STAND-BY RATE DESIGN FOR CHP

Prepared for:

New Jersey, Board of Public Utilities
Office of Clean Energy

Prepared by:

US DOE Mid-Atlantic Clean Energy Application Center

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Rate Design Comments

U.S. Department of Energy
Mid-Atlantic Clean Energy Application Center
Promoting CHP, District Energy, and Waste Heat Recovery

NOTICES AND ACKNOWLEDGEMENTS

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Purpose: The purpose of this filing is to provide comments on Stand-By Rate design for CHP and to support the adoption of combined heat and power (CHP) systems in New Jersey.

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COMMENTS

The comments here are 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.

General

With increased interest in efficient, clean, customer-sited resources comes increased interest in the regulatory policies that affect their deployment. The economic viability of clean, distributed generation (DG) and, in particular, combined heat and power (CHP) facilities, heavily depends on the regulatory policies that determine how they are treated by the electricity network. Standby rates are an important aspect of regulatory policies that must ensure that the utility is not punished for supporting CHP on its system while also ensuring that costs related to these charges are not such that they prevent CHP from being implemented. Standby rates should also recognize the societal benefits offered by CHP and take into account aggregation of multiple CHP plants on the utility's service line.

With the installation of onsite generation, a customer will rarely go entirely "off grid." Grid-supplied power retains value in a number of ways. For example, in a typical installation, the DG system is sized to serve less than the peak load at the customer site. A facility with a peak load of 1,000 kW that installs a 500-kW DG system to provide on site generation will require 500 kW from the grid during peak demand in addition to the power generated on site. Even a facility with onsite capacity sufficient to meet all of its demand may want or need to take power from the grid at times.

This may be done to:

• Serve needs in excess of that supplied by the DG system on average, to meet short-term or seasonal peaks, or, in certain cases, to serve the momentary need for increased power associated with DG start-up

• Supply power during scheduled outages of the DG system, most often for maintenance

• Supply power during unscheduled outages because of equipment failure, loss of fuel supplies, or other problems

• Purchase power at prices below the operating cost of the DG system, typically during off-peak periods when the local system is in surplus.

The term "*standby rate"* is often used as shorthand for the set of retail products that 'partial requirement' customers with onsite, non-emergency generation typically desire. Reasonable and nondiscriminatory standby rates for certain customers were first required under the Public Utilities Regulatory Policy Act of 1978. Many states distinguish among three types of service in their stand-by tariffs: supplemental, backup, and maintenance while some differentiate only between standby and supplemental. The following lists the most common components of service for partial requirements customers:

Supplemental Service. Supplemental service provides additional electricity supply for customers whose onsite generation does not meet all of their needs. In many cases it is provided under the otherwise applicable full requirements tariff.

Backup Service. Backup or standby service supports a customer's load that would otherwise be served by DG, during unscheduled outages of the onsite generation system.

Scheduled Maintenance Service. Scheduled maintenance service is taken when the customer's DG is due to be out of service for routine maintenance and repairs. In general, because this service can be scheduled for non-peak times, it is considered to create few additional or marginal costs to the utility's system, and tariffs

are typically structured to exempt the customer from capacity-related costs (e.g., reservation charges or ratchets, for either generation or delivery).

Economic Replacement Power. Some utilities offer economic replacement power—electricity at times when the cost of producing and delivering it is below that of the onsite source.

Electric industry restructuring and the unbundling of the electric system's components (generation, distribution, transmission, etc.) has, in some states, added complexity to rate design whereas the electricity prices of vertically integrated utilities that have not been unbundled often include generation, transmission, and distribution charges. The separation of these functions in restructured states has also led to a separation of the charges for them. This can cause some confusion when comparing different rate elements and, in particular, their ratchets and exemptions. In general, in a restructured state the question of partial requirements service is limited to the remaining monopoly services that are only provided by the local incumbent utility—distribution and, in certain cases, transmission—but there might also be default service offerings for energy charges.

In response to your request for information please note the following:

The submissions from the Electric Distribution Companies (EDC) in response to the Board Order dated July 18, 2012 do not distinguish between CHP and other forms of distributed generation including intermittent sources such as PV and wind. It is not feasible to design an appropriate and fair standby rate for both dispatchable and non-dispatchable distributed generation. If the Board Order is intended to address CHP, then the EDC's need to be asked to submit proposals for CHP only.

The responses form the various EDC's do not provide sufficient detail in terms of modeling the impact of their standby rates on the various C&I customer classes. Modeling of the proposed standby rates and their impact on customer bills needs to be conducted in order to properly understand the EDC's interpretation of the proposed standby tariffs.

On the subject of the contribution of DG to EDC cost savings, please see attached the following publications that deal in some depth this issue:

SEEAction Guide to the Successful Implementation of State Combined Heat and Power Policies, Chapter 2 on Standby rate Design. The full report is available at:
http://www1.eere.energy.gov/seeaction/chp_policies_guide.html

Regulatory Assistance Project and ICF International 2009 report on Standby Rates for Customer-Sited Resources.

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.