

City of Salem: Pioneering Community-Owned Energy Networks

Building a Clean Energy Investment Pipeline in Salem, Massachusetts

AT A GLANCE

Investment Priorities

District Geothermal Energy Network, Solar Microgrid & Battery Storage, Building Retrofits & System Conversions, Affordable Housing Solar

Pipeline Value

\$60M (geothermal network infrastructure)
Building retrofit costs to be determined through a second feasibility study

Key Partners

City of Salem, St. Peter's-San Pedro Episcopal Church, Salem Housing Authority, Working Power, HEET, Massachusetts Community Climate Bank (MCCB), MIT Renewable Energy Siting Clinic, B2Q Associates, Achieve Renewable Energy, MassDevelopment

Strategic Role:

Project Originator | Anchor Institution

The Path Forward

Securing funding for a second feasibility study to quantify building retrofit costs, refine network scope, evaluate solar microgrid design, and assess project delivery models, building toward a credible market solicitation to private developers.

THE BIG PICTURE

The City of Salem is transitioning its historic legacy as a fossil fuel hub into a future defined by clean energy innovation and economic resilience. Through the Municipal Investment Fund (MIF), Salem is moving beyond individual building retrofits to a structured portfolio of neighborhood-scale energy networks. This strategy focuses on "Heaven & Earth (H&E)," a pioneering community-led initiative that integrates solar resilience with networked geothermal infrastructure. By treating energy as a collective asset, Salem is de-risking high-upfront-cost technologies and creating a financeable model for urban decarbonization that prioritizes residents in critically impacted areas.

The Challenge: High upfront capital costs for geothermal infrastructure, combined with a multi-owner building network, which complicates unified tax credit capture and financing structure.

The Solution: Delivering the H&E Initiative through a Special Purpose Vehicle (SPV) with a consortium of partners, including the community, rather than a single private developer, enabling a coordinated Design-Build-Finance-Operate-Maintain (DBFOM) approach across a complex multi-owner downtown network while preserving community governance and long-term ownership.



CREATING THE FOUNDATION: COALITION, FEASIBILITY, AND MARKET READINESS

Through the Municipal Investment Fund (MIF), the City of Salem has built the technical foundation and stakeholder alignment needed to advance the H&E Initiative from grassroots concept to a credible investment opportunity.

- **Feasibility Confirmed:** B2Q Associates and Achieve Renewable Energy completed the Kickstart Mass Grant Networked Geothermal Feasibility Study, confirming that connecting 21 downtown Salem buildings to a geexchange network for heating and cooling is technically feasible. As part of an earlier feasibility study conducted by the City, a test well was drilled at Old Town Hall, within the proposed network area, and validated the geothermal resource.
- **MIT Stakeholder Engagement:** The MIT Renewable Energy Siting Clinic (RESC) conducted stakeholder engagement in Fall 2025 to identify potential offtakers, clarify community objectives, and address key concerns, including upfront cost and geothermal groundwater safety. A second round of outreach is underway in 2026, broadening engagement to additional small businesses and building owners before a wider community rollout
- **Coalition Depth:** The H&E Coalition spans the City of Salem, St. Peter's-San Pedro Episcopal Church, Salem Housing Authority, Salem State University, private energy developers, and community-based organizations, including the North Shore Community Development Coalition. The church serves as a building and community trust anchor, with its bilingual, multicultural congregation providing direct connection to The Point/El Punto, Salem's priority neighborhood.
- **Policy & Enabling Infrastructure:** Salem has adopted Commercial Property Assessed Clean Energy (C-PACE), an established Sustainability Revolving Fund, and a community-choice electricity aggregation program, Salem PowerChoice, which together could potentially generate approximately \$700,000 annually in program revenue. These funds could be redirected towards local clean energy project financing. The City is exploring this option and researching existing similar models adopted by Cambridge and Nantucket.



FEEDING THE PIPELINE: HEAVEN, EARTH, AND BEYOND

MIF-supported stakeholder engagement and feasibility work have surfaced a structured pipeline anchored by the H&E Initiative, with secondary geothermal and solar opportunities that expand the network's reach across Salem's priority communities and institutional anchors.

Heaven & Earth Initiative — Flagship Project

A three-component district energy project centered on St. Peter's-San Pedro Episcopal Church, serving Salem Housing Authority buildings and up to 21 downtown properties.

- **Component 1, Geothermal Network ("Earth"):** Ground heat exchanger and distribution piping for a downtown district geoexchange system providing heating and cooling to connected buildings. Preliminary capital cost estimated at \$50M to \$60M per the first feasibility study; a second feasibility study is needed to confirm scope, cost, and network expansion options.
- **Component 2, Building Retrofits & System Conversions:** HVAC and mechanical system upgrades required for each participating building to connect to the geothermal loop. Costs are not yet quantified and are expected to exceed the infrastructure cost. Different innovative models, such as a bulk Energy Services Performance Contract (ESPC) structure, are under consideration to aggregate building owner participation and reduce individual costs.
- **Component 3, Solar Microgrid & Battery Storage ("Heaven"):** Rooftop solar photovoltaic and battery storage systems aggregated across multiple buildings as a single portfolio, to be procured under a DBFOM model or long-term power purchase agreement (PPA) with a private solar developer. The microgrid is designed to extend energy cost benefits to The Point/El Punto community.
- **Investment Readiness:** Market-Scale Feasibility. SPV structure, delivery model selection, and financial assessment are the active predevelopment workstreams before private partner engagement.

Networked Geothermal Portfolio — Secondary Pipeline

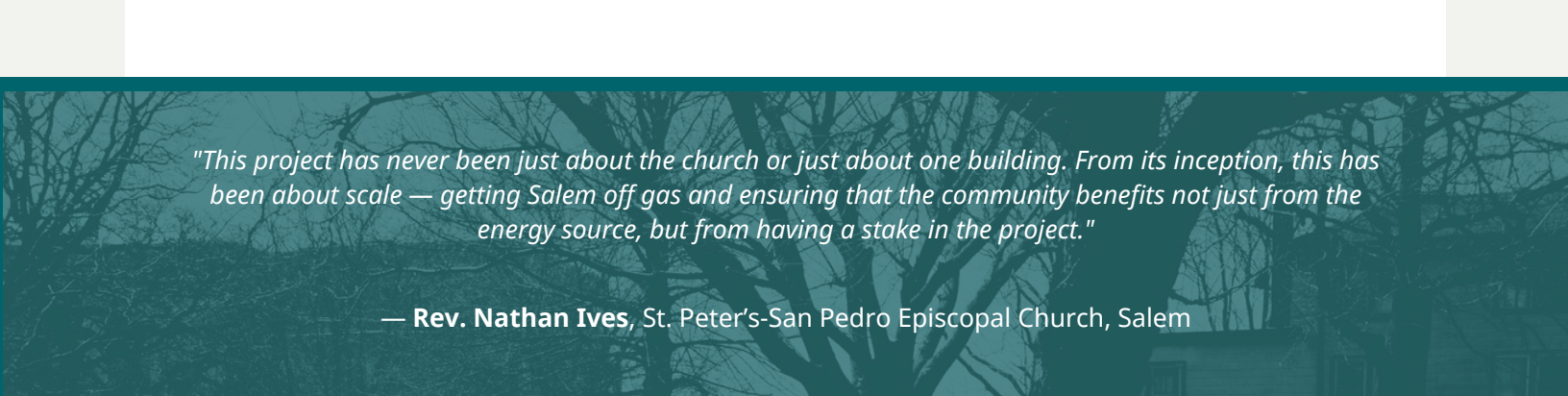
Beacon Communities, Salem Hospital, Salem Middle School, and Salem State University have expressed strong interest in connecting to future geothermal loops on Highland Avenue and the Salem State University campus.

- **Capital Stack:** Structure to be determined. City right-of-way access and anchor offtaker commitments are key public contributions to de-risk private capital participation.
- **Revenue Streams:** Long-term thermal energy service fees paid by connected buildings.
- **Investment Readiness:** Market-Scale Feasibility. Requires expanded feasibility analysis and anchor offtaker engagement.

Affordable Housing Solar Portfolio

Solar installation on a portfolio of affordable housing developments in Salem, with potential connectivity to the H&E solar microgrid where feasible.

- **Capital Stack:** C-PACE financing through MassDevelopment; public or green bank capital as subordinated credit enhancement to unlock private tax equity and debt.
- **Revenue Streams:** Discounted electricity rates and on-bill savings for residents.
- **Investment Readiness:** Market-Scale Feasibility. Portfolio scope and developer solicitation pending H&E solar microgrid design progress.



"This project has never been just about the church or just about one building. From its inception, this has been about scale — getting Salem off gas and ensuring that the community benefits not just from the energy source, but from having a stake in the project."

— Rev. Nathan Ives, St. Peter's-San Pedro Episcopal Church, Salem

PROVEN IMPACT & NEXT STEPS

Scale & Replication

The Heaven & Earth Initiative represents a replicable model for small and mid-size cities seeking to build community-anchored district energy infrastructure in dense, multi-owner downtown environments. Anchoring a geothermal network around a trusted community institution, using a consortium SPV to manage delivery across a multi-owner building portfolio, and pairing thermal energy with solar microgrid infrastructure, is a blueprint other cities can adopt to develop geothermal in their communities. The MIF-funded coalition framework, MIT-supported stakeholder engagement methodology, and SPV consortium delivery approach are largely transferable, especially among cities with similar combinations of historic building stock, multi-owner blocks, and high energy burden.

The Strategic Gap

The immediate predevelopment need is a second feasibility study to quantify building retrofit costs, evaluate solar microgrid design, confirm network expansion scope, and complete a financial assessment of SPV delivery options. This work is the prerequisite for engaging private capital partners and moving from feasibility to financing. The City is also exploring state capital sources, including Massachusetts Community Climate Bank capital, MassDevelopment green finance products, and Massachusetts gap energy grants to support early-stage predevelopment costs.

Activation Point

Private capital entry requires a defined project scope, a near confirmed offtaker list, and a selected SPV structure. Every dollar committed to the second feasibility study and financial assessment accelerates the path to private partner engagement, the trigger for the full \$60M-plus infrastructure investment to move from study to financing.

This case study was funded through the Municipal Investment Fund (MIF) to support local governments and their partner not-for-profit organizations in developing public-private partnership plans that accelerate the deployment of capital to energy and infrastructure projects.