

GSA/DOE: Request for Information Reducing Carbon Emissions

U.S. General Services Administration | Center for Emerging Building Technologies | Green Proving Ground Program (GPG)

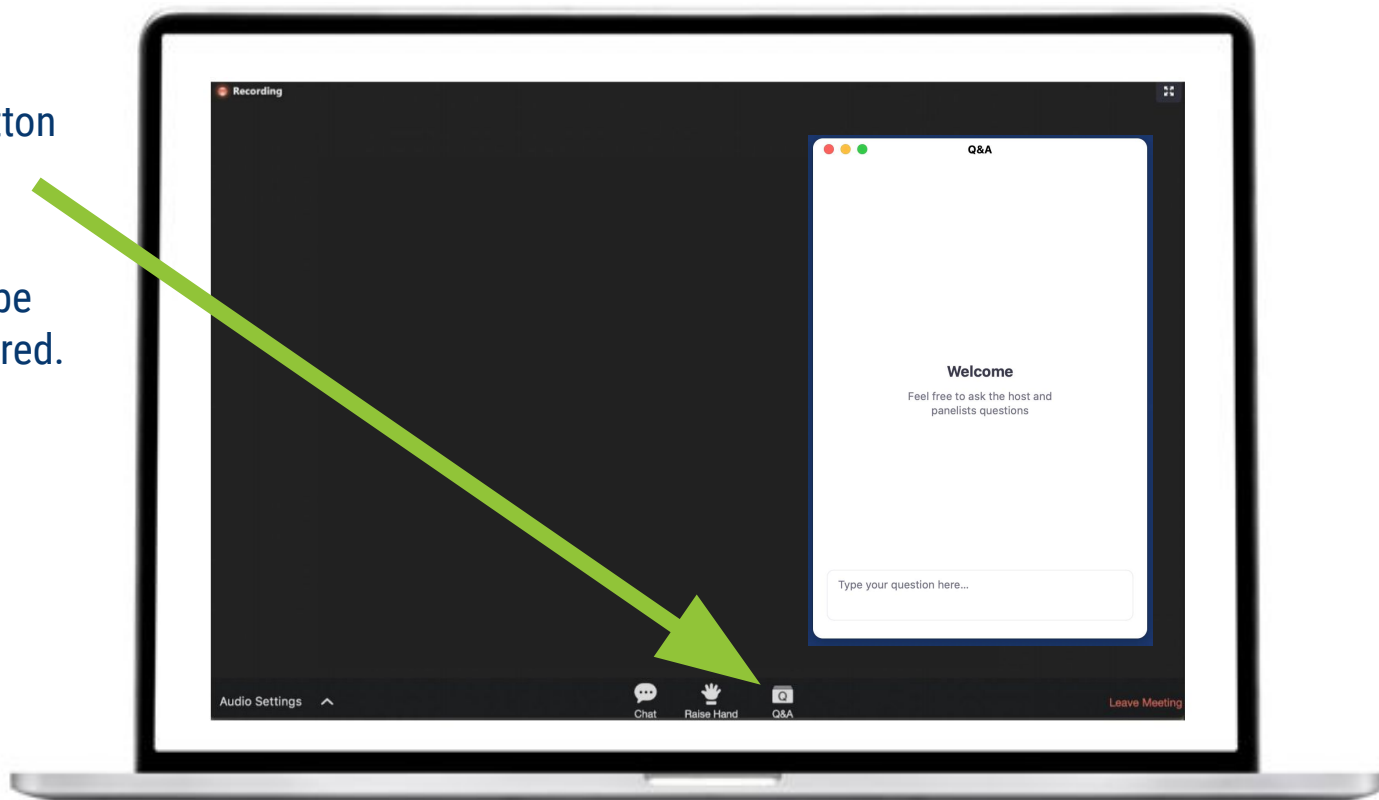
U.S. Department of Energy | Office of Energy Efficiency and Renewable Energy | Building Technologies Office (BTO)
Federal Energy Management Program (FEMP) | Solar Energy Technologies Office (SETO)



How to Ask Questions

Click the Q&A button
to ask questions.

The webinar will be
recorded and shared.



Agenda

- Overview
- Program Leads
 - GSA
 - DOE
- What Are We Looking For?
- RFI Mechanics and What it Means to Participate
- Q&A

Net-Zero Carbon Buildings

- High-Performance/Low-Carbon
- Onsite Energy Generation and Storage
- Greenhouse Gas or Carbon Reduction

GSA & DOE Seek Technologies for Net-Zero Carbon Buildings

Joint Request for Information Closes On

TUESDAY, DECEMBER 7, 2021

TARGETED TECHNOLOGIES

Technologies should be early commercial, and ready for evaluation in occupied, operational buildings.

► High-Performance/Low-Carbon

Electrification of major loads; large-scale heat pumps; retrofit heat recovery systems; innovative building envelope retrofits.

► Onsite Energy Generation & Storage

High-efficiency PV, BIPV, innovative PV and storage; solar thermal and geothermal, onsite wind, hydrogen fuel cells.

► Greenhouse Gas/Carbon Reduction

On-site carbon capture; technologies that use refrigerants with low or no global warming potential

The U.S. General Services Administration (GSA), working with the U.S. Department of Energy (DOE), has issued a Request for Information (RFI) for technologies that help reduce greenhouse gas emissions from commercial buildings. Technologies will be evaluated under dynamic, real-world conditions in federally or privately owned commercial buildings. Responses to this RFI will be evaluated based on the technology's potential for equitable and wide adoption in the U.S. marketplace. Novel financing approaches and/or business models to accelerate uptake of low-carbon technologies are encouraged and may be integrated into RFI responses.

Validate Real-World Performance

Participation can increase market acceptance of your technology by validating real-world performance. Technology evaluations help inform public- and private-sector investment decisions, accelerating commercialization as well as adoption within the federal government and the commercial building industry.

Visit gsa.gov/gpg for more information and to access the RFI.

► Review and Complete the RFI by 12/07/21 sam.gov keyword "FY22RFI01221"

► Attend the Webinar Wednesday, 11/10, 1 pm ET register at: gsa.gov/gpg

► Questions? gpg@gsa.gov



The Green Proving Ground program leverages GSA's real estate portfolio to evaluate innovative building technologies. The program aims to drive down operational costs in federal buildings and help lead market transformation through the deployment of new technologies. gsa.gov/gpg



The mission of DOE's Office of Energy Efficiency and Renewable Energy (EEER) is to accelerate the research, development, demonstration, and deployment of technologies and solutions to equitably transition America to net-zero greenhouse gas emissions economy-wide by no later than 2050, and secure the clean energy economy benefits all Americans, creating good paying jobs for the American people—especially workers and communities impacted by the energy transition and those historically under-served by the energy system and overburdened by pollution. energy.gov/eeer/office-energy-efficiency-renewable-energy



Today's Presenters



Kevin Powell

GSA – Program Director,
Center for Emerging
Building Technologies



Robert Meagley

DOE – Technology Manager,
Solar Energy Technologies
Office



Wale Odukomaiya

NREL – Research Engineer,
Building Energy Science
Group



Jeff Wanner

DOE – Project Manager



GSA Green Proving Ground Program (GPG)

GSA: Largest Single Portfolio of Commercial Office Space

8,721

PROPERTIES MANAGED, 377M ft²

1,574

OWNED, 188M ft²

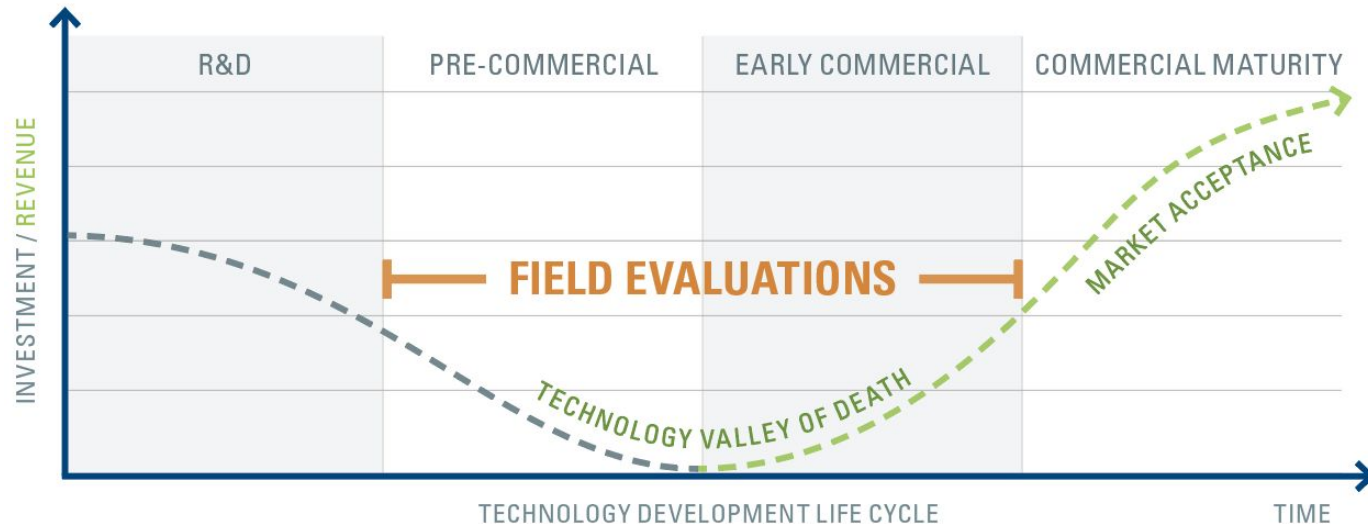
\$325M annual energy costs
for owned real-estate

At 52.2 kBTU/ft²/yr, GSA buildings are
33% more efficient than typical U.S.
commercial buildings

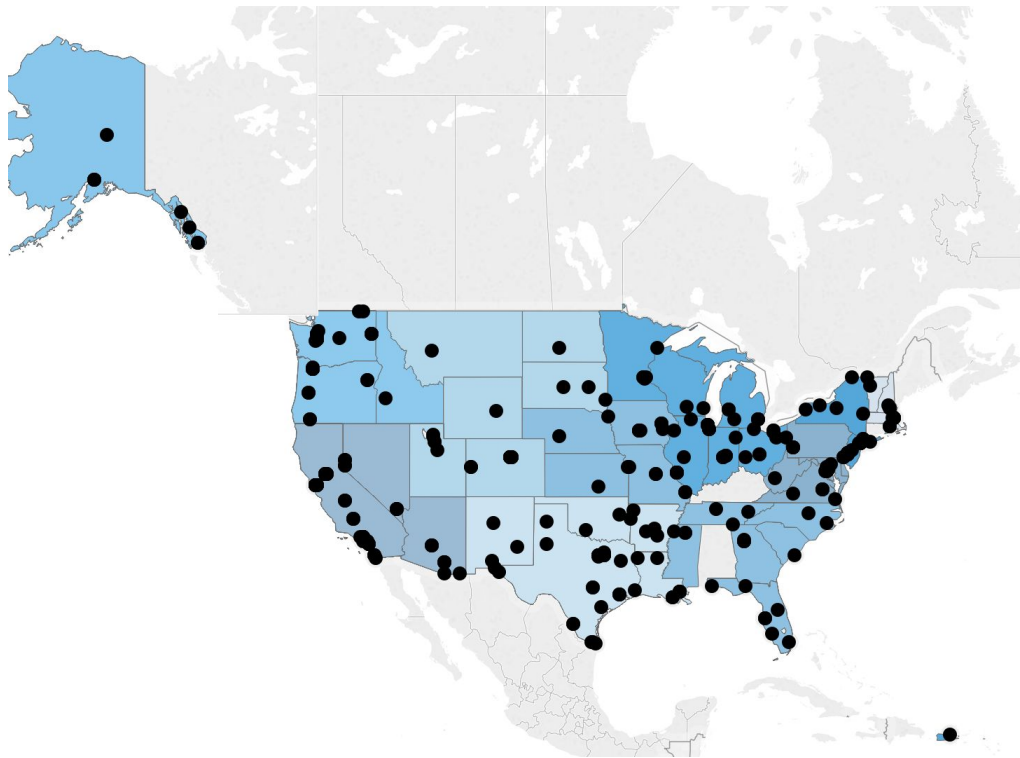


Why Field Evaluations?

Address the lack of objective performance and cost data that inhibit some technologies from finding their customer base.



Center for Emerging Building Technologies: 2011–2021



792 Technology Applications

80 Technologies Evaluated

48 Reports Published

23 Technologies Deployed in
500+ Facilities

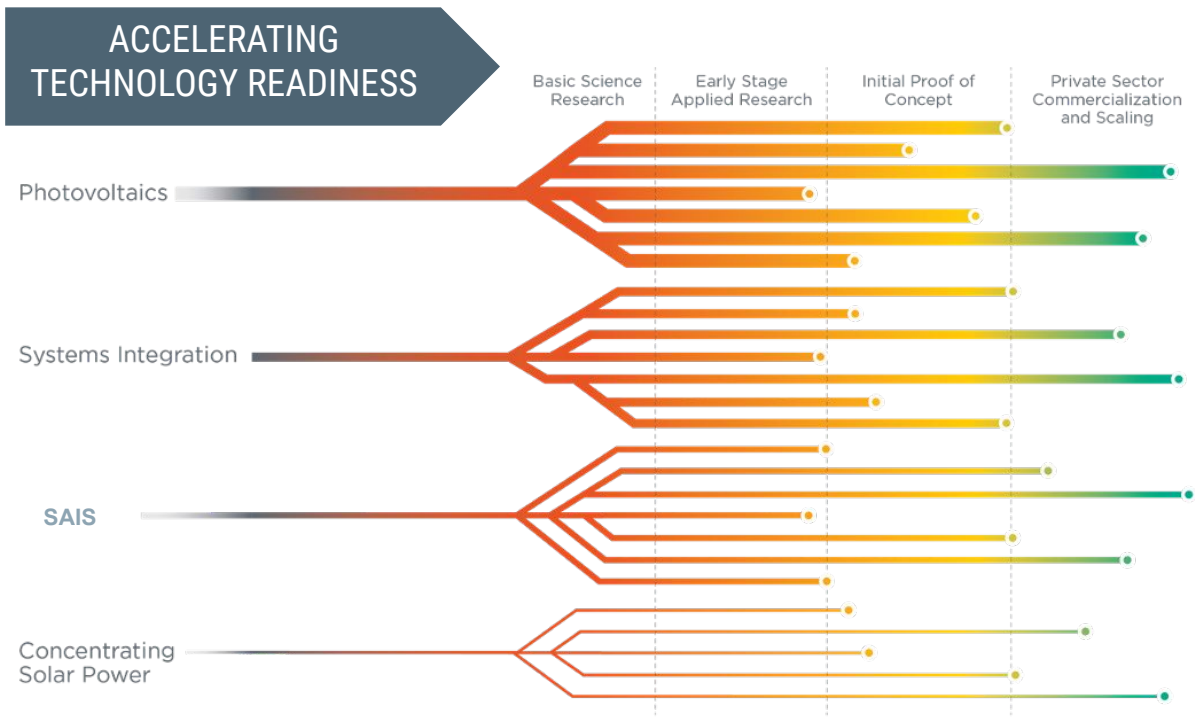
Total Lifecycle Cost Avoidance

\$203M



U.S. DEPARTMENT OF
ENERGY

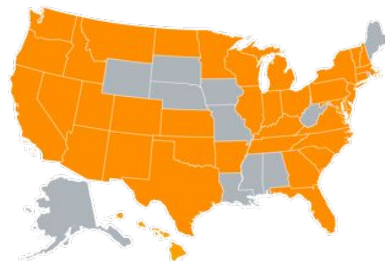
Solar Energy Technologies Office (SETO)



SETO Manages

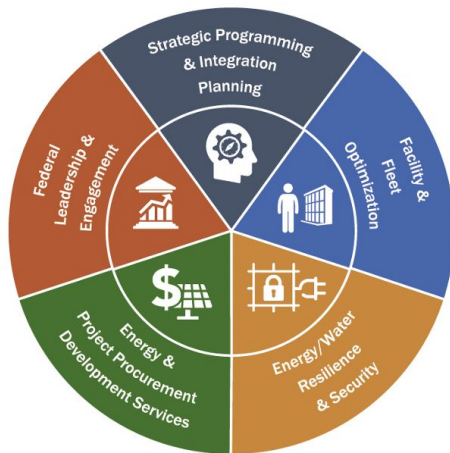
>375 Active Projects in
47 States and DC

30% Business/Non-Profit
40% National Labs
30% Universities



SETO Contact:
Robert.Meagley@ee.doe.gov

Federal Energy Management Program (FEMP)



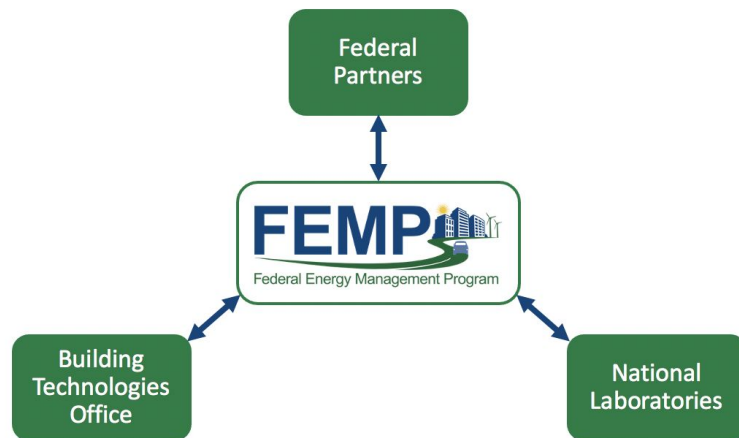
FEMP Mission

FEMP facilitates strategic energy management to enable federal agencies to meet energy-related goals, ensure mission assurance during normal operations, and prepare for mission assurance during conditions that impact normal operations.

FEMP Technology Validation Role

FEMP facilitates collaboration with DOE, federal partners, and National Laboratories to connect potential validation sites with solution providers.

FEMP Contact: Hayes.Jones@ee.doe.gov



Building Technologies Office (BTO)

Better Buildings Partners Are

**FORTUNE
100**

**32 of the
Fortune 100
Companies**

BTO Technology Field Validation

Connect national laboratories with technology providers and recruited host sites to provide technical assistance and 3rd party measurement and verification.

BTO Contact: Amy.Jiron@ee.doe.gov



**13% of All
Commercial
Building Space**



**12 of the
Top 25 U.S.
Employers**



28 State Governments



**90 Local
Governments**



[illegible]



What Are We Looking For?



RFI: What Are We Looking For?

Technology Maturity—Early Commercial

Only technologies and solutions that are ready for evaluation in occupied, operational buildings will be considered. Commercial technologies broadly in use and readily available are not appropriate candidates

Technology Categories

- High-Performance/Low-Carbon
- On-site Energy Generation and Storage
- Greenhouse Gas or Carbon Reduction



High-Performance/Low-Carbon Technologies or Solutions

Example technologies include:

- Technologies that electrify major loads
- Larger scale heat pumps (>10 tons/120,000 Btu) appropriate for cold climate zones and packaged heat pump systems with water heating or integrated with make-up air systems
- Innovative retrofit technologies to capture and manage waste heat
- Innovative building envelope retrofit solutions



On-site Energy Generation and Storage Systems

Example technologies include:

- Innovative integrated photovoltaics & storage
- Building integrated PV
- High efficiency PV cell & modules (> 20% efficiency)
- Solar thermal and geothermal
- Non-building mounted on-site distributed wind
- Hydrogen fuel cell technologies for on-site power



Greenhouse Gas or Carbon Reduction

Example technologies include:

- Technologies that use next-generation, low or no GWP refrigerants
- On-site carbon capture technologies for fuel-fired processes



Novel Financing Approaches



Novel financing approaches and/or business models to accelerate uptake of low-carbon technologies are encouraged, and may be integrated into responses to this RFI to streamline and accelerate deployment of the technology or solution.

Vendors Must Demonstrate Measurable Success Criteria

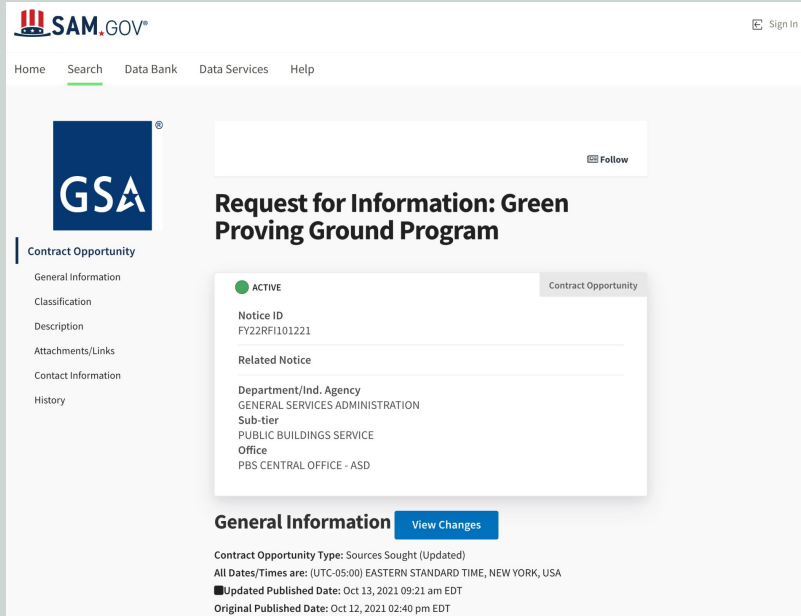
- Reduce GHG emissions
- Reduce primary energy (including electricity and fuel)
- Enable on-site energy generation (where applicable)
- Achieve reasonable simple payback periods
- Demonstrate novel financing approaches (where applicable)



RFI Mechanics and What it Means to Participate



RFI: How to Apply Applications Due by Tuesday, December 7, 11:59 PM EST



The screenshot shows the SAM.gov website interface. At the top, there's a navigation bar with 'Home', 'Search', 'Data Bank', 'Data Services', and 'Help'. A 'Sign In' button is in the top right. On the left, there's a sidebar with a 'GSA' logo and a 'Contract Opportunity' section containing links for 'General Information', 'Classification', 'Description', 'Attachments/Links', 'Contact Information', and 'History'. The main content area features a 'Request for Information: Green Proving Ground Program' title. Below the title, there's a 'Follow' button. A status box indicates the opportunity is 'ACTIVE' with a green dot. The 'Notice ID' is 'FY22RFI101221'. A 'Related Notice' section lists details: 'Department/Ind. Agency: GENERAL SERVICES ADMINISTRATION', 'Sub-tier: PUBLIC BUILDINGS SERVICE', 'Office: PBS CENTRAL OFFICE - ASD'. A 'General Information' section has a 'View Changes' button. At the bottom, it specifies 'Contract Opportunity Type: Sources Sought (Updated)', 'All Dates/Times are: (UTC-05:00) EASTERN STANDARD TIME, NEW YORK, USA', 'Updated Published Date: Oct 13, 2021 09:21 am EDT', and 'Original Published Date: Oct 12, 2021 02:40 pm EDT'.

Request for Information: Green Proving Ground Program

ACTIVE

Notice ID
FY22RFI101221

Related Notice

Department/Ind. Agency
GENERAL SERVICES ADMINISTRATION

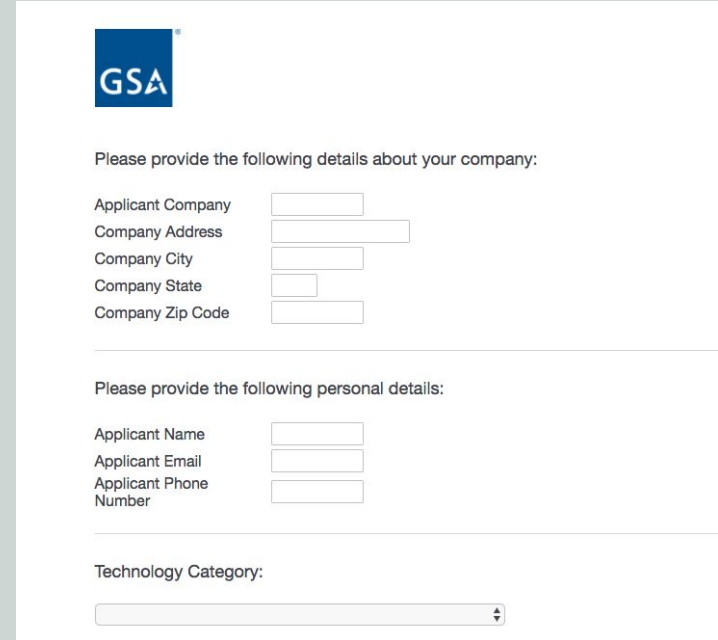
Sub-tier
PUBLIC BUILDINGS SERVICE

Office
PBS CENTRAL OFFICE - ASD

General Information [View Changes](#)

Contract Opportunity Type: Sources Sought (Updated)
All Dates/Times are: (UTC-05:00) EASTERN STANDARD TIME, NEW YORK, USA
■ Updated Published Date: Oct 13, 2021 09:21 am EDT
Original Published Date: Oct 12, 2021 02:40 pm EDT

sam.gov/#FY22RFI201221



The screenshot shows the application form for the RFI. It starts with the 'GSA' logo. Below it, a heading asks the user to provide company details. There are five input fields: 'Applicant Company', 'Company Address', 'Company City', 'Company State', and 'Company Zip Code'. A horizontal line separates this section from the next, which asks for personal details. There are three input fields: 'Applicant Name', 'Applicant Email', and 'Applicant Phone Number'. Another horizontal line follows, leading to the 'Technology Category' section, which features a dropdown menu.

GSA

Please provide the following details about your company:

Applicant Company

Company Address

Company City

Company State

Company Zip Code

Please provide the following personal details:

Applicant Name

Applicant Email

Applicant Phone Number

Technology Category:

[RFI Application](#)



Factors considered in selecting a technology:

1. Innovation
2. Performance
3. Costs/Savings
4. Deployment Potential
5. Technical Risk

Benefits to Participating in a Testbed Evaluation



- Participate in well-supported, high-visibility GSA and DOE programs
- Engage in a full-scale pilot with M&V managed by others
- Receive independent insights regarding technology fit for public- and private-sector buildings
- Inform public- and private-sector investment decisions through publicly available M&V findings
- Increase market acceptance by validating real-world performance

Path to Procurement and BAA and TAA Compliance

For GSA: For technologies looking to sell to the federal market you need a path for BAA or TAA compliance

- [Executive Order 14005 Ensuring the Future Is Made in All of America by All of America's Workers](#)
- [Buy American Act](#) (BAA)
- [Trade Agreements Act](#) (TAA)

For PV: need registration on [EPEAT](#) or exemption

- Ecolabel developed under EPA grant
- Environmental impact reduction by eco-labeled products
- Includes PV Modules and Inverters and other consumer electronics



Program Participation: Your Contribution

Technology

- GSA – Core equipment for evaluation must be (1) gifted to the U.S. government or (2) provided via alternative financing mechanism (i.e. UESC). Equipment installation will be funded by GSA.
- DOE – Project details and costs will be negotiated between vendor and host site partner.

Time and Travel

- Provide input to labs on test bed design, project plan, and evaluation report.
- Provide guidance on installation, commissioning, and tenant engagement.
- Travel to 1–3 on-site meetings.

Neither GSA nor DOE will provide direct funding to participate in the evaluation

Roles and Responsibilities

Federal Program	Host Site	National Lab	Tech Vendor
■ Overall project management ■ Coordinate and fund M&V ■ Lead report review and publication ■ <i>GPG only: Fund tech installation</i>	■ Oversee all contracting ■ Manage technology installation ■ Facilitate tenant engagement ■ Provide user feedback	■ Design project plan ■ Site evaluation ■ Collect and analyze data ■ Author technical report	■ Provide technology ■ Support design, installation and commissioning

RFI: Potential Host Sites

DOE High Impact Technology

- All commercial buildings in the U.S., including privately-owned buildings, federal buildings outside of GSA's jurisdiction, and institutional buildings. Vendors are encouraged to bring your own site.

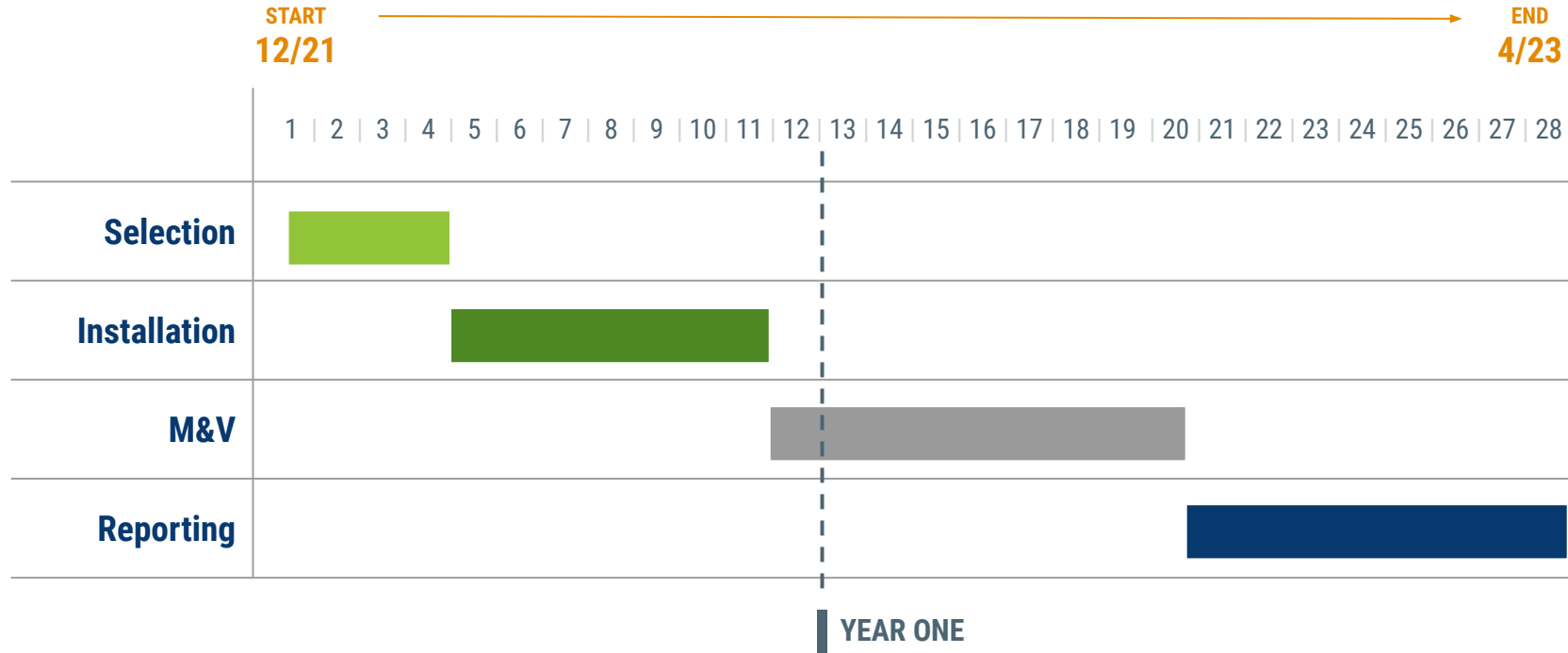
GSA

- Federally-owned buildings in GSA's portfolio
- Large urban buildings with central plant
 - 90% buildings > 100,000 ft², 80% portfolio energy spend: buildings > 200,000 ft²
- Majority in mild climate zone
 - > 80% in ASHRAE climate zones 3, 4, 5
- Energy efficient: Majority Energy Star 80 or better

RFI: Timeline

RFI Closes	December 7, 2021
GSA/DOE Reviews Completed	Early February 2022
Semi-Finalists Identified and Notified	Mid February 2022
Semi-Finalist Presentations (virtual)	March 2022
Finalist Selected	April/May 2022

Assessment Timeline



RFI: Program Information and Resources

 U.S. General Services Administration

Per Diem Lookup

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Home > Governmentwide Initiatives > Climate Action and Sustainability > Emerging Building Technologies

Emerging Building Technologies



GSA & DOE Seek Technologies for Net-Zero Carbon Buildings - RFI closes December 7

Seeking technologies that help reduce greenhouse gas emissions from commercial buildings

☐ ☒ ☐ ☐ ☐

Our two programs — [Green Proving Ground \(GPG\)](#) and [Pilot to Portfolio \(P2P\)](#) — enable GSA to invest wisely in next-generation building technologies.

Green Proving Ground (GPG)

Test-bed measurement and verification (M&V) — published reports, infographics and summary documents in the following categories:

- Overview of GPG
- Building Envelope
- Energy Management
- HVAC
- Lighting
- On-Site Power & Renewables
- Water



Pilot to Portfolio (P2P)

Deployment support — resources for GPG-proven technologies:

- Overview of P2P
- GPG-Validated Technologies for GSA
- On-Demand Webinars
- GSA Technology Deployment Maps
- Newsletters

Get updates

 Sign up for the mailing list

Email address

Go

RFI for Technologies for Net-Zero Carbon Buildings

Open October 12 - December 7, 2021

GSA, in collaboration with DOE, has issued a Request for Information (RFI) to obtain responses from vendors and other interested parties on technologies that help reduce greenhouse gas emissions from commercial buildings. The RFI invites industry to submit information on early-commercial technologies that are ready for evaluation in occupied, operational buildings.

[Learn more about the RFI](#)

Q&A

gpg@gsa.gov | gsa.gov/gpg

Applications Due by Tuesday, December 7, 2021 11:59 PM EST



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