



February 27, 2015

Verena Radulovic
U.S. Environmental Protection Agency
Product Development
Energy Star Program

Re: Energy Star Distribution Transformers Draft Specification Framework

Sent via email to: distributiontransformers@energystar.gov

Dear Ms. Radulovic:

The Edison Electric Institute (EEI) appreciates the opportunity to submit comments on the Energy Star Distribution Transformers Draft Specification Framework that was released in December 2014.

EEI is the association that represents all U.S. investor-owned electric companies. Our members provide electricity for 220 million Americans, operate in all 50 states and the District of Columbia, and directly employ more than 500,000 workers. With more than \$85 billion in annual capital expenditures, the electric power industry is responsible for millions of additional jobs. Reliable, affordable, and sustainable electricity powers the economy and enhances the lives of all Americans.

EEI and its members have been strong supporters of the Energy Star program. Energy Star specifications have been used for utility energy efficiency programs over the past 20 plus years. We believe that the program is most successful when this voluntary energy efficiency effort focuses on creating specifications that are fuel neutral, market neutral, technically feasible and capable of being satisfied by multiple suppliers.

As EPA notes in the draft specification framework, DOE recently revised standards for distribution transformers that take effect in 2016. *See* 78 *Fed. Reg.* 23,336 (Apr. 18, 2013). DOE selected TSL1 as the standard for liquid-immersed distribution transformers, noting that “the potential for significant disruptions in the steel supply market at higher efficiency levels was a key element in adopting TSL1.” *Id.* at 23,337. DOE noted that it intended to determine, no later than 2016, whether market conditions, particularly the supply chain for amorphous steel, would justify the re-evaluating the final efficiency standards. *See id.* DOE also noted other considerations, raised by stakeholders, including EEI, that made TSL1 the appropriate basis for the standards. Among these were size and cost constraints, particularly in retrofit applications. *See id.* at 23,396. In general, amorphous core steel transformers are larger and heavier than

other transformers, which can limit their suitability, particularly in retrofit applications in urban environments.

EPA's stated goal in the draft specification framework is to help overcome the market barriers to the uptake of more efficient, amorphous core steel transformers. This is a laudable goal. However, it is important to note that the existence of an Energy Star specification in 2015 for medium voltage liquid-immersed distribution transformers will not address immediately the market and cost issues identified by DOE when it selected TSL1. Further, the specification would not address the other concerns raised by stakeholders in the context of the DOE rulemaking. In particular, it would not address the space limitations that prevent utilities from using the larger amorphous core transformers in retrofit applications. As a result, neither DOE nor EPA should use the mere existence of any final Energy Star specification for medium voltage, liquid-immersed distribution transformers as justification for revisiting the final DOE TSL1 standards later this year or next year.

Moreover, rather than taking a product specification approach, EEI believes that the use of an economic/performance analysis approach would help achieve greater marketplace acceptance. For instance, many EEI members use the Total Owning Cost (TOC) approach when purchasing distribution transformers. Setting an Energy Star specification that incorporates TOC would afford purchasers (primarily utilities) the flexibility to optimize transformer purchases with individual circumstances, including first cost, losses, loading and maintenance.¹

Finally, EPA should consider whether focusing on amorphous core steel distribution transformers will stymie the development of newer technologies that are both more efficient and more appropriate for a range of utility applications. For example, new technologies may be able to provide the following characteristics:

- Smaller size / physical footprint for the same kVA capacity;
- Less weight for the same kVA capacity;
- Lower core losses than all current transformers on the market;
- Lower coil losses, at all transformer loadings (0 to 100%), than all current transformers on the market;
- Increased durability (same or longer life than current transformers, for all weather conditions);
- Same or increase reliability compared to the most reliable transformers currently available; and,
- Same or increased amount of recyclable and/or recycled materials.

¹ It is important to recognize that transformer loading has a huge impact on energy performance. For higher-loaded transformers, use of amorphous core technology will actually *decrease* efficiency, resulting in increased losses. It would not serve the Energy Star program well if a transformer with its imprimatur were to actually decrease efficiency as compared to a minimum efficiency transformer.

Such a unit would be useful in new and retrofit applications, thereby maximizing the potential energy savings from an Energy Star program.

Thank you for your review and consideration of our comments. Please contact Steve Rosenstock (202-508-5465, srosenstock@eei.org) if you have any questions about EEI's comments.

Respectfully submitted,

A handwritten signature in cursive script that reads "Steven J. Rosenstock".

Steve Rosenstock, P.E.
Senior Manager, Energy Solutions

cc: Rick Tempchin, EEI
Emily Fisher, Esq., EEI