National Electrical Manufacturers Association

The association of electrical equipment
and medical imaging manufacturers
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May 27, 2022

Ms. Ashley Armstrong
Department of Energy
Office of Energy Efficiency & Renewable Energy
Forrestal Building
1000 Independence Ave., SW
Washington, DC 20585

RE: Notice of Availability and Solicitation of Public Comment on the Draft Implementation Guidance Pertaining to the Extended Product System Rebate Program and Energy Efficient Transformer Rebate Program [6450-01-P]

Submitted via EPS_EET_rebates@ee.doe.gov

Dear Ms. Armstrong:

The National Electrical Manufacturers Association (NEMA) is the leading U.S. trade group representing electrical equipment and medical imaging manufacturers that are at the forefront of efficiency, sustainability, and resiliency. Our nearly 325 member companies have long provided a range of efficient products across multiple sectors, including utility transformers and electric motor driven systems. As the American economy becomes more electrified and energy-equitable, the electroindustry's robust and domestic manufacturing base stands ready and able to help make policy goals obtainable and benefits realized in the short-term.

Congress and the Biden-Harris Administration together have indicated through law and executive action that promoting product efficiency is a tangible way of achieving decarbonization and electrification goals. Sections 1005 & 1006 of the *Energy Act of 2020* and Section 40555 of the *Infrastructure Investment and Jobs Act of 2021* both authorize the Department of Energy (DOE) to provide financial rebates for the (re)development and deployment of efficient utility transformers and extended product systems. These rebates will incentivize critical infrastructure owners and operators to invest quickly in modern technology and help local communities, and the nation collectively, experience the benefits of a cleaner and electrified economy sooner.

NEMA appreciates the opportunity to jointly comment on the recently publish documents:

- *Draft Guidance: Extended Product Systems XPS*
- *Draft Guidance: Distribution Transformers*

Comments: Draft Guidance: Extended Product Systems XPS

Qualified Extended Product System

Overall, NEMA is pleased with the definition offered in the draft guidance document regarding a 'qualified extended product system.' In its definition, the DOE establishes a baseline of not less than 5% of reduced energy input (per kilowatt-hour) in order for an extended product to qualify. While the Fan Efficiency Index (FEI) and the Pump Efficiency Index (PEI) referenced in the guidance document provide accurate methods to demonstrate the target 5% energy savings, calculating this can be extremely difficult, especially in retrofit applications. Therefore, NEMA asks the agency to consider adding the option to use a Power Index (PI) to demonstrate compliance when systems use a motor with a variable speed control (i.e., a Power Drive Systems (PDS)).

A PI is a new rating that identifies energy savings from a given PDS when compared with a fixed speed, federally compliant motor. It is calculated through a standard co-developed by NEMA and the Northwest Energy Efficiency Alliance and was designed specifically to help end-users understand energy savings by using PDS. It can be downloaded here for reference:

- NEMA MG 10011-2022 Power Index Calculation Procedure—*Standard Rating Methodology for Power Drive Systems and Complete Drive Modules*.

The standard establishes the calculation procedure and metric of PI for low voltage (600 V or less) PDS and complete drive modules from 1 to 500 horsepower. Using the formula referenced in the standard, a PI of '5' equates to the 5% minimum energy savings by a product. This is equivalent to the 5% threshold established by the definition of qualified extended rebates. Due to these similarities, NEMA encourages the DOE to consider implementing PI as a qualifying requirement for rebates and other decarbonization-related policies.

To that end, we recommend the following additions and revisions to the rebate guidance language for extended product systems:

III. Definitions

- *Power Drive System (PDS)* means a combination of an *electric motor* and *electronic control* as defined and tested in accordance with NEMA MG 10011[1]

V. What is a Qualified Extended Product System

- (a)(2): reduces the input energy (as measured in kilowatt-hours) required to operate the extended product system by not less than 5 percent, as compared to identified base levels set by the Secretary. To demonstrate that the extended product system reduces the input energy (as measured in kilowatthours) required to operate the extended product system by not less than 5 percent, as compared to identified base levels set by the Secretary, an

eligible entity must demonstrate that its extended product system employs a PDS with a Power Index (PI) of 5 or greater or meets the equipment-specific criteria as described below in (b) through (d).

VII. Application Requirements

- (b)(4)(v): A copy or image of the nameplate of the electric motor and electronic control included in the pump, air compressor, or fan. In cases where a PDS is incorporated into existing equipment (e.g., a retrofit application), the manufacturer's product datasheet or nameplate should include the Power Index (PI) rating.

- (b)(5)(i): The serial number, manufacturer, and model number, and energy efficiency rating (expressed in PEIVL, isotropic efficiency, ~~or~~ FEI, or the PI (for PDS)) on the nameplate of the pump, air compressor, or fan and a copy of the manufacturer specification sheets.

DOE should also consider removing listed documentation elements, including:

- Copy of nameplate – Motor and Drive nameplates are often obscured in the final installation. This information is available on the invoice or the manufacturers product datasheet.

- Description of how electronic control is controlled – The method for controlling the end-product does not seem essential for energy savings, especially for motor-drive systems that have a PI where the estimated energy savings has already been determined.

- Annual operating hours – The operating hours is subjective and may vary based on time of year, user demand, and other variables. Verification of this is also problematic.

- Description of expected load variation – The load variance is subjective and may vary based on time of year, user demand, and other variables. Verification of this is also problematic.

- Pre- and post- installation photos of equipment – The product detail and invoice should be sufficient to confirm purchase. Photos of before/after may be forgotten by installers (since this is not a normal requirement for upgrades) and adds an additional administrative burden with little objective benefit.

Comments: Draft Guidance: Distribution Transformers

Third-party scrap receipt

The Administration has established aggressive clean-energy goals of a 100% carbon-free electricity sector by 2035 and a net-zero emissions economy by 2050. Modernizing America's power grid is a monumental challenge; developing an effective and practical strategic plan for doing so will require extensive planning to understand the various needs of stakeholders, identify and remedy political and logistical challenges, and allocate resources effectively. Such a comprehensive modernization strategy will take time to develop, however, the DOE recognizes through this rebate program that incremental upgrades to the grid can and should occur now. Bureaucratic efficiency is a necessary variable for the country to reach these decarbonization goals. Therefore, NEMA supports any approach that will make rebate funds available to eligible entities as quickly as possible.

A carbon-free electricity sector will undoubtably provide countless environmental and economic benefits. However, the Administration has also made equity a keystone policy objective of electrification, as reflected in the 'Justice40' initiative to deliver environmental justice to disadvantaged communities[2]. Therefore, the DOE needs to strike an appropriate balance in its guidance document that does not undermine one policy objective at the expense of another.

The replacement of legacy equipment with modern transformers is proven to reduce carbon-emissions and lower energy costs. But transformer manufacturing is not a quick process; the current lead time to produce a new transformer can be at least a year[3]. The DOE notes in its guidance that, as a condition of rebate eligibility, is it considering requiring submission of a receipt from a third-party scrap company on decommissioned transformers. Requiring a third-party scrap receipt would take legacy and inefficient equipment out of service sooner. However, given the manufacturing lead-time gap, taking such equipment out of service before a modern replacement is ready to be installed could reduce grid resiliency and increase consumer costs. For utilities which provide for disadvantaged communities, this could create a disincentive to invest in cleaner technology out of concern of further negatively impacting end-users. This could further exacerbate the equity gap between these communities and more advantaged ones.

To strike a balance, NEMA suggests that instead of a making a scrap receipt a pre-condition of a rebate, that such a receipt be required to be produced within a certain timeframe upon the awarding of a rebate. This window of time should account for the manufacturing lead-time. Failure to provide such a receipt by the deadline could result in a return of the rebate award.

Again, NEMA appreciates the opportunity to submit comments regarding these rebates. If you have any questions or need additional information, please contact me.

Sincerely,

Spencer Pederson
Vice President, Public Affairs

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[1] NEMA MG 10011-2022, ("NEMA MG 10011-2022"), "Power Index Calculation Procedure—Standard Rating Methodology for Power Drive Systems and Complete Drive Modules," approved 2022.

[2] https://www.whitehouse.gov/briefing-room/statements-releases/2021/01/27/fact-sheet-president-biden-takes-executive-actions-to-tackle-the-climate-crisis-at-home-and-abroad-create-jobs-and-restore-scientific-integrity-across-federal-government/

[3] https://theprowersjournal.com/2022/05/lamar-light-plant-feels-pinch-of-tight-supply-chains/