

One of the most cost-effective ways to mitigate greenhouse emissions, investing in home energy-efficiency projects, is key to fighting climate change and increasing health co-benefits.

Rochester ENergy Efficiency and Weatherization (RENEW)

This presentation will introduce the concept of how to offset your personal carbon footprint. It includes real-world examples of how [RENEW Climate Fund](#) is using offset donations to make our community more energy efficient and reduce greenhouse gas emissions.

Offsetting your carbon footprint by donating to [RENEW Climate Fund](#) supports:

- ▶ helping low-income neighbors increase home energy-efficiency
- ▶ helping low-income neighbors reduce energy costs
- ▶ reducing greenhouse gas emissions throughout the community
- ▶ working together to clean the air we ALL breathe

Who is RENEW?

- ▶ Multi-year collective impact program.
- ▶ Seeded with \$1.0M in NYS Attorney General settlement funds; work continued through generous support of ESL Charitable Foundation and individual donors.
- ▶ Housed at Rochester Area Community Foundation
- ▶ Community Partners include:

Action for a Better Community
City of Rochester
Coalition to Prevent Lead Poisoning
Common Ground Health
Ibero American Development Corp.
Lifespan
Monroe Co. Dept. of Public Health

Monroe County Office on Aging
NeighborWorks Community Partners
PathStone Corporation
Rochester Housing Authority
Rochester Housing Dvlpt Fund Corp.
Sustainable Homes Rochester
Town of Irondequoit
University of Rochester



What has RENEW done?

- ▶ By braiding resources and working cooperatively, RENEW and community partners have invested over **\$3.7M** into the homes of **nearly 300 low-to-moderate income (LMI) homeowners**.
- ▶ RENEW clients experience a **20% average savings on energy costs**.
- ▶ RENEW clients experience better physical and mental health outcomes. **100% with self-reported pre-existing respiratory conditions report reduced symptoms**.
- ▶ Estimates show that to date, RENEW's work will keep over **3,400 tons of greenhouse gas from entering the atmosphere**.
- ▶ Majority of RENEW clients are single women head of household, with children, who earn an average of **\$29,000 a year**.

RENEW decision making process

Criteria:

- ▶ Eligible homeowners must be working with a RENEW partner.
- ▶ RENEW funds weatherization, energy efficiency, health and safety interventions or the removal of barriers that render the homeowner ineligible for weatherization work including sewer line or electrical panel replacement, mold remediation, etc.
- ▶ RENEW is not a primary funder. Must be braided with partner funds and contain at least a 50% match.

Priorities:

- ▶ No heat/hot water
- ▶ Homeowner is ineligible for HEAP or EARP
- ▶ Sewage in the basement

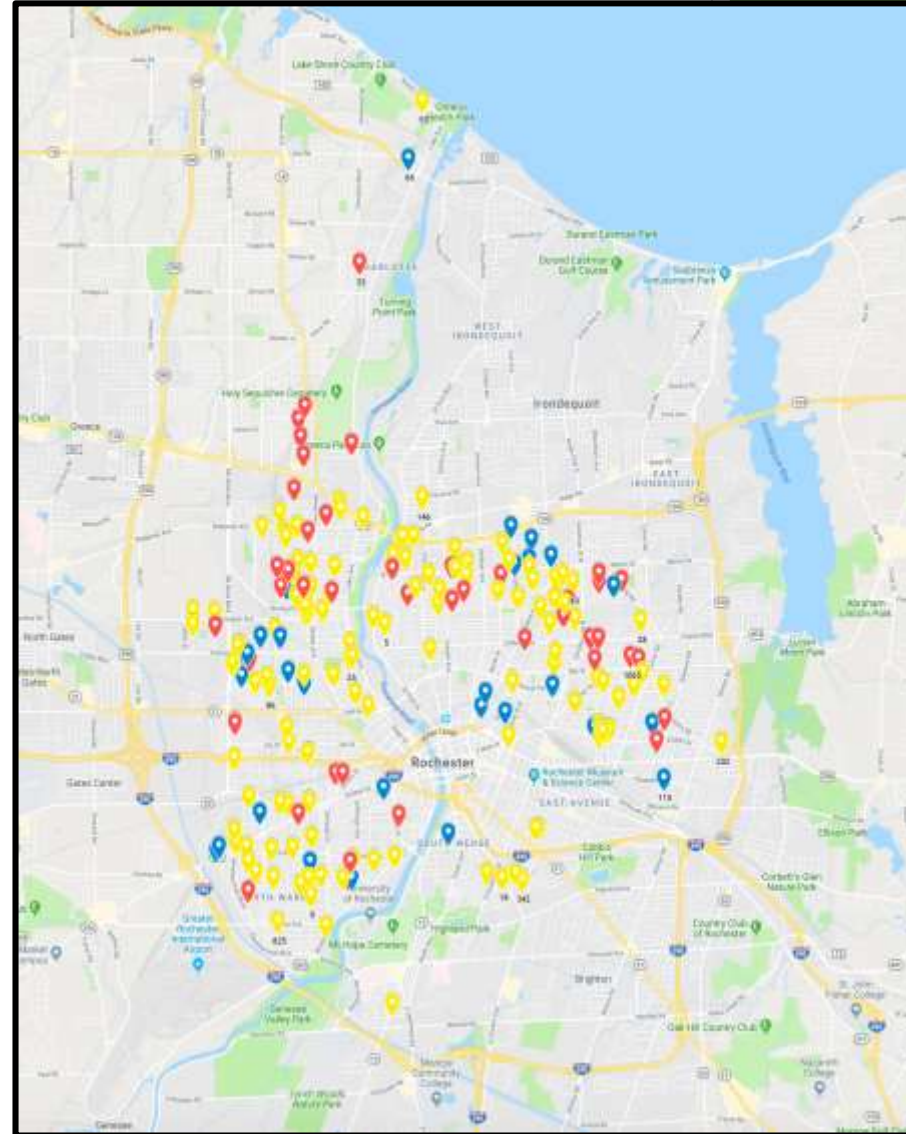


RENEW partners meet monthly to decide how to efficiently allocate grant funds to help LMI homeowners.

Progress as of Spring 2020

- ▶ Nearly 300 projects
- ▶ RENEW grants: **\$914,108.11**
- ▶ Partner dollars: **\$2,801,612.84**
- ▶ Average grant: **\$3,500.00**
- ▶ Total dollars invested in weatherization, energy efficiency, and health and safety interventions: **\$3.715 million.**

- ▶ **3:1 match.** All donations to RENEW are matched 3:1 with partner grant dollars.



What kind of work happens during energy-efficiency, weatherization projects?

	June 2016-March 2020
Air sealing	131
Bathroom Vent	42
Boiler	16
CO Detector	66
Dehumidifier	5
Doors	16
Duct Cleaning/Sealing	20
Electrical Work	18
Furnace External Power Venter	3
Furnace (High Efficiency)	148
Gas Dryer Flue	61
Glass Block Windows (Basement)	21
Health & Safety Items	110
HEAT PUMP HOT WATER HEATER	14
HEAT PUMP FURNACE	3
Hot Water Heater	117
Insulation	131
Lead Paint Hazard Remediation	30
Lighting (install LED bulbs)	82
Mold remediation	2
Pest remediation	2
Programmable Thermostat	95
Roof repairs/tear off	11
Sewer/Water Line Replacement	4
Smoke Detector	57
Sump Pump & Gutters	2
Ventilation	8
Weatherseal Doors	37
Window Installation	55

Qualitative and Quantitative Data

- ▶ The next few slides share actual stories from RENEW clients.
- ▶ The Pie Charts show how funds from various agencies were braided to create a comprehensive approach to making the homes of low-to-moderate income homeowners **healthier, safer, and more energy efficient.**
- ▶ **Better physical and mental health outcomes** were reported by our clients.
- ▶ **Energy cost savings and carbon emission reductions** are noted in the starbursts.
 - ▶ The stories that do not include energy cost savings and carbon emission reduction data just mean that that data is not available at this time.

Joyce called NeighborWorks Rochester because her sewer line was broken. *“We couldn’t flush the toilet or take a shower. You can’t go to work if you don’t take a shower.”* NeighborWorks couldn’t do weatherization work without getting the sewer line replaced, but their funding did not cover that scope of work.

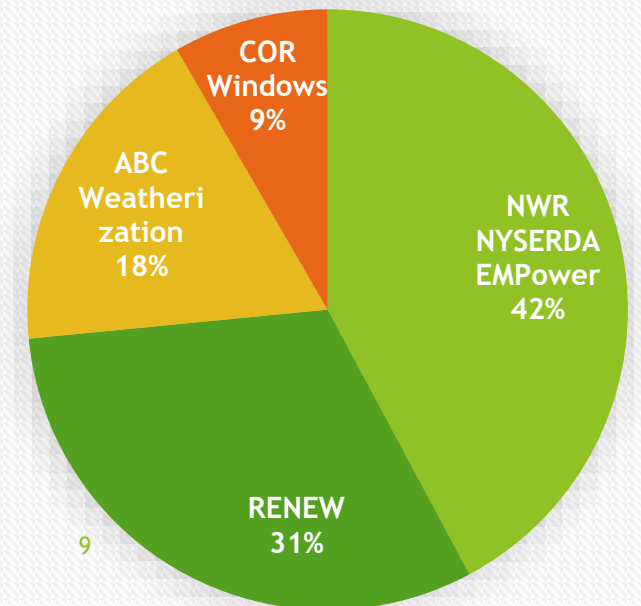
Joyce slept on the couch in the living room because the downstairs windows were not secure. *“If someone came in the house through one of those windows, I wouldn’t have heard them upstairs in my room...and I have two daughters!”*

Joyce and her family received a new sewer line, insulation, high efficiency furnace, air sealing, new door, AND eight new windows that close and lock. For the first time in years, Joyce is sleeping in her own bed.



30% energy costs decrease; 60.12 tons of carbon eliminated

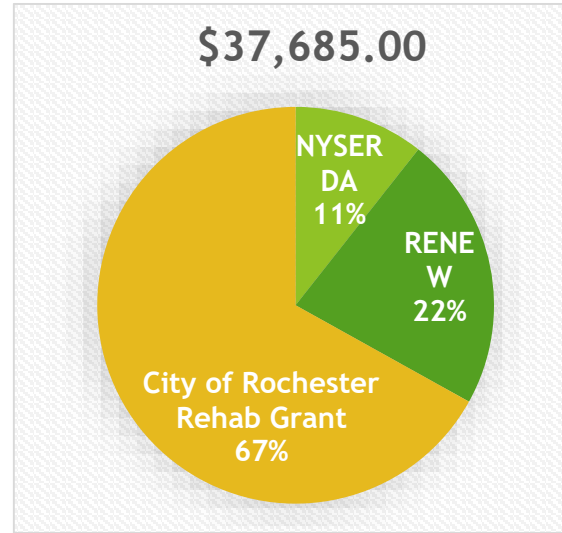
\$17,420.00



Bill is a 62-year-old veteran living in SE Rochester.

He told us he lives alone and struggles with depression. He was so *motivated by all of the improvements that he decided to make his own changes not covered by the grants.*

Bill talked about *how much better he felt after talking to the crew, getting help, and seeing how much nicer his home looked after all the work was completed.*



21% energy costs decrease; 33.89 tons of carbon eliminated



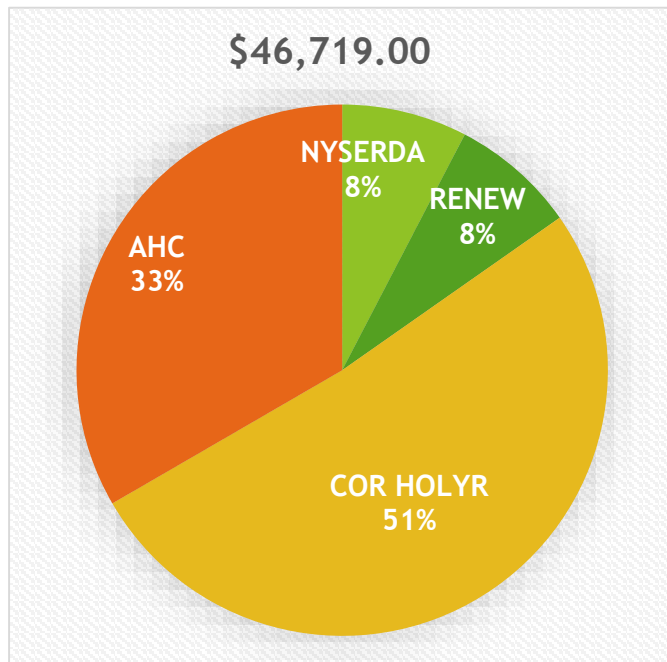
Three generations live under the roof of this home in the Holy Rosary Neighborhood.

Their home was always hard to keep warm. At one point, they did not have a working furnace.

Diagnosed with adult onset asthma, Pamela woke up coughing every night.

Now they have a new roof, hot water heater, furnace, and windows.

With the new furnace, Pamela sleeps through the night. Her husband is also sleeping better because she used to wake him with her coughing.



19% energy costs decrease; 23.8 tons of carbon eliminated

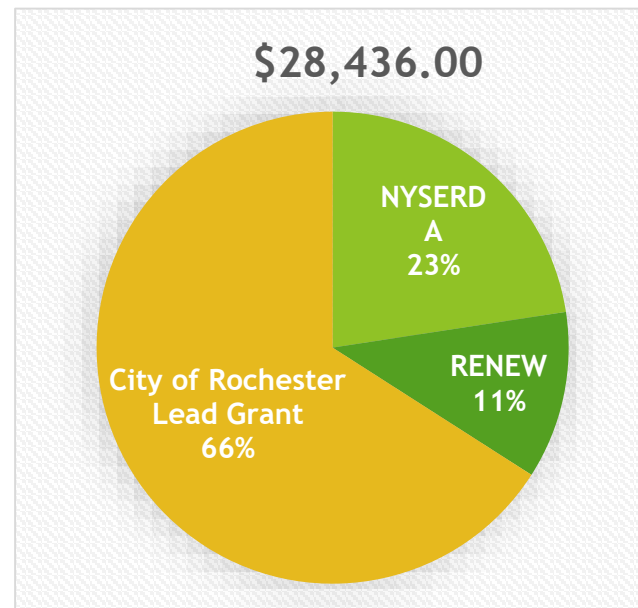
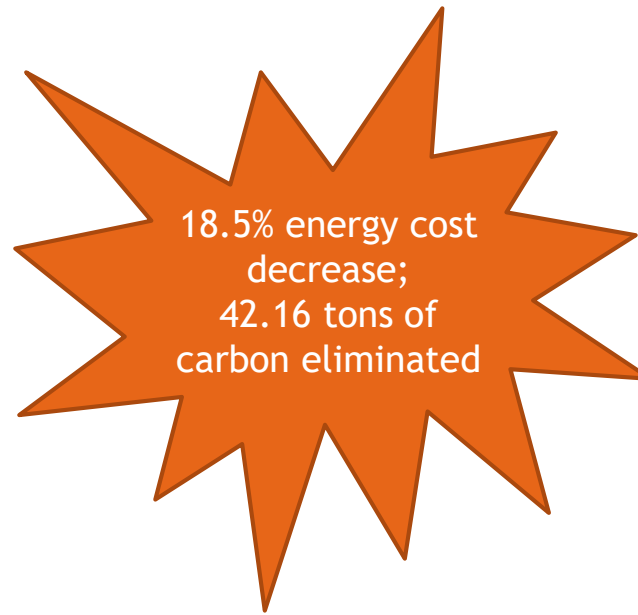


Inez lives in NE Rochester with her 4-year-old granddaughter. She is being treated for BOOP (bronchiolitis obliterans organizing pneumonia).

Mold in the home was identified as exacerbating her illness, but the cost to remediate was prohibitive. Her doctor at URMC referred her to Finger Lakes Occupational Health Services and they in turn connected Inez to PathStone.

She qualified for a City Lead grant, received insulation, windows, a hot water heater, a dehumidifier, and mold remediation.

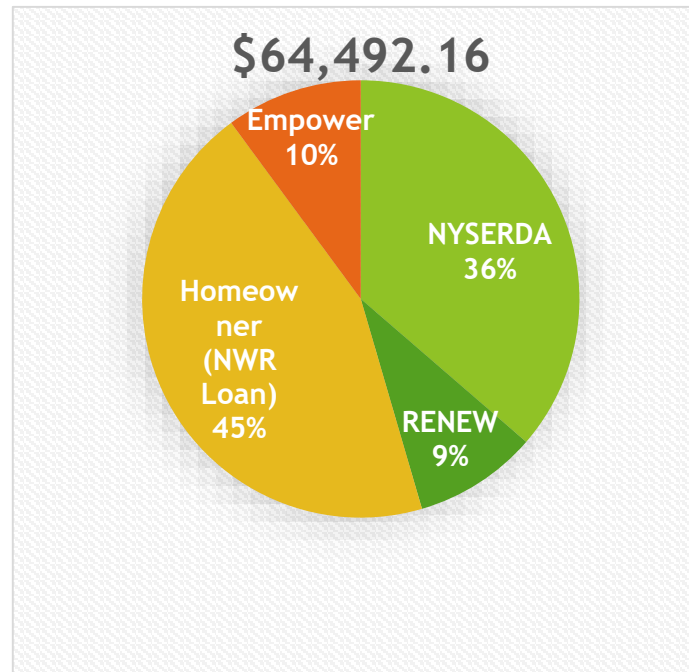
Most importantly, *Inez's BOOP has stabilized.*



Joanne, her husband, two children and four grandchildren live in Marketview Heights.

Joanne went to NeighborWorks Rochester (NWR) looking for a loan for a new roof. When Al from NWR met with Joanne and told her she could qualify for some significant home improvements, Joanne was skeptical. *“When Al started saying we could get a new furnace, a hot water heater, siding, windows, and insulation I was like ‘am I dreaming?’ and thought ‘I’ll believe it when I see it.’”*

Now the home is warmer in the winter and since they live on a busy street, Joanne has noticed that it is quieter.



Joanne says, *“Everyone is feeling much more comfortable and confident about our home. Especially the younger ones, they see that change is possible.”*

Joanne’s daughter and granddaughter made regular trips to the ED for asthma-related issues. They have not gone once since work was completed.



RENEW: more than a program to install hot water heaters and furnaces

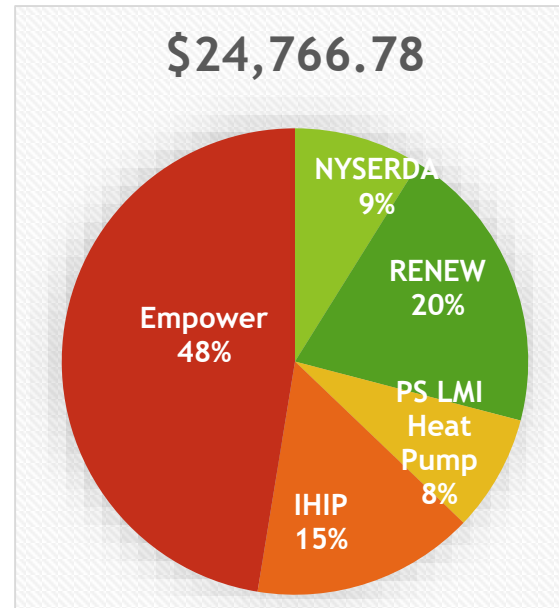
- ▶ Forward thinking. RENEW is committed to supporting the use of *clean heating and cooling technologies*.
 - ▶ Supported rehab of Rochester's 1st “near net zero” home.
 - ▶ Working with partners on 2nd project in the 19th Ward.
- ▶ RENEW has funded the installation of 20+ heat pump hot water heaters and furnaces in LMI homes.



Rocco is in his 60s, a Kodak retiree, and has suffered three heart attacks. His home is a former vacation cottage converted to year round many years ago. He warmed it with a space heater.

During the winter, his cats refused to go into the bedroom because it was so cold. Rocco routinely dressed in many layers of clothing. He had great difficulty paying utility bills averaging \$300.00 per month.

RG&E suggested Rocco contact PathStone Corp. to schedule an energy audit. By working with the Town of Irondequoit, NYSERDA, a Heat Pump Grant through Pathstone, and RENEW, Rocco qualified for insulation, health and safety items, and a **heat pump hot water heater and furnace.**



Now, his home is much warmer and far more comfortable. Rocco recently received his first utility bill after the work was completed. *“My RG&E bill was \$15.00!? That can’t be right!”* Good news, Rocco. That bill is correct.



Weatherization impacts the **health** of a family

- ▶ Water infiltration can create permanent damage that not only weakens the structure of the home, and possibly creates fire hazards from damage to electrical wiring, but also creates health hazards.
- ▶ Cold or inconsistent temperatures, dampness and moisture, mold and mildew can trigger asthma attacks and other respiratory conditions.
- ▶ Heating/cooling system upgrades, improved indoor temperatures, improved ventilation, lead paint remediation, etc. can reduce health hazards in the home.
- ▶ *100% of RENEW clients with pre-existing self-reported respiratory conditions **report significantly reduced symptoms.***

Weatherization impacts the **wealth** of a family

- ▶ LMI households, on average, spend 7.2% of annual income on energy costs.
- ▶ That's \$2,088 out of the \$29,000/year average income of a RENEW client.
- ▶ 57% of RENEW projects have been evaluated and analyzed:
 - ▶ 20% average decrease on energy costs
 - ▶ 17% of RENEW clients saw a **30%+ decrease on energy costs.**

Revenue Class: Residential
Profile:
City: RCT_07TEMP Tax Jurisdiction: NY 141100
Tax District: 0660
Device Type: Non-Daily
MOTG: Summer: 14.5427652 Winter: 12.8449204
Usage Factor: Base: 0.4943002 Summer: 0.1434366 Winter: 0.1669150
Read Cycle: 91
Critical Care: No

Natural Gas Use History

Read Date	Read Type	Use (Therms)	Total	Total Tax
06/21/2016	RGE	6.3	\$16.94	\$3.78
09/01/2016	Estimated	6.2	\$16.17	\$3.74
01/03/2017	RGE	6.2	\$16.50	\$3.75
04/01/2017	Estimated	25.7	\$20.00	\$1.57
05/01/2017	RGE	45.4	\$42.00	\$1.68
04/02/2016	Estimated	186.4	\$140.01	\$5.47
09/01/2016	RGE	73.1	\$69.36	\$2.83
01/01/2016	Estimated	236.9	\$175.14	\$6.88
01/02/2016	RGE	188.9	\$159.48	\$4.88
12/01/2017	Estimated	138.1	\$130.17	\$4.07
11/02/2017	RGE	29.9	\$32.17	\$1.44
10/02/2017	RGE	22.7	\$29.94	\$1.06
09/05/2017	RGE	8.2	\$16.59	\$0.73
08/02/2017	Estimated	13.4	\$19.22	\$0.87
07/03/2017	RGE	16.6	\$22.38	\$0.98
06/01/2017	Estimated	54.9	\$47.03	\$1.90
05/02/2017	RGE	102.9	\$91.66	\$3.70
03/01/2017	Estimated	174.3	\$159.99	\$4.73
03/01/2017	RGE	180.9	\$143.43	\$5.88
01/13/2017	Estimated	201.9	\$164.60	\$6.02
01/02/2017	RGE	222.5	\$148.63	\$5.92
12/01/2016	Estimated	110.2	\$80.20	\$3.36
12/01/2016	RGE	94.9	\$79.99	\$3.24

925.2 Therms
 $27,196 / 6,223 = 4.370$ (kwh)
1,107.4 Therms
 $33,554 / 5,627 = 5.963$
26% decrease

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The image shows two years of utility usage from a RENEW client. We calculate energy costs using Heating Degree Day and Cooling Degree Day data.

RENEW calculates greenhouse gas (GHG) emission reductions

- ▶ To date, energy efficiency work in RENEW homes will keep over 3,400 tons of carbon out of the atmosphere.
- ▶ Imagine 340 football fields stretched end to end. Each football field is filled with 10 enormous balloons that are 10-yards around. That’s about 3,400 tons of greenhouse gas/carbon emissions.

The image shows handwritten calculations on lined paper and a printed table. The handwritten notes include:

- 2018 = 1200 kWh
- Average HDD = 5916 (circled) = A
- 2916/20.7 HDD = 5627 = B
- SAVINGS = S
- 2018/17 = THOUS = U
- Equation: $\frac{B}{A} \times S \times U = \text{Savings}$
- Calculation: $.95 \times .20 \times 1000 = 190$
- Division: $\frac{5627}{5916}$ (NOMA)
- Final calculation: $.95 \times .205 \times 1,095.1 = 205 = 28.09 \text{ lbs carbon}$

The printed table shows energy cost savings and GHG emission reductions. Key values include:

- 431.1 Therms
- $27,281 / 6.223 = 4,383$
- 71,095.1
- $33,181 / 5,627 = 5,896$
- 25.5% decrease (circled)
- Final calculation: $.95 \times .205 \times 1,095.1 = 205$
- Result: 28.09 tons carbon over 20 years

RENEW uses NYSERDA approved BPI (Building Performance Institute) and U.S. EPA standards for calculating energy cost savings and GHG emission reductions.

Co-Benefits of Carbon Emission/GHG Reduction

- ▶ Reduced air pollution
- ▶ Reduced “heat island” effects
- ▶ Reduced healthcare costs
- ▶ Neighborhood stabilization
- ▶ Monetized benefits 5-10 times larger than mitigation costs
- ▶ By implementing effective climate solutions, we can address many social and economic justice issues.

Creating the RENEW Climate Fund

- ▶ Energy efficiency projects reduce the need to produce more energy now. One of the most cost-effective ways to reduce carbon emissions, *investing in energy efficiency*, is key to fighting climate change.
- ▶ How do we get people to create behavior change?
- ▶ How do we get government, municipalities, educational institutions, industries with triple bottom line, community organizations, and individuals committed to environmental justice and making greenhouse gas emission reduction a priority?
- ▶ How can we use our own choices to fight climate change, clean the air that we breathe, AND make a difference in the lives of our neighbors?
- ▶ Most people wildly overestimate how much it costs to offset their carbon footprint. *It's surprisingly affordable.*

Understanding your carbon footprint

- ▶ We create a carbon footprint every day by commuting to work/school, heating/cooling homes, and traveling. This quick video provides a helpful visualization of how we create carbon emissions.

<https://www.youtube.com/watch?v=Op-DyH4gyLU>

- ▶ Carbon offsets, or donations, are a form of trade.

The amount you offset depends upon how much carbon you create. When you calculate your carbon footprint you figure out:

- ▶ how much carbon you have created by everyday activities.
- ▶ what dollar amount to donate to an organization working to reduce **greenhouse gas** emissions.
- ▶ Your donation “offsets” or reduces your personal carbon footprint.

RENEW Climate Fund

- ▶ **It's easy:** Calculate your carbon footprint using your preferred online calculator. You can offset your commute to the office, holiday travel, or total household emissions. Any online carbon footprint calculator will help you calculate a donation amount to “offset” your carbon emissions.
- ▶ Examples of carbon emissions created and the donation amount to offset the carbon footprint:
 - ▶ Daily commute from Park Ave to Roch. Inst. of Tech? *\$129.40/year*
 - ▶ Average annual home energy use? *\$187.00/year*
- ▶ Once you have calculated what you need to donate to offset your carbon footprint, go to [RENEW Climate Fund](#) to make a secure and tax-deductible donation.

Thank you!

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www.racf.org/About/Initiatives/RENEW

