

What follows is an explanation of the data in each folder, all of which could be added to the Data Portal for this project:

- **figures_housing_characteristic:** contains the figures of housing characteristics for all dwelling units within the community.
 - `building_type_energy.svg`: shows the percentage of energy use for each type of dwelling unit.
 - `building_type_income.svg`: shows the percentage of dwelling units for each type of dwelling unit with the breakdown of area median income.
 - `building_type_tenure.svg`: shows the percentage of dwelling units for each type of dwelling unit with the breakdown of tenure.
 - `building_type_units.svg`: shows the percentage of dwelling units for each type of dwelling unit.
 - `cooling_efficiency.svg`: shows the percentage of dwelling units with each type of cooling system and the system efficiency.
 - `cooling_type.svg`: shows the percentage of dwelling units with each type of cooling system with the breakdown of ducted and non-ducted.
 - `energy_burden.svg`: shows the percentage of dwelling units for each category of energy burden.
 - `energy_burden_heating_fuel.svg`: shows the percentage of dwelling units for each category of energy burden the breakdown of heating fuel.
 - `energy_burden_income.svg`: shows the percentage of dwelling units for each category of energy burden the breakdown of area median income.
 - `envelope_label_frame_wall.svg`: shows the percentage of dwelling units in each envelope level for dwelling units with framed walls.
 - `envelope_label_masonry_wall.svg`: shows the percentage of dwelling units in each envelope level for dwelling units with masonry walls.
 - `heating_efficiency.svg`: shows the percentage of dwelling units with each type of heating system and the system efficiency.
 - `heating_fuel_energy.svg`: shows the percentage of energy use for each type of heating fuel.
 - `heating_fuel_units.svg`: shows the percentage of dwelling units for each type of heating fuel.
 - `tenure.svg`: shows the percentage of dwelling units for each type of tenure.
 - `top_enduse.svg`: shows the percentage of all energy use for the top four end uses.
 - `vintage.svg`: shows the percentage of dwelling units for each category of construction year.
- **figures_saving_results:** contains the figures of saving results for all dwelling units within the community. The definition of `segment{num}_{income level}` is explained at the end of the csv file.
 - `annual_saving_per_dwelling_unit.svg`: shows the total annual energy bill savings, site emission savings, site energy savings, electricity savings, gas, propane, fuel oil savings by applying each upgrade package for all dwelling units within the community.
 - `percentage_positive_saving_segment{num}_{income level}.svg`: The percentage of positive bill savings, emission savings, and total energy savings for dwelling units belonging to this segment.

- total_annual_savings.svg: shows the total annual energy bill savings, site emission savings, site energy savings, electricity savings, gas, propane, fuel oil savings by applying each upgrade package for all dwelling units within the community.
- upgrade_applicability.svg: shows the percentage of dwelling units that are applicable to each upgrade package.
- **saving_results.csv:** contains the saving results of 16 upgrade packages for the whole community and for the segment that the community is interested in. The definition of *segment{num}_{income level}* is explained at the end of the csv file. What follows explains the definition of each column data.
 - upgrade_name -- upgrade packages investigated in this analysis. There are 16 packages in total.
 - whole_community_upgrade_cost_mean_usd -- The average cost of this upgrade package for all dwelling units within the community, which also means upgrade cost per dwelling unit. The unit of this data is 2023 U.S. dollar.
 - whole_community_saving_bill_total_usd -- The total annual energy bill savings by applying this upgrade package for all dwelling units within the community. The unit of this data is 2023 U.S. dollar.
 - whole_community_saving_emission_total_kgCO2e -- The total annual emission savings by applying this upgrade package for all dwelling units within the community. The unit of this data is kilogram carbon dioxide equivalent.
 - whole_community_saving_energy_total_mmbtu -- The total annual energy savings by applying this upgrade package for all dwelling units within the community. The unit of this data is million British thermal units.
 - whole_community_saving_electricity_total_kwh -- The total annual electricity savings by applying this upgrade package for all dwelling units within the community. The unit of this data is kilowatt hour.
 - whole_community_saving_natural_gas_fuel_oil_propane_total_mmbtu -- The total annual natural gas, fuel oil, and propane savings by applying this upgrade package for all dwelling units within the community. The unit of this data is million British thermal units.
 - whole_community_saving_bill_mean_usd -- The average annual energy bill savings by applying this upgrade package for all dwelling units within the community, which also means energy bill savings per dwelling unit. The unit of this data is 2023 U.S. dollar.
 - whole_community_saving_emission_mean_kgCO2e -- The average annual emission savings by applying this upgrade package for all dwelling units within the community, which also means emission savings per dwelling unit. The unit of this data is kilogram carbon dioxide equivalent.
 - whole_community_saving_energy_mean_mmbtu -- The average annual energy savings by applying this upgrade package for all dwelling units within the community, which also means energy savings per dwelling unit. The unit of this data is million British thermal units.
 - whole_community_saving_bill_total_usd_wt_p0.1 -- 10th percentile annual energy bill savings by applying this upgrade package for all dwelling units within the community. The unit of this data is 2023 U.S. dollar.

- whole_community_saving_bill_total_usd_wt_p0.25 -- 25th percentile annual energy bill savings by applying this upgrade package for all dwelling units within the community. The unit of this data is 2023 U.S. dollar.
- whole_community_saving_bill_total_usd_wt_p0.75 -- 75th percentile annual energy bill savings by applying this upgrade package for all dwelling units within the community. The unit of this data is 2023 U.S. dollar.
- whole_community_saving_bill_total_usd_wt_p0.9 -- 90th percentile annual energy bill savings by applying this upgrade package for all dwelling units within the community. The unit of this data is 2023 U.S. dollar.
- segment{num}_{income level}_saving_bill_total_usd_wt_p0.1 -- 10th percentile annual energy bill savings by applying this upgrade package for dwelling units belonging to this segment. The unit of this data is 2023 U.S. dollar.
- segment{num}_{income level}_saving_bill_total_usd_wt_p0.25 -- 25th percentile annual energy bill savings by applying this upgrade package for dwelling units belonging to this segment. The unit of this data is 2023 U.S. dollar.
- segment{num}_{income level}_saving_bill_total_usd_wt_p0.75 -- 75th percentile annual energy bill savings by applying this upgrade package for dwelling units belonging to this segment. The unit of this data is 2023 U.S. dollar.
- segment{num}_{income level}_saving_bill_total_usd_wt_p0.9 -- 90th percentile annual energy bill savings by applying this upgrade package for dwelling units belonging to this segment. The unit of this data is 2023 U.S. dollar.
- segment{num}_{income level}_upgrade_cost_mean_usd -- The average cost of this upgrade package for dwelling units belonging to this segment, which also means upgrade cost per dwelling unit. The unit of this data is 2023 U.S. dollar.
- segment{num}_{income level}_saving_bill_per_dollar_invested_usd -- The total annual energy bill savings by applying this upgrade package divided by the total upgrade cost for dwelling units belonging to this segment. The unit of this data is 2023 U.S. dollar.
- segment{num}_{income level}_saving_energy_per_dollar_invested_mmbtu -- The total annual energy savings by applying this upgrade package divided by the total upgrade cost for dwelling units belonging to this segment. The unit of this data is million British thermal units per 2023 U.S. dollar.
- segment{num}_{income level}_saving_emission_per_dollar_invested_kgCO2e -- The total annual emission savings by applying this upgrade package divided by the total upgrade cost for dwelling units belonging to this segment. The unit of this data is kilogram carbon dioxide equivalent per 2023 U.S. dollars.
- segment{num}_{income level}_saving_bill_total_usd -- The total annual energy bill savings by applying this upgrade package for dwelling units belonging to this segment. The unit of this data is 2023 U.S. dollar.
- segment{num}_{income level}_saving_energy_total_mmbtu -- The total annual energy savings by applying this upgrade package for dwelling units belonging to this segment. The unit of this data is million British thermal units.
- segment{num}_{income level}_saving_emission_total_kgCO2e -- The total annual emission savings by applying this upgrade package for dwelling units belonging to this segment. The unit of this data is kilogram carbon dioxide equivalent.

- `segment{num}_{income level}_saving_bill_mean_usd` -- The average annual energy bill savings by applying this upgrade package for dwelling units belonging to this segment, which also means energy bill savings per dwelling unit. The unit of this data is 2023 U.S. dollar.
- `segment{num}_{income level}_saving_energy_mean_mmbtu` -- The average annual energy savings by applying this upgrade package for dwelling units belonging to this segment, which also means energy savings per dwelling unit. The unit of this data is million British thermal units.
- `segment{num}_{income level}_pct_saving_energy_mean_%` -- The average annual energy saving percentage by applying this upgrade package for dwelling units belonging to this segment, which also means energy saving percentage per dwelling unit.
- `segment{num}_{income level}_saving_emission_mean_kgCO2e` -- The average annual emission savings by applying this upgrade package for dwelling units belonging to this segment, which also means emission savings per dwelling unit. The unit of this data is kilogram carbon dioxide equivalent.
- `segment{num}_{income level}_pct_bill_positive_savings_%` -- The percentage of dwelling units that has positive energy bill savings by applying this upgrade package for dwelling units belonging to this segment. The unit of this data is percentage.
- `segment{num}_{income level}_pct_emission_positive_savings_%` -- The percentage of dwelling units that has positive emission savings by applying this upgrade package for dwelling units belonging to this segment. The unit of this data is percentage.
- `segment{num}_{income level}_pct_energy_positive_savings_%` -- The percentage of dwelling units that has positive energy savings by applying this upgrade package for dwelling units belonging to this segment. The unit of this data is percentage.
- `segment{num}_{income level}_energy_burden_before_upgrade_%` -- The energy burden of dwelling units belonging to this segment before upgrade. The unit of this data is percentage.
- `segment{num}_{income level}_energy_burden_after_upgrade_%` -- The energy burden of dwelling units belonging to this segment after upgrade. The unit of this data is percentage.