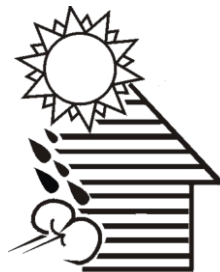




DEPARTMENT OF ECONOMIC
DEVELOPMENT AND COMMERCE

DEDC

**ENERGY SAVINGS REPORT BY
WEATHERIZATION ASSISTANCE PROGRAM
PUERTO RICO
October 2021**



*Weatherization
Works*

Acknowledge

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Introduction

The Energy Policy Program (EPP) of the Department of Economic Development and Commerce (DEDC) manages Department of Energy Weatherization Assistance Program (WAP).

The WAP reduces energy costs for low-income households by increasing energy efficiency in their homes, while ensuring their health and safety.

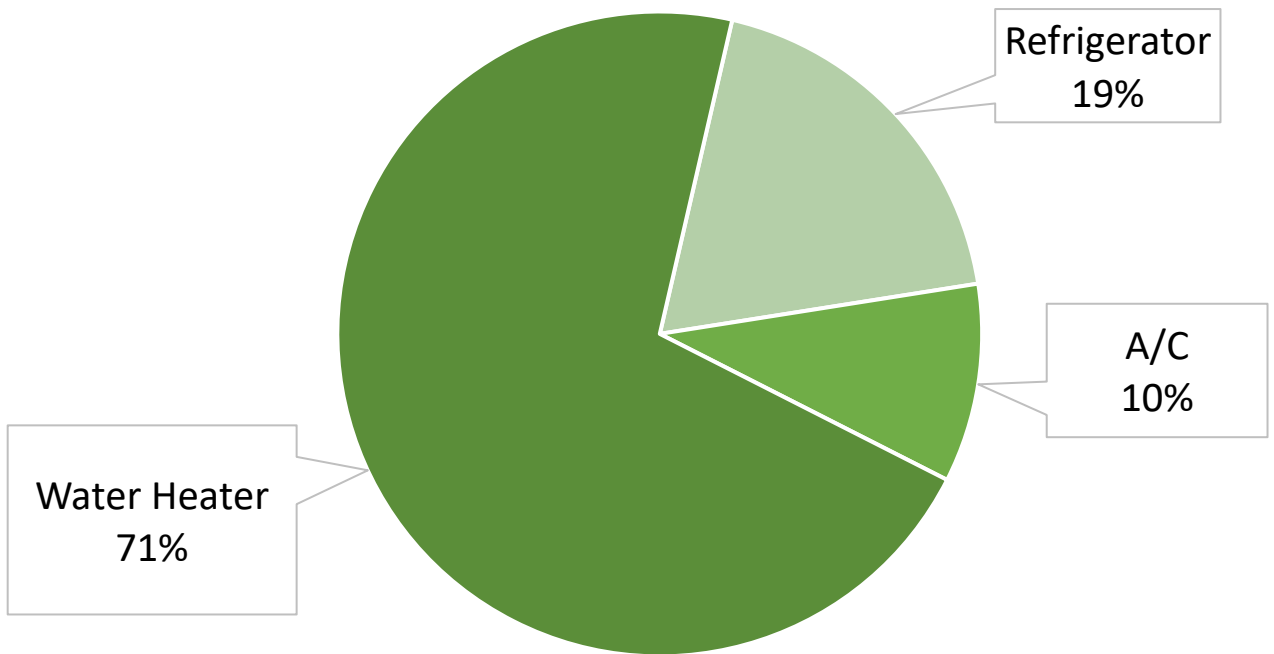
After having initial application process approved, WAP requires an energy audit for each household performed by external auditors. Considering specific parameters defined by WAP guidelines, energy audits data is used to define the implementations for each household. As defined by the evaluation process, the weatherization implementations include replacement of existing appliances. Additional works covered by WAP include health and safety measures.

Program regulations prioritizes social interest to assist low-income households. To this end, qualified beneficiaries and program implementations are defined with energy audit data and program guidelines.

While WAP assists with multiple initiatives, this report is focused on the top energy-saving implementations which include replacement of the following appliances: Air Conditioners (up to 12,000 BTU), Water Heaters, and Refrigerators.

For a total impact to 336 low-income households the total combined annual energy savings resulted on \$137,136 (685,681 kWh @ \$0.20/kWh). Energy saved is projected considering the life cycle of each appliance replaced, resulting in total lifetime energy savings of \$3.15MM (11,993,040 kWh starting @ \$0.20/kWh and annual rate increase of 3%). Additional information per each and combined implementations is included as part of the analysis and results of this report.

TOTAL ANNUAL ENERGY SAVINGS MIX

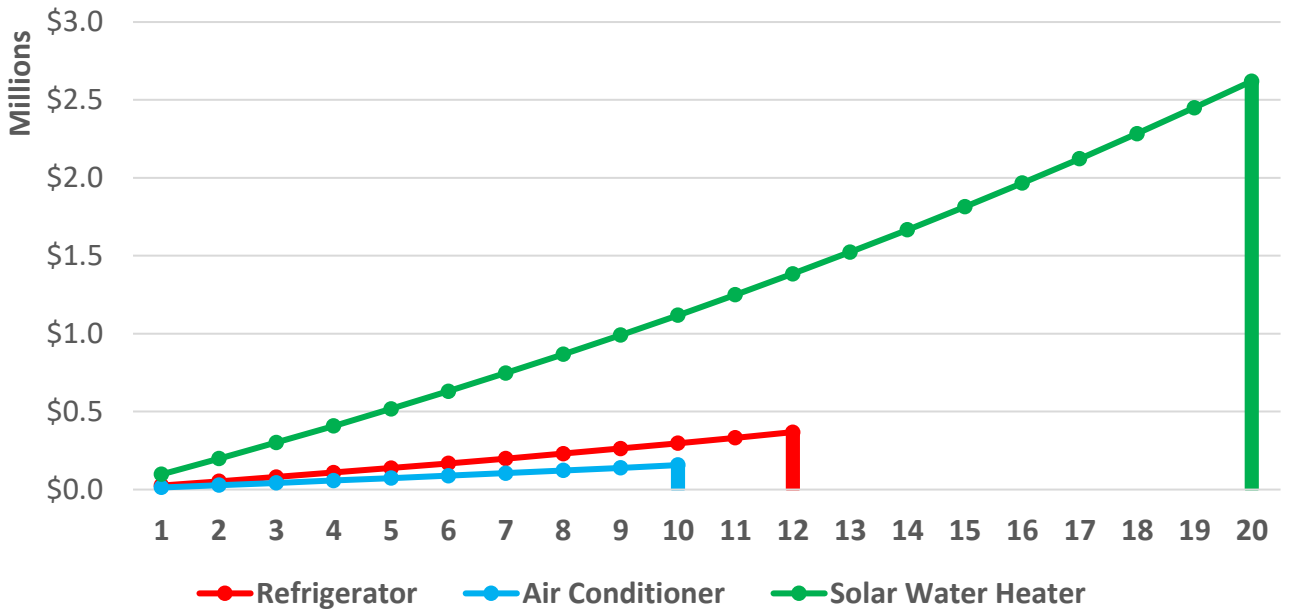


ANNUAL ENERGY SAVINGS BREAKDOWN

| Description | Energy Saving - kWh | Cost Saving - \$ |
|------------------------------|---------------------|------------------|
| Refrigerator Replacement | 129,565 | \$25,913 |
| Air Conditioner Replacement | 68,406 | \$13,681 |
| Solar Water Heater installed | 487,710 | \$97,542 |
| Total | 685,681 | \$137,136 |

Energy Rate considered @ \$0.20/kWh

TOTAL WEATHERIZATION IMPLEMENTATIONS LIFETIME ENERGY SAVINGS



WEATHERIZATION IMPLEMENTATIONS LIFETIME ENERGY SAVINGS

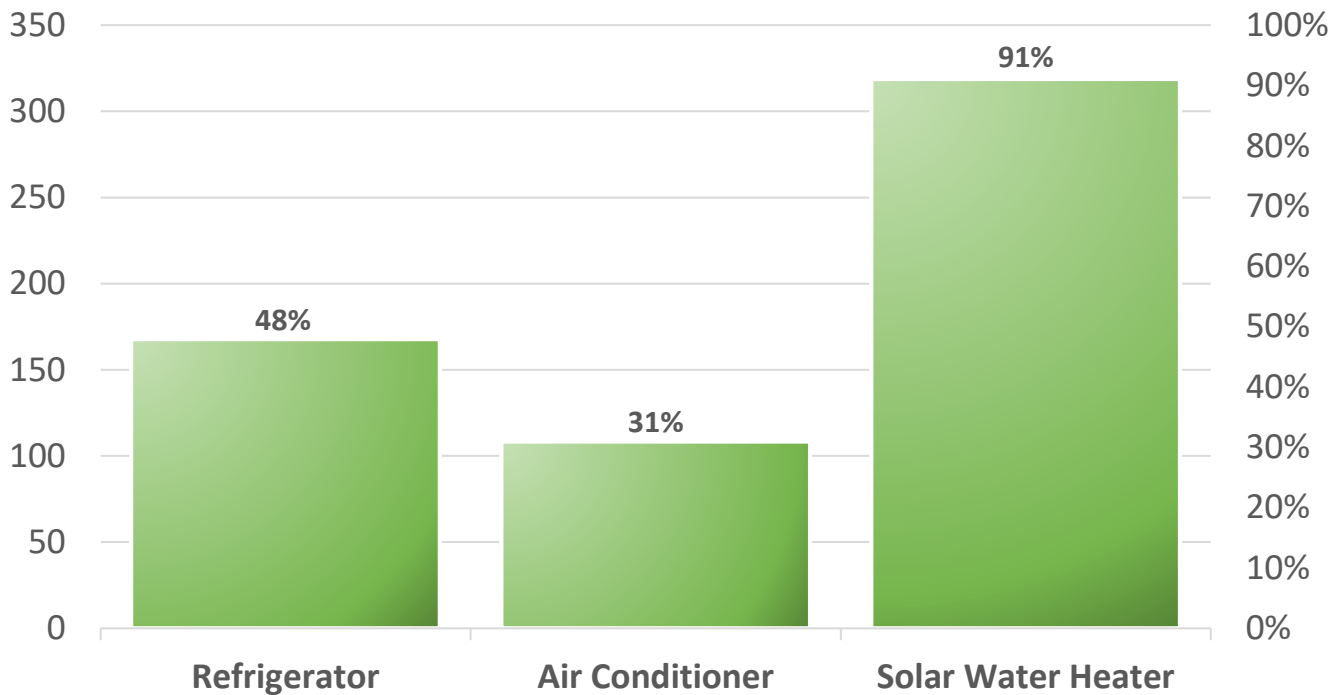
| Description | Lifetime | Energy Saving - kWh | Cost Saving - \$ |
|------------------------------|----------|---------------------|--------------------|
| Refrigerator Replacement | 12 | 1,554,780 | \$367,758 |
| Air Conditioner Replacement | 10 | 684,060 | \$156,840 |
| Solar Water Heater installed | 20 | 9,754,200 | \$2,620,990 |
| Total | | 11,993,040 | \$3,145,588 |

Energy Rate considered @ \$0.20/kWh

Annual Energy Rate increment 3%

Projected lifetime based on recommendations by EPA Energy Star program

WEATHERIZATION IMPLEMENTATIONS FREQUENCY

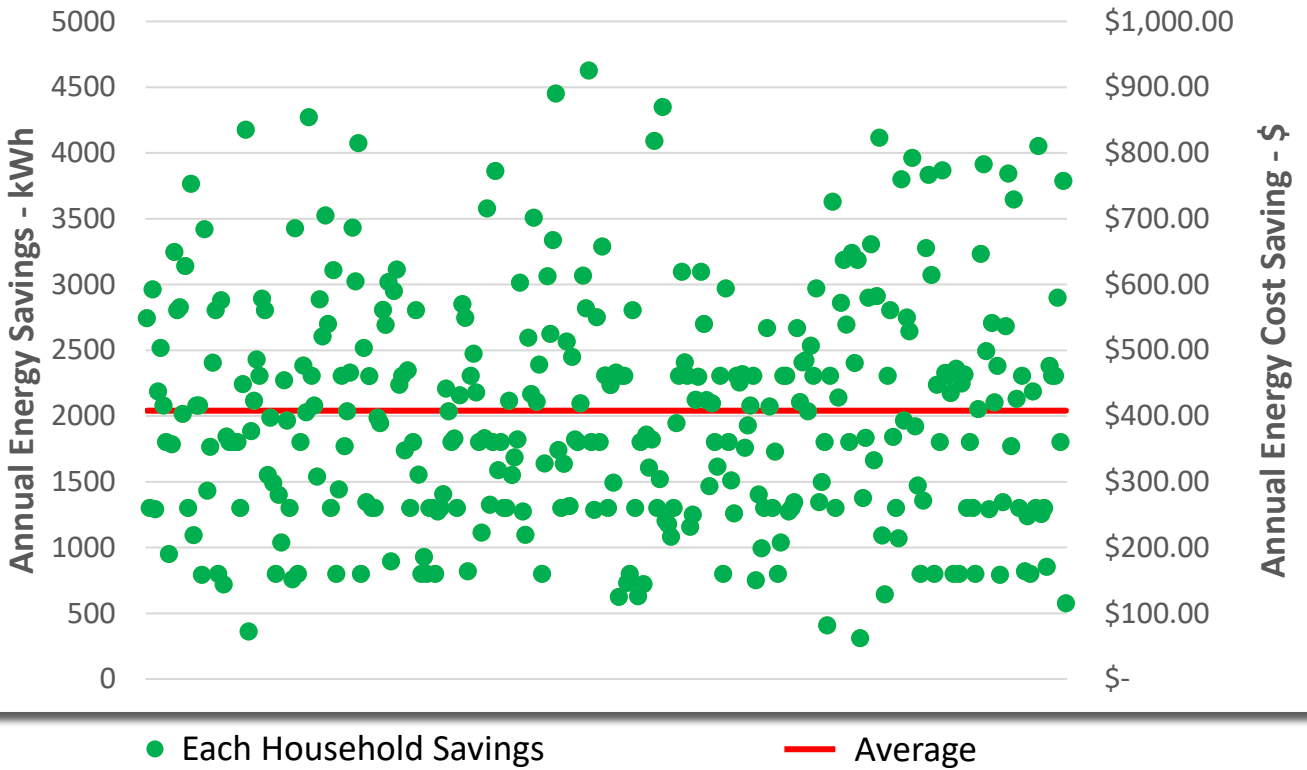


SUMMARY OF WEATHERIZATION IMPLEMENTATIONS

| Description | Qty | Total Households |
|------------------------------|-----|------------------|
| Refrigerator Replacement | 161 | 161 |
| Air Conditioner Replacement | 137 | 104 |
| Solar Water Heater installed | 306 | 306 |

Total of 336 households

ANNUAL SAVINGS PER HOUSEHOLD



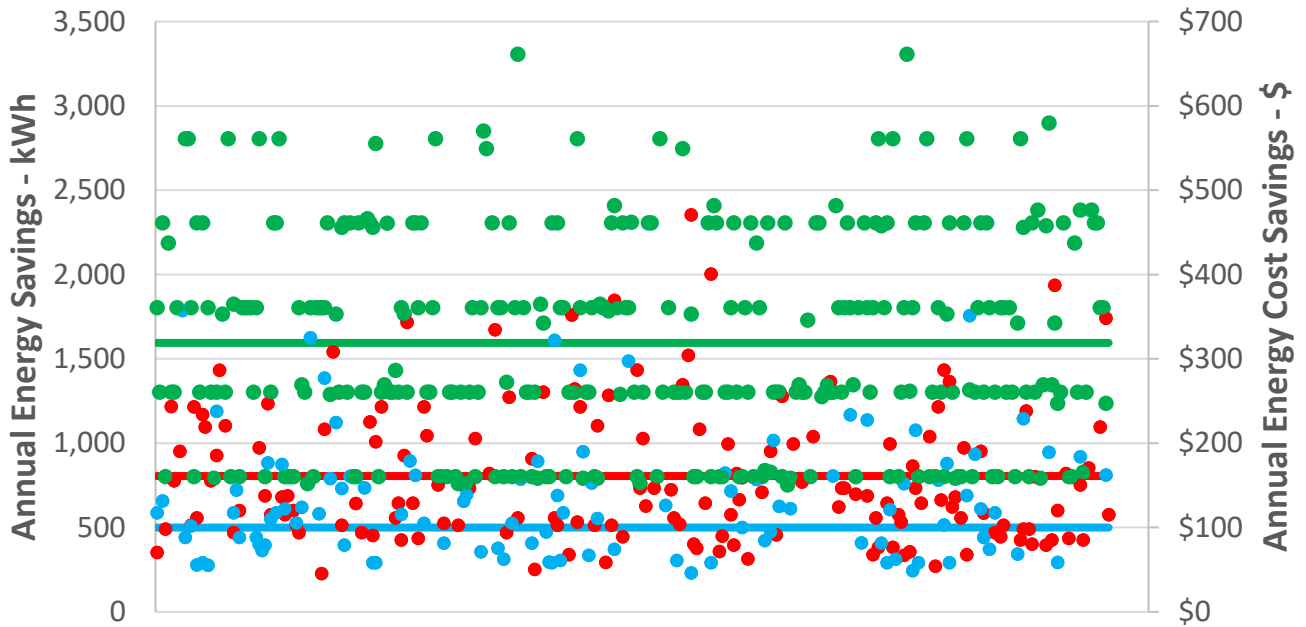
ANNUAL SAVINGS KEY INDICATORS

| Description | Energy - kWh | Cost Saving - \$ |
|-------------|--------------|------------------|
| Average | 2,041 | \$408 |
| Lowest | 313 | \$63 |
| Highest | 4,628 | \$926 |

Total of 336 households

Energy Rate considered @ \$0.20/kWh

ANNUAL ENERGY SAVINGS PER HOUSEHOLD MIX



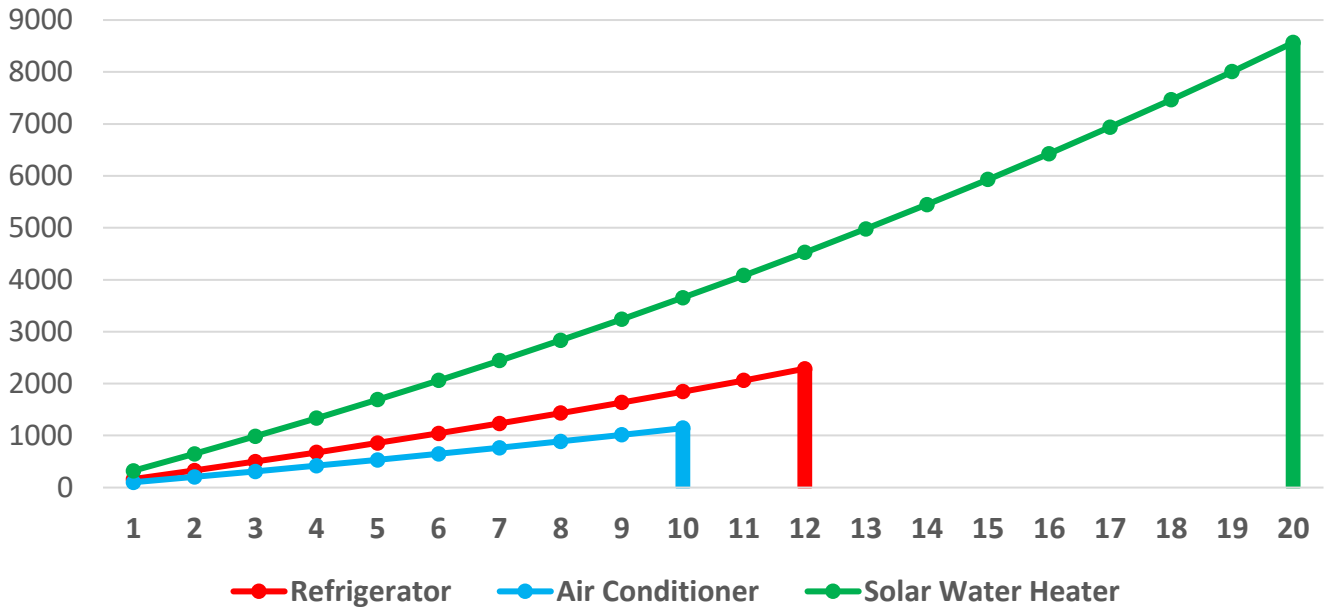
- Refrigerator
- Refrigerator Average
- Air Conditioners
- Air Conditioners Average
- Solar Water Heater
- Solar Water Heater Average

WEATHERIZATION IMPLEMENTATIONS ANNUAL SAVINGS

| Description | Energy Saving - kWh | Cost Saving - \$ |
|------------------------------|---------------------|------------------|
| Refrigerator Replacement | 805 | \$161 |
| Air Conditioner Replacement | 499 | \$100 |
| Solar Water Heater installed | 1,594 | \$319 |

Total of 336 households
 Energy Rate considered @ \$0.20/kWh

WEATHERIZATION IMPLEMENTATIONS LIFETIME ENERGY SAVINGS PER HOUSEHOLD



WEATHERIZATION IMPLEMENTATIONS LIFETIME ENERGY SAVINGS PER HOUSEHOLD

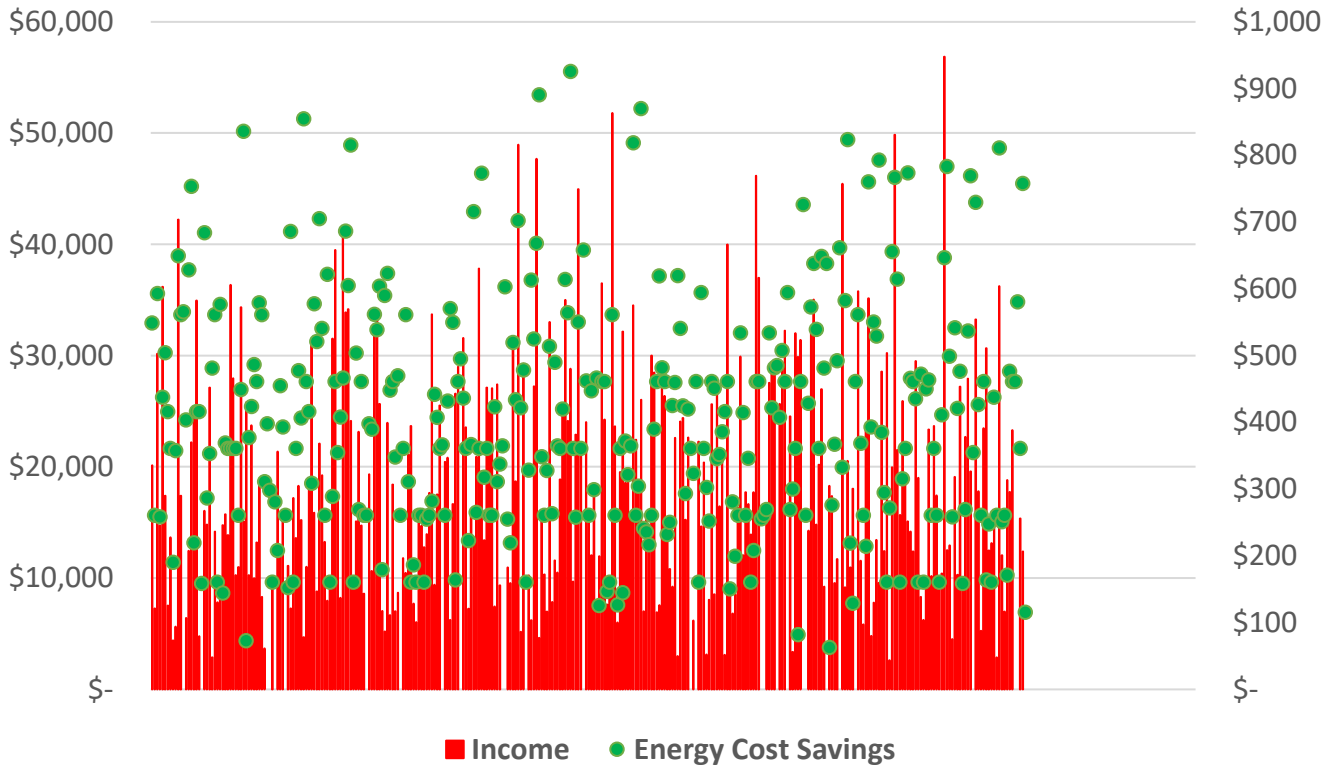
| Description | Lifetime | Energy Saving - kWh | Energy Cost - \$ |
|------------------------------|----------|---------------------|------------------|
| Refrigerator Replacement | 12 | 12,075 | \$2,285 |
| Air Conditioner Replacement | 10 | 4,491 | \$1,144 |
| Solar Water Heater installed | 20 | 31,880 | \$8,566 |

Energy Rate considered @ \$0.20/kWh

Annual Energy Rate increment 3%

Projected lifetime based on recommendations by EPA Energy Star program

INCOMES vs. SAVINGS



ANNUAL INCOMES vs. SAVINGS

| Description | Lowest | Average | Highest |
|-------------|--------|----------|----------|
| Incomes | \$0 | \$16,988 | \$56,856 |
| Savings % | - | 3% | 21% |

Total of 336 households

Energy Rate considered @ \$0.20/kWh