

High-Efficiency Heat Pump Program

Draft Program Design – Public Comments

August 2022

High-Efficiency Heat Pump Program (HHPP) will support the Rhode Island heat pump market through financial incentives, workforce development, and consumer and installer education. The public comment period for HHPP's initial draft program design was open for the duration of August 2022.

The Rhode Island Office of Energy Resources (OER) thanks the public for all feedback provided to date. We received a total of 57 comments on a variety of topics. Enclosed below is a list of all the public comments, excluding 12 documents submitted as attachments by commenters. These comments are available .

1. The Residential Incentive program should not be limited to buildings with "up to four housing units". This should be at least doubled. There are many small to medium sized condo buildings in Providence with more than four housing units that would be excluded, including my building which has eight housing units.
2. As a soon-to-be first-time homeowner, I'm very excited about this opportunity. I know that residential and low income are two of the 4 categories. Will there be specific acknowledgement and support for first time homebuyers to utilize this program? I know many younger folks buying homes often end up in older houses with older utilities and outdated mechanics.
3. If you want to encourage weatherization, include incentives for it. I recommend not requiring it. I had a Home Energy Assessment in 2012 and completed all recommended weatherization which was partly subsidized. Even with rebates, many homeowners will not be able to afford both weatherization and installation of heat pumps at the same time, especially given how high inflation has been and the rise in interest rates and new home prices. Have you incentivized the use of heat pumps in new home and business construction? Many landlords don't feel an incentive to weatherize or to upgrade heating systems because they do not pay the heating costs for their units. This places additional burdens on renters, especially lower income renters when housing is difficult to afford. How do you offer an incentive that is attractive to landlords (or possibly a penalty for poor heating and weatherization) so they will make the changes that benefit their renters and the environment? Could certain upgrades be required of landlords who own more than 5 or 10 units? Or of property managers who manage over 10 units?
4. The residential incentive should also be made available to people currently using electric heat and/or window air-conditioning! Converting from fossil fuels to electric heat pumps is going to put a strain on the grid. By also including electric customers who have very old and inefficient baseboard electric heat and/or window AC we can take some of the strain off the grid.
5. We are in the process of building a new home in Scituate and we might include the installation of a high efficiency heat pump. I would ask that you consider making the proposed incentives available to residents who install the equipment after the adoption date of the final incentive program (assuming this program is adopted in 2022). An effective date of January 1, 2023, or

similar date could provide a disincentive to qualifying Rhode Island residents who might be inclined to install a less efficient system owing to cost considerations.

6. Why are electric heating residential houses excluded from the program? They should stack/layer HPPP with the existing RI Energy program just like Oil/Gas heating houses do. Residential should also include 50% of total cost for any equipment, labor, or needed panel upgrades. \$750 instant rebate for heat pump water heaters is \$150 more than RI Energy currently offers. RI Energy should be required to match the HPPP.
Program should be retroactive to when the budget was passed.
7. As a homeowner currently reliant on oil for heating, I'm very interested in anything the state can do to help with residential upgrades to heat pumps. The incentive program idea is great, really will help make the financial calculation look more favorable. But I think more outreach is also needed so that Rhode Islanders know about this technology and its advantages -- for example, dual use for both heating and cooling. We also need to be able to find and trust reliable installation services, so maybe some sort of state certification for installers if this doesn't already exist.
8. The program sounds great but right now homeowners are struggling to pay their mortgage while getting back on their feet from Covid-19. Please invest in the HAF-RI program to keep homeowners in their homes. Invest in RI homeowners first need (shelter) before you begin investing in something that is not a need but a want.
9. Governor McKee, the heat pump is a great idea. Please, consider a 65% rebate only (cost basis) program for senior citizens. Thank you.
10. I am currently building a house and have decided on heat pumps as my sole heating and cooling option. Am I eligible for savings with this program?
11. Suitable equipment for the program should be based on equipment specifications, not whether equipment is on NEEP's product list. NEEP's product list is curated on a pay-to-play basis and not in consumer's best interests.
12. Hello, I live in a 1920s farmhouse with no access to Natural Gas. My heating sources are Heating Oil, Wood & Coal. Which heat source I use depends on the temperature. I start with heating oil when we just need to take the chill off, then go to wood in November/December. Coal kicks in for January/February and then we reverse as temps warm up. I would love to convert over to the new generation of heat pumps, but as someone who is nearing retirement, the cost is prohibitive. I look forward to seeing how this program can help seniors insulate their house and upgrade their heating options.
13. It appears the incentive program does not include anything for people building a new home other than possibly those homes considered "affordable". Is this correct?
14. Currently having a whole house heat pump system and a heat pump water heater installed in our existing home. Also adding solar panels with battery storage. It seems difficult to get tax credits and rebates due to a few reasons. One, the contractor hurdle. The requirement to choose a contractor from a set list to install the system. Two, a requirement to select equipment

from a set list. The water heater list does not include the model we selected. Third, the RISE weatherization check was another difficulty. They performed an inaccurate assessment of our home then did not respond to correct their mistake. Fourth, the whole house heating and cooling system we chose has a different standard of efficiency than SEER and HSPF. Standardization in the industry may not be at the point where only those criteria can be used. Might limit consumer options to mini splits. These requirements/hurdles will prevent others from taking advantage of the tax credits or rebates. Also, there are very few contractors who work on systems other than mini-splits or standard water heaters. Finding a contractor to do the work on both a heat pump water heater and whole house heat pump system was extremely time consuming. We'd love to be grandfathered into the 2023 tax credits/rebates since our work is still ongoing. the current credits look unlikely for us to get given the issues listed above. Thanks for taking the time to read this! Feel free to reach out for more details on our setup or journey getting to this point.

15. I support the proposed heat pump program; however, I recommend highlighting building code requirements that are rarely followed by HVAC installers nor checked by local building departments before issuing building permits and not verified during inspections. The program does note that "Heat pump systems must be sized to heat and cool the whole home", but it doesn't provide any oversight that system installers follow industry standards and the RI building code. The program also does not have a requirement under "Customer Eligibility" that a building permit must be obtained.

Often HVAC equipment installers do not calculate the heating and cooling needs of buildings to determine the proper size of the appliance and ductwork they install often resulting in oversized HVAC appliances and poorly designed ductwork. By making it a requirement of the program that HVAC installers present calculations demonstrating that they have assessed the energy needs of the building in compliance with industry standards and selected equipment that will meet those energy needs, the state won't waste money supporting HVAC contractors who don't comply with RI Building code and install oversized systems. This would also save taxpayers money since they won't be paying for larger systems than their building requires.

Here's some sample language that could be added to the program requirements to help avoid this problem: Any ducted heat pump HVAC system shall be sized according to ACCA Manual D and calculations submitted to and reviewed by the local building department (see RI SBC2 section M1601.1) prior to a building permit being issued. Heat pump systems shall be sized in accordance with ACCA Manual S and based on building heating and cooling loads calculated in accordance with ACCA Manual J (see RI SBC2 section M1401.3 Equipment and Appliance Sizing). The Manual S and Manual J calculations shall be submitted to and reviewed by the local building department prior to issuing a building permit. A final inspection approval of the HVAC system from the local building department shall be submitted prior to the program rebate being funded to the homeowner.

16. I need to specifically know if the energy efficient ductless mini-splits heat pumps will be approved for the rebates. My ancient A/C system is dying, and I must choose between replacing it with the same type of inefficient system - or wait till January to replace it with heat pumps. Many in RI use baseboard heat and DO NOT have ducts - so this question is crucial. Can you please let me know the specific answer. Your "design specs" don't say.

15. Reimburse 100% of the cost to all property owners. Do not politicize the program with differential subsidies. "Disadvantaged communities" are not the only people who could not afford this, e.g., retirees.
16. Can there be anything done to encourage heat pumps in multi dwelling apartment complexes. I have low-income friend who pays a high amount for electric heat for a one room apartment that does not even keep her warm.
17. We have had mini splits for many years and while they are terrific for cooling, they are not adequate for protecting a home with water pipes in the walls that are subject to freezing in lower temps. This proposal potentially does offer cooling to families that are in dire need but the rebates being offered should be geared at income levels. The total cost of a package is otherwise well outside the budget of many Rhode Islanders even with the rebates. Must also keep in mind the enormous rate increases being requested for electric rates. Should not some of the funding be earmarked to assisting families in this?
18. When I moved to Rhode Island, I moved from an all-electric home to one dependent on oil and gas. I was hoping to get off of these fossil fuels eventually. My oil tank suddenly had to be replaced. I had little time to do research, but what I found made the cost of converting to a heat pump prohibitive. I would welcome a way to get off of oil as a heating method. I hope that this program will help those who can barely afford oil heat, as well as those on fixed incomes. I want to make the transition but cannot see a way to afford it at this point. The state really needs to step up.
19. A) Any program incentivizing end use equipment that will
 - 1) increase load on the electrical system, thus increase the need for larger capacity (transmission size & maintenance and generation) and
 - 2) increase the quantity of end users under duress when the local electrical distribution system goes down should allocate monies to studying and remedying the issues. B) already today for A/C equipment break/fix it is difficult to find a contractor to look at your equipment in the summer unless you have a "maintenance contract" with a specific vendor; I would like to see some kind of schema to quickly increase the quantity and competition of service providers without having to be tied to an annual "subscription". Maybe something like a requirement of manufacturers to underwrite service provider development such as home developers chipping in for infrastructure costs.
20. Everything that the State of Rhode Island does has to have some kind of scam attached. I had previously about 2-3 years ago had several of the major contractors for heat pump systems give us estimates to put these in our home. The estimates were very high I thought at the time \$13,000 for one level. The reason I came to this conclusion was that relatives and friends that I worked with in Connecticut with similar homes were getting these systems put in for half or less than half of the estimates I was being given. Then I figured out that there were rebates from

National Grid and RISE that you could get if you jumped through all the hoops and spent more money and had more people in your house to do more work and still it was much more than in Connecticut to install. So basically, we said screw that we will get another window A/C. I just had another estimate from one of the same contractors that came 2 years ago, and the price is now 1-1/2 times what it was the first time \$20,000 for our one level house. What a scam, we know people who just had a large 2 floor home done in Waterford, CT for under 16,000 by a major CT contractor. They can stick these heat pumps where the sun doesn't shine in RI. Big scam as usual in RI and too expensive.

21. I live in North Kingstown. Our building was built in 1979 with all electric. Several of us would like to have more efficient Heat Pumps (ductless, mini splits) with a rebate.
22. There needs to be some control to prevent contractors from inflating costs to soak up the incentives. I had RISE out to my house last year to evaluate my energy system. They said that adding insulation to a 10'x12' breezeway and replacing some old windows that account for most of my energy loss was cost prohibitive, instead they recommended replacing my current oil heat with an electric heat pump system. I concede that the breezeway would need significant work to insulate properly, it wouldn't be cheap, and the windows are an odd size that would require custom replacements. But these efficiency improvements would still cost less than their recommendation which was only made to shift my expenses from the oil company to the power company. When I had their approved contractor out to price the heat pump system, they came up with a \$30k estimate. Their estimate included 2 people working for less than a full day installing this system. When I asked for a better breakdown of the costs in the estimate they went dark on me, no answer, no clarification why a system that costs \$12k in materials and takes 2 people less than 1 day to install was \$30k. The reality is that they added the maximum incentives to their quote so they get paid more and tried to sell it to me on just the theoretical energy savings which would have taken 20 years to pay for the system. For me to want to retrofit my house to heat pumps, it needs to make simple good business sense and not leave my family in the cold when the power goes out in the middle of winter. I would be sacrificing my current heating system which is an asset to instead get a liability of \$30k and further dependence on the electrical grid which isn't very reliable. In the 5 years we have spent in this house we have been out of power for on average 1.5 weeks every year through intermittent outages due to weather events downing trees on power lines. My generator can provide enough power to run my furnace, but it couldn't heat my house in these emergencies. Please reconsider the false economy and impact on safety of real people in crisis when putting together these incentives. Include controls on system markup and labor costs with real enforcement. Include a backup power requirement for homes that can only heat themselves on electricity. Only recommend retrofits that directly benefit the homeowner, not just the power company. Remember that the homeowner in Rhode Island is your constituent, the power company is just a corporation.
23. The proposal specifies that the system must be designed "to heat and cool the entire home." But what if such a design would make the system cost-prohibitive? I just had someone come out and he said the way my house is designed (plus the fact that RISE insulated my attic with blown-

in insulation), it would be impractical to install units in two of the bedrooms. Would this type of situation preclude me from participating in the incentive program? Or would I have to pay for extra capacity that I wouldn't use - which, I'm guessing, would reduce the overall efficiency?

24. I have reviewed the heat pump program and it's unclear what the average incentive would be to homeowners. Installing heat pumps are so expensive. I believe I was quoted 25,000 by a heating company in 2021. There was an incentive in place that would have taken 7-8000 off that cost. But as a social worker that cost would have still been prohibitive. I'm hoping that the rebates will be much more than that, otherwise, folks like me in similar financial brackets won't be able to take advantage. I would love to make my oil burning furnace more efficient and not rely on fossil fuels, but the cost of replacing my furnace last summer was 6,000 vs 18,000 with a heat pump. Unless the cost can come down to around how much it costs to replace an oil furnace with another oil furnace, people won't be able to make the switch.
25. This type of conversion is still unaffordable despite what is outlined in this program proposal. I am in a 76-year-old home in Newport with six heating zones, fueled by natural gas, and delivered through radiators/baseboards. The previous owners performed the conversion from oil to natural gas. I have secured numerous estimates for mini-split HVAC/heat pump conversion. I have essentially given up on the idea as none of the estimates came in below \$20,000.00, or even presumed the house had adequate wall space for units. This cost does not address remediation and removal of the old radiators and baseboards, not to mention trading high natural gas costs for high electricity costs, because we haven't been able to afford a solar conversion either and Rhode Island's energy costs are ridiculous. For those in the old housing stock that predominates in many communities, it is cost prohibitive. At today's inflation-fueled mortgage refinancing rates, that is not a path to success either. This program needs to be reviewed considering real-world installation and lifetime hidden costs of operation/ownership.
26. HIGH-EFFICIENCY HEAT PUMP PROGRAM (HHPP) Proposed Program Design Draft July 2022 Page 6 "[Residential Incentive} \$1,250/ton rebate for high-efficiency heat pumps providing space heating and cooling in existing homes". I have solar panels and battery systems installed with ducted air-source AC and gas heat. Desire to go all electric. I have priced out an upgrade to an 18 SEER 9 HSPF Bosch Heat Pump, which currently, per the RI Energy Rebate Program, provides only a \$350/ton rebate. Given the passage of the Inflation Reduction Act (IRA), will this increase to \$1250 per ton, as indicated in the draft HHPP and when will that be available for installs?? Of course, I would certainly like to have the upgrade before this coming heating season. RI Energy seems to be "in the dark" as per any 2022 IRA impacts.
27. How about making the incentives retroactive? We're switching to a heat pump system this year. It's a big investment. We could have just replaced the oil furnace, which would have been a lot less, but decided to go with the cleaner energy.
28. Will there be any kind of retroactive rebates or incentives for work being done to homes for this winter approaching now, since this program isn't projected until winter 2023?

We are currently getting ready to install a full house heat pump, and all quotes that we received were no less than \$20k. That is all out of pocket. Without those rebates, there really is no incentive for people to pay for this type of total home heating overhaul. (Same goes for rooftop solar, zero rebates or incentives). We could learn from MA and are falling behind them with this.

29. I think this is fantastic. Every winter my dad and I are cold as we have a very old gas furnace system which is too expensive to run regularly. I am on SSI with a full disability from the state and receive SNAP benefits. I am wondering I am trying to find a way to do the work this winter with a loan from RI Energy. This program will probably go into effect a year from this winter. If I take out the loan and then I am eligible for the program, would I be able to pay off the loan from RI Energy with funds from the program? If not, we may just suffer through another winter in the cold. So, my comment is - you should allow persons who couldn't wait for the program or didn't know the program would occur, to be able to apply the funds from the program to loans or expenses already made. Say, the past 5 years? I don't think people should be disadvantaged just because of a timing issue. Thank you for considering this suggestion. I look forward to seeing the final program guidelines, hopefully in some form before the program launches in winter 2023.
30. I encourage the state to expedite this process. A comment period to the end of August 2022 is all well and good but then not implementing the program until "winter 2023" is too long of time to wait to address a climate crisis that is upon us now. And when exactly is "winter 2023"? Is that Dec 20th, 2023, or will it be the beginning of 2023 in the winter that starts in December 2022? Very vague. This is a solution to a problem that needs immediate action. Please demonstrate that government bureaucracy can act quickly like the private sector would and get this program launched and available to a public who not only wants to move away from fossil fuels but needs to save \$ immediately with rising inflation everywhere. Thank you.
31. The sooner the better. Please don't forget us residing in Burrillville and have Pascoag Electric Utility. Also Block Island Power. There is not one electric car charger on Block Island. Thank you
32. Please consider only offering rebates for heat pumps that work with eco-friendly refrigerants such as propane or isobutane. These have very low global warming potential (GWP). There shouldn't be any rebates for systems using HFCs as refrigerants.
33. To whom it may concern, we believe this program is essential in the growth of this sector and in meeting the energy goals of Rhode Island. As a contractor in this space, we find the largest problem is the cumbersome nature of the HEA process. The round trip on the process as it stands now is about 2 months before we can begin our process with the end user. This will likely double if not triple if something is not done before this roll out. The STRICTLY suggestive nature of those appointments with the work not being required (just the appointment) seems redundant and it gets in our way to efficiently serve customers. We feel these two entities should be separate in this process, we do not discredit the validity of what's being done on that end. I speak from personal experience having gone through the process at my own home, and having all recommended work being done by an incredible local insulation contractor. Option B would be initializing another entity or entities other than Rise Engineering (or incentivizing Rise to grow to handle demand) to aid in the demand this program is going to create, allowing the process to happen in a shorter period that not only will be more attractive to homeowners but

allow HVAC contractors to complete work in a timely manner. The implementation of this program must also be public knowledge no later than Jan 31st, 2023. We cannot be held hostage with the promise of a new program and planned rebate amounts. This past year the program was not made official until APRIL. Installs do carry year-round, but Heat Pumps primarily install in March, April, May, and June. While its released retroactive to Jan 1, attempting to sell work not knowing and not being able to assure customers incentives will 100% be available is not conducive to what we do. Massachusetts while not perfect has done well with how its managed through Mass Save and their administrators. Let's not squander this opportunity. Thank-you.

34. I applaud the effort to move to a more sustainable energy source. However, to offer electric alternatives without solar is very short cited. You are transferring demand to a less than climate friendly resource unless all electric resources become solar/wind. Please consider including a solar incentive along with your current heat pump!!!
35. Should this incentive (for space heating/cooling) require weatherization? (GR) Yes, if needed based on the results of a free in-home energy audit started by RISE Engineering. To meet program objectives and to be a good financial steward to the \$25 million from the federal American Rescue Plan Act (ARPA). (GR) I have a suggestion to extend 0% financing HEAT Loan (from a local bank) of any required weatherization and the HHP rebate-eligible equipment (listed). 2) What mechanisms can be put into place to ensure that all rebate-eligible equipment is right-sized? (GR) I think the RIOER could develop, and online web-based calculator based on formulas provided by industry experts that properly sizes the equipment and a printout or saved PDF included as part of the submitted rebate application.
36. As Director, I applaud your recognizing the value that an all-electric facility has but I would suggest you look at the value of a geothermal system which does not need any auxiliary heating in colder days and therefore uses less energy than an air-to-air heat pump or mini split would use. I would welcome the opportunity to discuss this with you at your earliest convenience.
37. Thank you for the opportunity to provide comments. We commend you on the thoughtful process and program design. We believe that weatherization should always be a prerequisite to heat pump adoption however, as a lead vendor in the Massachusetts Mass Save program, we understand firsthand the complication and administrative burden that requiring weatherization can impose on a program. Therefore, since this is a pilot program, we recommend that OER provide an add-on incentive for weatherization work that is done within a window of the heat pump project date. Layered on top of the utility incentive, this should ensure weatherization is an incorporated measure during the HEA and incentive homeowners further to follow through. Right-sizing equipment is the biggest challenge we see with contractors and is critical to ensuring homeowner comfort and system efficiency. Manual J requirements would be overly burdensome to the program, and most likely would be of varying accuracy. We see that the program will include a level of quality assurance, but this is often post-installation and so won't ensure that systems aren't oversized. Abode has conducted over 800 pre- and post-quality assurance reviews on projects in for Municipal Light Plants in Massachusetts and believes that in

a nascent program such as this, program dollars can be better spent on contractor engagement and education or providing a sizing review prior to installation. We support the recommendation for homeowners to get 3 quotes but would not support making that a program requirement as that becomes a roadblock for some customers to move forward. We would like to emphasize the need to support homeowners to compare quotes for cost, efficiency, sizing, and environmental impact. As quotes are often undecipherable to the average homeowner, additional assistance may be required. We have also seen a recent trend for contractors to resist giving written quotes without homeowner commitment, and in some cases even charging for quotes.

38. As the program does not have a dedicated budget for education and homeowner support, we would like to reiterate the importance and need for these mechanisms in the marketplace. Empowering homeowners not only increases adoption and reduces the sales cycle time but increases the likelihood that systems will have a higher utilization rate and proper usage.
39. How efficient are these pumps, is there an average amount known by sq feet how much it would cost to heat a house for a winter? The price of electricity in RI is already scheduled to increase by the new electric company. Typically, electric has been a very expensive way to heat in the past.
40.
 - 1.) Do heat pumps work efficiently when the temperature outside is below 20F? I've read up on these and I have found that they are NOT efficient, nor will they provide enough heat when the weather is well below freezing, as often happens here in the northeast. The heat pumps cannot keep up when the weather is brutally cold. The heat pumps are well suited for more southern regions, but not here in the northeast.
 - 2.) How many solar panels are needed for a community the size of Warwick, or Coventry, for ALL the heat pumps to work using electricity?
 - 3.) How many wind turbines are needed for a community the size of Warwick, or Coventry, for ALL the heat pumps to work using electricity?
 - 4.) How many solar panels/wind turbines are needed for each house? How is this measured when our houses are different sizes?
 - 5.) What happens when the sun doesn't shine, or the wind is not present consistently, as can happen often during our winter months?
41. My wife and I have owned and operated 2 heat pump units at our residence for a few years now. We have been pleased with both their efficiency to heat and cool our upstairs (we have an old house and only had 1 radiator heating the upstairs until installing these pumps) and practical cost to run them. The AC has been a welcome relief during the recent hot spell. The incentives to get more of these units installed and augmenting existing HVAC systems will offer cost savings to residents and business owners alike, while they will enjoy comfort in their homes and at work. We support this initiative, based on our experiences. Since we've had ours for a while, a grandfather clause would be welcomed, but if not, we still endorse this program! Thank you.

42. My wife and I strongly support increased subsidies for installing energy-saving equipment, including heat pumps. We agree that the subsidy should be larger for low-income citizens, but that ALL citizens should receive a subsidy. We feel that for Rhode Island to meet its goals, the state subsidy for middle class families should cover at least 20% of the average cost of an air-source heat pump heating/cooling system, which currently averages about \$6000. The \$1250 proposed subsidy is therefore just about right.
43. Thank you and please feel free to contact me at...at any time with questions.
44. In my opinion this program is a foolish waste of money to benefit politically connected businesses that can provide these pumps. In Newport, winter temperatures frequently drop below 40 degrees where heat pumps stop being effective. They're also subject to power outages. U.S. use of natural gas and oil are not contributing in a meaningful way to global warming, not when compared to China, India, and other major polluters. I would prefer to see incentives for businesses to switch to remote employees and save on cars etc., rather than nonsensical investment in electric cars, with batteries that must be mined from environmentally sensitive areas etc. Ditto for solar panels, which are toxic and pose disposal problems. There's no common sense to these attempts to replace reliable fuels with H2H ones that don't work.
45. I find these electric heat programs to be just another government program that is not backed in any science. The only way it makes financial sense is to supplement the conversion 100% and I find that type of metric to be wasteful on any level. The state electricity is a large mix of fossil fuel driven so converting to electric heat just adds more load to an already constrained electric grid. Forcing things like this will just have government officials removed from office. Focus on items that normal Joe bag of donuts cares about. Why is inflation high, why are our small businesses failing. Stop being wasteful in the funds that are collected. If it made financial sense, then people would be doing it on their own. Focus on what your constituents want not what people a half of world away are dictating to us.

Stakeholder Comments for the HHPP Program

Additionally, 12 stakeholders submitted comments through attached documents.