

DOCKETED

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CalMTA Comments 23-ERDD-01 Retrofitting with Innovative Building Envelope Solutions Concept

CalMTA appreciates the opportunity to comment on the Draft Solicitation for 23-ERDD-01 Retrofitting with Innovative Building Envelope Solutions Concept.

Additional submitted attachment is included below.



06 March 2004
Via CEC e-Comment Portal

California Energy Commission
Electric Program Investment Charge (EPIC)
Docket Number: 23-ERDD-01
TN#: 254293

Subject: 23-ERDD-01 Retrofitting with Innovative Building Envelope Solutions Concept

This letter is submitted on behalf of the CalMTA, California's Market Transformation Administrator, in response to the recently published *Draft Solicitation Concept for Retrofitting with Innovative Building Envelope Solutions*. CalMTA was established by the California Public Utilities Commission (CPUC) via Decision 19-12-021 for the purpose of developing and supporting statewide market transformation initiatives (MTIs) to increase energy efficiency and reduce GHGs by driving market adoption of selected technologies and practices. CalMTA is a program of the CPUC and is administered by Resource Innovations.

CalMTA strongly supports the objectives and project focus of driving innovation in building envelope retrofit solutions. Energy losses associated with residential and commercial buildings have been well-documented and present significant challenges for meeting California's decarbonization goals cited in section IV of the Draft Solicitation.

CalMTA respectfully submits the following feedback in response to the Stakeholder Questions listed in the Draft Solicitation. All responses apply to Project Groups 2, 3 and 4.

Q2: Are there other envelope retrofit technologies not addressed in this concept that should be considered that could improve the value proposition for building retrofits?

There are additional envelope retrofit technologies currently at market with scalable domestic manufacturing including a wide range of secondary glazing systems, and additional technologies under development such as dynamic films and electrochromic glazing. Market ready commercial secondary window (CSW) systems are installed over (rather than replace) existing windows and provide a lower-cost option for window retrofits as compared to vacuum-insulated glazing (VIG) and dynamic films or glazing, can achieve U values as low as 0.16 and SHGC as low as 0.3 as rated by the Attachments Energy Rating Council (AERC). They also provide for a minimally invasive installation, often completed in minutes, requiring no tenant or occupant displacement.

CalNEXT has summarized the CSW market and California measure opportunities associated with them in their published 2024 report, *Commercial Windows Market Study and Measure Package Development* (ET23SWE0018). CalMTA is evaluating the potential for a CSW market transformation initiative.

Given that innovation in any specific glazing solution can often be applied to both residential and commercial applications, CalMTA believes there would be tremendous value and leverage in considering inclusion of secondary windows in this solicitation.

Q4: Should the groups include other existing building sectors, such as commercial, in addition to the residential sector, to address challenges and drive market adoption for building retrofits? If so, which sector(s) should be targeted first to lower cost and accelerate market adoption of technologies and why?

CalMTA encourages the CEC to consider broadening the scope of Project Groups 2, 3 and 4 to include commercial retrofit applications, or, alternatively, developing new groups to address both VIG and CSW in commercial buildings.

In order to lower costs and accelerate market adoption of technologies, CalMTA recommends focusing on the MUSH market - Municipal, Universities, Schools and Hospitals. Commercial real-estate (CRE) represents the largest energy savings and greenhouse gas reduction opportunity, but the current state of the CRE market, with historically high vacancy rates, present significant barriers that did not previously exist. CRE should remain a target market and may be enabled by Building Performance Standards over time. However, the MUSH market, which is largely owner-occupied, is not burdened by the challenge of split incentives. Also, schools should be a priority sub-market given the health impacts of extreme temperatures and the need for climate resilience, which improvements to a building's envelope, and windows, in particular, can offer. Schools are often densely populated and suffer, typically, from poor insulation. Lastly, hospitality benefits from noise reduction benefits in addition to thermal comfort and energy savings benefits.

Q6: Does a sufficient manufacturer ecosystem exist that is willing and/or able to manufacture these high-performing novel technologies following a successful demonstration project? If not, what additional resources are needed or additional concerns need to be addressed in order to increase manufacturing capacity following a successful demonstration?

A sufficient domestic manufacturing ecosystem exists for many commercial secondary windows. AERC has rated products from several manufacturers including Alpen, INOVUES and QuantaPanel. Those that achieve the U and SHGC value targets specified in this solicitation come from one manufacturer - Alpen High Performance Products. Other manufacturers have mature and scalable manufacturing capacity, have products rated by AERC and are developing advanced products that will meet the U and SHGC values specified in this solicitation.

Alpen has two manufacturing facilities - Louisville, CO and Vandergrift, PA. The Vandergrift facility recently received a DOE grant to expand capacity. More importantly, the manufacturing process is also capable of being transported onsite for larger-scale installation, reducing shipping costs and accelerating installation. The manufacturing 'cell' requires approximately 1,000 sq ft of space. This process was successfully deployed while

upgrading 6,514 windows in the Empire State Building in 2010. Smaller scale projects can also be addressed by this manufacturing solution.

Thank you for your efforts on this solicitation and the evolution of the retrofit windows market.

Sincerely,
Rick Dunn

A handwritten signature in black ink, appearing to read "Rick Dunn", written in a cursive style.

Sr. Manager, Emerging Technology
CalMTA