

HOME ELECTRIFICATION PRESERVE HEALTH, SAVE MONEY, AND REDUCE EMISSIONS




New Jersey Electrification
Coaching Network
March 3, 2025
Pat Miller



Carolina Beach, North Carolina

September 16, 2024



Ten days before Hurricane Helene in Carolina Beach, a once 18 inches of rain per year fell in 12 hours, soaked North Carolina.

Asheville, North Carolina

October 3, 2024



Westville, New Jersey

June 20, 2019



Kincade Fire, Jimtown, California

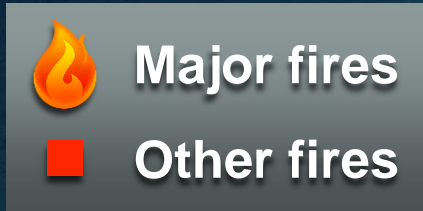
October 24, 2019





The Kincade fire grew to over 16,000 acres within 24 hours.

Active U.S. and Canadian Fires

September 24, 2024



 Major fires

 Other fires





THAWING PERMAFROST

COAL MINING

COAL PLANTS

AIR TRANSPORT

OIL PRODUCTION

INDUSTRIAL PROCESSES

FERTILIZATION

LAND TRANSPORT

LANDFILLS

Pollutants from Burning Gas

- **CO₂ and Carbon Monoxide**
- **Nitrogen oxides**
- **Formaldehyde**
- **Particulate matter (soot)**
- **Methane (leaks)**

Contribute to smog, acid rain, ozone in atmosphere



Health Impacts

Associated with

- **Respiratory illnesses such as asthma**
- **Cancer**
- **Death**

Methane is explosive

**Worldwide, air pollution
from fossil fuels kills
8.7 million people
every year**

Data: K Vohra, et al., "Global mortality from outdoor fine particle pollution generated by fossil fuel combustion: Results from GEOS-Chem," *Environmental Research*, 2021



Photo © 2023 Patrick Pleul/picture-alliance/dpa/AP Images



Photo © Shutterstock



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Caney Fork Farms/Skidmore College

We have the technologies in hand today to reduce emissions 50% in this decade.



Photo © Shutterstock



Photo © Shutterstock



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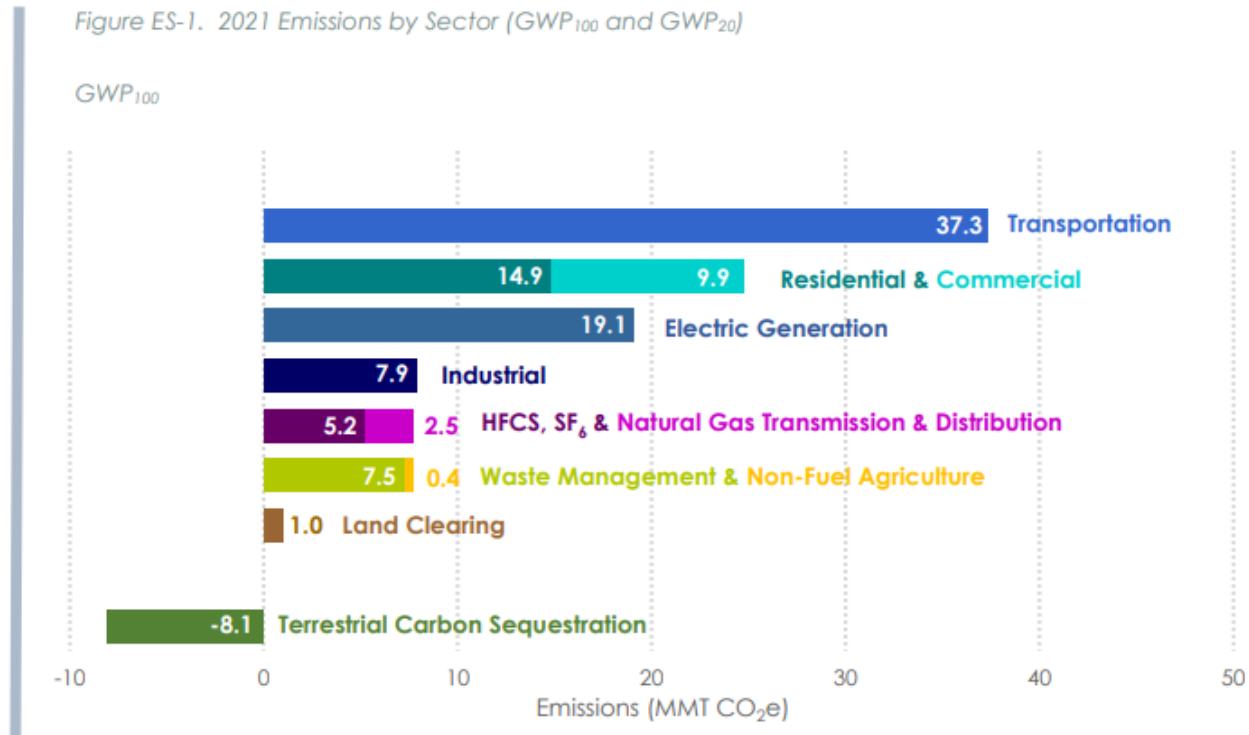


Photo © Shutterstock

2024 NJ Greenhouse Gas Emissions Inventory Report

New Jersey Department of Environmental Protection

Figure ES-1. 2021 Emissions by Sector (GWP₁₀₀ and GWP₂₀)



Top 3 Greenhouse Gas (GHG) Emissions Sources in NJ:

81% of All Emissions

REDUCE ALL 3

**Source: 2024 NJ Greenhouse Gas Emissions Inventory
Report**

New Jersey Department of Environmental Protection

- **Electricity generation (19%)**
- **Transportation (37%)**
- **Residential/commercial buildings (25%)**

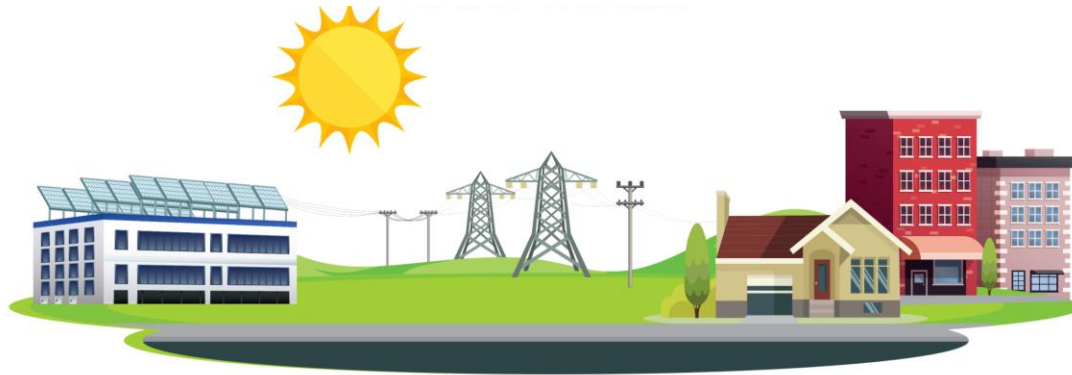
ZEROING OUT HOME CARBON EMISSIONS



1. Solar Panels
2. Insulated Walls, Floors and Attic
3. Energy Efficient Windows & Doors
4. Electric Car
5. Heat Pump Water Heater
6. Heat Pump Dryer
7. Induction Stove
8. Smart Thermostat
9. Heat Pump Heating and Cooling

CREDIT: NRDC

COMMUNITY SOLAR



Clean Energy

Lower Energy
Costs

No Panels on
Your Property

BPU/Sustainable Jersey Community Solar

www.sustainablejersey.com/communitysolar

OUR EV – PRIUS PRIME PLUG-IN



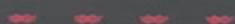
**OUR FIRST
ELECTRIFIED
APPLIANCE
REPLACEMENT –
CERAMIC STOVETOP**



Induction cooktops heat using a magnetic current. The result is evenly heated pots and pans with much less energy lost during cooking.



Soup Water Fry Hot Pot Stir-Fry Temp.



Power

Photo © Shutterstock



Timer/Pre.



Child Lock



Elec./Volt.



Function



ON/OFF



Experimental Induction Stovetop 1 Burner Portable Induction Hot Plate - \$109.



Energy Efficiency – Use Less Energy



A SIMPLE DO-IT-YOURSELF PROJECT

DUCT SEALING

**CAULKING
CORD**

**PRESSURIZED
FOAM
FOR LARGE GAPS**

**ALUMINUM
FOIL TAPE
TO SEAL JOINTS
IN INSULATION**

**DUCT SEALANT
WATER BASE**



**REFLECTIVE
BUBBLE WRAP**

**WRAP
AIR DUCTS IN
UNHEATED AREAS**

HOME PERFORMANCE WITH ENERGY STAR NJ & Nation-wide Weatherization Program

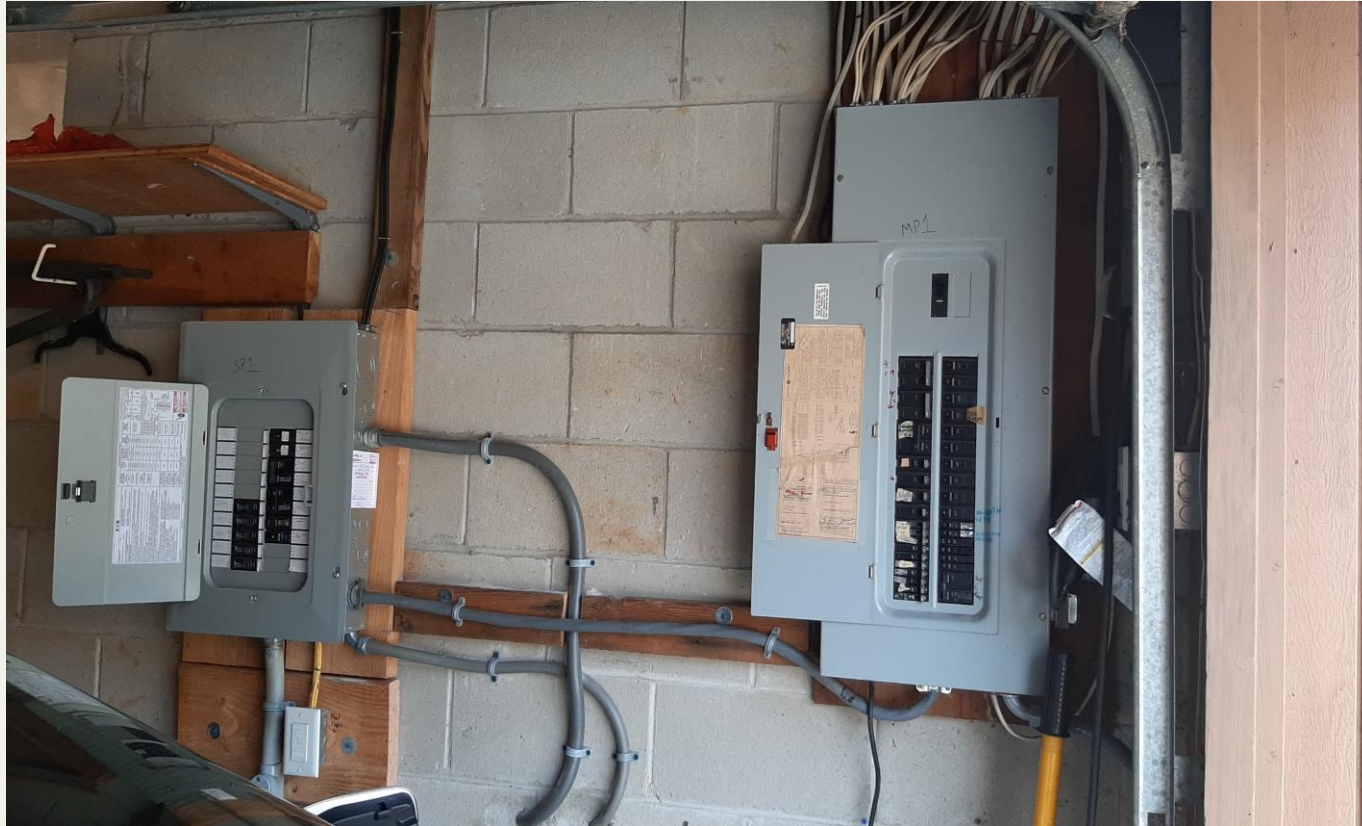
South Brunswick, NJ

May 11, 2023

Install 50 Gallon Heat Pump Water Heater w. UEF of 3.88	\$5,460
Shell Test & Seal Incl. Applicable Air Seal Top-Plates & Penetrations	\$2,960
Attic Hatch Insulated to R-13	\$275
Attic Stair Cover Insulated to R-13	\$475
4" of Dense-Packed Cellulose in Exterior Walls R-13, 564 Sq Ft	\$3,412
4" of Dense-Packed Cellulose in Garage Buffered Walls R-13, 267 Sq Ft	\$1,775
Audit Refund (\$99)	(\$99)
Total Project Cost	\$14,258
Rebate to Ciel Power, LLC	\$5,000
Balance Due Upon Completion of Project	\$9,258

* Can be paid with PSE&G 0% On-Bill Repayment
Project qualifies for a \$5,000 rebate to contractor through NJ HPwES Program

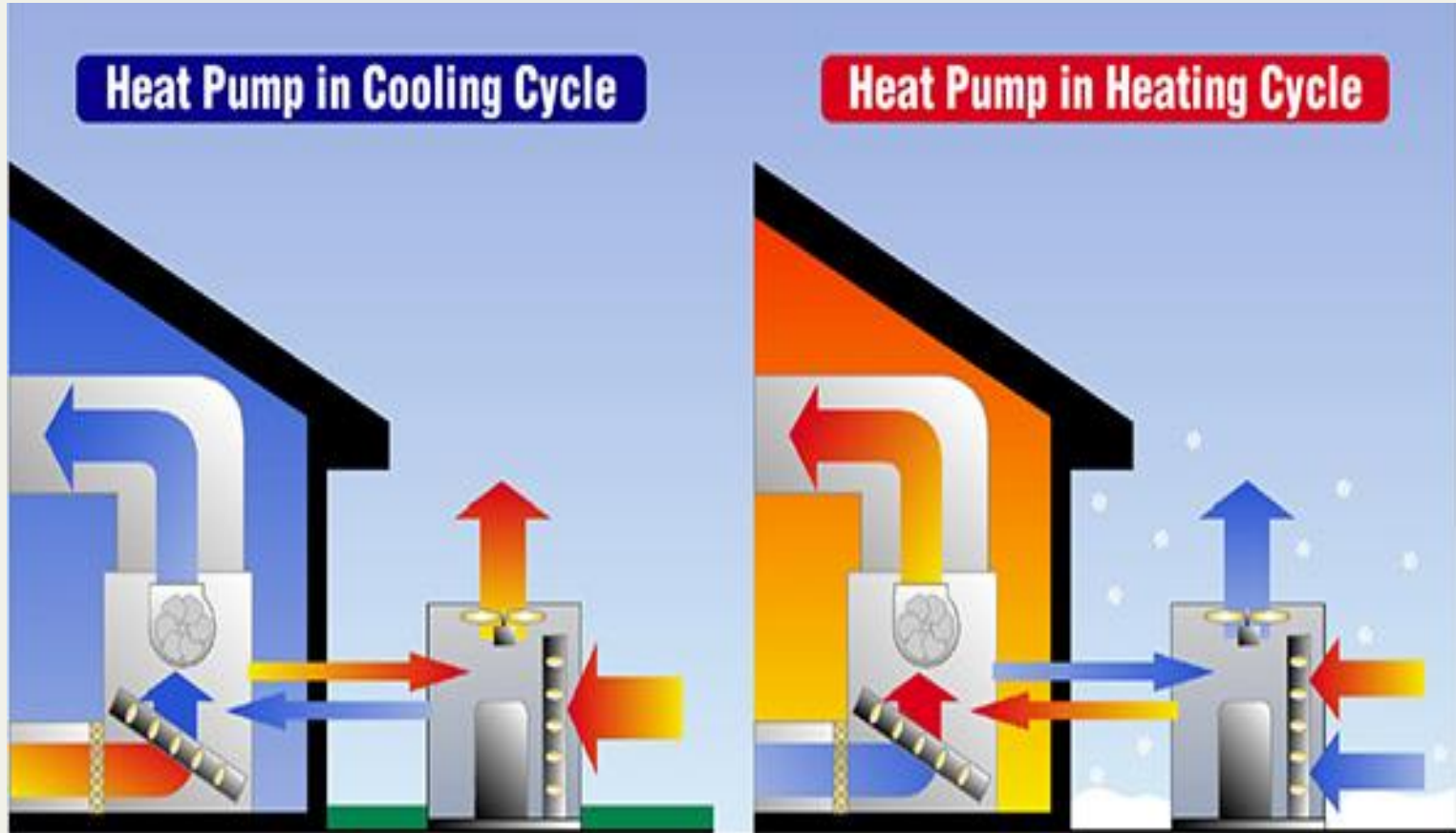
Spare Circuits for Future Electric Appliances



**New Box on Left
for New/Future**

- **2nd Heat
Pump Space
Heater/AC**
- **Stove**
- **2nd EV**

Space Heating & Cooling w. Electric Heat Pump



SPACE HEATING & COOLING WITH ELECTRIC HEAT PUMP

Gas Furnace Backup on Right



ELECTRIC HEAT PUMP WATER HEATER



HEAT PUMP COMBO WASHER/DRYER



Electric Heat Costs Less, Pollutes Less

2024 ENERGY COST FOR MILLER HOME

	ACTUAL 2024 with heat pumps for space & water heating	ACTUAL 2021 with gas for space & water heating	% CHANGE with heat pumps	With Heat Pumps
TOTAL Gas + Electric*	\$2265	\$2583	(12%)	Savings
GAS Cost	\$62	\$1088	(94%)	Reduction
ELECTRIC Cost	\$2203	\$1495	47%	Increase
THERMS Gas Burned	31	880	(96%)	Savings
TONS CO ₂ Emitted	0.2	5.1	(96%)	Savings

*Electricity in 2024 is 100% clean AND 16% lower cost, supplied by nearby Community Solar
Miller residence, single family house, Middletown, NJ v5 1/25/2025

NJ Electrification Coaching Network



Planning for Home Electrification



How To Start (Or Continue) Your Home Electrification Journey

The New Jersey Electrification Coaching Network (NJEEN) is a group of volunteers across NJ who provide free, confidential guidance and advice to homeowners and renters who want to electrify their homes, for savings, health, and reduction of carbon footprint.

Your electrification coach will help you plan your electrification project(s) and will guide you through selecting HVAC equipment and/or electric appliances for your home or apartment.



GOING ELECTRIC INTAKE FORM

Provide your name, city, county,
state, and email

IT'S *That* EASY

Link to Intake Form:

<https://tinyurl.com/yc2ew6rc>



For more info, visit:
<https://NJECN.substack.com>

**An electrification coach
will contact you to get
started**

