

“NextGen HVAC Innovation Challenges”
 Program Opportunity Notice (PON) 3519
Up to \$15 Million Available
Round 4 of 4

NYSERDA reserves the right to extend, and/or add or reduce funding to this solicitation

Important Dates* by: Rounds 1 & 2: 5:00 pm Eastern Time Rounds 3 & 4: 3:00 pm Eastern Time				
Round	Challenge Areas	Challenge Announcement	Concept Paper Due Date(s)	Full Proposal Due Date(s) (Tentative)
1	Heat Pumps, HVAC Controls, Compressorless HVAC, GHEX	June 29, 2017	August 3, 2017	November 16, 2017
2	Heat Pumps, HVAC Controls, Compressorless HVAC	March 22, 2018	April 26, 2018	August 14, 2018
3	Heat Pumps, Thermal Distribution, Open	December 6, 2018	January 17, 2019	May 9, 2019
4	Heat Pumps, Thermal Distribution, Energy Pod, Technology Transfer	October 17, 2019	December 12, 2019	May 26, 2020
<p align="center"> *Dates are subject to change. Proposers should check NYSERDA’s website https://portal.nyserderda.ny.gov/CORE_Solicitation_Detail_Page?SolicitationId=a0rt0000006nDncAAE for the latest updates and revisions to PON 3519. </p>				

I. Introduction

In June 2019, the New York State legislature passed the Climate Leadership and Community Protection Act (CLCPA) which codifies the requirement that New York achieve a carbon neutral economy, with at least an 85% reduction of greenhouse gasses (from a 1990 baseline) by 2050. The CLCPA sets an interim greenhouse gas (GHG) goal of a 40% reduction by 2030, along with goals of 70% renewable electricity generation by 2030, and 100% clean electricity generation by 2040. The CLCPA requires at least 35% of the funding spent on the state’s clean energy transition to benefit disadvantaged, low- and moderate-income communities (which includes affordable housing communities). The CLCPA codifies the New Efficiency NY target of 185 trillion BTUs of on-site energy efficiency by 2025, with a sub-target of 5 trillion BTUs through heat pump conversions.

In May 2019, New York City (NYC) introduced Local Law 97 as part of the Climate Mobilization Act (CMA). The CMA sets declining carbon emissions intensity caps for 2024 and 2030 covering buildings over 25,000 square feet in NYC. Failure to meet the caps carries significant financial penalties. To avoid those penalties, carbon intensive buildings will require comprehensive energy retrofits or alternate compliance through the purchase of renewable energy credits, if available. Meeting the CMA emission caps will reduce GHG emissions from NYC’s building stock 40% by 2030. The CMA calls for an advisory council to establish lower emissions caps every 5 years beyond 2030, ultimately resulting in the reduction of GHG emissions from NYC’s building stock of 80% by 2050.

Buildings are a large user of energy, a major contributor to greenhouse gas emissions (GHG) and system peak demand, and an important critical infrastructure for New York State (NYS). Heating, ventilation, and air conditioning (HVAC) equipment consumes approximately 40% of the energy used by residential and



commercial buildings, making this end use responsible for approximately 25% of the total energy used and 36% of the GHG emissions in NYS. The cooling requirement for buildings is the primary contributor to the difference between peak electric system demand (>32 GW) and average base-load system demand (<18 GW).

The large capital investment and long asset life of existing HVAC equipment requires new HVAC technologies to have compelling value propositions in order to achieve market adoption. Some innovations have been technically compelling but not commercially successful. Additionally, solutions on the market today do not address New York's diverse climate or dense urban population and are not sufficient to meet New York's aggressive energy and GHG reduction goals.

The NYSERDA NextGen HVAC program seeks to reduce the energy use of NYS consumers through advancements in the performance and capabilities of economically viable HVAC solutions. By supporting HVAC innovations, the program will enable buildings to be more energy efficient, load flexible, and resilient. Additionally, many HVAC innovations have the added benefit of improved indoor air quality and quality of life for consumers, providing not only economic value, but also improved occupant comfort.

This solicitation focuses resources on the successful commercialization of HVAC innovations. In addition to articulating the technical innovation, proposers must describe their commercialization strategy, including: customer discovery and channel strategy, competitive landscape, intellectual property, fundraising needs, manufacturing and scale-up, key partners, and team qualifications and development.

Through this solicitation, NYSERDA will issue a series of innovation challenges over four Rounds and three years (2017-2019). NYSERDA will identify attributes to drive HVAC innovation and challenge innovators to develop solutions that deliver on those attributes. Each Round of this solicitation will begin with the announcement of one or more specific innovation challenges. The areas NYSERDA expects to address through this solicitation include: heat pumps, compressorless HVAC, thermal distribution, advanced HVAC controls, renewable HVAC, integration of renewables/storage with conventional HVAC, solutions for decoupling the sensible and latent cooling requirements, and reductions in peak demand.

NYSERDA will announce the specific innovation challenge(s) for each Round on the tentative dates listed above. Interested proposers should check each Round for the specific innovation challenge areas. NYSERDA reserves the right to add, delete, or modify any of the innovation challenges over the course of this solicitation.

All Concept Papers and Proposals for Round 4 must address one of the following Innovation Challenge Areas: Heat Pumps; Thermal Distribution; Energy Pod, or Technology Transfer. For detailed discussion of each area, refer to Attachments E1 – E4 respectively.

A two-step evaluation process will be used. For each Round of the solicitation, proposers will be required to submit a Concept Paper by the indicated due date. All Concept Papers will be reviewed by a Scoring Committee (SC) based on the evaluation criteria listed in Section IV. NYSERDA may invite proposers whose Concept Papers have been selected for further consideration to submit a Full Proposal. The invitation will include the date by which Full Proposals must be received. Failure to submit a Concept Paper precludes submission of a Full Proposal. Submission of Full Proposals is by **invitation only**.

Proposal Submission: Online submission is preferable. Proposers may submit Word, Excel, or PDF files (file formats include: csv, doc, docx, gif, jpeg, jpg, pdf, png, ppt, pptx, pps, ppsx, tif, txt, xls, xlsx, and zip). Individual files should be 100MB or less in file size. Proposal PDFs should be searchable and should be created by direct conversion from MS Word, or other conversion utility. Files should not be scanned. For ease of identification, all electronic files must be named using the proposer's entity name in the title of the document. NYSERDA will also accept proposals by mail or hand-delivery if online submission is not possible. For detailed instructions on how to submit a proposal (online or paper submission), click the link "Application Instructions and Portal Training Guide [PDF]" located in the "Current Opportunities" section of NYSERDA's website (<https://www.nyserda.ny.gov/Funding-Opportunities/Current-Funding-Opportunities.aspx>).

Mailed or hand-delivered Concept Papers or Proposals must be clearly labeled and submitted to:

**Jillina Baxter, Concept Papers, PON 3519; or
Jillina Baxter, Proposals, PON 3519
NYS Energy Research and Development Authority
17 Columbia Circle
Albany, NY 12203-6399**

Questions? Please see the list of Designated Contacts below. No communication intended to influence this procurement is permitted except by contacting the Designated Contacts named herein.

- For technology-specific questions and questions on Attachment A1 – Statement of Work, see Section II: Innovation Challenge Areas below for a list of Designated Contacts.
- For commercialization-specific questions and questions on Attachment A2 - TRL/CRL Calculator, contact Erica Iannotti at (518) 862-1090 ext. 3285 or by email EricaNextGen@nyserda.ny.gov.
- For contractual questions concerning this solicitation, contact Venice Forbes at (518) 862-1090, ext. 3507 or by email VeniceSolicitations@nyserda.ny.gov.

Contacting anyone other than the Designated Contacts (either directly by the proposer or indirectly through a lobbyist or other person acting on the proposer's behalf) in an attempt to influence the procurement: (1) may result in a proposer being deemed a non-responsible offerer, and (2) may result in the proposer not being awarded a contract.

***All proposals must be received by 3 p.m. Eastern Time on the date noted above. Late, faxed, or emailed proposals will not be accepted.** Incomplete proposals may be subject to disqualification. It is the proposer's responsibility to ensure that all pages have been included in the proposal. Please note: for online submission, there are required questions that you will have to answer in addition to uploading attachments and you should allot at least 60 minutes to enter/submit proposals. The online proposal system closes promptly at 3 p.m. Eastern Time, files in process or attempted edits or submission after 3 p.m. Eastern Time on the date above, will not be accepted. If changes are made to this solicitation, notification will be posted on the "Current Opportunities" section of NYSERDA's website (<https://www.nyserda.ny.gov/Funding-Opportunities/Current-Funding-Opportunities.aspx>).

II. Innovation Challenge Areas

All submissions for Round 4 must address one of the following Innovation Challenge Areas:

1. **Innovation Challenge Area 1: Heat Pumps** – See Attachment E1
Technical questions concerning Heat Pumps should be directed to Robert Carver (Designated Contact) at (518) 862-1090 ext. 3242 or by email (RobertNextGen@nyserda.ny.gov).
2. **Innovation Challenge Area 2: Thermal Distribution** – See Attachment E2
Technical questions concerning Thermal Distribution should be directed to Michael Genovese (Designated Contact) at (518) 862-1090 ext. 3103 or by email (MichaelNextGen@nyserda.ny.gov).
3. **Innovation Challenge Area 3: Energy Pod** – See Attachment E3
Technical questions concerning Energy Pod should be directed to Michael Genovese (Designated Contact) at (518) 862-1090 ext. 3103 or by email (MichaelNextGen@nyserda.ny.gov) or Saul Brown (Designated Contact) at (518) 862-1090 ext. 3028 or by email (SaulNextGen@nyserda.ny.gov).
4. **Innovation Challenge Area 4: Technology Transfer**
Technical questions concerning Technology Transfer should be directed to Michael Genovese (Designated Contact) at (518) 862-1090 ext. 3103 or by email (Michael.Genovese@nyserda.ny.gov).

If the Designated Contact for a given technology area is not available, technology-specific questions should be directed to Joseph Borowiec (Designated Contact) at (518) 862-1090 ext. 3381 or by email (JosephNextGen@nyserda.ny.gov).

III. Program Requirements

Projects selected for funding must:

1. Show potential to reduce GHG emissions from the building sector in New York State.
2. Demonstrate benefits to electric System Benefits Charge (SBC) ratepayers (<https://www.nyserda.ny.gov/About/Funding>), regardless of the initial stage.
3. Address an opportunity to increase the energy-efficiency and/or advance the energy performance of new and/or existing buildings in the residential, multi-family, commercial, or institutional sector.
4. Provide direct and quantifiable energy, environmental, and economic benefits to New York State such as energy savings, demand response, emissions reductions, job creation, product manufacturing and sales, and/or reduced energy costs.
5. Satisfy the Concept Paper requirements and, if selected, Full Proposal requirements and sufficiently address the evaluation criteria (see Sections IV and V).
6. Complete all necessary attachments, including the Concept Paper Template (Attachment B) and, if selected, the Proposal Narrative (Attachment A), Statement of Work (Attachment A1), TRL/CRL Calculator (Attachment A2) and Budget Form (Attachment C).
7. Agree to pay recoupment to NYSERDA for commercial sales or licensing revenues of new technologies, services, or products developed with NYSERDA funding (see Section VI).
8. Agree to Annual Metrics Reporting terms (see Section VI) and General Conditions (see Section VII).
9. Development activities should describe their commercialization strategy and include other commercialization activities; basic research is ineligible.
10. Demonstration projects must take place within New York State and include a letter of support from the site owner(s)/decision maker(s).
11. Provide a letter of support and commitment from all funding sources.

Technology Stages Proposals will consist of one or more of the following stages as defined by Technology Readiness Level (TRL). Only the following three stages will be considered for funding:

Technology Stages	TRL	Proposer Cost Share
Feasibility	1-3	20%
Development	4-7	50%
Demonstration	8-9	40%

Proposals must articulate a plan to take the technology in its current stage through the Demonstration Stage. In other words, if the initial technology stage is Feasibility, the proposal should also include schedules and budgets for the Development Stage and Demonstration Stage. If the initial technology stage is Development, the proposal should also include a schedule and budget for the Demonstration Stage.

All activities with a **stage** budget in excess of \$350,000 may be broken down into **phases** at NYSERDA's discretion. Funding may be awarded for multiple phases with funding for each phase beyond the initial phase conditional upon meeting predefined goals of prior phases and contingent upon the availability of funds. An additional review will be required for projects to move between **stages**. For more information regarding the stage gating process, please refer to section 3 of 'Project Schedule, Staging, and Teaming' below.

Proposers should allocate 10-25% of the project budget for commercialization-related tasks, such as customer discovery, IP protection, business plan development, and design for manufacturing.

1. **Feasibility Stage** (Proposer cost share of 20% or greater)
 - a. Applied research aimed at early development of a new product or technology, policy, business, and/or regulatory model.
 - b. The Feasibility Stage of any proposed project will be limited to \$350,000 total.
 - c. Projects beginning in this stage should have a TRL of 1-3. If the TRL is of a greater value, the proposer should apply under the Development or Demonstration Stage.
 - d. After completing the Feasibility Stage, the sub-components should be validated and testing of the complete system should be underway.
 - e. After completing the Feasibility Stage, the innovation should be validated as commercially viable through discussions with potential customers and/or users.

2. **Development Stage** (Proposer cost share of 50% or greater)
 - a. Development and commercialization of products/services for improving the energy performance of new or existing buildings in NYS. Technical and commercial feasibility of the innovation should have been demonstrated prior to submitting to this stage. If feasibility has not yet been shown, the proposer may apply under the Feasibility Stage.
 - b. Development activities may include field testing to help improve the product/service or expected performance and value proposition.
 - c. Projects beginning in this stage should have a TRL of 4-7. If the TRL is less than 4, the proposer should submit under the Feasibility Stage. If the TRL is over 7, the proposer should submit under the Demonstration stage.
 - d. After completing the Development Stage, a prototype that can reliably perform all functions that would be required in an operational system should exist.
 - e. After completing the Development Stage, the team should have a strong, market-validated commercialization strategy that addresses commercialization activities.

3. **Demonstration Stage** (Proposer cost share of 40% or greater)
 - a. Demonstrations of new or under-utilized technologies or practices that advance the energy performance of either new or existing buildings in NYS.
 - b. Proposals beginning in the Demonstration Stage should not include technology or product development activities. If technology or product development activities are appropriate, the proposer may propose under the Feasibility Stage or Development Stage.
 - c. Demonstration proposals should clearly identify how the project will bring the product, technology, or practice closer to commercial success and how the demonstration will lead to increased use of the technology or practice in NYS.
 - d. Demonstration proposals should include a detailed plan for disseminating project results to a wide audience.
 - e. Evaluation of the demonstration should be conducted by a recognized and independent third-party evaluator (i.e., evaluator has no financial interest in the outcome of the demonstration).
 - f. The demonstration must take place at a site that pays into the Clean Energy Fund (<https://www.nyserda.ny.gov/About/Funding>) through the electric SBC unless significant statewide benefits are demonstrated.
 - g. Projects submitted under the Demonstration Stage should have a TRL of 8-9. If the TRL is less than 8, the proposer should submit under the Feasibility Stage or Development Stage.
 - h. After completing the Demonstration Stage, the product should be in its final form and ready for market.
 - i. After completing the Demonstration Stage, the team should have a strong, market-validated commercialization strategy.

Project Schedule, Staging, and Teaming: All proposers should consider the following guidelines when developing their submissions:

1. Proposers must select an initial stage and indicate it in their proposal. Unless the initial stage selected is Demonstration, the proposal will be a multi-stage proposal with commercialization as the end goal.

- a. The proposer should describe how they will complete their initial stage and any following stage along with significant milestones, total cost, and schedule for each stage.
- b. For example, if the initial stage is Feasibility, the proposal should also include separate tasks, schedules, and budgets for the Development Stage and Demonstration Stage. If the initial stage is Development, the proposal should also include separate tasks, schedule, and budget for the Demonstration Stage.
- c. NYSERDA reserves the right to modify a project's Statement of Work and may offer to fund part of the proposal or stage therein at a level lower than that requested, such as offering to fund only a single **stage** of a multi-stage proposal rather than a full development effort.



2. A project is expected to begin within nine months of the proposal due date. No project schedule should exceed a total of 36 months, except to indicate commercialization activities beyond those of the proposed project.
3. For multi-stage proposals:
 - a. Any contract awarded to fund one or more stage(s) of a multi-stage project does not in any way obligate NYSERDA to fund the later stages.
 - i. NYSERDA anticipates awarding contracts for either a single stage of a multi-stage project, or for multiple stages. In the case of a multi-stage award, NYSERDA anticipates issuing a contract with a maximum, "not-to-exceed" amount with subsequent stages only being awarded on a contingent basis as described below.
 - ii. NYSERDA reserves the right not to move forward with subsequent stages of a multi-stage award, dependent on project success and availability of funding.
 - iii. Later stages may be funded at NYSERDA's sole discretion, using a stage gating review process: at the completion of each stage, project outcomes will be evaluated to determine if the project will continue to be funded. The evaluation criteria will include: probability of technical and commercial success, potential market impact, leverage of resources, strategic fit within the program portfolio, and the availability of program funds.
 - iv. NYSERDA expects it may award more contingent funding than is available for this program.
 - b. The proposal must meet the minimum proposer cost share for each stage (20% feasibility, 50% development, 40% demonstration).
4. A proposal may be considered non-responsive if it fails to comply with the requirements above, the Proposal Requirements of Section IV, or the General Conditions of Section VIII.
5. Prior to an award being made, proposers may be required to demonstrate confirmation of cost share, participation of key individuals and team, commitment from demonstration site, and the ability to qualify for an award under applicable laws and regulations.
6. Preference will be given to proposers that provide attractive leverage (cash co-funding, partnerships) opportunities for NYSERDA, and proposers who have a strong path to commercialization.

A payment based on the final deliverable will be reserved until project completion. If awarded, NYSERDA may choose to negotiate the amount of such payment. If the project is a multi-stage project, a report should be delivered following the completion of each stage.

NYSERDA seeks teaming arrangements that increase probability of success and commercialization of technologies that yield NYS benefits. Teams may include commercial firms, manufacturers, large original equipment manufacturers (OEM), industry associations, research organizations, universities, government agencies, corporate strategic partners, strategic investors, end-users, and other stakeholders. **Include letters of commitment or interest from each identified team member in the appendix to the proposal.**

Letters of Commitment or Interest - If you are relying on any other organization to do some of the work, provide services or equipment, or share in the non-NYSERDA cost, include a letter from that organization describing its planned participation. Also include letters of interest or commitment from businesses or other organizations critical to the future commercialization, demonstration, or implementation of the project. Absence of letters of commitment or interest may be interpreted as meaning that the proposer does not have support from the subject parties. However, in the instance that a proposal is beginning in the Feasibility Stage, a letter of commitment from a Host Site may be difficult to secure. In this instance, a proposer should indicate their intention to secure the commitment and that more time is necessary to do so. Letters should not be solicited from NYSERDA personnel.

IV. Concept Paper & Full Proposal Requirements

1. **Concept Paper:** Submission of a Concept Paper is required for initial consideration under this solicitation. Failure to submit a Concept Paper precludes submission of a Full Proposal. Concept Papers must conform to the following requirements:
 - The Concept Paper Template (Attachment B) must be complete. If a required question is not answered, the Concept Paper may be deemed unresponsive and may be returned;
 - Concept Paper submitters are required to use the format of the Concept Paper Template. The intent of the template is to lead the proposer through the requirements in an organized manner without repeating or restating necessary information. **Concept Papers using a different format may be deemed unresponsive;**
 - Concept Papers must be submitted in Adobe PDF format, be written in English, be single spaced, use black 11 point Times New Roman font (except in Figures and Tables), and be formatted to fit on 8.5 inch by 11-inch paper with margins no less than 1 inch;
 - Concept Papers shall not exceed four (4) pages in length including graphics, figures, and/or tables; and
 - Concept Papers must prominently display on each page the Principle Investigator's Last Name and be completed in accordance with the Submittal Instructions.
2. **Full Proposal:** If notified by NYSERDA of a favorable Concept Paper review, the proposer will be invited to submit a Full Proposal. Full Proposals must include the following:
 - The Proposal Narrative (Attachment A) form-fillable document must be complete. The Innovation Challenge Area and initial Technology Stage must be clearly indicated. **The Proposal Narrative must have all the required questions/sections answered. If a required question is not answered, the proposal could be deemed non-responsive.**
 - The Statement of Work (Attachment A1), TRL/CRL Calculator (Attachment A2), and Budget Form (Attachment C) must be completed.
 - Proposals should not be submitted in an elaborate format. Unnecessary appendices beyond those sufficient to present a complete, comprehensive, and effective response will not influence the evaluation of the proposal. Each page of the proposal should state the name of the proposer, the PON number, and the page number.
 - **Cost Sharing:** The proposal should show non-NYSERDA funding of at least 20% of the Feasibility Stage, 50% of the Development Stage, and 40% of the Demonstration Stage. Cost sharing can be from the proposer, other team members, and other government or private sources. Contributions of direct labor (for which the laborer is paid as an employee) and purchased materials may be considered "cash" contributions. Unpaid labor, indirect labor, or other general overhead may be considered "in-kind" contributions. NYSERDA will not pay for

efforts which have already been undertaken. The proposer or proposing team cannot claim as cost-share any expenses that have already been incurred.

In compliance with §139-j and §139-k of the State Finance Law (see Section VII, General Conditions below for additional information), proposers will be required to answer questions during proposal submission, which will include making required certification under the State Finance Law and to disclose any Prior Findings of Non-Responsibility.

V. Proposal Evaluation

1. **Concept Papers:** Concept Papers determined compliant with application procedures and eligible and responsive to PON 3519 will be subject to NYSERDA review. Eligible Concept Papers will be reviewed and scored per the criteria and point system below. A score of 65 points is the minimum threshold of 100 possible points. No proposal with a score of less than 65 will be considered for an invitation to submit a Full Proposal.

Evaluation Criteria in Order of Importance:

- **New York State Impact (20 points)**
 - Is the proposed approach an advancement over existing solutions which, if successful, will result in truly significant improvements in energy technology and in energy utilization, GHG emission reductions, building resiliency and utilization in New York State?
 - Is the proposed approach likely to enable benefits at scale, that is, if developed, could supplant existing technology and/or create entirely new marketplaces in New York State, stimulating clean technology manufacturing and business growth and improving consumer choice?
 - Is the proposed concept consistent with the innovation challenge, and NYSERDA programmatic goals and mission?
- **Innovation (20 Points)**
 - Is the proposed approach unique and innovative?
 - Is the proposed approach technically sound?
 - Is the proposed approach aimed at the development of technology or innovative business practice, as opposed to basic research aimed at discovery and fundamental knowledge generation?
 - Does the proposal have a market-based approach? Is the proposed commercialization strategy comprehensive and practical?
- **Competitive Landscape and Market Barriers (20 Points)**
 - Does the proposer demonstrate an understanding of existing and other emerging solutions?
 - Has the market been identified and characterized and are there sufficient markets or needs for the concept/technology, project, or study?
 - To what extent has the proposer engaged the market? To what extent does the proposer understand the market?
 - How significant are the barriers to market entry or adoption of the concept, product, or technology?
 - Is the value proposition sufficient that the concept or technology will likely be successful in the target market?
- **Risks and Challenges (15 Points)**
 - Does the proposal clearly identify the technical and commercial risks and challenges?
 - Have key technical and commercial challenges been identified and prioritized?
 - Is there an understanding of competitive options being developed by others?
- **Team (15 Points)**
 - Who are the key team members on the proposed effort?

- What organizations will be involved with the proposed effort and what will each contribute?
 - Does the proposed team have the necessary expertise and resources to carry out the proposed work?
- **Project Plan (10 Points)**
 - Does the proposal clearly outline how the key risks and challenges will be addressed?
 - Do the proposed project objectives, if achieved, validate the proposed concept?
 - Do the proposed project objectives, if achieved, outline a clear path to market?
 - Can the proposed work be reasonably accomplished for the amount of time, effort, and resources proposed?
2. **Review and Selection Process:** Selected Concept Paper applicants will be invited to submit Full Proposals. Only those demonstrating significant and clear technical merit and market viability will result in an invitation from NYSERDA to submit a Full Proposal.
3. **Full Proposal:** Full Proposals will be reviewed by a Scoring Committee (SC) and will be scored and ranked according to the following criteria, **listed in order of importance**. After the Full Proposals are reviewed, NYSERDA will issue a letter to each proposer indicating the proposal evaluation results. Proposers receiving favorable evaluations may be invited to enter into contract negotiations with NYSERDA. The proposer may be required to submit additional details for the Statement of Work, budget, and schedule, and may also be asked to address specific questions or recommendations of the SC before contract award.

Proposals that meet solicitation requirements will be reviewed by a Scoring Committee using the Evaluation Criteria below.

Evaluation Criteria in Order of Importance:

- **Proposed Solution/Scope.** Does the proposed project specifically address a problem or opportunity identified in an Innovation Challenge Area and sub-category in the PON and does it show potential to make significant progress in support of the Innovation Challenge Area? Is the proposed project likely to solve the problem or exploit the opportunity? Is the proposed work technically feasible, innovative, and superior to alternatives? Is the work strategy sound? Is there a clear commercialization strategy that is market-based and likely to be successful? Can the technical and commercial strategies be tested, measured, and adjusted with ease?
- **Project Benefits.** How significant are the potential reductions in GHG emissions or energy use resulting from the project? Will there be economic benefits in New York State in the form of subsequent manufacturing or technical service activity, intellectual property creation, revenue-generation, or job creation? Are there additional significant benefits, such as improvement in the building sector's resiliency to disasters? Will a significant part of the work on the project take place in New York State?
- **Market Potential.** Does the proposed project address a current challenge or opportunity that is not being addressed by others? Is the implementation or commercialization strategy well-conceived and appropriate for the stage(s) of development? Has the proposer adequately and correctly described the target customer, defined their value proposition, and identified a real demand for the proposed solution? Does the proposed solution have the potential for wide-scale replication? Is there a process or strategy in place to measure progress and success?
- **Project Value.** Is the overall project cost justified based on the expected benefits? Relative to the project cost, how significant is the potential market or deployment opportunity? How appropriate are the proposer's co-funding contributions (sources and amounts) in view of the proposer's overall financial resources, degree of risk exposure, and potential to benefit from

the work? Does the proposer have a reasonable plan for pursuing any additional funding necessary for full commercialization?

- **Project Team and Support.** To what degree does the team have relevant and necessary technical and commercial background and experience? Has the proposer previously commercialized any products? How firm are the commitments and support from essential participants, co-funders, and other organizations? Has the proposer demonstrated support from necessary market actors and potential customers?

Other Considerations. Proposals and concept papers will be reviewed to determine if they meet all Program Requirements, fit well within the selected Innovation Challenge Area and have been submitted under the proper Stage. The proposal and concept paper's fit with NYSERDA's overall objectives will also be considered, including: risk/reward relationships; similar ongoing or completed projects; the general distribution of projects among innovation challenges, industries, and other organizations and locations in New York State; and, the degree to which there is a diversity of technologies, approaches, time-to-market, geographic locations, methods, and institutions in the existing portfolio of projects funded by NYSERDA. NYSERDA reserves the right to accept or reject proposals based on the degree to which pricing and hourly rates are in line with the rest of the market.

VI. Recoupment and Metrics

Recoupment - For any new projects exceeding \$100,000 that involve product development, including business development, NYSERDA will require a royalty based on sales and/or licensing of the new product developed (Please see Attachment F – Sample Agreement for specific recoupment obligations). Recoupment is not required for demonstration projects. Please see the definitions below to determine if your project will be subject to recoupment. Please note that NYSERDA will make final determinations as to whether proposals fit within the demonstration or product development categories.

1. **Product Development:** the method of bringing a new or improved product or service to market, including technical feasibility, business case feasibility, market analysis, proof of concept, product design, engineering, scale up, and field testing. Field testing is the stage in which a technology, not yet commercially available with a warranty, is operated in real world conditions with results used for product iteration, market validation, or customer engagement.
2. **Demonstration:** a project intended to increase sales or usage of a commercialized product already in the marketplace, with results used to generate objective performance information for customers or policymakers. At this stage, the product is available for commercial sale and warranted. While incremental improvements may be incorporated based on the demonstration results, the final product design is essentially complete.

Projects where NYSERDA's share of funding is \$100,000 or less will not require recoupment. However, should subsequent funds be awarded for further product development of the same or a substantially similar product, any funds previously received under the \$100,000 threshold will be added to the future recoupment obligation. Please note: NYSERDA may decline to contract with awardees that are delinquent with respect to recoupment payments or sales reporting for any previous NYSERDA agreement.

Annual Metrics Reports – If awarded, the proposer will be required to submit to NYSERDA's Project Manager on an annual basis, a prepared analysis and summary of metrics addressing the anticipated energy, environmental and economic benefits that are realized by the project. All estimates shall reference credible sources and estimating procedures, and all assumptions shall be documented. Reporting shall commence the first calendar year after the contract is executed. Reports shall be submitted by January 31st for the previous calendar years' activities (i.e. reporting period). Please see Attachment (D): Sample Metrics Reporting Guides for the metrics that you will be expected to provide and the reporting duration. NYSERDA may decline to contract with awardees that are delinquent with respect to metrics reporting for any previous or active NYSERDA agreement.

VII. General Conditions

Proprietary Information - Careful consideration should be given before confidential information is submitted to NYSERDA as part of your proposal. Review should include whether it is critical for evaluating a proposal, and whether general, non-confidential information, may be adequate for review purposes. The NYS Freedom of Information Law, Public Officers law, Article 6, provides for public access to information NYSERDA possesses. Public Officers Law, Section 87(2)(d) provides for exceptions to disclosure for records or portions thereof that "are trade secrets or are submitted to an agency by a commercial enterprise or derived from information obtained from a commercial enterprise and which if disclosed would cause substantial injury to the competitive position of the subject enterprise." Information submitted to NYSERDA that the proposer wishes to have treated as proprietary, and confidential trade secret information, should be identified and labeled "Confidential" or "Proprietary" on each page at the time of disclosure. This information should include a written request to except it from disclosure, including a written statement of the reasons why the information should be excepted. See Public Officers Law, Section 89(5) and the procedures set forth in 21 NYCRR Part 501 <https://www.nyserda.ny.gov/About/-/media/Files/About/Contact/NYSERDA-Regulations.ashx>. However, NYSERDA cannot guarantee the confidentiality of any information submitted.

Omnibus Procurement Act of 1992 - It is the policy of New York State to maximize opportunities for the participation of New York State business enterprises, including minority- and women-owned business enterprises, as bidders, subcontractors, and suppliers on its procurement Agreements.

Information on the availability of New York subcontractors and suppliers is available from:

Empire State Development
Division For Small Business
625 Broadway
Albany, NY 12207

A directory of certified minority- and women-owned business enterprises is available from:

Empire State Development
Minority and Women's Business Development Division
625 Broadway
Albany, NY 12207

State Finance Law sections 139-j and 139-k - NYSERDA is required to comply with State Finance Law sections 139-j and 139-k. These provisions contain procurement lobbying requirements which can be found at <https://online.ogs.ny.gov/legal/lobbyinglawfaq/default.aspx>. Proposers are required to answer questions during proposal submission, which will include making required certification under the State Finance Law and to disclose any Prior Findings of Non-Responsibility (this includes a disclosure statement regarding whether the proposer has been found non-responsible under section 139-j of the State Finance Law within the previous four years).

Tax Law Section 5-a - NYSERDA is required to comply with the provisions of Tax Law Section 5-a, which requires a prospective contractor, prior to entering an agreement with NYSERDA having a value in excess of \$100,000, to certify to the Department of Taxation and Finance (the "Department") whether the contractor, its affiliates, its subcontractors and the affiliates of its subcontractors have registered with the Department to collect New York State and local sales and compensating use taxes. The Department has created a form to allow a prospective contractor to readily make such certification. See, ST-220-TD (available at http://www.tax.ny.gov/pdf/current_forms/st/st220td_fill_in.pdf). Prior to contracting with NYSERDA, the prospective contractor must also certify to NYSERDA whether it has filed such certification with the Department.

The Department has created a second form that must be completed by a prospective contractor prior to contacting and filed with NYSERDA. See, ST-220-CA (available at

http://www.tax.ny.gov/pdf/current_forms/st/st220ca_fill_in.pdf). The Department has developed guidance for contractors which is available at <http://www.tax.ny.gov/pdf/publications/sales/pub223.pdf>.

Contract Award - NYSERDA anticipates making one or multiple awards under this solicitation. NYSERDA anticipates a contract duration of a maximum of 3 years, unless NYSERDA management determines a different structure is more efficient based upon proposals received. A contract may be awarded based on initial applications without discussion, or following limited discussion or negotiations pertaining to the Statement of Work. Each proposal should be submitted using the most favorable cost and technical terms. NYSERDA may request additional data or material to support applications. NYSERDA will use the Sample Agreement to contract successful proposals. NYSERDA may at its discretion elect to extend and/or add funds to any project funded through this solicitation. NYSERDA reserves the right to limit any negotiations to exceptions to standard terms and conditions in the Sample Agreement to those specifically identified in the checklist questions. Proposers should keep in mind that acceptance of all standard terms and conditions will generally result in a more expedited contracting process. NYSERDA expects to notify proposers in approximately 7 weeks from the proposal due date whether your proposal has been selected to receive an award. NYSERDA may decline to contract with awardees that are delinquent with respect to any obligation under any previous or active NYSERDA agreement.

Accessibility Requirements - If awardees from this solicitation will be posting anything on the web, or if the awardee will produce a final report that NYSERDA will post to the web, the following language must be included. NYSERDA requires contractors producing content intended to be posted to the Web to adhere to New York State's Accessibility Policy. This includes, but is not limited to, deliverables such as: documents (PDF, Microsoft Word, Microsoft Excel, etc.), audio (.mp3, .wav, etc.), video (.mp4, .mpg, .avi, etc.), graphics (.jpg, .png, etc.), web pages (.html, .aspx, etc.), and other multimedia and streaming media content. For more information, see [NYSERDA's Accessibility Requirements](#).

Limitation - This solicitation does not commit NYSERDA to award a contract, pay any costs incurred in preparing a proposal, or to procure or contract for services or supplies. NYSERDA reserves the right to accept or reject any or all proposals received, to negotiate with all qualified sources, or to cancel in part or in its entirety the solicitation when it is in NYSERDA's best interest. NYSERDA reserves the right to reject proposals based on the nature and number of any exceptions taken to the standard terms and conditions of the Sample Agreement. NYSERDA reserves the right to disqualify proposers based upon the results of a background check into publicly available information and the presence of a material possibility of any reputational or legal risk in making of the award.

Disclosure Requirement - The proposer shall disclose any indictment for any alleged felony, or any conviction for a felony within the past five years, under the laws of the United States or any state or territory of the United States and shall describe circumstances for each. When a proposer is an association, partnership, corporation, or other organization, this disclosure requirement includes the organization and its officers, partners, and directors or members of any similarly governing body. If an indictment or conviction should come to the attention of NYSERDA after the award of a contract, NYSERDA may exercise its stop-work right pending further investigation or terminate the agreement; the contractor may be subject to penalties for violation of any law which may apply in the particular circumstances. Proposers must also disclose if they have ever been debarred or suspended by any agency of the U.S. Government or the New York State Department of Labor.

Vendor Assurance of No Conflict of Interest or Detrimental Effect - The proposer shall disclose any existing or contemplated relationship with any other person or entity, including any known relationships with any member, shareholders of 5% or more, parent, subsidiary, or affiliated firm, which would constitute an actual or potential conflict of interest or appearance of impropriety, relating to other clients/customers of the proposer or former officers and employees of NYSERDA, in connection with proposer's rendering services as proposed. If a conflict does or might exist, please describe how your company would eliminate or prevent it. Indicate what procedures will be followed to detect, notify NYSERDA of, and resolve any such conflicts.

The proposer must disclose whether it, or any of its members, or, to the best of its knowledge, shareholders of 5% or more, parents, affiliates, or subsidiaries, have been the subject of any investigation or disciplinary action by the New York State Commission on Public Integrity or its predecessor State entities (collectively, "Commission"), and if so, a brief description must be included indicating how any matter before the Commission was resolved or whether it remains unresolved.

Public Officers Law – For any resulting awards, the Contractor and its subcontractors shall not engage any person who is, or has been at any time, in the employ of the State to perform services in violation of the provisions of the New York Public Officers Law, other laws applicable to the service of State employees, and the rules, regulations, opinions, guidelines or policies promulgated or issued by the New York State Joint Commission on Public Ethics, or its predecessors (collectively, the "Ethics Requirements"). Proposers are reminded of the following Public Officers Law provision: contractors, consultants, vendors, and subcontractors may hire former NYSERDA employees. However, as a general rule and in accordance with New York Public Officers Law, former employees of NYSERDA may neither appear nor practice before NYSERDA, nor receive compensation for services rendered on a matter before NYSERDA, for a period of two years following their separation from NYSERDA service. In addition, former NYSERDA employees are subject to a "lifetime bar" from appearing before any state agency or authority or receiving compensation for services regarding any transaction in which they personally participated, or which was under their active consideration during their tenure with NYSERDA.

Any awardee will be required to certify that all of its employees, as well as employees of any subcontractor, whose subcontract is valued at \$100,000 or more who are former employees of the State and who are assigned to perform services under the resulting contract, shall be assigned in accordance with all Ethics Requirements. During the term of any agreement, no person who is employed by the contractor or its subcontractors and who is disqualified from providing services under the contract pursuant to any Ethics Requirements may share in any net revenues of the contractor or its subcontractors derived from the contract. NYSERDA may request that contractors provide it with whatever information the State deems appropriate about each such person's engagement, work cooperatively with the State to solicit advice from the New York State Joint Commission on Public Ethics, and, if deemed appropriate by the State, instruct any such person to seek the opinion of the New York State Joint Commission on Public Ethics. NYSERDA shall have the right to withdraw or withhold approval of any subcontractor if utilizing such subcontractor for any work performed would be in conflict with any of the Ethics Requirements. NYSERDA shall have the right to terminate any contract at any time if any work performed is in conflict with any of the Ethics Requirements.

Due Diligence – NYSERDA, at its discretion, may conduct broad due diligence to validate any or all elements of an application and to assess applicants' prospects of success, including gathering information to assess a proposal relative to any of the topics listed in evaluation criteria, whether or not such topic is explicitly addressed in a proposal. NYSERDA may conduct due diligence on some or all proposals based on NYSERDA's current guidelines at the time of a review. NYSERDA staff may follow up with proposers to request additional information or clarification regarding applicant's proposal, including questions regarding applicant's business prospects and resources, whether or not those questions are specifically related to the elements of the proposal. Additionally, customized due diligence may be conducted by internal or external staff or contractors based on questions on any proposal raised by NYSERDA staff and/or the Scoring Committee. Due diligence may include (but is not limited to): interviews of independent references and background checks of team members; assessment of prior business experience of any team member associated with a proposal; research on intellectual property claims; customer and partner reference checks; market research on the applicants' target market and any other related or possibly competitive technology or market area; research to validate any assumptions on current or future revenues, costs, capital needs, and financing prospects for proposers' business, including similar (or unrelated) technologies, processes, or competitive solutions; or any other research that could reasonably inform the evaluation of a proposal, or the prospects for commercial success of the proposers' business (whether directly related to, or unrelated to the specific elements in a proposal). Due diligence may include discussions with proposers' former and current business partners, employees, investors, customers, and competitors. Due diligence may be conducted by NYSERDA personnel or contractors including members of the scoring committee, before, during, or after a scoring process, and



prior to finalization of a contract award, any information gleaned in diligence may be used to score or re-score a proposal.

Recoupment - For any new product research and/or development, NYSERDA will generally require a royalty based on sales of the new product developed. NYSERDA's standard royalty terms are 1% of all sales and license revenue accruing to the Contractor for products produced (for a period of fifteen years or until the Contractor pays NYSERDA an amount equal to the amount of funds paid by NYSERDA to the Contractor, whichever comes first).

VIII. Attachments

[Attachment A – Proposal Narrative](#)

[Attachment A1 – Statement of Work](#)

[Attachment A2 – TRL/CRL Calculator](#)

[Attachment B – Concept Paper Template](#)

[Attachment C – Budget Form and Instructions](#)

[Attachment D – Metrics Reporting Guide](#)

[Attachment E1 – Heat Pumps](#)

[Attachment E2 – Thermal Distribution](#)

[Attachment E3 – Energy Pod](#)

[Attachment E3a – Appendix 2](#)

[Attachment E3b – Appendix 3](#)

[Attachment E4 – Technology Transfer](#)

[Attachment F – Sample Agreement](#)