

September 20, 2013



Amanda Stevens
U.S. Environmental Protection Agency
Ariel Rios Building
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

RE: ENERGY STAR® Clothes Dryers Draft 2 Version 1.0 Specification

Dear Ms. Stevens:

Northwest Energy Efficiency Alliance is a non-profit organization working to encourage the development and adoption of energy-efficient products and services. NEEA is supported by the region's electric utilities, public benefits administrators, state governments, public interest groups and efficiency industry representatives. This unique partnership has helped make the Northwest region a national leader in energy efficiency.

This letter is being sent as a way to emphasize our position with regard to a few key issues associated with the most recent draft of the Energy Star dryer specification. NEEA signed onto the comments provided by the Super-Efficient Dryer Initiative (SEDI), and we fully support the comments being provided by the California Investor-owned Utilities (CA IOUs). But we wish to strongly emphasize three issues that will likely determine whether or not there is any serious utility interest in energy efficiency initiatives involving clothes dryers, and the way in which the energy savings from such initiatives will be accounted for. Those issues are:

1. The use of DOE's Appendix D2 as the basis for rating and qualifying Energy Star clothes dryer models
2. The inherent relationship between drying time and clothes dryer efficiency
3. The 5 percent "credit" for "connected" clothes dryer models

The Use of Appendix D2

As stated in the other comments referenced above, NEEA **strongly** supports the use of Appendix D2 as the basis for qualifying Energy Star clothes dryer models. In fact, it is our belief that if EPA were to revert to using Appendix D1 for its program, there would be no utility-based clothes dryer efficiency programs or initiatives. While Appendix D2 may have its shortcomings (such as the unrepresentative nature of the clothes load used and the presumed number of annual clothes dryer cycles), we can at least compensate for those shortcomings by adjusting the estimated savings from the more efficient dryers to more closely represent the real world, based on our own field research and that of others.

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However, if Appendix D1 were to be used for rating and qualifying products, there is no possible way for us to adjust for the unpredictable differences in the auto-termination behavior of individual clothes dryer models. It is quite clear from DOE testing and from our own lab testing that the efficiency rank order of clothes dryers changes in significant and unpredictable ways when shifting from testing with Appendix D1 to Appendix D2. Even if the annual energy use estimates coming from Appendix D1 were a reasonable approximation of reality (they aren't) and were able to expose the real efficiency differences among dryer models (they can't), NEEA and its 130+ funding utilities will not support an efficiency qualifying framework that can't even correctly rank-order the efficiency of clothes dryer models.

So to reiterate, if EPA chooses to revert to Appendix D1 for its clothes dryer specification, it is highly unlikely that NEEA and the utilities in the Pacific Northwest will continue to have any interest in clothes dryer efficiency initiatives until such time as Appendix D2 becomes the basis for product qualification.

Drying Cycle Time and Dryer Efficiency

Recent lab testing, some of which has been done under contract to NEEA, has made it quite clear that clothes drying efficiency can be dramatically improved by turning down the heat and lengthening the drying cycle time. In fact, CEF performance better than 8.0 can be achieved simply by using no heat at all, provided one is willing to accept a drying cycle time in excess of 4 hours.

While no-heat drying is an extreme case, it is clearly possible for manufacturers to achieve CEF ratings in excess of 4.0 by using more modest extensions in drying cycle time (75-105 minutes perhaps) and reducing energy used for heating. Manufacturers can achieve this rating by simply labeling such a cycle as the "normal" or default dryer cycle for testing and certification purposes, whether or not households actually *use* this cycle for any significant percentage of their annual dryer loads. The inherent relationship between clothes drying efficiency and low-heat, longer dryer cycles opens up a significant opportunity for manufacturers to game the specification to achieve an Energy Star rating while delivering very little in the way of real energy savings in the field.

At present it's impossible to know how households might use such a clothes dryer – which cycles would be chosen for which loads, on average. Regardless of how EPA chooses to implement its specification, this will be important field research to conduct, and NEEA is planning to invest in such research starting in 2014.

But EPA could substantially mitigate the gaming potential in its specification if it adopted the recommendation made by the CA IOUs with regard to the CEF specification. We strongly support a CEF specification that increases with dryer cycle times longer than those accepted as "normal" by households today (one hour, plus or minus).

Credit for "Connected" Appliances

NEEA strongly disapproves of this credit proposal.

For quite a long time now, the proponents of the "smart grid" and the manufacturers of devices and systems that enable it have been promoting the benefits of "smart grid connectivity." And

yet in very few instances (mostly the integration of renewable energy resources) have these benefits, or the costs associated with them, been quantified, in general or for any particular appliance or system.

We have a few important questions that must be answered before we will consider supporting any sort of credit for this functionality:

- 1) What are the benefits of grid connection for a clothes dryer? This includes energy benefits, capacity benefits and any ancillary economic benefits.
- 2) To whom do the benefits accrue?
- 3) What are the costs of achieving these benefits, and who pays those costs?
- 4) If there are any *net* benefits, how should those be realized and paid for?
- 5) To what extent can grid- or internet-connected appliances be reprogrammed to use more energy than they were certified to use, *after* they are placed in service?

Unfortunately, DOE has steadfastly refused to define a “network mode” for appliances in its test procedure rulemakings, or to require the energy use of an appliance when in this mode. Such a test procedure is already defined in the relevant IEC test procedure for an appliance such as a dryer (IEC 62301, IEC 62087), so the absence of a test procedure is not because of a lack of existing methodologies. In fact, DOE has adopted a number of the other IEC test procedures for other off and standby modes of operation.

Typical small network equipment, such as modems, routers and wireless devices, consume about 5 Watts when in the on mode. While this may seem like a small amount of power (43 kWh per year in the case of a clothes dryer that’s in use about 400 hours per year), there is no obvious or quantified benefit derived from the use of this energy. We’ve seen no national data on the fraction of annual clothes dryer operating hours that occur during utility peak or shoulder peak hours, and so have no sense yet of any demand response benefit that might accrue to a utility. There is no obvious energy savings benefit from this functionality to offset its energy cost.

Recent developments in dryer and other technologies (e.g. water heaters) have made it clear to us that it is entirely plausible for a manufacturer (or others) to adjust the firmware or software in the controls of a “connected” appliance in such a way as to cause it to use more energy than it used “out of the box,” or worse, than it was certified to use through a federal test procedure. Under these circumstances, it might be more appropriate to *debit* the performance of a “connected” appliance than to credit it. But until these issues are resolved, it would be highly inadvisable to do either.

In short, until and unless the questions above have been answered, for any given appliance, it would be highly inappropriate to award any sort of credit for the mere presence of grid- or internet-connecting capability. It would be even more inappropriate in the case of clothes dryers, as the credit being proposed is the same order of magnitude as the supposed energy savings being delivered by the 2015 standards for clothes dryers.

If in the future the financial and energy costs and benefits of grid-connected functionality are actually quantified and verified in the field, NEEA will reconsider its position on this issue. In the meantime, we strongly urge EPA to drop the proposed credit for this feature at this time.

NEEA appreciates the opportunity to offer these comments to the EPA. Thank you for considering these comments in the development of the next draft of the ENERGY STAR residential clothes dryer specification.

Sincerely,



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