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## Notice of Funding Opportunity

**Title:** California Energy Commission – Examining the Effects of Hydrogen in End-Use Appliances for Large Commercial Buildings and Industrial Applications

**Website:** <https://www.energy.ca.gov/solicitations/2021-09/gfo-21-503-examining-effects-hydrogen-end-use-appliances-large-commercial>

**Funding:** Total: \$1,500,000. Maximum awards: \$750K-\$1.5M, depending on project.

**Dates:** Pre-Application Workshop: October 14, 2021 at 10AM  
Deadline for Written Questions: October 28, 2021  
Deadline to Submit Full Applications: November 22, 2021

**Summary:** The purpose of this solicitation is to fund a technical study to identify the impact of the potential use of hydrogen and hydrogen-natural gas blends on existing appliances as a potential decarbonization strategy for large commercial buildings and the industrial sector. The study will identify operating parameters such as the maximum concentration of hydrogen that can be handled by existing equipment with and without modification. This study will inform policymakers and the private sector of the potential for hydrogen and hydrogen-natural gas blends as a decarbonization strategy for industrial and large commercial building applications.

### Project Topic Areas:

This solicitation will result in a techno-economic study that will identify the impact of hydrogen and hydrogen-natural gas blends on existing appliances used in the large commercial building and industrial sectors. It will also identify operating parameters such as the maximum concentration of hydrogen that can be handled by this equipment with and without modification. The use of hydrogen and hydrogen-natural gas blends could change combustion characteristics because of the differences in physical and chemical properties. The addition of hydrogen could also pose safety and performance issues such as embrittlement, flame flashback, flame stability, wet flame gas, gas flow changes, reduced radiative heat transfer, impacts on criteria air pollutant emissions and energy efficiency, system differences in control and safety, and other unforeseen complications in end-use applications which could change the characteristics of the resulting product.

### Funding:

There is up to \$1,500,000 available for the grants awarded under this solicitation. The minimum funding amount for the project is \$750,000. The maximum funding amount is \$1,500,000. Match funding is not required for this solicitation. However, applications that include match funding will receive additional points during the scoring phase.

Project Group	Available Funding	Minimum Award Amount	Maximum Award Amount	Minimum match funding (% of Natural Gas Funds Requested)
Group Examining the Effects of Hydrogen in End-Use Appliances for Large Commercial Buildings and Industrial Applications	\$1,500,000	\$750,000	\$1,500,000	0%

### Project Requirements:

The research must address these knowledge gaps and identify key benefits, challenges and potential solutions associated with using hydrogen and hydrogen-natural gas blends in end-use appliances for large commercial buildings and industrial applications. The result will inform



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policymakers and the private sector of the technical and economic feasibility of this strategy and identify additional research, demonstration, and infrastructure necessary to enable large-scale deployment. The transfer of knowledge gained from this study is the primary goal. This study will focus on end-use applications for hydrogen and hydrogen-natural gas blends. The production, storage of and/or conveyance of hydrogen outside of the appliance and/or equipment are not covered by this GFO.

**Eligible Applicants:**

This solicitation is open to all public and private entities. Demonstration projects in this solicitation must be located in the service territory of a California natural gas Investor Owned Utility (NG IOU), which includes Pacific Gas and Electric Company, San Diego Gas & Electric Company, and Southern California Gas Company. All projects in this solicitation must benefit natural gas IOU ratepayers.