



STATE OF NEW JERSEY
Board of Public Utilities
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CLEAN ENERGY

IN THE MATTER OF REVISIONS TO THE NEW)
JERSEY CLEAN ENERGY PROGRAM FISCAL YEAR)
2016 (FY16) PROTOCOLS TO MEASURE RESOURCE)
SAVINGS) ORDER
DOCKET NO. EO09120975

Parties of Record:

- Maurice Kaiser**, Honeywell Utility Solutions
- Diane Zukas**, TRC Energy Services
- Michael Ambrosio**, Applied Energy Group
- Mark Mader**, Jersey Central Power & Light
- Timothy White**, Atlantic City Electric
- Sandra Eason-Perez**, Orange & Rockland Utilities
- Bruce Grossman**, South Jersey Gas Company
- Susan Ringhof**, Public Service Electric & Gas Company
- Andrew Dembia**, New Jersey Natural Gas
- Mary Patricia Keefe**, Elizabethtown Gas Company
- Stefanie Brand**, Director, Rate Counsel

BY THE BOARD:¹

BACKGROUND AND PROCEDURAL HISTORY

On February 9, 1999, the Electric Discount and Energy Competition Act, N.J.S.A. 48:3-49 et seq. ("EDECA") was signed into law. Among other things, EDECA established requirements to advance energy efficiency and renewable energy in New Jersey through the societal benefits charge. N.J.S.A. 48:3-60(a)(3). EDECA further empowered the Board to initiate a proceeding and cause to be undertaken a comprehensive resource analysis ("CRA") of energy programs, currently referred to as the comprehensive energy efficiency ("EE") and renewable energy ("RE") resource analysis, and to determine the appropriate level of funding for EE and Class I RE programs that provide environmental benefits above and beyond those provided by

¹ Commissioner Upendra J. Chivukula recused himself due to a potential conflict of interest and as such took no part in the discussion or deliberation of this matter. Commissioner Joseph L. Fiordaliso was not present at the December 16, 2015 agenda meeting.

standard offer or similar programs in effect as of February 9, 1999. These programs are now called New Jersey's Clean Energy Program (the "NJCEP").

By Order dated May 19, 2015, Docket No. EO09120975, the Board approved a document entitled Protocols to Measure Resource Savings ("Protocols") dated April 27, 2015 which contains the FY15 Protocols approved by the Board. The Protocols are used by the program managers, identified below, to estimate energy savings and renewable energy generation. The Protocols include algorithms for measuring energy and other resource savings or renewable or clean energy generation that result from the implementation of eligible measures under the NJCEP. The Protocols require updating from time to time as baselines against which energy savings are measured change due to upgrades in energy codes or appliance efficiency standards, as programs or measures are added or changed, as a result of program evaluations, or due to other changes in the assumptions used to measure resource savings. In this Order, the Board will consider proposed modifications to the Protocols, described below.

PROPOSED REVISIONS TO PROTOCOLS

The Office of Clean Energy (OCE) asked Honeywell, the NJCEP Residential EE and Renewable Energy Market Manager and TRC, the Commercial and Industrial (C&I) EE Market Manger, to propose revisions to the Protocols that reflect FY16 program changes. The Market Managers proposed various revisions to the Protocols to reflect current codes and standards, new technologies and building practices, and other changes in the marketplace.

Applied Energy Group (AEG), the NJCEP Program Coordinator, compiled these proposed modifications of the Market Managers and prepared a red-lined draft that identified all of the proposed modifications to the Protocols. The proposed modifications were also reviewed by Rutgers Center for Energy, Economic and Environmental Policy (CEEPP), which has been engaged by the Board to manage NJCEP program evaluation activities. On September 21, 2015, OCE Staff circulated the redlined draft of the proposed Protocols modifications to the EE and RE committees distribution lists, including the Market Managers, the Division of Rate Counsel (Rate Counsel), the State's electric and natural gas utilities, the New Jersey Utilities Association, environmental groups, and local governments. The deadline for submitting comments was October 5, 2015, and subsequently extended to October 16, 2015. A summary of changes is provided below. Several groups submitted comments, which are also summarized below.

Summary of Changes:

Description	Revision
Peak Definition	Clarified Off Peak definition
Ground Source Heat Pump	Changed baseline assumptions and algorithm
Residential Gas HVAC Boiler Circulatory Pumps	Added new measure
Residential Gas HVAC Boiler Controls	Removed Measure
Residential Low Income LED Lamps	Added LED lamps to program
Residential Low Income LED Nightlight	Added LED lamps to program

Residential Low Income Combo space and water heating	Revised savings algorithm for Combined Boiler and Water Heater Protocol
Residential New Construction	Revised modeling inputs
Residential New Construction Energy Star Products Clothes Washers	Added two tiers (Energy Star & CEE Tier 2)
Energy Star Products Refrigerators	Added two tiers (Energy Star & CEE Tier 2)
Energy Star Products Advanced Power Strip Tier 2	Modified text, no savings revision
Energy Star Products Clothes Dryer	Modified text, no savings revision
Energy Star Windows Energy Star Windows	Removed measure
Appliance Recycling Refrigerators	Revised savings to NEEP Tech Manual
Appliance Recycling Appliance Recycling	Removed NTG
Home Performance	Updated web links
Commercial and Industrial EE Construction Lighting	Revised language to reflect implementation of EISA
Commercial and Industrial EE Construction Lighting	Revised EFLH

SUMMARY OF COMMENTS

Comments were submitted by Rate Counsel and South Jersey Gas (SJG). The substantive written comments received are summarized below.

Residential Low Income Program Hot Water Conservation Measures

Comment: SJG proposed including specific protocols for low flow showerheads and faucet aerators in the residential low income program. Rate Counsel submitted supplemental comments regarding SJG’s proposal and suggested improvements to the savings algorithms to make the inputs and assumptions more specific to New Jersey demographics. In particular, Rate Counsel recommended consideration of other technical reference manuals in nearby states such as Pennsylvania and New York to develop protocols for hot water conservation measures.

Response: Staff agrees with SJG insofar as there is a need for specific savings algorithms for low flow showerheads and faucet aerators. However, Staff also believes that the issues raised by Rate Counsel regarding the specific formulation of the proposed savings algorithm have merit. As a result, Staff included revised algorithms for low flow showerheads and faucet aerators based on guidance from other technical reference manuals for similar measures. In particular, the revised algorithm in the Protocols uses additional savings factors based on flow rate reduction, household size and household type.

Residential Low Income Program Space and Water Heating Measures

Comment: SJG proposed inclusion of a specific savings algorithm for indirect water heaters in the residential low income section of the protocols. The proposed algorithm is based on a recent impact evaluation of the program conducted by Apprise, which is available for review on the NJCEP website.

Response: Based on Staff's review of SJG's proposed algorithms for indirect water heaters and the referenced source material, Staff included the revised specific-savings algorithm in the Protocols.

Comment: SJG recommended review of the algorithm for furnace and boiler replacements for the residential low income program over the course of the next program year to determine if a revision is appropriate.

Response: Staff acknowledges SJG's comment and invites reconsideration of the furnace and boiler savings algorithms in future versions of the Protocols.

Comment: SJG proposed revisions to the combined space and water heating measures. Rate Counsel raised several concerns with the inputs and assumptions used in the proposed revisions. In particular, Rate Counsel commented that the algorithm did not take into account differences in heating load by housing type. Rate Counsel also recommended that the algorithm account for early retirement and replace-on-failure replacements using the remaining useful life of the existing measure and dual baseline analysis, if early retirement is an applicable program option.

Response: Staff acknowledges the revisions proposed by SJG. However, Staff also agrees that the concerns raised by Rate Counsel have merit and should be considered in future versions of the Protocols. As a result, Staff has decided to maintain the protocols in their current version in consideration of Rate Counsel's comments and study whether early retirement is a program option.

Lost Revenue Recovery

Comment: Rate Counsel commented that the Protocols should include an affirmative statement to prohibit the use of the Protocols to calculate lost revenue.

Response: Rate Counsel correctly notes that the Protocols are not to be used to calculate lost margin revenue recovery and recognizes that this practice is not permitted in New Jersey. Accordingly, lost margin revenue recovery was removed as a stated purpose of the Protocols in previous versions to address this prohibition. Since lost margin recovery is not permitted in New Jersey at the present time, staff will consider revising the Protocols if and when the Board permits this practice in New Jersey.

Free Riders and Free Drivers

Comment: Rate Counsel commented that the Office of Clean Energy should initiate studies to assess the impact of free riders and free drivers on program savings (i.e. those customers that would have purchased qualifying EE products without and incentive) and that the results should be included in future versions of the Protocols.

Response: Staff agrees that the evaluation of free riders and free drivers is an important. The inclusion of an assessment of free riders and free drivers will be considered in the next evaluation plan.

Ground Source Heat Pump

Comment: Rate Counsel identified a typographical error in the algorithm for calculating heating energy savings from ground source heat pumps.

Response: Staff agrees and revised the Protocols to correct the typographical error identified by Rate Counsel.

Boiler Circulatory Pumps

Comment: Rate Counsel requested clarification on the addition of circulator pump measures and the removal of boiler control measures. Rate counsel also requested more detailed information to identify the reference for circulator pump information.

Response: Staff notes that the NJCEP no longer offers incentives for boiler control measures and were therefore removed from the Protocols. The NJCEP will begin offering incentives for circulator pumps in FY16. Savings algorithms for circulator pumps were added to the Protocols based on the Efficiency Vermont Technical Reference Manual to account for the new measure addition. Staff clarified the complete source reference for the new measure in the Protocols.

LED Lighting

Comment: Rate Counsel commented they were unable to locate the source document for the savings values for LED lighting measures and further recommended clarification of the source reference. Rate Counsel also proposed that the baseline operation hours for a night light should reflect only night time hours.

Response: Staff revised the Protocols to address Rate Counsels comments regarding LED lighting measures. Clarification was provided for the LED lighting measures source references and baseline operation hours were adjusted to only account for night time hours.

Residential New Construction

Comment: Rate Counsel commented that the proposed changes to the residential new construction protocols for energy modeling software were reasonable. Rate Counsel also identified a typographical error and an incomplete source reference in this section and recommended a correction.

Response: Staff agrees with Rate Counsel and made the appropriate revisions to the Protocols to address the typographical error and incomplete source reference.

Clothes Washers and Dryers

Comment: Rate Counsel commented that the protocols for clothes washers and clothes dryers should provide detailed source references for key assumptions and clarification on the methodology for how savings values were determined.

Response: Staff revised the Protocols for clothes washers and dryers to address Rate Counsel's comment. In particular, the protocols refer to the Mid Atlantic Technical Reference manual for both measures, supplementing New Jersey specific data from the 2009 Residential Energy Consumption Survey (performed by the US Energy Information Administration) where appropriate.

Refrigerator and Freezer Recycling

Comment: Rate Counsel commented that the use of the Mid-Atlantic Technical Reference Manual for the Protocols for refrigerator and freezer recycling is inappropriate because it uses parameters that are not specific to New Jersey weather. Rate Counsel further recommended that the Protocols include savings that are specific to New Jersey.

Response: Staff believes that it is important to have New Jersey specific parameters to determine savings. Staff believes that it is appropriate to use the proposed protocols for appliance recycling measures until New Jersey specific data is available. Staff further recommends that appliance recycling be added to the current evaluation plan.

Refrigerators

Comment: Rate Counsel proposed to use the Consortium for Energy Efficiency (CEE) database as a reference for CEE Tier 2 Refrigerators.

Response: Staff agrees with Rate Counsel and added the suggested reference for CEE Tier 2 Refrigerators to the Protocols.

Electric Chillers

Comment: Rate Counsel requested clarification on the source reference for the proposed changes to the protocols for electric chillers.

Response: Staff revised the Protocols to provide clarification on the source reference for the proposed changes to the electric chiller protocols. Specifically, the protocols for electric chillers were revised to distinguish between positive displacement and centrifugal chillers.

SREC Registration Program

Comment: Rate Counsel requested clarification on the data source for the estimated annual production factor used to calculate solar energy generation.

Response: Staff revised the Protocols to provide more information on the source reference for solar energy generation. The production factor is based on a combined average calculation of the PV Watts estimated annual output for the Newark and Atlantic City weather stations.

Demand Response Programs

Comment: Rate Counsel recommended that future versions of the Protocols should reflect the findings of CEP's Data and Evaluation working group and any measurement and verification methodologies required for participation in PJM Interconnection, LLC's energy efficiency and demand response programs.

Response: Staff agrees with Rate Counsel and will consider such findings in future versions of the Protocols.

DISCUSSION AND FINDINGS

The proposed modifications to the Protocols were circulated to the public via the EE and RE committees distribution lists and posted on the NJCEP web site and interested stakeholders were given an opportunity to comment on the proposed changes. The Board **HEREBY FINDS** that Board Staff solicited input from public stakeholders on proposed changes to the Protocols, carefully considered the public comments on the proposed changes to the Protocols and based on those comments, recommended approval. The Board **FURTHER FINDS** that the proposed changes to the current draft of the Protocols are reasonable based on the need to update Protocols from time to time to reflect up-to-date energy savings baselines reflective of upgrades in energy codes or appliance efficiency standards; additions and changes to Clean Energy programs or measures; program assessments and evaluations; and other changes in the assumptions used to measure resource savings.

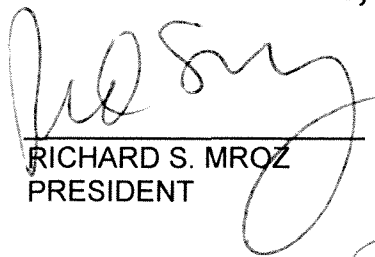
The Board **FINDS** that the Protocols should continue to be updated from time to time so that they are current with federal and State codes and standards and are reflective of current technologies and building practices and other changes in the marketplace, including the addition of new NJCEP programs and program components. For the reasons set forth above, the Board **FINDS** that the proposed Protocols include reasonable methodologies and are appropriate for estimating energy savings and renewable and distributed generation. The Board supports ongoing program evaluation to inform additional updates to the Protocols and **DIRECTS** the OCE to continue coordinating the development of an evaluation plan. Based on the above, the Board **HEREBY APPROVES** the Protocols to Measure Resource Savings dated November 24, 2015 for use in estimating savings from FY16 program measures.

The effective date of this order is December 26, 2015.


DATED: 12/16/15

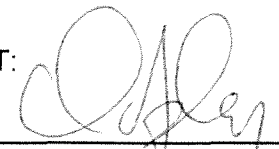
BOARD OF PUBLIC UTILITIES

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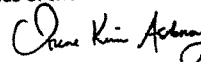

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I HEREBY CERTIFY that the within document is a true copy of the original in the files of the Board of Public Utilities



IN THE MATTER OF REVISIONS TO THE NEW JERSEY CLEAN ENERGY PROGRAM
FISCAL YEAR 2016 (FY16) PROTOCOLS TO MEASURE RESOURCE SAVINGS
DOCKET NO. EO09120975

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