



# **Item 10: Retrofitting Existing Residential Buildings with Innovative Envelope Solutions (GFO-24-310)**

*March 12, 2026 Business Meeting*

Jeanie Mar, Energy Commission Specialist  
Energy Research and Development Division  
Building Decarbonization Unit



# Overview

**Purpose:** Demonstrate innovative retrofit envelope solutions to improve customer value proposition

## Group 1

High-performance  
Insulation

➤ \$ 1,780,779

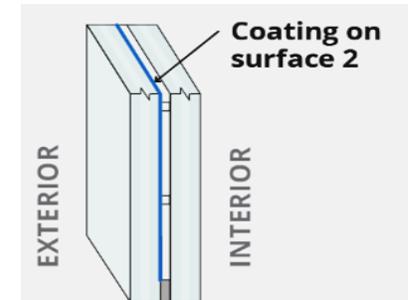


Source: [insulationmasters.com](http://insulationmasters.com)

## Group 2

Vacuum insulated  
glass windows

➤ \$ 1,750,000



Source: [Guardian Glass](http://Guardian Glass)

## Group 3

Advanced building  
construction  
strategies

➤ \$ 1,985,004



Source: [Herox.com](http://Herox.com)

## Group 4

Existing frame high-  
performance windows

➤ \$ 500,000



Source: [familyhandyman.com](http://familyhandyman.com)



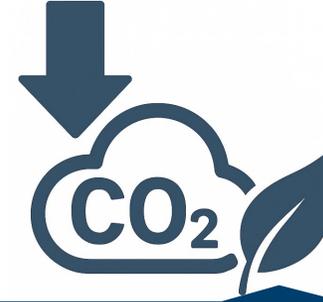
# Benefits to Californians



Improved retrofit value proposition



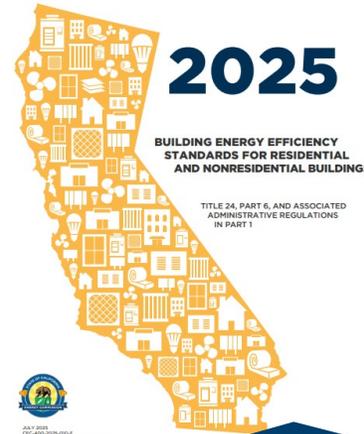
Reduced heating/cooling loads & energy costs



Lower GHG emissions



Occupant comfort



Inform codes and standards



# Electric Power Research Institute, Inc. (EPRI)

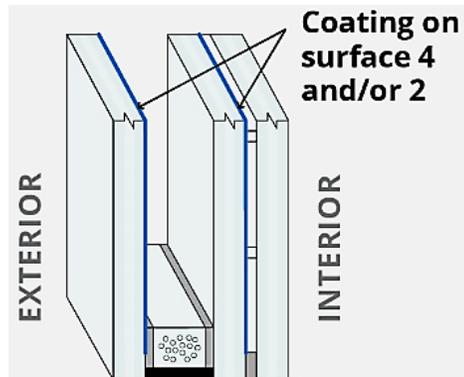
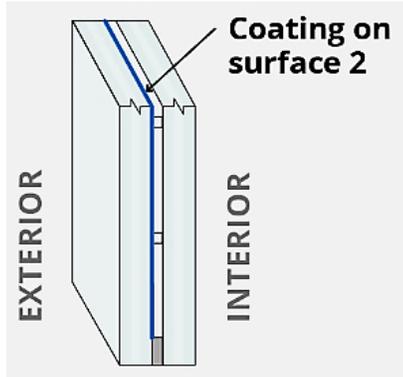


Source: Liatris

- Project Focus:
  - Thin aerogel-based insulation applied to homes
- Project Locations:
  - Manufactured/SF homes in LI/DAC



# Institute of Gas Technology d.b.a. GTI Energy



*Top: Standard VIG*  
*Bottom: Hybrid VIG*  
**Source:** [Guardian Glass](#)

- Project Focus:
  - Demonstration of standard and hybrid VIGs
  - Existing frame and full replacement installations
  - VIG metrics for T24
- Project Location:
  - SF/MF homes in LI/DAC



# Association for Energy Affordability (AEA)



**Top:** RoboAttic removing insulation  
Source: [RoboAttic + ThermaDrone](#)

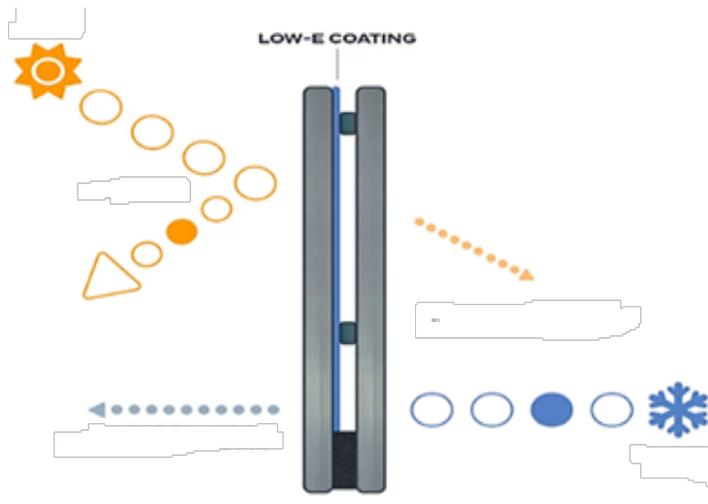


**Center-Left & Bottom-Left:** AeroBarrier setup and RoboAttic  
**Bottom Right:** Thermactive spray on EIFS  
Source: AEA

- Project Focus:
  - Autonomous robotic system to remove and reapply attic insulation
  - AeroBarrier attic air sealing
  - Thermactive spray on wall insulation
- Project Location:
  - MF homes in LI/DAC



# Lawrence Berkeley National Laboratory (LBNL)



**Top:** Thin-triple pane cross section

**Source:** Alpen

**Bottom:** Enthermal VIG

**Source:** Luxwall

- Project Focus:
  - Prototype development & lab testing of high performing windows for existing frame retrofits
  - Air infiltration guideline and test procedure (T24)
- Project Location:
  - LBNL lab



# Staff Recommendation

- Adopt staff's recommendation that these actions are exempt from CEQA
- Approve 4 grant agreements