



New England Geothermal Professional Association  
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TO: Energy Efficiency Advisory Council  
FROM: Lawrence Lessard, President, New England Geothermal Professional Association  
RE: NEGPA PROPOSALS TO EEAC FOR 2022-2024 EE PLAN  
DATE: January 26, 2021  
CC: Lawrence Lessard, Amanda Schneck, Ryan Dougherty, Matthew Orio, Martin Orio, Carl Orio, William Stevens, Esq.

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The New England Geothermal Professional Association (“NEGPA”) is encouraged by Program Administrators (“PA’s”) statement that they are “actively reviewing” ground source heat pumps and that GSHPs screen as cost effective (PA New Offerings and Solutions (November 18, 2020)).

NEGPA proposes three priorities for the development, implementation, and evaluation of the 2022-2024 Energy Efficiency Plan. First, amend the technical resource manual (“TRM”) to accurately identify and reflect the operating performance and other benefits of ground source heat pumps; second, set numerical benchmarks, track GSHP adoption, and include GSHPs as a key component of electrification; and third, include installation of GHSPs for low and moderate-income families.

NEGPA appreciates consideration of our comments. We look forward to GSHP Installations playing an important part in the Commonwealth achieving its climate goals. We reiterate our previous offers to participate in a technical session with EEAC, the PAs, and the technical consultants to each.

**RECOMMENDATION ONE:**

**The electric and gas PAs should amend the Residential and Commercial and Industrial sections of the Technical Reference Manual to accurately calculate benefits of ground source heat pumps.**

The current TRM uses inaccurate information relative to the calculation of the economic and environmental benefits of GSHPs. These inaccuracies are not consistent with industry standards and underestimate the environmental and cost benefits of GSHPs. As a result, the existing TRM harms ratepayers because they are not receiving the full benefits of energy efficiency programs.

These amendments are urgent because of the need to reduce greenhouse gases and lessen summer and winter peak electric loads. GSHPs are a key component of this process because the technology is the most efficient way to heat and cool buildings.

In the Spring of 2020, NEGPA presented proposed TRM revisions to the PAs. NEGPA appreciates the PA's consideration of these important amendments. Modification of the TRM using NEGPA's proposal will better align the TRM with requirements of the Green Communities Act, the Global Warming Solutions Act and other state EE programs.

NEGPA would appreciate the opportunity to review and comment upon the revised TRM when the PA's complete their revisions.

## **RECOMMENDATION TWO**

### **Gas and electric PA's should set numerical benchmarks, track adoption of GSHPs, and include GSHPs as a key component of electrification in their the 2022-2024 Energy Efficiency Plans.**

The General Court recently amended the Global Warming Solutions Act (G.L. c. 21N (Senate, No. 2995)) to require numerical benchmarks and tracking the adoption of GSHPs. NEGPA recommends that the PA's establish such numerical benchmarks and track adoption levels in their 2022-2024 Energy Efficiency Plans.

Governor Baker's Comprehensive Energy Plan relies on electrification of heating and cooling to meet the GWSA goals. Forecasting models have shown that with aggressive heating sector electrification, Massachusetts could be reaching a winter peak as early as 2035.

NEGPA agrees with the EEAC consultant team recommendation to promote electrification projects that include conversions to ground-source heat pump systems (C&I Existing Building Retrofit Workshop (December 1, 2020)). NEGPA also agrees with the EEAC Consultant team recommendation to establish separate, higher, ground source heat pump unit goals and to include the addition of incentives and HEAT Loan eligibility for ground source heat pumps (Residential Existing Buildings Workshop (December 15)).

At the Listening Sessions, NEGPA submitted documentation demonstrating that ground source heat pumps have a much larger impact on complying with the Global Warming Solutions Act and provide deeper savings than air source heat pumps due to reduced electric usage, longer service life of GSHP facilities, and displaced fossil fuel savings.

GSHPs perform consistently at high efficiencies regardless of outdoor air temperatures, due to their reliance on the more stable thermal energy stored in the ground. GSHPs provide for the most manageable and predictable electrical demand at winter and summer peaks. Deployed at scale, GSHPs will effectively 'flatten the curve,' reducing both summer and winter peak electricity demand for the whole grid. We note that industry ratings for GSHPs are based on 'worst case' ground heat exchanger temperatures, so performance is at most times better than the

published ratings. This is in contrast to other technologies, such as ASHP, that have industry ratings based on outdoor temperatures that are typically more favorable than our local climate.

NEGPA would appreciate the opportunity to meet with both PA and EEAC consultant teams in technical conferences to present more detailed technical data quantifying these benefits.

### **RECOMMENDATION THREE**

#### **Gas and Electric PAs should develop strategies to include installation of GSHPs for low-and moderate-income families.**

NEGPA agrees with the EEAC consultant team recommendation that the long-term decarbonization goals in Massachusetts call for residential heat pumps at large scale (Income Eligible Services Workshop Brief (November 10, 2020)). NEGPA supports the EEAC Consultant team recommendation to deliver targeted training for ground source heat pumps that will benefit existing EE workers across initiatives and sectors (EEAC Consultant team Workforce Development Workshop (December 15)).

PAs should include equitable participation in GSHP installations through enhanced delivery models with a special focus on renters, moderate income, non-English speaking, and small business customers. GSHPs are a solution for clean and cost-effective heating, cooling and hot water.

GSHPs have the lowest operating cost for heating and cooling. Lifetime costs of the entire system - not just the heat pump itself - need to be considered in calculating benefits. Typical GSHP system life is from 35 to 45 years. Underground Loops can last more than 50 years. The average geothermal system in MA operates at \$840/year.

GSHP air filtration improves indoor air quality and provides proven health benefits. GSHP's operate quietly in densely settled areas and dramatically reduce greenhouse gas emissions. GSHPs are a cost-effective fuel switching measure and play an important role in meeting the requirements of the Global Warming Solutions Act.