



February 26, 2015

ENERGY STAR for Distribution Transformers

US EPA

Via email: distributiontransformers@energystar.gov

Dear ENERGY STAR for Distribution Transformers Team,

Re: ENERGY STAR Distribution Transformers Draft Specification Framework

This letter provides comments on behalf of the Natural Resources Defense Council and our 1.4 million members and online activists on EPA's December 2014 ENERGY STAR Distribution Transformers Draft Specification Framework.

In brief

NRDC welcomes and supports EPA's effort to develop an ENERGY STAR specification for medium voltage liquid-immersed distribution transformers. The proposed efficiency levels seem suitable, and well chosen for supporting improved efficiency, economics, and market transformation. However, it may be useful to revise the approach to allow and encourage utilities to simultaneously apply "Total Cost of Ownership" (TCO) analysis when selecting distribution transformers, and treat the proposed efficiency levels as a soft target, similar to the approach taken in the previous ENERGY STAR transformer program.

Discussion

As summarized in the Framework document, and consistent with the extensive analysis and stakeholder input in the U.S. Department of Energy's 2011-2013 rulemaking process for the distribution transformers efficiency standards that take effect in 2016, there is a large potential for cost-effective energy efficiency beyond that which will be achieved by current utility purchasing practices and the updated efficiency standards.

DOE's analyses indicated that higher efficiency levels could have delivered more than \$7 billion in additional customer benefits and more than 2 quadrillion Btus of energy savings. DOE adopted efficiency levels for reasons that were investigated at great length during the rulemaking process. Those reasons include concerns with sole-source providers of critical materials (notably, amorphous metal), risk of inadvertently encouraging remanufacturing of inefficient old distribution transformers rather than replacement, and other factors. However, those concerns do not appear to arise with a voluntary program such as ENERGY STAR.

The choice of DOE's "Trial Standards Level" (TSL) 4 for the ENERGY STAR specification seems suitable, in that it is sufficiently stringent to deliver large savings and would facilitate market transformation of key technologies and materials, but is also at a level which DOE's detailed analysis found cost effective in most applications.

That said, it would be worthwhile to consider a different ENERGY STAR approach than the one proposed in the Framework document. In particular, there may be real merit in adopting the approach used in the previous ENERGY STAR transformer program, i.e., which doesn't merely specify an efficiency level, but also simultaneously encourages utilities to apply TCO analysis to determine whether such higher efficiency is economically justified and only purchase accordingly. This seems like an attractive approach for several reasons.

First, there are many distribution transformers for which TSL 4 would be uneconomic, and a TCO-focused ENERGY STAR specification may help avoid unintended uneconomic outcomes. For example, DOE's detailed analysis found that about 18% of 'Design Line 2' transformers would not be cost-effective at TSL 4. DOE found that some fraction of transformers would be uneconomic for each of the four other liquid immersed distribution transformer Design Lines, as well, although to a lesser degree.

Second, in some cases, and increasingly over time, a higher efficiency level than TSL 4 may be economic, and a TCO-focused ENERGY STAR specification may help in capturing some of those opportunities and driving more economic energy-saving outcomes faster. For example, again considering Design Line 2, DOE estimated that the more stringent TSL 5 would be cost-effective for nearly 50% of distribution transformers.

Third, utilities clearly have the technical expertise and data to perform TCO analyses, and a TCO-focused ENERGY STAR specification may be helpful in recognizing and promoting a best-practice culture of solid economic analysis. Further, the NEMA TP-1 specification lays out a widely understood simplified methodology that provides a solid analytic foundation.

While it is not clear that an ENERGY STAR specification will be sufficient to drive substantial improvement in purchasing of more economic, efficient distribution transformers by utilities, given the large size of the opportunity and the absence of other identified options to help move the market, this effort seems more than worthwhile.

We appreciate the opportunity to provide these comments, and welcome further work on this efficiency opportunity.

Respectfully submitted,



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