

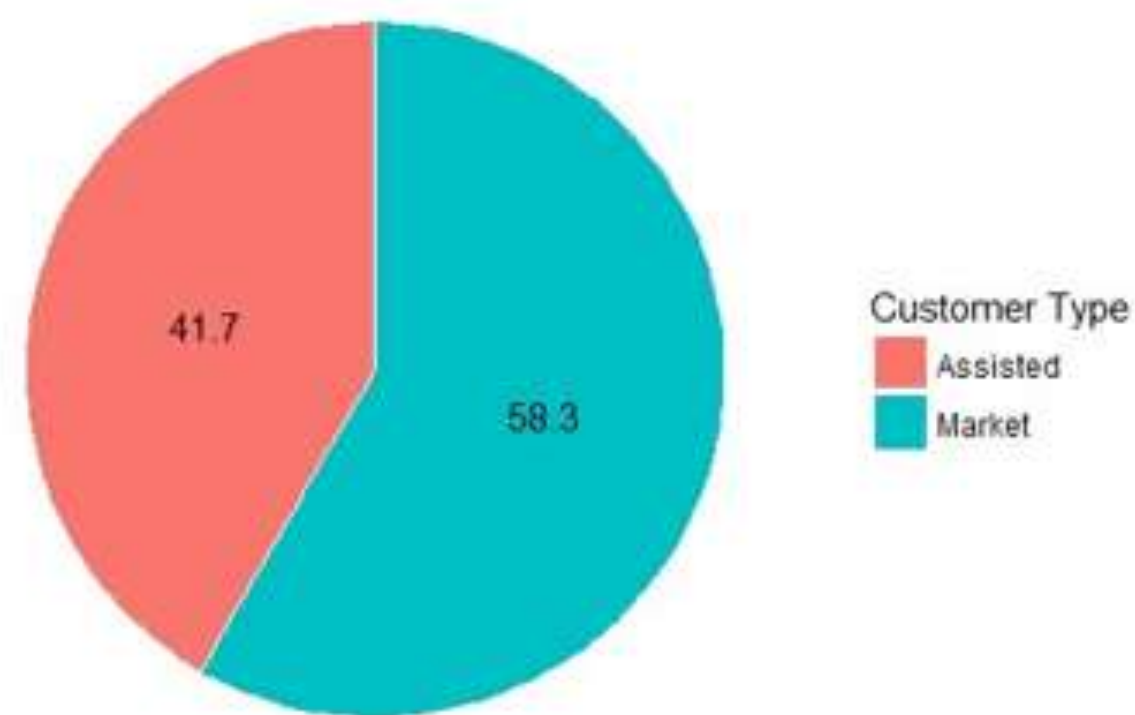
The Green Equalizer: Providing Economic Relief to New York Households through Environmental Sustainability

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Background

While we are in the tenth year of historical recovery, many U.S. households have yet to feel the effects of this economic boom. Instead, wages have been stagnant as the cost of living has increased. During this same period the world has experienced seven of the top ten hottest years on record. U.S. policy makers, however, are avoiding policies that promote environmental sustainability suggesting that they stifle economic growth and hurt middle class families. Studies are increasingly showing that environmental policies have the ability to both reduce our carbon footprint while economically benefiting American families. The NY Energy Star program will be used as a case study.

NYS Retrofit Projects by Customer Type



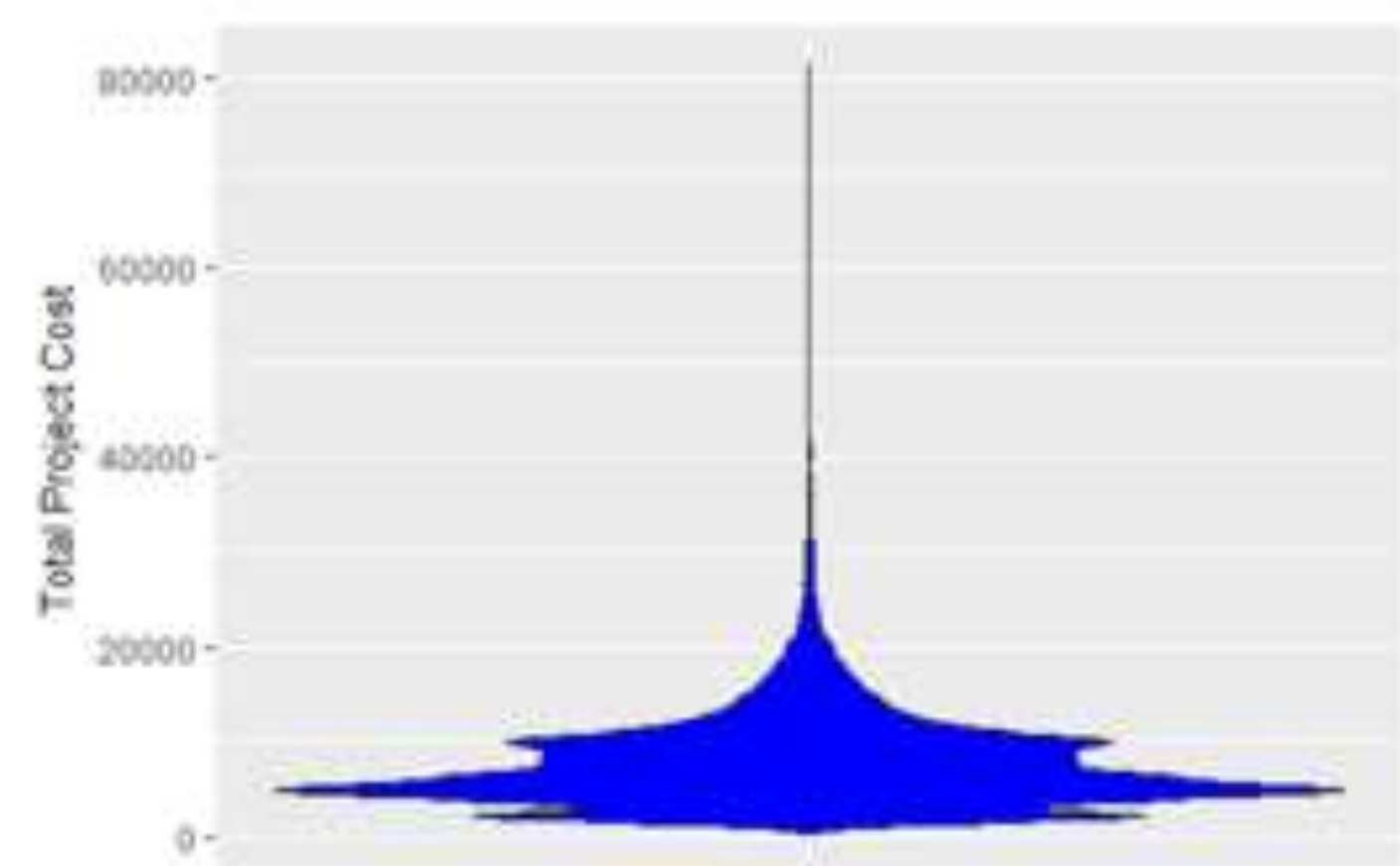
NYS Energy Efficiency Projects

Customer Type	# of Projects
Assisted	21227
Market	29617
Total	50844

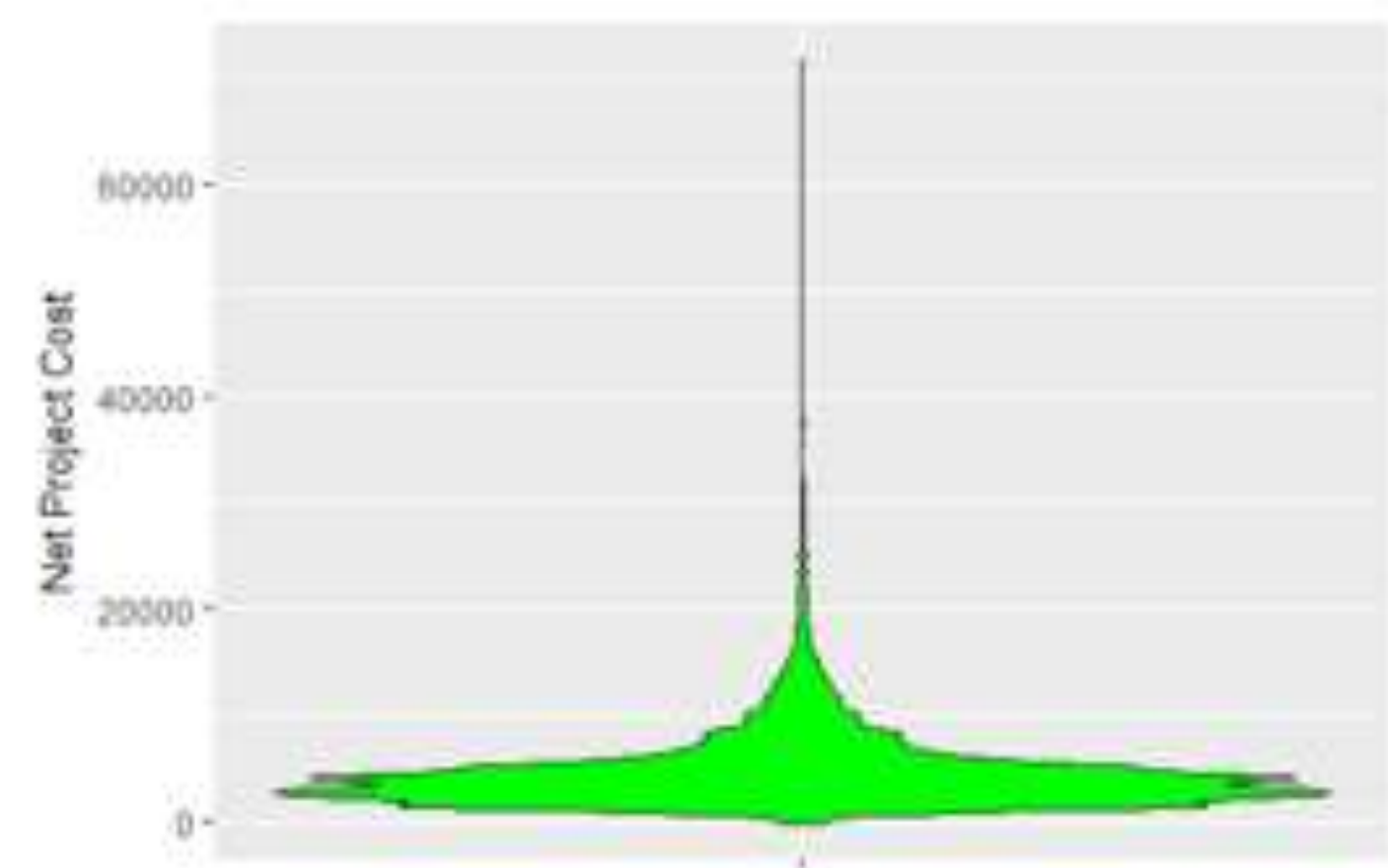
Results

The following violin plots compare the median gross retrofit costs for Assisted retrofit projects with the net cost after government subsidies and incentives. The total cost of Assisted retrofits ranged from \$330 to \$81,402 with a median cost of \$6487. After subsidies the cost of the median retrofit dropped 41% to \$3837.

Median Retrofit Cost



Min.	Median	Mean	Max.
330	6487	7658	81402



Min.	Median	Mean	Max.
-259	3837	4637	71402

Methodology

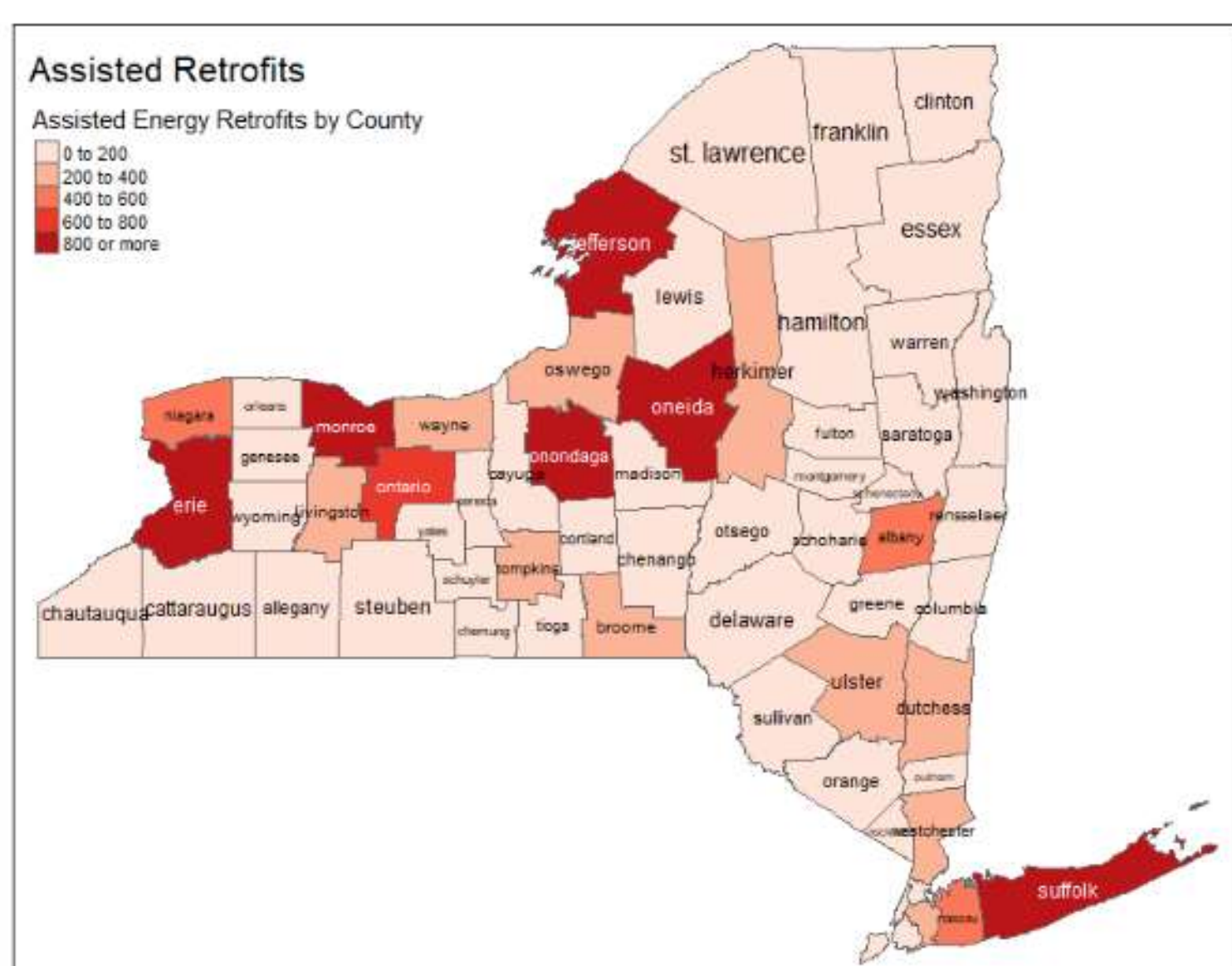
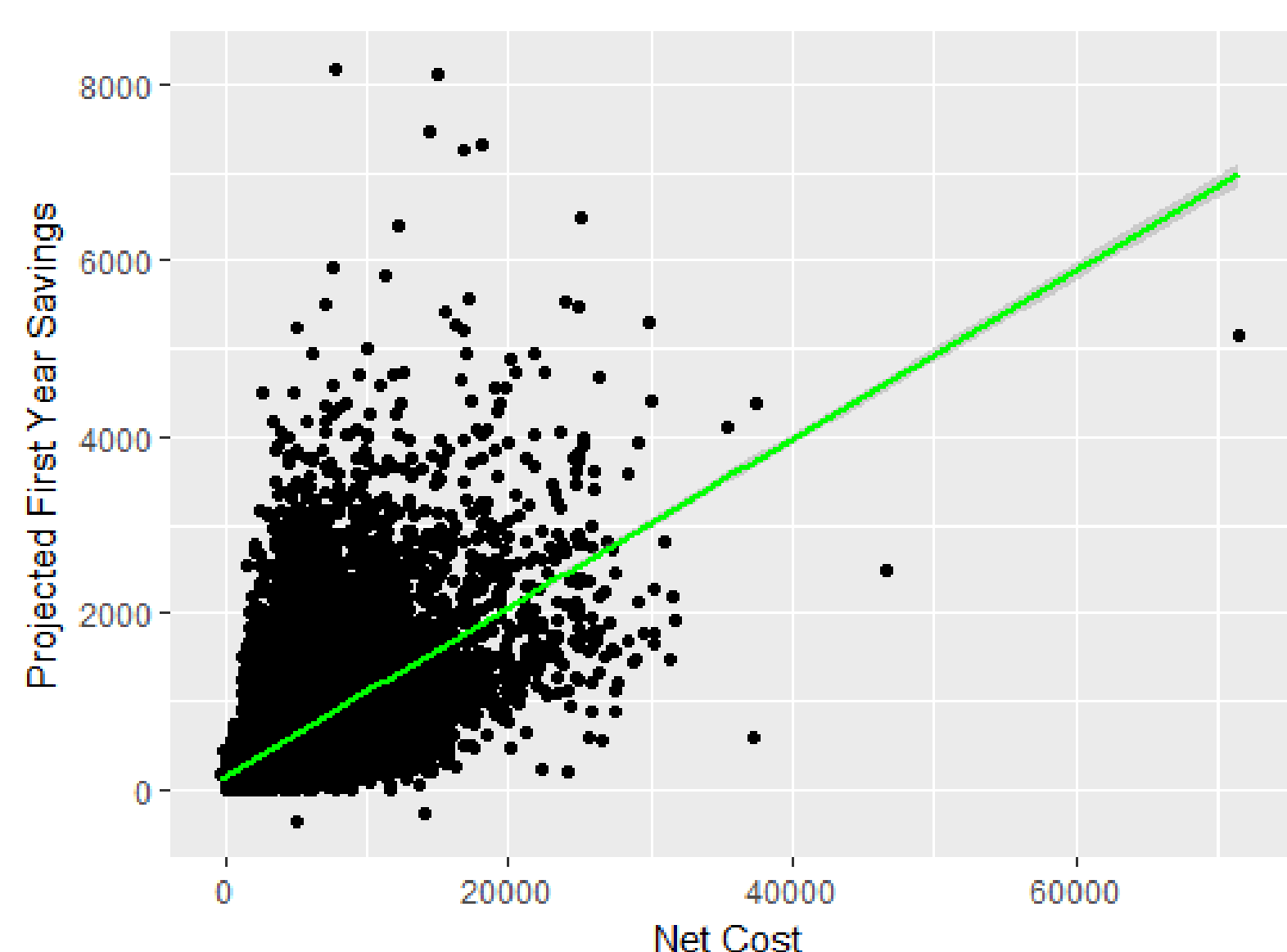
The dataset, "Residential Existing Homes (One to Four Units) Energy Efficiency Projects with Income-Based Incentives by Customer Type: Beginning 2010" was utilized for this analysis. I specifically focused on "Assisted" homeowners who were income eligible for government subsidies and incentives to help pay for their retrofits.

The following variables were examined:

- **Customer** (categorical) – Categorized project homeowners as either "Market" (not eligible for income-based subsidies and incentives) or "Assisted" (eligible for income-based subsidies and incentives).
- **EReduction** (numerical) – Projected first year energy reduction in kilowatts.
- **FYSavings** (numerical) – Projected first year utility savings in dollars.
- **NCost** (numerical) – Net energy efficiency project cost after government subsidies and incentives in dollars.
- **TPCost** (numerical) – Gross cost of energy efficiency projects in dollars.

The next regression shows that every \$100 spent on a retrofit project resulted in \$10 in first year utility savings. The average Assisted residential energy efficiency projects provided households with an average first year savings of \$464, paying for themselves in 10 years.

Retrofit Cost and First Year Utility Cost Savings



Conclusion

This analysis shows that by promoting environmental sustainability, states can tackle two social dilemmas with one policy. They can both encourage the creation of greener communities while providing economic assistance to lower and middle income families. These policies can also support a promising and growing green industry sector.