



# Energy Efficiency in MENA *Status and Outlook*

*Ahmed Samir Elbermbali, Managing Director of the CEBC*

27.05.2021



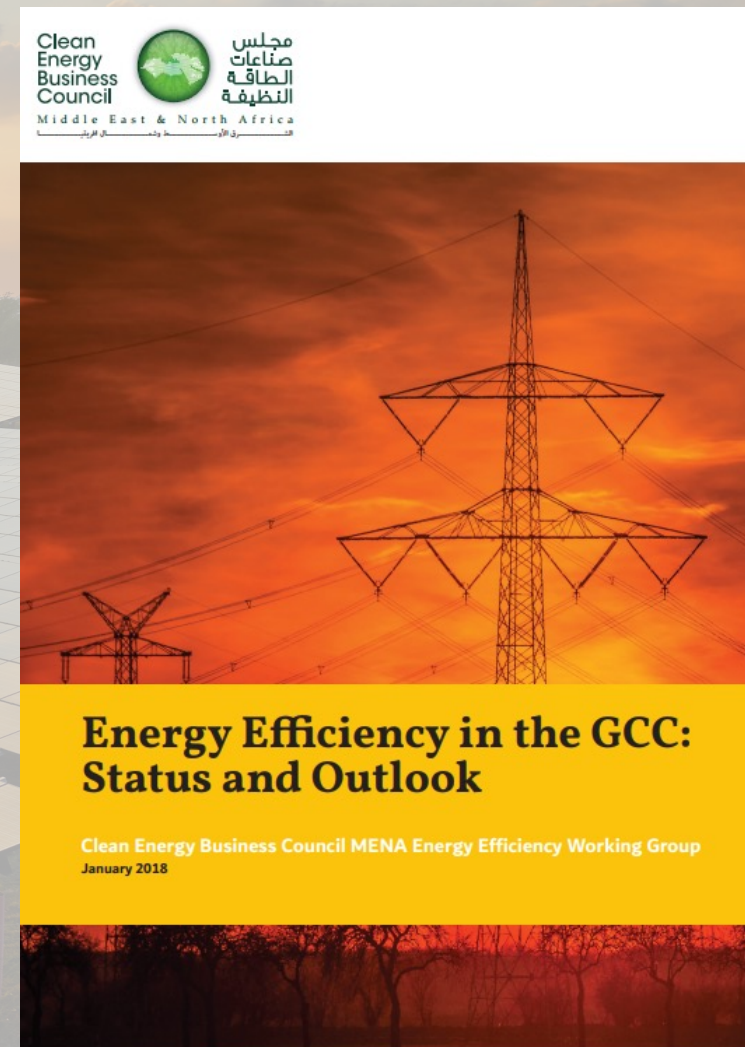
# About us : a regional non-profit organisation in clean energy





# Energy Efficiency in the GCC: Status and Outlook (2018)

- *Energy Efficiency in the GCC: Status and Outlook* report was released in January 2018
  - Download from the CEBC Energy Efficiency Working Group page here: <https://cebcmena.com/whatwedo/EEWG/>
- White paper focus: GCC buildings, industrial, and transportation sectors, presenting an overview of energy efficiency developments, as well as some recommendations for businesses and policy-makers
- Supporting electricity tariff resources
  - Residential: <https://cebcmena.com/whatwedo/gcc-residential-tariffs-latest/>
  - Commercial, Industrial and Government: <https://cebcmena.com/whatwedo/gcc-commercial-industrial-tariffs-latest/>





# Energy Efficiency in the GCC: Status and Outlook (2018)

- CEBC released an updated version of this white paper in July 2021.

Key updates include:

- Expanded scope to countries outside the GCC: Egypt, Jordan, Morocco, Lebanon
- Latest updates on regional energy price reforms
- Latest market developments across buildings, ESCO industry, transportation, and industry
- Updated recommendations to policy makers
- More in-depth electricity tariff pricing structures





# Motivation for the UPDATED MENA Energy Efficiency White Paper

## UAE mulls cancelling energy subsidies

Ministry wants to remove all forms of subsidies in gas and electricity to reflect real price, says energy minister

Published: January 15, 2018 19:00  
by Anwar AhmadStaff Reporter

### Saudi Arabia announces sweeping power sector reforms

RIYADH, November 18, 2020

Saudi Arabia has announced sweeping reforms in the electricity sector that will, in the long-term, ensure the health and



in the Kingdom, with shift to renewable energy and  
for energy production; and  
security and reliability to enable effective integration  
entries; and  
on footprint



### Power Tariffs To Gradually Increase To 29 Fils By 2019

Muhannad Mansour/DTNN ,muhannad@dt.bh

BAHRAIN - JANUARY 05, 2016



Energy Minister Dr. Abdulhussain Mirza stated during a press conference following the weekly Cabinet meeting in Gudaibiya Palace, starting next March, electricity tariffs for domestic, industrial and commercial consumption would gradually increase to 29 fils/ kilowatt/hour by the year 2019.

## BUSINESS

## Cost-reflective tariffs force large power customers to cut usage in Oman



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## THE JORDAN TIMES

WEATHER, A

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Home » Local » Gov't increases electricity prices

### Gov't increases electricity prices

By Mohammad Ghazal - Apr 01, 2018 - Last updated at Apr 01, 2018

April 23, 2021  
4:55 AM EDT

### Africa

## Egypt raises domestic fuel prices for first time since subsidy reform

1 minute read

Reuters



Egypt's price-setting committee raised domestic fuel prices on Friday for the first time since it was formed in October 2019 following the completion of subsidy reforms, the petroleum ministry said in a statement.

Prices were last raised in July 2019 when Egypt, a net oil importer, finished phasing out subsidies on fuel products as part of a reform programme backed by the International Monetary Fund. Prices had remained stable over the past year after being lowered in April 2020 and October 2019.

cluding households that consume 300

ryari, chief commissioner of the Energy

the \$55 cap set by the government to

the previous three months.

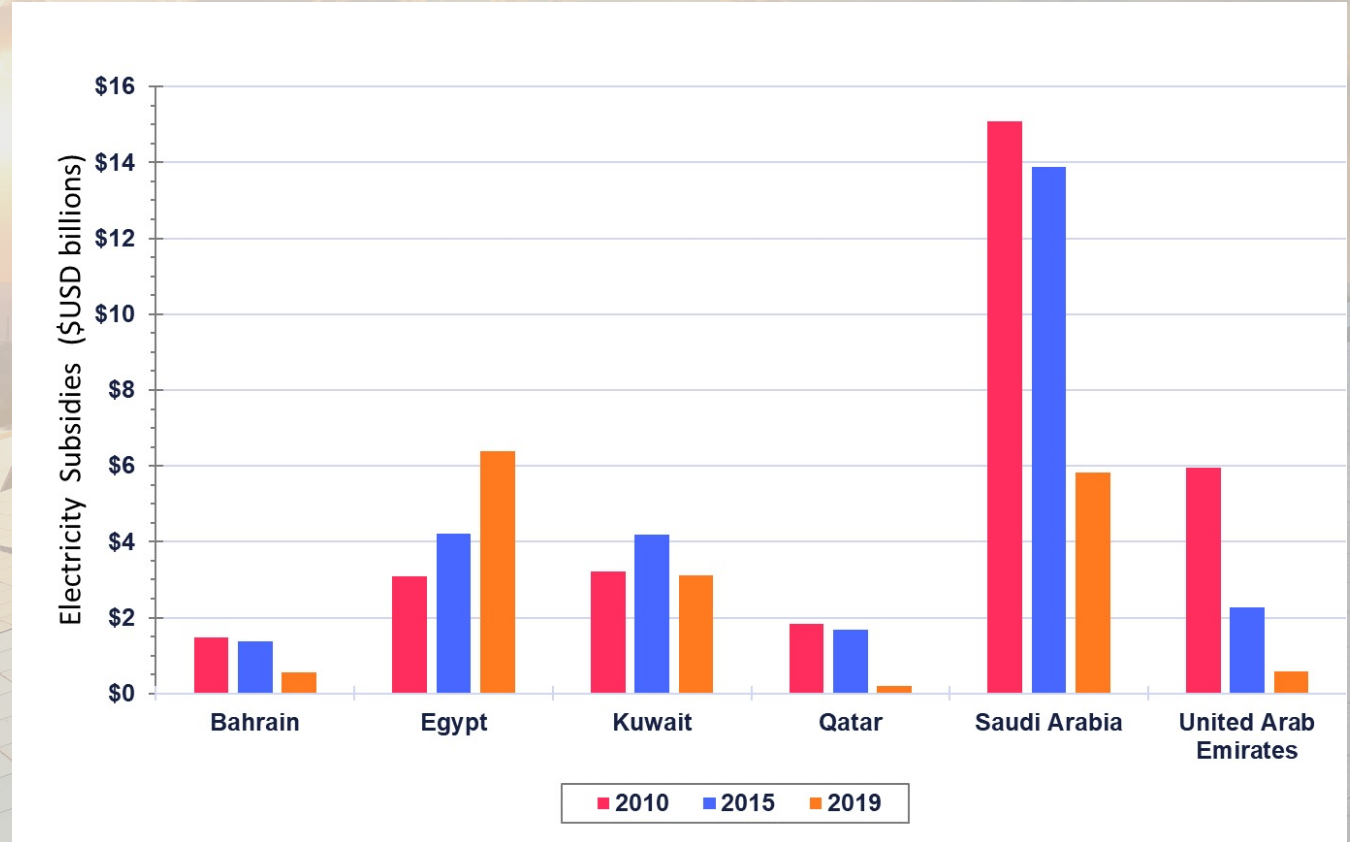
tributes some 25 per cent o the gross

n and rise in costs," he told The Jordan



## Electricity Subsidies: 2010 to 2019

- Significant reductions in electricity subsidies from 2010 to 2019 across the GCC:
  - ~90% reduction in the UAE and Qatar.
  - ~61% reduction in Saudi Arabia and Bahrain
- However, not all countries reduced subsidies...
  - Kuwait electricity subsidies stayed mostly flat
  - Egypt's electricity subsidies more than doubled from 2010 to 2019

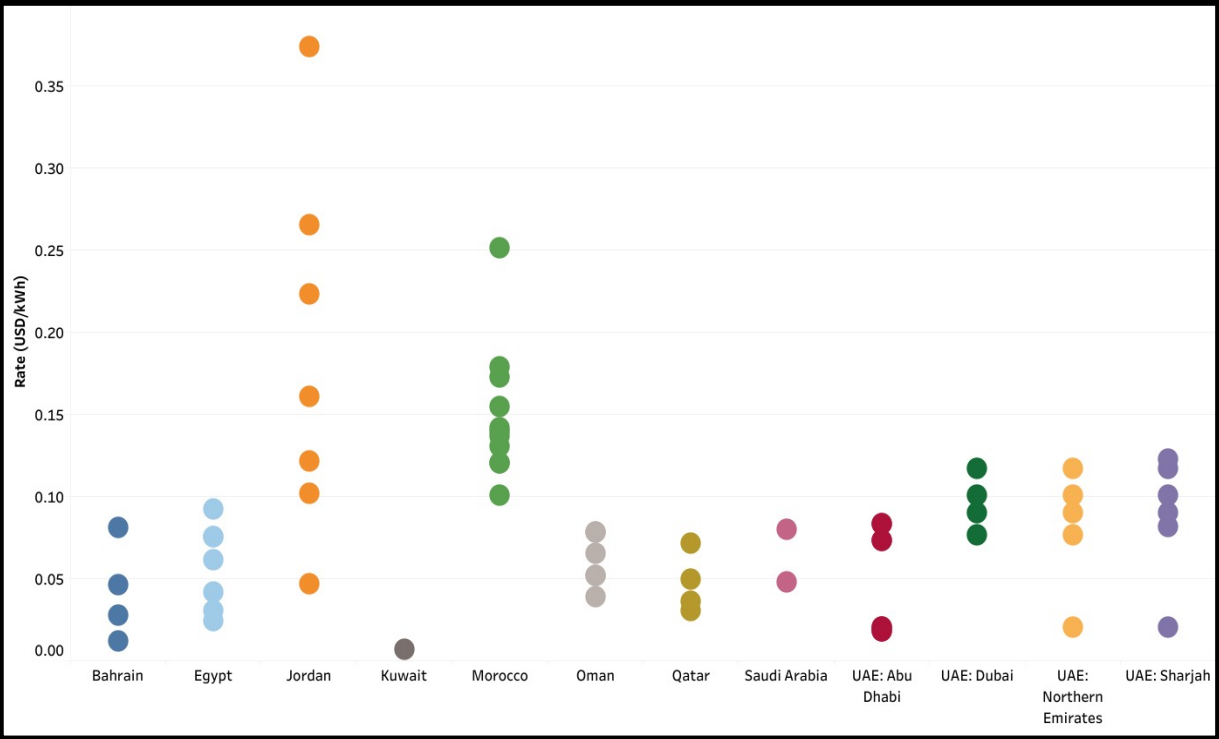


Source: International Energy Agency Data and Statistics webpage.

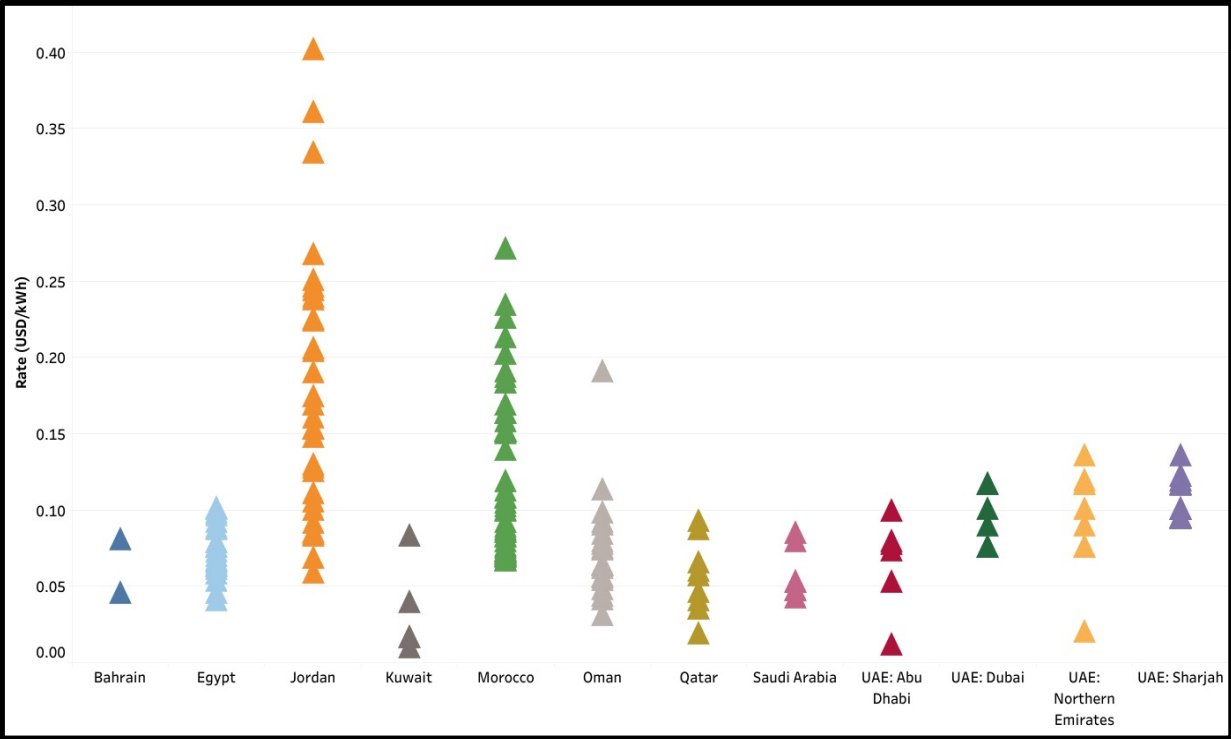
<https://www.iea.org/data-and-statistics/data-browser?country=WORLD&fuel=Prices&indicator=Subsidies>



# Current Electricity tariffs in selected MENA countries (as of 2021)



**Figure 1 : MENA Residential Sector Electricity Tariffs (January 2021)**



**Figure 2 : MENA Government, Industrial and Other sectors Electricity Tariffs (January 2021)**



# Electricity tariffs in selected MENA economies

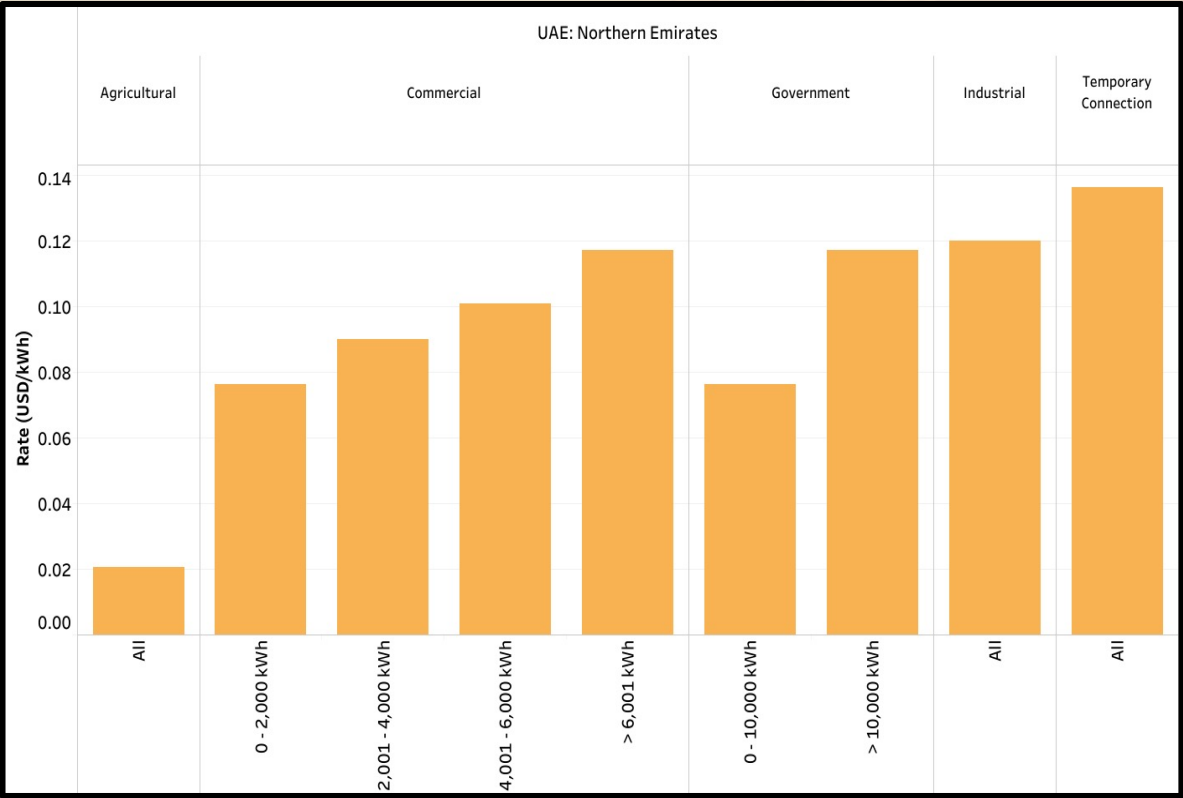


Figure 3 : UAE : Northern Emirates Non-residential Electricity Tariffs (January 2021)

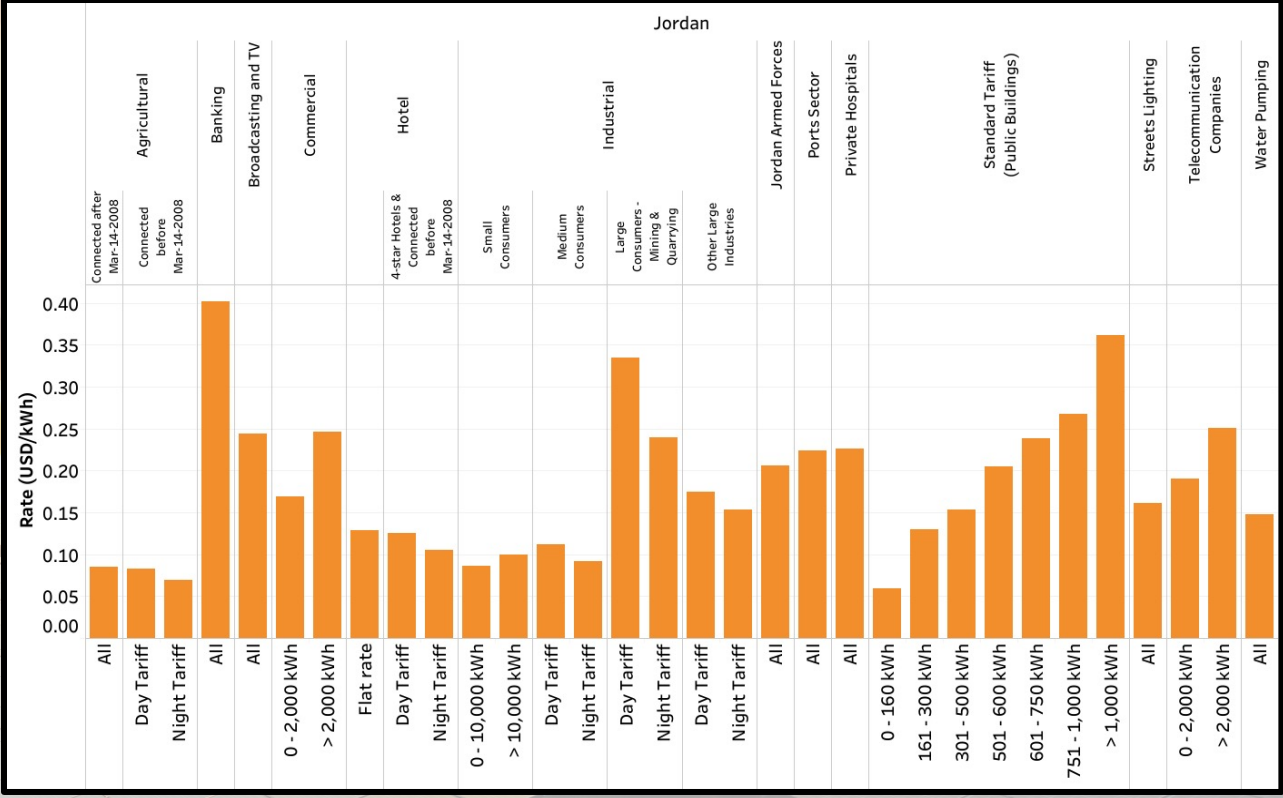


Figure 4 : Jordan Non-residential Electricity Tariffs (January 2021)

Sources: ETIHADWE - <https://etihadwe.ae/en/About/Pages/Tariff.aspx> for the UAE: Northern Emirates tariffs data (2021)  
EMRC - <https://www.emrc.gov.jo/echobusv3.0/systemassets/electricity%20tariff%20retail%20from1%201%202020.pdf> for Jordan tariffs data (2021)



# Middle East total final energy and electricity consumption, by sector (2018)

Energy is consumed in a variety of forms (e.g., electricity, natural gas, diesel, etc.) across the major sectors: **residential buildings, commercial and government buildings, industry, and transportation**

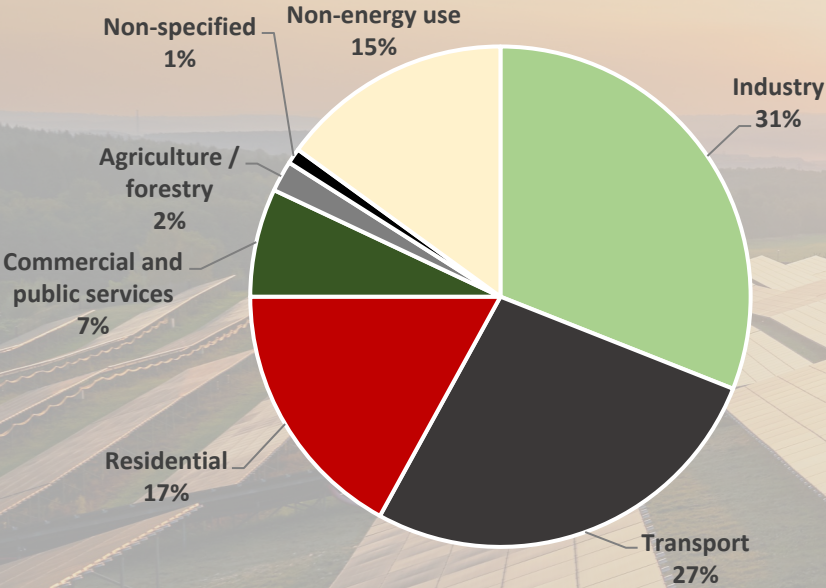


Figure 5 : Middle East\* total final energy consumption (2018)

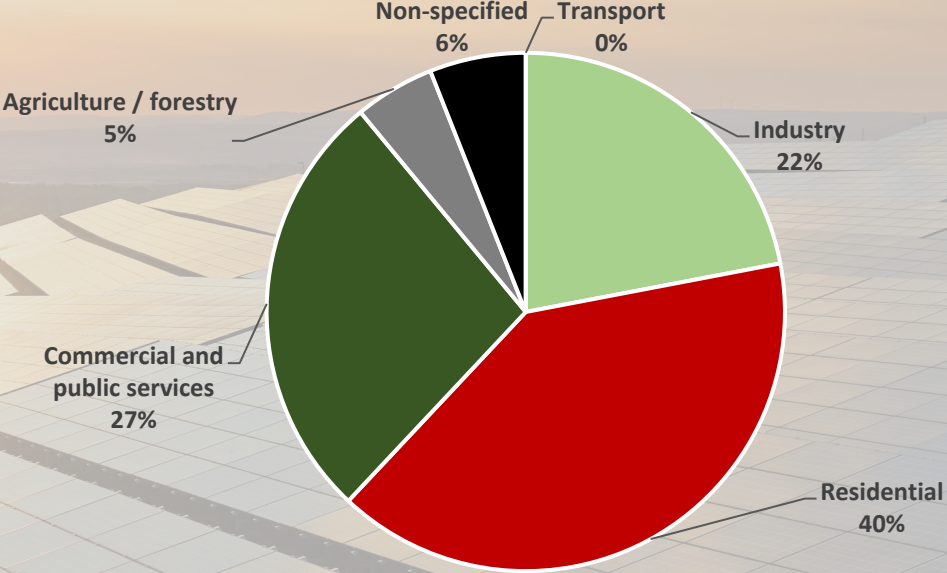


Figure 6 : Middle East\* total final electricity consumption (2018)

\* Middle East includes Bahrain, Islamic Republic of Iran, Iraq, Jordan; Kuwait; Lebanon; Oman; Qatar; Saudi Arabia; Syrian Arab Republic; United Arab Emirates and Yemen.

Source: IEA World Energy Balances, <https://www.iea.org/subscribe-to-data-services/world-energy-balances-and-statistics>



# Industrial sector energy efficiency highlights

- Globally and in the MENA region, **the industrial sector consumes more primary energy than any other sector**, accounting for more than half of global energy consumption.
- In the MENA region, **industry consumes 31% of total final energy consumption and 22% of electricity**, according to the IEA.
- At the regional level, **the industrial sector contributes 10 percent of the Gulf Cooperation Council's GDP (2015)**.<sup>1</sup>

Sources: (1), (2) Gulf News, <https://gulfnews.com/business/uae-industrial-sector-contribution-to-gdp-to-reach-25-by-2025-1.1443564>

(3) Dubai Industrial Strategy 2030, <https://mbrsgcdn.azureedge.net/cmsstorage/mbrsg/files/4b/4b0342ac-32e4-41c8-8efe-5bebebe16307.pdf>

## Saudi Arabia



- The Saudi Energy Efficiency Center sets energy efficiency targets that must adhered to for certain energy-intensive industries (i.e., cement, steel, aluminum and petrochemicals). The current SEEC target for these industries is to meet the average of the 2018 benchmark by the end of year 2025

## UAE



- Large aluminium, cement, and petroleum refining industries
- UAE targets its industrial sector to reach 25 % of the GDP by 2025<sup>2</sup>
- Dubai aims to become an international hub for knowledge-based, innovation and sustainable industries<sup>3</sup>

- **The importance of energy management policies:** Both UAE and KSA put an emphasis on the development of industrial energy management policies, using the ISO 50001 energy management framework. These efforts are strengthened by their participation in the **Clean Energy Ministerial Energy Working Group (EMWG)**.



## Recommendations for Industrial Sector : policy makers



### Incentivize industrial energy management programs such as ISO 50001

- Energy management policies are well-established internationally, with strong adoption in countries across the European Union. Stringent industrial management programs are also mandatory in Japan.
- In the GCC, the UAE has more ISO 50001 certifications than any other country and two GCC-based organizations have recently been awarded the prestigious CEM Award of Excellence in Energy Management



### Provide incentives to industrial organizations to perform energy audits

- An industrial energy audit can help to build momentum for a strong energy management program and also uncover energy cost savings
- **Example.** Between 2006 to 2009, the U.S. DOE provided over 600 free energy audits to U.S. industrial organizations. The implementation of a similar program can help GCC industries to better cope with increased electricity rates.



### Develop an industrial energy management workforce

- A well-qualified industrial energy management workforce is critical to establishing an energy-efficient industrial sector.
- **Example.** The US Department of Energy Industrial Assessment Center is a program that funds engineering programs at 24 US universities to provide free assessments to identify significant energy savings, water and waste reduction recommendations



# Recommendations for building sector : building owners

## ***Define Goals***

Understand your organization's sustainability and energy savings goals.



***Learn the various methods of achieving these savings and procuring energy efficiency***

## ***Perform an energy audit***

Identify energy conservation measures to cut your energy bill



## ***Monitor and report on progress and achievements***

Focus on continual energy performance improvement.



## ***Hire a quality service provider***

Support or deliver energy efficiency services based on the needs of the business.





# Recommendations for building sector : policy makers

In order to incentivize energy efficiency improvements in commercial and government buildings, governments can consider the adoption of the following programs and policies :

## ***Incentive Programs***

Give discounts or revise the tariff structure based on high-performance. The appropriate incentive structure will help drive buildings to reduce consumption and improve energy performance.

## ***Energy Reporting***

Public marketing campaigns can showcase and actively promote the highest performers at the neighborhood, city and country level. This would help for people to know the macro-level ability of buildings and their impact to perform.

## ***Training and Education Programs***

Education and training programs give owners, operators and developers insights to help make energy efficiency improvement easier to develop and scale

## ***In practice...***

- The Emirates Green Building Council has developed a project with UAE hotels and has published a report in 2016 with the voluntary participation of 46 UAE hotels.
- The report studies energy and water consumption data between 2013 and 2015 :
  - The Phase 1 of the of the Emirates GBC's Benchmarking Program is completed.
  - The Phase 2 of the program is aligned with the Building Energy Efficiency Accelerator and the initiative is a part of the six assessment tools under the UN program, Sustainable Energy for All, and it aims to double the global rate of improvement in energy efficiency.





# The ESCO market and key developments

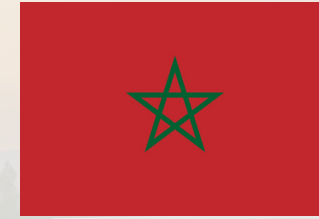
The ESCO market in the MENA region has developed in recent years, especially with the introduction of the **Super ESCOs**. However, the market stays still fragmented in the region and there is a crucial need to further improve it.



- In **Abu Dhabi**: Creation of the Super ESCO Abu Dhabi Energy Services LLC in 2020.
- Targets:
  - Focus on 3,000 Abu Dhabi government buildings
  - Make savings of 2.7 TWh electricity and 9 M cubic water by 2030 in Abu Dhabi
- In **Dubai**: The Etihad Energy Services Super ESCO program established in 2013.
- Targets:
  - Reduce power and water consumption by 30 percent by 2030




- In **KSA**, creation of the Tarshid National Energy Services Company by PIF in 2017
- Projects :
  - The retrofitting of 81,600 m<sup>2</sup> Ministry building in Riyadh; 3,700 tons of harmful CO<sub>2</sub> emissions will be avoided
  - Completed the first phases of streetlights retrofitting projects in Jeddah, Medina, and Makkah. Expected to have yearly energy savings of 70 percent .



- In **Morocco**, the adoption of a 2011 law on energy efficiency first gave definition for ESCOs.
- In 2020, to develop the ESCO market and Morocco's Société Ingénierie Energétique (SIE) was transformed into a Super ESCO to facilitate financing of energy efficiency in public buildings and to reduce barriers in front of the ESCO market





Thank you for your attention !

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Clean  
Energy  
Business  
Council



مجلس  
صناعات  
الطاقة  
النظيفة

Middle East & North Africa  
الشرق الأوسط وشمال أفريقيا





# **Green Buildings Energy Efficiency Compliance**





1

# AHRI Introduction





# AHRI Introduction

AIR CONDITIONING HEATING AND REFRIGERATION INSTITUTE



**AIR-CONDITIONING, HEATING,  
& REFRIGERATION INSTITUTE**

we make life better®

Through our global advocacy and various core activities, we strive to help save energy, improve productivity, and ensure a better environment.

The Air Conditioning Heating and Refrigeration Institute (AHRI) is a Not for Profit, Manufacturers Association. Our 320 + Members manufacture Residential, Commercial & Industrial Heating, Ventilation, Air Conditioning, Refrigeration and Hot Water Heating.





# AHRI Introduction

AIR CONDITIONING HEATING AND REFRIGERATION INSTITUTE

## GLOBAL ADVOCACY

### NORTH AMERICAN MARKET



Federal & State Level Advocacy

### GLOBAL MARKET



Collaboration with UNEDO/ KIGALI  
Standards adoption & Harmonization  
Climate Change & Ozone Issues

## STANDARDS DEVELOPMENT

140+ Published Standards & Guidelines  
Industry's top Experts & Public Review

ANSI/AHRI Standard 210/240 with  
Addenda 1 and 2  
(formerly ARI Standard 210/240)

2008 Standard for

**Performance Rating  
of Unitary Air-Conditioning  
& Air-Source Heat Pump  
Equipment**



## CERTIFICATION

40+ Certification Programs  
1000+ Licensees, Including  
280+ International Players



*Globally Recognized. Industry Respected.*

### APPROVED CERTIFICATION BODY





# AHRI Introduction

AIR CONDITIONING HEATING AND REFRIGERATION INSTITUTE

## INDUSTRY EVENTS

THE GLOBAL EVENT FOR HVACR INDUSTRY



## TECHNICIAN TRAINING & CERTIFICATION

TECHNICIAN TRAINING & CERTIFICATION



REFRIGERANT DRIVER LICENSE



## RESEARCH

REFRIGERANT



AHRI-led program tests alternative refrigerants for major product categories



## REGULATIONS

### US FEDERAL REGULATIONS



### GCC NATIONAL REGULATIONS



## MARKET SURVEILLANCE

Provide performance information  
on behalf of participants to

- U.S. Department of Energy
- U.S. Environmental Protection Agency
- U.S. Federal Trade Commission
- California Energy Commission
- Natural Resources Canada

## CERTIFICATION DIRECTORY

**AHRI** Directory of  
Certified Product Performance  
we make life better®

**Quick Search Criteria**

AHRI Certified Reference Number

Brand Name

Model Designation

Refrigerant Used per ASHRAE 34

Compressor Type

Hertz

Country of Origin

Is Rerated





**François Boueri**  
Vice President



**Khalil Issa**  
Executive Director



**Nabil Shahin**  
Technical Director



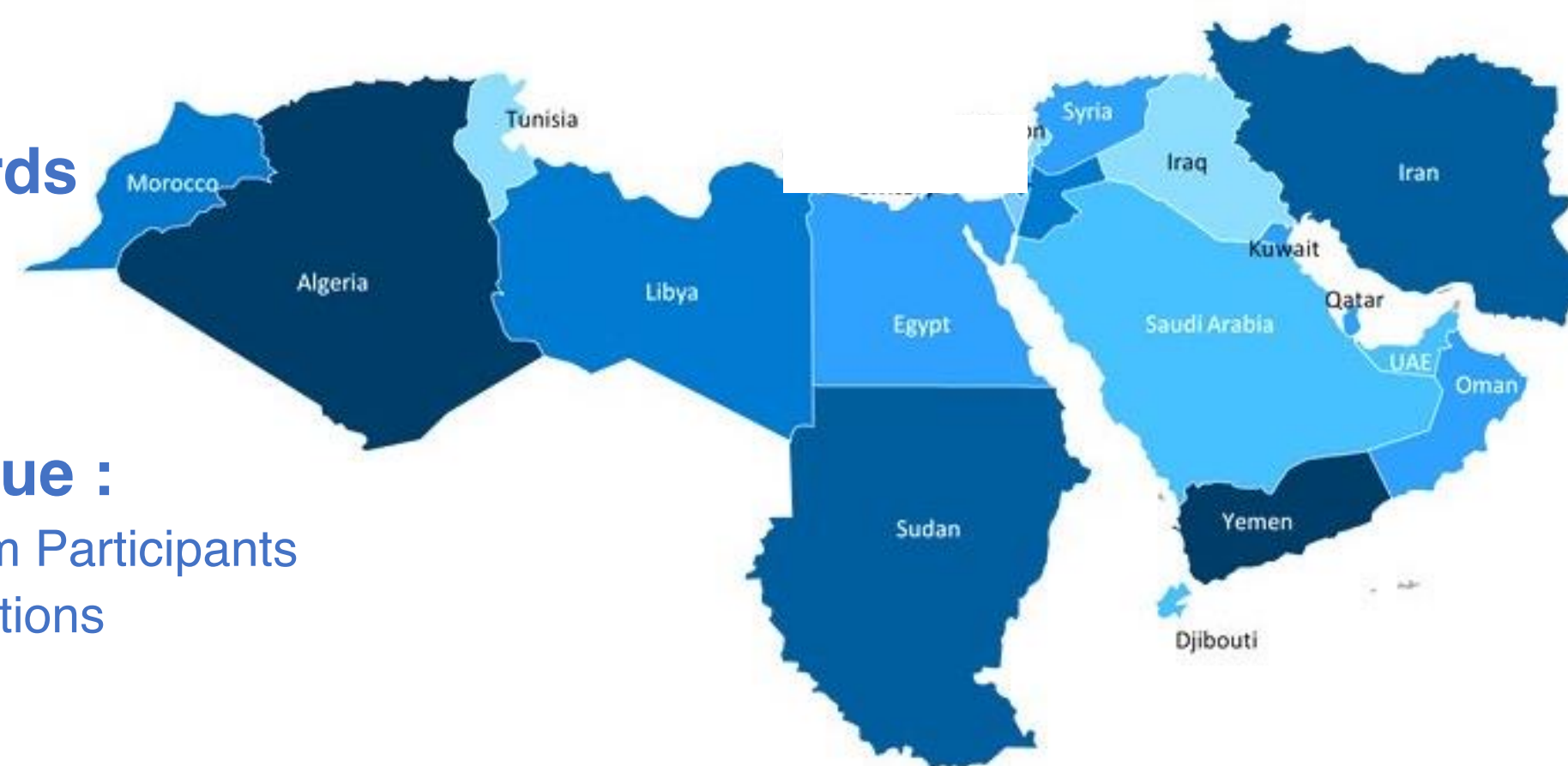
**Dalip Singh**  
Technical Analyst

**Extend Support to HVAC Stakeholders/Regulators to Meet Region's Energy Challenges**

**Adapt & Develop Regional Standards and Certification Programs:**

**Establish Direct & Frequent Dialogue :**

- AHRI members and Certification Program Participants
- Regulators and Green Building Organizations





# AHRI Introduction

AIR CONDITIONING HEATING AND REFRIGERATION INSTITUTE

## OUR STRENGTH : GLOBAL MEMBERSHIP – INDUSTRY EXPERTISE & BEST PRACTICE





**2**

## **Green Building Codes**

**AHRI Certification as Compliance Tool**





## GREEN BUILDING CODES AND ASHRAE 90.1

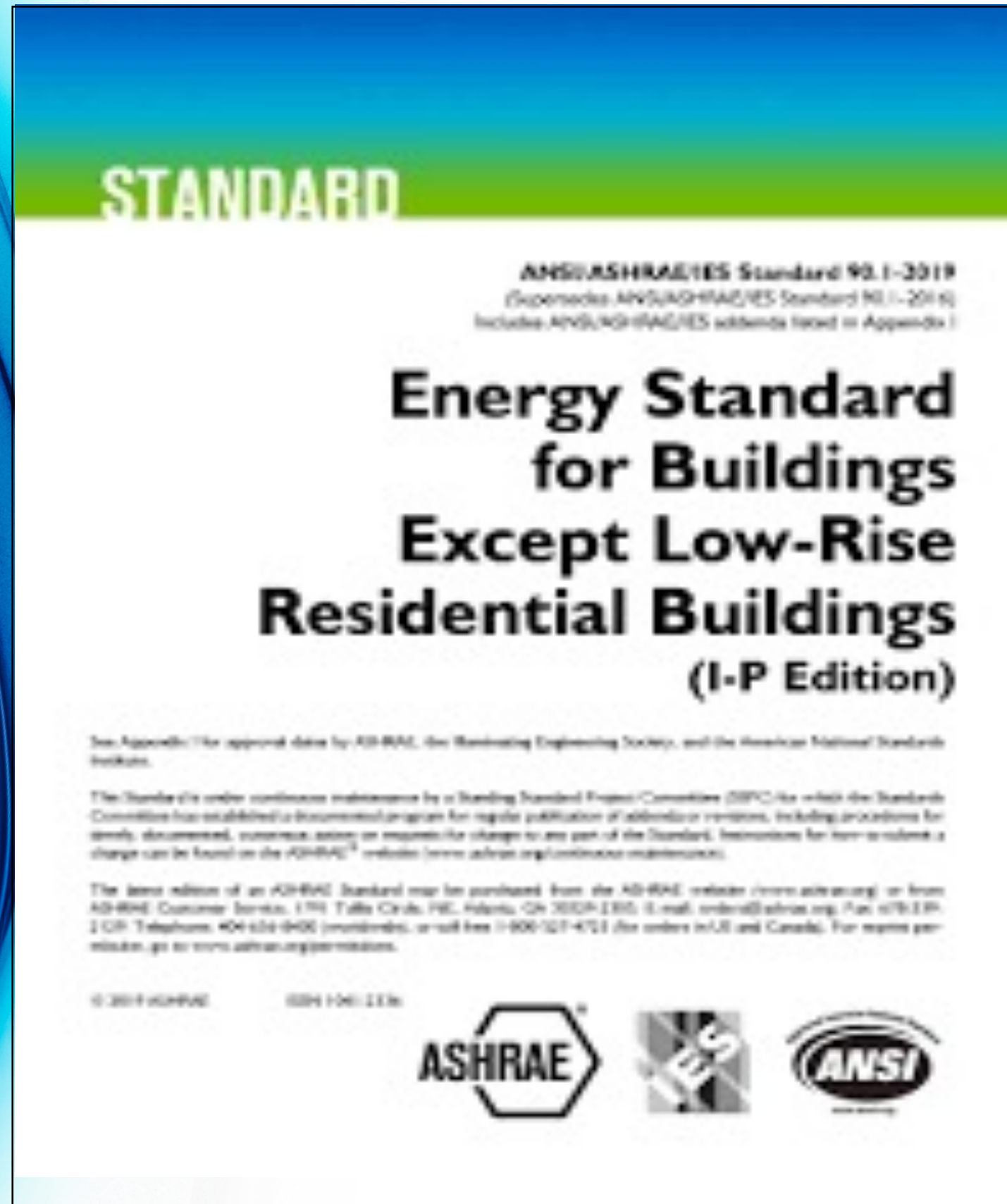


## ASHRAE STDS: FOUNDATION OF REGION'S GREEN BUILDING CODES

STANDARD 90.1 - STANDARD 55 - STANDARD 62 - ASHRAE HANDBOOK – FUNDAMENTALS



## ASHRAE 90.1 SCOPE



Minimum energy-efficient requirements ( design/construction, O&M)

1. new buildings and their systems,
2. new portions of buildings and their systems,
3. new systems and equipment in existing buildings, and

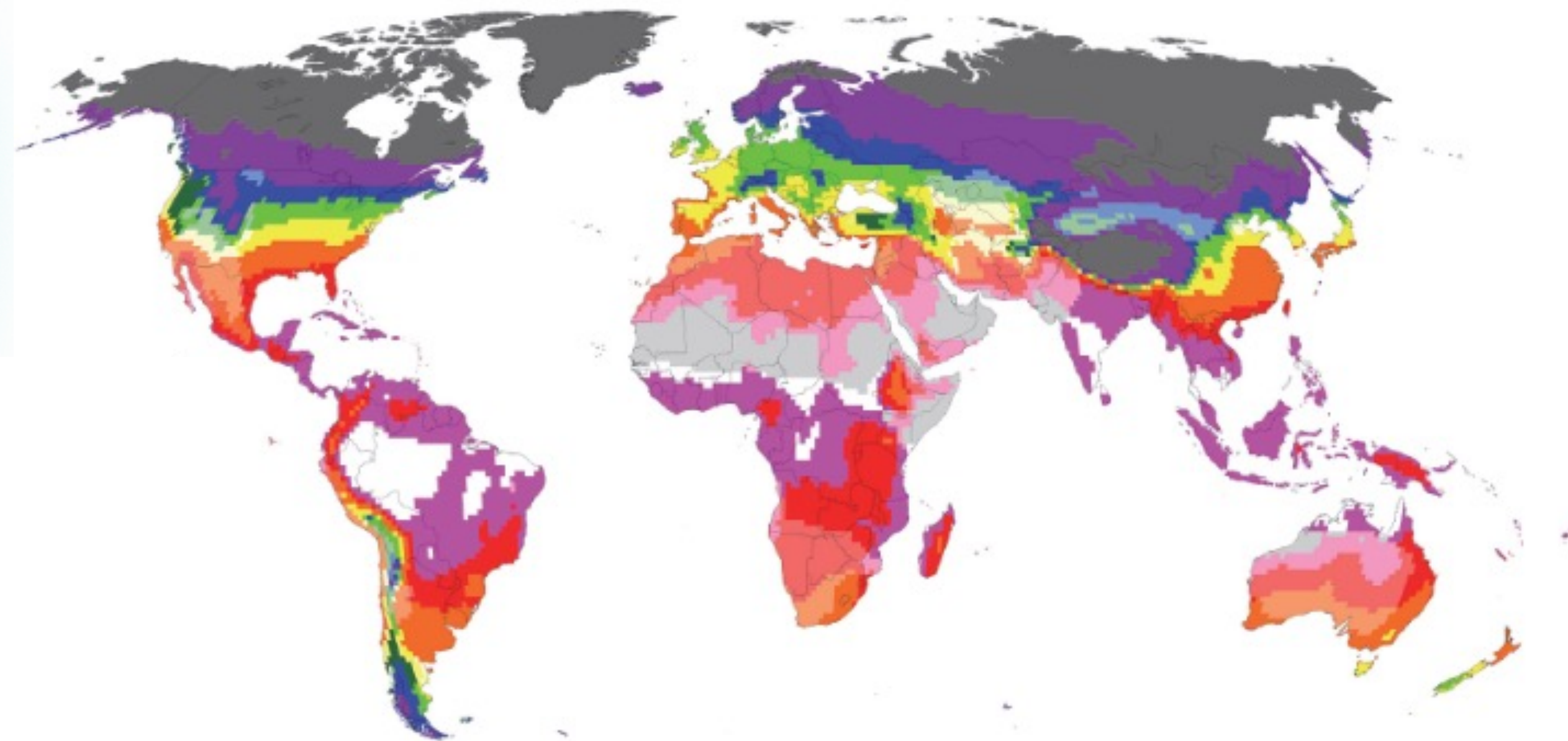
Criteria for determining compliance with these requirements.

Building Envelope / HVACR/ DHW/ Power / Lighting / Other Equipment



## CLIMATE ZONES IN ASHRAE 90.1

### ANNEX A1 REFERENCE ASHRAE 169 FOR CLIMATE ZONE DESIGN



Zone 0B Extremely Hot Dry
Zone 1A Very Hot Humid
Zone 1B Very Hot Dry
Zone 2A Hot Humid
Zone 2B Hot Dry

Region's Climate Zone: A0-3 and B0-3

### AHRI CERTIFICATION & RATING

AHRI Standard 211/241-0B/1B-2021 (SI)

Table 9. Test Conditions for Air-cooled Products <sup>1</sup>				
Test Name	Air Entering Outdoor Unit <sup>2</sup> (°C)	Air Entering Indoor Unit <sup>2</sup> (°C)	Compressor Speed <sup>3</sup>	Indoor Airflow <sup>4</sup>
Cooling Mode				
T <sub>3,Full</sub>	46.0 / 24.0 <sup>5,6</sup>	29.0 / 19.0	Full <sub>C</sub> <sup>8</sup>	Full <sub>C</sub>
T <sub>4,Full</sub>	48.0 / 24.0 <sup>5,6</sup>	26.6 / 19.4	Full <sub>C</sub> <sup>8</sup>	Full <sub>C</sub>
T <sub>1,Full</sub>	35.0 / 24.0 <sup>5,6</sup>	27.0 / 19.0	Full <sub>C</sub>	Full <sub>C</sub>
T <sub>1,Int</sub>	35.0 / 24.0 <sup>5,6</sup>	27.0 / 19.0	Int <sub>C</sub>	Int <sub>C</sub>
T <sub>1,Low</sub>	35.0 / 24.0 <sup>5,6</sup>	27.0 / 19.0	Low <sub>C</sub>	Low <sub>C</sub>
B <sub>Full</sub>	27.8 / 18.3 <sup>5,6</sup>	26.7 / 19.4	Full <sub>C</sub>	Full <sub>C</sub>
B <sub>Low</sub>	27.8 / 18.3 <sup>5,6</sup>	26.7 / 19.4	Low <sub>C</sub>	Low <sub>C</sub>
C <sub>Full</sub>	27.8 / 14.4 <sup>5,6</sup>	26.7 / 13.9 <sup>7</sup>	Full <sub>C</sub>	Full <sub>C</sub>
C <sub>Low</sub>	27.8 / 14.4 <sup>5,6</sup>	26.7 / 13.9 <sup>7</sup>	Low <sub>C</sub>	Low <sub>C</sub>
D <sub>Full</sub>	27.8 / 14.4 <sup>5,6</sup>	26.7 / 13.9 <sup>7</sup>	Full <sub>C</sub>	Full <sub>C</sub> <sup>9</sup>
D <sub>Low</sub>	27.8 / 14.4 <sup>5,6</sup>	26.7 / 13.9 <sup>7</sup>	Low <sub>C</sub>	Low <sub>C</sub> <sup>9</sup>
E <sub>Int</sub>	30.6 / 20.6 <sup>5,6</sup>	26.7 / 19.4	Int <sub>C</sub>	Int <sub>C</sub>
F <sub>Low</sub>	19.4 / 11.9 <sup>5,6</sup>	26.7 / 19.4	Low <sub>C</sub>	Low <sub>C</sub>
G <sub>Low</sub>	19.4 / 14.4 <sup>5,6</sup>	26.7 / 13.9 <sup>7</sup>	Low <sub>C</sub>	Low <sub>C</sub>
I <sub>Low</sub>	19.4 / 14.4 <sup>5,6</sup>	26.7 / 13.9 <sup>7</sup>	Low <sub>C</sub>	Low <sub>C</sub> <sup>9</sup>
Cooling Mode Operation Tests				
Voltage Tolerance	35.0 / 23.9 <sup>6</sup>	26.7 / 19.4	Full <sub>C</sub>	Full <sub>C</sub>
Low Temperature	19.4 / 13.9	19.4 / 13.9	Full <sub>C</sub>	Full <sub>C</sub>
Insulation Efficiency	26.7 / 23.9	26.7 / 23.9	Full <sub>C</sub>	Full <sub>C</sub>
Condensate Disposal	26.7 / 23.9	26.7 / 23.9	Full <sub>C</sub>	Full <sub>C</sub>
Extra High Maximum Operation (Optional)	52.0 / 31.0	26.7 / 19.4	Full <sub>C</sub> <sup>8</sup>	Full <sub>C</sub>



AHRI STANDARDS REFERENCED IN ASHRAE 90.1

NORMATIVE STANDARDS

ASHRAE 90.1 - SECTION 12

Normative Table Lists 18 AHRI Standards. These include but not limited to:  
AHRI 210/240 (DX Splits < 5.4 RT)  
AHRI 340/360 ( DX Units > 5.4 RT)  
AHRI 1230 VRF Systems  
AHRI 550/590 Chillers

4.1.7 Definitions:  
Normative appendices are considered to be integral parts of the mandatory requirements of ASHRAE 90.1

MANDATORY PROVISIONS

ASHRAE 90.1 - HVAC SECTION 6.4

Mandatory Minimum SEER  
Rating and Operating Conditions as per AHRI Std.  
Tables 6.8 List of Equipment and Respective AHRI Std.

6 Heating, Ventilating, and Air Conditioning

Table 6.8.1-1 Electrically Operated Unitary Air Conditioners and Condensing Units—  
Minimum Efficiency Requirements

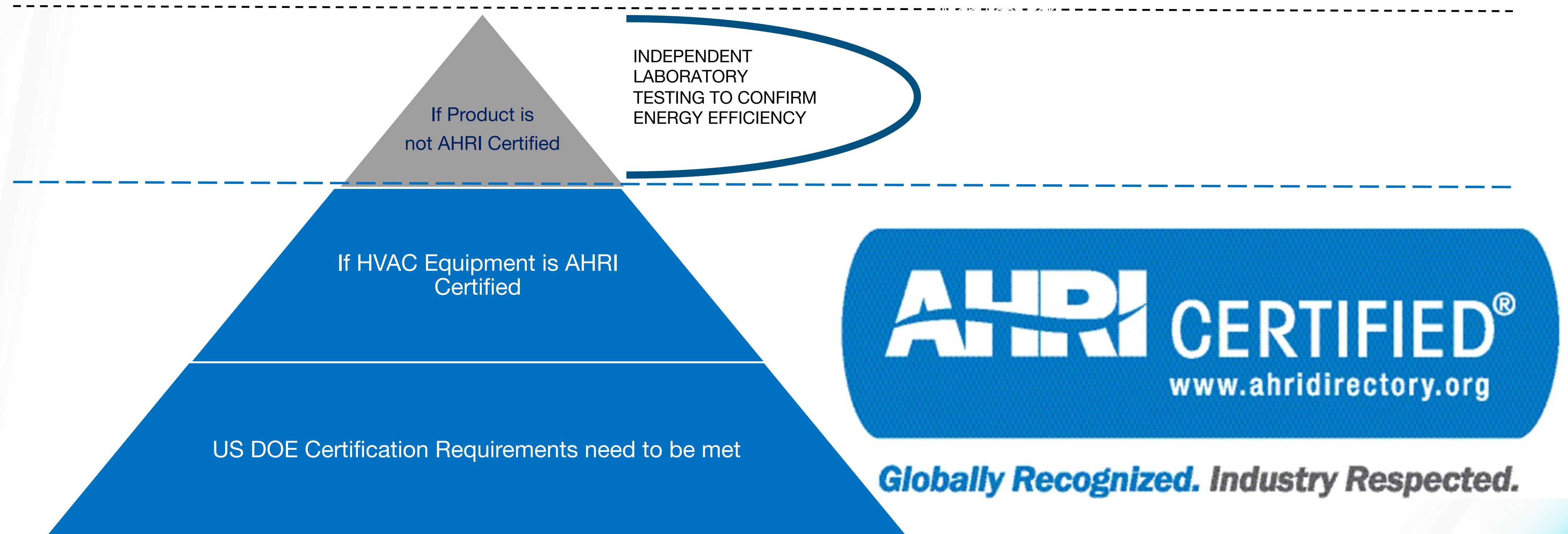
Equipment Type	Size Category	Heating Section Type	Subcategory or Rating Condition	Minimum Efficiency	Test Procedure <sup>a</sup>
Air conditioners, air cooled	<65,000 Btu/h <sup>b</sup>	All	Split system, three phase	13.0 SEER	AHRI 210/240
			Single package, three phase	14 SEER	



## ASHRAE 90.1 MANDATORY PROVISION:

### SECTION 6.4.1.4 VERIFICATION OF EQUIPMENT EFFICIENCY

If Selected Equipment is covered by Certification Programs with Provisions for Verification & Challenge of Equipment Efficiency then :





# **3 AHRI Certification Program**





# AHRI Certification Program

HVAC INDUSTRY'S 65+ YEARS GOLD STANDARD

## “AHRI CERTIFIED” IS NOT TO BE CONFUSED WITH ”RATED AS PER AHRI STD”

“ Rated as per “ essentially means that claimed performance is @ operating temperatures referred to in the AHRI Standard

It **DOES NOT MEAN** compliance to Standards

There **IS NO** Independent Verification of Claim

There **ARE NO** Clear Test Methods or Basis of Calculation

It **IS NOT** Possible to fairly or accurately compare suppliers performance

### CONCLUSION

MANY SUPPLIERS CLAIM “**RATED AS PER AHRI**”  
**IT DOES NOT MEAN THE PRODUCT IS CERTIFIED BY AHRI**

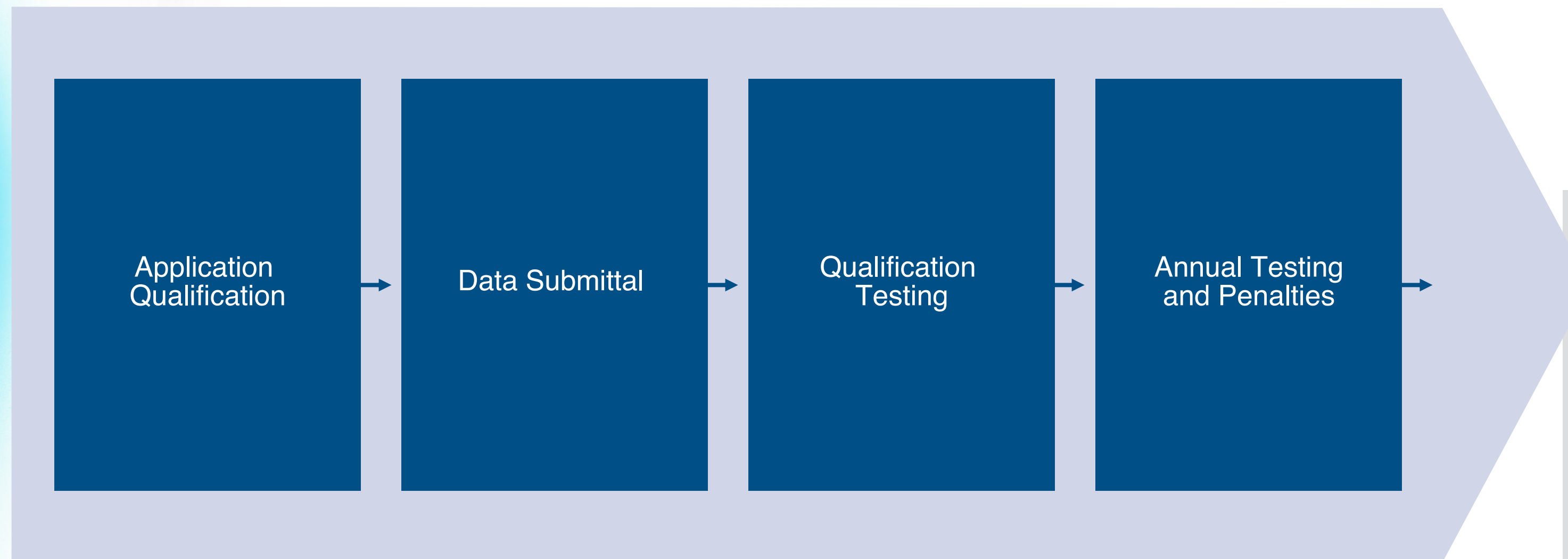


# AHRI Certification Program

HVAC INDUSTRY'S 65+ YEARS GOLD STANDARD

## RIGOROUS CERTIFICATION PROGRAM

### CERTIFICATION PROCESS STAGES



*Globally Recognized. Industry Respected.*

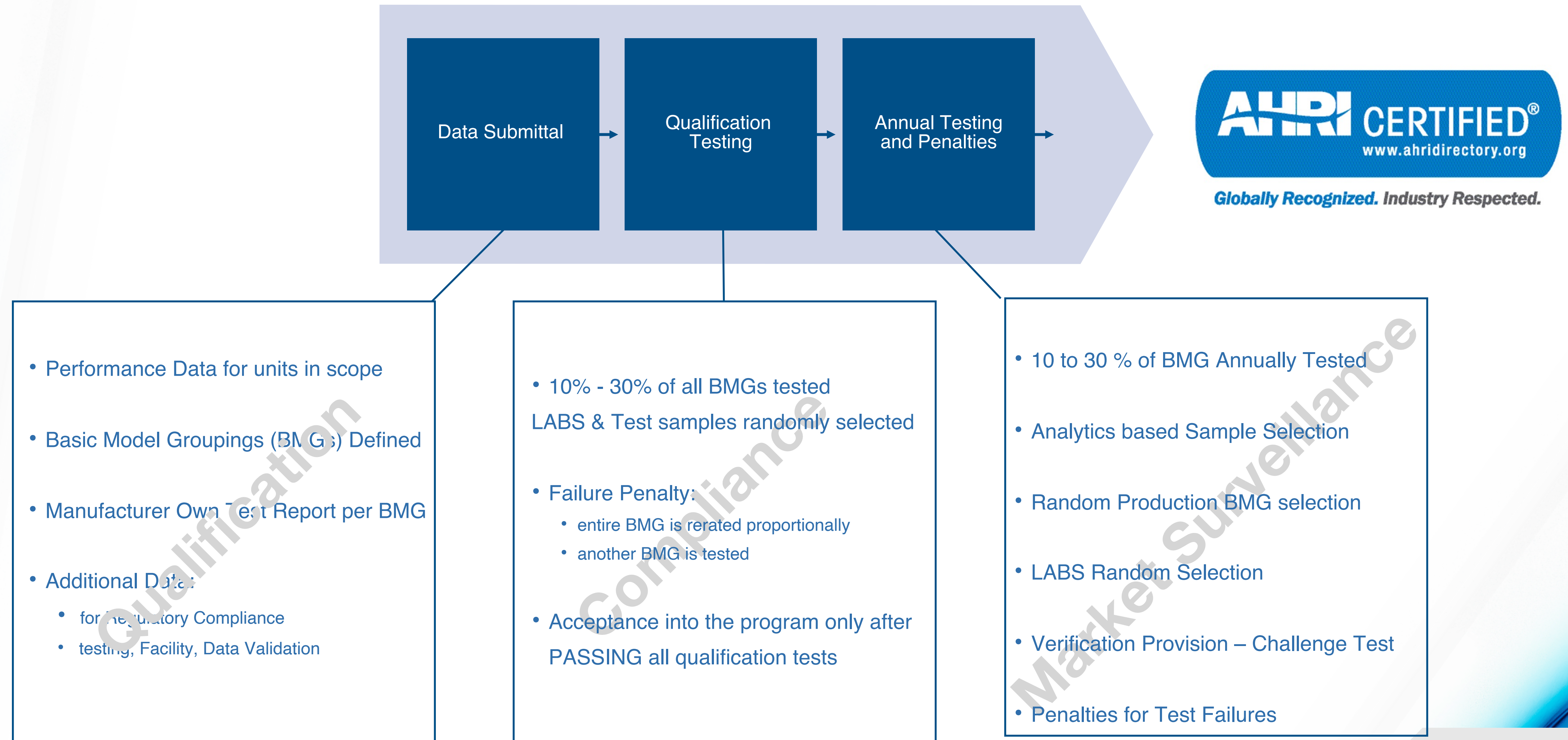
- ☒ Conforms to standard
- ☒ Subject to rigorous and continuous testing
- ☒ Manufacturers' performance ratings independently measured
- ☒ Third-party verified
- ☒ All products within program scope certified
- ☒ Provides marketplace clarity



# AHRI Certification Program

HVAC INDUSTRY'S 65+ YEARS GOLD STANDARD

## SYSTEMATIC STRINGENT INDUSTRY-DRIVEN CONFORMITY ASSESSMENT PROGRAM



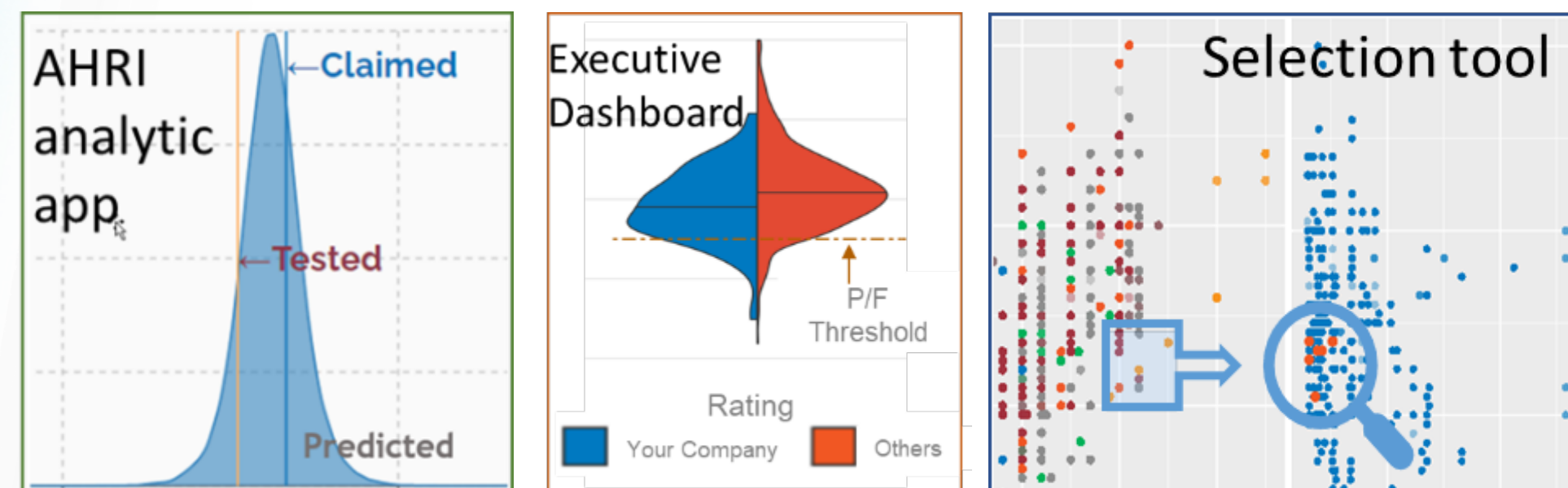


# AHRI Certification Program

HVAC INDUSTRY'S 65+ YEARS GOLD STANDARD

## VERIFICATION & CHALLENGE TEST PROVISIONS - PENALTIES

### AHRI DATA BASE AND ONGOING ANALYTICS



### VERIFICATION AND CHALLENGE PROGRAM PROVISIONS:

Any Certification Program Participant Challenge Testing  
AHRI Selective AD HOC Testing

### ESCALATING PENALTIES FOR TEST FAILURES:

Mandatory Re-rates  
Additional Penalty Tests  
Additional Annual Tests  
Monetary Penalty  
Mandatory C Level Meeting  
DE-LISTING



# AHRI Certification Program

HVAC INDUSTRY'S 65+ YEARS GOLD STANDARD

## MOST DEMANDING LABORATORY ACCREDITATION IN HVAC INDUSTRY:

### ISO/IEC 17025

- Quality management similar to ISO 9001
- Testing Lab in any industry (ex Tobacco )
- Compliance as per lab's own quality system
- Auditors w no HVACR industry experience
- Audit cycle depends on auditor approach

### AHRI QUALIFIED LABS MEET

### ISO 17025 & AHRI 140



2019 Standard for  
**Performance Rating of  
Air-conditioning and Heating  
Equipment Test Stands**



### AHRI 140

- Written Specific for HVACR industry
- Technical standard used to assess and qualify labs for HVACR testing
- Compliance per approved industry standard
- AHRI assigned auditors/industry professionals
- Annual audits



# AHRI Certification Program

HVAC INDUSTRY'S 65+ YEARS GOLD STANDARD

## EXPANDING LABORATORY FOOTPRINT ACROSS THE GLOBE



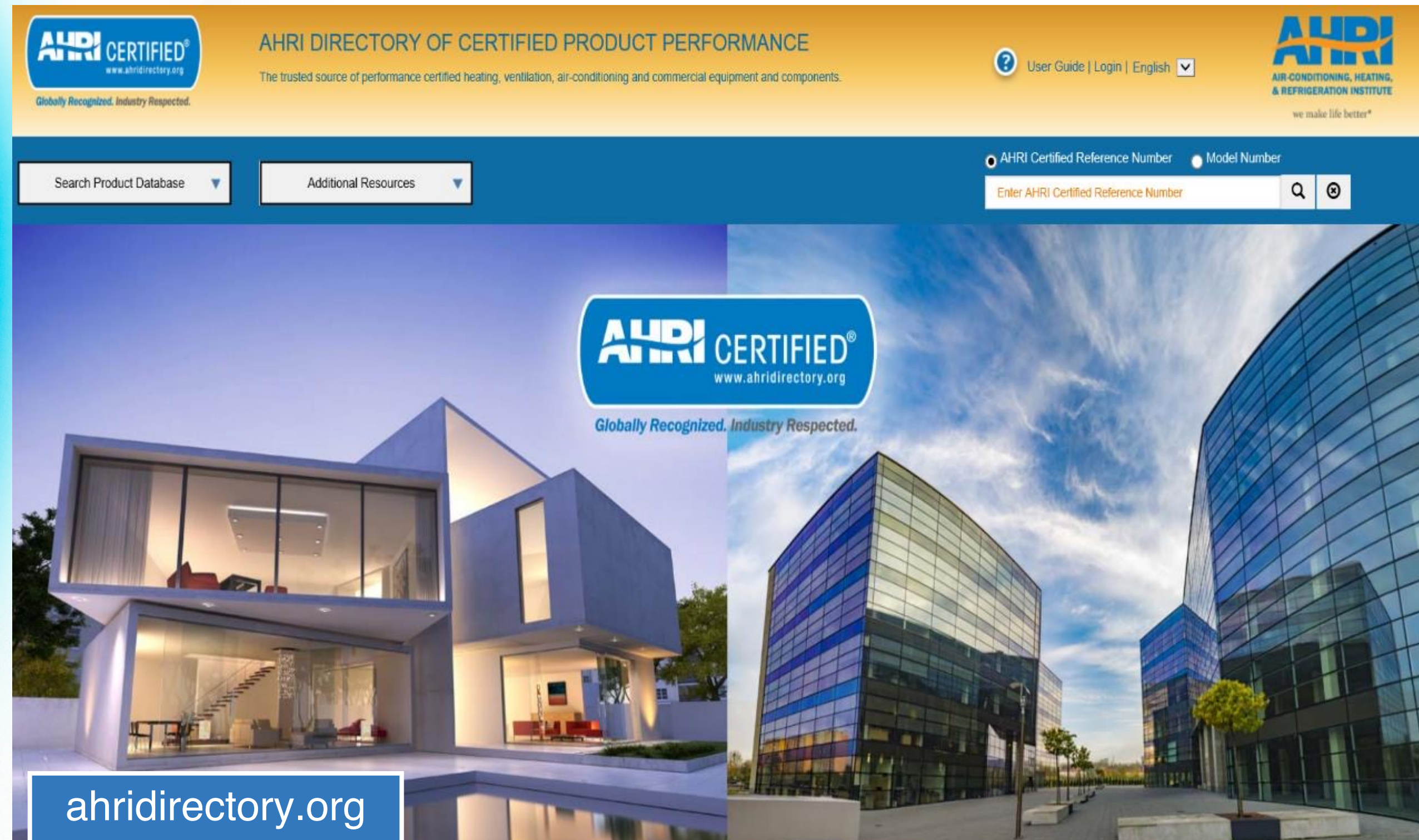
- Air Movement and Control Association (AMCA) – USA
- Canadian Standards Association (CSA) – USA
- CETIAT - France
- DMT GmbH & CO KG - Germany
- Heat Transfer Research Inc., TX USA
- Hefei General Machinery & Electrical Product Inspection (GMPI) - China
- Intertek ( NY – OH – TX, USA)
- Underwriters Laboratory ( UL ) – USA
- Underwriters Laboratory ( UL ) - Middle East
- Lucerne University ( HSLU ) Switzerland



# AHRI Certification Program

HVAC INDUSTRY'S 65+ YEARS GOLD STANDARD

## AHRI DIRECTORY : GLOBAL PUBLIC FREE ACCESS



- Download certified performance ratings: residential, commercial, and industrial products
- Real-time data and on-demand current Certificates print out.
- Quick search functions
- Gives End User / Designer the Confidence in certified high efficiency products and ability to confirm certification and compare product performance.



## HVAC INDUSTRY'S 65+ YEARS GOLD STANDARD

## AHRI DIECTORY AS A TOOL





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# Thank You

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**WEBINAR ON**  
**Guidance to Increasing Compliance Levels**  
**Across the Varying Regulations Affecting**  
**HVAC Systems in the MENA Region**  
**BY**  
**CLEAN ENERGY BUSINESS COUNCIL**



# **How companies can benefit from the ever-changing legislations**

By Mrs. Habiba Al Mar'ashi

EEG Chairperson

30<sup>th</sup> November 2021



# How has the pandemic effected us?





# **The HVAC legislations updates which companies need to look out for are:**

- European Commission Regulation EU 2016/2281
- 2021 International Energy Conservation Code
- The European "Right to Repair"
- Dubai Al Sa'faat Green Building System



# How to benefit from these legislations

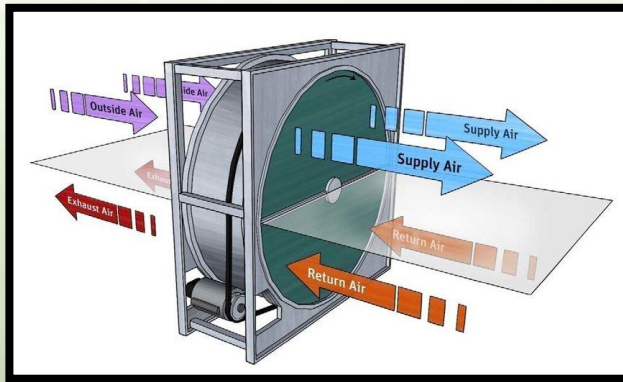
**Cost-leadership  
strategy**

**The differentiation  
strategy**

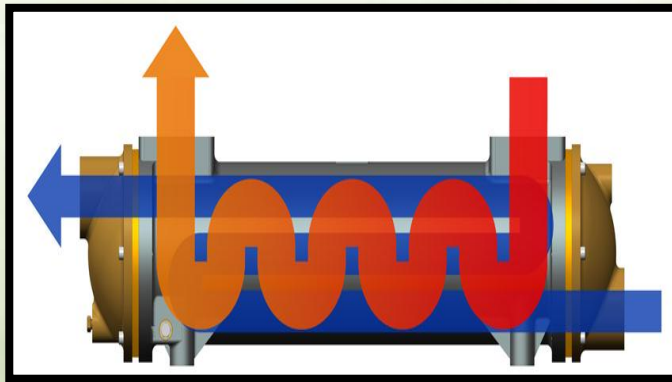
**The focus  
strategy**



# Keeping up with the technology



Heat recovery wheels



Counter flow heat exchangers



Fan array systems





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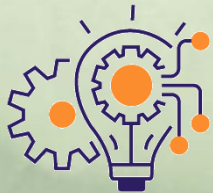
# Getting ahead on the competition using legislations



**Investment in understanding legislations**



**Recruit well**



**Welcome innovation**



**Choose products wisely**





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# Conclusion





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# Thank you!

**Together for a Better Environment®**

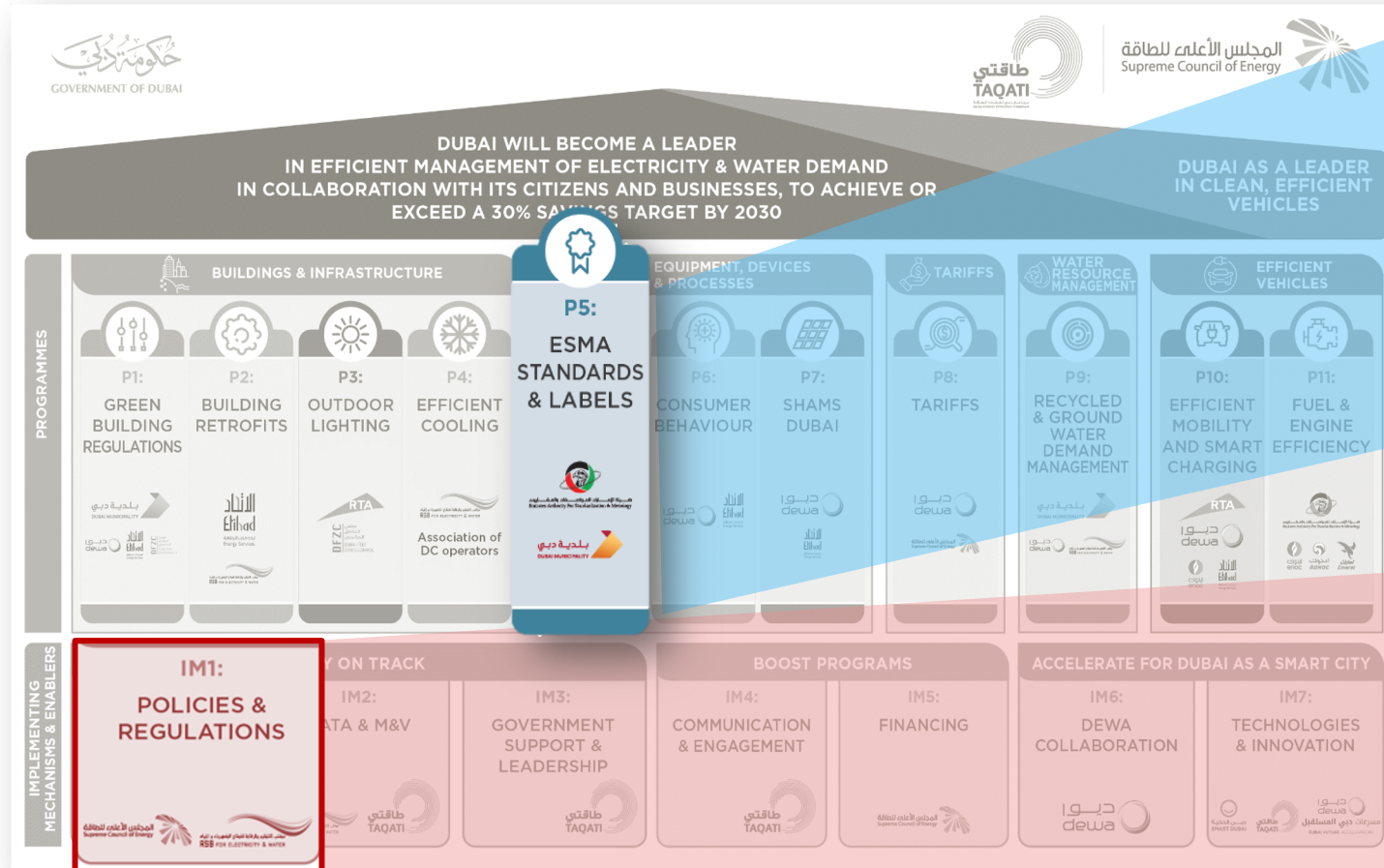
**Tel: +971 4 344 8622 | Fax: +971 4 344 8677**

**Email: [eeg@emirates.net.ae](mailto:eeg@emirates.net.ae), Website: [www.eeg-uae.org](http://www.eeg-uae.org)**

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# Policies and regulations are key enablers to energy efficiency transition and to reaching energy efficiency targets but require robust compliance to be effective

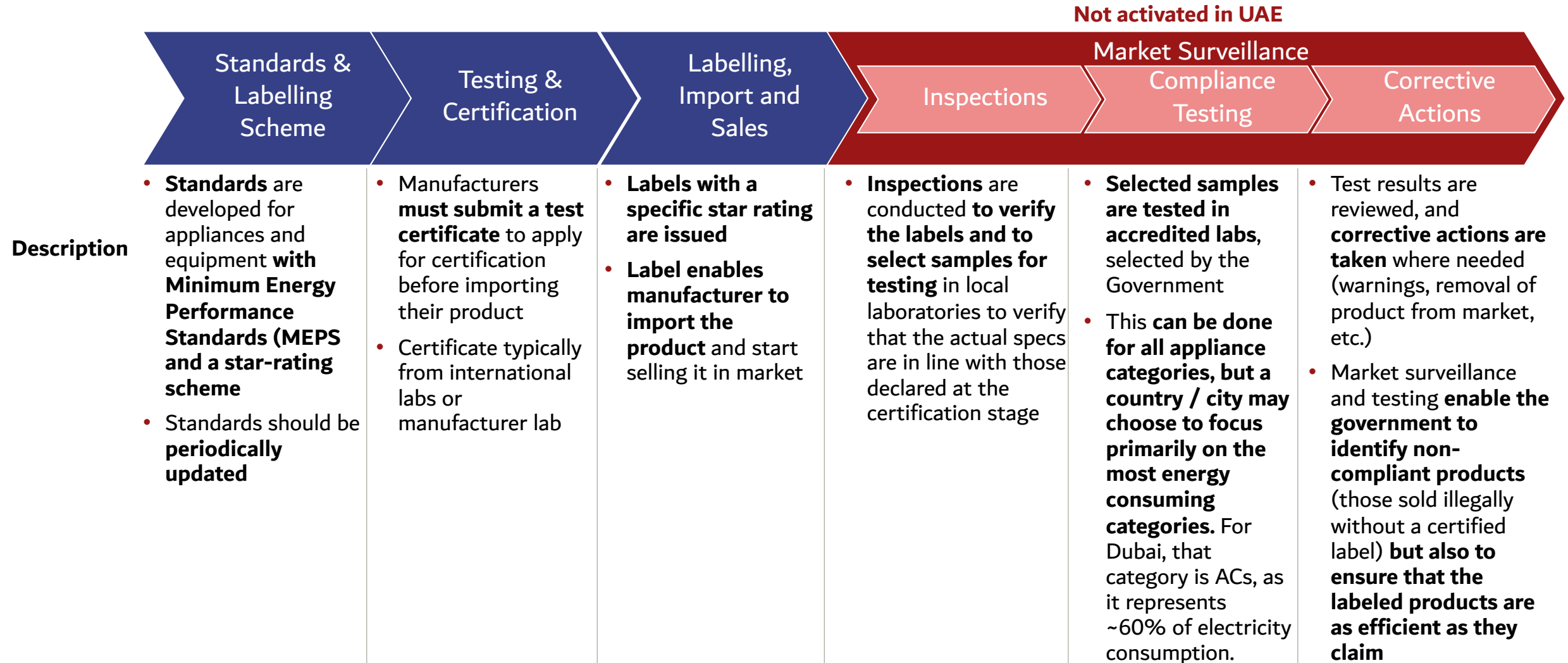


- One of the key DSM programs is Standards and Labels for Appliances and Equipment.
- The standards cover key appliance categories such as ACs, Washing Machines and Dryers, Refrigerators, Water Fixtures, etc.

- Policies and regulations are key enablers to energy efficiency transition and to reaching energy efficiency targets
- However, even the most robust policies and regulations can only be effective if proper compliance and implementation mechanisms are put in place



## Market surveillance and testing are key to ensuring that products in the market meet the standards set through regulations







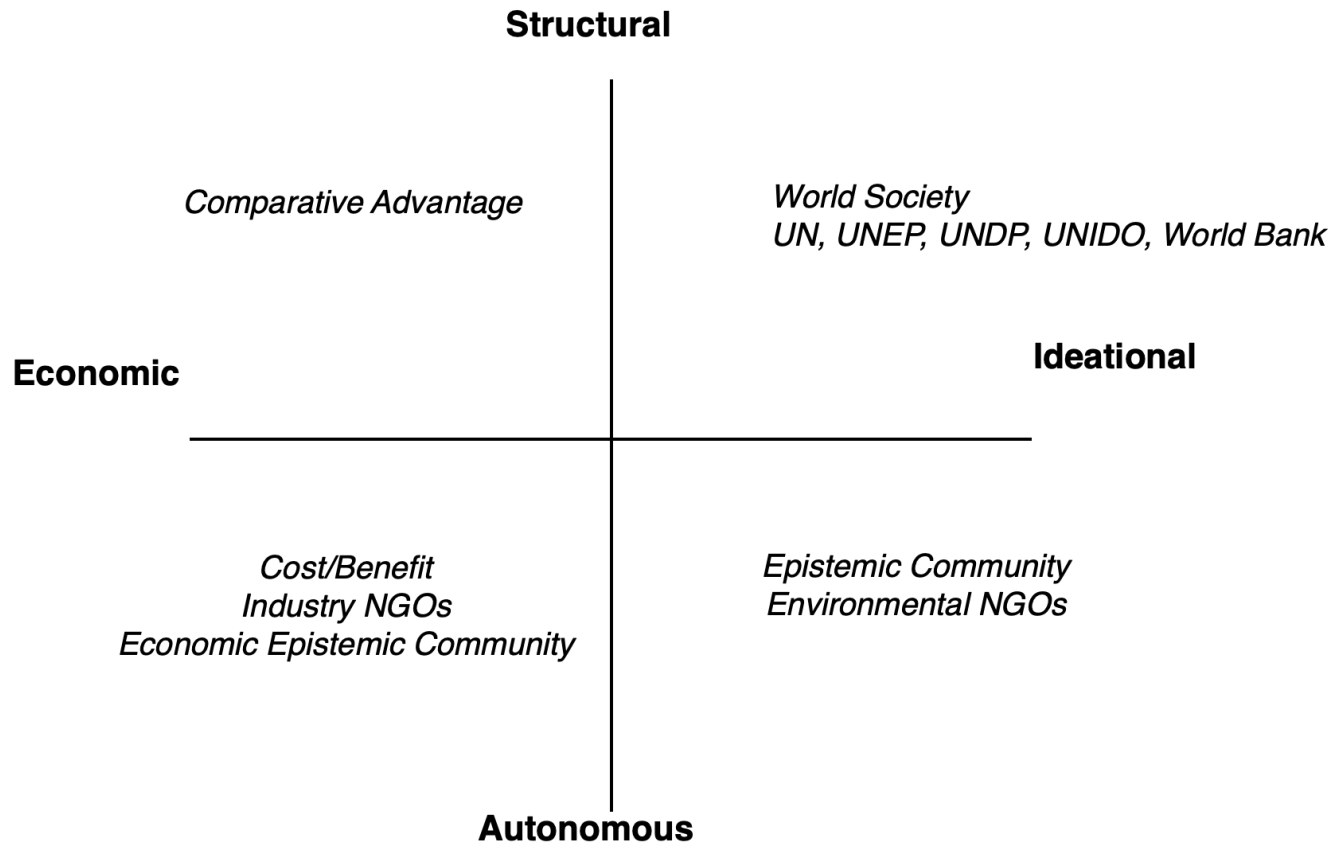
## HVAC Energy Efficiency Regulations in the GCC



**Maher Mousa**  
Director of Product Management and Compliance  
Al Salem Johnson Controls



# Regulatory framework



Source: Mousa, M. (2015) 'The Impact of Business Interests on Amending Montreal Protocol to Manage HFCs in HVACR Industries'  
Adopted from: Drezner, D. W. (2001) 'Globalization and Policy Convergence', International Studies Association



# The GCC

## Drivers

Energy / water scarcity & cost  
Necessity of HVAC  
Refrigerant/Climate regulations  
Increase local content / Non oil GDP  
Comparative advantage

## Priorities

Energy conservation  
Support local manufacturers (Economy)  
Consumer protection  
Environment/ international agreements  
and legislations

## Challenges

Managing complexity  
Refrigerants safety & efficiency  
Trade laws limitations  
Testing facilities  
Political environments

## Lobbying

MEPS  
Refrigerants  
Standards  
Certification



# Objective

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- Strategize for MEPS + Refrigerants - Montreal Protocol  
evolvment HCFCs ► HFCs ► ► ► ??
- Common ground
- Wise and balanced environmental and energy policy
- Effective implementation and governance
- Where to start?





THANK YOU



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