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# Kickstart Massachusetts Request for Application

## Background and Program Goals

HEET, a Massachusetts climate solutions incubator, is releasing this Request for Applications (RFA) for community networked geothermal feasibility studies. We will be funding up to 10 projects that explore how networked geothermal heating and cooling could be installed in communities across the Commonwealth.

In Massachusetts, building operations account for 30% of all emissions. Electrifying building heating is key to achieving the state's 2050 net zero mandate. Individual ground-source heat pumps are more than twice as efficient as air-source heat pumps, and when networked together in a campus or community setting by an ambient-temperature loop, energy efficiencies have been reported to reach a coefficient of performance (COP) of 8.9 at peak performance.

Eversource Gas is currently installing the first utility-led networked geothermal system in the country in Framingham, and National Grid has broken ground on a similar pilot project in Lowell. [HEET is leading a research team](#) that is studying these installations to assess the potential of networked geothermal to deliver thermal energy throughout the state.

Our intent with this funding is to begin developing a pipeline of shovel-ready networked geothermal projects in Massachusetts, both to support the scaling of this extremely promising pathway to decarbonization, and to help the selected communities access further funding and investment opportunities. Kickstart Mass will also help foster community engagement and education around the benefits of networked geothermal and how these systems work in homes and businesses. HEET will monitor progress on the feasibility studies and help support successful outcomes by connecting grant recipients to system designers, installers, and other industry professionals.

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## Grant Description

Kickstart Mass, a collaboration between HEET and the Massachusetts Clean Energy Center, will provide grants of up to \$50,000 to 7-10 Massachusetts communities through a competitive application process to conduct initial feasibility studies that assess potential sites for networked geothermal. At least 40% of Kickstart Mass grant funding will go to Environmental Justice communities.

Once grant recipients are selected, there will be an opportunity to negotiate any changes that may need to be made regarding the requested funding amount and project scope. We anticipate feasibility studies will take 6-9 months to complete with final feasibility studies published at the beginning of 2024. Each community's feasibility study will consider the unique opportunities and challenges to the design and implementation of a networked geothermal system.

## Eligibility

1. **Must** be physically located within one of the 351 municipalities in Massachusetts
2. **Must** be able to receive and hold funding in business or organization account OR provide proof of fiscal sponsorship
3. Lead applicants **may** be a municipal agency, community-based organization, academic institution, property owner, or business. However, the examples of lead applicants listed are not meant to be exhaustive. HEET will consider any entity as a lead applicant so long as documentation of partnerships with other municipal stakeholders is provided.

## Use of Funds

Kickstart Mass grant recipients may use funds to cover staff time, community engagement, contracting of project consultants, and other administrative expenses. We understand that the available funding may not cover the total amount for conducting the feasibility study. We encourage applicants to seek cost-matching opportunities and supplemental grants to help cover additional costs. Please see the Budget section below for more information.

## Disbursal of Funds

Funds will be disbursed based on deliverables tied to key milestones established in your project timeline. In the event that an applicant needs initial funding to meet the first milestone deliverable, please describe this need in the Milestones & Timeline section. If your application is approved, the terms of this up-front payment will be negotiated with the HEET team.

Deliverables should be submitted to [kickstartmass@heet.org](mailto:kickstartmass@heet.org) and will be reviewed within 10 business days. If the deliverable is approved, funding will be disbursed within five business days from the date of

approval. Grant recipients will be notified of the status of their deliverables and any resulting milestone payments via email to the lead applicant.

In the event that grant recipients are unable to successfully meet the agreed-upon project milestones and deliverables, HEET reserves the right to rescind payments.

## Deadlines & Key Dates

Please visit the [Kickstart Mass page](#) for times and links.

- September 12 Office hour
- October 13 Deadline to request application and/or technical assistance from HEET
- October Informational webinar (date TBD)
- November 1 Optional application pre-review—submit to [kickstartmass@heet.org](mailto:kickstartmass@heet.org)
- December 1 Final applications due
- January 30, 2024 Grants awarded
- March 1, 2024 Begin feasibility studies
- End of 2024 Feasibility studies must be completed

Note: Any date changes will be reflected on HEET's [Kickstart Mass page](#).

## Evaluation Process

Applications will be evaluated by a scoring committee of external reviewers. Applications will then be reviewed by a selection team composed of five reviewers, three of which are members of HEET. HEET is interested in funding a diverse array of projects, so please include information on the applicable diversity dimensions listed below. HEET may reach out to applicants to clarify information provided in the application.

## Applicant Information

Please provide general information about your organization and contact details. This information will be used to create or update our grant record system.

### Organization Information

Organization legal name:

Organization AKA or DBA, if applicable:

Mailing address:

Organization phone:

Organization web address:

## Contact Information

First name:

Last name:

Title:

Phone:

Email:

If the contact is not the executive director, please include:

Executive Director first name:

Executive Director last name:

**[Optional] Please list the key stakeholders/stakeholder groups that would comprise the project team for this feasibility study and contact information for each member. Describe each individual's or group's role and experience.**

## Organizational Tax Status

Is your organization a 501(c)(3) nonprofit organization with a valid EIN from the IRS?

If yes, please answer the following questions:

- EIN (please type in the following format: XX-XXXXXXX):
- Attach a copy of your organization's official notice of tax-exempt status from the IRS (see links for a [sample document](#) or [directions on how to obtain the letter](#)).
- Attach a copy of your organization's current Board of Directors list.

Is your organization a community-based organization (CBO), municipal agency, accredited educational institution, or other entity?

- If municipal agency:
  - Attach proof of affiliation (written verification from local municipality of department/agency affiliation)
  - Link to the website or attach a staff or city/county board list
- If community-based organization:
  - Link to website, attach staff list or proof of affiliation
  - Attach proof of fiscal sponsorship if the CBO receives funding but is not a 501(c)(3)
- If educational institution:
  - Attach an administrative staff list for your institution:
  - Attach your district's W-9 form:
  - If you are a public school, please confirm whether you have received authorization for this project from your superintendent.
- If other entity:
  - Attach proof of affiliation

## Budget

HEET anticipates awarding 7-10 grants of up to \$50,000 each. Applicants may seek additional funding to supplement the Kickstart Mass grant. Please note that any HEET funding must be used solely for purposes designated in the application that are not also being funded by any additional sources.

Options for additional funding include:

- [Empower Massachusetts \(Mass Clean Energy Center\)](#)
  - Build organizational capacity & explore innovative solutions (\$5,000 to \$50,000)
  - Implement solutions (\$50,000 to \$300,000)

### Project Budget

Please submit a budget for the proposed feasibility study project. (See Appendix for budget template).

Include:

- Staff/Labor costs
  - Consultants
- Equipment and materials
- Administrative costs and overhead
- Other anticipated expenses

If you are applying for supplemental funding, please include the amount in the budget and provide the information below for each funding source.

***Please note:*** *If your project is contingent on additional funding that has not been secured at the time your application is submitted, and that funding subsequently falls through, you must notify HEET within three business days, and HEET reserves the right to withdraw funding. You may also submit an amended budget for a reduced scope of work, which the Review Committee will consider.*

- Name of funding source
- Website
- Grant description
- Grant amount
- Timeline
  - Application deadline
  - Award date
  - Disbursement date
  - Grant completion date
- Required deliverables, if any

## Timeline & Milestones

Please provide a proposed timeline of your feasibility study project. This may include potential deliverables, milestones, and project outcomes. Include a detailed description of each milestone (2-5 sentences). Milestones will be used to determine the disbursement of funds upon their approval by HEET.

**Please note:** Feasibility studies are expected to begin on March 1, 2024, and be completed by the end of 2024.

## Application Questions

Please complete each section to the best of your knowledge and with the information available in your municipality. HEET team members and other technical experts are available to assist you if needed.

## Submission Specifications

**Application:** Please email a single PDF plus any supporting source documents in a zipped folder to [kickstartmass@heet.org](mailto:kickstartmass@heet.org).

**Large Files:** For any zipped file over 25 megs, please store it on the platform of your choice and share it with [kickstartmass@heet.org](mailto:kickstartmass@heet.org).

**File Naming Conventions:** File names are important to help us clearly understand your submission and supporting documents. Please consistently begin each file name with a short version of your entity's name and then explicitly describe what the file is. For example, if the City of Somerville Office of Sustainability and Environment were applying, a sample file name for the application could be "Somerville OSE-Kickstart Application."

## Section 1: Community Demographics

1. Please provide demographic information and data sources about your municipality. Key elements to include are population, population density (urban/suburban/rural), household size, age distribution, race/ethnicity, languages spoken, employment status, household income, housing (renters vs homeowners), and energy burden (percentage of household income spent on utility bills).
2. To understand the [environmental justice population](#) distribution in your municipality, please submit a map of the EJ block groups in your municipality from [The Environmental Justice Map Viewer](#) developed by the state's Executive Office of Energy and Environmental Affairs.

## Section 2: Building Typology and Zoning Map

1. Please provide building typology information for your municipality including the number of buildings by use type, number of parcels, and age of buildings. Also please link to your

municipality’s zoning bylaws and zoning maps with clearly defined land-use districts, overlay districts, and other unique geographic elements.

**Note:** Please use standard building types for commercial and residential defined by the Department of Energy. See [Prototype Building Models](#)

### Section 3: Utility Information

1. Please provide electric, gas, and water utility information for the municipality, including any municipal-owned utility (or utilities). Information to include:
  - a. Name
  - b. Service territory (indicate if your municipality is served by multiple utilities of each type)
  - c. **[Optional]** Any other context about the engagement between the utility company and community members to date.
  
2. Please provide energy efficiency data for the municipality. If your municipality is served by Mass Save, data can be obtained from [The Massachusetts Energy Efficiency Database](#). Data obtained from The Massachusetts Energy Efficiency Database can be found in the “Geography” section under “Usage, Savings, and Incentives”. Filter by Municipality and download a PDF version.

**Note:** Please include Annual Electric Usage (MWh), Annual Electric Savings (MWh), Electric Incentives (\$), Annual Gas Usage (Therms), Annual Gas Savings (Therms), Gas Incentives (\$).

### Section 4: Stakeholder Engagement and Knowledge

1. Please describe the process for stakeholder engagement in your municipality as it pertains to environmental policy and program development. **(1000 words maximum)**
  - a. What stakeholder groups are engaged?
  - b. How is community input gathered?
  - c. Where is information shared?
  - d. What opportunities are provided to educate stakeholders?
  
2. Please describe any stakeholder engagement and education that has been conducted in your municipality around networked geothermal. If none has been done so far, please describe how you would conduct that engagement process. **(500 words maximum)**
  
3. Please describe how you would educate and elicit feedback from environmental justice communities during the study to ensure a thorough analysis of the key environmental justice considerations. Describe what those considerations may be in your municipality. **(500 words maximum)**



4. List the interested stakeholders/stakeholder groups that your team plans to collaborate with throughout the feasibility study and provide any letters of support from relevant municipal offices, community-based organizations, and other stakeholders.

## Section 5: Identify Geothermal Site(s) *[Optional]*

Please review the HEET guidance document on Networked Geothermal Site & Design Considerations before completing this section. If your team has already identified a potential site you may provide site-specific information. If your team has not selected a specific site, you may provide municipal information. The questions in this section can be submitted partially completed, based on the information available at the time of applying, and will not be penalized in the evaluation process.

### Building heating/cooling needs and related systems

#### 1. Mixed cooling and heating use

Connecting buildings with different energy needs increases system efficiency and requires a smaller bore field, both of which reduce costs. For instance, an office building requiring cooling can heat several homes with the waste heat.

#### 2. Building heating and cooling distribution system

Heat pumps currently cannot efficiently provide the heat needed for steam radiators, thus steam systems would need to be replaced in any buildings connected to the system, increasing the cost.

#### 3. Adequate electric panel and wiring

A significant percentage of homes do not have adequate electric service and legal wiring to run a heat pump. Evaluating the electric capacity of the buildings is an important step in creating a project scope of work and budget.

### Geological Assets

#### Information sources:

- [Water and geothermal well digital mapping application](#)

This free, public application allows users to:

- ◆ View well completion reports ('well logs') pertaining to geothermal systems
- ◆ View thermal conductivity point measurements of MA overburden and bedrock materials
- ◆ Compare the above data with parcel maps, 1:24,000 surficial geology maps, bedrock lithographic maps, and USGS topographic maps
- ◆ Add/upload their own GIS data layers, or export point data for their own projects
- ◆ View MA State and local guidelines concerning GSHPs and FAQs regarding MA State and local permitting

- ◆ Make connections to MA local agencies involved in the permitting of GSHPs

**Note:** This application is currently intended as a desktop tool. The website formatting has not yet been optimized for phones or small screens. Please report website errors or suggestions for improvements to: [program.director-dwp@mass.gov](mailto:program.director-dwp@mass.gov) or to [alex.gamble@mass.gov](mailto:alex.gamble@mass.gov)

→ Data and maps from [MassGIS \(Bureau of Geographic Information\)](#)

**Please provide the following supplemental information, if available:**

- 1. Well log data** closest to the proposed site/municipality. Enumerate and attach MassDEP data logs found and the distance from the proposed site/municipality.
- 2. Access to thermal storage: Bedrock**  
Bedrock provides good thermal conductivity for thermal storage. Almost all of Massachusetts (with the exception of Cape Cod, the islands and portions of southeastern Massachusetts) has bedrock at an average depth of 35 feet, which can generally result in a cost-effective borehole installation. Provide estimates on bedrock lithology, elevations, well types/distributions, and vertical distance to bedrock from surrounding well log data, if available.
- 3. Surface or groundwater resource**  
Access to a river, canal, aquifer or the ocean is a potential thermal source so long as the loop is closed and any thermal shifts are within a permitted range that ensures no negative impact on the body of water.
- 4. Groundwater presence**  
Information about groundwater quality and flow is essential for design to ensure the thermal storage is calculated correctly and the grout is consistent with local water conditions. Groundwater salinity is especially important to the selection of effective grout material and is more likely to be an issue in a coastal setting.

**Heat recovery and heat networking opportunities**

1. Given the building typologies and their associated loads, there may be opportunities to provide a large source or sink to the network. Please provide information on opportunistic buildings that may be present in the proposed community.

**Examples include:** *Steam condensate, ice rink, grocery stores, food packaging factory, gymnasium, data center, brewery*

2. Consider additional stakeholders to engage to leverage opportunistic thermal resources such as: transit tunnels, sewage, wastewater facilities, storm drains, etc

### **Test Borehole**

If you have drilled a test borehole, please provide at a minimum:

1. Drilling company and point of contact
2. Thermal conductivity test
3. Geological information
4. Depth to bedrock
5. Hydrology

If you plan to drill a test borehole, please describe your site selection and driller acquisition process and outcomes.

## Appendix: Budget Template

Organization name		
PROJECTED INCOME		
Funding Sources	Amount	Funds Requested or Committed?
Kickstart Grant	\$	Requested
	\$	
	\$	
	\$	
	\$	
	\$	
<b>Total Income</b>	\$	
PROJECTED EXPENSES		
Expense	Amount	Billed to Kickstart Grant? (Y/N)
	\$	
	\$	
	\$	
	\$	
	\$	
<b>Total Expenses</b>	\$	

**Note:** Total income must match total expenses.

If necessary, please include any clarifying information about the project budget.

**Note:** HEET recognizes circumstances may change over the life of a grant. Therefore, if there are any changes to line items of this budget, please submit an amended budget to HEET for approval prior to spending remaining funds.