

2012 NJ CEP COMPLIANCE PLANS COMMENT FILING

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Prepared by:

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Policy Filing



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Promoting CHP, District Energy, and Waste Heat Recovery

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Purpose: The purpose of this filing is to provide testimony in response to the 2012 NJCEP Compliance Plans and to support the adoption of combined heat and power (CHP) systems in New Jersey.

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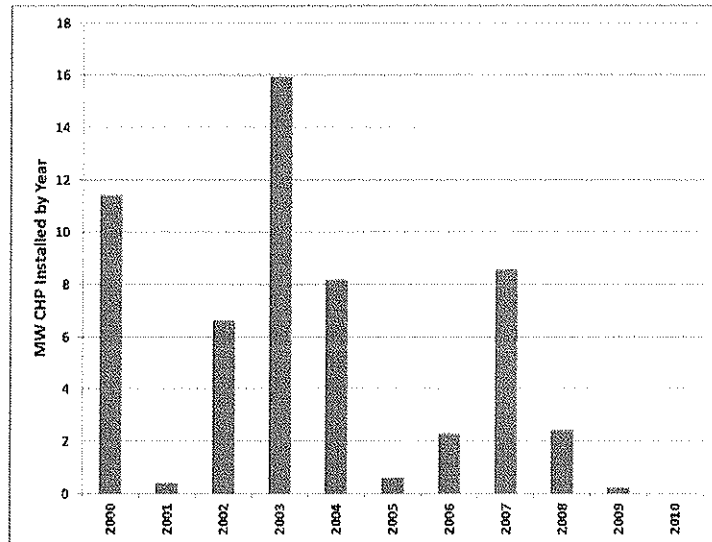
COMMENTS

We appreciate the opportunity to provide comments on the Office of Clean Energy's 2012 Compliance Plan with specific reference to matters related to the CHP program outlined in the C&I Market Manager's 2012 Program & Budget Filing. The testimony here is derived from our work relating to the implementation of combined heat and power, district energy and waste heat recovery both in NJ as well as throughout the Mid-Atlantic region.

2012 NJ OCE Energy Efficiency Program Budget

We support the allocation of \$55MM in funding for CHP and believe this is necessary to resuscitate the CHP industry in New Jersey in order that the goals of the Energy Master Plan (EMP) can be met. While this money could be used for other beneficial purposes such as load side energy efficiency, it is vital that New Jersey develop in-state power production and CHP is the most cost effective and energy efficient form of power generation. CHP is a dispatchable source of power generation and represents supply-side energy efficiency which is required together with load-side energy efficiency.

Despite multiple good faith efforts to develop CHP in New Jersey, there has been a significant lack of success for a variety of reasons. The EMP goal of developing 1,500 MW of CHP within 10 years would require development of 150 MW per year. The adjacent graph shows the volume in MW's of CHP installations in NJ since 2000 according to a Department of Energy sponsored report by ICF International. The level of CHP development is far short of meeting the EMP goals and necessitates the level of investment envisioned in the 2012 filings in order to develop the industry to a more self sustainable level of activity. In addition, the complexity and long-term nature of CHP development requires that a significant commitment be made by the BPU in order to stimulate the levels of private investment that are needed to attain the EMP goals.



2012 C&I Market Manager CHP Program

We fully endorse the move to a stand alone CHP program. The costs, risks and hurdles associated with working through the Pay-for-Performance program prevented any meaningful level of participation. We expect that a well run stand alone program will result in substantially more CHP projects being developed.

An effective CHP program will require comprehensive and technically competent application review so that only well qualified projects will be funded. This is a necessary component to avoid allocation of funds to projects that are ill conceived and which will ultimately not proceed. We suggest that the application and review process employed for the Retail Margin Fund CHP program be used as a template for the CEP CHP/FC program.

The filing suggests that incentive dollars will be reserved based upon the date of the approved Application Form. We suggest that a merit based system be implemented whereby the applications undergo a review of economic merit so that applications of highest value are incentivized. This, in addition to the requirement that applications meet other technical hurdles would ensure that incentive dollars were used to the maximum advantage. In addition there should be a carve out for fuel cells to ensure that this technology is allowed to participate. We would suggest a carve out of 10% of the total funds available being used as the minimum amount devoted to fuel cell applications. If this were not fully subscribed at the end of a specific period then this money could be returned to the program for all technologies.

We suggest that the maximum system size of 1 MW be eliminated as a qualification requirement. However, we do agree with maintaining the maximum incentive cap at the first 1 MW so that the focus of the program is maintained. The qualification requirement cap places an unnecessary restriction on implementation of larger scale projects that are needed to reduce energy costs for many private sector companies and in fact provide more benefit to the rate payer. There is a need for a stand-alone CHP program outside of the EDA loan/grant program which is not suitable for all potential CHP projects. There clearly needs to be some level of coordination whereby a project developer elects to work through only one of the programs. However, there is an important market failure potential with the proposed programs in that private companies that can not meet the strict credit requirements of the EDA program are precluded from developing CHP. This population includes many suitable CHP sites that would be greater than 1 MW and is also a population that needs the assistance to reduce their energy costs in order to maintain jobs in New Jersey. The suggested realignment of incentive levels below together with the maximum project incentive cap will provide the required additional support for smaller systems while not disallowing larger systems.

We believe that the Level 2 incentive of \$2 per watt is too high for larger Level 2 CHP applications and while the 30%/40% program incentive cap should regulate grants to appropriate levels, this method encourages participants to overstate project costs. We are more in favor of a tiered system based on size in addition to the cap so that systems have an appropriate level of support while we maximize the total power production from the program. For example CHP systems up to 100 kW would receive \$2.00/watt, between 101 kW and 500 kW would receive \$1.50/watt and over 500 kW would receive \$1.00/watt for the first 1,000,000 watts. This would get more MW's while maintaining stronger support for smaller systems which we do believe is warranted. With typical systems costing in the range of \$3,000 to \$4,000 per kW including 5-year maintenance contract, the above is inline with the caps but avoids the tendency to build in additional costs.

The technical and administrative details outlined in the program filing are somewhat lacking in detail and in an effort to help develop a successful program design we offer the following:

The annualized efficiencies stated in the filing of 60% for CHP and 45% for fuel cells without heat recovery should be based on higher heating value and calculated from the total power output in Btu plus the total heat recovered for useful purposes in Btu divided by the higher heating value of the fuel input in Btu.

The filing states that systems should have the ability to island/disconnect from the utility. CHP systems will be required to meet utility interconnection standards which would typically disconnect the system in the event of a utility failure. We do not support the requirement to have a CHP system restart in island mode as that may place a significant cost burden on the system due to the need to upgrade the facility grid and is also not a necessary component for a successful CHP system. All safety requirements will be implemented in order to interconnect with the utility grid and black start for island mode is not feasible for many existing buildings.

The payment schedule allows for up to 20% of the project incentive to be paid one year after project inspection and acceptance and confirmation the project is achieving the minimum efficiency threshold. We suggest that this retained payment is not less than 20% and would be paid after a 12-month data review

proved that the system met its efficiency obligations. If the project failed to meet this obligation then a second chance to provide data would be provided. The availability of this final payment should be maintained through 24 months after system acceptance. It needs to be recognized that complete commissioning of a CHP system together with thermal loads can take six months or longer after system start-up as it is somewhat ambient temperature dependent.

The warranty or service contract should be a comprehensive contract with specific scope requirements that must maintain a specific availability of equipment. The suggested availability is 85%. This does not require the host facility to operate the system 85% of the time but does require that the system is able to operate at least 85% of the time. The availability limit should not be set at maximum thresholds of 95% which would only serve to add additional insurance costs to the project unnecessarily.

The list of eligible project costs should delineate thermal cooling technology costs such as chillers, desiccants, cooling towers and accessories required by the system that are driven by the CHP system but are not necessarily directly connected to the system. These are covered in the program through the increased incentive and should be an allowable project cost.

The evaluation guidelines include islanding capability and as described above, this may present a significant burden for existing facilities whose facility grid may not allow the system sequencing necessary for operation of the CHP system in islanding mode. Most facilities will employ a CHP system that is sized to meet the base load electric requirements. In order to restart this system in island mode in the event of a utility failure, the switchgear must be able to sequence specific loads to the engine's step loading capacity. This can be a cost prohibitive barrier form many existing facilities. In addition, the societal benefits associated with CHP do not require islanding. We strongly suggest that this requirement be eliminated or minimized in its evaluation score.

FOLLOW UP

I and my colleagues are available to discuss any of the above issues and will continue to support New Jersey in its efforts to develop a clean, cost effective and reliable power market through effective utilization of CHP in line with the NJ Board of Public Utility and Department of Energy's goals.