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VIA ELECTRONIC FILING

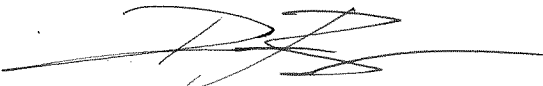
Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street, 2nd Floor North
P.O. Box 3265
Harrisburg, PA 17105-3265

**Re: Implementation of the Alternative Energy Portfolio Standards Act of 2004:
Standards for the Participation of Demand Side Management Resources - Technical
Reference Manual 2021 Update
Docket No. M-2019-3006867**

Dear Secretary Chiavetta:

Enclosed please find the Comments of PPL Electric Utilities Corporation for filing in the above-referenced proceeding.

Respectfully submitted,



Devin Ryan

DTR/jl
Enclosure

cc: Regi Sam (rsam@pa.gov)
Kriss Brown (kribrown@pa.gov)

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Implementation of the Alternative Energy :
Portfolio Standards Act of 2004: Standards :
for the Participation of Demand Side : Docket No. M-2019-3006867
Management Resources - Technical :
Reference Manual 2021 Update :

**COMMENTS OF
PPL ELECTRIC UTILITIES CORPORATION**

TO THE PENNSYLVANIA PUBLIC UTILITY COMMISSION:

I. INTRODUCTION

By Tentative Order entered April 11, 2019, the Pennsylvania Public Utility Commission (“Commission”) requested comments on the proposed 2021 update of the Commission’s Technical Reference Manual (“TRM”).¹ PPL Electric Utilities Corporation (“PPL Electric” or the “Company”) has actively participated in all of the proceedings instituted by the Commission to implement Act 129 of 2008, P.L. 1592, 66 Pa.C.S. §§ 2806.1-2806.2 (“Act 129”). The Company appreciates this opportunity to comment on the Commission’s proposed 2021 revisions to the TRM (“Proposed 2021 TRM”).

PPL Electric generally agrees with most of the changes proposed in the Proposed 2021 TRM. However, as detailed in the comments below, the Company has identified some areas that it believes require technical modification, clarification, or both.

¹ *Implementation of the Alternative Energy Portfolio Standards Act of 2004: Standards for the Participation of Demand Side Management Resources – Technical Reference Manual 2021 Update*, Docket No. M-2019-3006867 (Order Entered Apr. 11, 2019) (“TRM Tentative Order”).

II. COMMENTS ON THE TRM TENTATIVE ORDER AND PROPOSED 2021 TRM

In the following sections, PPL Electric provides its technical comments on proposals contained in the TRM Tentative Order. Most of the comments are suggestions to improve the clarity of a TRM protocol or are corrections. However, PPL Electric does not provide technical comments on every Commission proposal. PPL Electric has organized its technical comments in accordance with the sections of the TRM Tentative Order.

A. VOLUME 2 OF THE PROPOSED 2021 TRM

1. Section 2.1.1 Residential EnergyStar Lighting

PPL Electric recommends updates to the discussion of Watts_base appearing on page 11 of Section 2.1.1. Watts_base assumes the 45 lumen/W standard will apply to all bulbs sold starting in 2020. However, this standard will not apply to reflector and previously-exempt specialty bulbs if the Department of Energy’s proposed withdrawal of its revised definition of a general-service lamp (“GSL”) is finalized. Accordingly, the Company recommends that the TRM’s language allow for the application of either market or pre-EISA standard baselines to non-GSL bulbs if this proposed rulemaking becomes final.²

2. Section 2.7.1 Residential New Construction; Section 2.7.3 Low Rise Multifamily New Construction

PPL Electric requests clarification on text that appears in both Section 2.7.1 Residential New Construction and Section 2.7.3 Low Rise Multifamily New Construction. Both protocols state that “[m]odeled energy and peak demand savings shall be produced by a RESNET accredited software program or by other models approved by the PA SWE. The latter include the Passive House accreditation software packages (Passive House Planning Package and WUFI Passive), though both tools require the user to separately model the code baseline reference

² See <https://www.regulations.gov/document?D=EERE-2018-BT-STD-0010-0001>.

design to calculate energy and demand savings.” Proposed 2021 TRM, Volume 2, pp. 183, 190 (footnotes omitted).

The Company appreciates the flexibility. However, since savings can be calculated for lighting and appliances within the software, PPL Electric requests clarification that the Commission’s intent is for the software and the baseline reference design home to include up-to-date assumptions reflecting current state and federal lighting and appliance standards.

Furthermore, the single family new construction and multifamily new construction measures do not reflect the code amendments recently adopted by Pennsylvania. PPL Electric recommends the following updates to Tables 2-135 and 2-136: (1) air leakage should be updated to 5 ACH50; and (2) climate zone 6 frame wall u-factor should be updated to 0.045 to reflect the recent Pennsylvania code amendments.

3. Section 2.7.4 EnergyStar Manufactured Homes

In Section 2.7.4 EnergyStar Manufactured Homes, PPL Electric requests that the Commission confirm that the only approved modeling software are REM/Rate and those listed on RESNET’s National Registry of Accredited Rating Software Programs. *See* Proposed 2021 TRM, Volume 2, p. 193. The Company notes that the RESNET site includes three software programs at this time.

4. Section 2.7.5 Home Energy Reports

PPL Electric requests that the Commission clarify the following text in Section 2.7.5, Home Energy Reports: “However, the multi-year perspective will improve the cost-effectiveness of new cohorts of HER recipients compared to a 1-year measure life assumption.” Proposed 2021 TRM, Volume 2, p. 198. This statement is probably true in most cases, but not always. If savings from previous treatments persist, then additional treatments in future years may have relatively small incremental savings and, therefore, low cost-effectiveness. The impact of

assuming a multi-year measure life on HER cost-effectiveness is unknown. Therefore, the Company requests that the Commission clarify whether the text should read as follows: “Under the SWE’s savings persistence assumptions, the multi-year perspective will improve the cost-effectiveness of new HER cohorts compared to a 1-year measure life assumption.”

In addition, PPL Electric requests that the Commission confirm that the treatment effect estimates in the algorithms and examples on page 199 of Volume 2 are adjusted for joint savings (uplift). If so, the Company recommends that TRM explicitly state those estimates are adjusted for joint savings (uplift). If the savings are not adjusted for joint savings (uplift), PPL Electric requests that the Commission clarify how the EDCs should account for the joint savings.

Further, concerning the lifetime savings formula on page 199 of Volume 2, PPL Electric would like the Commission to clarify and confirm that savings are only summed over three years because the persistence savings become negative after three years.

Moreover, PPL Electric recommends editing Table 2-143. On page 200, the Proposed 2021 TRM specifies a 100% savings decay rate for years 1 and 2, and 31.3% savings decay rate for years 3 and beyond. An EDC may desire to conduct its own evaluation to calculate a savings decay rate. If the SWE allowed the EDCs to conduct savings persistence evaluations and to use the results from the savings calculations instead of the 31.3% default, PPL Electric recommends that Table 2-143 be updated to allow for EDC data gathering in addition to providing the default annual savings decay rate.

5. Section 2.9 Demand Response

In Section 2.9, the TRM indicates a 10-year measure life for Direct Load Control (“DLC”) and Behavior Based Demand Response (“DR”) programs.

PPL Electric requests that the Commission clarify: (1) the basis for this assumption; and (2) whether the 10-year measure life applies to behavioral DR programs, or whether the measure life for behavioral DR programs should be a one-year measure life.

B. VOLUME 3 OF THE PROPOSED 2021 TRM

1. Section 3.1 and Appendix C, Commercial Lighting

PPL Electric requests clarification of the basis for disconnected lighting wattage in Table 3-10, “Connected Load of the Baseline Lighting.” *See* Proposed 2021 TRM, Volume 3, p. 22. The Company also believes that adding a footnote to this table providing this clarification will reduce potential confusion by the EDCs and their evaluators by standardizing the derivation of delamped savings.

In addition, in Tables 3-5 and 3-6, PPL Electric recommends adding “24/7 convenience/retail store” building type. *See* Proposed 2021 TRM, Volume 3, pp. 19-20. This building type is associated with 8,760 hours of use (“HOU”) and 1.0 coincidence factor (“CF”). Further, the same 8,760 HOU, and 1.0 CF information for “24/7 convenience/retail store” building type should be added to the “Lookups” tab in Appendix C (Lighting Audit & Design Tool for Commercial and Industrial Projects).

PPL Electric also recommends additions to Appendix C to allow entry of different heating and cooling system types per space designation. Currently, unique cooling system types for each space designation are captured in the “General Information” tab, but Appendix C only allows one heating system type for the whole building. With the current configuration, the evaluation, measurement, and verification (“EM&V”) is complicated and time consuming when there are multiple heating and cooling systems within the same building. This issue can be easily resolved by adding functionality to Appendix C that allows multiple heating systems in one building. In fact, the Company notes that the draft Appendix C has added a new custom facility

type drop down list for new construction the “Lighting Inventory” tab. PPL Electric’s recommendation is similar to that approach. One option is to add two columns (one for heating and one for cooling sources) with drop down lists in the assumptions section of the “Lighting Inventory” tab. Additionally, the formulas in column V (IF energy) and W (IF demand) on the “Lighting Inventory” tab would need to be updated to reference the heating and cooling sources for each line item from the newly added drop down list columns. This change would save considerable time and effort for EM&V.

2. Section 3.1.7 Lighting Improvements for Midstream Delivery Programs

In Section 3.1.7, Tables 3-21, 3-22, and 3-23 assume the 45 lumen/Watt standard will apply to all bulbs sold starting in 2020 (except for lumen ranges above 3,301). *See* Proposed 2021 TRM, pp. 49-51. However, this standard will not apply to reflector, previously-exempt specialty bulbs, and lamps over 2600 lumens if the DOE’s proposed withdrawal of its revised definition of a GSL is finalized. As a result, PPL Electric recommends the TRM be updated to allow for the application of either market or pre-EISA standard baselines to non-GSL bulbs if this proposed rulemaking becomes final.³

Furthermore, Table 3-21, Baseline Wattage, Omnidirectional Lamps should be clarified. PPL Electric understands that general service lamps over 2,600 lumens are currently exempt from EISA GSL standards and will continue to be exempt if the DOE’s proposed withdrawal of its revised definition of a GSL is finalized. If this does not occur, and the 45 lumen/Watt standard applies to high-lumen lamps, Wattsbase for minimum lumen bin of 3,301 should be 81 (instead of 200 showing in Table 3-21), and Wattsbase for minimum lumen bin of 4,000 should be 111 (instead of 300 showing in Table 3-21).

³ *See* footnote 2, *supra*.

In addition, PPL Electric notes that in Table 3-22, Baseline Wattage, Decorative Lamps, the last minimum lumen value should read 1050 and not 1049. Moreover, in Table 3-23, Baseline Wattage, Directional Lamps, the Wattbase for the lumen bin 3,301 for Reflector Lamp ≥ 2.25 " and reflector lamp PAR MR MRX should be 87 not 200, unless exempt. If they are exempt, it should be stated in the Tables.

3. Section 3.8.1 Wall and Ceiling Insulation

PPL Electric recommends an update to Table 3-165 in Section 3.8.1. *See* Proposed 2021 TRM, Volume 3, p. 246. Currently, Table 3-165 shows the new construction baseline R-value is R-38 for ceilings and R-20 for walls. However, these R-values do not reflect the IECC 2015 energy code adopted by Pennsylvania. Therefore, PPL Electric recommends replacing Table 3-165 in the Proposed 2021 TRM with IECC 2015 table C403.1.3 because the IECC 2015 code baseline R-value is variable depending on the type of ceiling or walls.⁴

⁴ *See* https://up.codes/viewer/pennsylvania/iecc-2015/chapter/CE_4/ce-commercial-energy-efficiency#CE_4.

III. CONCLUSION

For all of the reasons stated above, PPL Electric Utilities Corporation recommends that the Pennsylvania Public Utility Commission proceed with development of the 2021 TRM consistent with PPL Electric Utilities Corporation's comments.

Respectfully submitted,



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