**GFO-24-310**

**Retrofitting Existing Residential Buildings with Innovative Envelope Solutions**

**Addendum 1**

**June 27, 2025**

Disclaimer: Textual content contained within brackets and with a ~~strikethrough~~ was removed, and textual content in **bold underline** was added.

The purpose of this addendum is to make the following revisions to the

Solicitation Manual and the Attachment 2: Project Narrative document.

# Solicitation Manual

## Under Key Words/Terms

* Updated Page 5 and 6: Added terms

|  |  |
| --- | --- |
| **Solar Heat Gain Coefficient (SHGC)** | **The amount of heat gained or lost through windows due to solar radiation into the building. The higher the number, the more heat gained through the window.** |
| **Visible Light Transmittance (VT)** | **A measure of the amount of visible light that is transmitted through a window. Higher values indicate that more light is transmitted through the window.** |

## Section I.C. Under “COMMON GROUP REQUIREMENTS”, Life Cycle Cost Effectiveness Methodology

* Updated Page 6: **Utilizing this energy cost-effectiveness approach, applicants should develop a 30-year life cycle net present value analysis, which includes the measures’ first costs as well as the annual energy savings, annual maintenance costs (or savings), and other operating and maintenance costs (or savings), using a three-percent real discount rate. Utilizing this approach, applicants should develop a benefit/cost ratio for each measure, and the entire building if applicable. Similarly, utilizing the present values of all costs and benefits, applicants should develop a simple payback period for each measure, and the entire building if applicable. Ideally, the project will produce a benefit/cost ratio of greater than one, and a simple payback period of less than seven years.**

## Section I.C. Under Group 1: Residential Opaque Envelope Retrofits - Value Proposition Improvement

* Updated Page 8: Group 1 goals are to a) test and demonstrate improved insulation performance ([~~between~~] of no less than R-8/inch for non-VIP and R-14/inch for VIP products. These products must be available up to a thickness of 4 inches in 0.5-inch increments, either as one component or as layers attached to each other);
* Updated Page 8: [~~P]~~ Ideally, projects in this group…
* Updated Page 8 proposed technologies:

1. Minimum high-performance requirements [~~between~~] **of no less than** R-8**/**inch **for non-VIP products** and R-14**/**inch **for VIP** for insulation products. **These products must be available up to a thickness of 4 inches in 0.5-inch increments, either as one component or as layers attached to each other. Final installed performance R-value must be, at a minimum, Title 24 (T24) code compliant for the envelope component in the climate zone where the building is located.** [~~The product performance must be available in at least 0.5-inch increments.~~]
2. **Ability to cut and fit the novel insulation products in the field. If cutting and fitting in the field is not possible, identify remedies for situations where field cutting is required, including, but not limited to, combining novel technologies with legacy technologies and calculating weighted average R-values for the entire building.**

* Updated Page 9, Project Requirements:

1. … verify that the energy performance goals of the selected insulation product (non-VIP or VIP) [~~listed in Table 1~~] can be met.
2. **Development of guidelines that can be used by building occupants and installers for 1) fault detection of failed components that include vacuum and 2) cost-effective vacuum restoration of the failed product in the field, or other novel techniques for restoring the failed product performance. For non-vacuum technologies where component failure is not a concern, this requirement does not apply.**

* Updated Page 10, Project Narrative Attachment:

1. Provide analysis on how the selected technology may meet or exceed the performance criteria described [~~listed in Table 1~~] and summarize the information in Table 1.[~~2. If the target cost metric for the selected technology is different than indicated in Table 1, provide justification for an alternate cost target for the technology that meets the performance metric and~~] For the life cycle cost effectiveness analysis, please follow the guidelines described [~~discussed~~] in the Common Group Requirements Section I.C.i.
2. **For applications seeking reduced match, demonstrate how the project will provide benefits to the tribe or disadvantaged and/or low-income community.**
3. **Discuss whether the novel technology can be used as continuous insulation or as cavity insulation, or describe other suitable practices.** **Researchers must ensure that insulation that is installed on the interior side of the walls does not cause moisture issues in the wall cavity or cause moisture issues in roof deck assembly.**

Bullet from item i.

* If proposed sites are located in a Tribe or disadvantaged and/or low-income community, **a** proposed **CBO or local for-profit organization that** **can fulfill the role of a** CBO[~~(s)]~~ must be identified and the **organization’s** [~~CBO’s~~] role and involvement in the project (e.g., site recruitment, tech transfer, workforce development) described.
* Updated Page 12: Deleted Table 1 Group 1 Performance and Cost Targets.
* Updated Page 12**:** Renumbered Table 2

**Table 1:**[**~~2~~**] **Performance Metrics for Group 1 Applicant Technology**

## Section I.C. Under Group 2: Residential Vacuum Insulated Glass Retrofits - Value Proposition Improvement

* Updated Page 12 Technology Requirements: Moved from Option 2 to next paragraph below so the statement applies to both Options 1 and 2.
  + Option 2: The existing window sashes are removed and replaced with VIG sashes. [~~The researchers must also evaluate whether they can cost-effectively improve the thermal performance of the existing frame.~~]

The researchers must also evaluate whether they can cost-effectively improve the thermal performance of the existing frame. Under this method, the new VIG window combined with the existing frame must achieve a U-factor of no greater than 0.18.

* UpdatedPage 13 Project Requirements:

Proposed work must include [**~~ONE~~ ~~OR MORE~~** ~~activity(ies) from a - c~~ **~~AND~~**] **ALL** of the activities [~~in d - k~~] below:

1. Independently lab test to compare the performance of Title 24 compliant requirements with the proposed technology prior to field installation to verify that the energy performance goals listed in Table **2**[~~3~~] can be met.
2. **Develop guidelines that can be used by building occupants and installers for 1) fault detection and loss of VIG IGU vacuum and 2) cost-effective restoration of the failed components in the field, or other novel techniques for restoring VIG vacuum.**
3. Conduct a cost analysis [~~of~~] **comparing the** current Title 24 compliant windows [~~and~~]**with** both the complete changeout and the existing frame methods to include materials and installation costs per square foot or per window.
4. **Provide a life cycle cost analysis using two baselines for U-factor and SHGC of the existing windows and Title 24 compliant windows.**
5. **Develop energy model software metrics that include U-factor, SHGC, VT, and air leakage for Title 24 inclusion.**

* Updated Page 14 Technical Merit:

1. Provide analysis on how the selected technology may meet or exceed the criteria listed in Table **2**[~~3]~~ and summarize the information in Table **3.**[~~4. If cost metrics are not achievable, provide justification for an alternate cost target for the technology that meets the performance metric and~~] **For the** life cycle cost effectiveness **analysis, please follow the guidelines** **described** [~~discussed]~~ in the Common Group Requirements Section I.C.i.
2. Discuss [~~which additional~~] **how the project addresses** technology feature**s/activities**[~~(s)~~] in Group 2 Project Requirements, Section 1.II.a. - 1.II.c. [~~, that the technology will address and how the technology will address it/them~~.] **If the project addresses only 2 of the 3 features, applicants must explain a) which 2 features are addressed, b) why the third feature cannot be addressed in the project, and c) why their project is still a good candidate for meeting Group 2’s goals. Provide all assumptions used to justify the technology and approach.**
3. **For applications seeking reduced match, demonstrate how the project will provide benefits to the tribe or disadvantaged and/or low-income community**.

* Updated Page 15 Technical Approach, item i:
* At least 7 SF units **AND** **at least 8 units in** 2 MF buildings [~~with a minimum of 8 total units~~] and at least one additional SF **unit** and one additional MF building backup site **for each installation method** to ensure that the minimum **number of demonstration sites** continues to be met throughout the project term. Sites must be in as least 2 different CZs.
  + - If proposed sites are located in a Tribe or disadvantaged and/or low-income community(ies), the proposed **CBO or local for-profit organization that** **can fulfill the role of a** CBO[~~(s)~~] **must be** identified, and the **organization's** [~~CBO’s~~] role and involvement in the project (e.g., site recruitment, tech transfer, workforce development) described.
* Updated Page 15: Renumbered and modified Table 3  
    
  **Table 2[~~3~~]: Group 2 Performance** [**~~and Cost Targets~~**]

|  |  |  |
| --- | --- | --- |
|  | **Method 1 Existing frame** | **Method 2 Complete changeout** |
| Whole Window (U-factor)  (R-value) | ≤ 0.18  ≥ 5.6 | ≤ 0.13  ≥ 7.7 |
| [~~Installed Target Cost Premium\* ($)~~ ] | [~~$8 per square foot~~ ] | [~~$10 per square foot~~ ] |

* Updated Page 15: Renumbered Table 4 to be Table 3

**Table 3:**[**4**] **Performance Metrics for Group 2 Applicant Technology**

## Section I.C. Under Group 3: Residential Envelope Retrofits with Advanced Building Construction Techniques

* Updated Page 17:

Projects in this group must advance envelope energy-saving components or envelope system packages, which include a combination of high-performance energy efficiency measures (See Table 4[~~5~~] for minimum performance requirements).

* Updated Page 17:  
  Proposed work must include **ONE OR MORE activity(ies) a - d** **AND** **ALL** activities e - **g** [~~h~~]:
* Updated Page 18 Project Narrative, Technical Merit:

1. Discuss why the combinations of energy efficiency measures were selected, how the ABC method and technique will be used to apply the measure(s), and how this will improve the value proposition and drive uptake of envelope retrofits. **If the target performance metric for the selected technology or approach does not meet the minimum performance metrics indicated in Table 4, but the technology or approach being used can simplify installation processes, decrease occupant disruption, and/or reduce retrofit time, the applicant must provide justification for a) why it does not meet the minimum performance, b) how it can simplify installation processes, decrease occupant disruption, and/or reduce retrofit time, c) how it will benefit California Electric IOU ratepayers, such as GHG reductions and energy and cost savings, and d) why their project is still a good candidate for meeting Group 3’s goals. Provide all assumptions used to justify the technology or approach.**
2. **For applications seeking reduced match, demonstrate how the project will provide benefits to the tribe or disadvantaged and/or low-income community.**

* Updated Page 19 Technical Approach:

1. Identify a minimum of 5 proposed **residential** demonstration sites and one additional backup site. **A demonstration site is one residential unit. For SF or manufactured homes, the minimum is 5 homes. For MF buildings, while multiple buildings may be selected for the demonstration, the minimum is one building with at least 5 units all within the same building (e.g., 1 MF building with 5 units, or 2 MF buildings with 5 units in the first building and 3 units in the second building (8 total units)). Demonstration sites may include a mix of building types, if more than 5 sites will participate in the demonstration AND if the minimum is met for at least 1 of the building types (e.g., 5 MF units and 1 SF unit OR 5 SF units and 1 MF unit). Site combinations may be modified subject to CEC Commission Agreement Manager (CAM) approval.**

* If proposed sites are located in a Tribe or disadvantaged and/or low-income community(ies), the proposed **CBO or local for-profit organization that** **can fulfill the role of a** CBO ~~[partner(s)~~] must be identified and the **organization’s** [~~CBO’s~~] role and involvement in the project (e.g., site recruitment, tech transfer, workforce development) described.
* Updated Page 19: Renumbered Table 5 as Table 4

**Table 4[~~5~~]: Group 3 Performance Targets**

## Section I.C. Under Group 4: Residential Window Retrofits using Existing Frames

* Updated P 21 Project Narrative, Technical Merit:

1. Provide analysis on how the selected technology may meet or exceed the 0.22 thermal installed whole window performance criteria and summarize the information in Table **5**[~~6~~].
2. **For applications seeking the match to be waived, demonstrate how the project will provide benefits to the tribe or disadvantaged and/or low-income community.**

* Updated Page 21**:** Renumbered Table 6 as Table 5 **Table 5:[~~6~~] Performance Metrics for Group 4 Applicant Technology**

## Section I.D.1 Under FUNDING

* Updated Page 22 below Funding table

\* For projects in Groups 1-3 that are **ALL** located ~~[~~**~~ALL~~]** in **and** benefitting **disadvantaged and/or low-income** communities or a tribe **and** have **a CBO or a local for-profit organization that can fulfill the role of a CBO,** [~~community-based organization involvement~~] **the match requirement** will **be** reduce**d** [~~match]~~ to 10%. All other Group 1-3 projects will have a 20% match requirement.

## Section I.D.2 Under FUNDING

* Updated Page 22, Match Funding Requirement

Applications for all groups must include a minimum **20%** total match share percentage for this solicitation. If **Group 1, 2, and 3 projects** are demonstrated in **and** benefitting a tribe or disadvantaged and/or low-income communities AND **include either a CBO or a local for-profit organization that can fulfill the role of a CBO [~~have CBO involvement~~]**, **the** match **requirement** is reduced to 10 percent. **Group 4** will have the match requirement waived if the project is a pilot demonstration located in **and** benefitting a tribe or disadvantaged and/or low-income community. **To qualify for the reduced or waived match, applications must demonstrate how the project will benefit the tribe or disadvantaged and/or low-income community in the Project Narrative.**

## Section I.E. Under “KEY ACTIVITIES SCHEDULE”

* Updated Page 24:

| ACTIVITY | DATE | TIME |
| --- | --- | --- |
| Solicitation Release | May 5, 2025 |  |
| **Pre-Application Workshop** | **May 19, 2025** | **10 a.m. - 12 p.m.** |
| **Deadline for Written Questions** | **May 26, 2025** | **5:00 p.m.** |
| Anticipated Distribution of Questions and Answers | Week of June **23** [~~9]~~, 2025 |  |
| **Support for Application Submission in ECAMS** | Ongoinguntil  **[~~June 30~~] July 25, 2025** | **5:00 p.m.** |
| **Deadline to Submit Applications** | **[~~June 30~~] July 25, 2025** | **11:59 p.m.** |
| Anticipated Notice of Proposed Award Posting Date | Week of [~~Sept 15~~] **October 6**, 2025 |  |
| Anticipated Energy Commission Business Meeting Date | ~~[November~~ **~~20~~] December 8**, **2025** |  |
| Anticipated Agreement Start Date | ~~[January 5~~] **February 16** 2026 |  |
| Anticipated Agreement End Date | September 30, 2030 |  |

## Section II.A.1. Under “Eligibility”

* Updated Page 35: Added eligible funding agency
  + **Massachusetts Clean Energy Center (MassCEC)**

## Section IV.E Under “Stage One Application Screening”

* + Updated Page 49: Screening Criteria 4.

**Groups 1, 2, and 3:** If project demonstration/deployment sites are located in and benefiting a Tribe, Disadvantaged Community, and/or Low-Income Community **AND include either a CBO or a local for-profit organization that can fulfill the role of a CBO** [**~~with CBO involvement~~**], Match requirement is 10% of the requested CEC funds.

* + Updated Page 53: Scoring CRITERIA for Groups 1, 2, and 3

Scoring Criteria 4.

* Demonstrates that the project team, *(TDD only) including Community Based Organization* ***(CBO)******or a******local for-profit organization that can fulfill the role of a CBO****,* has appropriate qualifications, experience, financial stability and capability to complete the project.
  + Updated Page 56: Scoring CRITERIA for Groups 1, 2, and 3

Scoring Criteria 8.

1. Includes letters of support from technology partners, community-based organizations**/local for-profit organization that can fulfill the role of a CBO**, environmental justice organizations, or other partners that demonstrate their belief that the proposed project will lead to increased equity and is both feasible and commercially viable in the identified low-income and/or disadvantaged communities.

* Updated Page 60 Preference Points
  + Applications proposing **pilot demonstration** projects located in and benefiting low-income and/or disadvantaged communities within IOU service territories may qualify for additional preference points.

# Attachment 2: Project Narrative

* + Updated Page 3: Team Qualifications, Capabilities and Resources:

1. Demonstrates that the project team, *(TDD only) including Community Based Organization* ***(CBO)******or a******local for-profit organization that can fulfill the role of a CBO****,* has appropriate qualifications, experience, financial stability, and capability to complete the project.
   * Updated Page 4: Disadvantaged & Low-Income Communities

Criteria 8: **For Groups 1-3 with demonstration sites in tribe, Disadvantaged & Low-Income Communities only and Group 4 with pilot demonstrations in tribe, Disadvantaged & Low-Income Communities only.**

1. Includes letters of support from technology partners, community-based organizations**/local for-profit organization that can fulfill the role of a CBO**, environmental justice organizations, or other partners that demonstrate their belief that the proposed project will lead to increased equity and is both feasible and commercially viable in the identified low-income and/or disadvantaged communities.

**Natalie Johnson,**

**Commission Agreement Officer**