board should therefore increase the CHP/Fuel Cell budget to match the market in New Jersey and to maintain a level generally commensurate with competing jurisdictions.

4. Conclusion

The CHP/FC program is achieving significant recent improvements in transparency and communication. At the same time, the fuel cell industry is in the midst of an important inflection point with increased customer demand expected to lead to a global market of over \$5.2B by 2019. New Jersey is poised to capture some of that growth in the form of investments, job creation/retention, and customer savings, while at the same time achieving significant emission reductions and increased resiliency. Bloom Energy suggests that instead of making wholesale changes that could have unintended

consequences, the Board should instead allow the program to proceed while convening an objective, data driven process designed to develop a full and complete record upon which more significant reforms to the program can be based.

Very truly yours,

/S/

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Via electronic submission

June 17, 2016

Irene Kim Ashbury
Secretary of the Board
New Jersey Board of Public Utilities
44 South Clinton Avenue, 3rd Floor, Suite 314
Trenton, New Jersey 08625-0350

Re: Straw CRA Proposal FY17 and Compliance Filings

Secretary Ashbury,

On behalf of Northeast Energy Efficiency Partnerships (NEEP),¹ please accept our insights responding to the Board's request for comment on the FY17 Comprehensive Resource Analysis Straw Proposal and Compliance Filings.² NEEP is a regional non-profit that works to accelerate energy efficiency in homes, buildings and industry across the Northeast and Mid-Atlantic states. NEEP serves as an information resource for policymakers, program administrators, Commissions, and others to inform the adoption and implementation of public policies and programs that advance energy efficiency.

1. 'VALUE LEDS' IN PROGRAM PORTFOLIOS

Within their summary of proposed modifications for Fiscal Year 2017, Applied Energy Group (AEG) suggests inclusion of 'value LEDs' in efficiency program plans.³ The comments below provide information to help the Board assess the best pathway forward to maximize energy savings resulting from high efficiency residential light bulbs with a focus on the superior benefits of products that meet the ENERGY STAR Version 2.0 lamp specification.

In support of our mission to accelerate energy efficiency in the region, NEEP actively manages a regional residential lighting working group, convening industry stakeholders, utility program administrators, manufacturers, and others to help inform best practices in program administration and accelerate market transformation. As part of this initiative, we publish an annual residential lighting strategy report, which provides an overview of the current and future market for residential lighting.⁴ Drawing upon the collective knowledge of our working group and most recent strategy report, we respond to the Board's solicitation for comment, detailing:

¹ These comments are offered by NEEP staff and do not necessarily represent the view of the NEEP Board of Directors, sponsors or partners.

² New Jersey Board of Public Utilities. CRA Straw Proposal and Fiscal Year 2017 Budgets Notice of Opportunity for Comment. (May 31, 2016) Available at:

http://www.njcleanenergy.com/files/file/public_comments/CRA%20Straw%20and%20FY17%20Budgets%20Notice%205-31-16.pdf

³ Applied Energy Group. Energy Efficiency and Renewable Energy Program Plan. Summary of Proposed Program Modifications for Fiscal Year 2017. Page 6. (May 2016) Available at:

http://www.njcleanenergy.com/files/file/public_comments/Summary%20of%20FY17%20Program%20Changes.pdf

⁴ NEEP. Northeast and Mid-Atlantic Residential Lighting Strategy: 2015 Update. December 2015. Available at:

<http://www.neep.org/sites/default/files/resources/2015RLSUpdateFinal.pdf>

1. The historical value of ENERGY STAR;
2. The evolution of ENERGY STAR to Version 2.0; and
3. Concerns regarding 'value LEDs'.

1.1. The Historical Value of ENERGY STAR

While residential lighting is now a mainstay of energy efficiency programs throughout the region, early residential lighting programs faced difficulties with compact fluorescent lamps (CFLs) that did not have the quality attributes to meet consumer expectations, resulting in consumer backlash against the technology.⁵ To overcome those difficult beginnings, residential lighting programs in our region and beyond have relied on EPA's ENERGY STAR program to promote ENERGY STAR Certified lighting products whenever possible. These products meet stringent quality and efficiency requirements and receive third-party testing both to earn the ENERGY STAR Mark, *and* after they have been in market through verification testing.

1.2. The Evolution of ENERGY STAR to Version 2.0

In the early days of commercially available LEDs, the technology was much more expensive than less efficient alternatives. Efficiency programs were necessary to help buy-down the first cost to introduce products to consumers, and ENERGY STAR's stringent certification was necessary to ensure high quality. A lifetime of 25,000 hours (about 22 years at three hours per day) was set as the minimum threshold for ENERGY STAR LED; this very long rated life seemed necessary to encourage early consumers to purchase a lightbulb in the \$20-40 range.

More recently, LED manufacturers have gained the economies of scale necessary to bring down product costs much closer to a commodity level—especially with a an efficiency program incentive—and a lifetime of 20+ years is no longer necessary for consumers to justify the purchase. As a result of this, several manufacturers are beginning to release LED a-line bulbs that do not achieve ENERGY STAR certification. These new products meet low price points, but do not meet ENERGY STAR's criteria concerning lifetime, power factor, and beam angle. These lamps, referred to as "value LEDs," or "-ish bulbs," have no industry accepted common attributes beyond low price, leaving consumers with no assurance that the product will perform well, efficiently or for the stated product life hours..

As a result of the growing "value-LED" market segment, it became clear that ENERGY STAR would need to react to these new products to ensure the integrity and quality of LEDs in the market was maintained. Through 2015, ENERGY STAR worked with dozens of stakeholders to revise their Lamp specification. The group reached a consensus that an ENERGY STAR certified product with a lifetime of 15,000 hours would meet consumer expectations, be available at a very reasonable price point, and save consumers energy. This consensus was embodied within a new specification, ENERGY STAR Lamps Version 2.0, with the purpose of maintaining quality, but still allowing manufacturers flexibility to reach a low price point.

The ENERGY STAR Lamps 2.0 specification was finalized in January, 2016.⁶ Since January, manufacturers have been retooling their product to meet the new specification and testing it through third-party certified testing

⁵ See Generally, McCulough, Jeff (et al.) LED Lighting: Applying Lessons Learned from the CFL Experience. (2008) Available at: http://aceee.org/files/proceedings/2008/data/papers/6_95.pdf

⁶ United States Environmental Protection Agency. ENERGY STAR Program Requirements Product Specification for Lamps (Light Bulbs), Eligibility Criteria, Version 2.0. Available at: <https://www.energystar.gov/sites/default/files/ENERGY%20STAR%20Lamps%20V2%20Revised%20Spec.pdf>

bodies (CBs). The testing takes several months, but ***according to staff with the Environmental Protection Agency (EPA) products certifying to the new specification will be available in the market starting in July, 2016.***⁷

1.3. Concerns Regarding ‘Value LEDs’

Since ‘value LEDs’ have not been tested and verified to meet the ENERGY STAR criteria, their promotion through regulated energy efficiency programs raises concerns around quality assurance, transparency, efficacy, and free-ridership.

Quality Assurance: ENERGY STAR criteria are designed to provide a quality consumer experience, ensuring that energy efficiency comes with no sacrifice of performance or features—avoiding the pitfalls associated with the early consumer experiences with CFLs. All ENERGY STAR certified products are independently certified based on testing in EPA recognized laboratories and a sample of products is verified “off-the-shelf” annually. From an efficiency program perspective, this reduces key uncertainties regarding whether products are delivering on energy performance. As such, these measures result in high levels of consumer appreciation; ENERGY STAR-labeled light bulbs receive statistically higher satisfaction ratings compared to non-qualified bulbs.⁸ Furthermore, given the fact that the specifications are developed through a public stakeholder process, ENERGY STAR criteria are also designed with other market realities in mind including product availability, product cost, consumer payback, and efficiency program needs such as product lifetime requirements. ***These assurance measures are not available for so-called ‘value LEDs’.***

Transparency: ENERGY STAR specifications are negotiated in a public process creating a level playing field for all manufacturers to design products to meet the specification and market accordingly. In so doing, ENERGY STAR does not arbitrarily pick winners and losers based on perceived reputation, but rather relies on data from the third party certification and verification process to determine eligibility. AEG’s Comprehensive Resource Analysis Compliance Filing suggests thresholds and recommendations for consideration of lamps outside of ENERGY STAR Certification, however ***those thresholds have not been vetted in an open stakeholder process, nor do they have third^d party testing of randomly assigned product samples.*** In addition to the concern that manufacturers could cherry pick specific lightbulbs that meet these thresholds and only submit the testing reports from products that pass, ***the lack of transparency in the product selection process could leave NJ’s Clean Energy Program subject to disputes or potential legal ramifications from manufacturers who were not included in the program.*** ENERGY STAR’s open process eliminates the concern from this.

Efficiency: The new ENERGY STAR Lamps 2.0 specification has many quality attributes, including a significant increase in efficacy. It is for this reason that no current CFLs will meet the new higher specification. EPA’s analysis found an 8.5 percent efficacy increase for the version 2.0 products. In that case, efficiency programs will be able to claim more savings and a greater delta Watt for LEDs that meet version 2.0. ***This underscores the value of waiting for those products to hit the market in July, rather than embracing ‘value LEDs’.*** Furthermore, the efficacy levels suggested by AEG’s compliance filing is 70lpw, where the ENERGY STAR Lamps 2.0 criteria sets

⁷ Presentation from EPA Staff Daniel Cronin, MEEA Energy Solutions Conference, Feb 25, 2016 (*Emphasis Added.*)
<http://www.mwalliance.org/conference/sites/default/files/Cronin%20slides.pdf>

⁸ United States Environmental Protection Agency. National Awareness of ENERGY STAR for 2015: Analysis of CEE Household Survey. Available at: <https://www.energystar.gov/awareness>

efficacy at 80lpw for most products*. Thus, the efficacy levels NJ is proposing is 14% lower than that set by ENERGY STAR.⁹

Free-ridership and Attribution: Lastly, while it may seem attractive to support non-ENERGY STAR LEDs because of their considerable sales volume and low price points, , such characteristics also suggest that the value LED market is working well without efficiency program incentives. ***Thus program promotions of widely available, less efficient value LEDs could likely result in high levels of free-ridership, as people are already buying these products, regardless of whether program administrators promote them through incentive offerings.***

Conversely, since the more efficient ENERGY STAR version 2.0 lamps are expected to be slightly more expensive than the non-ENERGY STAR lamps currently on the shelves, the savings impact of a program incentive to bring the cost of ENERGY STAR products down to the level of the non-ENERGY STAR LED or halogen, would be even greater. The new ENERGY STAR 2.0 Specification would not exist if not for concerned efficiency stakeholders, including efficiency program administrators, and thus a strong argument exists for high levels of attribution for products that meet ENERGY STAR 2.0.

CONCLUSION

NEEP commends the Board for its efforts to advance energy efficiency s in New Jersey with the latest iteration of its Comprehensive Resource Analysis. Please accept these comments in the spirit they are intended: to aid the Board, and ultimately New Jersey ratepayers, in securing a more affordable, reliable, cleaner and sustainable energy future.

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⁹ ENERGY STAR Lamps 2.0 sets at 70lpw minimum for products with a color rendering index (CRI) greater than 90, but no "value" products that have entered the market have reached that high of a CRI. As such, assuming 80lpw to be the appropriate ENERGY STAR minimum for most bulbs is accurate.