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ENERGY STAR® Distribution Transformers Draft 1 Specification In-Person Stakeholder Meeting August 20, 2015

ENERGY STAR Products Labeling Program



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Meeting Details

- Webinar slides and related materials will be available on the Distribution Transformers Product Development Web page:
 - www.energystar.gov/NewSpecs
 - Follow link to “Version 1.0 is in Development” under “Transformers”
- Audio provided via teleconference:
 - Call in:** +1 (877) 423-6338 (U.S.)
+1 (571) 281-2578 (International)
 - Code:** 773366 #
 - Phone lines will remain open during discussion
 - Please mute line unless speaking



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Meeting Objectives

- Review of ENERGY STAR program
- Review Stakeholder feedback on the Framework Document (Dec 2014)
- Receive feedback on ENERGY STAR's Draft 1 proposed approach to the:
 - Specification
 - Purchasing tool
 - Third-party certification

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Agenda

Time	Topic
10:00–10:45	Introductions and Program Recap
10:45–11:15	Stakeholder Feedback on Framework
11:15–12:00	Proposal: Draft 1 Specification Approach
12:00–1:00	Lunch
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2:00–2:45	Proposal: Purchasing Tool
2:45–3:30	Third-Party Certification
3:30–4:30	Next Steps and Wrap-up

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Introductions

Verena Radulovic
U.S. Environmental Protection Agency

Matt Malinowski
ICF International

Emmy Phelan
ICF International

Mahesh Sampat
EMS International Consulting, Inc.

Stakeholders to introduce themselves



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Program Recap

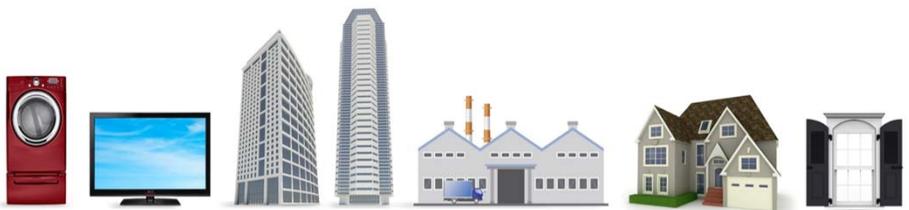
- Voluntary climate protection partnership with the U.S. EPA since 1992
- Strategic approach to energy management, promoting energy efficient products and practices
- Tools and resources to help save money and protect the environment
- To date, **ENERGY STAR** has prevented 2 billion metric tons of greenhouse gas emissions and saved \$300 billion on utility bills



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EPA's ENERGY STAR identifies the most energy-efficient **products, buildings, plants, and new homes.**
 Today, every ENERGY STAR label is verified by a rigorous third-party certification process.



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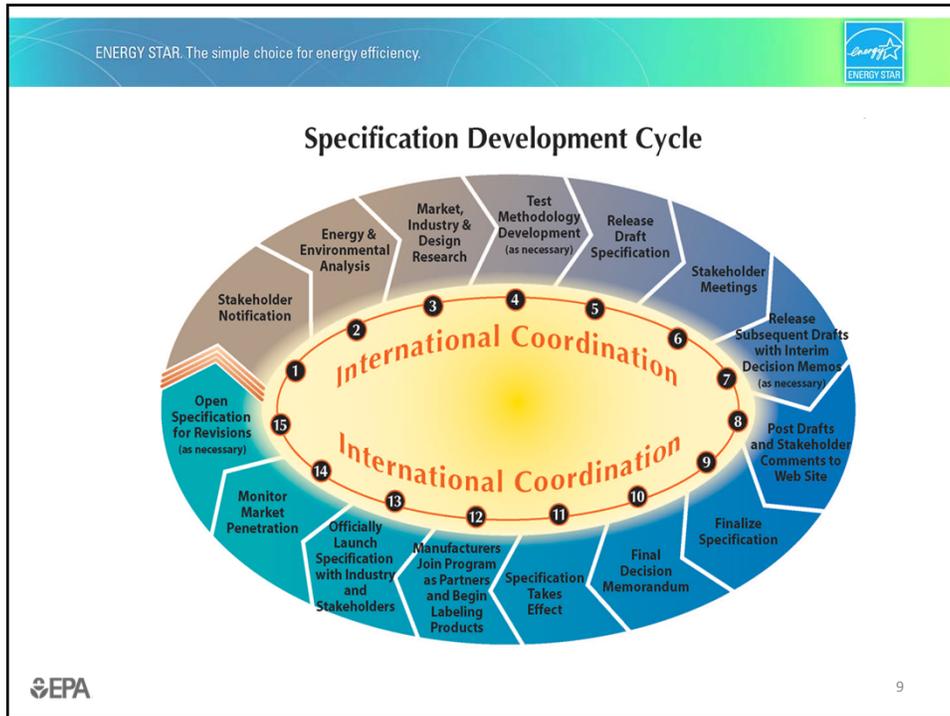
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Lighting CFLs SSL Integral LED lamps Residential light fixtures		Home Envelope Roof products Windows/Doors		
Heating & Cooling Central AC Heat pumps Boilers Furnaces Ceiling fans Room AC Ventilating fans Water Heaters	Office Equipment Computers* Monitors* Printers* Copiers* Scanners* Fax machines* Multi function Devices* Servers* UPS Storage	Commercial Food Service Dishwashers Refrigerators Freezers Ice Machines Fryers Steamers Hot Food Holding Cabinets Griddles Ovens Vending machines	Appliances Clothes washers Dishwashers Refrigerators Dehumidifiers Air cleaners Water coolers	Home Electronics Cordless phones TV Set Top boxes Home audio
Other Pool Pumps Electric Vehicle Supply Equipment				

* = Covered by EU agreement 8

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-
- ### Guiding Principles of Specification Development
- Cost-effective efficiency
 - Performance maintained or enhanced
 - Significant energy savings potential
 - Efficiency improvements are achievable with non-proprietary technology
 - Product differentiation and testing are feasible
 - Labeling can be effective in the market
- EPA
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Distribution Transformers: History

1995

2007

2010

2014

2016

ENERGY STAR Transformers program in effect

Energy Policy Act (EPACT) for low voltage dry-type transformers in effect/ENERGY STAR program sunset

DOE Federal Standard for medium voltage dry-type and liquid-immersed transformers in effect

ENERGY STAR scopes Distribution Transformers and launches framework for liquid immersed distribution transformers. Anticipates developing and finalizing Version 1.0 Specification in 2015.

DOE Revised Standard for low/medium voltage dry-type and liquid-immersed transformers in effect



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1995-2007 ENERGY STAR Transformers

- Utilities performed an economic analysis of total cost of ownership
- Low voltage transformers had to meet criteria below

Key Product Criteria for ENERGY STAR Labeled Commercial and Industrial Transformers (Single Phase)

Single Phase-kVa	Efficiency Level (%)
15	97.7
25	98.0
37.5	98.2
50	98.3
75	98.5
100	98.6
167	98.7
250	98.8
333	98.9

Criteria for ENERGY STAR Labeled Commercial and Industrial Transformers (Three Phase)

Three Phase-kVa	Efficiency Level (%)
15	97.0
30	97.5
45	97.7
75	98.0
112.5	98.2
150	98.3
225	98.5
300	98.6
500	98.7
750	98.8
1000	98.9



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ENERGY STAR Scoping Effort

- In late 2013/early 2014, EPA conducted a Scoping Report for Distribution Transformers to determine the energy and monetary savings potential



ENERGY STAR Market and Industry Scoping Report Medium Voltage Distribution Transformers February 2014

The U.S. Environmental Protection Agency (EPA) consistently looks for new opportunities to expand ENERGY STAR to new product categories that will deliver significant benefits to consumers and the environment in the form of energy and dollar savings plus greenhouse gas reductions. A key step in this evaluation is the development of a scoping report that provides a snapshot of the product market, energy use, and savings potential associated with an ENERGY STAR program for the scoped product type. EPA uses scoping findings to prioritize product specification development work. While scoping reports are drafted primarily for internal evaluation purposes, and are not intended to be exhaustive but rather a guidepost for the ENERGY STAR program, EPA makes the reports available with the interest of benefiting other efficiency programs evaluating similar opportunities. For more information about the ENERGY STAR specification development process, go to: www.energystar.gov/productdevelopment.



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Projected Sales: Largest opportunity lies in liquid-immersed, medium voltage distribution transformers

Distribution Transformer Equipment Type	Units Shipped	MVA Capacity Shipped
Liquid-immersed, medium-voltage, single-phase	683,726	21,994
Liquid-immersed, medium-voltage, three-phase	49,739	32,266
Dry-type, medium-voltage, single-phase, 20-45 kV BIL	709	23
Dry-type, medium-voltage, three-phase, 20-45 kV BIL	522	257
Dry-type, medium-voltage, single-phase, 46-95 kV BIL	546	23
Dry-type, medium-voltage, three-phase, 46-95 kV BIL	2,074	3,655
Dry-type, medium-voltage, single-phase, ≥ 96 kV BIL	202	9
Dry-type, medium-voltage, three-phase, ≥ 96 kV BIL	1,286	2,206
Total	738,804	60,433



Source: U.S. Department Of Energy (DOE), Technical Support Document

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Opportunity for Additional Energy Savings

- Significant energy savings can be realized on a national basis beyond the 2016 DOE Standards, based on small increases in efficiency.
- For distribution transformers, core and winding efficiency can be improved or the geometric configuration of the transformer altered.
- EPA examined DOE's extensive analysis, which devised different trial standard levels (TSLs) for various equipment classes (ECs).
 - Energy savings is highly dependent on equipment class
 - Because efficient transformers can become inefficient if used at the wrong capacity factor, savings will **depend on models being used as marked**

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Stakeholder Feedback to Framework Document

- **Total Cost of Ownership**
 - A stakeholder suggested incorporating a total cost of ownership approach into the specification since:
 - TSL 4 could be uneconomical for some equipment categories.
 - In some cases, a higher efficiency than TSL 4 could be more economical.
 - Utilities perform this calculation already and ENERGY STAR could promote a best-practice.

In response to stakeholder feedback, EPA proposes to include the total cost of ownership method into the program via the purchasing tool.

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Stakeholder Feedback to Framework Document

- **Loading Variation**
 - Several stakeholders commented on the variable nature of loading profiles depending on the specific application of a transformer and the variation in efficiency as a result.

EPA has proposed a new approach that will allow manufacturers to certify models that provide savings over the minimum-standards-compliant model for the specific capacity factor and application where the transformer will be deployed.

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Stakeholder Feedback to Framework Document

- **Core Material Concerns**
 - TSL 4 efficiency levels may allow a few silicon steel designs for single-phase but amorphous designs would be the only option for three-phase
 - Several stakeholders expressed concern over only one company having the technological capability of producing amorphous metals for the core, though several manufacturers currently exist that can manufacture the transformer from the sourced amorphous core metal.

Through a voluntary program, ENERGY STAR strives to encourage manufacturers to provide the most efficient, yet cost-effective transformers using materials that would provide the highest energy and cost savings. EPA understands the concerns expressed. The new approach proposed in Draft 1 should alleviate those concerns while also encouraging manufacturers to use materials that offer improvements in efficiency and develop new capabilities.



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Stakeholder Feedback to Framework Document

- **Program Longevity**
 - Stakeholders mentioned the possibility of an ENERGY STAR specification leading to an increase in the federal standard efficiency levels.

EPA expects that the approach proposed in Draft 1 will allow the program to have a long lifetime because it will designate for stakeholders efficient transformer models tailored to suit their specific applications, rather than only designating efficiency at a single capacity factor.



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Stakeholder Feedback to Framework Document

- **Test Procedures**
 - A stakeholder stated that the DOE test procedure and Alternative Efficiency Determination Method (AEDM) for modelling efficiency should be used for qualification.

EPA proposes that manufacturers use the AEDM to certify products to ENERGY STAR to align with the process in place for self-certification to the DOE Final Rule, thus reducing testing burden.

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Introducing ENERGY STAR Draft 1 Specification for Liquid-Immersed Distribution Transformers

Addresses:

- Definitions
- Scope
- Efficiency Criteria
- Testing

EPA prefers to use industry accepted definitions and aligns with the definitions adopted by DOE in the Code of Federal Regulations, 10 CFR 431.192.



Transformer Definition

- A transformer is a device consisting of 2 or more coils of insulated wire that transfers alternating current by electromagnetic induction from 1 coil to another to change the original voltage or current value.



Source: ElectricityForum.com





Distribution Transformers – Product Definition

- A distribution transformer is a transformers that:
 - a) Has an input voltage of 34.5 kV or less;
 - b) Has an output voltage of 600 V or less;
 - c) Is rated for operation at a frequency of 60 Hz; and
 - d) **Has a capacity of 10 kVA to 2500 kVA for liquid-immersed units and 15 kVA to 2500 kVA for dry-type units.**



Distribution Transformer Definition (continued)

- Does **not** include a transformer that is an—
 - i. Autotransformer;
 - ii. Drive (isolation) transformer;
 - iii. Grounding transformer;
 - iv. Machine-tool (control) transformer;
 - v. Nonventilated transformer;
 - vi. Rectifier transformer;
 - vii. Regulating transformer;
 - viii. Sealed transformer;
 - ix. Special-impedance transformer;
 - x. Testing transformer;
 - xi. Transformer with tap range of 20 percent or more;
 - xii. Uninterruptible power supply transformer; or
 - xiii. Welding transformer.

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Distribution Transformers – Product Types

- Liquid-immersed Distribution Transformers: means a distribution transformer in which the core and coil assembly is immersed in an insulating liquid.
- Low-voltage Dry-Type Distribution Transformer: means a distribution transformer that:
 - a) Has an input voltage of 600 volts or less;
 - b) Is air-cooled; and
 - c) Does not use oil as a coolant.
- Medium-voltage Dry-type Distribution Transformer: means a distribution transformer in which the core and coil assembly is immersed in a gaseous or dry-compound insulating medium, and which has a rated primary voltage between 601 V and 34.5 kV.

EPA intends to include only Liquid-immersed Distribution Transformers in the Version 1.0 specification.



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Distribution Transformers – Basic Model

Consistent with the definition in the Department of Energy Final Rule for Distribution Transformers, 78 FR 23384

- Basic Model: means a group of models of distribution transformers manufactured by a single manufacturer, that have:
 - the same insulation type (i.e., liquid-immersed),
 - the same number of phases (i.e., single or three),
 - the same standard kVA rating, and do not have any differentiating electrical, physical or functional features that affect energy consumption.
- Differences in voltage and differences in basic impulse insulation level (BIL) rating are examples of differentiating electrical features that affect energy consumption.

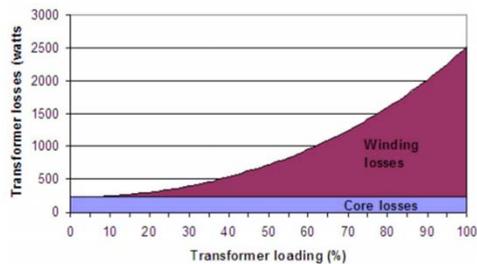


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Distribution Transformers – Operational Power States

- No-Load Loss (or Core Loss): means those losses that are incident to the excitation of the transformer.
- Load Loss (or Coil Loss): means, for a distribution transformer, those losses incident to a specified load carried by the transformer, including losses in the windings as well as stray losses in the conducting parts of the transformer.



$$\begin{aligned} \text{Total Losses} \\ &= \text{No Load Loss} \\ &+ \text{Load Loss} \end{aligned}$$



Scope

- Included Products:
 - Liquid-immersed Distribution Transformers
- Excluded Products:
 - Products covered under other ENERGY STAR product specifications
 - Low-voltage Dry-type Distribution Transformers
 - Medium-voltage Dry-type Distribution Transformers

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Proposal: From Framework to Draft 1

- **Framework:** Referenced TSL4 levels at 50% load testing, following approach for DOE standard

↓ SHIFT

- **Draft 1:** New approach to highlight the top efficient products at specified load points, in 5% increments from 10% to 70% capacity factor
 - Recognizes that different purchasers have different needs in regions and applications with different average capacity factors.
 - Provides purchasers with the most efficient right-size transformers.

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Setting Efficiency Criteria

- Consistent with the ENERGY STAR guiding principles EPA would like to set efficiency criteria that provide *significant energy savings potential* and *differentiate products*
- Therefore, need ENERGY STAR certified models to stand out from standard models.
 - EPA proposes to set efficiency requirements
 - At the same time, EPA proposes to include a separate tool for purchasers to calculate total cost of ownership

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Percent Efficiency Calculation

- The Percent Efficiency, calculated per the formula below, shall be greater than or equal to the efficiency requirement for each relevant capacity factor

Equation 1: Percent Efficiency Calculation

$$\eta = 100\% \times \left(\frac{S_1 \times L \times 1000}{S_1 \times L \times 1000 + NL_1 + LL_1 \times L^2} \right)$$

Where:

- η is efficiency of the transformer as a percentage;
- S_1 is the kVA rating of the transformer;
- L is the per unit load level, e.g., if the load level is 50%, then 'L' will be equal to 0.5;
- LL_1 is the load loss power corrected to the reference temperature of 55°C and incorporating ohmic and stray losses at the load level; and
- NL_1 is the no-load loss power corrected for wave-form distortion and then to the reference temperature of 20°C.



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Efficiency Requirements

	Number of Phases:	Single-phase			Three-phase	
		Capacity (kVA Rating):	25	50	500	150
Efficiency at Specified Capacity Factor (%)	10%	TBD	TBD	TBD	TBD	TBD
	15%	TBD	TBD	TBD	TBD	TBD
	20%	TBD	TBD	TBD	TBD	TBD
	25%	TBD	TBD	TBD	TBD	TBD
	30%	TBD	TBD	TBD	TBD	TBD
	35%	TBD	TBD	TBD	TBD	TBD
	40%	TBD	TBD	TBD	TBD	TBD

Will be developed for Draft 2 through 70% capacity based on the following



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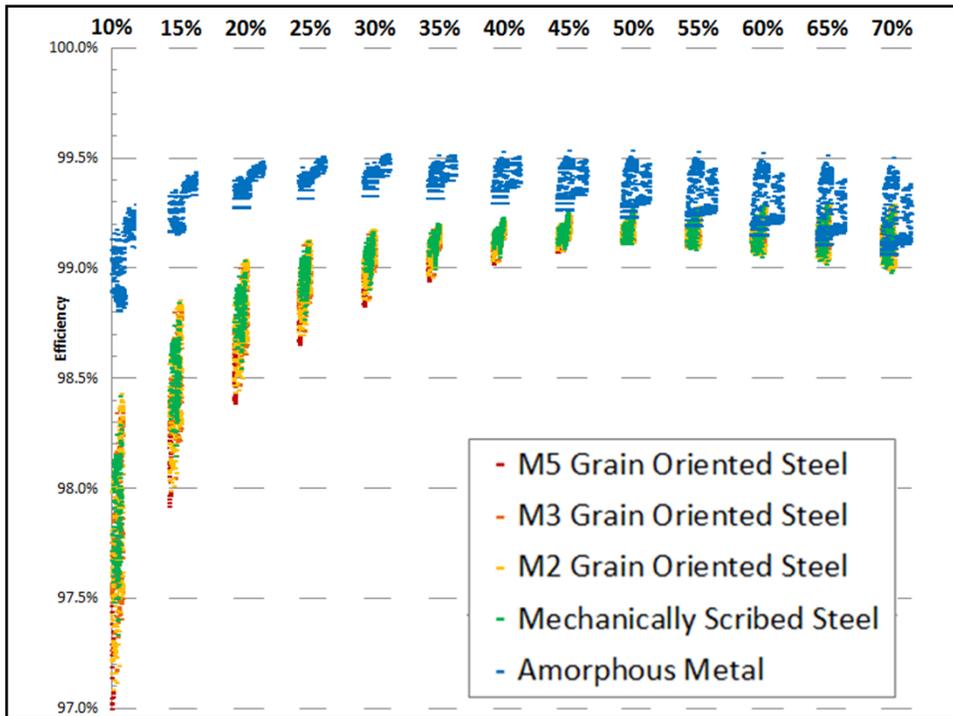
Developing Efficiency Requirements

ENERGY STAR Guiding Principles:

- Cost-effective efficiency
- Performance maintained or enhanced
- Significant energy savings potential
- Efficiency improvements are achievable with non-proprietary technology
- Product differentiation and testing are feasible
- Labeling can be effective in the market



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Developing Efficiency Requirements (continued)

EPA welcomes any new data. Please provide to DistributionTransformers@energystar.gov by Wednesday, September 16.

- In the absence of new data, EPA will use DOE-modeled data
- Designs will then be grouped by optimal capacity factor—10% to 70% (in 5% increments)
- At each capacity factor, EPA will propose levels that recognize the top performing products while ensuring that more than one steel type can meet
- A transformer design could earn the ENERGY STAR label at one or more capacity factors.

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Feedback Request on Proposed Approach

EPA welcomes feedback on the selected capacity factors that will be used to set efficiency criteria.

Should there be more capacity factors than the current 5% increments?

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And again, EPA appreciates new data using the data assembly template.

PRODUCT DESCRIPTION		(Insert Columns for Additional Models)	
GENERAL		VALUE	UNITS
1	Manufacturer		
2	Model Number		
3	Please specify whether the Transformer was custom made (engineered) or manufactured		
MODEL INFORMATION			
4	Rated Capacity		kVA
5	Number of Phases		
6	Core Material (e.g., M2, M3, SA1, etc.)		
7	Coil Material		
8	Weight		lbs
9	Core Weight		lbs
10	Height		in
11	Width		in
12	Depth		in
13	What average capacity factor is this transformer optimized for?		%
TEST RESULTS			
14	Core Loss		
15	Coil Loss at 55°C at 50% Capacity Factor		
EFFICIENCY TEST RESULTS (TYPE IN DIRECTLY OR USE "MEASUREMENTS" WORKSHEET)			
16	Efficiency at 50% Capacity Factor		%

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Equivalent Losses for Transformers at Intermediate kVA Ratings

- For transformers with a kVA rating not listed in Table 1, the no-load and load losses at that kVA rating shall be entered into Equation 2 to calculate the losses for an equivalent transformer at a kVA rating that does appear in the table.
- These equivalent no-load and load losses shall then be entered into Equation 1 to determine the Percent Efficiency of the equivalent transformer and compare against the efficiency requirement.

$$NL_1 = NL_0 \times \left(\frac{S_1}{S_0}\right)^x \text{ and } LL_1 = LL_0 \times \left(\frac{S_1}{S_0}\right)^x$$

Where:

- LL_0 and NL_0 are the load and no-load losses, respectively, at an intermediate kVA rating S_0 , measured per the Test Method;
- LL_1 and NL_1 are the load and no-load losses, respectively, at the equivalent kVA rating S_1 (for use in Equation 1);
- S_0 is an intermediate kVA rating not appearing in Table 1;
- S_1 is the closest kVA rating in Table 1 for which equivalent losses and Percent Efficiency are being calculated; and
- x is the scaling exponent, which is 0.76 for single-phase and 0.79 for three-phase.

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Equivalent Losses for Transformers at Intermediate kVA Ratings (Continued)

EPA welcomes feedback on the scaling equation and the tradeoff between scaling and requirements for additional kVA ratings

	Number of Phases:	Single-phase			Three-phase	
	Capacity (kVA Rating):	25	50	500	150	1500
	10%	TBD	TBD	TBD	TBD	TBD
	15%	TBD	TBD	TBD	TBD	TBD

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Purchasing Tool

- Several stakeholders requested that the total cost of ownership approach be incorporated into the ENERGY STAR program noting:
 - Utilities are generally aware of the types of loads that they are most commonly served by a particular transformer
 - Setting a single criterion for all transformers does not take into account the actual average capacity factor for that application
 - In certain application, it could be uneconomical for some equipment categories
 - In some situations, a higher efficiency than the one specified could be economical
 - Allows more customer flexibility to optimize their purchase based on their balanced interests.



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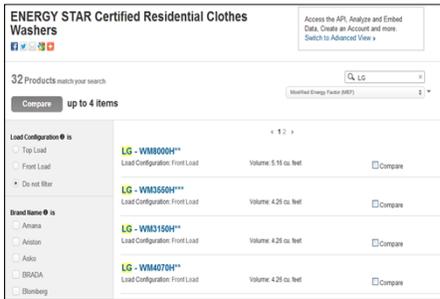


ENERGY STAR's Current Product Finder Tool

- Public-facing tool consumers, retailers, utilities and other stakeholders use to access product data
- www.energystar.gov/productfinder

Benefits:

- Provide better access to EPA product data for all stakeholders
- Model data updated daily
- Models searchable by brand, model name, model number, additional information



This tool will be used as a basis for the Total Cost of Ownership Tool for certified Distribution Transformers



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Purchasing Tool: Total Cost of Ownership

- The tool will be integrated onto the ENERGY STAR site and serve as the Product Finder tool.
- The tool will allow purchasers to see which model(s) that are certified to the ENERGY STAR will have the lowest losses and operating costs given their application.

Results: The top-rated results show up here after requirements are input to the left.

Top-rated Results

1. D02_C11_F3_A14.00_B3.50

Capacity (kVA):	25	Steel Type:	SA1
Efficiency at 50% Load:	99.35%	Dimensions (in):	11hx20wx20d
Operating Cost at 20% Load:	\$140	Weight (lbs):	559

2. D02_C11_G3_A14.00_B3.00

Capacity (kVA):	25	Steel Type:	SA1
Efficiency at 50% Load:	99.28%	Dimensions (in):	11hx19wx19d
Operating Cost at 20% Load:	\$134	Weight (lbs):	491

3. D02_C11_F2_A5.00_B1.51

Capacity (kVA):	25	Steel Type:	SA1
Efficiency at 50% Load:	99.22%	Dimensions (in):	11hx19wx19d
Operating Cost at 20% Load:	\$128	Weight (lbs):	477



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Total Cost of Ownership Tool Live Demo



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Certification Process

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    graph LR
      Partner[ENERGY STAR Partner] --> CB[Certification Body (CB)]
      Lab1[Laboratory: Accredited] <--> CB
      Lab2[Laboratory: CB Witnessed/Supervised] <--> CB
      CB --> EPA[EPA ENERGY STAR]
      EPA --> APIs[ENERGY STAR APIs]
      APIs --> ProductLists[Product Lists]
      APIs --> ProductFinders[Product Finders]
      subgraph PAI [Publicly Accessible Information]
        ProductFinders
        APIs
        ProductLists
      end
  
```

Days to weeks 1 day

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3rd Party Certification

- The U.S. Environmental Protection Agency (EPA) requires all ENERGY STAR products to be third-party certified.
 - Products are tested in an EPA-recognized laboratory and reviewed by an EPA-recognized certification body before they can carry the label.
- Additional models may be certified through DOE's Alternative Efficiency Determination Method , 10 CFR 429.70(d)
 - DOE's AEDM allows manufacturers to self-certify the performance of transformer designs using computer modeling.
 - Reduces time and testing burden for certification.

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Testing

- ENERGY STAR certified liquid-immersed transformers shall be tested using:

Product Type	Test Method
All	U.S. DEPARTMENT OF ENERGY, "Test procedures for measuring energy consumption of distribution transformers", Appendix A to Subpart K of 10 CFR Part 431

- Basic Model shall be selected for testing per the requirements laid out in the Department of Energy Certification Requirements for Distribution Transformers, 10 CFR 429.47.
- For qualification of an individual product model, the Basic Model shall be equivalent to that which is intended to be marketed and labeled as ENERGY STAR.

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AEDM – Alternative Efficiency Determination Method

- For qualification of all products under the Basic Model definition, the Alternative Efficiency Determination Method (AEDM) can be used to qualify all subsequent models that meet the Basic Model parameters. Any subsequent testing failures (e.g., as part of verification testing) of any model in this family of products will have implications for all models in the family.
 - The AEDM is derived from a mathematical model that represents the energy consumption characteristics of the basic model and is based on
 - Engineering or statistical analysis,
 - Computer simulation or modeling, or
 - Other analytical evaluation of performance data
- Manufacturers using the AEDM shall follow all verification methods and procedures laid out in Department of Energy Certification Requirements: Alternative methods for determining energy efficiency and energy use, 10 CFR 429.70(d).



Substantiating the AEDM

- Manufacturers must apply the AEDM to at least 5 of the manufacturer's basic models (*two of which are among the five basic models with the highest unit volumes of production in the prior year*) that have been selected for testing and calculate the power loss for each of these basic models.
 - Test at least five units of each of these basic models and power loss must be calculated.
 - No two basic models should have the same combination of power and voltage ratings
 - At least one basic model should be single-phase and at least one should be three-phase

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Illustration

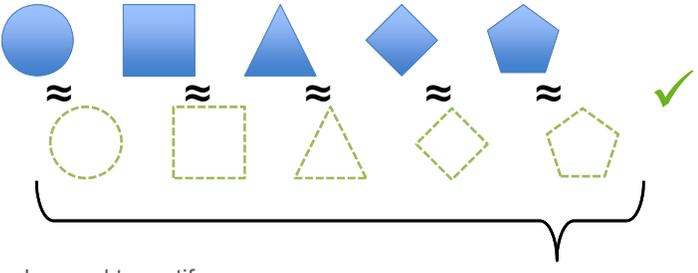
- Individual Basic Models may be certified through testing:
 
- Additional models may be certified on the basis of a Basic Model but cannot vary in energy consumption
 

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Illustration (continued)

- The AEDM, once substantiated . . .
 
- . . . can be used to certify additional, different Basic Models without further testing
 

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Substantiating the AEDM

- For each basic model,
 - The predicted total power loss . . . must be within +/- 5% of the mean total power loss determined from testing

$$95\% \leq \frac{P_{Modeled}}{\frac{1}{5} \sum_5 P_{Test_i}} \leq 105\%$$

- The average of the percentage power loss predicted from the AEDM and the power loss from testing must be within 97% and 103%:

$$97\% \leq \frac{1}{5} \sum_5 \frac{P_{Modeled}}{P_{Test_i}} \leq 103\%$$



Certification: Meeting at one or more capacity factors

- Liquid-immersed distribution transformers that have been certified as meeting the requirements for at least one capacity factor can be labeled
 - Product certification is tied to capacity factor
 - A transformer could earn the ENERGY STAR label at one or more capacity factors
- Clear and consistent labeling of ENERGY STAR qualified liquid-immersed distribution transformers will be required:
 - In product literature (i.e., user manual, spec sheets, etc.)
 - On the manufacturer's internet site where information about the ENERGY STAR qualified models is displayed
 - In RFP responses to purchasers
- Indicate at which capacity factors a transformers is certified

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Certification Process

- For purposes of ENERGY STAR certification, any testing would need to be performed in an accredited laboratory or one that participates in a CB's witnessed or supervised manufacturers' testing laboratory (W/SMTL) program.
- Laboratories that are accredited to ISO/IEC 17025 by an EPA-recognized accreditation body (AB) may apply for EPA recognition and unaccredited laboratories can gain EPA recognition by participating in a CB's witnessed W/SMTL program.
- For those distribution transformer manufacturers that operate their own laboratories for testing and are not accredited, EPA recommends that manufacturers participate in a CB's W/SMTL. More information on EPA's third party certification and verification program is available at www.energystar.gov/3rdpartycert.
- EPA has previously helped train CBs on program requirements

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Verification

- Verification testing ensures that products that have earned the ENERGY STAR label continue to meet the specification.
- Verification testing is administered by EPA-recognized CBs, and products are selected through a combination of EPA nominations and random selections.

EPA seeks information on production cycles, distribution channels, and lab capacity to inform the verification testing process for transformers.

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Agenda

Time	Topic
10:00–10:45	Introductions and Program Recap
10:45–11:15	Stakeholder Feedback on Framework
11:15–12:00	Proposal: Draft 1 Specification Approach
12:00–1:00	Lunch
1:00–2:00	Proposal: Draft 1(continued)
2:00–2:45	Proposal: Purchasing Tool
2:45–3:30	Third-Party Certification
3:30–4:30	Next Steps and Wrap-up

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Next Steps

Event	Date
Launch Webinar	January 14, 2014
Draft 1 Specification Issued	July 27, 2015
Draft 1 Stakeholder In-Person Meeting	August 20, 2015
Feedback on Draft 1 Due to EPA	September 16, 2015
Manufacturer Data Due to EPA	September 16, 2015
Additional Draft Specifications Issued and Associated Stakeholder Webinars	Fall 2015
Final Specification Issued	Winter 2016
Specification Effective	Winter 2016

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Next Steps

Event	Date
<i>Launch Webinar</i>	<i>January 14, 2014</i>
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Specification Effective	Winter 2016

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Comments

- Again, comments and data are due on **September 16, 2015** to:
DistributionTransformers@energystar.gov
- Manufacturers are invited to provide modeled and tested data on their current models for inclusion in the dataset.
- In the absence of receiving new data, EPA will evaluate DOE's current dataset.
- Unless marked as confidential, all comments will be posted to the EVSE product development page at http://www.energystar.gov/products/spec/distribution_transformers_pd
- Accessible through www.energystar.gov/NewSpecs and clicking on "Version 1.0 is in development" under "Transformers"

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Open Discussion

- DOE and EPA would now like to open up the line for any general comments from stakeholders.

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Thank you!

To be added to EPA's stakeholder listserve to receive specification updates, please email:

DistributionTransformers@energystar.gov.

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