

**4<sup>th</sup> U.S.-China  
Energy Efficiency Forum  
September 25, 2013**

Compiled Presentations from Track 4, Breakout  
Session 1/Morning

**Appliance and Equipment Energy  
Efficiency Standards**

# US Appliance Standards Program Overview



U.S. DEPARTMENT OF  
**ENERGY**

Energy Efficiency &  
Renewable Energy

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Program Manager - Appliance Standards and  
Building Codes

# Appliance Standards: What Does the Program Cover?

- Over 60 products are covered by DOE's appliance standards program. These are known as "covered products."
- Covered products are responsible for 90% of residential building energy consumption, 60% of commercial building energy consumption, and approximately 29% of industrial energy consumption.
  - In 2009, the Nation's 113 million households and 5.4 million commercial buildings consumed approximately 39.2 quadrillion Btu (quads) of energy annually, about 41 percent of the U.S. total.
  - Residential buildings use 22 percent of the U.S. total and commercial buildings use 19 percent. Industrial equipment and processes comprises 29 percent of the national total.
  - Energy use in buildings costs \$413.3 Billion (\$2009).

# Appliance Standards: What are the Program Benefits

The Program is highly effective, achieving high bang-for-the-buck in energy savings.

- Standards to date have saved US consumers \$42 billion in utility bills annually and \$30 billion net of costs to achieve these savings.
- The national energy efficiency standards promulgated to date are expected to save 69 quads of energy by 2020 and 120 quads by 2030.
- The cumulative utility bill savings to consumers of these standards are estimated to be over \$900 billion by 2020 and over \$1.6 trillion through 2030.
- Annual carbon dioxide savings will reach nearly 260 million tons by 2020 and the cumulative savings by 2030 is estimated to be 6.5 billion tons.

# What Does the Program Do?

- Establishes test procedures for measuring the energy efficiency of covered products.
  - Energy efficiency is often difficult to define, and requires different metrics for different products.*
  - Test procedures must be carefully developed, so they can't be gamed.*
- Establishes the mandatory standard levels for the energy efficiency of covered products.
  - The standard is defined in terms of the test procedures established by the Program.*
  - Manufacturers must test their products using the DOE test procedure, and it must meet the standard level to be sold in the U.S.*

(c) *Dishwashers.* (1) The Estimated Annual Operating Cost (EAOC) for dishwashers must be rounded to the nearest dollar per year and is defined as follows:

(i) When cold water (50 °F) is used,

(A) For dishwashers having a truncated normal cycle as defined in section 1.15 of appendix C to this subpart,  
 $EAOC = (D_e \times S) + (D_e \times N \times (M - (E_D / 2)))$ .

(B) For dishwashers not having a truncated normal cycle,  
 $EAOC = (D_e \times S) + (D_e \times N \times M)$

Where,  
 $D_e$  = the representative average unit cost of electrical energy, in dollars per kilowatt-hour, as provided by the Secretary,

See the Federal Register, August 29, 2003.

Product class	Standard level	
<b>Residential water heaters*</b>		
Gas-fired Storage .....	For tanks with a Rated Storage Volume at or below 55 gallons: $EF = 0.675 - (0.0015 \times \text{Rated Storage Volume in gallons})$ .	For tanks with a Rated Storage Volume above 55 gallons: $EF = 0.8012 - (0.00078 \times \text{Rated Storage Volume in gallons})$ .
Electric Storage .....	For tanks with a Rated Storage Volume at or below 55 gallons: $EF = 0.960 - (0.0003 \times \text{Rated Storage Volume in gallons})$ .	For tanks with a Rated Storage Volume above 55 gallons: $EF = 2.057 - (0.00113 \times \text{Rated Storage Volume in gallons})$ .
Oil-fired Storage .....	$EF = 0.68 - (0.0019 \times \text{Rated Storage Volume in gallons})$ .	
Gas-fired Instantaneous .....	$EF = 0.82 - (0.0019 \times \text{Rated Storage Volume in gallons})$ .	

See the Federal Register, April 16, 2010.

# What Does the Program Do?

- Enforces the standards.
  - *DOE can order manufacturers to take corrective action if their products do not meet the standard levels.*
  - *This can include ordering them not to sell the products in the United States and the imposition of civil penalties.*

**BEFORE THE  
U.S. DEPARTMENT OF ENERGY  
Washington, D.C. 20585**

In the Matter of: )  
Sears, Roebuck & Co. ) Case Number: 2011-SE-1418  
(freezers) )  
)

Issued: June 26, 2012

**NOTICE OF NONCOMPLIANCE DETERMINATION**

Manufacturers and private labelers are prohibited from distributing covered products that do not comply with applicable federal energy conservation standards. 10 C.F.R. § 429.102; 42 U.S.C. § 6302.

On September 22, 2011, DOE completed testing of one compact chest freezer, Kenmore-brand model number 255.19702010 ("19702"), privately labeled and distributed in commerce in the U.S. by Sears, Roebuck & Co. ("Sears") and manufactured in China. In December 2011 and January 2012, DOE completed testing of three additional units of 19702. DOE's testing was conducted in accordance with the relevant DOE test procedure (10 C.F.R. Part 430, Subpart B, Appendix B1).

DOE's testing demonstrated that Kenmore-brand chest freezer model number 19702 is not in compliance with federal law. Given the tested units' measured volumes, their respective maximum permissible rates of energy consumption were 261, 262, 263, and 262 kilowatt-hours per year (kWh/yr).<sup>1</sup> Based on their performance during testing, the four units that DOE tested consumed energy at the rates of 374, 413, 388, and 449 kWh/yr, an average of more than 50 percent over the federal limit.

(November 28, 2012)

## **Midea Agrees to Pay \$4.5M for Four Models that Fail to Meet Federal Energy Standards**

Midea America Corp., Hefei Hualing Co., Ltd., and China Refrigeration Industry Co., Ltd. ("Midea")—all subsidiaries or affiliates of GD Midea Holding Co., Ltd.—agreed to pay \$4,562,838 after admitting in a compromise agreement that one refrigerator-freezer basic model and three freezer basic models fail to meet the relevant federal energy conservation standards. Specifically, Midea admitted that the DOE-tested units of the offending basic models consumed energy at approximately the following rates:

UL-WD195-D: 55% over the standard UL-WD145-D: 28% over the standard

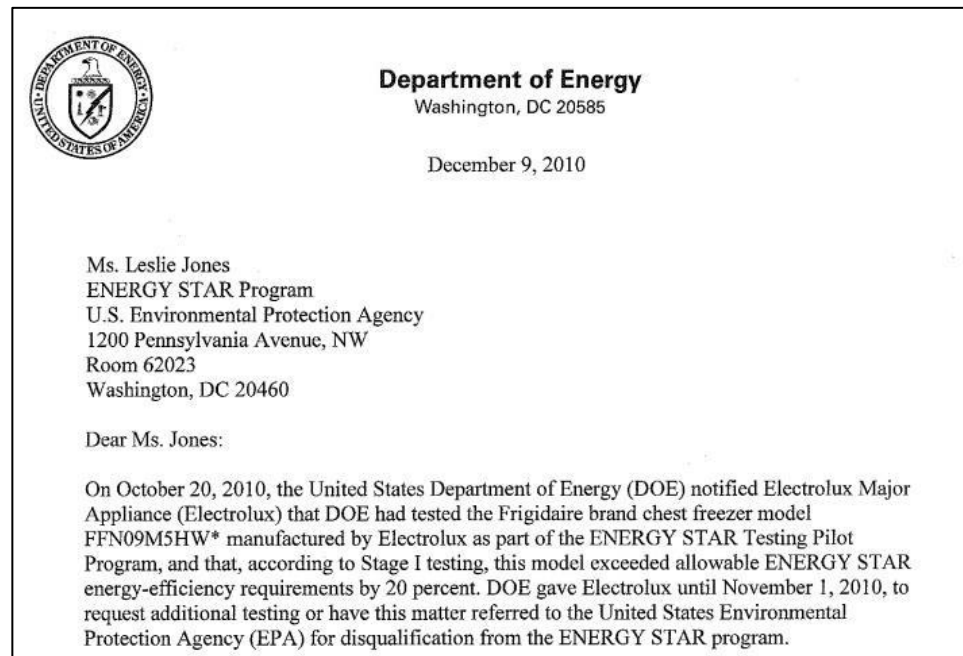
HS-390C: 8% over the standard HD-146F: 8% over the standard

# DOE Office of General Counsel Leads Enforcement with BTP Support

- **Certifications to Date**
  - Close to 2 million products have been certified to DOE since January 1, 2010
  - 100-percent of certifications are reviewed by DOE
- **Enforcement Activity**
  - Approximately 250 open enforcement actions
  - Emphasis on testing and standards violations
  - Expanding to commercial equipment
  - Collected over \$5,400,000 in civil penalties for violations
  - Enforcement news: <http://energy.gov/gc/enforcement-news>
- **Online, Public, Searchable Certification Database**
  - Launched at end of 2011
  - Version 2.0 release upcoming
- **Guidance Database**
  - DOE released a guidance database in September 2011, which houses responses to questions DOE has received regarding scope of coverage, definitions, test procedures, standards applicability, certification, and enforcement.

# What Does the Program Do?

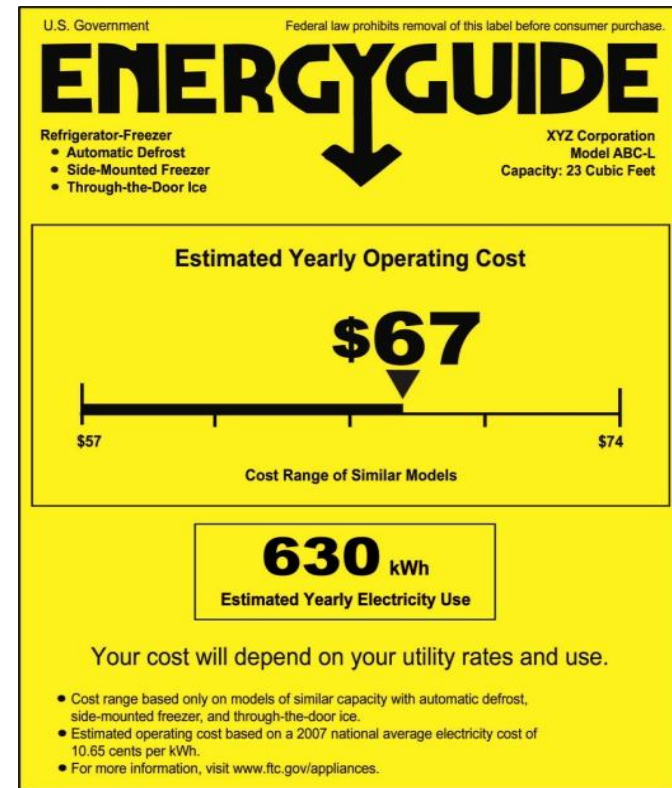
- Working with EPA, leads test procedure development, testing/verification, and **MOST EFFICIENT** for ENERGY STAR.
  - *DOE generally uses the same test procedure for appliance standards and ENERGY STAR.*
  - *DOE conducts testing in support of the ENERGY STAR program to verify the required efficiency levels.*
  - *DOE has tested over 400 products since 2010 to ensure that products bearing the ENERGY STAR logo deliver the energy savings consumers expect.*
  - *ENERGY STAR MOST EFFICIENT targets ~top 5% of market for several home appliances.*





# What Does the Program Do?

- Working with FTC, DOE creates a methodology to calculate energy-usage values for Energy Guide labels on appliances.
  - *Generally the results on the FTC label are based on calculations resulting from DOE test procedures.*
  - *Manufacturers must file data reports with FTC and must contain the ratings for the appliances. FTC is allowing manufacturers to submit reports to DOE via CCMS.*



# Compliance Dates for Standards Promulgated to Date

Product	Compliance Date for Original Standard and Updates	Authorizing Legislation
<b>RESIDENTIAL PRODUCTS</b>		
Clothes Washers (Water and Energy)	1988, 1994, 2004/2007, <b>2015/2018</b>	NAECA 1987
Clothes Dryers	1988, 1994, <b>2014</b>	NAECA 1987
Dishwashers (Water and Energy)	1988, 1994, 2010, 2013	NAECA 1987
Refrigerators and Refrigerator-Freezers	1990, 1993, 2001, <b>2014</b>	NAECA 1987
Freezers	1990, 1993, 2001, <b>2014</b>	NAECA 1987
Room Air Conditioners	1990, 2000, <b>2014</b>	NAECA 1987
Central Air Conditioners and Heat Pumps	1992/1993, 2006, <b>2015</b>	NAECA 1987
Water Heaters	1990, 2004, <b>2015</b>	NAECA 1987
Furnaces	1992, <b>2013</b>	NAECA 1987

# Compliance Dates for Standards Promulgated to Date

Product	Compliance Date for Original Standard and Updates	Authorizing Legislation
<b>RESIDENTIAL PRODUCTS</b>		
Boilers	1992, 2012	NAECA 1987
Direct Heating Equipment	1990, 2013	NAECA 1987
Cooking Products	1990, 2012	NAECA 1987
Pool Heaters	1990, 2013	NAECA 1987
Ceiling Fans and Ceiling Fan Light Kits	2007	EPACT 2005
Torchieres	2006	EPACT 2005
Dehumidifiers	2007, 2012	EPACT 2005
External Power Supplies	2008	EISA 2007
Microwave Oven Stand-by Power	<b>2016</b>	EISA 2007

# Compliance Dates for Standards Promulgated to Date (2)

Product	Compliance Date for Original Standard and Updates	Authorizing Legislation
<b>COMMERCIAL &amp; INDUSTRIAL PRODUCTS</b>		
Electric Motors	1997, 2010	EPACT 1992
Warm Air Furnaces	1994	EPACT 1992
Packaged Boilers	1994	EPACT 1992
Air Conditioners and Heat Pumps	1994/1995, 2003/2004, 2010, 2012, 2012- <b>2014</b>	EPACT 1992
Water Heaters, Hot Water Supply Boilers and Unfired Hot Water Storage Tanks	1994, 2004	EPACT 1992
Distribution Transformers	2007, 2010, <b>2016</b>	EPACT 1992, EPACT 2005

# Compliance Dates for Standards Promulgated to Date (3)

Product	Compliance Date for Original Standard and Updates	Authorizing Legislation
<b>COMMERCIAL &amp; INDUSTRIAL PRODUCTS</b>		
Refrigerators, Refrigerator-Freezers and Freezers	2010, 2012	EPACT 2005
Automatic Ice Makers	2010	EPACT 2005
Clothes Washers <sup>+</sup>	2007	EPACT 2005
Unit Heaters	2008	EPACT 2005
Refrigerated Beverage Vending Machines	2012	EPACT 2005
Walk-in Coolers and Walk-in Freezers	2009	EISA 2007

# Compliance Dates for Standards Promulgated to Date (4)

Product	Compliance Date for Original Standard and Updates	Authorizing Legislation
<b>LIGHTING PRODUCTS</b>		
Fluorescent Lamp Ballasts	1990, 2005/2010, <b>2014</b>	NAECA 1988
General Service Fluorescent Lamps and Incandescent Reflector Lamps	1995, 2008, 2012	EPACT 1992, EISA 2007
Medium Base Compact Fluorescent Lamps	2006	EPACT 2005
Illuminated Exit Signs	2006	EPACT 2005
Traffic Signal Modules and Pedestrian Modules	2006	EPACT 2005
Mercury Vapor Lamp Ballasts	2008	EPACT 2005
Metal Halide Lamp Ballasts and Fixtures	2009	EISA 2007
General Service Incandescent Lamps, Intermediate Base Incandescent Lamps and Candelabra Base Incandescent Lamps	2012/ <b>2014 &amp; 2020</b>	EISA 2007

# Compliance Dates for Standards Promulgated to Date (5)

Product	Compliance Date for Original Standard and Updates	Authorizing Legislation
<b>PLUMBING PRODUCTS (Water Only)</b>		
Faucets	1994	EPACT 1992
Showerheads	1994	EPACT 1992
Water Closets	1994/1997	EPACT 1992
Urinals	1994/1997	EPACT 1992
Pre-rinse Spray Valves	2007	EPACT 2005

# Standards Under Development

Standards	Stage
Computers	Framework
Computer Servers	Framework
Portable Air Conditioners	Framework
Commercial Packaged Boilers	Framework
Refrigerated Beverage Vending Machines	Framework
Commercial Compressors	Framework
Residential Boilers	Preliminary Analysis
Packaged Terminal Air Conditioners and Heat Pumps	Preliminary Analysis
Ceiling Fans and Ceiling Fan Light Kits	Preliminary Analysis
Commercial and Industrial Pumps	Preliminary Analysis
Commercial and Industrial Fans and Blowers	Preliminary Analysis
Miscellaneous Residential Refrigeration	Preliminary Analysis
Dehumidifiers	Preliminary Analysis



# Standards Under Development - Continued

Standards	Stage
GSFL and Incandescent Reflector Lamps	NOPR
High Intensity Discharge Lamps	NOPR
Furnace Fans	NOPR
Electric Motors	NOPR
Set Top Boxes	NOPR
Automatic Commercial Ice Makers	NOPR
Commercial Clothes Washers	NOPR
Single Package Vertical Air Conditioners and Heat Pumps	NOPR
Residential Water Heaters	NOPR
Commercial Packaged Air Conditioners and Heat Pumps	NOPR
Commercial Warm-Air Furnaces	NOPR
Commercial Water Heaters	NOPR
Battery Chargers and External Power Supplies	Final Rule
Metal Halide Lamp Fixtures	Final Rule
Commercial Refrigeration Equipment	Final Rule
Walk-in Coolers and Freezers	Final Rule

# Test Procedures Under Development

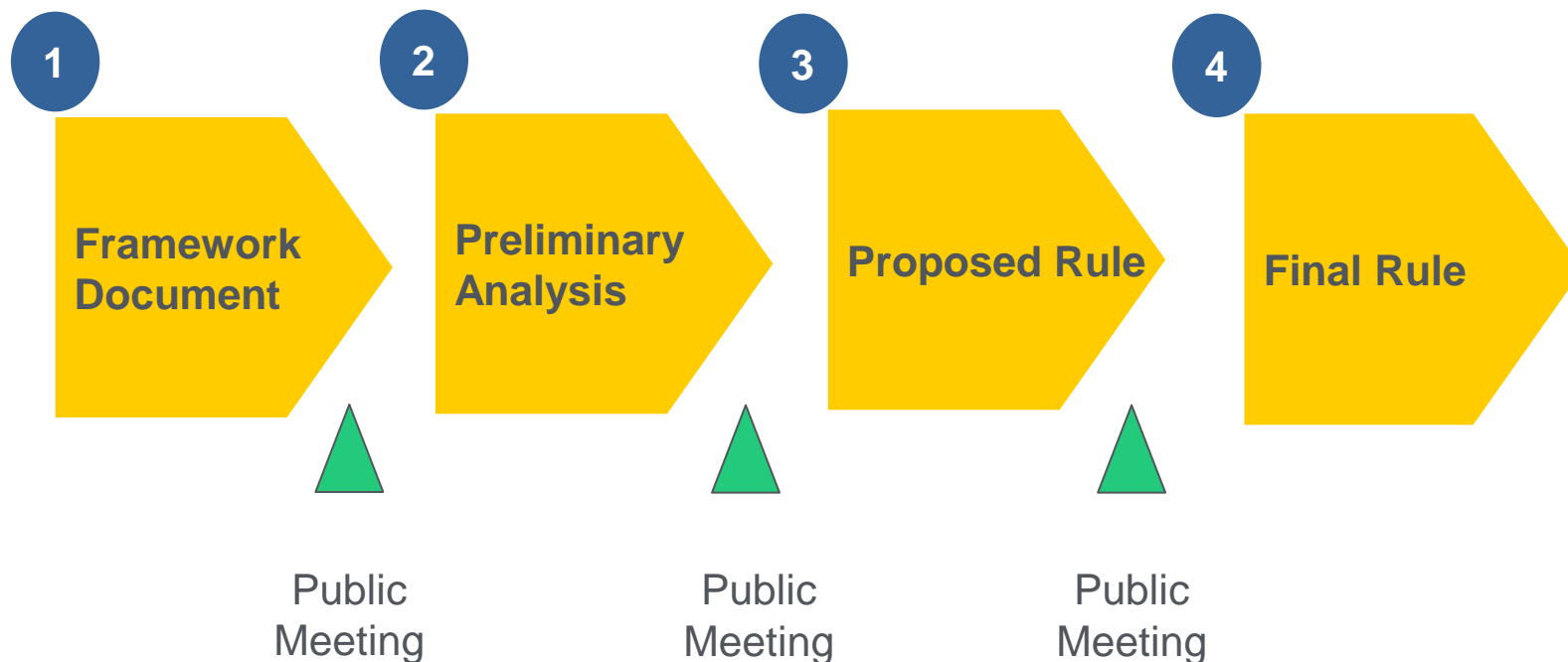
Test Procedures	Stage	Test Procedures	Stage
Alternative Efficiency Determination Methods	SNOPR	Compact Fluorescent Lamps	NOPR
Set Top Boxes	NOPR	Direct Heating Equipment and Pool Heaters (Active Mode)	NOPR
Electric Motors	NOPR	Illuminated Exit Signs	NOPR
High-Intensity Discharge Lamps	SNOPR	Light Emitting Diodes	SNOPR
Television Sets	SNOPR	Microwave Ovens (Active Mode)	NOPR
Central Air Conditioners and Heat Pumps	SNOPR	Packaged Terminal Air Conditioners and Heat Pumps	NOPR
Induction Cooking Products (Active-Mode)	NOPR	Plumbing Products	SNOPR
Clothes Dryers (Automatic Termination Sensors)	NOPR	Residential Furnaces & Boilers (Active Mode)	NOPR
Furnace Fans	SNOPR	Traffic Signal Modules and Pedestrian Modules	NOPR
Residential and Commercial Water Heaters	NOPR	Commercial Clothes Washers	NOPR
Miscellaneous Residential Refrigeration	NOPR	Residential Refrigerators - Ice Making	NOPR
Commercial and Industrial Pumps	NOPR	Dehumidifiers (Active)	NOPR
Commercial and Industrial Fans and Blowers	NOPR	Luminaires Lighting Systems	RFI
Beverage Vending Machines	NOPR		
Ceiling Fans and Ceiling Fan Light Kits	NOPR		

# ENERGY STAR Test Methods Under Development & Review

Test Methods	Stage
Clothes Washer Performance (Rinsing ability/Cleaning ability)	Preliminary
Commercial Heat Pump Water Heaters	Draft 1
Computers	Draft Final
Connected Clothes Washers	Preliminary
Connected Clothes Dryers	Preliminary
Dishwasher Performance (Cleaning ability )	Final
Laboratory Grade Refrigerator/Freezer and Ultra-Low Temperature Freezers	Draft 2
Large Network Equipment	Draft 1
Boilers	Draft 2
Set-top Boxes	Draft 2
Commercial Refrigeration Equipment	Draft 2
Telephony	Draft 2
Central Air Conditioning	Preliminary
Clothes Dryers	Draft 2

# Standards Rulemaking Process – How to Get Involved

DOE energy conservation standards are established by a four-phase rulemaking process which includes three public meetings



Stakeholders are encouraged to submit comments to the rulemaking docket during the comment periods that follow each of the first 3 phases

# Certification basics

- Energy conservation standards regulatory program based on self-certification before distribution
  - Submitted annually
  - Updated to reflect discontinuance
- Manufacturer must submit a certification report
  - Report states that covered product/equipment was manufactured in compliance with the federal standards
  - Private labelers need not certify
  - Importers are “manufacturers”
- Representation of efficiency must be based upon either:
  - testing, or
  - estimations from a defensible mathematical model
    - This is only allowed for limited types of products/equipment!
- Certify efficiency based upon “basic model”

# Basic Model Explanation

- **Manufacturer** decides scope of basic model
  - May contain multiple individual models
  - May be made up of only one individual model
  - Only have to test basic model – not each individual model
- All individual models must be from same manufacturer
  - May be distributed under different brand names
  - **Must** certify all brand names!
- Can **only** include individual models that have:
  - same primary energy source, and
  - essentially identical electrical, physical, and functional characteristics that affect
    - energy consumption,
    - energy efficiency,
    - water consumption, or
    - water efficiency

# Certification Submission

- Requirements explained in 10 C.F.R. § 429.12
  - product or equipment type
  - product or equipment class
  - manufacturer's name and address;
  - private labeler's name(s) and address (if applicable);
  - brand name, if applicable;
  - basic model number and individual model numbers
  - whether new, discontinued model, or some other update
  - test sample size
  - importer identification numbers, if applicable;
  - whether certification based upon waiver of test procedure
  - whether certification is based upon exception relief from OHA
  - whether certification is based upon the use of ARM
  - product specific information listed in §§ 429.14 through 429.54

# Certification Submission

C10 fx

A	B	C	D	E	F	G	H	I	R	S	T	U
Product Type: <b>Class A External Power Supplies Other Than Switch-Selectable Single-Voltage External Power Supplies - Basic Model</b>								Version 4.3				
Status of This Input Sheet			No Data			Overall Status of Template			No Data			
<b>Certification Report</b>												
<ul style="list-style-type: none"> <li>Please enter your data in the columns shaded in gray below, <b>using a separate line for each model.</b></li> <li>Click on the column heading for instructions on how to complete cells in that column.</li> <li>Cells highlighted in yellow indicate an "Error." "Error" means that information is missing or there is an issue with the entry.</li> <li>If the "Status" for a row is "Error," you can see an explanation in the columns to the right of the Status column.</li> <li>Reports submitted with errors cannot be processed and will be returned for resubmission.</li> </ul>												
Line No.	Status	Manufacturer	For Third-Party Representatives, Company Number From Certification Sheet	Brand Name(s)	Basic Model Number	Individual Model Number Covered by Basic Model	Action	Product Class	Average Active Mode Efficiency (%)	No-Load Mode Power Consumption (watts) (If Applicable)	Nameplate Output Power (watts)	Output Current (amps) If Missing From Nameplate
9												
10	1											
11	2											
12	3											
13	4											
14	5											
15	6											
16	7											

Ready | Certification | **Input** | Product Description | Instructions | 75%



# Energy-Saving Certification System in China

## 中国节能认证制度

HAO Xin / 郝欣

CNCA / Certification and Accreditation Administration of  
the People's Republic of China



4<sup>th</sup> EEFORUM , 2013.9.25, Washington



# Outline / 提纲

**Certification & Sustainable Development**

节能认证与社会可持续发展

**Energy-saving products certification**

节能产品认证

**Low-carbon products certification**

低碳产品认证

**Energy Management System Certification**

能源管理体系认证

**Developments** 发展动态

# Certification & Sustainable Development

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- \* 认证工作在中国已发展20余年，在涉及安全、资源节约、环境保护等领域，逐步发挥着不可替代的作用。
- \* The third-party certification system has developed more than 20 years in China.
- \* Related to electrical safety, resource conservation, environmental protection and other fields.
- \* It is gradually playing an irreplaceable role.

# Certification & Sustainable Development



# Certification & Sustainable Development



# Certification & Sustainable Development

A prerequisite for supporting policies, measures in building the **sustainable development society**.

可持续发展社会建设配套政策/措施实施的重要前提条件之一

**“Energy Star” certification in U.S..** A prerequisite for the federal government purchases regulated by law.

《政府采购法》、总统令等都明确要求联邦政府采购的耗能产品必须是“能源之星”认证的产品

**“Energy-saving product” certification in China.** A prerequisite for the government purchases.

财政部、国家发改委《节能产品政府采购实施意见》：从国家认可的节能产品认证机构认证的节能产品中按类别确定实行政府采购的范围，并以“节能产品政府采购清单”的形式公布。

# Energy-saving products certification

Paid more attention to energy-saving products certification.

Achieved certain results in many aspects.

主管部门高度重视节能产品认证工作，取得了成效。

- CNCA, AOSIQ, NDRC, MIIT...

Took measures to promote energy-saving products certification.

积极推进节能产品认证工作

- Cultivate and standardize the certification market. 认证市场培育和规范
- Technical bodies' capacity building. 技术机构能力建设
- Products and technical specification development. 产品和认证技术规范开发
- Certification results acceptable and recognition. 认证结果采信

# Energy-saving products certification

“The guide opinions on strengthening the resource-saving products certification”

《关于加强资源节约产品认证工作的意见》

2007

CNCA, NDRC, AQSIQ

Official Document



“Management approach on energy-saving products certification”

《节能产品认证管理办法》

To be released

AQSIQ, NDRC, CNCA

Administrative  
Regulations



# Energy-saving products certification

## Resource-saving products certification

Energy-  
saving

Water-  
saving

Renewable  
energy

Fuel-  
saving

And so  
on...

# Energy-saving products certification

**Energy-  
saving  
certification**

**Terminal  
Energy-using  
products**

Refrigerator, Air  
conditioning,  
Television,  
Computer...

Fluorescent...

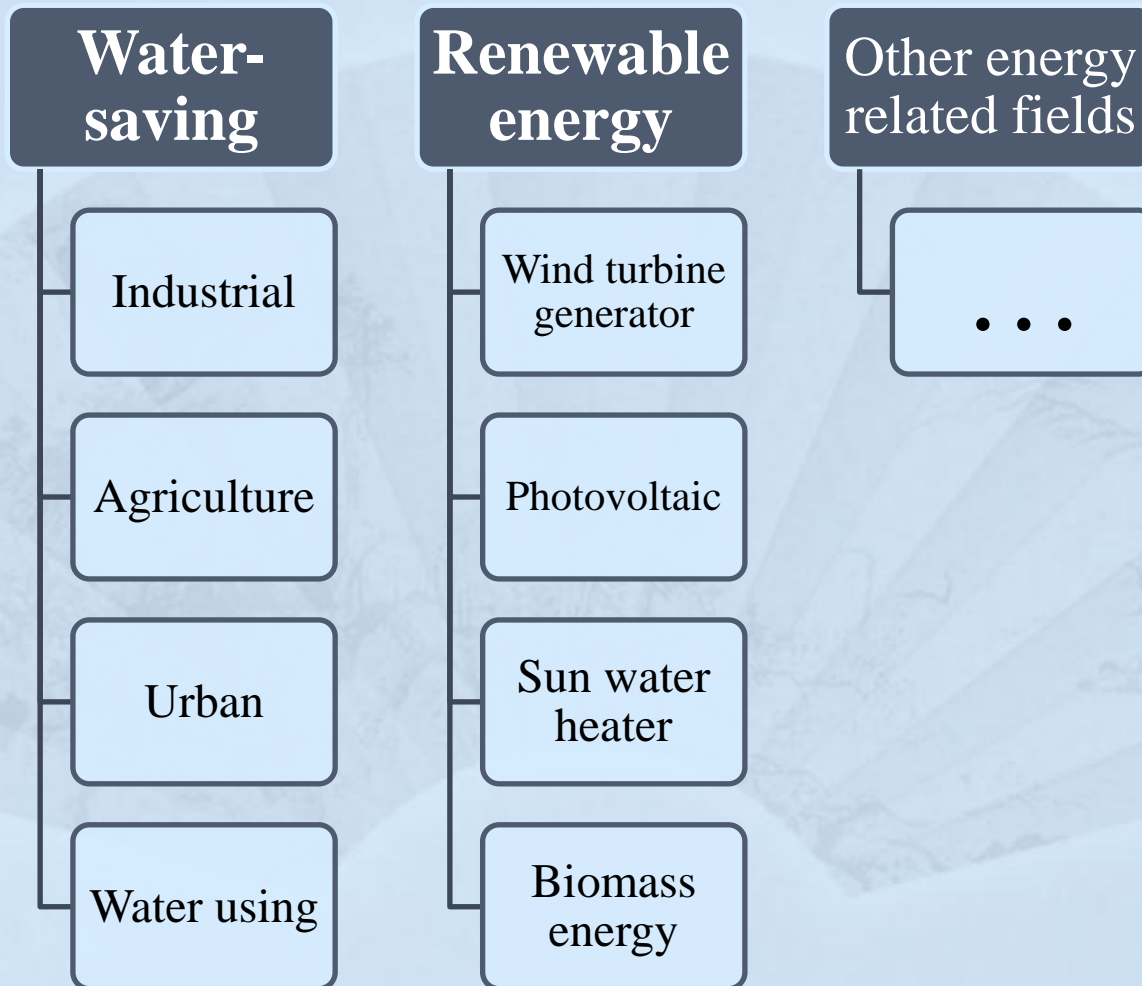
**Industrial  
Energy-using  
Products**

Electric motor,  
Ventilators,  
Centrifugal pumps...

**Transmission  
and distribution  
products**

Distribution  
transformers,  
Inverter,  
Prefabricated  
Substation...

# Energy-saving products certification



# Energy-saving products certification

- \* By the end of June 2013, four major energy-saving product certification bodies accumulated issued 45620 certificates which involved 79 kinds of energy-saving products. In 2013, the total of new certificates is 5205, and the total of current valid certificates is 20299.
- \* 截止2013年6月底，4家主要节能产品认证机构共对79种产品颁发节能产品认证证书45620张，其中2013年新增证书5205张，目前有效证书20299张。

# Energy-saving products certification

- \* First half of 2013, 52 kinds of products (68826 types), 459 manufactures listed in the 14th Government Purchases List for the energy-saving products.
- \* 25 kinds of products (57635 types) are government-mandated procurement.
- \* 2013年上半年完成的第14期《节能产品政府采购清单》共覆盖26个品目、52种产品类别，清单中涉及459家企业、68826个产品型号/系列；其中政府强制采购的节能产品覆盖10个品目、25种产品类别，共涉及318家企业、57635个产品型号/系列。

# Energy-saving products certification

- \* Continued to carry out energy-saving products certification quantified. Estimates showed that since 2008, energy certification of products accumulated saving/replacing 318.6 Billion kWh electricity, equivalent to 113.435 million tons of standard coal.
- \* 持续开展节能产品认证指标量化工作，将发证量较大、计算方法成熟的近30种节能认证重点产品纳入指标量化体系进行测算。测算结果显示，自2008年以来，获得节能认证的产品累计节约/替代318640.51百万度电，相当于11343.50万吨标准煤。

# Energy-saving products certification

**Capacity of technical institution has steadily improved, some well-known certification brand gradually formed.**

技术机构能力稳步提升，形成了一些知名的认证品牌

**High attention to the certification standard system construction, and put much effort to the technical specification management.**

高度重视认证用标准体系建设，加大技术规范管理力度

**Good social and economic benefit.**

产生了良好的社会、经济效益

# Low-carbon products certification

- \* Reduce carbon emissions, guide low-carbon production and consumption
- \* 降低碳排放，引导低碳生产和消费的有力手段。
- \* February 2013, NDRC & CNCA, "Interim Measures on Management of low-carbon products certification."
- \* 2013年2月，国家发展改革委和国家认监委联合印发《低碳产品认证管理暂行办法》
- \* Low-carbon authentication technology committee: responsible for product certification catalog, certification standards and specifications, implementation rules, requirement for certification body and personnel.
- \* 组建低碳认证技术委员会，研究制定国家低碳产品认证的产品目录、认证技术规范 and 认证实施规则，研究制定低碳产品认证实施机构和人员的资质准入条件。



# Low-carbon products certification

## Announcement about the scope of certification.

2013年8月14日，《国家认监委关于发布<低碳产品认证目录（第一批）>的公告》（2013年第21号公告）。

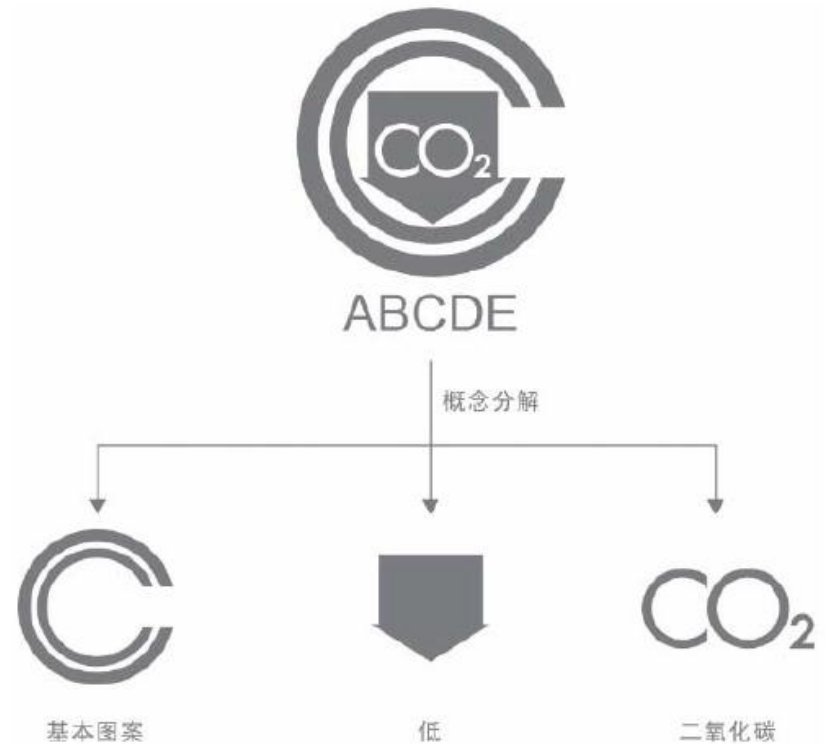
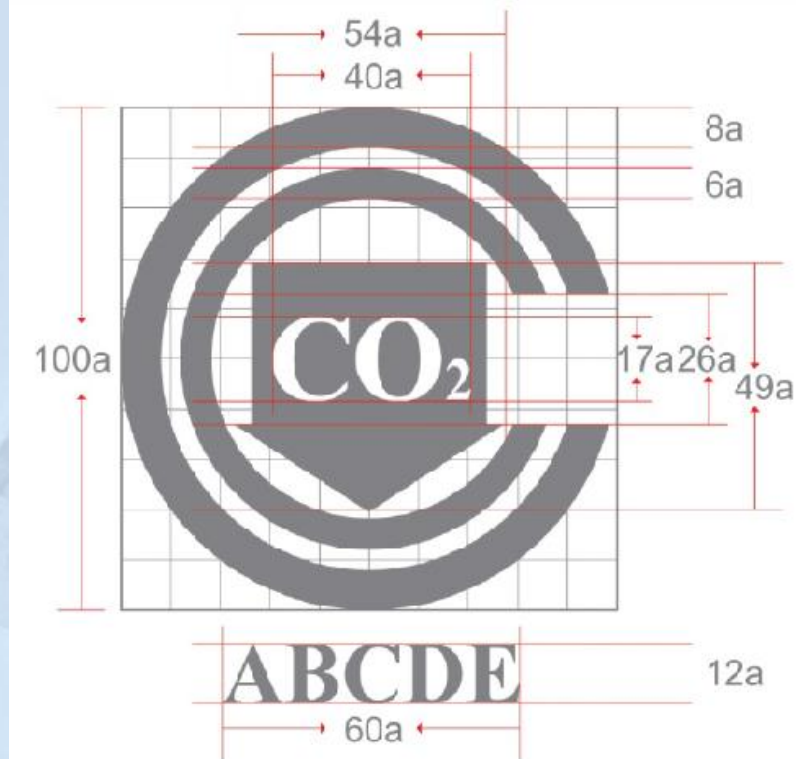
- Common Portland Cement 通用硅酸盐水泥
- Plate glass 平板玻璃
- Aluminum Profiles 铝合金建筑型材
- Small three-phase asynchronous motor 中小型三相异步电动机

## Announcement about the approval requirements for low-carbon products certification bodies

2013年8月30日，《国家认监委关于开展低碳产品认证机构审批有关事项的公告》（2013年第21号公告），

- Scope of Certification 认证范围
- Certification standards 认证依据
- Requirement for certification body 认证机构条件
- Approval procedures 审批程序

# Low-carbon products certification



# Energy Management System Certification

**2002, the conception for "energy management system"**

2002年，提出能源管理体系的概念

**2009.10, certification test run**

2009年10月,能源管理体系认证试点

**2011.06, ISO50001 released**

2011年6月，ISO50001 《能源管理体系 要求与实施指南》

**2012.12, IDT GB/T23331-2012**

2012年12月，GB/T23331-2012 《能源管理体系 要求》

**2013.10.01, formally implemented**

2013年10月1日，正式实施……

# Energy Management System Certification

## Energy Management System Certification - Test Run

**37 certification bodies are involved in.**

37家机构参与了能源管理体系认证试点工作

**Issued 209 certificates by the end of June 2013.**

截止2013年6月，共颁发认证证书209张，75%的获证组织是列入发改委万家企业名单的重点用能单位。

**Issued Document joint with NDRC, accept the results of certification in certain area.**

2012年11月，与发改委共同发布《关于加强万家企业能源管理体系建设工作的通知》，对认证结果予以采信

# Energy Management System Certification

Institutional arrangements for the formal implementation

制度正式实施相关安排

- Management: CNCA/CNAS/CCAA 分工管理
- Approval of certification bodies 认证机构审批
- Professional division 专业划分
- The frequency of inspection 监督频次

# Developments

Release  
“energy-  
saving  
product  
certification  
management  
measures“  
发布《节能产  
品认证管理办  
法》

- **Organization and management (the responsibilities of various stakeholders, the system model, and institutional management)**
- **Establishment and implementation of certification**
- **Certificates and mark**
- **Results acceptance**
- **Supervision**
- **Punishment...**

# Developments

- \* Expand the scope of energy-saving products certification rely on energy efficiency standards for energy-using products.
- \* 依靠用能产品能效标准，扩大节能产品认证目录。
- \* To strengthen coordination with NDRC, NEA, MWR, etc., issue the unified products certification catalogue, certification rules, and the certification mark.
- \* 加强与国家发改委、国家能源局、水利部等部门的协调，联合发布国家统一的产品认证目录、认证规则、认证标志等。

# Thanks !

Contact me: 010-82262717(Tel)

010-82260772(Fax)

haox@cnca.gov.cn





## The Role of Third Party Equipment Certification in Assuring Equipment Energy Efficiency and Regulatory Compliance

Henry Hwong

Senior Vice President, Technical Services and Communications



# Introduction to AHRI

## ➤ Standards:

- Globally recognized & accredited SDO
- Over 100 standards and growing portfolio!
- Global and regional harmonization efforts

## ➤ Certification:

- Certifying performance for over 60 years!
- Voluntarily driven
- 40 programs, 3,000 tests yearly, and growing

## ➤ Advocacy:

- Promote industry interests domestically and globally



*Globally Recognized. Industry Respected.*



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# A History of Cooperation

## ➤ Standards:

- MOU on standard usage
- Translations into Chinese
- US, China, EU regional standards harmonization

## ➤ Certification:

- Advocated and supported voluntary, industry driven certification programs in China
- MOU on certification cooperation with CRAA
- Certification agreement with CRAA as AHRI's exclusive agent in China

## ➤ Advocacy:

- Refrigerant policies
- Trade show registration

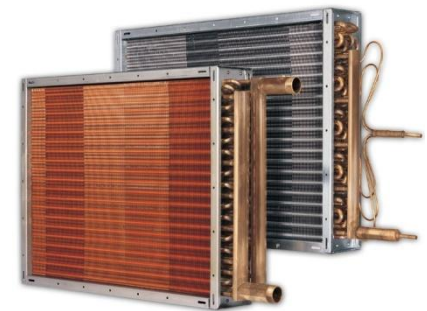
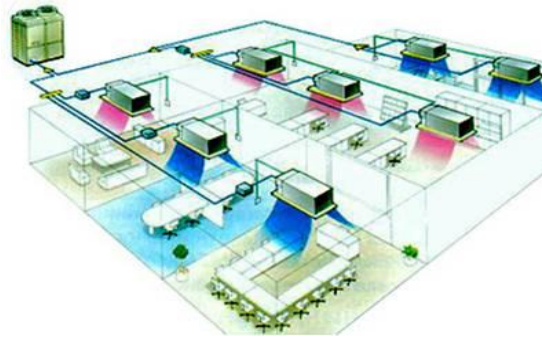


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# What is Performance Certification

## ➤ Program that verifies performance of products

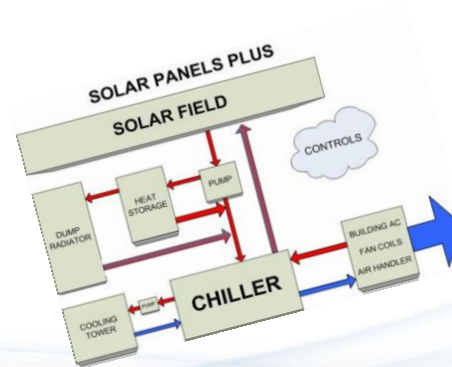
- Capacity
- Power Consumption
- Energy Efficiency
- Pressure Drop
- Purity of refrigerants



## ➤ Product safety or quality are not certified



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# Elements of a Credible Certification Program

- Uses ISO 17025 accredited laboratories
- Accreditation to ISO 17065 as CB
- Uses recognized industry test standards
- Stringent qualification process
- Certify all
- Extensive and continuous testing
- Penalty for rerates
- Challenge tests
- Open to all manufacturers
- Random selection
- Industry directed and respected
- Globally recognized



# AHRI Directory of Certified Product Performance

- Provides certified performance ratings for 40 product categories
- Real-time data
- Quick search functions
- Sophisticated up front data validation
- Identifies tax credit/rebate eligibility
- Meets FTC labeling requirements
- Source of Data for all federal, state, and some global entities
- On-demand printout of certificates



[www.ahridirectory.org](http://www.ahridirectory.org)

# AHRI Certificate of Product Ratings

- Instantly generated and date stamped
- Printout of all certified ratings
- Identifies product re-rates due to certification test failures
- Identifies manufacturer and all associated brand names
- Unique reference and certificate number
- Authoritative proof of certification!

**AHRI CERTIFIED**  
www.ahri.org

## Certificate of Product Ratings

AHRI Certified Reference Number: 3018070      Date: 05/2010      Status: Active

Product: Forced Circulation Air-Cooling and Air-Heating Coils  
Coil Type or Line Designation: ZCWH12ZCWH16LKH19  
Manufacturer: ZECO AIRCOIL INDUSTRIES PVT. LTD.  
Trade/Brand name: ZECO

Rated as follows in accordance with AHRI Standard 550-2001 for Forced Circulation Air-Cooling and Air-Heating Coils and subject to notification of rating accuracy by AHRI approval, independent, third party testing:

Fluids Used:                      Chilled Water: Hot Water  
Coil Rating Number:  
Coil Rating Code/Code:  
Software Version Number:      Coil Data Version 5.5

**AHRI CERTIFIED**

I Model with an "Active" status are those that are currently in production. Models with a "Discontinued" status are those that the manufacturer have discontinued to stop producing, yet stock is still available. Models with an "Obsolete" status are those that the manufacturer is required to stop manufacturing due to an AHRI certification program test failure.

**DISCLAIMER**  
AHRI does not assume the product rated on this Certificate and makes no representation, warranty or guarantee as to, and assumes no responsibility for, the product's value or the Certificate. AHRI expressly disclaims any liability for damage of any kind arising out of the use or performance of the product, in the construction, alteration or use thereof on the Certificate. Certificate ratings are valid only for models and configurations listed in the details of each rating entry only.

**TERMS AND CONDITIONS**  
This Certificate and its contents are prepared pursuant to AHRI's Certificate and may only be used to indicate product and performance purposes. The contents of this Certificate may not, in whole or in part, be reproduced, copied, disseminated, entered into a computer database, or otherwise placed in any form or manner in any other media, except for the user's individual, personal and confidential reference.

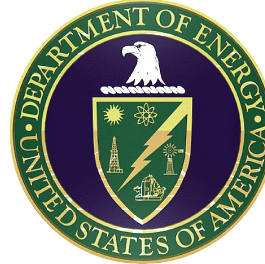
**CERTIFICATE VERIFICATION**  
For information on the model used on this certificate and for further information regarding AHRI's "Active Certificate" and other AHRI Certificate Reference Number and the date on which the certificate was issued, visit the AHRI website: [www.ahri.org](http://www.ahri.org).

2006 AHRI Conditioning, Heating and Refrigeration Institute      CERTIFICATE NO: 0209PH041073



# One Stop Shopping for Regulatory Compliance

- DOE
- Energy Star
- California Energy Commission
- Natural Resources of Canada
- Consortium of Energy Efficiency
- Tax credit eligibility
- State demand side rebate eligibility
- LEED credit eligibility
- FTC labeling
- Specified around the world



Natural Resources  
Canada

Ressources naturelles  
Canada

Canada



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# AHRI Certification Meets Industry Needs!

➤ Don't take our word for it...

seattle.gov  
Department of Planning and Development

### BuildingConnections

Department of Planning and Development news and events

### Directory of Energy Efficient HVAC Equipment

Find Split or Packaged Air Conditioners  
Find Split or Packaged Heat Pumps  
Find Variable Speed Mini-Split Air Conditioners  
Find Variable Speed Mini-Split Heat Pumps  
Central Air-Conditioner and Heat Pump Efficiency LDI  
Find a Rebate or Incentive Program

### HOW AND WHY OF CERTIFIED

Across the globe, regulators increasingly depend on **AIR-CONDITIONING, HEATING AND REFRIGERATION INSTITUTE (AHRI)** for accurate and unbiased evaluation of heating, ventilation, air conditioning and commercial refrigeration (HVAC/R) equipment. AHRI's certification programs demonstrate to government building owners and homeowners that equipment performance claims have been independently measured and verified, instilling consumer confidence and enabling fair product comparisons. Only upon performance verification are certification marks applied to HVAC/R products to serve as visual statements of conformance.

The CEE HVAC Directory provides easy access to energy-efficient residential and small commercial central air conditioners and heat pump equipment certified through AHRI. The directory lists thousands of certified systems that qualify for CEE's residential and commercial HVAC initiatives.

### Certified Matched Systems

It is important to know that split central air conditioning and heat pump systems typically consist of two parts: an indoor (coil) unit and an outdoor (condensing) unit. These two parts are specifically designed to work together as a coordinated "team" to provide top performance and maximum efficiency and comfort. For split systems, **AHRI certifies** the performance of the system and not the individual units.

A certified matched system will list the indoor and outdoor unit combination together in the directory and each system is assigned a unique Certified Reference Number (formerly AHRI

AHRI CERTIFICATION

## HAVTECH

INNOVATIVE SOLUTIONS. EXCEPTIONAL SERVICE.

### WHY IS AHRI CERTIFICATION IMPORTANT?

**Honest performance ratings**  
The most important reason for AHRI certification is that it guarantees to the owner, architect, and engineer that capacity and performance ratings are not only honest but confirmed by sophisticated, internationally recognized testing facilities.

**Level playing field**  
Responsible manufacturers support AHRI because it ensures that all manufacturers are using the same rating procedures and are competing fairly in the marketplace. This allows the purchaser to make intelligent, informed decisions when selecting and buying equipment.

**Are all HVAC products covered by AHRI?**  
Over 200 air HVAC products are covered by AHRI certification programs, from swimming pool water heaters, rooftop, energy recovery ventilators, chillers, air handlers, to refrigerated display cases. Responsible manufacturers are eager to join and participate in AHRI certification programs because bearing the AHRI certification sticker is a sure indicator that you are dealing with a reputable, honest, technically competent manufacturer.

**AHRI Certification and ENERGY STAR**  
Most states now require ENERGY STAR as part of their building code and ENERGY STAR requires that HVAC equipment be AHRI certified. Consequently, the use of non-certified equipment for which there is a certification program is a violation of code.

**AHRI Certification and LEED**  
LEED certification requires that HVAC equipment and design be in accordance with ASHRAE 90.1 which ultimately requires AHRI certification.

**Conclusions**  
The acceptance and use of a non-certified product where a certification program exists has a number of negative implications:

**ABOUT HAVTECH**

For thirty years, Havtech has provided innovative comfort solutions and service to customers in industries including Technology, Health Care and Education.

Havtech is the Mid-Atlantic's leading independent commercial HVAC equipment supplier. Our team of highly trained Sales Engineers and support staff are ready and able to support all of your commercial comfort needs today.

Havtech is headquartered in Columbia, MD, serving Maryland, Massachusetts, PA, Virginia and West

ROOTS TO ROOFTOPS AUTOMATER.LOCK

## FMD Facility Maintenance Decisions

### HVAC Equipment: Third-Party Certification Ensures Efficiency

By James Piper, P.E. - April 2009 - HVAC

Premium energy-efficiency products typically carry a premium price, so how do managers know the premium they are paying for a system or component with a higher rating really is more efficient? How do they know they are getting their money's worth.

To help managers evaluate different HVAC systems and components, the certification program from the **Air-Conditioning, Heating, and Refrigeration Institute (AHRI)** and the **U.S. Environmental Protection Agency's Energy Star program**, for example, are designed to ensure products meet specific performance and energy-efficiency criteria.

AHRI has developed and published a series of test procedures in rating HVAC system and components. Manufacturers submit products to independent testing facilities that perform specified test procedures under strict operating conditions to evaluate performance.

The testing agency then certifies that performance to meet an established standard. The

POOLgear PLUS

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### AHRI Certified<sup>®</sup> Heat Pump Pool and Spa Heaters

When selecting heat pump pool and spa heaters, you consider size efficiency and costs. Another important consideration: Determining whether it's AHRI Certified<sup>®</sup>.

The **Air-Conditioning, Heating, and Refrigeration Institute**, as the trade association representing more than 200 heating, air conditioning, water heating, and commercial refrigeration (HVAC/R) manufacturers, administers the industry's independent product performance certification programs. The certification program for heat pump pool and spa heaters, launched in September 2008, joins 35 other certification programs in providing consumers with verification of performance ratings for millions of HVAC/R products.

You can be assured products bearing the AHRI Certified mark have undergone rigorous, annual testing by independent laboratories under contract to AHRI.

Every certified product is also listed in the **AHRI Directory of Certified Product Performance**. This real-time, online database provides valuable tools to conduct performance comparisons of similar products offered by multiple manufacturers and allows printing of AHRI Certificates of Product Ratings for every model listed. The certificate provides the consumer with proof of the model's certified performance ratings.

By choosing AHRI Certified heat pump pool and spa heaters:

- You can be confident that the unit's capacity rating plate is providing you with accurate information to select the appropriately-sized unit for your specifications. Selecting AHRI Certified heat pump pool and spa heaters ensures the product will deliver the manufacturer's claimed capacity and efficiency, and is capable of heating the pool effectively and efficiently.
- You are able to satisfy building code requirements. State building codes referencing the **International Energy Conservation Code (IECC)** or **ASHRAE 90.1** require heat pump pool and spa heaters meet a minimum COP and EER. AHRI certification is the only way to ensure compliance.

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## FMD Facility Maintenance Decisions

### HVAC: Insist On AHRI Certified Equipment

March 2013 - HVAC

Maybe an organization is designing a new building. Or maybe a maintenance or engineering manager is placing a bid for a retrofit heating, ventilation, air conditioning and commercial refrigeration (HVAC) and water-heating system in a commercial or institutional building, or replacing an aging chiller or rooftop unit.

No matter what the situation, **managers should insist on AHRI Certified<sup>®</sup> HVAC and water-heating equipment**. These days, odds are that managers and other in-house parties involved in the process have made saving energy an important part of the decision to upgrade or, in the case of a new building, an important component in meeting specific requirements under the **Leadership in Energy and Environmental Design (LEED)** rating system.

Certainly, when it comes to designing a HVAC system for a facility, the choices and decisions can be daunting. One thing that is for certain is that the system's design needs to be based on accurate performance ratings. For this reason, managers should start the project off right by specifying HVAC and water-heating equipment and components listed in the **AHRI Directory of Certified Product Performance**, which is available at [www.ahridirectory.org](http://www.ahridirectory.org). Products listed in this directory have been subject to rigorous, third-party testing and have been found to meet the performance claims of the manufacturer.

### Ensuring Performance

AHRI's certification programs cover product categories from air-to-air, energy-recovery



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# When it comes to Assuring Equipment Performance ... AHRI Certification is the First Best Practice!

[www.ahridirectory.org](http://www.ahridirectory.org)



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