Alaska Heat Smart Heat Pump 101:

What You Need to Know

An Overview

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Who is AK Heat Smart?

501(c)(3) incorporated in 2019

AHS' mission is to promote energy efficiency in Alaska homes and buildings by providing education, advocacy, and support for weatherization and clean energy solutions. AHS works to help Alaska residents save money and increase comfort and home health through improved heating systems and energy efficiency upgrades.

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AHS Programs…

- **Home Energy Assessment Program:** empowers homeowners to make informed decision about home heating electrification
- **Healthy Homes**: HUD-funded lower-income, whole home energy retrofits
- **Clean Heat Incentive Program**: offers financial incentives to income-qualified homeowners for heat pump installations
- **AK Carbon Reduction Fund**: lower-income oil to heat pump direct assistance
- **Nonprofit Retrofits for Health and Housing** (NORTHH): statewide nonprofit building energy retrofits (20-30 buildings)

ACES - EPA CPRG Grant

➔ 6100 Heat Pump Installations Over Five Years

6100 heat pumps to replace primary fossil fuel heating systems in 48 communities between Ketchikan and Kodiak.

➔ Reduce Home Heating Costs

Adding a heat pump to a home's heating mix can help realize utility cost savings of between 25% up to 75%.

➔ Expand AHS Services and Workforces Regionwide

Through educating residents across the region, households will land in 'the driver's seat' and be positioned to make informed decisions about home heating improvements. Increased demand will lead to workforce growth.

"This project has been funded wholly or in part by the United States Environmental Protection Agency under assistance agreement #84101201 to Southeast Conference (SEC). The contents of this document do not necessarily reflect the views and policies of the Environmental Protection Agency, nor does the EPA endorse trade names or recommend the use of commercial products mentioned in this document."

So why heat pumps?

- Maritime climate
- Regional electricity - majority low-cost hydro
- Delivered fuels expensive
- Supportive community leadership
- Aids community energy security
- Much of the world knows these things!


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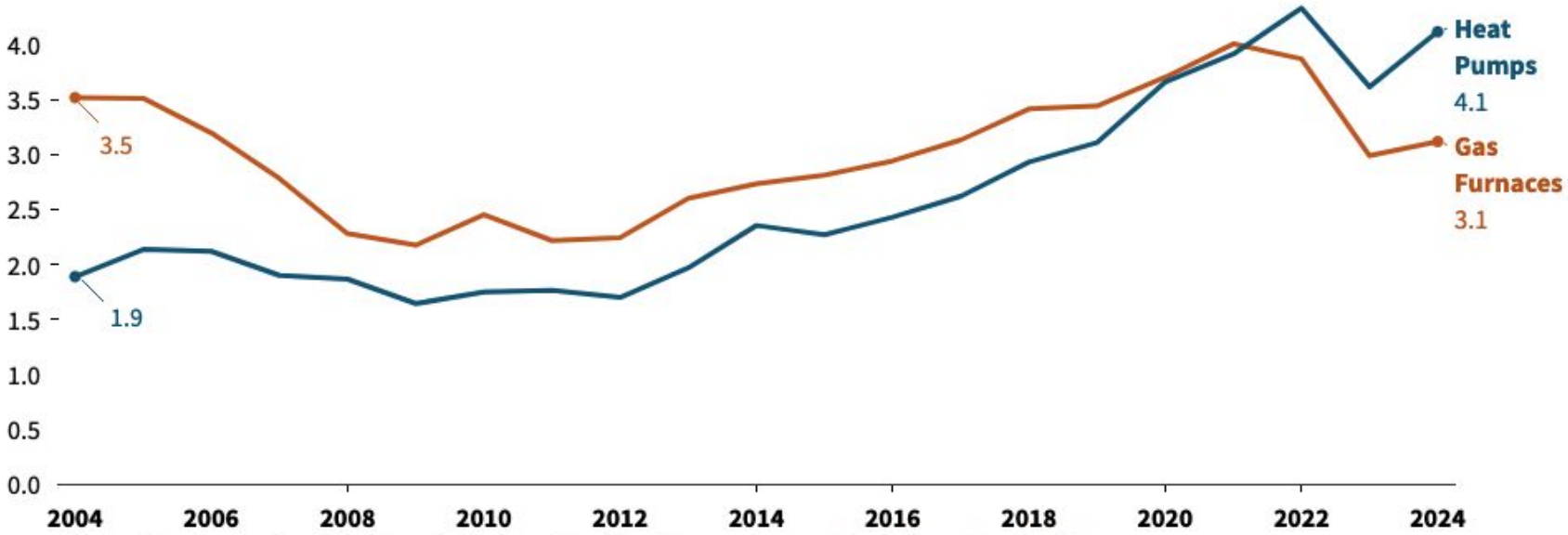
Annual Shipments of Gas Furnaces and Air-Source Heat Pumps

Annual # of units shipped (millions of units), 2004-2024



Source: Air Conditioning, Heating, & Refrigeration Institute, Monthly Shipments Report • Get the data • Download image

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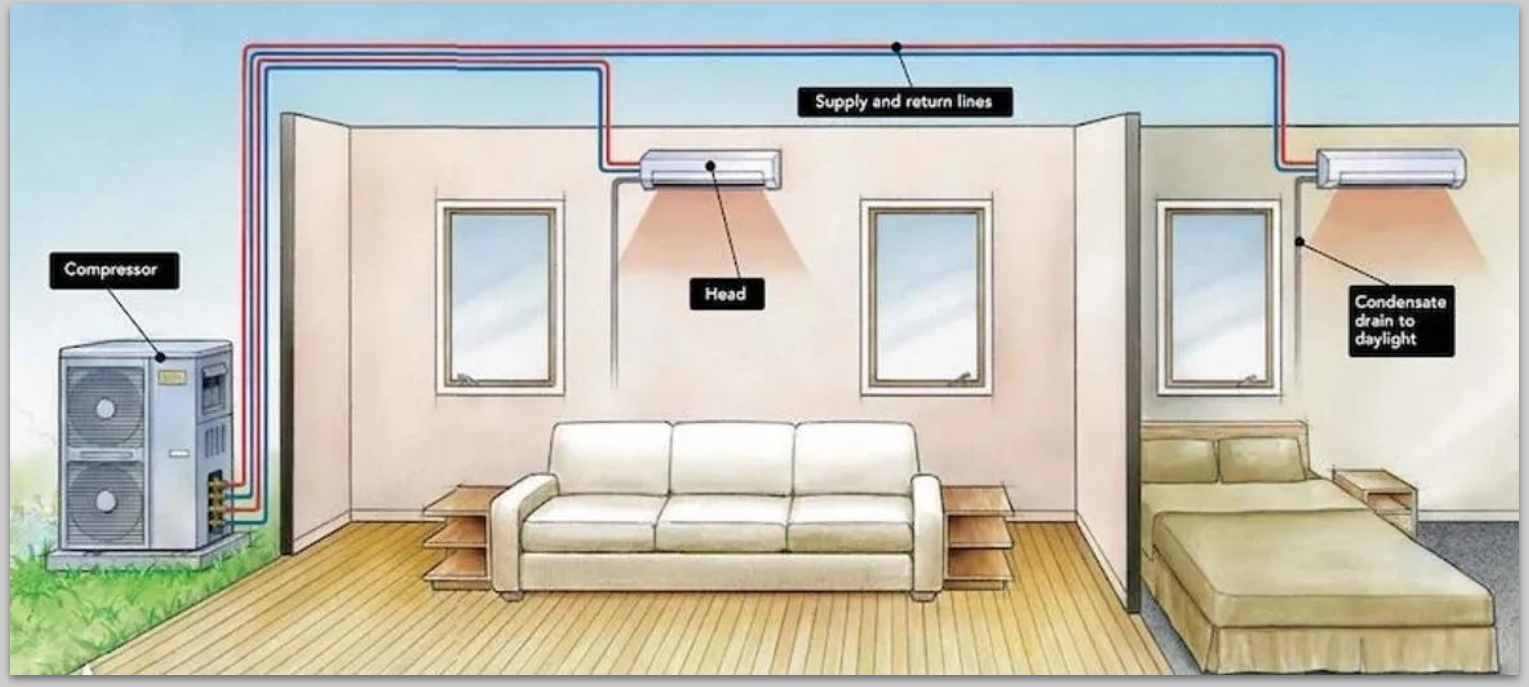
So again, why heat pumps?

- Move heat, don't make it
- Upwards of 300% efficiency
- Can cut 25-75% from heating bills
- Clean and local
- Supports community labor, local economies and local electrical grids
- Financial support available for up front costs

Air Source Heat Pump (Mini Split)



https://www.attainablehome.com/ductless-mini-splits-is-it-worth-it/

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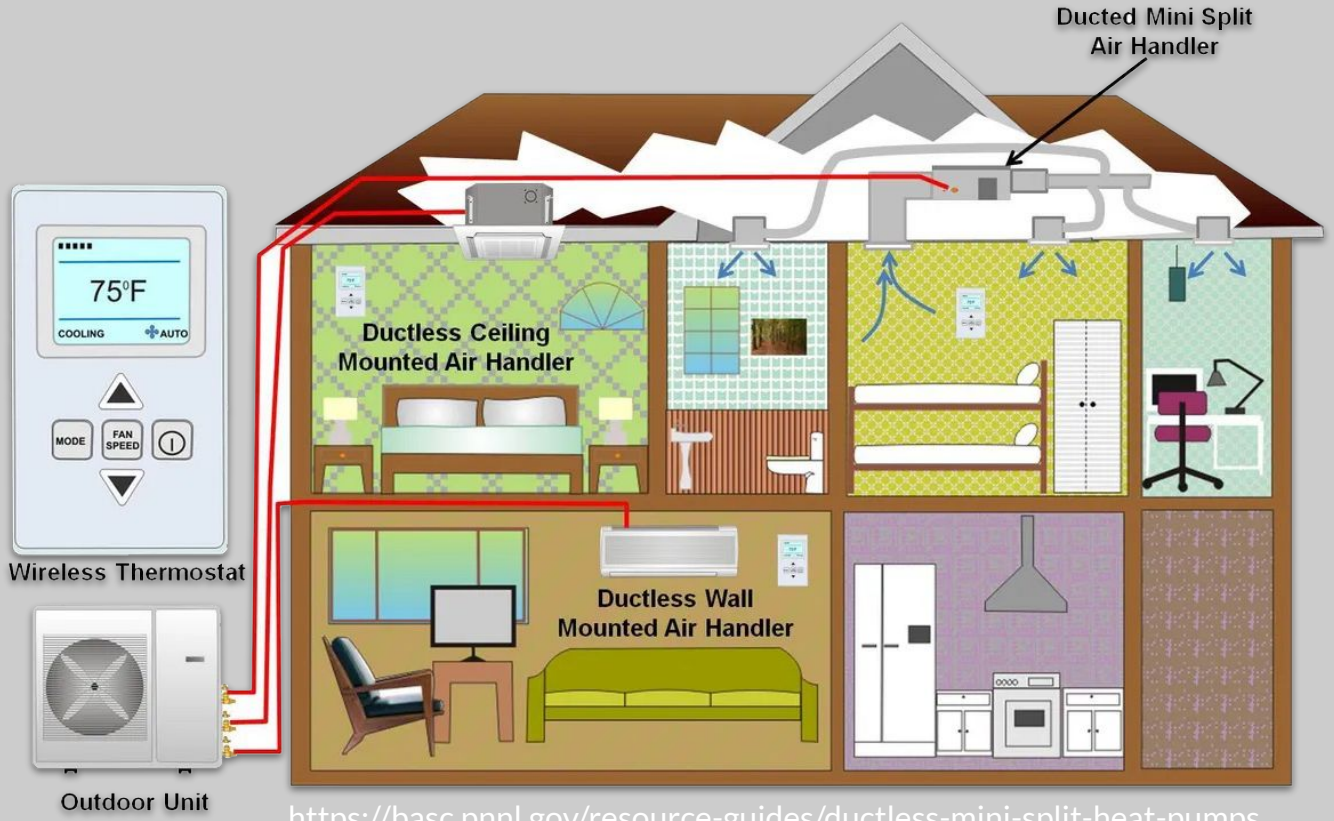
Ducted Air Source Heat Pump



https://basc.pnnl.gov/resource-guides/ductless-mini-split-heat-pumps

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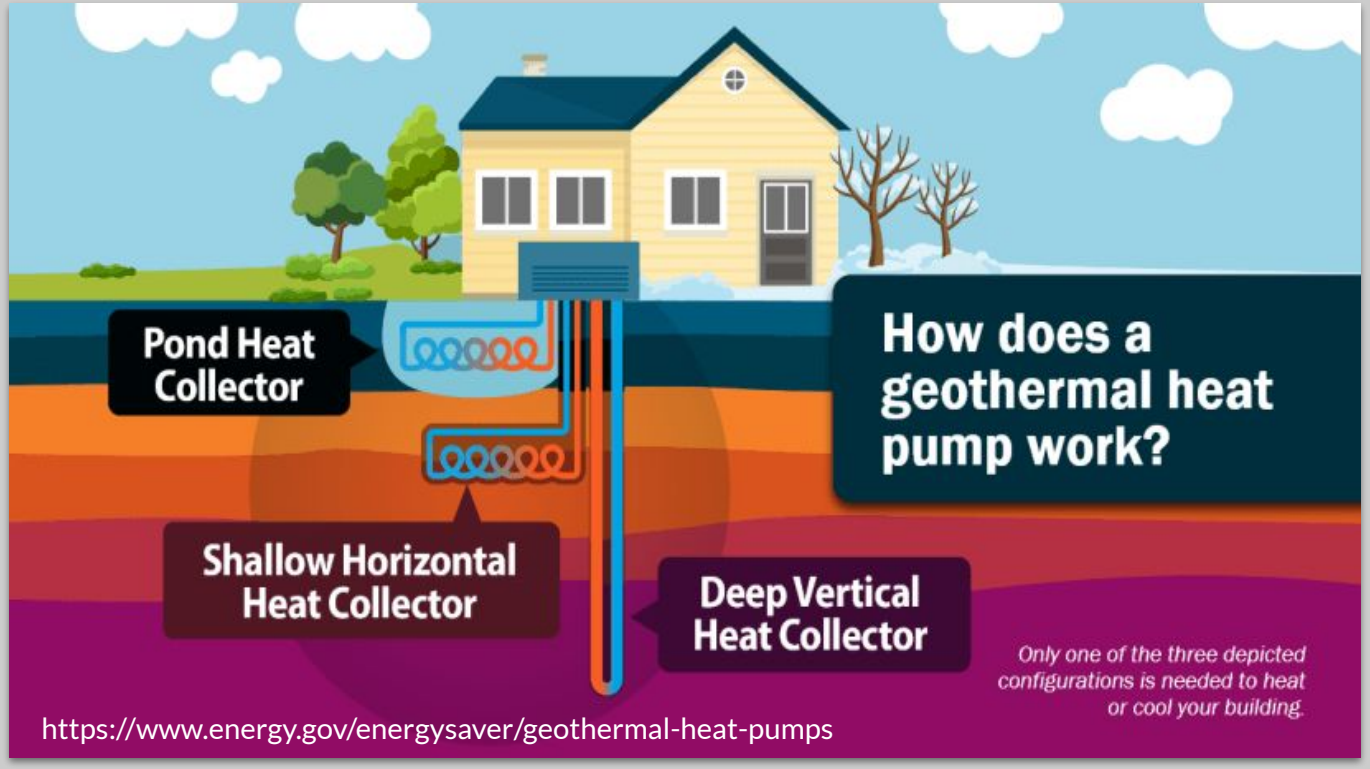
Ground Source Heat Pump



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What About My Home?

Will it work?
What do I need?
What will it cost?
What will it save?

Who can help answer these questions?

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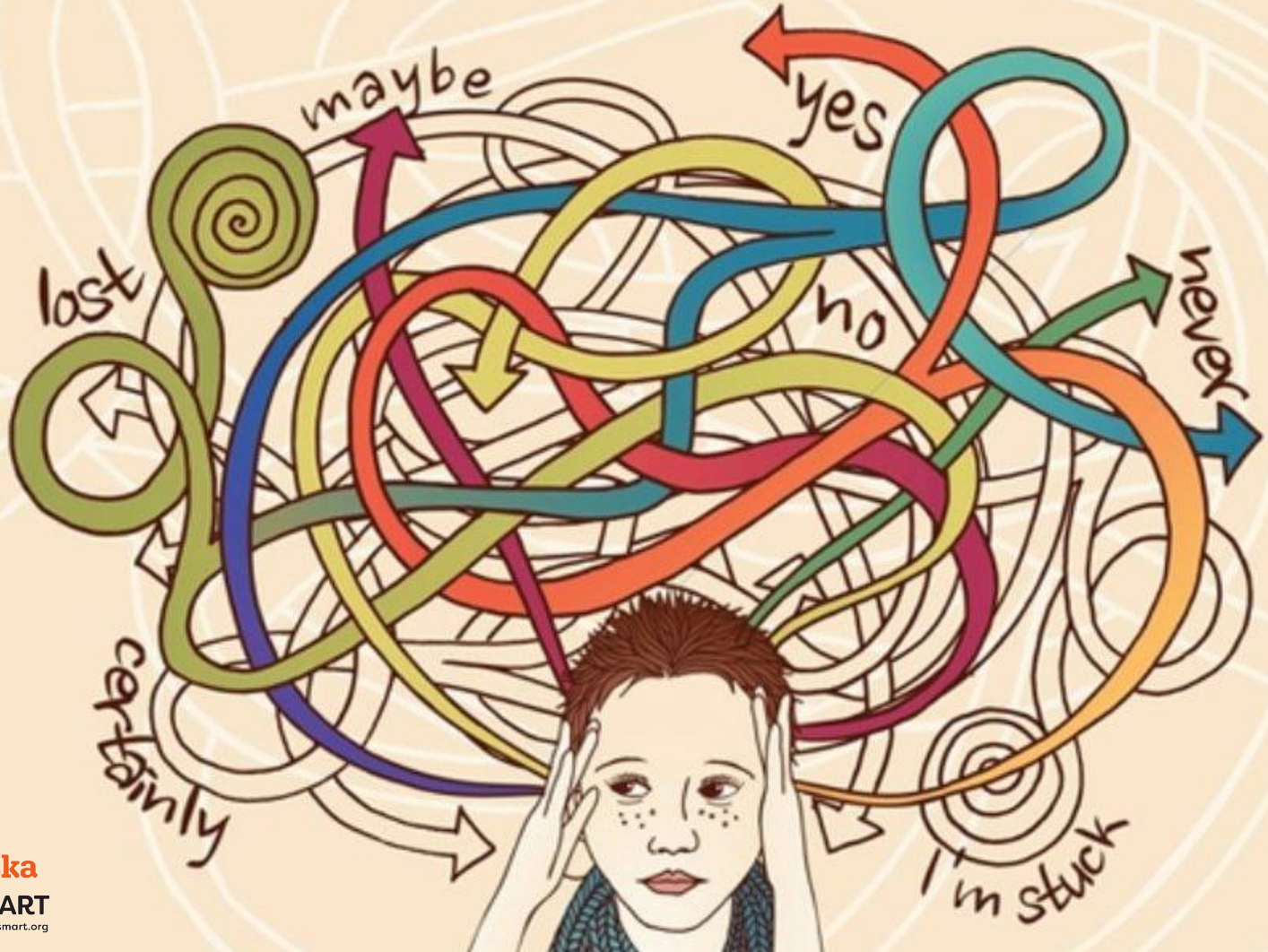

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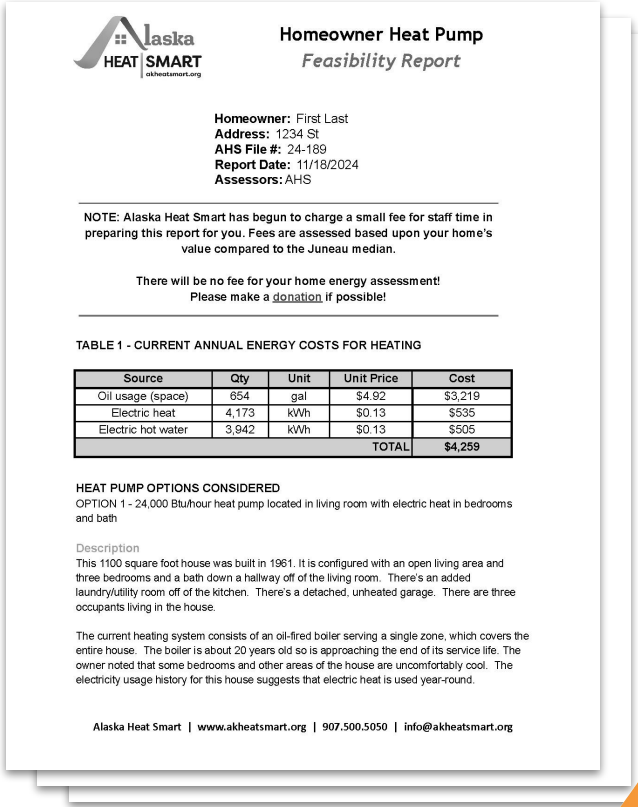

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Homeowner Heat Pump
Feasibility Report

Homeowner: First Last
Address: 1234 St
AHS File #: 24-189
Report Date: 11/18/2024
Assessors: AHS

NOTE: Alaska Heat Smart has begun to charge a small fee for staff time in preparing this report for you. Fees are assessed based upon your home's value compared to the Juneau median.

There will be no fee for your home energy assessment!
Please make a donation if possible!

TABLE 1 - CURRENT ANNUAL ENERGY COSTS FOR HEATING

Source	Qty	Unit	Unit Price	Cost
Oil usage (space)	654	gal	$4.92	$3,219
Electric heat	4,173	kWh	$0.13	$535
Electric hot water	3,942	kWh	$0.13	$505
			TOTAL	$4,259

HEAT PUMP OPTIONS CONSIDERED
OPTION 1 - 24,000 Btu/hour heat pump located in living room with electric heat in bedrooms and bath

Description
This 1100 square foot house was built in 1961. It is configured with an open living area and three bedrooms and a bath down a hallway off of the living room. There's an added laundry/utility room off of the kitchen. There's a detached, unheated garage. There are three occupants living in the house.

The current heating system consists of an oil-fired boiler serving a single zone, which covers the entire house. The boiler is about 20 years old so is approaching the end of its service life. The owner noted that some bedrooms and other areas of the house are uncomfortably cool. The electricity usage history for this house suggests that electric heat is used year-round.

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Home Assessment Report

- Home energy data summary
- EE considerations
- ASHP Recommendations
  - Unit sizing and location
  - Supplemental heating
  - Other EE options
- Savings and payback period
  - Estimated installation cost
- Info re installers, financing, etc.

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For More Information:

www.akheatsmart.org

www.akcarbonreduction.org

www.seconference.org/energy-committee

www.akheatsmart.org/resources/calculator

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