

# ENERGY STAR Testing

U.S. DEPARTMENT OF  
**ENERGY** | Energy Efficiency &  
Renewable Energy



## Pilot Verification Program for Selected ENERGY STAR Products

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**1» Background and Overview**

2» Testing Process

3» Results – Progress to date

4» Lessons Learned

Several recent events convinced the DOE to act now to bolster verification processes within the ENERGY STAR program.

- Recent publications raised questions about the performance of certain products
- Government Accountability Office (GAO) Report indicated vulnerability to “Fraud and Abuse”\*\*
- Support needed for the State Energy Efficiency Appliance Rebate Program (SEEARP)
  - leverages \$300 million in ARRA funds to help states offer rebates on certain ENERGY STAR appliances.

\*\*ENERGY STAR Program: Covert Testing Shows the ENERGY STAR Program Certification Process Is Vulnerable to Fraud and Abuse, March 5 2010.  
<http://www.gao.gov/products/GAO-10-470>

**Objective:** Conduct a pilot testing program to ensure ENERGY STAR products meet the program requirements.

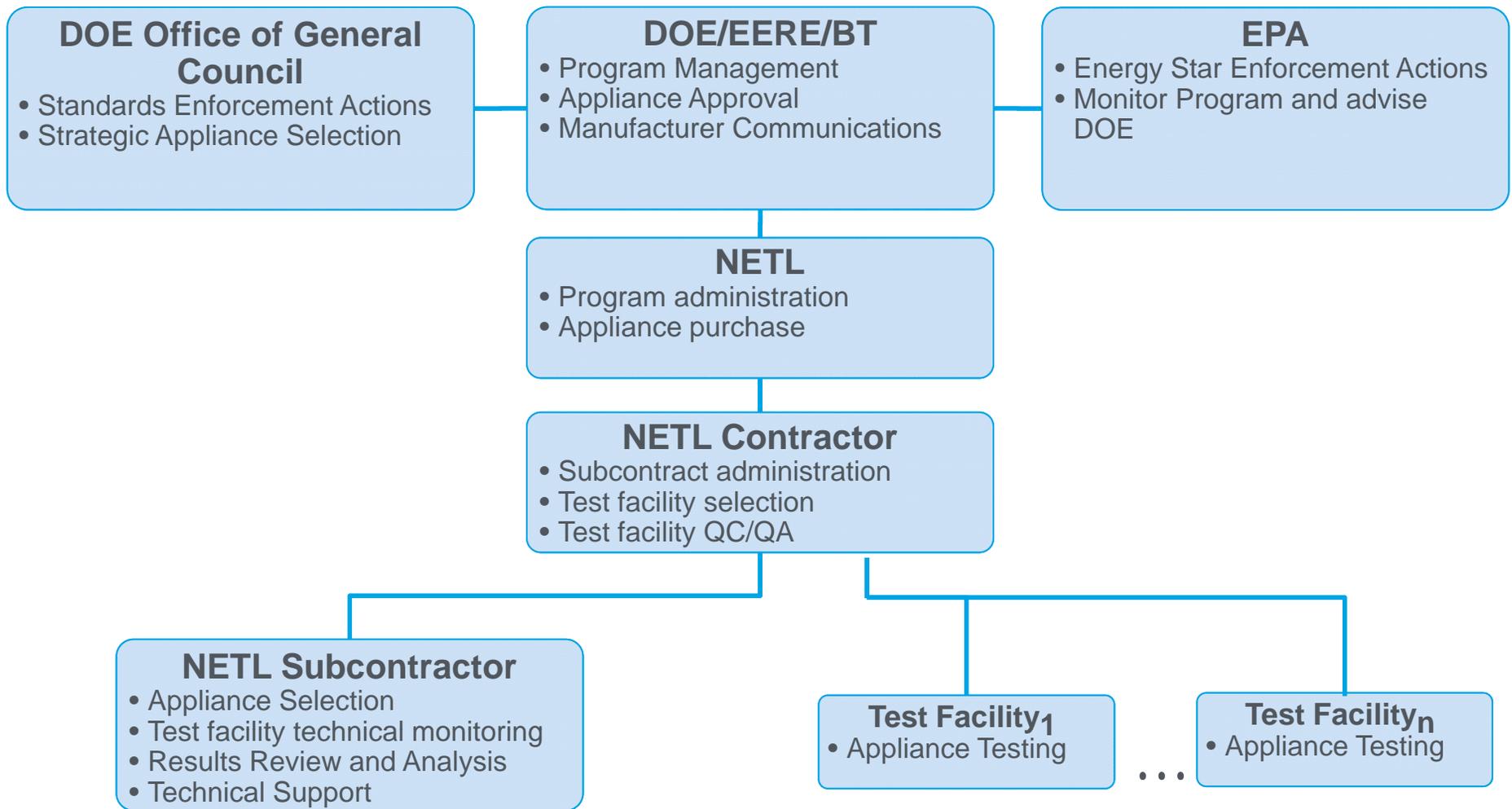
## Related Goals:

- Maintain integrity of the ENERGY STAR label and consumer trust
- Help ensure that consumers and the nation achieve expected energy (and water) savings
- Help ensure that no manufacturer gains an unfair competitive advantage by misrepresenting the energy (and water) performance of its ENERGY STAR-labeled products
- Establish the foundation for a future extended verification program

The ENERGY STAR Verification Program will benefit from, and also enhance, a number of additional DOE programs.

- DOE Lab Accreditation Program
  - Will insure labs conduct tests as per federal test procedures
  - Will assist ENERGY STAR program by accelerating test lab selection in the future
- DOE Lab Round-Robin Testing
  - Test labs used in ENERGY STAR program will participate in round robin testing
- DOE Accelerated Test Procedure Development
  - ENERGY STAR program will identify gaps in test procedures and create/revise procedures
- DOE Energy Conservation Standards Rulemakings
  - Provides minimum performance requirements on available units

# Pilot Program Structure – Contributors



1» Background and Overview



2» **Testing Process**

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## Product Selection and Procurement

Select, purchase, and ship test products

## Lab Selection

Determine available qualified facilities and award testing

## Stage I Testing

Screening tests -- Further Action Required or No Action Required

## Stage II Testing

Determines compliance if action is required after Stage I

DOE randomly selected 20% of basic models for testing, and then modified the selection based on strategic considerations.

- Basic models picked through random selection
- Omitted basic models that were not available for sale through normal retail distribution channels
- DOE added about 10 basic models based on strategic considerations

Appliance	Number of Basic Models <sup>1</sup>	Target Number to Test
Refrigerators <sup>2</sup>	405	81
Freezers <sup>2</sup>	121	26
Clothes Washers	200	40
Dishwashers	54	11
Tankless Water Heaters	59	12
Storage Water Heaters	55	11
Room Air Conditioners	398	80

<sup>1</sup>A basic model includes all variations of a unit made by a manufacturer that have the same energy-use characteristics.

<sup>2</sup>DOE subdivided the selection of refrigerators and freezers based on Product Class shipment data.

Four test facilities met the stringent requirements for various products.

## BR Laboratories, Inc.

- Refrigerators/freezers, dishwashers, residential clothes washers, room air conditioners, water heaters

## CSA International (Toronto) and CSA OnSpeX (Cleveland)

- Refrigerator/freezers, dishwashers, residential clothes washers, water heaters

## Intertek Testing Services

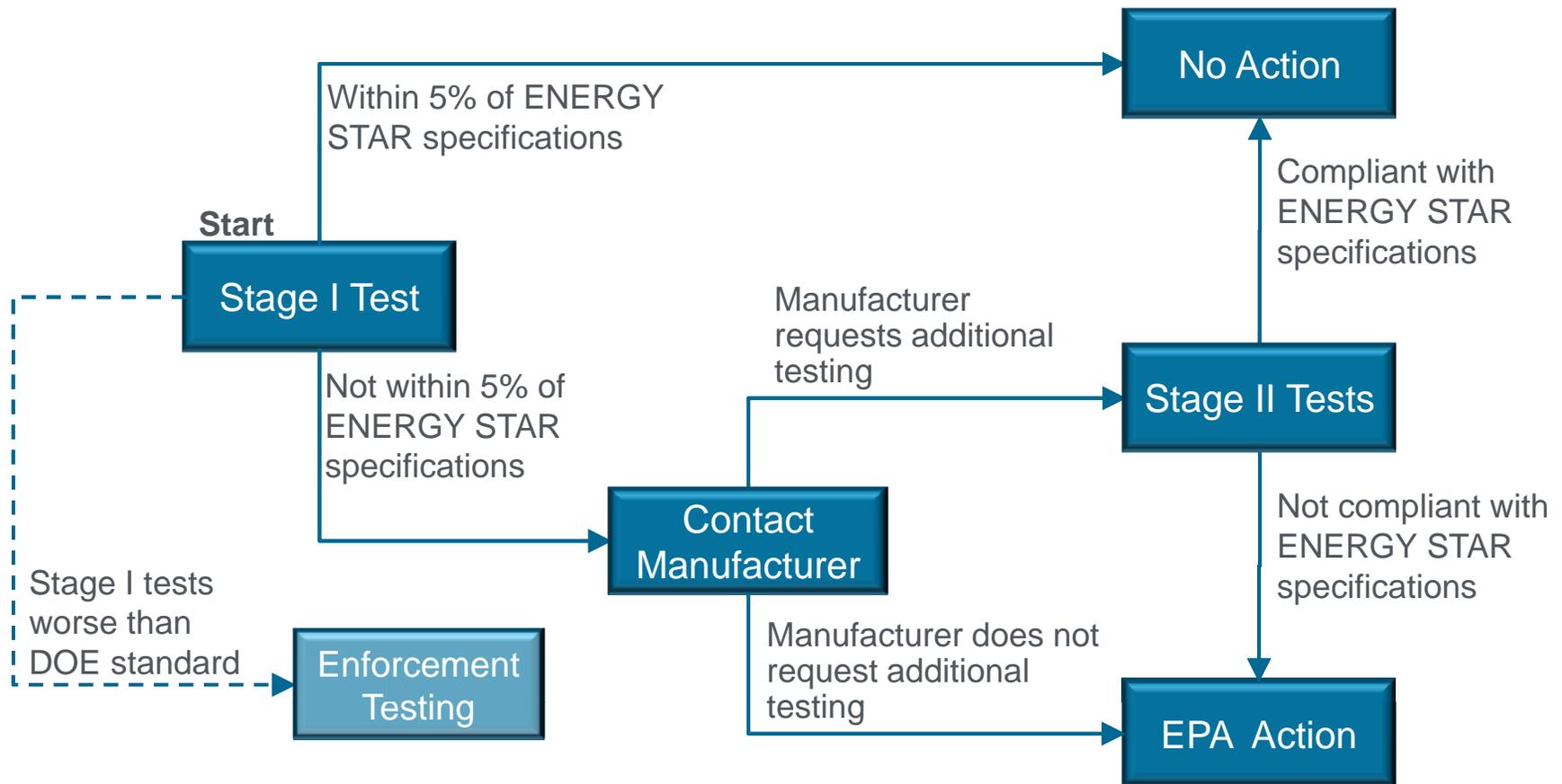
- Refrigerator/freezers, dishwashers, room air conditioners, water heaters

## Springboard Engineering

- Residential clothes washers

# Verification Testing

The process begins with a Stage I test, then proceeds to a Stage II test, if warranted.



What about products not requiring further action?

- Information on these performing within 5% or greater of ENERGY STAR program requirements will not be released.
- Previous experience with CFL testing provided an unfair market advantage to lamps meeting ENERGY STAR program requirements.

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2» Testing Process

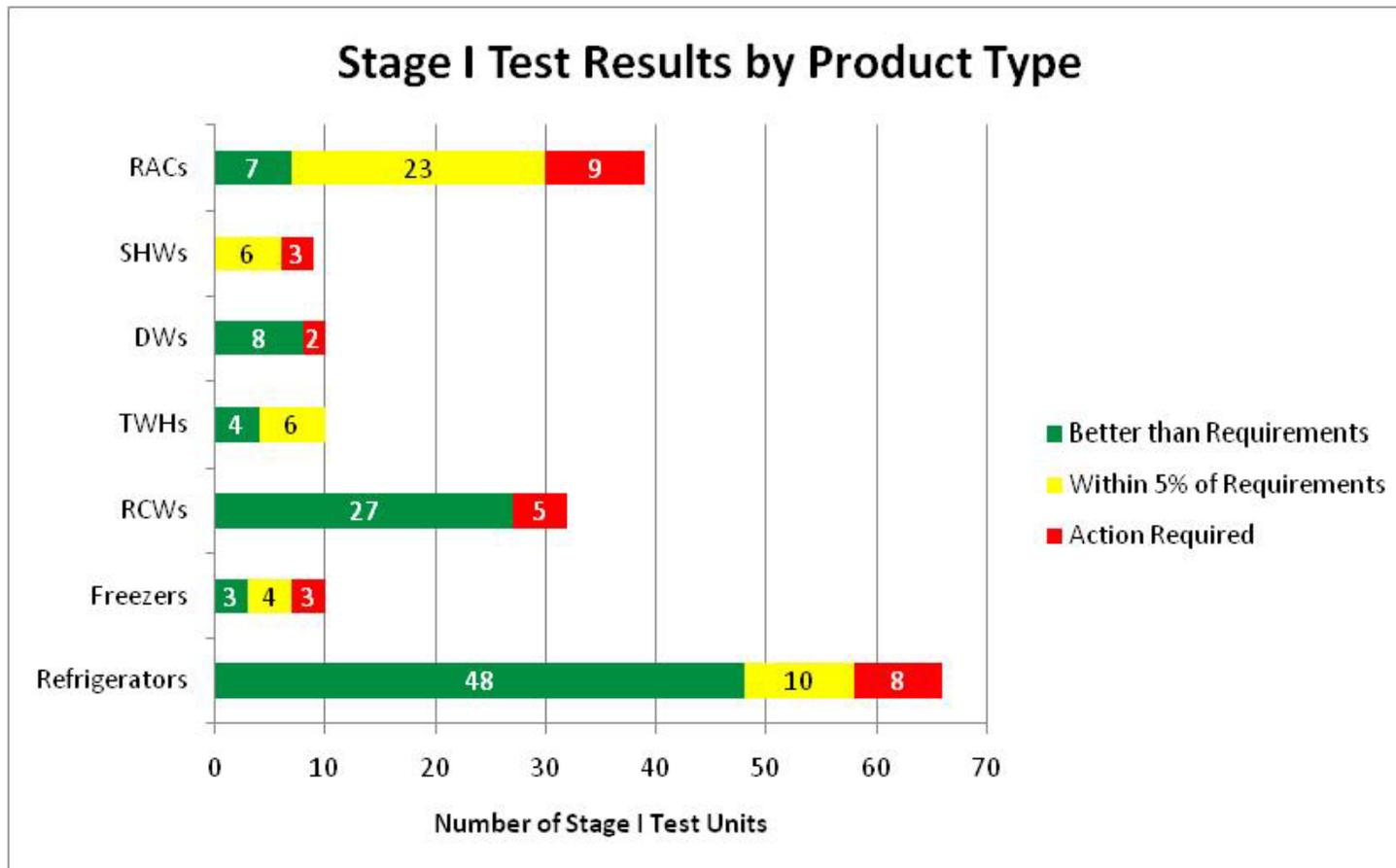


**3» Results – Progress to date**

4» Lessons Learned

# Interim Results (Stage I)

30 of the 176 units tested (17%) require further action (tested more than 5% worse than ENERGY-STAR specifications).



\*Action Required = DOE to contact manufacturer regarding the test results

# Interim Results (Stage II)

Based on test results to date, we project that approximately 49 of the 265 appliances will require Stage II testing.

Appliance	Total	Tested	Stage I Units that Require Action	Projected units that will require action
Refrigerators	82	66	8	10
Freezers	24	10	3	7
Clothes Washers	40	32	5	6
Dishwashers	11	10	2	2
Tankless WH	12	10	0	0
Storage WH	11	9	3	4
Room Air Conditioner	87	39	9	20
<b>TOTAL</b>	<b>267</b>	<b>176</b>	<b>30</b>	<b>49</b>

\*Projections are approximated from current rates

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**4» Lessons Learned**

Many lessons have been learned from the verification pilot program that will help improve future programs.

- Streamline Test Lab Selection
  - Preliminary accreditation of labs allows for timely selection of experienced labs with appropriate facilities
- Focus Selection of Products
  - Testing the newest products and high volume products is more representative of the market
- Continually Refine Test Report Templates
  - Provide a consistent process for delivering uniform and complete reports
- Continually Refine Testing Guidelines
  - Ensure that testing is standardized and transparent with the support of stakeholders

# Questions?