ENERGY STAR® Program Requirements
Product Specification for Residential Dishwashers

Eligibility Criteria
Draft 1 Version 6.0

Following is the **Draft 1 Version 6.0** ENERGY STAR Product Specification for Residential Dishwashers. A product shall meet all of the identified required criteria if it is to earn the ENERGY STAR.

1) Definitions:

Below are the definitions of the relevant terms in this document. Where noted below, definitions are identical to the definitions in the U.S Department of Energy (DOE) test procedure at 10 Code of Federal Regulations (CFR) 430, Subpart B, Appendix C1 or in 10 CFR 430.2. When in conflict, the definitions in the CFR take precedence.

A. Dishwasher[1]: A cabinet-like appliance which with the aid of water and detergent, washes, rinses, and dries (when a drying process is included) dishware, glassware, eating utensils, and most cooking utensils by chemical, mechanical and/or electrical means and discharges to the plumbing drainage system.

   a. Compact Dishwasher[2]: A dishwasher that has a capacity of less than eight place settings plus six serving pieces as specified in ANSI/AHAM DW-1-2010 (incorporated by reference; see §430.3), using the test load specified in section 2.7 of 10 CFR 430, Subpart B, Appendix C1.

   b. Standard Dishwasher[2]: A dishwasher that has a capacity equal to or greater than eight place settings plus six serving pieces as specified in ANSI/AHAM DW-1-2010 (incorporated by reference; see §430.3), using the test load specified in section 2.7 of 10 CFR 430, Subpart B, Appendix C1.

   c. Portable Dishwasher[3]: A dishwasher which is not permanently connected to the household water and electric supply lines. It can be mounted on wheels and easily moved from one place to another in normal use. This definition includes dishwashers intended to be used on a countertop or table.

B. Basic Model[1]: All units of a given type of product (or class thereof) manufactured by one manufacturer, having the same primary energy source, and which have essentially identical electrical, physical, and functional (or hydraulic) characteristics that affect energy consumption, energy efficiency, water consumption, or water efficiency.

C. Consumer Product[1]: Any product (other than an automobile, as defined in Section 501(1) of the Motor Vehicle Information Cost Savings Act) which: (1) in operation consumes, or is designed to consume, energy and water (2) to any significant extent, is distributed in commerce for personal use or consumption by individuals.

Note: For Version 6.0, EPA has removed definitions from the DOE dishwasher test procedure located at 10 CFR 430 Subpart B Appendix C, reflecting the move to the new DOE residential dishwasher test procedure in 10 CFR 430 Subpart B Appendix C1 (Appendix C1) that manufacturers started using in May 2013.

[1] 10 CFR 430, Subpart A, Section 430.2
[2] 10 CFR 430, Subpart B, Appendix C1
[3] ANSI/AHAM DW-1-2009

Consistent with other recent ENERGY STAR appliance specification revisions, EPA has incorporated a number of minor updates, including: 1) updating the introduction to Section 1 with a clarification stating that if there is a conflict between the DOE definition listed in Section 1 and the definition found in the CFR, the CFR definition takes precedence; 2) incorporating new footnotes with citations for definitions included in Section 1; and 3) adding a definition for Consumer Product, a term used in Section 2, for clarity.

2) Scope

A. Included Products: Products that meet the definition of a dishwasher and are a consumer product as specified herein are eligible for ENERGY STAR qualification, with the exception of products listed in Section 2B.

B. Excluded Products: Product types not specifically identified in Section 2A are not eligible for ENERGY STAR qualification under this specification. Products that are covered under other ENERGY STAR product specifications (e.g., Commercial Dishwashers) are not eligible for qualification under this specification.

Note: The amended Federal standard that became effective in May 2013 was equivalent to the ENERGY STAR efficiency levels for compact dishwashers. In order to minimize confusion during the time it would take to establish new requirements to differentiate energy efficient compact dishwashers from conventional models, EPA amended the Version 5.2 specification making compact dishwashers ineligible for qualification after December 31, 2013. In the Draft 1, Version 6.0 specification, EPA is proposing new levels for compact dishwashers and has thus removed them from the excluded product list in Section 2B.

3) Qualification Criteria

A. Energy Performance Requirements

Annual Energy Consumption (AEC) shall be less than or equal to Maximum Annual Energy Consumption (AEC_{MAX}), as calculated per Equation 1.

Equation 1: Calculation of Maximum Annual Energy Consumption

$$AEC_{MAX} = AEC_{BASE} + AEC_{AdderConnected}$$

where,

AEC_{BASE} is the annual energy consumption base allowance (kWh/year), per Table 1

$AEC_{AdderConnected}$ is the annual energy connected allowance, per Table 2

Table 1: Annual Energy Consumption Base Allowances

Product Type	AEC_{BASE} (kWh per year)
Standard	270
Compact	195

Table 2: Connected Allowance

Product Type	$AEC_{AdderConnected}$
Dishwashers *Compact and Standard*	0.05 x AEC_{BASE}

[1] Product must be qualified using the final and validated ENERGY STAR Test Method for Residential Dishwashers to Validate Demand Response (TBD) to use the allowance.
[2] Calculated allowance shall be rounded down to the nearest whole number before being applied in Equation 1.

B. Water Performance Requirements

Table 3: Maximum Water Consumption

Product Type	**Water Consumption** (gallons per cycle)
Standard	≤ 3.5
Compact	≤ 2.6

Note: With the broad goal of reducing greenhouse gas emissions, the primary objective of the ENERGY STAR Program is to recognize highly energy efficient products in the market. In developing a product specification, EPA considers the following Guiding Principles:

- Significant energy savings can be realized on a national basis;
- Product performance can be maintained or enhanced with increased efficiency;
- Purchasers will recover their investment in increased efficiency within a reasonable amount of time;
- Efficiency can be achieved through one or more technologies such that qualifying products are broadly available and offered by more than one manufacturer;
- Product energy performance can be measured and verified with testing; and
- Labeling would effectively differentiate products and be visible for purchasers.

Experience has shown that it is typically possible to achieve the necessary balance among principles by selecting efficiency levels reflective of the top 25% of models available on the market when the specification goes into effect. The current ENERGY STAR levels for residential dishwashers have been in place since January 20, 2012. Based on unit shipment data (USD) collected annually, EPA has found that the market responded quickly to the last specification change and estimates the ENERGY STAR residential dishwasher market share in 2012 was 89%. New 2013 Federal standards for dishwashers have also reduced the savings of an ENERGY STAR product relative to a standard model. Considering these factors and based on the availability of products in the market that exceed the current ENERGY STAR criteria, EPA is proposing requirements for Version 6.0 specification to more effectively differentiate highly efficient residential dishwashers for consumers.

Note (con't): In Draft 1 Version 6.0, EPA is proposing that to qualify for ENERGY STAR, standard dishwashers use less than or equal to 270 kilowatt hours per year (kWh/yr) and 3.5 gallons of water per cycle. This would reduce the energy use by 12% and water use by 25% relative to a dishwasher that just meets the Federal standard. Using a dataset of residential dishwashers made up of ENERGY STAR certified models and models listed in DOE's Certification Database, EPA estimates that approximately 27 percent of all standard residential dishwashers on the market meet the proposed criteria. These models are produced by 13 manufacturers and sold under 20 brands. Based on current pricing data collected as well as the increased product availability by the time the current Version 5.0 specification became effective in January 2012, EPA believes that consumers will have a good selection of products available at this higher efficiency level and will be able to recoup their investment in a reasonable timeframe. EPA observed a $15-20 price differential between a model that would meet the specification and one that would not, resulting in a payback of approximately 3 years. Further information is available in the supplemental data & analysis spreadsheet, which accompanies this draft specification. EPA welcomes comments on the proposed criteria for standard residential dishwashers.

Most compact dishwashers that were previously ENERGY STAR certified (prior to 12/31/2013) or that are listed in DOE's Certification Database, have a rated energy consumption of 222 kWh/year and water use of 3.5 gallons per cycle. To further understand the technologies that could offer efficiency gains for both compact dishwashers and standard-size dishwashers, EPA reviewed the most recent DOE Technical Support Document for residential dishwashers. This analysis found that manufacturers could incorporate changes including a permanent magnet motor, an internal water heater in the base of the tub, a sump pump with reduced volume, and a switch mode power supply in order to meet higher efficiency levels. For compact dishwashers EPA is proposing maximum energy and water use requirements – 195 kWh/yr and 2.6 gallons per cycle – that would be consistent with the savings for standard size dishwashers, i.e., 12% less energy and 25% less water than compact dishwashers that just meet the Federal standard. EPA found at least 2 models (dishwasher drawers) that would presently meet these levels. Given there appears to be smaller differentiation in the efficiency of compact dishwasher currently in the market, EPA is seeking additional information on manufacturers' plans to introduce more energy and water efficient compact dishwashers that exceed the current Federal standards, and what efficiency levels will be available in 2015.

C. Reporting Requirement for Cleaning Performance: The per-cycle Cleaning Index (CI_i), as defined in the ENERGY STAR Test Method for Determining Residential Dishwasher Cleaning Performance Section 5.3A, shall be reported for each test cycle (heavy, medium and light). If multiple units are tested, reported Cleaning Indexes shall be in accordance with paragraph 5.A.b.

Note: During the Version 5.0 dishwasher specification development process, a number of stakeholders expressed concern that dishwasher efficiency was reaching a point at which the product's cleaning performance may be negatively impacted. Manufacturers cautioned that if product performance does not meet consumer expectations, energy and water savings will be reduced as consumers opt to use more intensive energy and water cycles or other measures to compensate, i.e., increasing pre-washing or hand-washing. In order to better evaluate and understand the potential linkages between cleaning performance and energy and water efficiency requirements, EPA is proposing that manufacturers report the dishwasher's cleaning performance as part of ENERGY STAR certification. In 2011, DOE began working with stakeholders to develop a cleaning performance test method for dishwashers. The final test method, which is built upon the DOE energy and water test procedure (Appendix C1) was published in February 2014. This Version 6.0 proposal includes reporting the cleaning index for each test cycle, consistent with the sampling requirements specified in Section 5A of the product specification. Cleaning performance would be tested using the ENERGY STAR Test Method for Determining Residential Dishwasher Cleaning Performance. Once collected, this data will enable EPA to better understand how cleaning performance varies with energy and water use, providing the necessary information to more fully evaluate cleaning performance, energy and water use concurrently during future specification revisions.

One of the Guiding Principles of the ENERGY STAR program is that product performance be maintained as energy efficiency increases. EPA seeks to maintain the ENERGY STAR as an attractive purchasing tool for a broad array of consumers by delivering on the concept that energy efficiency does not require a sacrifice in performance. While energy efficiency remains the basis upon which top performers are selected, EPA has a longstanding practice of addressing other aspects of product performance in ENERGY STAR specifications to ensure that overall product performance is maintained relative to non-qualified products.

In 2013, the Association of Home Appliance Manufacturers (AHAM), some of its members, and DOE completed a round robin test using the ENERGY STAR Draft Final Test Method for Determining Residential Dishwasher Cleaning Performance. Upon review of this round robin's data, dishwasher manufacturers have expressed concern that the current test does not currently provide sufficient repeatability and reliability. DOE and EPA observed that the results were generally consistent with the data gathered through DOE's earlier investigative testing. These results were presented during the October 2012 ENERGY STAR stakeholder webinar. There is some inherent variability due to the subjectivity from having a human grader count particles and their size, to score the cleanliness of the dishware/flatware. Considering this, EPA and DOE believe that there is benefit with having labs begin to use and develop experience with the test, and in particular, grading the dishware. The test burden involved with collecting and reporting cleaning performance scores will be modest, since the cleaning performance test can be carried out at the same time as the DOE energy and water test, with only an added step to grade the dishware and flatware. Considering that labs have not yet had sufficient experience with this test, as an initial step, EPA is proposing to collect and analyze the data, but will not post individual-model cleaning performance scores on the ENERGY STAR product list.

EPA welcomes feedback on the proposed reporting requirement for cleaning performance in Version 6.0.

D. Significant Digits and Rounding: All calculations shall be carried out as specified in Appendix C1 to Subpart B of Part 430 and 10 CFR Part 430.23(c).

Note: Consistent with other appliance specification revisions, EPA has revised the significant digits and rounding requirements to reference the applicable sections of the CFR.

E. Model Numbers: Model numbers used for ENERGY STAR qualified product submissions shall be consistent with Federal Trade Commission (FTC) and Department of Energy (DOE) submissions.

4) Connected Criteria:

The following optional connected criteria are applicable to Included Products, Section 2A.

Note: Consistent with criteria proposed for other ENERGY STAR appliance categories, EPA is proposing optional connected criteria for dishwashers designed to provide enhanced functionality to consumers and potential benefits to the grid.

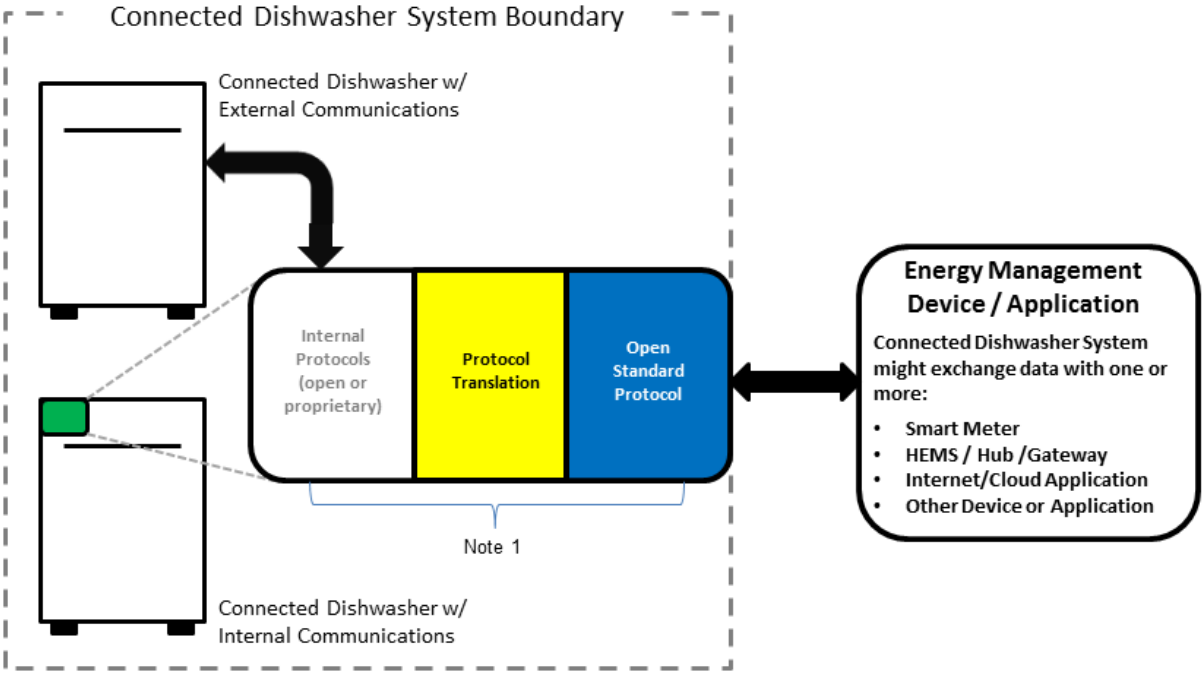
A. Connected Dishwasher System

To be recognized as connected and to be eligible for the connected allowance, a "connected dishwasher system" (as shown in Figure 1) shall include the base appliance plus all elements (hardware, software) required to enable communications in response to consumer-authorized energy related commands (*not including third-party remote management which may be made available solely at the discretion of the manufacturer)*. These elements may be resident inside or outside of the base appliance.

The specific design and implementation of the connected dishwasher system is at the manufacturer's discretion provided it is interoperable with other devices via open communications protocol and enables economical consumer-authorized third party access to the functionalities provided for in sections 4D, 4F, and 4G. The capabilities shall be supported through one or more means, as identified in section 4B2. A product that enables economical and direct, on-premises, open-standards based interconnection is the preferred option for meeting this requirement, but alternative approaches are also acceptable.

The product must continue to comply with the applicable product safety standards – the addition of the functionality described below shall not override existing safety protections and functions. The appliance must meet manufacturer's internal minimum performance guidelines, e.g., cleaning performance.

Figure 1. Connected Dishwasher System Boundary – Illustrative Example



Note 1: Communication device(s), link(s) and/or processing that enables open standards-based communication between the connected dishwasher system and Energy Management Device/Application(s). These elements could be within the base appliance, and/or an external communication module, a hub/gateway, or in the Internet/cloud.

Note: EPA's ENERGY STAR program is seeking to help advance the market for products with intelligent features in ways that deliver immediate consumer benefits as well as support a low-carbon electricity grid over the long-term. In promoting this functionality, EPA also seeks to ensure the consumer is being considered such that their experience in operating the product is maintained or enhanced with new energy savings and convenience opportunities (e.g., receiving a message there is a performance issue with the dishwasher, enabling a service center to make an initial assessment of the problem).

The connected criteria contained in this draft build upon the work done in other specification development efforts (e.g., refrigerators/freezers, clothes washers, clothes dryers) where similar criteria are being developed. The connected criteria stress interoperability and the use of open protocols while also reflecting a more flexible approach that allows for multiple paths of implementation. This approach provides the Agency a basis upon which to consider products with connected functionality as they begin to enter the market and make more prescriptive changes to the requirements, based on real-world market experience, as warranted.

EPA plans to also play a role in consumer education to help further the understanding of additional savings opportunities associated with ENERGY STAR products that have connected functionality, as well as how to best capture these savings (e.g., use of energy saving modes / opportunities for smart grid connection) and in what scenarios these savings will be realized.

EPA encourages stakeholder feedback on the connected criteria proposed for residential dishwashers in Section 4.

B. Communications

1. Open Standards – Communication with entities outside the connected dishwasher system that enables connected functionality (sections 4D, 4F, 4G) must use, for all communication layers, standards:

   a. Included in the Smart Grid Interoperability Panel (SGIP) Catalog of Standards,[4] and/or
   b. Included in the NIST Smart Grid framework Tables 4.1 and 4.2, and/or
   c. Adopted by the American National Standards Institute (ANSI) or another well-established international standards organization such as the International Organization for Standardization (ISO), International Electrotechnical Commission (IEC), International Telecommunication Union (ITU), Institute of Electrical and Electronics Engineers (IEEE), or Internet Engineering Task Force (IETF).

2. Communications Hardware Architecture – Communication with entities outside the connected dishwasher system that enables connected functionality shall be enabled by any of the following means, according to the manufacturer's preference:

   a. Built-in communication technology
   b. Manufacturer-specific external communication module(s) and/or device(s)
   c. Open standards-based communication port on the appliance combined with open standards-based communications module
   d. Open standards-based communication port(s) on the appliance in addition to a, b or c, above

   If option b or c is used, the communication module/device(s) must be easy for a consumer to install and shipped with the appliance, provided to the consumer at the time of sale, or provided to the consumer in a reasonable amount of time after the sale.

C. Open Access

To enable interconnection with the product, in addition to section 4B1 that requires open-standards, an interface specification, Application Programming Interface (API) or similar documentation shall be made available to interested parties that at a minimum, allows transmission, reception and interpretation of the following information:

1. Energy Consumption Reporting specified in section 4D (must include accuracy, units and measurement interval);
2. Operational Status, User Settings & Messages specified in section 4F (if transmitted via a communication link);
3. Demand Response specified in section 4G.

[4] http://collaborate.nist.gov/twiki-sggrid/bin/view/SmartGrid/PMO#Catalog_of_Standards_Processes

D. Energy Consumption Reporting

In order to enable simple, actionable energy use feedback to consumers and consumer authorized energy use reporting to 3rd parties, the product shall be capable of transmitting energy consumption data via a communication link to energy management systems and other consumer authorized devices, services, or applications. This data shall be representative of the product's interval energy consumption. It is recommended that data be reported in watt-hours for intervals of 15 minutes or less, however, representative data may also be reported in alternate units and intervals as specified in the product manufacturer's interface specification or API detailed in section 4C.

The product may also provide energy use feedback to the consumer on the product itself. On-product feedback, if provided, may be in units and format chosen by the manufacturer (e.g., $/month).

E. Remote Management

The product shall be capable of receiving and responding to consumer authorized remote requests *(not including third-party remote management which may be made available solely at the discretion of the manufacturer)*, via a communication link, similar to consumer controllable functions on the product. The product is not required to respond to remote requests that would compromise performance and/or product safety as determined by the product manufacturer.

F. Operational Status, User Settings & Messages

1. The product shall be capable of providing the following information to energy management systems and other consumer authorized devices, services or applications via a communication link:

   - Operational / Demand Response (DR) status (e.g., off/standby, cycle in process, delay appliance load, temporary appliance load reduction).

2. The product shall be capable of providing the following information on the product and/or to energy management systems and other consumer authorized devices, services or applications via communication link:

   - At least two types of messages relevant to the energy consumption of the product. For example, messages for dishwashers might address performance issues or report of energy consumption that is outside the product's normal range.

G. Demand Response

A connected dishwasher system shall have the capability to receive, interpret and act upon consumer-authorized signals by automatically adjusting its operation depending on both the signal's contents and settings from consumers. At a minimum, the product shall be capable of providing the following capabilities in all operational modes:

1. *Delay Appliance Load Capability:* The capability of the product to respond to a signal in accordance with consumer settings, except as permitted below, by delaying the start of an operating cycle beyond the delay period.

   a. Default settings – The product shall ship with default settings that enable a response in accordance with 4G1 for at least 4 hours.

   b. Consumer override – The consumer shall be able to override the product's Delay Appliance Load response before or during a delay period.

   c. The product shall be able to provide a Delay Appliance Load response at the start of each consumer initiated operating cycle, but is not required to provide more than three Delay Appliance Load responses in a rolling 24-hour period.

2. *Temporary Appliance Load Reduction Capability:* The capability of the product to respond to a signal by providing load reduction for a short time period, typically 10 minutes. Upon receipt of signal and in accordance with consumer settings, except as permitted below, the product shall restrict its average power draw during the load reduction period to no more than 50% relative to the baseline average power draw defined in the Test Method to Validate Demand Response.

    a. Default settings - The product shall ship with default settings that enable a response in accordance with 4G2 for a time period of least 10 minutes.

    b. Consumer override – The consumer shall be able to override the product's Temporary Appliance Load Reduction response before or during a load reduction period.

    c. The product shall be able to provide at least one Temporary Appliance Load Reduction responses per consumer initiated operating cycle.

Note: The demand response (DR) criteria proposed in Section 4G have been informed by the recommended definition of a "smart" dishwasher included in the smart appliance petition submitted to ENERGY STAR by the Association for Home Appliance Manufacturers (AHAM) and efficiency advocates, as well as additional stakeholder comments on the connected criteria for the ENERGY STAR clothes washers, refrigerators and freezers.

The proposed DR criteria define two dishwasher responses: a Delay Appliance Load (DAL) capability and a Temporary Appliance Load (TALR) capability. The DAL capability would entail the dishwasher delaying the start of the wash cycle when it's beneficial for grid operation (e.g., during peak period). Many dishwasher models already provide consumers with a delay start cycle setting. With a TALR capability, a dishwasher would temporarily reduce its load (e.g., for a 10 minute period) by at least 50%. Given the number of different cycle options available on dishwashers, EPA has also added language to clarify that a dishwasher be capable of delaying the start of a load or temporarily reducing load in any of the modes/cycles that might be used by the consumer.

The proposed DAL and TALR criteria specify minimum durations of 4 hours and 10 minutes, respectively. Since these are minimum requirements only, manufacturers could also create responses that exceed these minimum requirements. The proposed criteria would require the product to able to provide a load delay at the start of each cycle, but based on manufacturer feedback – no more than 3 times in a 24-hour period in order to balance the benefits with possible impacts to the consumer experience. The TALR criteria would also require a dishwasher to be able to provide at least one reduction per consumer initiated operating cycle. EPA considered this a reasonable expectation and is sensitive that requiring the product to provide multiple TALR in a cycle, prolonging the total length of the cycles which today are often already long (2+hours), may not be acceptable for consumers. The DAL and TALR capabilities include a consumer override requirement that would ensure consumers have the ability to override a response when necessary.

EPA welcomes stakeholder comment on the proposed DR criteria for residential dishwashers.

H. Information to Consumers

If additional modules, devices, services and/or infrastructure are part of the configuration required to activate the product's communications capabilities, prominent labels or other forms of consumer notifications with instructions shall be displayed at the point of purchase and in the product literature. These shall provide specific information on what consumers must do to activate these capabilities (e.g. "*This product has Wi-Fi capability and requires Internet connectivity and a wireless router to enable interconnection with an Energy Management System, and/or with other external devices, systems or applications."*).

5) Test Requirements

A. One of the following sampling plans shall be used to the test for qualification to ENERGY STAR. A single sampling plan should be used to determine energy, water and cleaning performance.

a. A representative unit shall be selected for testing based on the definition for Basic Model provided in Section 1 above; or

b. Units shall be selected for testing per the sampling requirements defined in 10 CFR § 429.19, which references 10 CFR § 429.11. The Cleaning Index (CI_i) for each test cycle, as defined in the ENERGY STAR Test Method for Determining Residential Dishwasher Cleaning Performance Section 5.3A (heavy, medium and light), shall be the average CI_i for all units which comprise the sample.

Note: Based on prior stakeholder feedback received on test sampling plans during the cleaning performance test procedure development stakeholder process, Section 5A would allow the DOE residential dishwasher sampling requirements for energy and water testing specified in the CFR to also be used in order to determine a model's cleaning performance scores. Consistent with other product specifications, the specification also provides the option for manufacturers to test, for ENERGY STAR certification purposes, one representative unit based on the definition of a Basic Model.

B. When testing residential dishwashers, the test methods specified in Table 4 shall be used to determine ENERGY STAR qualification:

Table 4: Test Methods for ENERGY STAR Qualification

ENERGY STAR Requirement	Test Method Reference
Energy Consumption (kWh/year)	10 CFR 430, Subpart B, Appendix C1[1]
Water Consumption (gallons/cycle)	
Cleaning Performance Reporting Requirement	ENERGY STAR Test Method for Determining Residential Dishwasher Cleaning Performance (Rev. Feb-2014)

[1] *And in accordance with any applicable DOE issued test procedure guidance, listed here: http://www1.eere.energy.gov/guidance/default.aspx?pid=2&spid=1*

C. Compliance with Connected functionality, as specified in Section 4, shall be through examination of product and/or product documentation. In addition, demand response functionality will be certified using the **TBD** ENERGY STAR Test Method for Residential Dishwashers to Validate Demand Response in order to be eligible for the connected allowance.

Note: In support of the proposed reporting requirement, EPA has integrated the reference to the new ENERGY STAR Test Method for Determining Residential Cleaning Performance that was finalized by DOE in February 2014.

DOE plans to develop a test method to validate DR capabilities of residential dishwashers that will be referenced in this specification. DOE's test method development will be dependent on manufacturers to supply products for connected testing. This test is also anticipated to be a separate, add-on test method. Products would need to be qualified using this final and validated ENERGY STAR test method to use the proposed allowance.

In the meantime (prior to when this new ENERGY STAR test method for demand response is available), qualified dishwashers with connected features, as specified in Section 4, would be highlighted on the ENERGY STAR website.

6) Effective Date

The ENERGY STAR Residential Dishwasher specification shall take effect on **TBD**. To certify as ENERGY STAR, a product model shall meet the ENERGY STAR specification in effect on the date of manufacture. The date of manufacture is specific to each unit and is the date (e.g., month and year) on which a unit is considered to be completely assembled.

Note: The Version 6.0 specification would be effective 9 months after a final specification is published.

7) Future Specification Revisions

A. EPA reserves the right to change the specification should technological and/or market changes affect its usefulness to consumers, industry, or the environment. In keeping with current policy, revisions to the specification are arrived at through industry discussions. In the event of a specification revision, please note that the ENERGY STAR qualification is not automatically granted for the life of a product model.