



MODERNIZING SCHOOL HVAC SYSTEMS IN MAINE: STRATEGIES TO EVALUATE OPTIONS AND MOVE PROJECTS FORWARD



Transitioning to Modern HVAC Systems for Better Learning Environments

Modernizing heating, ventilation, and air conditioning (HVAC) systems is an essential action school administrative unit (SAU) leaders can take to create safe and healthy learning environments and improve operational efficiency. This resource provides school leaders, school board members, and other interested stakeholders with insights into evaluating different HVAC upgrade options and understanding the financial resources available to support these critical investments.

In the last several decades, HVAC technology has gone through a paradigm shift. Instead of burning fossil fuels to generate heat, modern systems use electricity to move heat that already exists in

the air or under the ground. These [modern HVAC systems](#) provide reliable heating and cooling while also allowing schools to incorporate advanced filtration and ventilation to improve indoor air quality. As Maine classrooms experience [more bouts of extreme heat](#) and [contend with wildfire smoke](#), these improvements are critical to the safety and wellbeing of students, teachers, and staff.

SAU leaders can take advantage of financial support from state and federal sources to reduce the cost of installing modern systems. These incentives can help SAUs make HVAC choices that are both the most efficient over the long term, but also the most affordable to install.

Comparing Modern and Legacy HVAC Systems

Modern HVAC	Legacy HVAC
Modern heating equipment includes heat pumps (air-, ground-, or water-source), with advanced ventilation systems including dedicated outdoor air systems (DOAS), and energy recovery ventilators (ERVs). ▶ Heats and cools spaces reliably and efficiently ▶ Achieves ventilation goals cost-effectively ▶ Ventilation systems condition supply air so heating systems can work more efficiently ▶ Promotes healthy indoor and outdoor air ▶ Future-proofs school building systems for an evolving regulatory environment ▶ Can include Hybrid Systems (systems that combine multiple heating/cooling technologies, such as heat pumps, boilers, furnaces, and/or biomass)	Common technologies in Maine include boilers and furnaces that rely on oil, propane, natural gas, and/or biomass. Existing legacy equipment: ▶ Provides limited or no cooling ▶ Involves on-site combustion that creates air pollution ▶ May not be able to accommodate high-performance filters ▶ May not be able to properly ventilate or can do so at high cost Source: Adapted from HVAC Choices for Student Health and Learning (RMI and UndauntedK12) The Maine Green Schools Guides on Heat Pump and Ventilation Solutions offer information on specific technologies, their applicability across Maine school buildings, and resources on school ventilation practices and Maine building standards.

Evaluating HVAC Costs

Upgrading or installing a new HVAC system is a significant investment. Moreover, the opportunity to replace or upgrade systems is a rare opportunity with decades long implications. Given the substantial advancements in heat pump technology, SAU leaders should be focused on taking every replacement opportunity to transition to modern equipment.

Selecting the right technology starts with a clear and shared set of goals. For example, many communities have identified cooling as a requirement for school buildings.

Affordability and maintainability are common criteria. Some communities prioritize reduced air pollution and contribution to greenhouse gas emissions. In all cases, the upfront and ongoing costs will play an important role in decision-making.

Understanding how to evaluate and compare the costs of various HVAC system options is invaluable to this decision-making. Life-cycle cost analysis (LCCA) is the industry standard for comparing HVAC system options. In addition to the upfront installation costs, this approach considers

First Costs, Life-Cycle Costs, and Societal Costs of HVAC Systems

Life-Cycle Cost: The total cost of owning the HVAC system over its life.			
First Cost	Heating and Cooling Cost	Maintenance Cost	Repair and Replacement Cost
The initial capital cost to purchase and install the HVAC system.	The cost to run the HVAC system (based on energy source, efficiency, utility rates).	Planned, routine service to keep the HVAC system operating.	Unplanned costs when parts fail or the system breaks.

Societal Cost		
Costs associated with HVAC system type/performance often borne outside of the SAU's finances.	In schools without cooling or ventilation, this can include impacts on health and learning.	In schools with delivered fuel as a primary heat source, this includes carbon emissions, and reliability of supply.

long-term energy use, maintenance, and repair expenses over the system’s useful life. When comparing the life-cycle costs of various options, it’s important to understand whether the systems are delivering comparable benefits. For example, comparing the cost of a gas boiler directly to the cost of a heat pump overlooks that heat pumps also provide cooling, while gas boilers do not.

Ground-source heat pumps (GSHPs) can offer some of the most significant benefits compared with legacy options and other modern HVAC options for several reasons:

- ▶ Underground temperatures remain stable year-round, allowing GSHPs to **operate three to seven times more efficiently** than legacy technology.¹

- ▶ Switching from oil or propane heating to GSHPs **reduces energy consumption and exposure to volatile heating fuel prices**, which may **lower operating costs** while also providing cooling.²
- ▶ By relying on stable underground temperatures rather than delivered fuels, GSHPs **improve resilience**, ensuring consistent heating without the risk of fuel supply disruptions during extreme weather or delivery constraints.
- ▶ Properly designed systems have long equipment lifespans, and the underground loop infrastructure can last for decades with **lower ongoing maintenance costs**.³

¹ Liu et al. [Grid Cost and Total Emissions Reductions Through Mass Deployment of Geothermal Heat Pumps for Building Heating and Cooling Electrification in the United States](#). No. ORNL/TM-2023/2966. Oak Ridge National Laboratory (ORNL), Oak Ridge, TN (United States), 2023.

² Maine Department of Energy Resources. [Annual Fuel Heating Prices](#), as of March 2026. Efficiency Maine. [Commercial Heating Calculator](#), 2026.

- ▶ GSHPs can substantially **reduce building carbon emissions** compared with legacy, fossil-fuel heating systems — helping schools meet their SAU's, town's, or state's [climate goals](#).⁴
- ▶ GSHPs provide efficient heating, cooling, and can be paired with efficient ventilation — **keeping classroom temperatures comfortable and improving indoor air quality**. As 90+ degree days are [projected to at least double](#) across parts of Maine by 2050, adequate cooling and ventilation is critical in every classroom across the state.⁵
- ▶ Federal incentives are available to **lower the upfront capital costs** by up to 50%.⁶

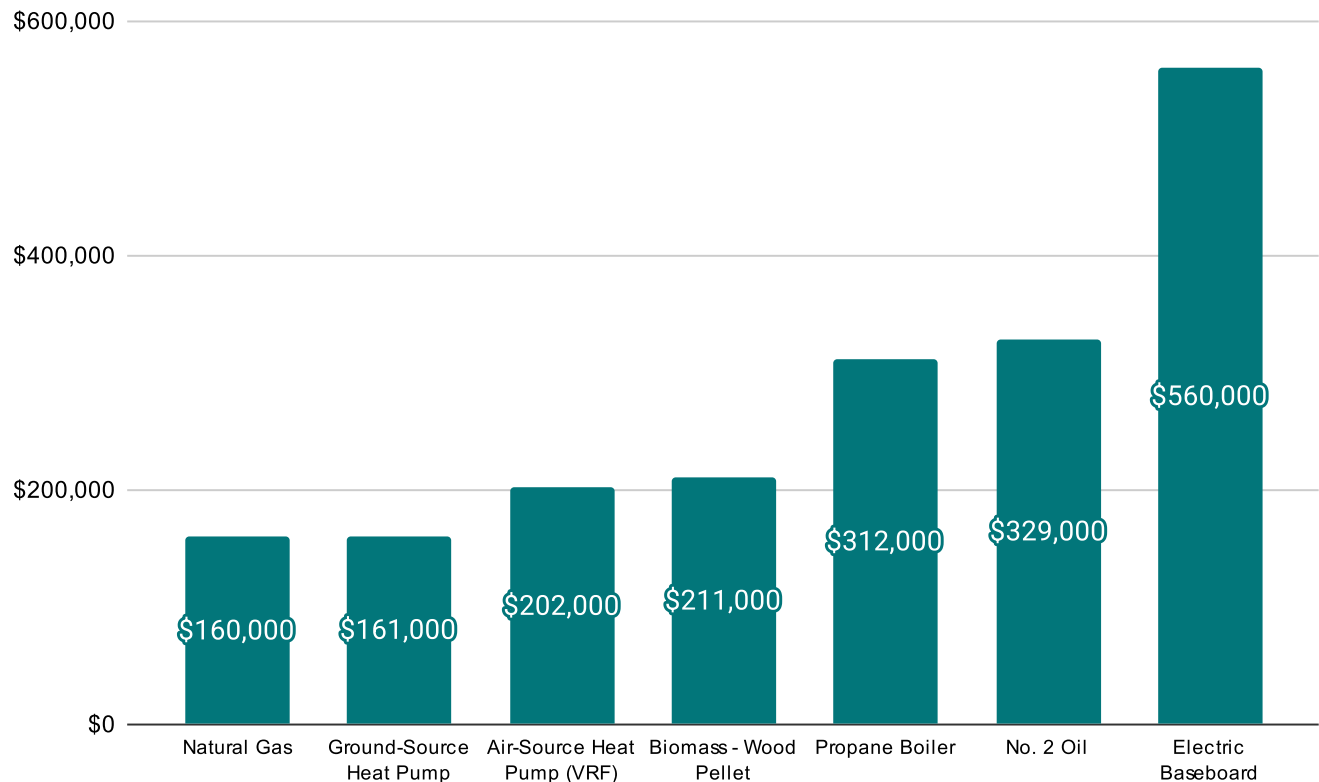


GSHPs: A Proven Technology

Schools across Maine – and nationally – have worked with architects, engineers, and HVAC contractors to design and install successful ground-source heat pumps for decades.

Morse High School / RSU01. Courtesy of Siri Anderson (Blind Dog Associates) for Lavallee Brensinger Architects.

**Figure 1. Estimated Annual Heating Costs by Fuel System Type
(Building Size: 200,000 sq ft)**



See [Appendix C](#) for note accompanying this figure.

³ US Department of Energy. [Guide to Geothermal Heat Pumps](#). 2011.

⁴ Liu et al., [Grid Cost and Total Emissions Reductions](#), 2023.

⁵ The Maine Climate Council, Climate Glossary. [Impacts of Climate Change Across Maine](#).

⁶ 26 U.S.C. § 48 (Energy Credit). www.law.cornell.edu/uscode/text/26/48.

Incentives to Reduce the Installation Cost of Modern HVAC Systems

In this section:

- ▶ **Efficiency Maine Funding Opportunities**
- ▶ **The Maine Office of Community Affairs (MOCA) Community Resilience Partnership**
- ▶ **Federal Energy Tax Credits**

State and federal incentives help lower the upfront costs of upgrading to modern HVAC systems. Incentives vary depending on equipment type and project timelines. Reviewing available incentives early in

the planning process can help school administrative units (SAUs) understand how different system choices may affect available incentives to lower upfront costs.

Efficiency Maine Funding Opportunities

Efficiency Maine provides [technical assistance funding](#) and [financial incentives](#) to help schools plan and implement a range of modern HVAC technologies and ventilation improvements by lowering the initial investment. New Funding Opportunity Notices (FONs) may become available for schools at any given time.

Commercial and Industrial Prescriptive Initiatives

The [Commercial and Industrial Prescriptive Initiatives](#) (CIPI) offer standardized [rebates](#) for commonly installed, high-efficiency HVAC technologies including **mini-split heat pumps, VRF systems, heat pump rooftop units, and energy recovery ventilators (ERVs)**. Incentives are pre-determined based on equipment type and are subject to change.

Key Considerations

- ▶ The project must be pre-approved before equipment is purchased or installed.
- ▶ Payments are generally made within 30 days after the project is completed, following a post-installation verification.

Commercial & Industrial Custom Program

The Custom Program offers rebates on modern HVAC solutions that **do not qualify** for Prescriptive Initiatives. **Ground-source heat pump (GSHP)** systems may be eligible for funding through this program.

Learn More

- ▶ Review Efficiency Maine's current [incentives for the K-12 sector](#).

- ▶ Projects must be completed by an [Efficiency Maine Qualified Partner](#) to be eligible for these incentives. Watch the [Getting Started with a Qualified Partner](#) video to get started.
- ▶ Sign up for a free [Virtual Consultation](#) to ask questions about programs and eligibility.
- ▶ SAUs considering GSHP projects may request a [Scoping Audit](#) for support.

The Maine Office of Community Affairs (MOCA) Community Resilience Partnership

The [Community Resilience Partnership](#) provides grants and technical assistance to communities in Maine to help them identify and address local priorities to reduce greenhouse gas emissions, transition to clean energy, and become more resilient to climate change – including school HVAC modernization and other building upgrades.

Key Considerations

- ▶ Participation is open to municipalities, federally recognized tribes, and unorganized territories. School administrative units (SAUs) must partner with an eligible community and enroll in the Partnership before applying for grants or technical assistance.

- ▶ Once enrolled, communities gain access to peer learning networks and a Regional Coordinator who can help develop project ideas and support applications for state and federal funding.
- ▶ The Partnership typically offers one Community Action Grant round per year, with awards ranging from \$5,000 to \$75,000 per community.

Learn More

- ▶ Review the State of Maine Governor's Office of Policy Innovation and the Future's [Community Resilience Partnership](#) program webpage.
- ▶ Sign up for updates from the [Community Resilience Partnership](#).

Federal Energy Tax Credits

Schools that install **ground-source heat pumps (GSHP)** can earn [Investment Tax Credits](#), which are paid out to schools as cash reimbursements through [Elective Pay](#). Reimbursements range from 6 to 50% of eligible project costs. The tax credit is noncompetitive, and funding is unlimited

for projects that commence construction by December 31, 2034.

Key Considerations

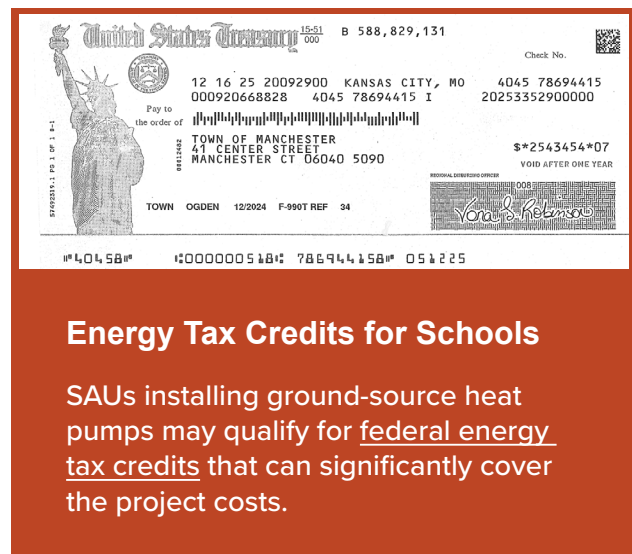
- ▶ Ensure tax credits are incorporated into the analysis of life cycle and upfront costs. This is a substantial source of

funding for modern HVAC systems that should not be overlooked as decision-makers are evaluating HVAC options.

- [Filing is required](#) to receive reimbursement. After a project is placed into service and the return is filed, the IRS issues the earned credit as a cash reimbursement.
- Schools can maximize their reimbursement if the project meets [prevailing wage and apprenticeship](#) requirements or exceptions, uses [domestic content](#), or is sited in an “[energy community](#)”.
- SAUs should engage tax professionals during the design process to understand how various choices will impact the tax credit amount and the required actions for compliance.

Learn More

- Review UndauntedK12’s [Energy Tax Credits for Schools Hub](#) to learn more about the tax credit for GSHP and how to navigate the [Elective Pay](#) process.
- See examples of [SAUs](#) that have received cash reimbursements through Elective Pay for installing GSHPs.
- Contact Glenn Cummings, Director of the [Maine Green Schools Program](#) for support. The Maine Green Schools

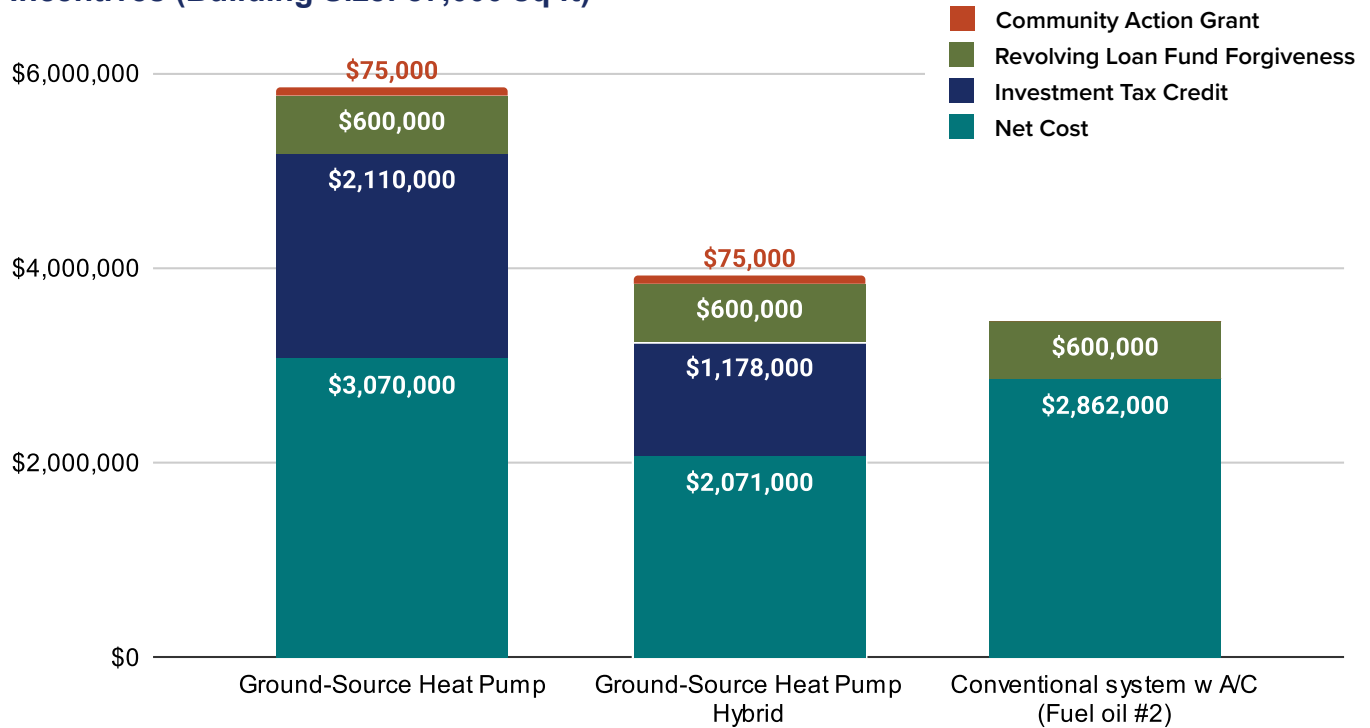


Program is a partnership between the Maine Department of Education and the Governor’s Office of Policy Innovation and the Future.

- Visit www.undauntedk12.org or email info@undauntedk12.org for resources, tools, and support. UndauntedK12 is a national nonprofit working to ensure that every student has the opportunity to attend a safe, healthy, and resilient school.

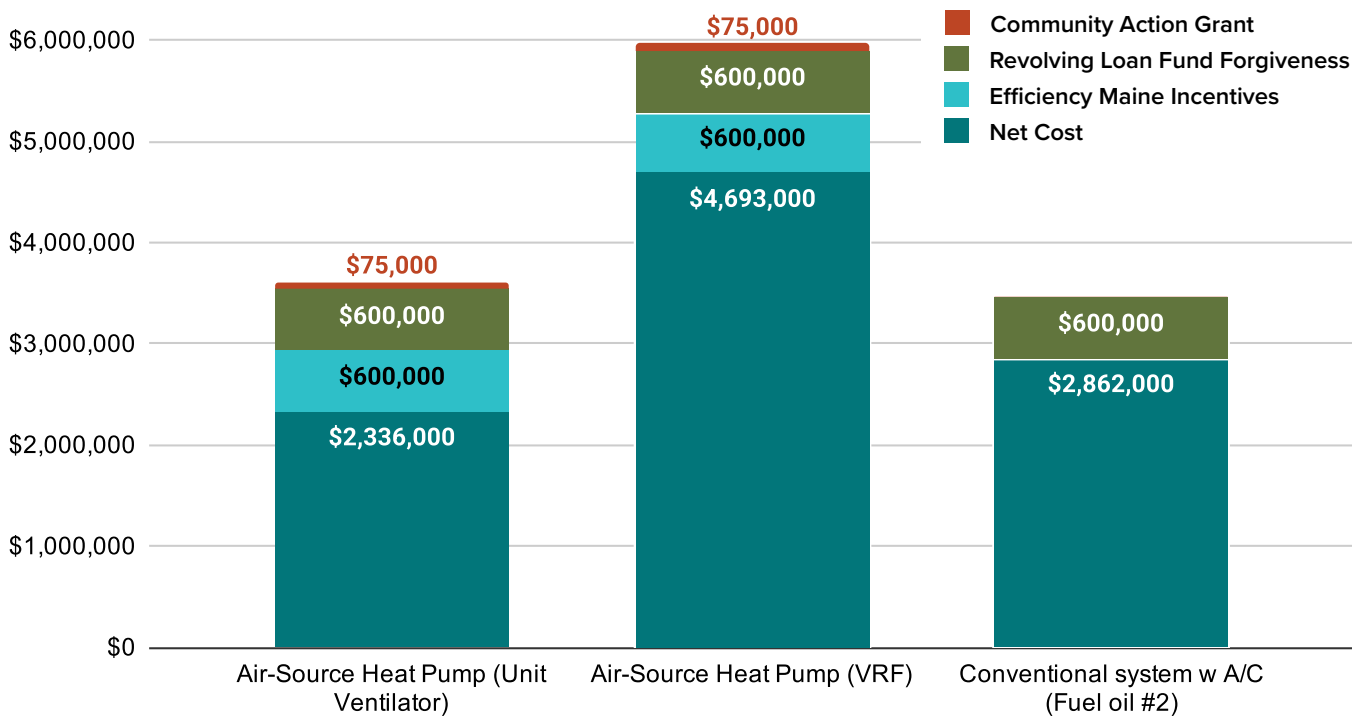
Figures [2a](#) and [2b](#) (on page 8) demonstrate how the net cost of installing modern HVAC systems (air or ground-source heat pumps) are comparable – and in some cases lower – than legacy systems after incentives are applied to the initial costs.

Figure 2a. Net Install Costs for GSHP, GSHP Hybrid, and Fuel Oil-Based Systems after Incentives (Building Size: 87,000 sq ft)



See [Appendix C](#) for note accompanying this figure.

Figure 2b. Net Install Costs for ASHP and Fuel Oil-Based Systems after Incentives (Building Size: 87,000 sq ft)



See [Appendix C](#) for note accompanying this figure.

Financing Tools

In this section:

- ▶ **Municipal Lease**
- ▶ **School Revolving Renovation Fund**
- ▶ **Energy Savings Performance Contracts (ESPCs)**

Financing tools can help school administrative units (SAUs) move forward with HVAC upgrades by covering upfront costs and spreading repayment over time. These tools can also help SAUs manage cash flow during the period between project construction and receipt of incentives or tax credit payments.

Municipal Lease

A [municipal lease](#) allows SAUs to pay for **equipment or building upgrades** over time with funds in the annual budget. Under this approach, a school administrative unit (SAU) enters into a lease agreement with a lender and makes scheduled payments over several years instead of paying the full project costs upfront.

Key Considerations

- ▶ A municipal lease can provide an alternative to traditional debt financing, such as bonds or bank loans.
- ▶ Because municipal leases use tax-exempt interest rates, borrowing costs may be lower than traditional financing.

Municipal Lease Financing

Maine Revised Statute Title 30-A §6006-E creates a collaborative state financing program that lets SAUs finance new construction or renovations through lease-purchase agreements procured through a competitive bidding process.

Learn More

Review the [Efficiency Maine Municipal Lease Program](#). This program connects SAUs with private, Maine-based lenders who can provide this financing for projects that have been preapproved for an [EM Incentive](#).

Email [Efficiency Maine Green Bank](#) or call 866-376-2463.

School Revolving Renovation Fund

The [School Revolving Renovation Fund](#) (SRRF) offers interest-free loans and partial loan forgiveness to finance **HVAC upgrades** that address specific health, safety and

compliance issues. The Renovation Fund operates as a partnership with the State and the SAU each paying a portion of the overall project costs.

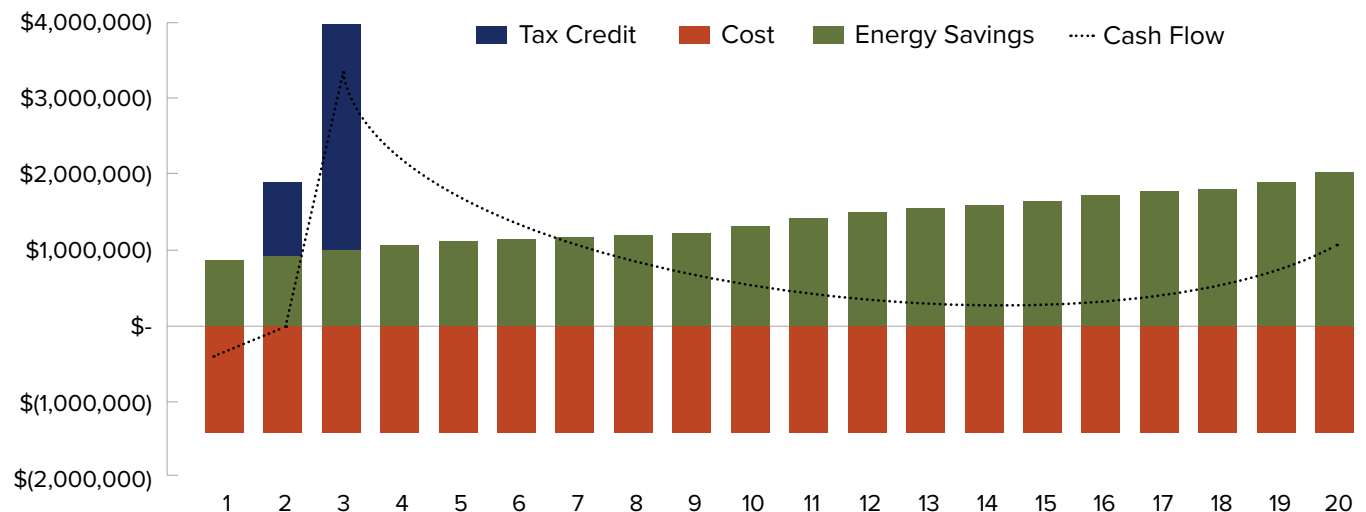
Key Considerations

- ▶ Funding is limited and not all applications are approved. In recent years, between 40-70% applications have been approved.
- ▶ Projects that address an urgent health or safety risk are prioritized for funding.
- ▶ The loan limit is \$2 million per school building per funding priority within a 5-year period.
- ▶ The loan forgiveness rate ranges between 30 and 70% and is based on the SAU's state education subsidy.
- ▶ The loan balance is re-paid over either five or ten years at a 0% interest rate.
- ▶ Once approved by the Maine Department of Education, projects are subject to voter approval.

Learn More

- ▶ Review [Maine Department of Education School Revolving Renovation Fund \(SRRF\)](#) webpage and [Application Process](#) to know what to expect when applying for and implementing SRRF financing.
- ▶ Reach out to the Maine Department of Education's [School Facilities Manager](#) with questions. In preparation for the application to the Revolving Loan Fund, the Maine Green Schools Program is now offering free energy audits and project planning options for all Maine public schools.

Figure 3. Sample Financial Framework for HVAC, Lighting, and Weatherization Upgrades



Note: This figure shows how a K–12 HVAC renovation using ground-source heat pumps can be funded through a combination of projected energy savings and energy tax credits. The tax credits are earned after the system is placed into service, providing a cash flow that helps offset project costs.

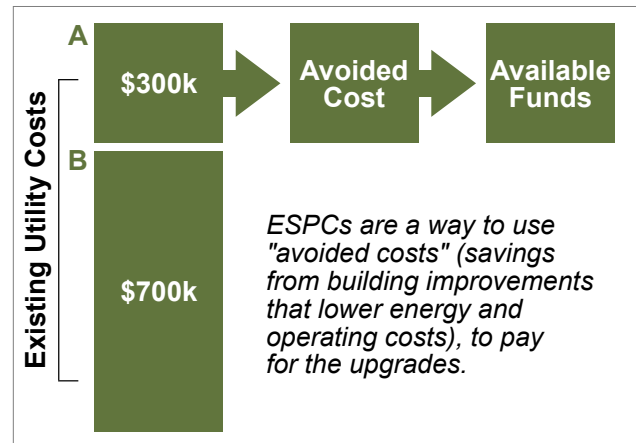
Energy Savings Performance Contracts (ESPCs)

Since funding and oversight capacity at school administrative units (SAUs) is limited, and scoping and financing energy savings projects benefit from specialized knowledge, many SAUs can benefit from working with an [Energy Services Company](#) (ESCO). The contracting vehicle, an [Energy Savings Performance Contract](#) (ESPC) is enabled by [state statute](#).

Under this approach, the ESCO will assess the school building(s), identify opportunities to make energy-saving upgrades, and devise a financial plan that incorporates available incentives, financing options, and energy savings. The guaranteed energy savings are specified as part of the contract terms.

Benefits of working with an ESCO

- ▶ ESCOs bring technical expertise and project management capacity to help SAUs identify and implement energy-saving improvements.
- ▶ They can support the SAU in applying for and securing financing by providing the cash flow analysis and financial modeling.
- ▶ Because savings are guaranteed, the ESCO assumes some financial risk if projected results are not achieved.
- ▶ Guaranteed energy savings may help SAUs qualify for lower interest rates than they could secure on their own.
- ▶ Compared to traditional procurement methods, an ESPC may facilitate faster project delivery timelines.



The ESPC Opportunity for Maine Schools

Under Maine state law, ESCO contracts must include performance criteria that guarantee energy savings, a maximum total project cost, code compliance, and annual reconciliation of performance based on a predetermined measurement and verification plan.

[Maine Revised Statute Title 20-A §15915 Energy service companies and 3rd-party financing](#)

Working with an ESCO can help move projects forward—but these agreements involve complex technical, financial, and contractual decisions that require careful planning and a clear understanding of procurement, contract terms, and financing structure.

- ▶ View the [RFQ Evaluation Checklist](#)
- ▶ Explore [Key Considerations](#) when select and contracting with an ESCO

Key Considerations

- ▶ ESPCs have historically focused on energy efficiency measures with shorter payback periods (e.g. lighting, controls). For this reason, some ESCOs may have limited experience incorporating HVAC electrification into performance contracts, and may not be familiar with systems like ground-source heat pumps. Identify ESCOs with HVAC electrification experience.
- ▶ Due to transaction costs, there is typically a minimum project size of about \$1M. Discuss minimum transaction size with potential partners.

- ▶ Successful ESPCs require a trusted partnership with a provider who has relevant expertise and will support unique project goals.

Learn More

- ▶ Review ESCO Key Considerations ([Appendix A](#)).
- ▶ Use Efficiency Maine's [Qualified Partner Lookup Tool](#) to find trusted and experienced ESCOs, and confirm their [National Association of Energy Services Companies](#) (NAESCO) accreditation status.

CASE STUDY: St. George School Building Energy Efficiency Upgrades and HVAC Modernization

At St. George School, a failing HVAC system frequently broke down, leaving classrooms uncomfortably hot and compromising indoor air quality. To resolve this safety issue, the St. George School partnered with [Energy Efficient Investments, Inc. \(EEI\)](#), a New England-based ESCO, on a solution to upgrade the HVAC system while improving overall building efficiency.

EEI designed a project to rehabilitate existing units with ERVs, install high-efficiency air-source heat pumps, and upgraded lighting, windows, and insulation. These projects improved heating and



cooling performance while lowering operating costs. The project was financed with a SRRF loan with a 30% forgiveness rate. The loan forgiveness combined with the subsidized interest rate saved taxpayers an estimated \$1 million.

Adding air-conditioning introduces new operating costs. However, these costs can be offset by investments in improved building envelope performance and more energy-efficient systems, which often reduce long-term maintenance and repair

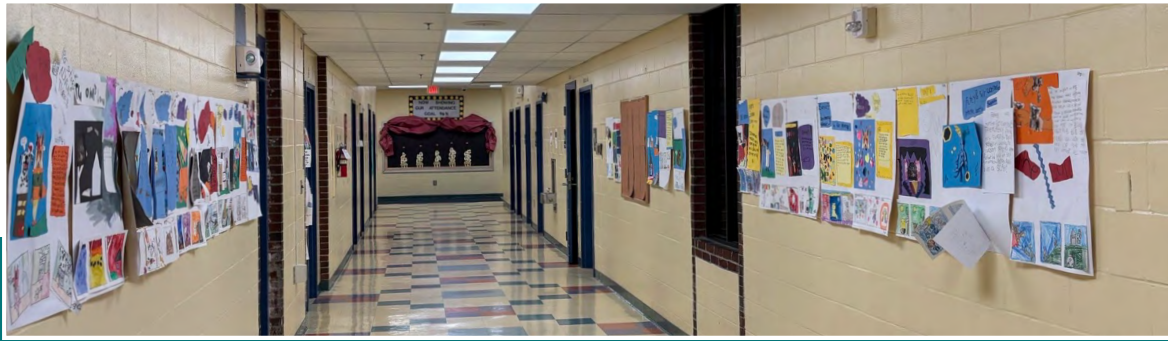
expenses compared to legacy equipment. Providing cooling also helps maintain more stable learning environments, supporting student focus, academic performance, and achievement during periods of extreme heat.



St. George School Project Project Funding Breakdown

Building size: 35,000 | Enrollment: 204

Total Project Cost	\$2,300,000
Less Efficiency Maine Incentives	-\$470,000
Less Portion of Loan Forgiven	-\$580,000
Net Project Cost	\$1,250,000
SRRF Loan (0% interest over 10 years)	\$1,345,000
Surplus	\$115,000
Annual Energy Savings	-\$30,500
Year 1 Bond Payment	\$133,300



CASE STUDY:

Westbrook School Department's Multi-Phase Facilities Modernization Project

Westbrook School Department faced a significant, deferred maintenance backlog that far exceeded available funding. The SAU worked with [Siemens Smart Infrastructure](#) on a comprehensive, multi-phase project that bundled improvements to maximize financial savings.

The project included two phases:

- ▶ Phase 1: A \$4M budget-neutral (self-funded) modernization project that included LED lighting, solar energy panels, comprehensive building envelope improvements, and an open-protocol, non-proprietary building controls upgrade at the Middle School with a SAU-wide energy controls strategy to optimize efficiency and operational control.
- ▶ Phase 2: Phase 2: (Beneficial electrification and ventilation) Currently in the design phase, this next phase focuses on HVAC upgrades with added comfort cooling utilizing the latest heat pump and energy recovery ventilation technology. It leverages the cash flow from a major rooftop solar project currently under construction and federal and state funding.

The Financial Results (A Win for Taxpayers)

- ▶ **Zero Capital Required:** Phase 1 was funded through energy and operational

savings and required no upfront capital investment.

- ▶ **Total Energy Spend Reduction:** Annual expenditures (electric + thermal) are estimated to drop by 49%, from \$1 Million to approximately \$500,000. *This does not take into account cost avoidance from reduced energy usage at a time of rising energy costs.*
- ▶ **Solar Cash Flow:** The solar arrays are projected to generate more than \$5 million in positive cash flow over 20 years. Two schools will offset nearly 100% of their electricity consumption with rooftop solar.
- ▶ **External Funding:** Siemens helped Westbrook Schools unlock more than \$80,000 in Efficiency Maine incentives from the lighting and building envelope upgrades and an additional \$350,000 from the federal 179D program. The SAU was also awarded a \$15,000 Siemens grant that went towards new equipment for their VoTech.
- ▶ **Guaranteed Performance:** Realized \$255,000 in Year 1 energy savings and projected \$1 million in 20-year operational budget savings.

Putting It All Together

There is no one-size-fits-all solution for HVAC modernization. The right approach will depend on your existing building conditions, your goals, and available funding. Experienced partners and resources are available to help school decision-makers evaluate options and move projects forward.

Know your options. Understand the types of modern, high-performance HVAC systems, incentives, and resources available to support projects. Consider the [financial, health, environmental, and resilience benefits](#) of modern systems. Consider conducting an initial set of high-level energy studies for the portfolio of properties to determine the level of energy reduction opportunity and/or suitability to electrify building(s).

Select the right partners to achieve your goals. When selecting partners, prioritize

firms with experience in the technologies or project types you are considering. An experienced project team can help you evaluate existing equipment and replacement options, design projects in alignment with goals and budgets, and navigate funding opportunities. Use Efficiency Maine's [Qualified Partner Lookup Tool](#) to explore ESCOs, designers, architects, installers, and suppliers.

Plan early for tax credit eligibility. If your project includes ground-source heat pumps, work with your project partners to ensure the system design meets the tax credit requirements. Many SAUs work with professional services firms that specialize in helping schools file for energy tax credits and maximize available incentives. There is no one-size-fits-all solution for HVAC modernization. The right approach will depend on your existing building conditions, your goals, and available



Interior mechanical room with ground-source heat pumps. Courtesy of [CMTA, Inc.](#)

funding. Experienced partners and resources are available to help SAUs evaluate options and move projects forward.

Take advantage of technical assistance and support. Technical assistance programs can provide free or low-cost expert guidance as you plan and implement your project.

Efficiency Maine [School Decarbonization Technical Assistance Program](#)

SAUs can receive up to 50% of the cost (up to \$20,000) for technical assistance services through the [School Decarbonization Technical Assistance](#) program. This funding supports planning activities—such as **feasibility studies**, **energy assessments**, and **project development**—to help SAUs design projects that qualify for incentives under Efficiency Maine’s rebate programs. SAUs must use an engineering or legal firm from Efficiency Maine’s [Approved Provider List](#).

Efficiency Maine [C&I Custom Program Scoping Audit Form](#)

SAUs that are considering **ground-source heat pumps** can complete a scoping audit form to determine eligibility for incentives under the Efficiency Maine Custom Incentive Program.

Contact:
custom@efficiencymaine.com
or call (207) 213-6247

Maine Department of Education Green Schools Initiative - [Free Energy Audit and Indoor Air Quality Assessment](#)

The Maine DOE Green Schools Program, in partnership with [BIMS](#), offers free school facility energy and indoor air quality assessments. SAUs can receive a full audit of energy use and HVAC systems, a guide with recommended improvements, and support identifying funding and planning clean energy upgrades.

Contact: don@bims.company
or call (207) 956-2685

Acknowledgements

Thank you to the following organizations and individuals who provided excellent support, insight, and data to inform this resource:

- ▶ [Breakaway Energy Services](#)
- ▶ [Energy Efficiency Investments, Inc.](#)
- ▶ [Siemens Smart Infrastructure](#)
- ▶ [Efficiency Maine](#)
- ▶ [Building Infrastructure Management Solutions](#)

Appendix A: ESCO Considerations

Through [Maine state law](#), schools must go through an RFQ or RFP process to select an energy services company (ESCO). A well-structured RFQ provides an opportunity to evaluate the ESCO and ensure it's

technically qualified, financially stable, and capable of delivering guaranteed energy savings. In this section are key areas to consider.

Procurement and Contracting Points of Caution

- ▶ **Understand payment structure and terms.** Ask whether the performance contract includes an escalator. Over a 20-year lease, even small escalations can significantly affect the payment schedule. Ensure escalators are clearly disclosed, including the assumptions behind them, and review how they will impact out-year payments. Consider negotiating to reduce or set a cap on utility rate escalators.
 - ▶ **Clearly define scope of work.** The responsibilities of the ESCO vs. the school administrative unit (SAU) should be clearly articulated and where appropriate should include actions required to maximize tax credits and data collection to support measurement and verification (M&V).
 - ▶ **Understand risks.** Understand the nature and scope of the guarantee being provided by your ESCO. Understand the circumstances in which an ESCO would not be required to compensate the SAUs for unrealized savings.
 - ▶ **Ensure compliance with state laws.** SAUs are able to request that the Department of Administrative and Financial Services, Bureau of General Services review the performance criteria
- section of the contract for conformance with [Maine state statute §15915](#).
- ▶ **Consider using an Owner's Representative as a risk mitigation tool.** An owner's representative can provide advice at strategic points in the process, such as supporting the RFQ, proposal reviews, major negotiations, technical critique, progress inspections, review of measurement and verification plans, and risk management strategies. The Owner's Representative is also typically involved in overseeing commissioning of the new equipment and witnessing key elements of the measurement and verification process.
 - ▶ **Issue an RFQ for qualified Owner's Representatives.** Assemble a steering committee; consider asking the project architect to oversee the RFQ process, but the SAU should lead in the selection.

Sample RFQs for Owner's Representative Services

- ▶ Windham-Raymond Middle School [Owner's Representative RFQ](#) - issued by Lavallee Brensinger Architects
- ▶ The Town of Cape Elizabeth and the Cape Elizabeth School Department [RFQ](#)

- ▶ **Select the right Measurement and Verification (M&V) plan to confirm that energy savings are achieved and that project payments align with actual performance.** There are several industry-standard M&V options used to track energy use and savings. **Option C ([Whole-Building Measurement](#))** is often the most effective approach for schools. When reviewing a RFP, SAUs should understand which M&V approach is included, for how long verification will continue, who is responsible for the costs associated with M&V activities, and whether ongoing support (maintenance, staff training) is part of the agreement.
- ▶ **State and federal incentives are not guaranteed.** Contracts should require that the ESCO coordinate with Efficiency Maine to pursue all available incentives, assist the SAU in securing financing, and ensure the project meets all requirements for applicable state incentives and energy tax credits.
- ▶ **Use real-time data dashboards.** Some firms may offer live dashboards tracking energy use and savings, which can provide up-to-date information and also serve as a learning tool for students.

RFQ Evaluation Checklist

- ❑ **Verify the ESCO's bonding capacity.** Understand the ESCO's bonding limit and current project load. The ESCO should operate within its bonding limits to protect each project. If the ESCO exceeds its bonding limit, the SAU could have significant financial exposure.
- ❑ **Require audited financial statements to assess the ESCO's stability.** Some ESCOs will automatically provide this.
- ❑ **Require proof of safety/OSHA compliance.** Ensure the ESCO's on-site team is qualified and OSHA-compliant, with proper licenses and certifications. Do not rely on subcontractor qualifications; the ESCO's employed project manager should meet all safety and licensing standards.
- ❑ **Ensure the RFQ meets state laws.**
- ❑ **Require examples of past Measurement and Verification (M&V) reports.** This will help you evaluate the ESCO's guaranteed savings approach, willingness to take risk and what results can potentially be expected.
- ❑ **For ground-source heat pump projects, confirm the ESCO understands the requirements and is prepared to support the SAU in qualifying for available tax credits.** This is critical for projects over 1 MW.
- ❑ **Require past examples of Investment Grade Audit (IGA) reports that encompassed major mechanical renovations, preferably including heat pump and/or energy recovery ventilation systems.** This will help you evaluate the quality of their project development effort and ability to deliver comprehensive and well thought through solutions aligned with your SAU's unique buildings and goals.
- ❑ **Request past examples of projects that demonstrate controls expertise and BAS integration.** Building automation systems can significantly improve the performance and efficiency of an HVAC system, review how each ESCO approaches controls integration, system interoperability, and long-term support for the controls platform.
- ❑ **Ask each ESCO to describe their parts sourcing, technician training, and long-term service and support.** Over a 20-year performance contract, the availability of parts, service technicians, and software support can significantly affect system performance and costs. If an ESCO relies heavily on outsourced support, understand how that affects response times, costs, and the ESCO's accountability over the life of the project.
- ❑ **Look for demonstrated strategies of stacking incentives to maximize funding and offset project costs.** Eligibility for rebates, grants, and tax credit incentives are subject to meeting specific requirements and timelines. An ESCO should be able to demonstrate how they will stack incentives and time projects to maximize funding and reduce costs.

Appendix B: Key Terminology

- **Energy Savings Performance Contract (ESPC):** is a financial mechanism used to pay for today's facility upgrades with tomorrow's energy savings without tapping your organization's capital budget. An ESPC/EPC constitutes a partnership between a facility owner and an energy service company (ESCO).
- **Energy Service Company (ESCO):** An Energy Service Company (ESCO) partners with facility owners to develop, deliver, finance, and/or own energy and infrastructure modernization projects funded by operational cost savings, incentive dollars, and/or client capital.
- **Energy Conservation Measures (ECMs)** are upgrades to equipment or processes that result in energy savings. May include weatherization, lighting, HVAC, and electric panel upgrades.
- **Air-source heat pumps (ASHP):** a type of heat pump that extracts heat from the air and transports the heat inside to provide space heating, or outside to provide space cooling. There are various types, including those that are ducted or ductless, and those serving single zones or multiple zones.
- **Variable Refrigerant Flow (VRF):** ductless, all-electric HVAC systems that use refrigerant to transfer heat. Two-pipe VRF heat pumps can heat and cool spaces but not simultaneously, while three-pipe VRF heat recovery systems can heat and cool simultaneously.
- **Ground-source heat pumps (GSHPs):** are a type of heat pump that extracts heat from the ground and transports it inside to provide space heating, or into the ground to provide space cooling.
- **Air-handling units (AHUs):** condition and circulate air in buildings. AHUs come in a variety of configurations and sizes, located either indoors or outdoors. Because these units often configure multiple HVAC functions into one self-contained unit, they are also sometimes referred to as packaged units.
- **Dedicated outdoor air systems (DOAS):** operate independently of the heating and cooling system to draw in and filter outdoor air to ventilate indoor spaces. These systems may incorporate heat recovery or energy recovery.
- **Energy Recovery Unit:** recover the temperature and humidity of outgoing air and use it to precondition incoming outdoor air separately from the indoor air recirculating through the heating or cooling system.
- **Measurement and Verification Plan (M&V Plan)** is defined as the plan providing details on how the Guaranteed Savings will be verified.
- **International Performance Measurement and Verification Protocol (IPMVP)** provides an overview of current best practice techniques available for measurement and verification (M&V) of performance contracts.

Appendix C: Figure Notes

Figure 1:

Energy consumption is based on heating fuel comparison data for Kennebunk High School from the Maine Department of Education's [2014 School Energy System Study](#); costs for the air-source heat pump (VRF) and electric baseboard are calculated using the Efficiency Maine [Commercial HVAC Heating Calculator](#). Utility costs are calculated using [March 2026 utility rates](#) reported by the [Maine Department of Energy Resources](#); Comparative costs to heat smaller school buildings generally follow the trend presented in the chart (subject to price of electricity and fuel type).

Figure 2a:

The initial cost estimates for the ground-source heat pump (GSHP) and conventional fuel oil system are based on data from the Maine Department of Education's [2014 School Energy System Study](#) and assume a 2% annual cost escalation rate. The cost basis for the GSHP hybrid (with a backup fuel-based boiler) is based on Oxford MS data from the 2025 Massachusetts School Building Authority [Heat Pump Study](#). Revolving Loan Fund Forgiveness estimates for all three systems assume financing through the [School Revolving Renovation Fund](#), with a loan covering 80% of project costs (up to \$2 million) and a 30% loan forgiveness rate, and a Community Action Grant; Efficiency Maine may provide additional incentives via the Custom Program. The Investment Tax Credit is assumed to equal 40% of eligible GSHP equipment installation costs.

Figure 2b:

The initial cost estimates for the air-source heat pump systems are based on Springfield HS (MA) data (cost (\$) / sq ft) from the 2025 Massachusetts School Building Authority [Heat Pump Study](#); the conventional fuel oil system is based on data from the Maine DOE's [2014 School Energy System Study](#) and assumes a 2% annual cost escalation rate. Revolving Loan Fund Forgiveness estimates for all three systems assume financing through the [School Revolving Renovation Fund](#), with a loan covering 80% of project costs (up to \$2 million) and a 30% loan forgiveness rate; and a Community Action Grant.