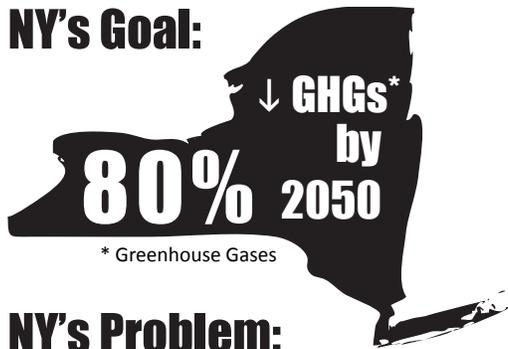


Making Residential Heating and Cooling Climate-Friendly in New York State

NY's Goal:



NY's Problem:

90% of households in NY use fossil fuels for heating their homes.



GREENHOUSE GAS EMISSIONS FROM COMBUSTION IN NY

On-Site Combustion

(Such as for heating, hot water, cooking, industrial processes and other)

37%

24%

39%

Electricity

Transportation

New York's Solution: **Renewable-Ready** Efficient Electric **HEAT PUMPS**



Heat pumps use free energy from the environment (ground or air) to provide more efficient heating and cooling than would be available using electricity alone.

Air source heat pumps operate like air conditioners in reverse and are commonly used in other parts of the country. **Cold climate air source heat pumps** are now available, and the technology keeps improving.

Ground source heat pumps, often called "geothermal" heat pumps, are even more efficient because they tap into the constant temperature of the ground below the frost line.

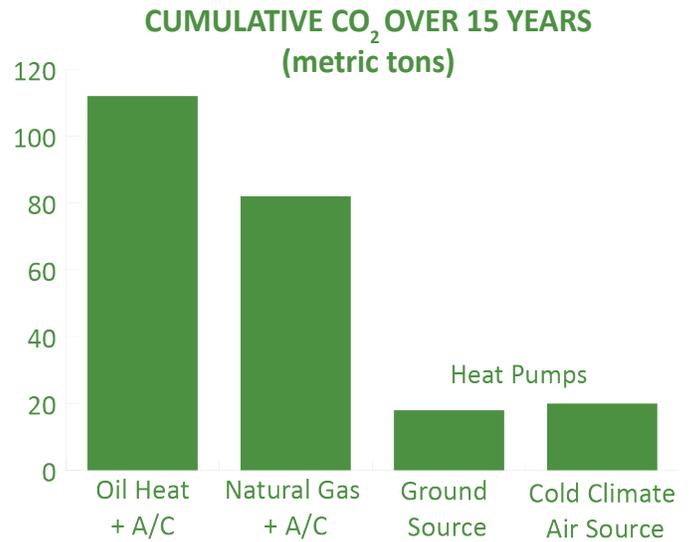
Both kinds can be used for cooling too!

Heat Pumps are Renewable Ready!

Heat pumps use electricity to run the motors that drive the compressors and fans. They can be run in either direction to provide heating or cooling, and are more efficient than air conditioners and standard electric heat.

Cold climate air source and geothermal heat pumps provide warmth without burning fossil fuels in your house, and their efficiency greatly reduces greenhouse gases, even using an electricity supply that is not 100% renewable, like our electricity supply today.

When powered with 100% renewable electricity, they provide a fully renewable heating and cooling option. That's why we call them renewable ready!



NEW YORK STATE ANNOUNCES \$15 MILLION FOR RENEWABLE HEATING AND COOLING

On February 8, Governor Cuomo announced new NYSERDA initiatives to promote renewable heating and cooling, including \$15 million in rebates for installation of ground source heat pump systems through 2019.

NYSERDA is accepting comments on the rebate program and the development of the long-term policy framework through March 10, 2017.

Visit www.RenewableHeatNow.org for information about how to comment.



Retrofitting Your Home?

Ground Source Heat Pumps ("Geothermal")

- Higher initial cost, but last longer.
- Widely available from contractors.
- Economical to retrofit oil and propane heated homes.
- Not currently economical to replace natural gas systems.
- Can also provide lower-cost air conditioning in summer.

Cold Climate Air Source Heat Pumps

- Available, and becoming even more efficient.
- Lower initial cost.
- Economical to replace natural gas systems in upstate homes.
- Economical to retrofit oil and propane heated buildings.
- Can also provide lower-cost air conditioning in summer.

NOTE: Once installed, heat pumps' operating costs are relatively stable compared to the high price volatility of oil, propane, and natural gas.

Policy Recommendations for New York

BIGGEST BANG FOR THE BUCK...

- Aim to retrofit fuel oil and propane heated homes with heat pumps within 20 years, avoiding additional gas pipelines.
- Prioritize low-income residences, especially those receiving financial assistance to pay heating bills in order to reduce price volatility and the social cost of energy poverty.

FOR NEW HOUSES...

- Passive house construction and efficient electric heating systems should be required for new construction starting in 2020.

BASE REBATE CALCULATIONS ON...

- Social cost of carbon and system benefits of peak load reduction, using CO₂eq value of methane leaks, based on a 20-year global warming potential value.
- PERFORMANCE: Provide the highest rebates to the most efficient heat pumps (typically ground-source).

NO INCENTIVES FOR...

- Conversion from oil or propane to gas

AGREE New York
Alliance for a Green Economy

More information at www.renewableheatnow.org • This fact-sheet was prepared by Alliance for a Green Economy