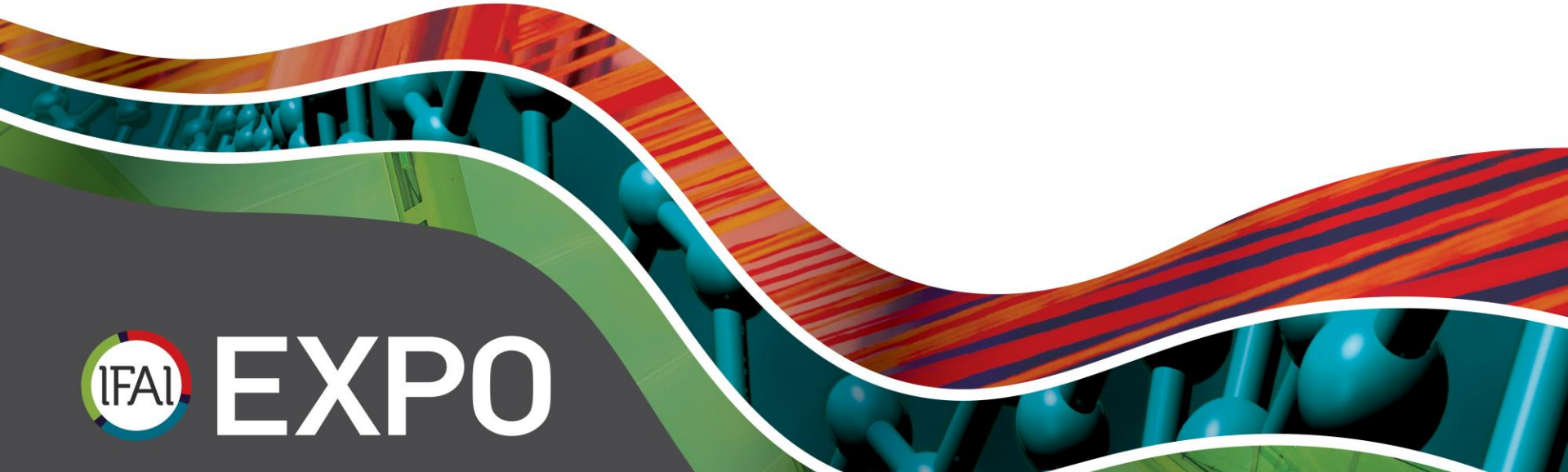
Leveraging Window Attachment Certification: Adding Value and Driving Sales

Erika Burns, Attachments Energy Rating Council (AERC)



Overview

Part I. Background

Part II. What is the Attachments Energy Rating Council?

Part III. Why AERC certification?

Part IV. The Role of Fabrics in the AERC Certification Program

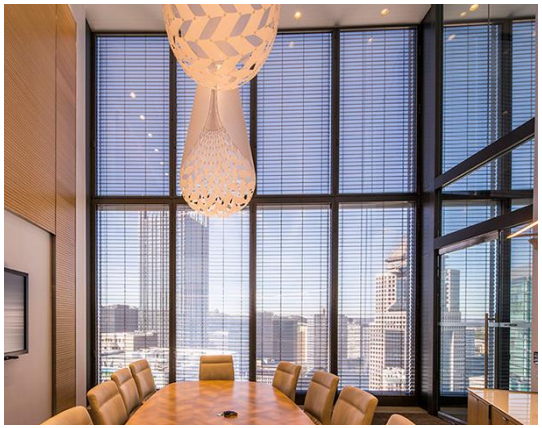
Part V. Getting Involved

Part I. Background

What are Window Attachments?

Interior Shutters

Horizontal Blinds/ Slat Shades



Cellular Shades

Interior Roller Shades

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What are Window Attachments?

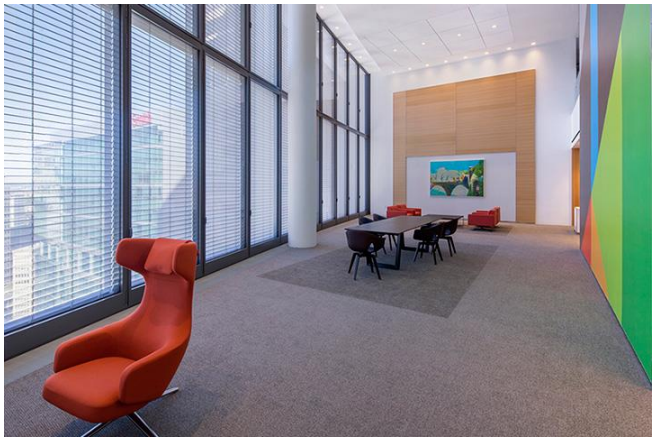
Exterior Storm Windows

Exterior Roller Shades

Exterior Roller Shutters

Awnings

Commercial Applications



Images courtesy of Somfy, Lutron, and Mechoshade.

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Increasing Sales

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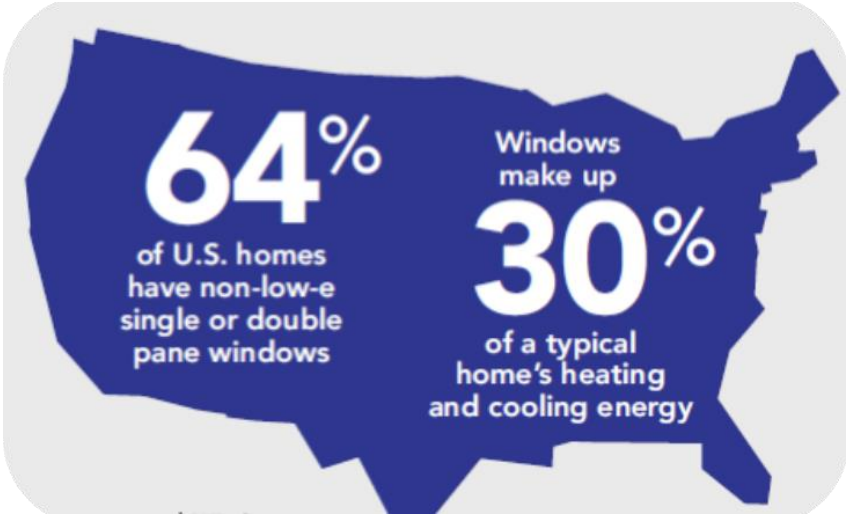
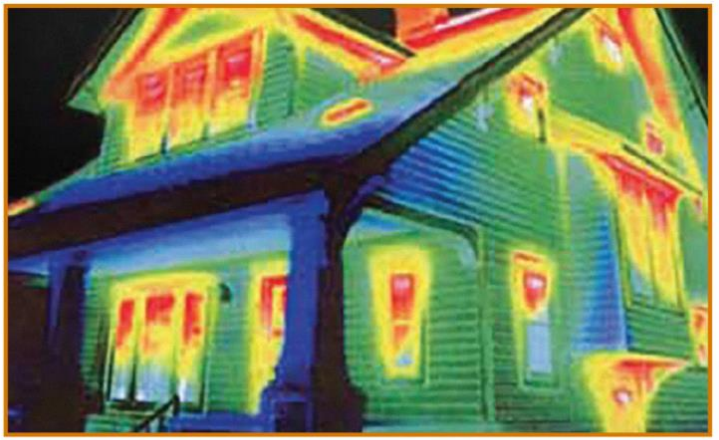
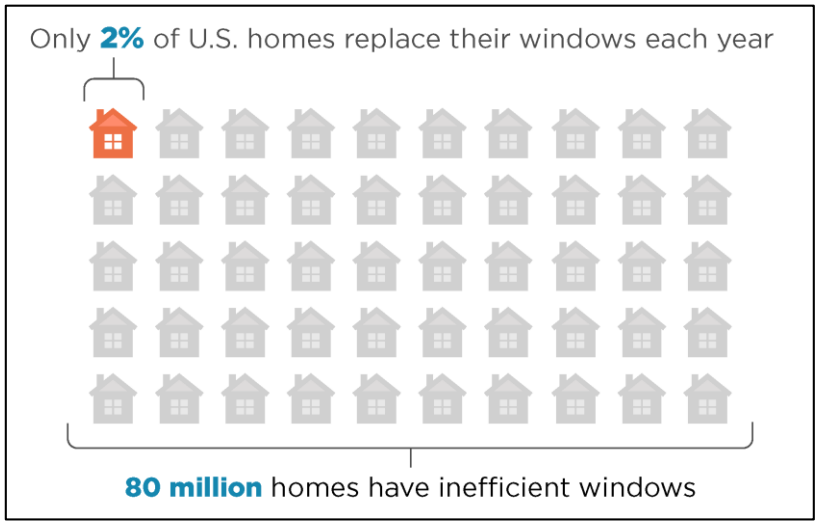
Part II. Introduction to Window Attachments and the Attachments Energy Rating Council

The Problem





Most household heat is lost through the windows and roof.



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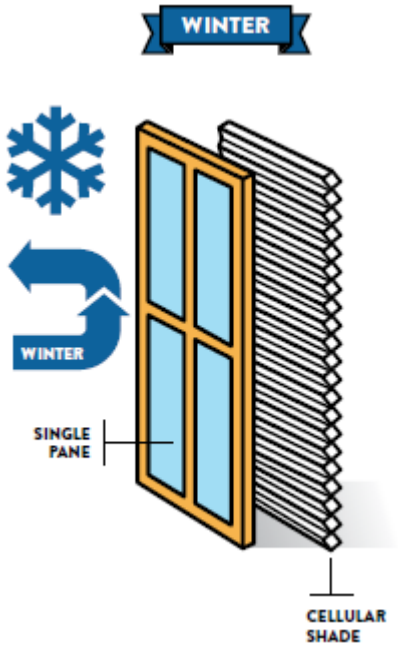
Why is AERC Necessary?

- Window attachments can **save energy**
  - — However, many consumers are unaware of their energy-saving capability
- Consumers have no way to **compare the energy performance** of attachments
- Energy efficiency incentive programs require ratings and energy performance information



Attachments Energy Rating Council
AERC

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What is the AERC?

AERC is an independent, **public interest** organization whose mission is to provide consumers with **credible, relevant, and comparable** information about **window attachments** and their **performance.**

- AERC members include
  - Public Interest Groups
  - National Labs
  - Commercial Labs
  - Product Manufacturers
  - Fabric Manufacturers
  - Utilities

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Phased Ratings Development

Residential Phase 1: Open for certification

- Blinds
- Cellular Shades
- Roller Shades
- Storm Windows
- Solar Screens
- Pleated Shades

Residential Phase 2: Starting in 2019

- Awnings
- Rolling Shutters

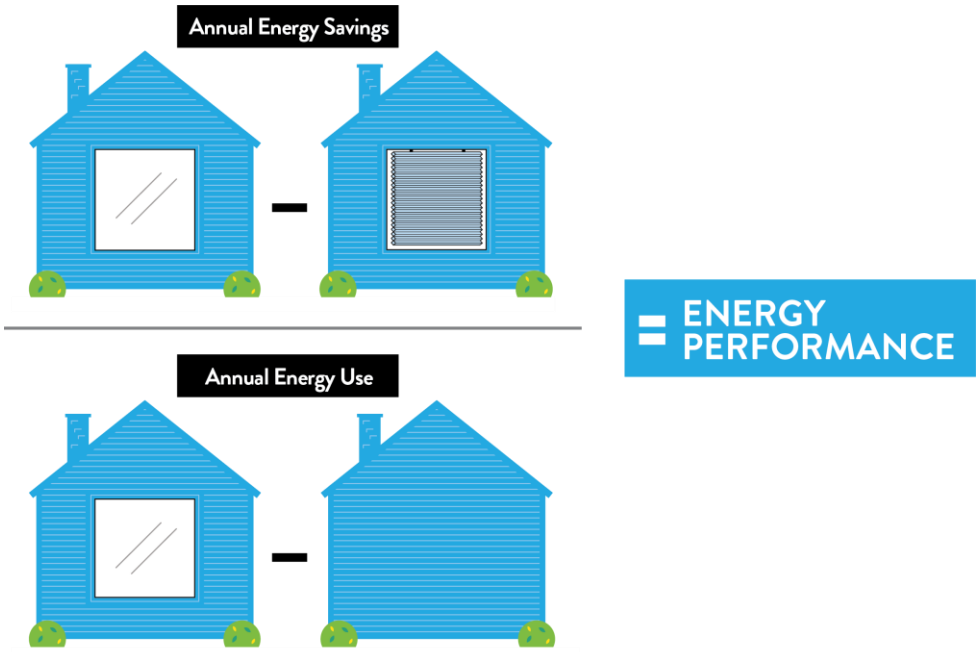
Commercial: TBD

AERC Technical Ratings

- U-Factor
- Solar Heat Gain Coefficient (SHGC)
- Visible Transmittance (VT)
- Air Leakage (as applicable)
- Annual Energy Performance (EP_H, EP_C)
  - Comparative metric
    - Cold climate
    - Warm climate
  - Sole numbers on product label

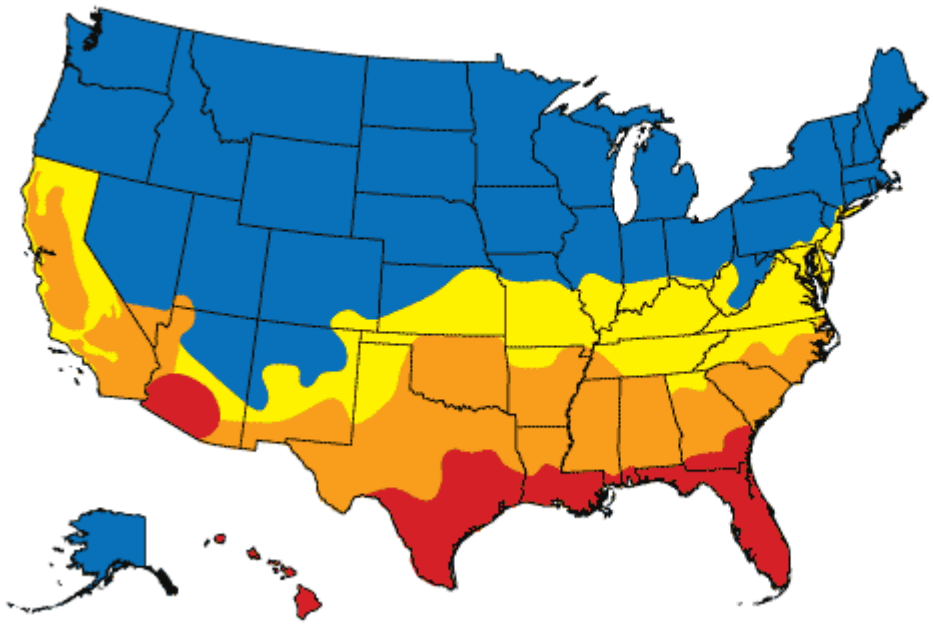
Annual Energy Performance

What happens to a home's energy consumption over the course of a year when you add a window attachment to a window?



Climate Assumptions

- Energy performance varies based on climate
  - Single rating inadequate



Cool climate = Minneapolis, MN

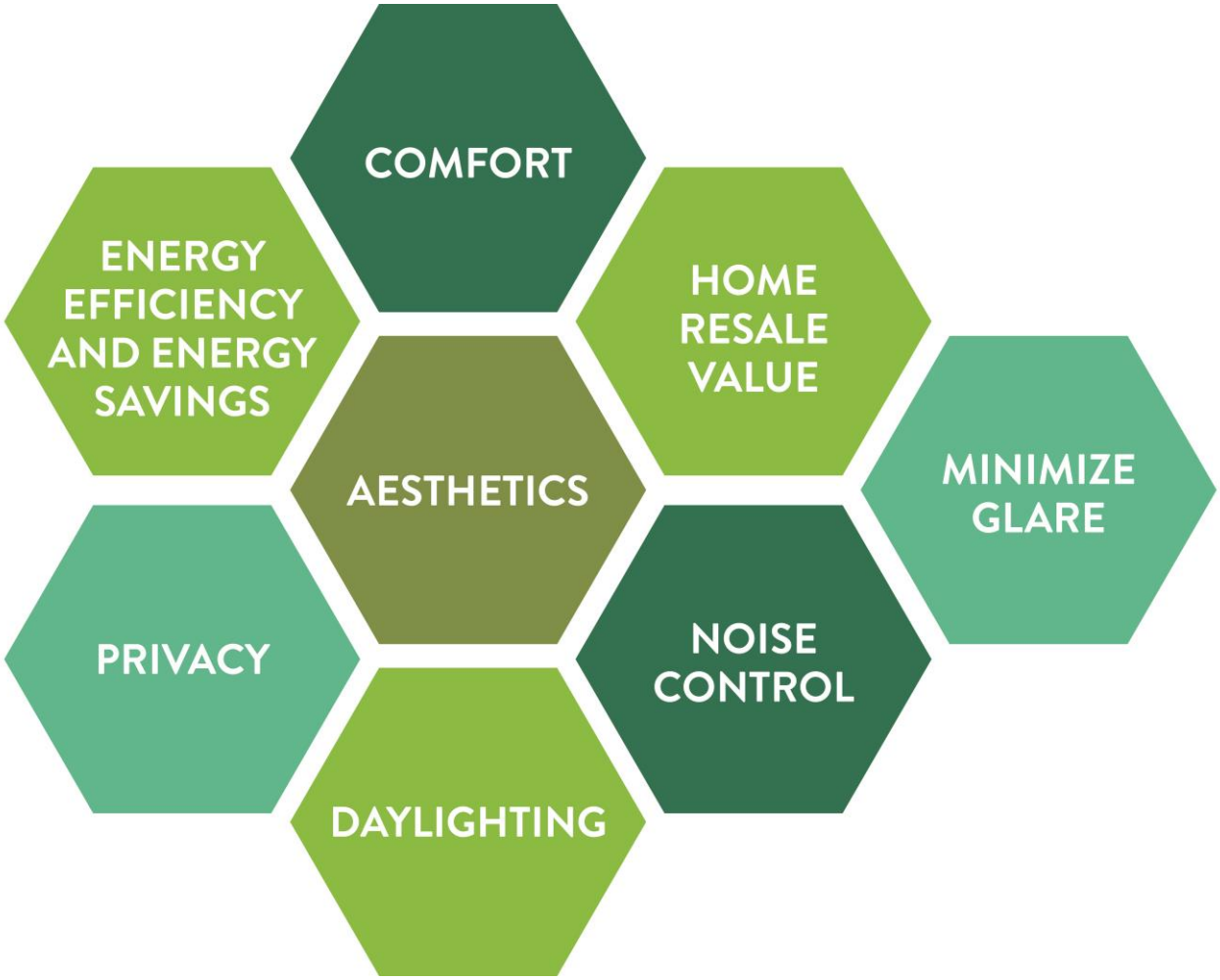
Warm climate = Houston, TX

EP Meaning

EP value	Signifies: The window attachment installed over baseline window
<0	**Use more energy** on an annual basis than if it had no attachment at all
0	**No net impact on the energy performance** of the home on an annual basis
>0 and 100	**Improves the net annual energy performance** of the home
100	**Performance is equivalent to a net zero energy window**
>100	**Net annual energy producer compared to a net zero energy window**

Part III. Why AERC Certification?

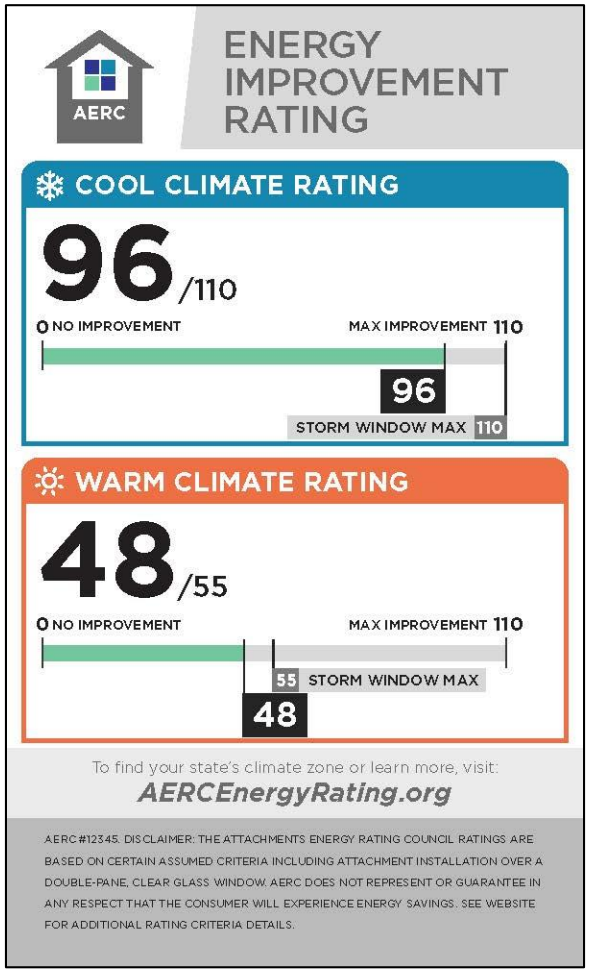
Window Attachments Value

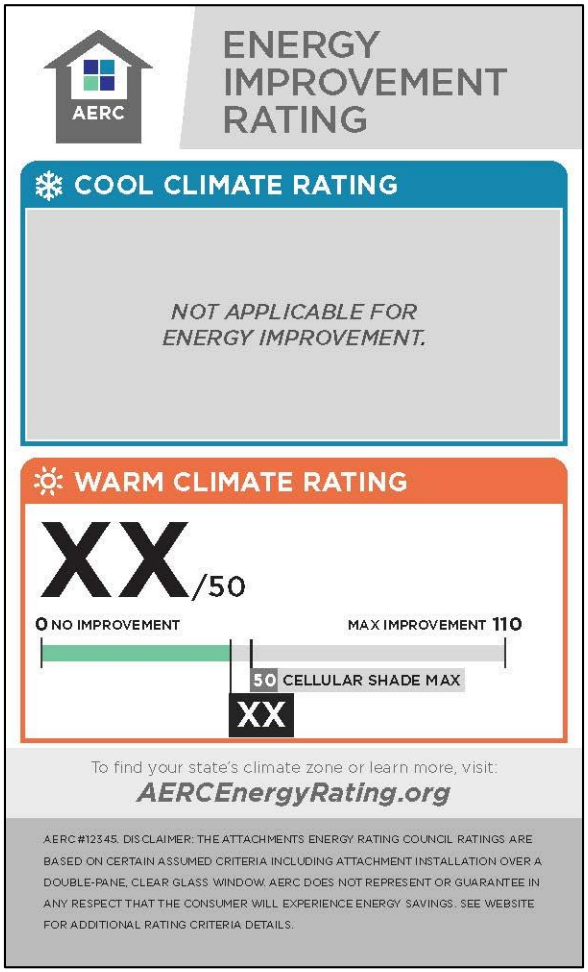


Marketing Appeal: Product Differentiation

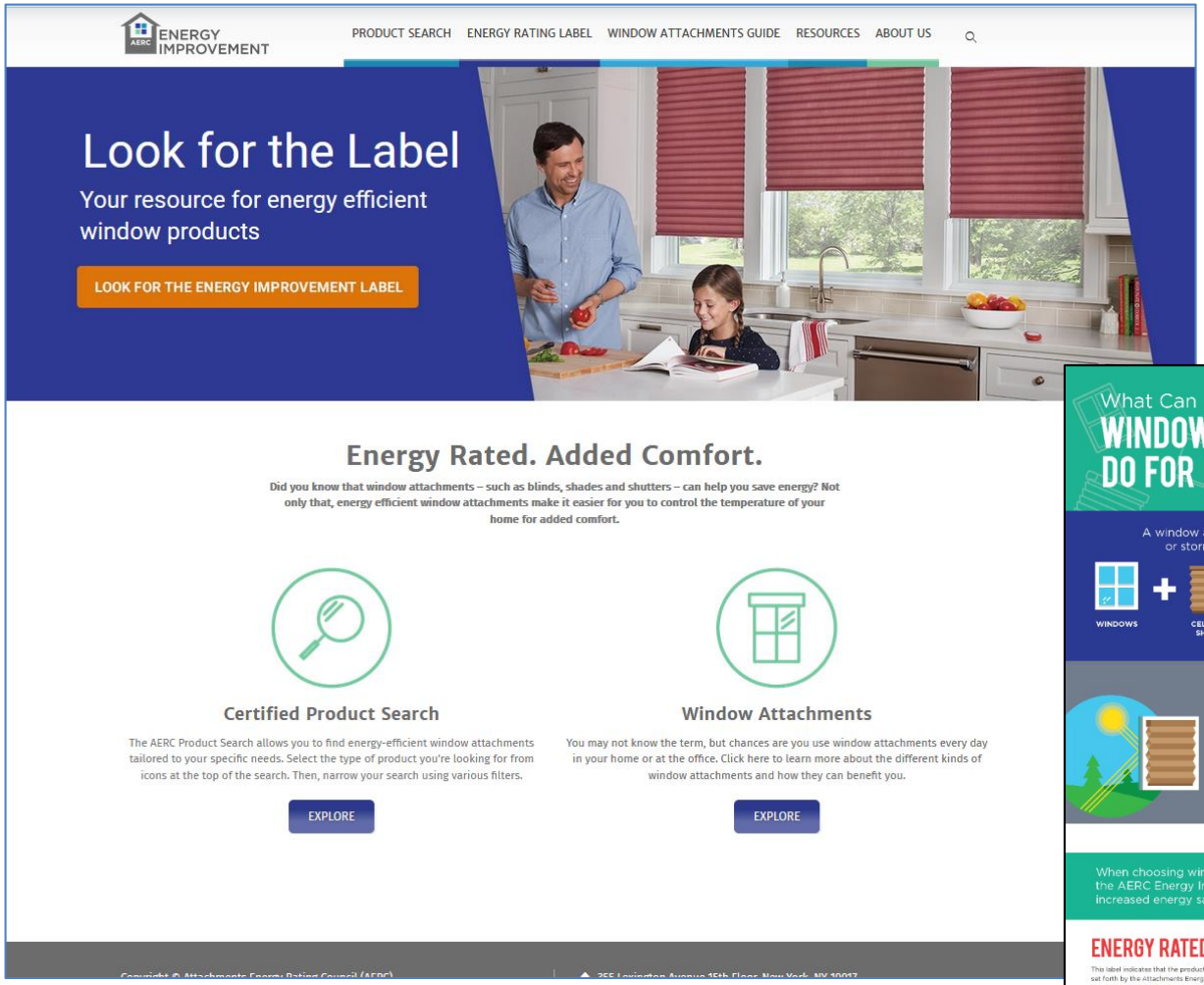
- AERC label differentiates window attachments
  - Third-party certification validates claims
- Generates product performance ratings
  - Enables direct product comparisons

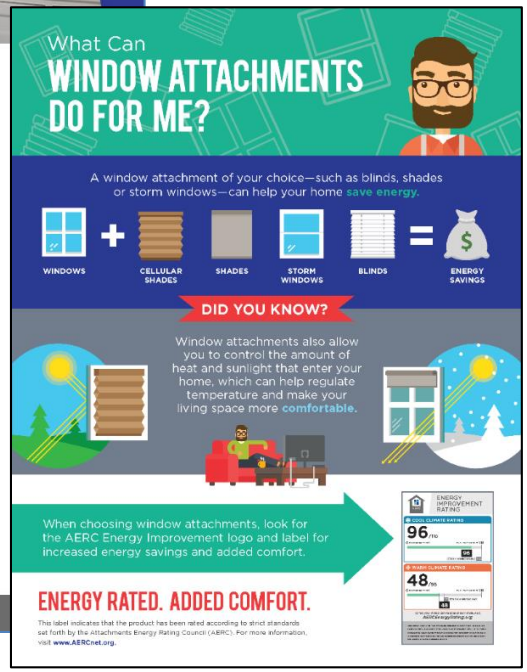
Energy Improvement Rating Label





AERC Certified Products Website





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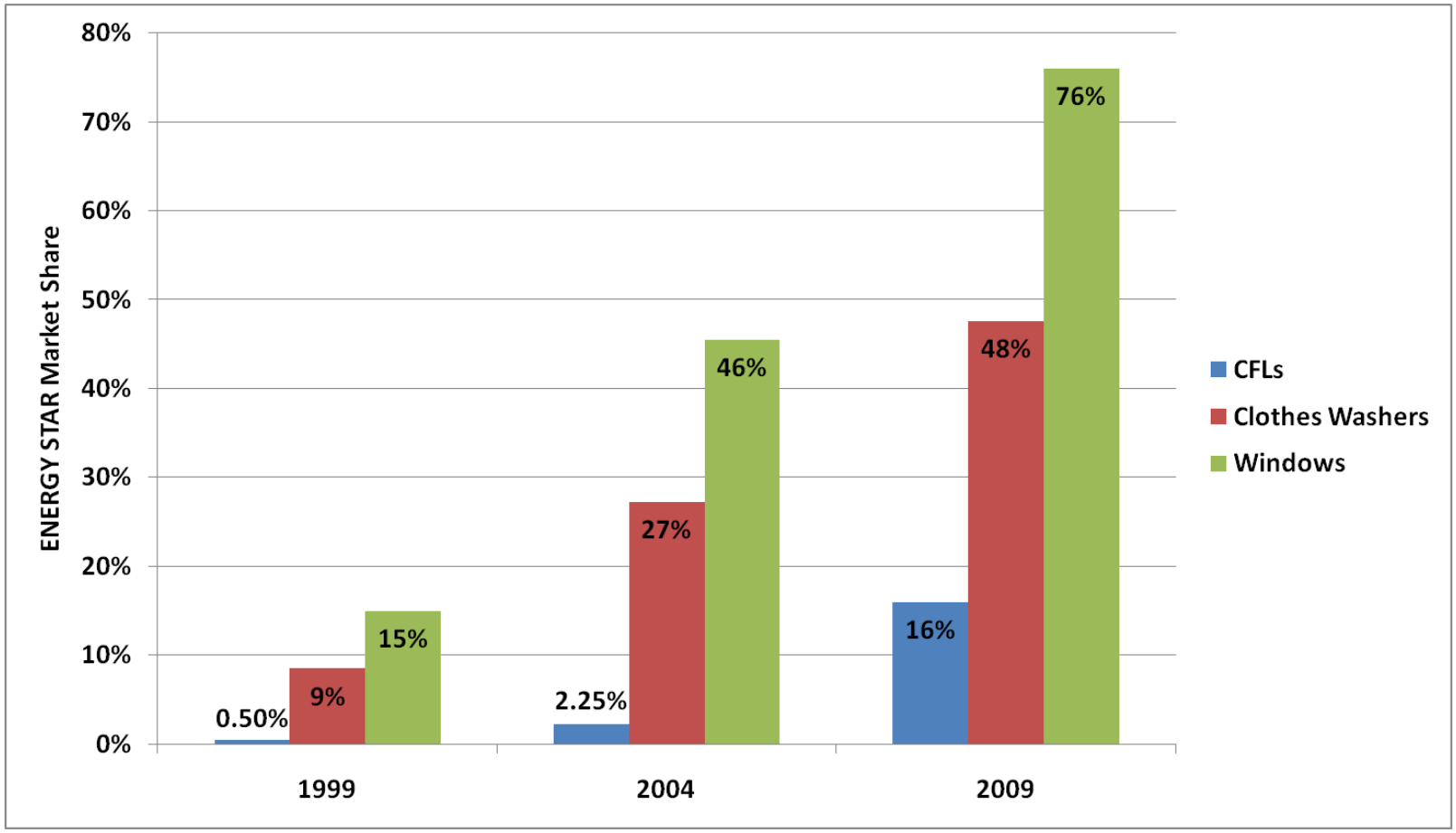
Case Study: ENERGY STAR



ENERGY STAR Clothes Washers

- On average, each year, the **higher price** of ENERGY STAR qualified clothes washers has generated **$1.3 billion in additional revenue for the industry**.

Average Price of Non-Qualified Product	Average Price of ENERGY STAR Qualified Product	Average Price Difference
$496	$904	**+$408**

Prices based on 2010-2011 information.

Utility Incentive Opportunities

- Utilities and efficiency organizations mandated to provide energy efficiency
- Funding from utility bills used to promote efficient products
  - Increase sales and market share
  - Higher-margin products

Larson: Utility-driven Sales

Product type: low-emissivity (low-E) storm windows

- Energy savings demonstrated in field studies
- Cost-effective (savings worth utility $ investment)

Efficiency Vermont and Focus on Energy conducted pilot programs in retail stores

- Customer discounts up to 25% off normal price
- Utilities funded discounts and promotional materials

Low-E Storm Window Utility Pilot Results

Pilot (year)	Overall storm window sales increase	Low-E sales increase	Low-E market share
Efficiency Vermont (2015)	37%	337%	2014 – 22% **2015 – 70%**
focus on energy Partnering with Wisconsin utilities (2017)	9.6%	125%	2016 – 30% **2017 – 62%**

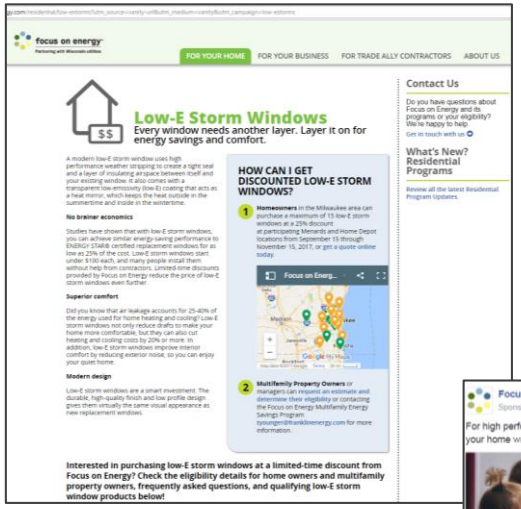
Utility-funded Marketing

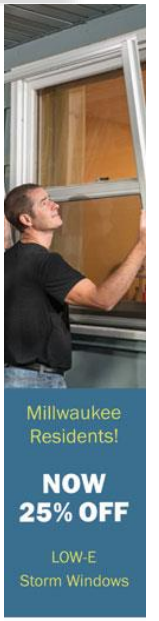
Branding and messaging of product benefits

In-store displays

Utility communications

Digital marketing and social media ads





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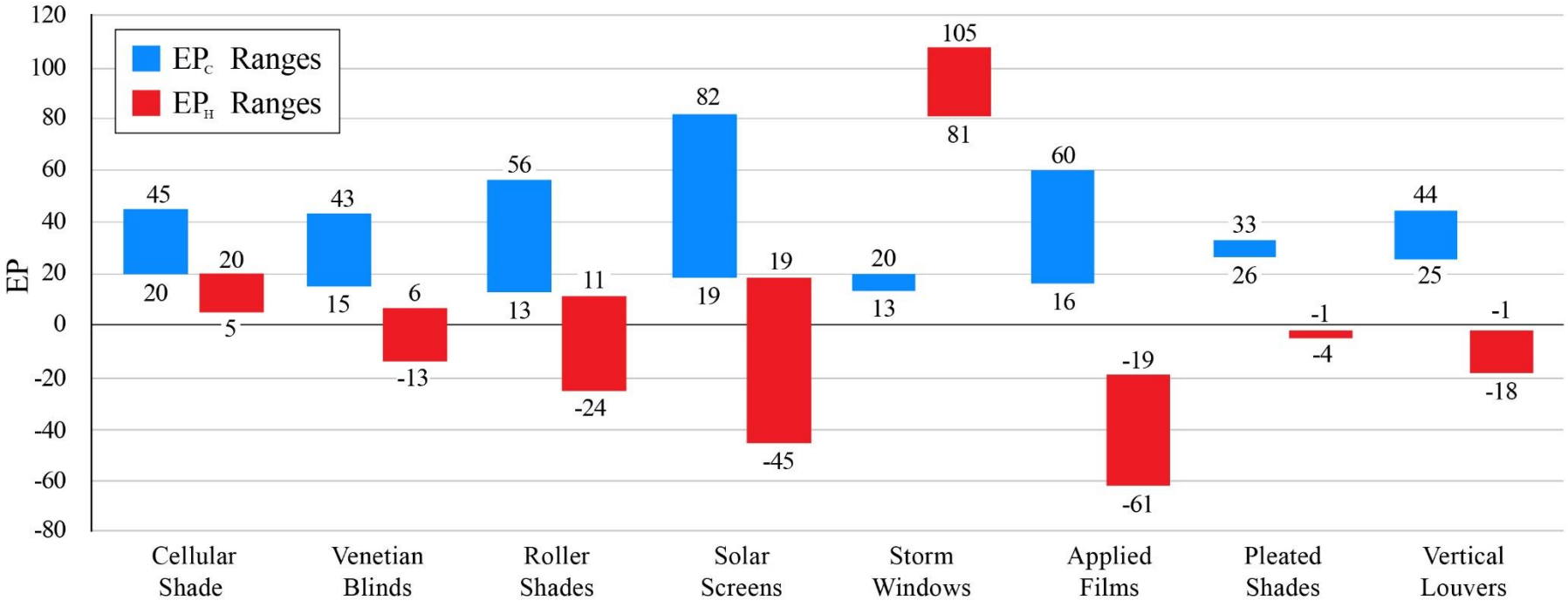
EP by Product Category



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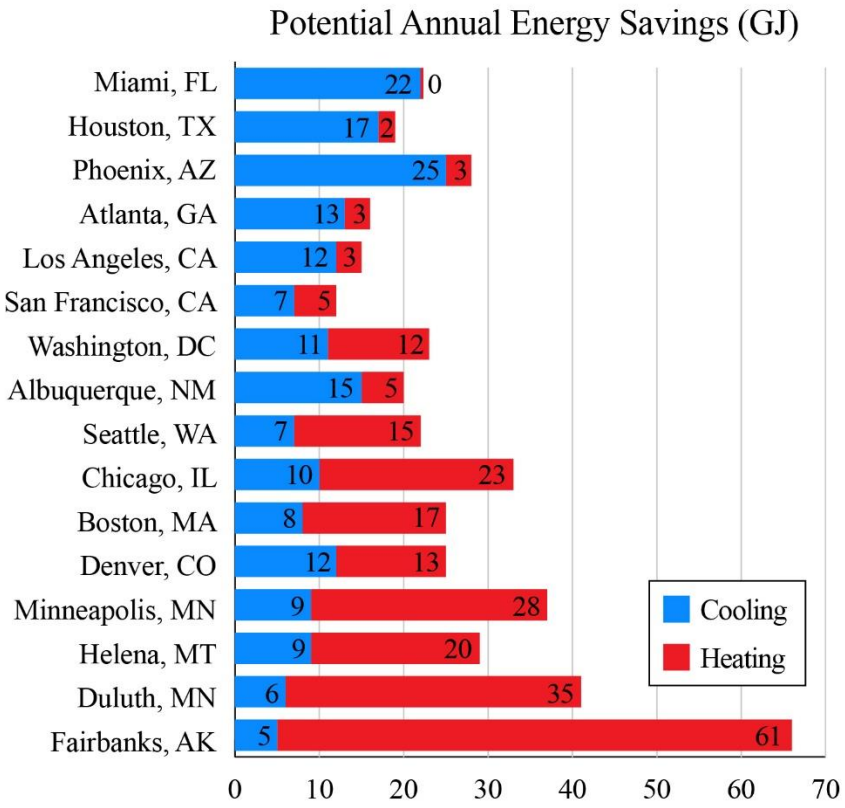
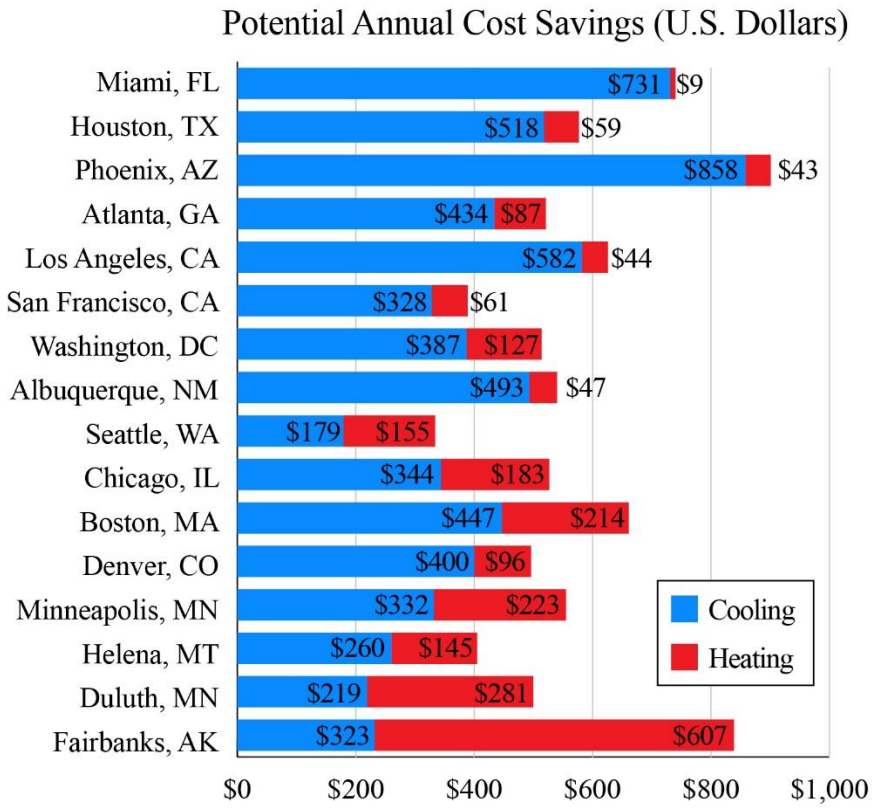
Savings Potential





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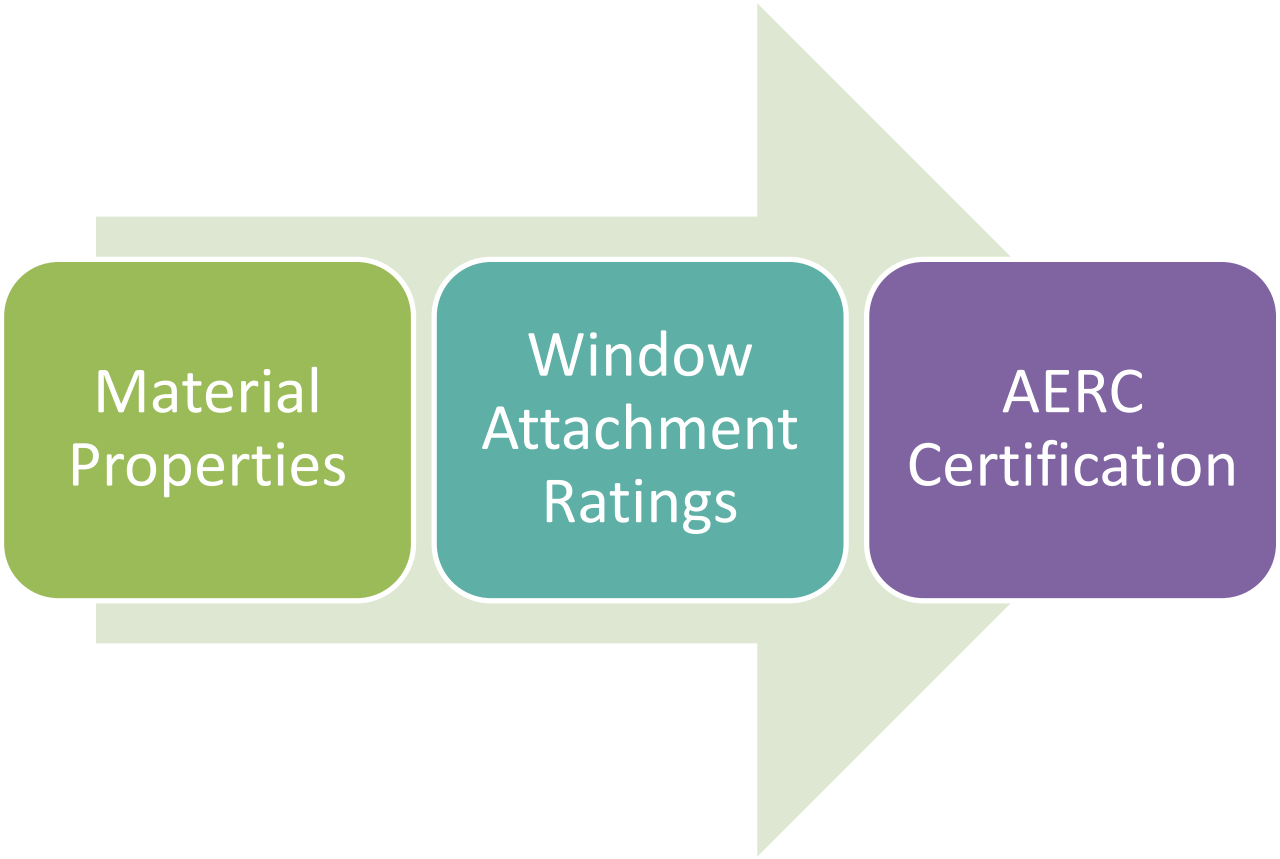
Field Studies

Product type	Location (year)	Baseline window/ house type	Estimated energy savings
Low-e storm windows	Chicago, IL	Single pane, clear glass Single-family detached	19-27% annual heating energy savings ($145-$600)
Low-e storm windows	Richland, WA	Double-pane, clear glass, aluminum frame PNNL Model House	10.5% heating season energy savings 8.0% cooling season energy savings
Cellular shades (triple cell) on optimum operation schedule	Richland, WA	Double-pane, clear glass, aluminum frame PNNL Model house	10.5 ±3.0% heating season and 16.6 ±2.9% for the cooling season *compared to vinyl blinds employing the same operation schedule

Part IV. The Role of Fabrics in the AERC Certification Program

Certification Starts with Fabrics



Role of Fabrics

- Window attachments can only be simulated, rated, and submitted for AERC certification if their materials are:
  - Tested by an **approved test lab** in accordance with AERC program requirements; and
  - Listed in one of the following:
    - Complex Glazing Database (CGDB)
    - International Glazing Database (IGDB)

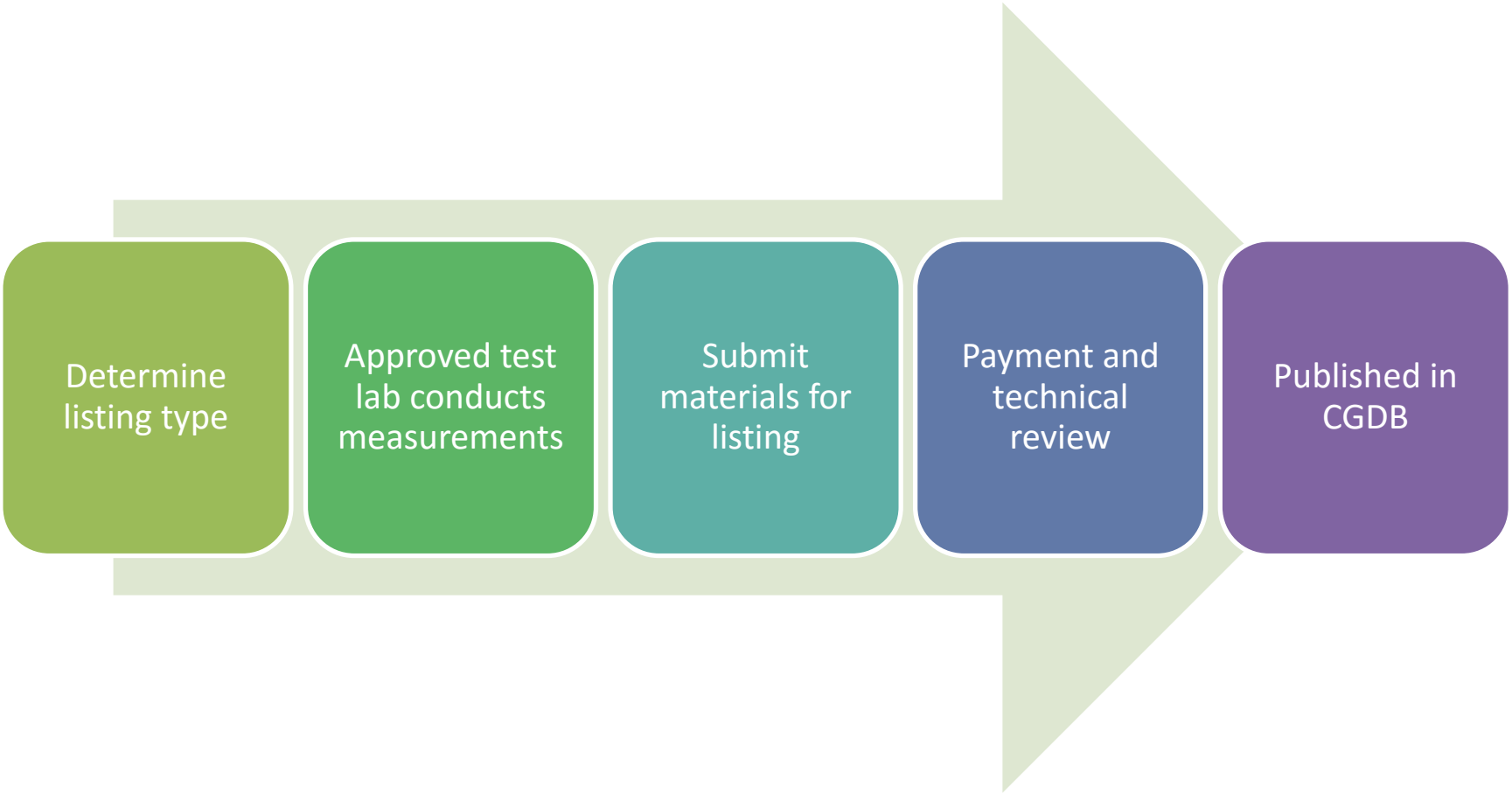
AERC 1.1 Standard

- Defines technical procedures to determine the optical and thermal properties of materials used in window attachments:
  - Optical openness factor (OF)
  - Visible transmittance (Tvis)
  - Solar transmittance (Tsol)
  - Visible reflectance (Rvis)
  - Solar reflectance (Rsol)
  - Bi-directional scattering distribution function (BSDF)
  - Emissivity (Ɛ)
  - Infrared transmittance (Tir)
  - Permeability factor (PF)
  - Thermal conductivity (k)

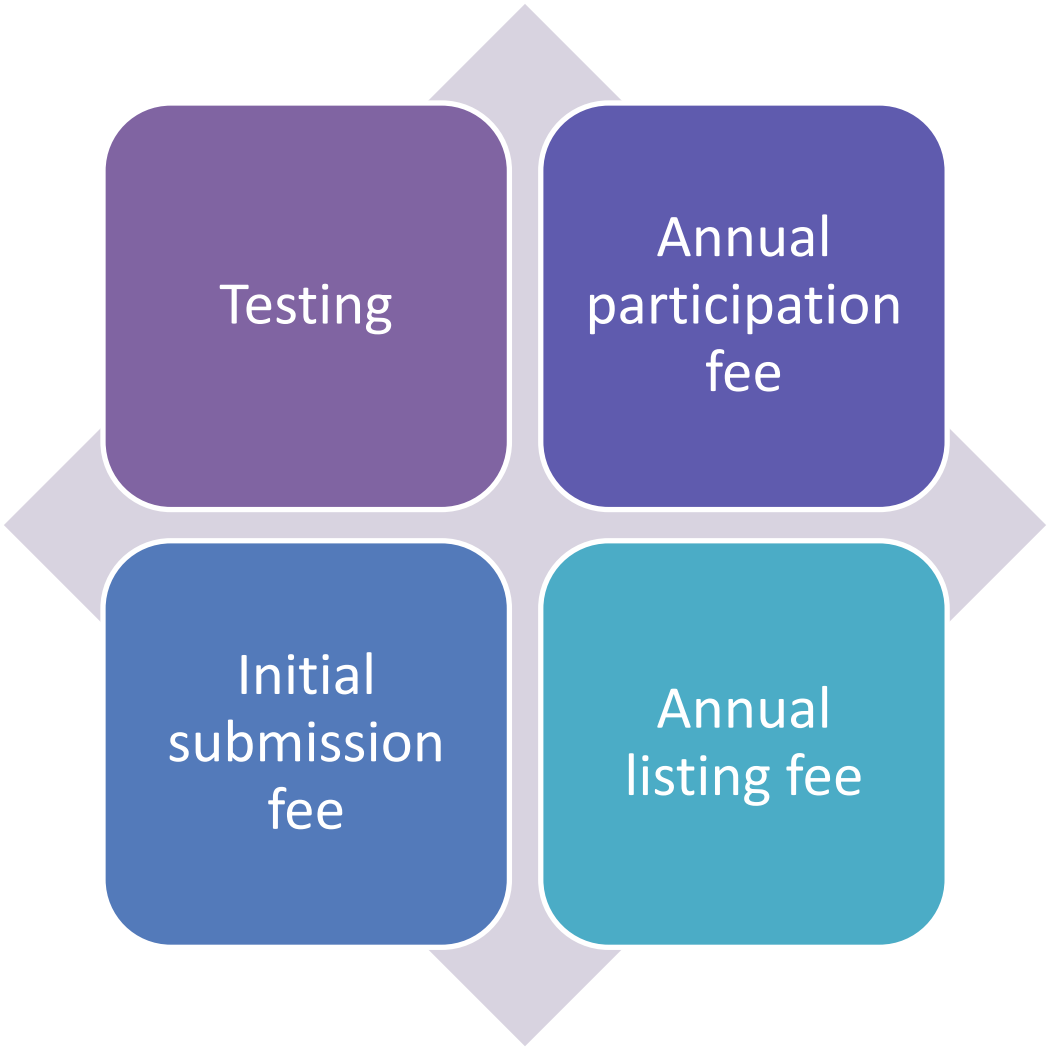
Complex Glazing Database (CGDB)

- Stores material properties data of fabric and materials
- Developed and maintained by Lawrence Berkeley National Laboratory
- Material properties are foundational to window attachment simulations
  - Accessed through WINDOW software tool

Testing and CGDB Listing



Material Costs



CGDB Program Fees

Short term member-only early adopter discount

Fee Type	Sub-type	Member	Non-Member
Annual Manufacturer Participation Fee		$1,000	$4,000
New Submission Per Product Listing Fee	1-50 Listings	~~$210~~ $25	$300
	51-150 Listings	~~$170~~ $20	$300
	151+ Listings	~~$90~~ $10	$300
Annual Per Product Listing Fee	1-50 Listings	$70	$200
	51-150 Listings	$55	$200
	151+ Listings	$30	$200

Window Attachment Certification

Window attachment product modeled using material properties and product geometry as inputs

Performance properties and EP ratings generated through performance simulations

Submitted for listing in the AERC Certified Products Database

Certified products displayed publicly on the AERC Certified Products Website and labeled in stores

Window Attachment Costs

Simulation

Annual participation fee

Annual listing fee

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AERC Certification Fees

Fee Type	Sub-Type	Member	Non-Member
Annual Participation Fee		$3,440+	$5,500+
Annual Primary Listing Fee	1 - 75	$170	$260
	76 - 150	$140	
	151+	$110	
Annual Secondary Listing Fee	1 - 75	$70	$130
	76 - 150	$40	
	151+	$30	

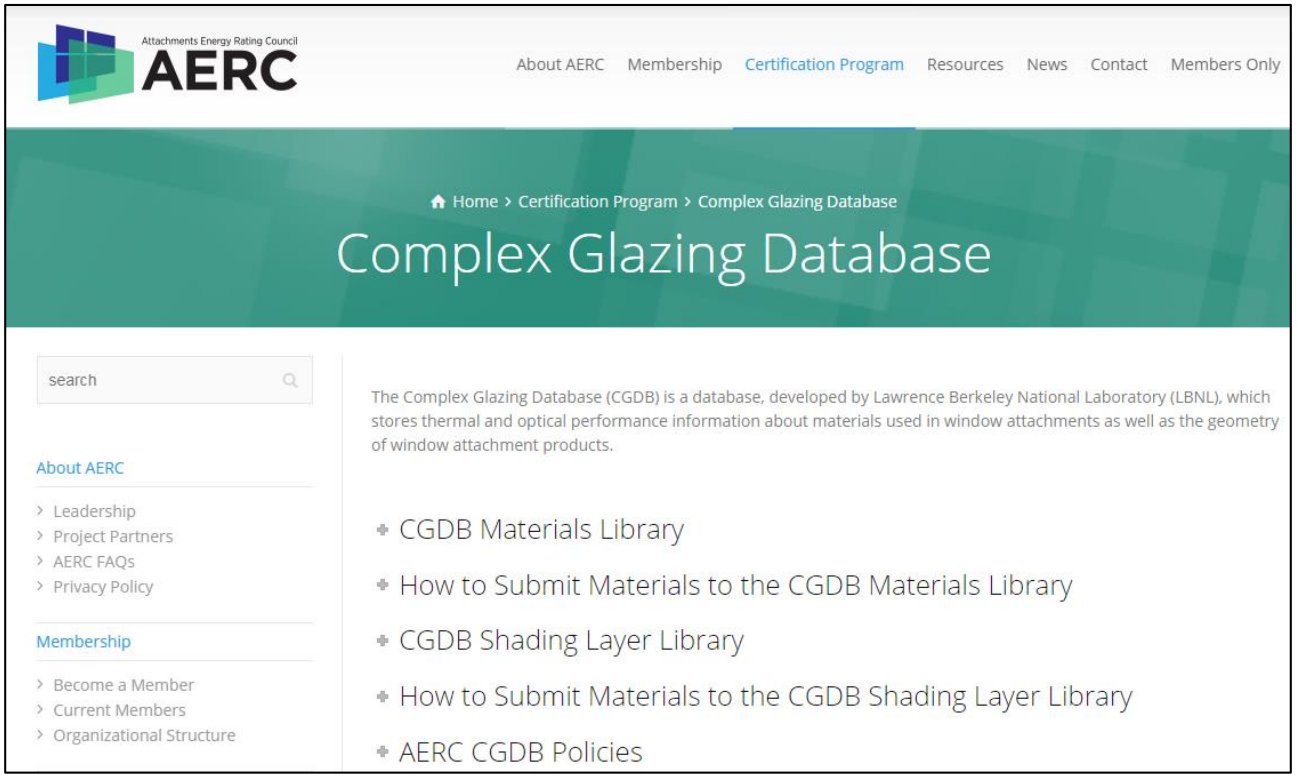
AERC Commercial Program

- **Goal:** basic program in place by end of 2019
- Initial stages of development
  - Fabrics and material properties already established
  - Identifying window attachment energy-related information needs in the commercial space
- Building relationships with and gaining input from commercial stakeholders:

Architects	Interior designers	Building owners	Building managers
Specifiers	Contractors	Commercial attachment manufacturers	Fabric manufacturers

Part V. Getting Involved

Learn More



https://AERCnet.org

Certification as an Investment

- Get ahead of the market
- Differentiate your products
- Back up performance claims
- Promote higher-margin products
- Gain recognition from utilities

Participate in Program Development

- Adding awnings and rolling shutters in 2018
- Operation schedule based on interior products study
- Beginning development of commercial product certification program

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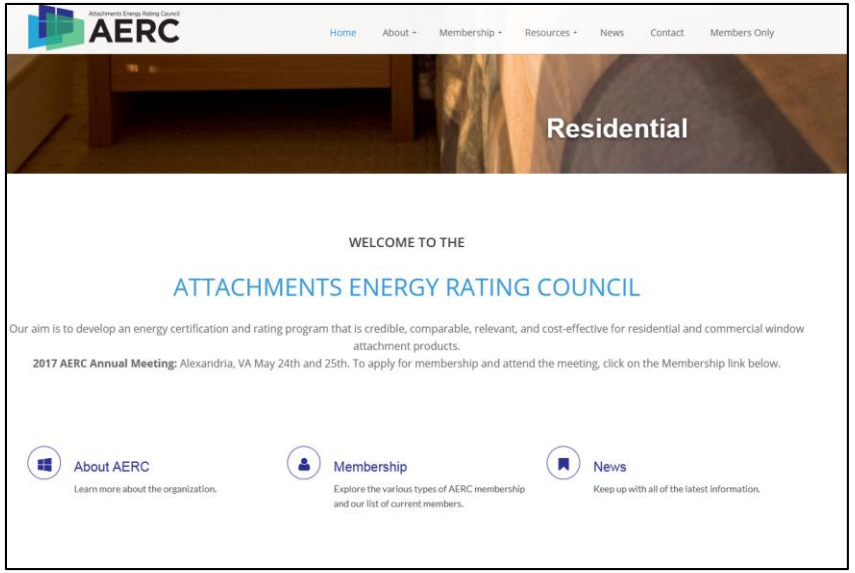
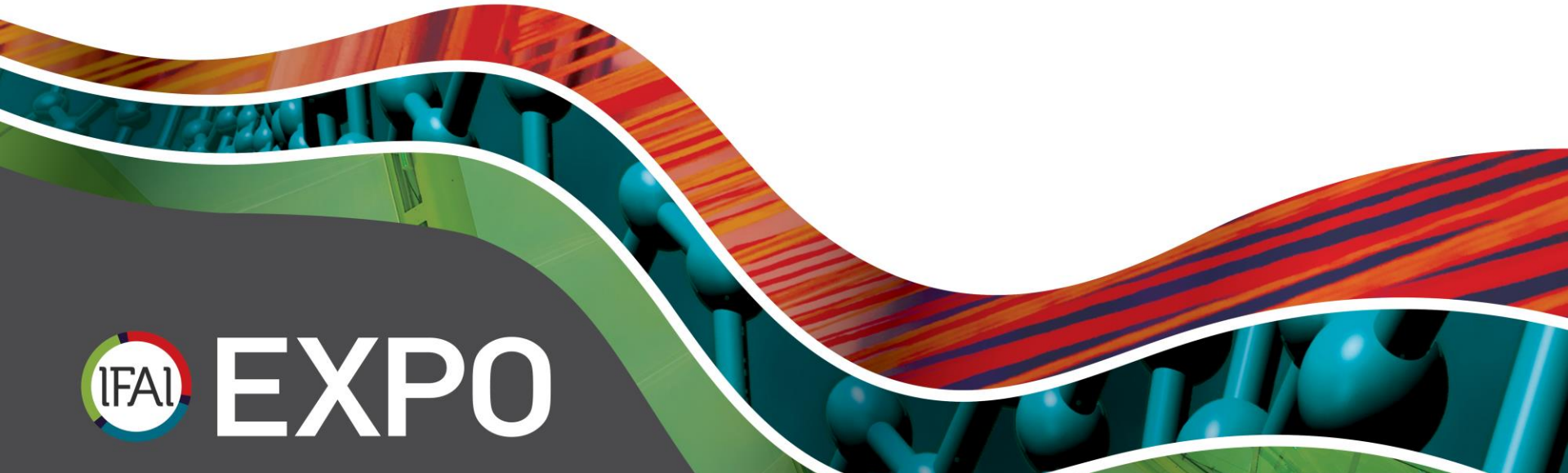
Get Involved!

- Join our e-mail list
- Educational resources released this fall on consumer website
- Attend AERC Fall Meeting in Chicago, IL
  - November 12-14, 2018



Don’t Wait!

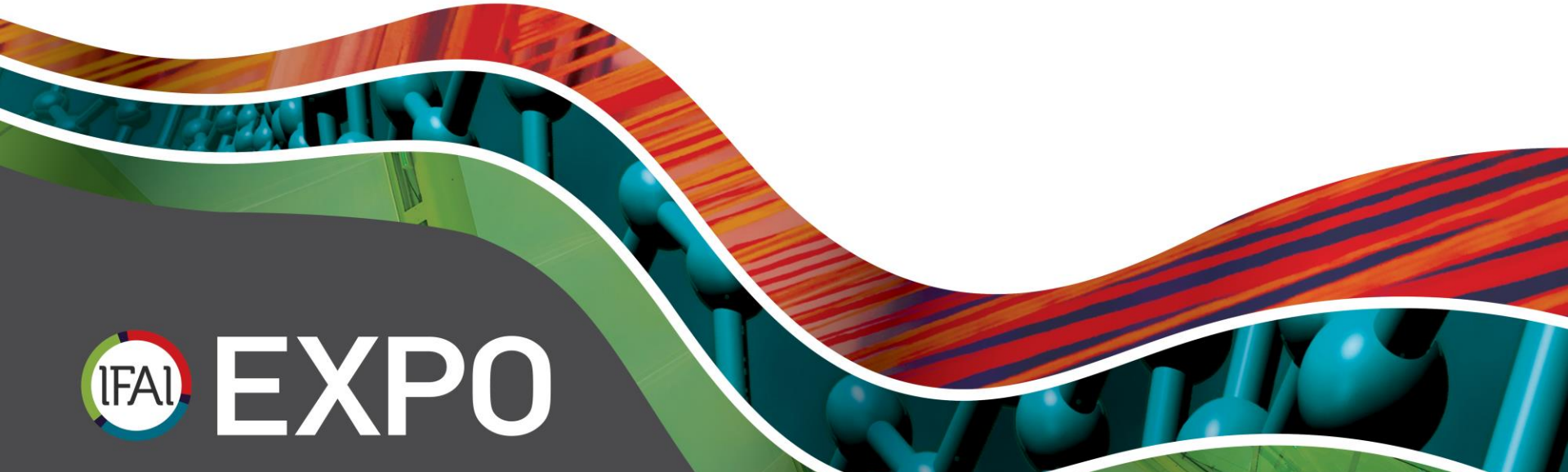
Questions?



Contact Information

Erika Burns

AERC Program Coordinator

eburns@drintl.com

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