

Energy and Climate

Looking forward to a Fossil-Fuel-Free North Haven

Sea Level is rising due to climate change caused by greenhouse gas emissions.

North Haven sea level has increased about 8 inches since 1950, about 1 inch per decade. It will increase more quickly in the future, probably another foot or more in the next 30 years.



Sometimes people argue that a foot or two doesn't matter much, it's not a lot compared to the tidal range. But they're wrong. At high tide in a storm, two feet is the difference between no flooding and two feet of flooding, or two feet and four feet.

The next fifty years are going to be rough no matter what. But what we do now is hugely important for how bad things get in the future.

We need to reduce greenhouse gas emissions

Produce electricity with wind, solar, etc., not coal and methane. Maine is doing pretty well: about 70% renewable generation.

Use electricity for heating, cooling, water heating, transportation, etc., rather than fossil fuels.

Ancillary benefits for electrification on North Haven:

- Reduce fuel truck trips to the island. Less disruption to the ferry.
- Electric cooking ranges are healthier: they produce no benzene or NO_x.

Start where you use most of your energy

For North Haven residents, that means North Haven.

People who are on North Haven for a few months or less should prioritize their main home. But (1) as North Haven appliances need replacement, replace them with good ones, and (2) once you have done what you can at your main home, start working on North Haven. And (3) if a North Haven program needs critical mass, take that into account. For instance, perhaps a heat pump installer would provide a discount if several people get systems installed at the same time.

Plan ahead: if you wait until your heater or water heater fails, you will probably replace it with whatever is in stock, and live with that for 10 to 20 years.

Use this equipment.

	Year-Round	Summer
Heating	Heat Pump	
Cooling	Heat Pump or none	Heat Pump or none
Water Heating	Heat Pump water heater	Heat Pump water heater (other electric is second-best)
Cooking	Induction range	Induction range but not very important
Vehicle	EV	EV best but not very important
Insulation	Worthwhile if house is poorly insulated.	Not important for most
Weather sealing (windows, doors)	Very worthwhile in most old houses.	Not important for most

Why distinguish between Year-Round and Summer?

Houses that are occupied only in summer probably use no heating and on NH no air conditioning either. Even an uninsulated, non-weather-sealed house is often comfortable all summer.

A summer-only car uses little gasoline, and it would take a lot of energy to make a new car that would sit unused most of the year.

What about residential solar?

Maine can produce a lot of solar power in summer. The cost has come way down in recent years. And here's some news hot off the presses: "On April 22, 2024, the U.S. Environmental Protection Agency (EPA) selected Maine's proposal for a \$62 million grant award to provide financial and technical assistance enabling low-income and disadvantaged households across the state to access solar and energy storage. This program is forthcoming, but not yet available."

Federal tax credits are available for all residential solar installations.

Even summer residents should consider installing solar on a North Haven house: the solar panels generate electricity whether you are there or not!

There can be a lot of 'economy of scale' in installing solar. If enough people are interested, it might make sense to pitch in to install a large system (on the roof of the school, for example) and split the costs and the proceeds from selling power to the electric grid.

Heat Pumps

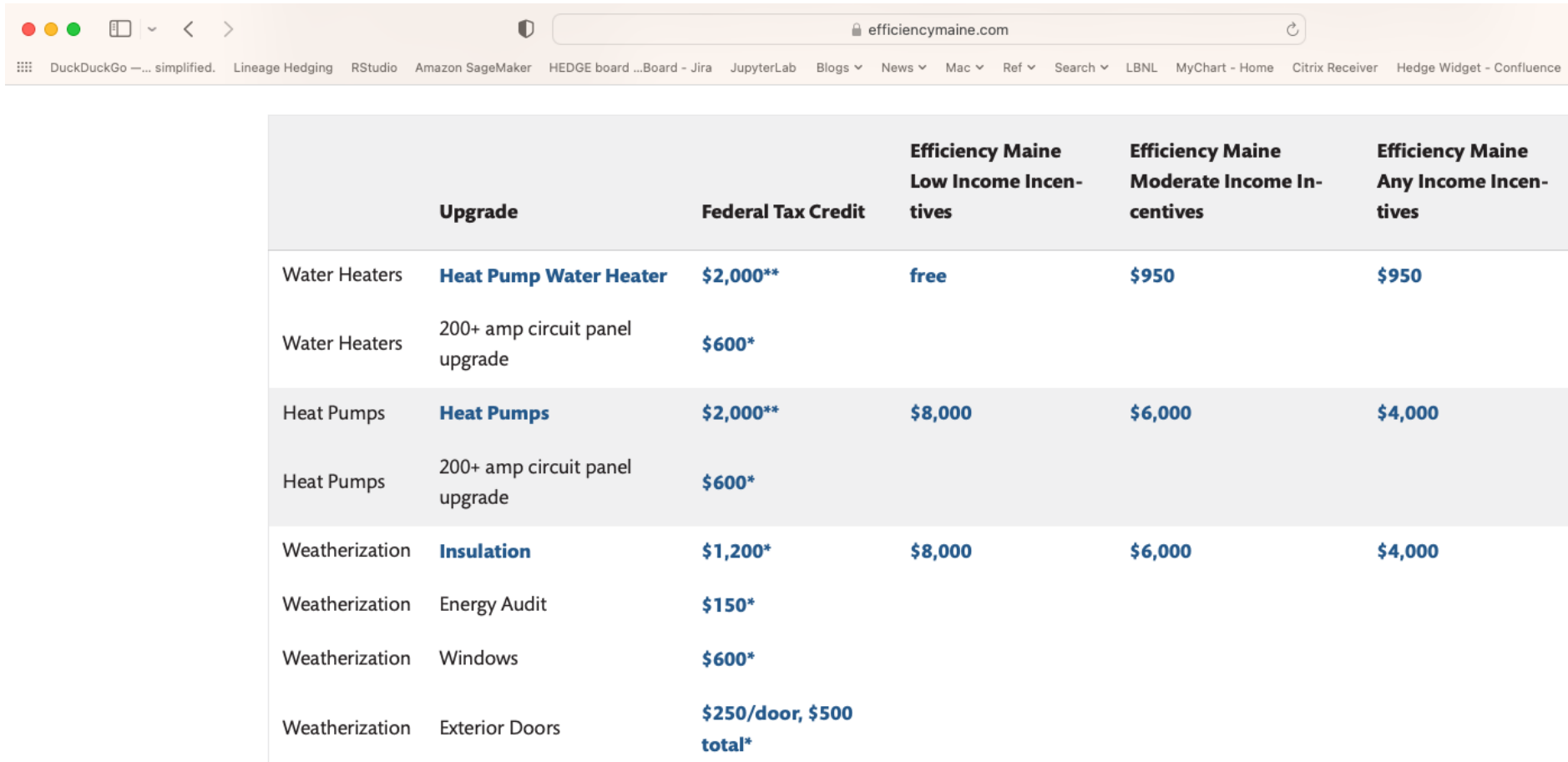
A “heat pump” moves heat from one place to another. A conventional air conditioner is a type of heat pump: it moves heat from inside your house to outside. A refrigerator is also a type of heat pump.

A heat pump can cool a house, or heat it. Even when it is cold outside, there is still heat outside! (Sounds funny). Think of your freezer: when the compressor comes on, it moves heat from the cold freezer into your warm room.

EfficiencyMaine.com has information on rebates and subsidies for heat pumps. These can be BIG! Low-income residents can get a rebate of 80% of the project cost! (Moderate income: 60% rebate! High income: 40% rebate!). There are federal tax credits to help with related costs such as electric panel upgrades.

In addition to heat pumps for heating and cooling indoor air, they can heat water. An electric heat pump water heater is *much* more efficient than an old-style (resistive) electric water heater.

EfficiencyMaine.com is a great resource for NH



The screenshot shows a web browser window with the URL efficiencymaine.com. The browser's address bar and tabs are visible at the top. Below the browser window is a table with five columns: Upgrade, Federal Tax Credit, Efficiency Maine Low Income Incentives, Efficiency Maine Moderate Income Incentives, and Efficiency Maine Any Income Incentives. The table lists various energy efficiency upgrades and their associated costs and incentives.

	Upgrade	Federal Tax Credit	Efficiency Maine Low Income Incentives	Efficiency Maine Moderate Income Incentives	Efficiency Maine Any Income Incentives
Water Heaters	Heat Pump Water Heater	\$2,000**	free	\$950	\$950
Water Heaters	200+ amp circuit panel upgrade	\$600*			
Heat Pumps	Heat Pumps	\$2,000**	\$8,000	\$6,000	\$4,000
Heat Pumps	200+ amp circuit panel upgrade	\$600*			
Weatherization	Insulation	\$1,200*	\$8,000	\$6,000	\$4,000
Weatherization	Energy Audit	\$150*			
Weatherization	Windows	\$600*			
Weatherization	Exterior Doors	\$250/door, \$500 total*			

RewiringAmerica.org is also useful, but has only federal incentives. Many states have additional incentives, as Maine does.