

2019

SINGLE-FAMILY POTENTIAL STUDY APPENDICES

RESIDENTIAL BUILDING STOCK ASSESSMENT

Prepared for:
NYSERDA
Carley Murray
Senior Project Manager

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Prepared by:
Cadmus Group LLC, Waltham, MA
Lakin Garth
Mitt Jones
Taylor Bettine

Table of Contents

Appendix A. Analysis Methodology

Appendix B. Baseline Forecast Data

Appendix C. Detailed Assumptions and Energy Efficiency Potential

Appendix D. Detailed Measure List Inputs

Appendix A. Analysis

Methodology

DEVELOPING BASELINE SALES FORECASTS

Collecting Baseline Data

Creating a baseline forecast of sales for each fuel type required multiple data inputs to accurately characterize energy consumption within NYS:

- Single-family households by climate zone
- End-use saturations (the percentage of an end use [such as central air conditioning] present in a dwelling)
- Equipment saturations (the average number of units in a dwelling)
- Fuel shares (proportion of units using electricity or natural gas)
- Efficiency shares (the percentage of equipment below, at, and above standard)
- Annual end-use consumption estimates by efficiency levels

Data specific to NYS not only provided the basis for baseline forecasts but also supported estimation of technical potential. The assessment included a significant primary data collection effort to ensure use of the best available data. Table A-1 provides a list of baseline forecast data sources.

TABLE A-1. BASELINE FORECAST DATA SOURCES

Data	Residential Single-Family Data Source
Single-Family Households, by Climate Zone	U.S. Census Bureau American Community Survey data, U.S. Census Bureau American Community Survey (ACS) Public Use Microdata Sample
Single-Family New Homes Counts	Extrapolated historical ACS data
End-Use Energy Consumption	RBSA site visit data, 2018 New York TRM, ENERGY STAR®, DOE/Office of Energy Efficiency and Renewable Energy (EERE) Technical Service Documents (TSD)
End-Use Saturations and Fuel Shares	RBSA site visit data
End-Use Efficiency Shares	RBSA site visit data, Heating, Air-Conditioning Refrigeration Distributors International (HARDI) shipment data for NYS, ENERGY STAR® U.S. shipment data, U.S. Energy Information Administration (EIA) Residential Energy Consumption Survey

Baseline Forecast of Sales and Customers

Consistent with the RBSA building stock study, Cadmus collected existing single-family household counts from the 2016 ACS Public Use Microdata Sample dataset at the county level, then aggregated these to the economic development region, and eventually to climate zone and statewide levels. To arrive at the base year (2018) number of single-family households, Cadmus added estimates of new, single-family

housing units for 2017 and 2018 to the 2016 ACS Public Use Microdata Sample data. Table A-2 provides the estimate of single-family households by climate zone and the total for NYS in 2018.

TABLE A-2. ESTIMATE OF SINGLE-FAMILY HOUSEHOLDS BY CLIMATE ZONE

	Climate Zone 4	Climate Zone 5	Climate Zone 6	Total
Single-Family Homes (2018)	2,536,364	1,967,170	815,688	5,319,221

After collecting all customer counts from the base year, Cadmus created baseline sales forecasts for each fuel type by multiplying the number of homes with each fuel type (electric, natural gas, fuel oil, and propane) by the sum of each end use’s annual energy consumption. Cadmus relied on the 2016 ACS Public Use Microdata Sample data to estimate the total number of homes with each fuel service at the county, economic development region, and climate zone levels. Table A-3 presents the estimate of base-year homes with each fuel-type service.

TABLE A-3. BASE YEAR (2018) ESTIMATE OF HOUSEHOLDS BY CLIMATE ZONE AND FUEL TYPE

Climate Zone	Electric	Natural Gas	Fuel Oil	Propane
Climate Zone 4	2,536,364	1,634,350	698,519	44,450
Climate Zone 5	1,967,170	1,344,308	269,660	91,615
Climate Zone 6	815,688	348,613	206,555	70,677
Total NYS	5,319,221	3,327,271	1,174,734	206,743

Prior to estimating technical potential, Cadmus adjusted the load and sales forecasts to account for future federal standards, energy codes, and natural market adoption and to avoid double-counting the savings from these end uses. Appendix B shows the sales forecast before and after applying future federal standards.

End-Use Energy Consumption

The per-unit, end-use energy consumption—also known as unit energy consumption—for the residential, single-family forecast provides a crucial input for end-use forecasts. Here, end use refers to specific energy-consuming equipment, including lighting, HVAC, and water heating. Industry studies derive this consumption using a variety of methods, including statistical methods (such as conditional demand modeling), physics-based building simulation models (such as the DOE’s EnergyPlus model), and simple algorithms (such as ENERGY STAR® calculators).

Cadmus drew from several resources to estimate the end-use energy consumption for the residential, single-family segment and fuel-type combinations in this study. Cadmus prioritized using data from primary research—either site visits or phone surveys—before relying on secondary data sources. Using primary data from New York data sources allowed for better baseline energy-use estimates and ensured that results were based on local data sources, where possible. Using local data sources improves potential savings estimates compared with relying on regional or national data for end-use energy consumption values.

Saturations and Fuel Shares

To produce a bottom-up, end-use forecast, Cadmus first determined how many units of each end use would be found in a typical home. End-use saturations represent the average number of units in a home and fuel shares represent the proportion of those units using electricity versus natural gas. For instance, a typical home has 0.99 clothes dryers (saturation) and 50% of these units are electric (fuel share).

Efficiency Shares

Efficiency shares equal the current saturation of a specific type of equipment (of varying efficiency). Within an end use, these shares sum to 100%. For instance, the efficiency shares for a central air conditioning end use may be 50% SEER 13, 25% SEER 15, and 25% SEER 16.

End-Use Consumption Estimates

Prior to estimating the technical potential of electric, natural gas, and other fossil fuel energy efficiency measures, Cadmus developed annual end-use consumption estimates for each fuel type. The following equation specified the forecast for each end use in the study:

$$EUSE_{ij} = \sum_e HHOLD_i * UPA_i * SAT_{ij} * FSH_{ij} * ESH_{ije} * EUI_{ije}$$

Where:

- $EUSE_{ij}$ = Total energy consumption for end use j in customer segment i
- $HHOLD_i$ = The number of households in segment i
- UPA_i = The units per households in customer segment i
- SAT_{ij} = The share of customers in customer segment i with end use j
- FSH_{ij} = The share associated with electric, natural gas, fuel oil, or propane in end use j in customer segment i
- ESH_{ije} = The market share of efficiency level e in the equipment for customer segment ij
- EUI_{ije} = The end-use intensity or unit energy consumption for the equipment configuration ije

Cadmus summed each end-use forecast within each fuel-type combination to determine the overall sales forecast.

MEASURE CHARACTERIZATION

Cadmus developed a comprehensive measure database of technical and market data that applied to all end uses in the residential, single-family market segment, then estimated costs, savings, and applicability for a set of energy efficiency measures. Through this process, Cadmus calculated measure savings as the unit energy savings or measure percentage savings to estimate the total end-use savings. These measure end-use percentage savings, when applied to the baseline end-use forecast, produced estimates of energy efficiency potential.

First, Cadmus developed an initial list of measures using its in-house database, which included information from several sources:

- Measures included within the 2018 New York TRM (version 6)
- Efficiency tiers from the CEE and ENERGY STAR
- Measures from Cadmus’ extensive database, which include details from regional or national databases (such as the California Database for Energy Efficient Resources) and various TRMs
- Selected emerging technologies and behavioral measures

Upon identifying measures, Cadmus compiled all inputs required to estimate potential. Table A-4 shows key inputs and possible data sources. Cadmus designed the site visits and surveys to collect primary data on key measures, supplementing data where necessary by using the other sources.

TABLE A-4. KEY MEASURE DATA SOURCES

Input	Single-Family Energy Efficiency Measures
Energy Savings	Primary data collection phone surveys and site visits, 2018 New York TRM, ENERGY STAR, DOE Office of Energy Efficiency and Renewable Technology (EERE), ^a Regional Technical Forum, regional and well-respected TRMs, Cadmus research
Equipment and Labor Costs	National Residential Efficiency Measures Database, ^b RSMMeans, ^c ENERGY STAR, DOE/EERE, California Database for Energy Efficient Resources, Regional Technical Forum, Incremental Cost Studies, regional TRMs, online retailers, Cadmus research
Measure Life	2018 New York TRM, ENERGY STAR, California Database for Energy Efficient Resources, regional and well-respected TRMs, Cadmus research
Technical Feasibility	Primary data collection phone surveys and site visits, Cadmus research
Percentage Incomplete	Primary data collection phone surveys and site visits, EIA Residential Energy Consumption Survey, ENERGY STAR market shipment reports, Cadmus research

^a DOE and EERE. <http://energy.gov/eere/office-energy-efficiency-renewable-energy>

^b National Renewable Energy Laboratory (NREL). “National Residential Efficiency Measures Database.” <http://www.nrel.gov/ap/retrofits/>

^c RSMMeans. Cost Data. <https://www.rsmeans.com/products/online.aspx>

Energy Savings and Measure Interactions

For each energy efficiency measure, Cadmus estimated energy savings, both savings per unit (kWh or MMBtu) and savings as a percentage of end-use equipment baseline consumption by dividing the savings per unit values by end-use consumption estimates. These estimates also accounted for savings interactions and results across end uses (for example, when efficient lighting is installed, cooling loads decrease due to the reduction of waste heat). Cadmus relied on a number of sources to develop savings estimates:

- **Primary data collection site visits and phone surveys.** The primary data collection involved site visits and phone surveys in the residential single-family segment. Primary data provided comprehensive information on building characteristics, energy-consuming end uses, and equipment efficiencies as well as information on customers’ attitudes toward energy efficiency and willingness to adopt efficiency measures.
- **2018 New York TRM.** The TRM provided the primary method to calculate the estimated per-unit energy savings for a variety of measures. Cadmus supplemented default TRM values with primary data collection values where possible.

- **Other state and regional TRMs.**
- **Recent NYSEERDA and NYS utility program evaluations and program data.**
- **The DOE Uniform Methods Project or other standard evaluation protocols.** This set of protocols defines standard calculations used to estimate energy savings for a number of measures. Cadmus' savings calculations were consistent with such industry standards.
- **ENERGY STAR calculators.** The U.S. Environmental Protection Agency's (EPA) ENERGY STAR calculators provided estimates of per-unit savings for a number of measures, including efficient appliances (such as refrigerators, freezers, and clothes washers) and efficient home electronics (such as televisions, computers, and monitors).
- **DOE/EERE technical support documents.** DOE included estimates of equipment energy consumption in its technical support documents for numerous energy-efficient equipment types.

Equipment and Labor Costs

Cadmus estimated equipment and labor costs for each energy efficiency measure and used these costs to calculate benefit/cost ratios to assess measure cost-effectiveness. Cadmus relied on a number of sources in developing cost estimates:

- **NREL National Residential Efficiency Measures Database.** NREL maintains a detailed, up-to-date dataset of measure costs for many energy efficiency measures.
- **RSMeans.** RSMeans provided construction cost data, including costs for several home retrofits (such as weatherization, windows, and other shell upgrades). Cadmus used data from 2018 RSMeans, the most recent version.
- **ENERGY STAR.** The EPA provided current equipment costs for a number of ENERGY STAR-rated units.
- **DOE/EERE technical support documents.** DOE/EERE included estimates of equipment and labor costs in technical support documents for several types of energy-efficient equipment.
- **Incremental cost studies.** TRMs often require incremental cost studies that show baseline and efficiency measure costs (such as labor, equipment, and operations and maintenance), and states frequently update these studies to incorporate the most recent cost data. These studies include measures most commonly offered through utility-sponsored energy efficiency programs.
- **Online retailers.** Cadmus continuously reviewed prices listed on manufacturer or retailer websites. Although online retailers may not provide estimates of installation (labor) or annual operations and maintenance costs, they provide reliable equipment costs.

Due to the high level of cost variance across NYS, Cadmus used RSMeans city cost indices to adjust costs by the International Energy Conservation Code climate zone using representative cities for each climate zone. This means the same measure will cost more in Climate Zone 4 (New York City) than it will

elsewhere in the state. These cost indices are specific to material and labor costs, and Cadmus applied them accordingly.

Measure Life

Cadmus used estimates of each measure's effective useful life (EUL) to calculate the lifetime net present value benefits and costs for each energy efficiency measure and for determining the natural rate of end-use equipment replacements, assumed to be one divided by the EUL. Many data sources for measure savings and costs (described above) also provided estimates for measure lifetimes. Cadmus relied on a number of sources to develop measure life estimates:

- 2018 New York TRM
- NREL National Residential Efficiency Measures Database
- EUL studies, including the Northeast Energy Efficiency Partnership's 2007 EUL study or EULs derived by the Association of Home Appliance Manufacturers
- ENERGY STAR
- DOE/EERE technical support documents
- Regional TRMs

Technical Feasibility

Technical feasibility factors represented the percentage of homes that could feasibly install an energy efficiency measure. Technical limitations included equipment capability or space limitations. For example, solar water heaters could not be feasibly installed in homes that did not have the required roof orientation and pitch. Cadmus relied on a number of sources to develop feasibility estimates:

- **Phone surveys and site visits.** The phone surveys and site visits collected data (such as housing characteristics) to inform estimates of technical feasibility. For instance, some water heaters located in small spaces reduced the feasibility of installing a heat pump water heater, which would require airflow above that of a standard water heater.
- **Energy efficiency program evaluations.** Some energy efficiency program evaluations included research to identify technical barriers to installing energy efficiency measures.
- **Cadmus research and third-party research (including the Federal Energy Management Program and DOE).** Various third-party measure characterization reports identified technical limitations for energy efficiency measures. Cadmus used these assessments to estimate the proportion of homes that would feasibly install each measure. In some instances, Cadmus used engineering judgment to proximate technical constraints.

Percentage Incomplete

Percentage incomplete factors represent the percentage of homes that have not yet installed an energy efficiency measure. This equals one minus the current saturation of an energy efficiency measure. To account for current saturations of energy-efficient equipment, building energy codes and standards, and

the natural adoption of efficiency measures, Cadmus relied on a number of sources in developing estimates of percentage incomplete:

- Primary data collection of key measures through phone surveys and site visits
- Recent stock assessments and surveys (such as the 2015 EIA Residential Energy Consumption Survey)
- ENERGY STAR reports

Energy Efficiency Technology Measure Database

After creating a list of electric, natural gas, and other fossil fuel energy efficiency measures applicable to NYS, Cadmus classified energy efficiency measures into two categories:

- **High-efficiency equipment measures.** These measures directly affected end-use equipment that followed normal replacement patterns and were based on the EUL (such as high-efficiency central air conditioners).
- **Retrofit measures.** These measures affected end-use consumption without replacing end-use equipment (examples include insulation, thermostats, and showerheads). As such, the measures did not include timing constraints from equipment turnover (except for new homes) and should be considered discretionary (savings could be acquired at any point over the planning horizon).

Cadmus assumed that all high-efficiency equipment measures would be installed at the end of the existing equipment's remaining useful life, and therefore did not assess energy efficiency potential for early replacement.

The study used several relevant inputs for each measure type:

- **Equipment and retrofit measures:**
 - **Technical feasibility:** the percentage of homes where customers could install this measure, accounting for physical constraints.
 - **Energy savings:** the average annual savings attributable to installing the measure, in absolute or percentage terms.
 - **Equipment cost:** the full or incremental cost, depending on the measure and application.
 - **Labor cost:** the expense of installing the measure, accounting for differences in labor rates by region, urban versus rural areas, and other variables.
 - **Measure life:** the expected measure life of the equipment.
- **Retrofit measures only:**
 - **Percentage incomplete:** the percentage of homes where customers had not installed the measure, but where the measure could technically be installed.
 - **Measure competition:** for mutually exclusive measures, accounting for the percentage of each measure likely installed. To avoid double-counting savings, for example, 1.5 GPM and 2.0 GPM showerheads cannot both be installed in the same showerhead socket; therefore,

only one permutation is determined, based on the technical feasibility (for technical potential) and on the cost-effectiveness (for economic potential).

Cadmus used Excel workbooks to characterize underlying measure assumptions and analysis (by measure category). The measure workbooks contained detailed saving calculations, cost research, EUL data, applicability factor values, and measure assumptions as well as well-documented source descriptions. Cadmus aggregated all measure data into a final master input file for use in the potential model. These detailed measure workbooks are provided in supplemental formats along with the final report.

Codes and Standards

Cadmus' assessment accounted for changes in codes and federal standards over the planning horizon. These changes affected customers' energy-consumption patterns and behaviors, and determined which energy efficiency measures would continue to produce energy savings over minimum requirements. Cadmus captured current efficiency requirements, including those enacted but not yet in effect.

Cadmus used the New York State Energy Conservation Construction Code, which requires that residential single-family homes comply with the 2015 code, as the baseline for the new home vintage. Both the baseline consumption forecast, and energy efficiency measure savings estimates explicitly assumed 100% code compliance for new single-family homes. New home energy efficiency savings were measured relative to the code requirements for each single-family home component. For example, floor insulation savings in climate zone 4 were calculated as the increment of energy savings achieved from installing R-30 insulation relative to the R-19 energy code requirement for climate zone 4.

Cadmus did not attempt to predict how federal standards (or state energy codes) might change in the future, rather only factored in legislation already enacted—notably, EISA provisions slated to take effect over the course of analysis. EISA required that general service lighting becomes approximately 30% more efficient than incandescent technology, with standards phased in by wattage from 2012 to 2014. In addition, EISA includes a backstop provision that requires even higher-efficiency technologies beginning in 2020 (45 lumens per watt or better). On January 18, 2017, the DOE expanded EISA requirements for previously exempt specialty lamps (such as reflectors, globes, and candelabras) and higher lumen-standard lamps (greater than 2,600 lumens). On September 5, 2019, however, the DOE's final rule and notice of proposed determination effectively rescinded the EISA 2020 backstop standard.

Uncertainty remains regarding how the EISA backstop standard will be implemented because of pending legal challenges. Given the timing of the final rule and uncertainty around its effects, Cadmus' modeling methodology assumed that the 2020 EISA backstop standard would still occur. For this study, Cadmus assumed that standard and specialty lamps would be impacted by the EISA backstop provision in 2020 and thus used a baseline of 70 lumen per watt lighting, starting in 2020, as the base case.

Cadmus explicitly accounted for several other pending federal standards. Table A-5 and Table A-6 provide lists of recently enacted or pending equipment standards that are accounted for in this study's residential single-family segment for electric, natural gas, and other end uses. Cadmus also incorporated

other standards that became effective for equipment prior to 2019. For measures where a future standard would have a higher efficiency than a current standard market practice baseline, Cadmus adjusted the baseline to the new federal standard.

TABLE A-5. CURRENT AND PENDING ELECTRIC STANDARDS BY END USE

Electric End-Use Equipment Type	Current (Baseline) Standard	New Standard (Year Effective)
Cooking Oven	2012	No new standard pending
Cooking Range	2012	No new standard pending
Central Air Conditioner	2015	2023
Room Air Conditioner	2015	No new standard pending
Dehumidifier	2013	No new standard pending
Dryer	2015	No new standard pending
Freezer	2015	No new standard pending
Air-Source Heat Pump	2015	2023
Linear Fluorescent Lamp	2018	No new standard pending
Lighting General Service Lamp	2014	2020
Microwave	2016	No new standard pending
Refrigerator	2015	No new standard pending
Furnace Fan Motor	2019	No new standard pending
Water Heater GT 55 Gallon	2017	No new standard pending
Water Heater LE 55 Gallon	2017	No new standard pending

TABLE A-6. CURRENT AND PENDING NATURAL GAS AND OTHER FOSSIL FUEL STANDARDS BY END USE

End-Use Equipment Type	Current (Baseline) Standard	New Standard (Year Effective)
Cooking Oven	2012	No new standard pending
Cooking Range	2012	No new standard pending
Dryer	2015	No new standard pending
Heat Central Fuel Oil Boiler	2012	2021
Heat Central Fuel Oil Furnace	2013	No new standard pending
Heat Central Natural Gas Boiler	2012	2021
Heat Central Natural Gas Furnace	2015	No new standard pending
Heat Central Propane Boiler	2012	2021
Heat Central Propane Furnace	2015	No new standard pending
Pool Heater	2014	No new standard pending
Water Heater GT 55 Gallon	2017	No new standard pending
Water Heater LE 55 Gallon	2017	No new standard pending

Naturally Occurring Conservation

Cadmus' baseline forecast included naturally occurring conservation, which refers to reductions in energy use occurring due to normal market forces (such as technological change and changes in energy prices) and market transformation efforts. Market transformation refers to market interventions that remove barriers to energy efficiency and encourage the adoption of energy efficiency as standard practice. These impacts resulted in changed baseline sales, from which Cadmus estimated technical potential. This analysis accounted for naturally occurring conservation in two ways:

- The potential associated with certain energy-efficient measures assumed a natural adoption rate, net of current saturation. Total potential savings associated with ENERGY STAR appliances account for current trends in customer adoption; for example, the study assumed the current

market share of ENERGY STAR televisions is about 90%. As such, the baseline energy forecast includes consumption estimates based on the current market share of ENERGY STAR televisions, and the technical savings potential includes only energy savings available for the 10% of the market that is not ENERGY STAR.

- The assessment accounted for gradual increases in efficiency due to the retirement of older equipment in existing homes, followed at the time by replacement with units meeting or exceeding minimum standards.

ESTIMATING TECHNICAL POTENTIAL

After fully populating the measure database, Cadmus used measure-level inputs to estimate technical potential over the planning horizon. First, Cadmus estimated savings from all measures included in the analysis, then aggregated results to the end use, fuel type, and residential single-family segment level.

Cadmus characterized individual measure savings, first in terms of the percentage of end-use consumption. For each non-equipment measure, the estimated absolute savings used the following equation:

$$SAVE_{ijm} = EU_{ije} * PCTSAV_{ijem} * APP_{ijem}$$

Where:

- $SAVE_{ijm}$ = Annual energy savings for measure m for end use j in customer segment i
- EU_{ije} = Calibrated annual end-use energy consumption for equipment e for end use j and customer segment i
- $PCTSAV_{ijem}$ = The percentage savings of measure m relative to base use for the equipment configuration ije , accounting for interactions among measures (such as lighting and HVAC), calibrated to annual end-use energy consumption
- APP_{ijem} = Measure applicability: a fraction representing the combined technical feasibility, existing measure saturation, end-use interaction, and any adjustments used to account for competing measures

For example, for wall insulation that saved 10% of space heating consumption, the final percentage of the end use saved would be 5%, assuming an overall applicability of 50%. This value represented the percentage of baseline consumption that the measure saved in an average home.

Capturing all applicable measures, however, would require examining many instances in which multiple measures affected a single end use. To avoid overestimating total savings, Cadmus assessed cumulative impacts and accounted for interactions among various measures—a treatment called “measure stacking.” The primary method used to account for stacking effects establishes a rolling, reduced baseline, applied sequentially upon the assessment of measures in the stack.

The following equations illustrate this technique, applying measures 1, 2, and 3 to the same end use:

$$SAVE_{ij1} = EUI_{ije} * PCTSAV_{ije1} * APP_{ije1}$$

$$SAVE_{ij2} = (EUI_{ije} - SAVE_{ij1}) * PCTSAV_{ije2} * APP_{ije2}$$

$$SAVE_{ij3} = (EUI_{ije} - SAVE_{ij1} - SAVE_{ij2}) * PCTSAV_{ije3} * APP_{ije3}$$

After iterating all measures in a bundle, the final percentage of the reduced end-use consumption provided the sum of each individual measure’s stacked savings, which Cadmus divided by the original baseline consumption. The order of the stacked, retrofit measures in a bundle is ranked from the highest to lowest saving measures, in terms of the percentage energy savings for that end use.

ECONOMIC POTENTIAL

Economic potential represents a subset of technical potential, consisting only of measures meeting cost-effectiveness criteria. Cadmus used the primary cost-effectiveness test adopted under the NYS BCA Framework to identify cost-effective measures in a manner consistent with New York Department of Public Service guidance. Table A-7 lists the benefits and costs considered in calculating benefit/cost ratios to develop the economic potential that served as the basis of the base-case achievable potential.

TABLE A-7. SUMMARY OF COSTS AND BENEFIT COMPONENTS

Type	Component
Costs	Incremental measure equipment costs
	Incremental measure labor costs
	Incremental measure operations and maintenance cost
Benefits	Avoided energy costs
	Deferred capacity costs (generation, transmission and distribution)
	Reduced CO2 emissions
	Avoided water benefits

Details follow for some of the components shown in Table A-7.

- **Incremental measure equipment costs** include equipment, labor, and ongoing annual operations and maintenance costs required to purchase a measure and sustain savings over each measure’s EUL.
- **Avoided energy costs** reflect the direct (primary) and secondary energy savings from installing energy efficiency measures. Cadmus’ end-use modeling approach to estimating potential necessitates that each individual measure account for primary and secondary fuel energy savings. An example is the cost of R-60 ceiling insulation for a home with a natural gas furnace and electric cooling system. For the furnace, Cadmus characterized the energy savings that R-60 insulation produced for electric central cooling systems, conditioned in the presence of a natural gas furnace, as a secondary benefit in the natural gas energy efficiency modeling.
- **Deferred capacity costs** include the deferred generation and transmission and distribution capacity benefits that accrue from peak-coincident, electric, energy efficiency measures. The study also included deferred natural gas distribution costs, which Cadmus developed from utility

sales-weighted, avoided distribution capacity costs, relying on the most recently filed data from each investor-owned natural gas distribution company’s marginal cost of service studies.

- **Reduced CO2 emissions** reflect the economic value of avoided greenhouse gas emissions, including CO2, consistent with the social cost of carbon.
- **Avoided water benefits** include the indirect energy savings achieved through reduced water consumption from measures such as low-flow showerheads and faucet aerators.

In addition to each benefit and cost detailed above, Cadmus calculated the net present value of benefits, including a single line loss factor of 7.2% and a discount rate based on a utility energy sales-weighted, average cost of capital of 6.9%.

Data Sources

Cadmus collected the data required to perform benefit/cost analysis from a variety of sources and developed weighting criteria to estimate utility-specific data for two geographic designations in NYS. Following discussions with NYSERDA, Cadmus selected one area comprising Climate Zone 4 and a second comprising Climate Zones 5 and 6, because of the vast differences in avoided energy and avoided capacity costs. Table A-8 provides the comprehensive list of data sources and notes regarding their treatment in the potential study.

TABLE A-8. BENEFIT/COST ANALYSIS DATA SOURCE SUMMARY

Fuel Type	Data	Source Data Tool or Model	Agency	Notes
Electricity	Avoided Energy	CARIS	New York Independent System Operator (NYISO)	Avoided electric energy costs originated from the 2018 CARIS 2 Base Case Location Based Marginal Prices and were binned by season, on- and off-peak periods, and weekday/weekends to account for the time-varying value of energy efficiency
	Avoided Generation Capacity	ICAP Model	NYISO; DPS	The ICAP Model values are based on the NYISO Gold Book. The ICAP Model was filed by the New York Department of Public Service (DPS) Staff on May 2, 2018 in Case 14-M-0101
	Avoided Transmission and Distribution Capacity	Utility specific	Utilities	Cadmus developed utility sales-weighted avoided transmission and distribution capacity costs, relying on the 2016 BCA Handbook filed data from each electric investor-owned utility and on input assumptions for the 2018 Utility 2.0 Long Range Plan for the Long Island Power Authority. Different values were employed for Climate Zone 4 and Climate Zones 5 and 6, which were combined

Fuel Type	Data	Source Data Tool or Model	Agency	Notes
	Avoided CO2 (Electricity)	EPA SCC; DPS Model	US EPA; DPS	Cadmus used the EPA Social Cost of Carbon (SCC) at the 3 percent discount rate net of the projected Regional Greenhouse Gas Initiative (RGGI) compliance costs included in the 2018 CARIS 2 Base Case model. The SCC on a per-MWh basis (\$/MWh) is derived using the latest DPS estimate of the marginal emissions factor for electricity (lb. CO2/MWh) calculated using the 2018 CARIS 2 Base Case model; a description of the DPS methodology is provided in Attachment B of the Order Establishing the Benefit Cost Analysis Framework (issued January 21, 2016 in NYS PSC Case 14-M-0101)
	Losses, Sales-Weighted Average Cost of Capital	Utility specific	Utilities	Cadmus developed a utility sales-weighted average cost of capital for electric and natural gas utilities
	Avoided Natural Gas	CARIS	NYISO	Cadmus relied on CARIS 2018 forecasted prices (unburdened \$/MMBtu)
Natural Gas	Avoided Natural Gas Capacity	Utility specific	Utilities	Cadmus developed utility sales-weighted avoided distribution capacity costs, relying on the most recently filed data from each investor-owned natural gas distribution company's marginal cost of service studies and on Con Edison's 2019 BCA input assumptions for its proposed EE portfolio. Different values were employed for Climate Zone 4 and Climate Zones 5 and 6, which were combined
	Avoided CO2	EPA SCC	US EPA	Cadmus used the EPA SCC at the 3 percent discount rate. The SCC on a per-MMBtu basis (\$/MMBtu) is derived using the marginal emissions factors for buildings (lb. CO2e/MMBtu) published in the Final Performance Metrics Report of the NYS Clean Energy Advisory Council (CEAC) – Metrics, Tracking and Performance Assessment Working Group (filed July 19, 2017 in NYS PSC Matter 16-00561)
Fuel Oil	Avoided Fuel Oil	New York Home Heating Oil Price Monitoring Program; Annual Energy Outlook	NYSERDA; EIA	Cadmus relied on NYSERDA's Home Heating Oil Price Monitoring program to establish a multi-year average cost from September 2015 through February 2019, then used the EIA Annual Energy Outlook to apply average annual growth rates to create a long-term forecast
	Avoided CO2	EPA SCC	US EPA	Cadmus used the EPA SCC at the 3 percent discount rate. The SCC on a per-MMBtu basis (\$/MMBtu) is derived using the marginal emissions factors for buildings (lb. CO2e/MMBtu) published in the Final Performance Metrics Report of the NYS CEAC

Fuel Type	Data	Source Data Tool or Model	Agency	Notes
Propane	Avoided Propane	New York Home Propane Price Monitoring Program; Annual Energy Outlook	NYSERDA; EIA	Cadmus relied on NYSERDA's Home Propane Price Monitoring program to establish a multi-year average cost from September 2015 through February 2019, then used the EIA Annual Energy Outlook to apply average annual growth rates to create a long-term forecast
	Avoided CO2	EPA SCC	US EPA	Cadmus used the EPA SCC at the 3 percent discount rate. The SCC on a per-MMBtu basis (\$/MMBtu) is derived using the marginal emissions factors for buildings (lb. CO2e/MMBtu) published in the Final Performance Metrics Report of the NYS CEAC

^a New York DPS Guidance CE-07 indicates that the avoided CO2 (\$/kWh) value is to be based on either the Clean Energy Standard Tier 1 Renewable Energy Credit price or the EPA SCC net of Regional Greenhouse Gas Initiative clearing price.

As noted in Table A-8, Cadmus summarized the avoided electric energy costs from the 2018 CARIS 2 base case, 8706-hourly, location-based marginal prices into 16 bins based on season, on- and off-peak periods, and weekday/weekends to account for the time-varying value of energy efficiency. Cadmus also assigned each electric energy efficiency measure an end-use load shape, and summarized the normalized, annual energy usage into the same 16 bins. U.S. DOE's Building America energy simulations provided the underlying 8760-hourly, end-use load shapes.¹

Additional Economic Potential Considerations

Economic potential for a given measure can exceed technical potential when a second measure, interacting with that measure, fails a benefit/cost screen. For instance, if a homeowner installs an efficient air conditioner that reduces baseline cooling consumption from 1,000 kWh to 900 kWh, then installs a weatherization measure that saves 10% off the baseline cooling consumption, this weatherization results in energy efficiency savings, or technical potential, of 90 kWh (900 * 10%).

Had the efficient air conditioner not been installed first, the homeowner's baseline consumption would have been 1,000 kWh, and the weatherization measure would have resulted in energy savings or economic potential of 100 kWh (1,000 * 10%). In this case, the economic potential (100 kWh) exceeds the technical potential (90 kWh) for the weatherization measure.

ACHIEVABLE POTENTIAL

This section communicates the study's approach and findings related to achievable potential.

This study defines achievable potential as the estimated portion of economic potential that customers would be willing to adopt if the financial barriers and other market barriers to purchasing energy

¹ U.S. DOE. "Commercial and Residential Hourly Load Profiles for all TMY3 Locations in the United States." Available online: <https://openei.org/doe-opendata/dataset/commercial-and-residential-hourly-load-profiles-for-all-tmy3-locations-in-the-united-states>

efficiency measures could be reduced through incentives, reductions in transaction costs, marketing, technical information, and education of customers and service providers. Therefore, Cadmus measured and expressed achievable potential as a fraction (percentage) of economic potential. While estimating technical and economic potentials fundamentally remains an engineering and accounting endeavor, based on industry-standard practices and methodologies, achievable potential proves difficult to quantify and reliably predict, given it depends on a large number of behavioral factors that, over time, tend to change unpredictably.

A number of factors account for the gap between economic and achievable potential, including customer awareness, perceptions of energy efficiency value, the upfront cost of energy efficiency measures, and associated “soft costs” and transaction costs. For new measures and programs, additional practical constraints regarding the availability of delivery infrastructure must be considered; these barriers are extensively documented in the energy efficiency literature.

NYSERDA and NYS utility programs can mitigate some of these market barriers through program designs and delivery processes; for example, utilities can reduce first-cost barriers by providing financial incentives to lower upfront costs and to improve customer paybacks. However, because these incentives cover only a portion of most measures’ incremental costs, incentives may prove insufficient to motivate some customers to adopt energy efficiency measures. This particularly holds true for mechanical equipment in the residential sector, where upfront costs tend to be high.

Thus, evaluating achievable potential depends on assessing two questions:

- Which barriers can a household overcome during the planning horizon?
- How much economic potential can be deemed reasonably achievable?

The achievable potential presented in the study is the economic potential multiplied by two factors: the maximum achievable acquisition assumption, and the annual acquisition ramp rates. Cadmus determined a range of maximum achievable acquisition assumptions by deploying surveys to determine single-family households’ willingness-to-adopt energy efficiency measures. The annual acquisition ramp rate represents the estimated upper limit of annual conservation resource development.

Willingness to Adopt Energy Efficiency Measures

To assess the fraction of customers likely to adopt an energy efficiency measure, the surveys included questions to elicit information about customers’ willingness to adopt measures under different proxy incentive scenarios. For several measure types (such as appliances, heating and cooling equipment, lighting, and weatherization), survey respondents were first asked how likely they would be to adopt an efficient measure in the next five years. Survey respondents who responded “not too likely” or “not at all likely” were then asked about their likelihood to adopt a measure if their utility or other entity covered 25% of its incremental cost (the cost to upgrade), corresponding to the total low-incentive achievable scenario.

The survey then asked if respondents would adopt the efficient measure if their utility or another entity covered 50% of the incremental upfront cost (corresponding to the total moderate incentive achievable

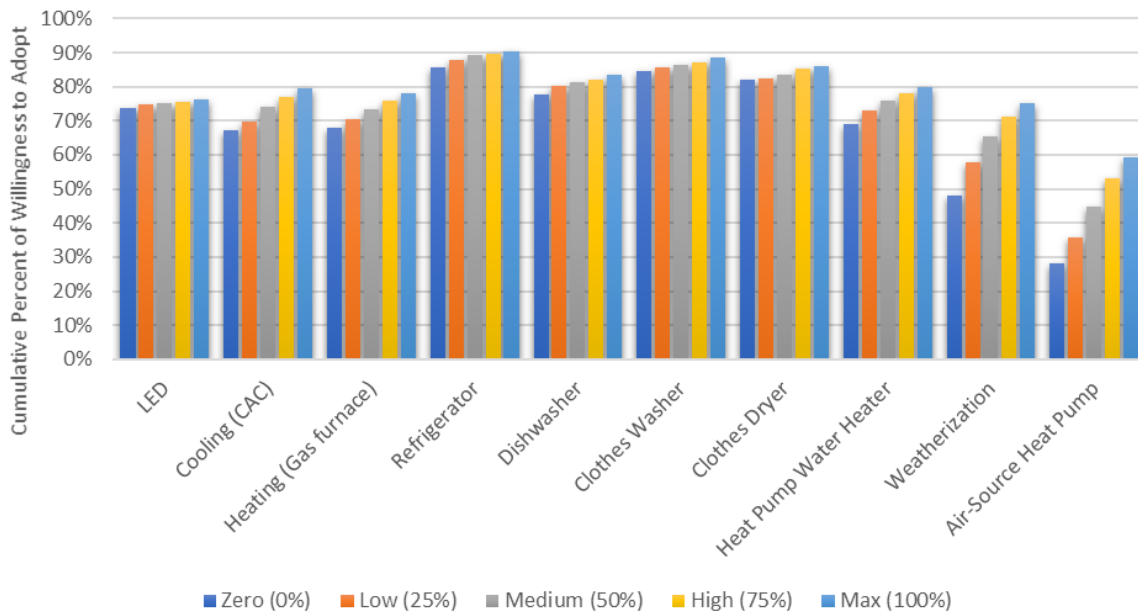
scenario) and if 75% of the measure’s incremental cost were covered (corresponding to the total high-incentive achievable scenario). Finally, the survey asked if a customer would adopt the efficient measure at the maximum incentive 100% payment level, making it free for the customer relative to the less-efficient option. In each of the low, moderate, high, and maximum incentive scenarios, survey questions indicated the efficiency measure’s incremental upfront cost and the incentive’s dollar value.

Table A-9 summarizes assumptions for each achievable scenario. Figure A-1 shows the results of customers’ willingness to adopt efficient measures under the different incentive scenarios. Cadmus surveyed customers regarding their willingness to adopt lighting, central cooling, heating, appliance, water heating, weatherization, and air-source heat pump measures. Cadmus assigned an achievable potential category to each potential study measure. Appendix B provides the complete list of energy efficiency measures and achievable potential categories.

TABLE A-9. ACHIEVABLE POTENTIAL SCENARIOS

Scenario	Incentive Percentage of Incremental Cost
Zero Incentive	0%
Low Incentive	25%
Moderate Incentive	50%
High Incentive	75%
Max Incentive	100%

FIGURE A-1. SINGLE-FAMILY CUSTOMERS’ WILLINGNESS TO ADOPT BY MEASURE TYPE



Ramp Rates

Cadmus developed a series of ramp rates to determine the incremental, year-to-year achievable potential for this study and applied one ramp rate to each efficiency measure within the study. Ramp rates are generalized sigmoid curves (s-curves) that assume an initial saturation rate in the study's first year (2019) before progressing to 100% saturation on either an incremental or cumulative basis, depending on the resource type (discretionary or lost opportunity). Lost opportunity measures are available only during specific periods, including when equipment has reached its end of life and must be replaced, or when new homes are constructed. If savings from these lost-opportunity measures are not acquired within this limited window of opportunity, they are "lost."

To determine which ramp rate should be applied for a given measure, Cadmus employed a hierarchy:

- For measures already offered in NYS and that have achieved moderate-to-high energy savings levels, Cadmus applied more aggressive ramp rates.
- For measures with relatively low, no, or negative incremental costs, Cadmus applied more aggressive ramp rates.
- For measures not currently offered by all utilities or that have achieved less-than-moderate levels of energy savings, Cadmus applied more conservative ramp rates.
- For measures with relatively high incremental costs, Cadmus applied more conservative ramp rates.

Table A-10 provides the 10 ramp-rates applied to measures in this study to determine the timing of achievable potential. For modeling purposes, Cadmus established separate ramp rate names for retrofits and lost opportunities, but assigned similar names and meanings to the separate ramp rates. The table lists ramp rate names in each category (discretionary and nondiscretionary), from most to least aggressive. For each ramp rate, "fast", "mod" (or moderate), and "low" refers to the acquisition pace over time; the numbers (40, 20, 10, 5, and 3) refer to general levels of the initial percent of units that have been achieved.

TABLE A-10. DISCRETIONARY AND NONDISCRETIONARY RAMP RATE NAMES

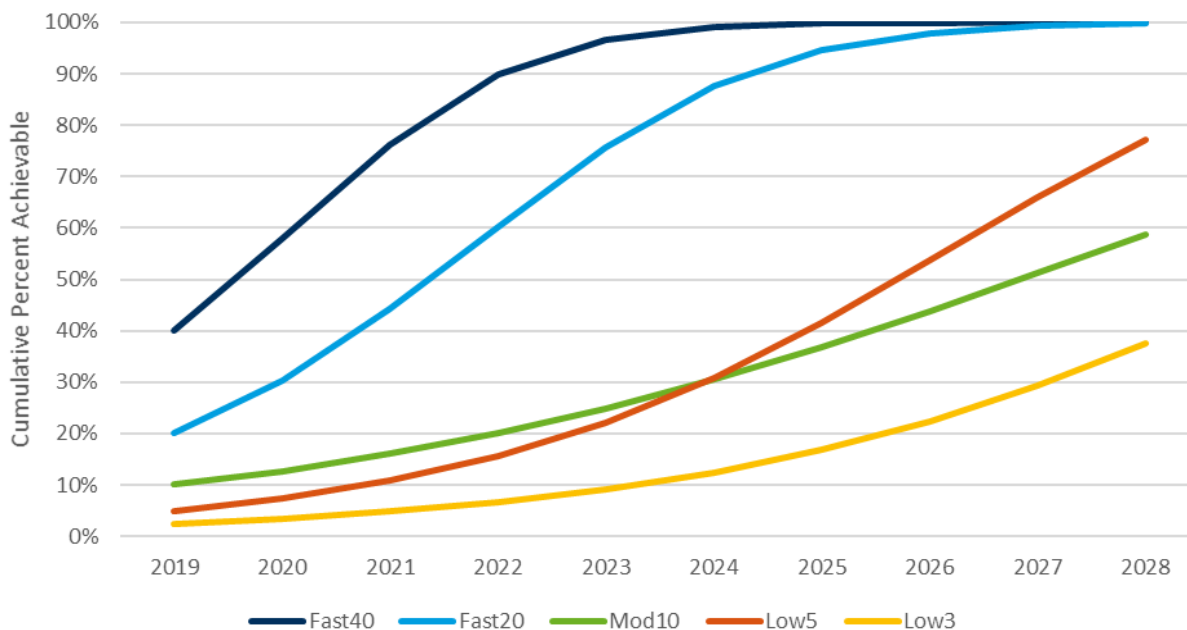
Discretionary (Retrofit)	Nondiscretionary (Lost Opportunity)
Retrofit - Fast40	Lost Opportunity - Fast40
Retrofit - Fast20	Lost Opportunity - Fast20
Retrofit - Mod10	Lost Opportunity - Mod10
Retrofit - Low5	Lost Opportunity - Low5
Retrofit - Low3	Lost Opportunity - Low3

Figure A-2 illustrates the annual acquisition ramp rates used in the potential study. Discretionary resources were available at the study's beginning and can be acquired at any time. A retrofit measure assigned the "Retrofit – Fast40" ramp rate will reach 99% saturation in the study's sixth year, whereas a retrofit measure assigned the "Retrofit – Mod10" ramp rate will not reach 100% saturation until the study's last year. For lost opportunity measures, when a ramp rate reaches 100% saturation, it means that 100% of the units available for replacement in that year have been achieved.

Residential LEDs were assigned the most aggressive ramp rate for three reasons:

- They have a relatively high saturation rate
- Their prices exhibit a rapid decline
- The 2020 EISA backstop—requiring that all general service lamps and most specialty lamps meet a minimum federal standard of 45 lumens per watt—is expected to reduce the available technical, economic, and achievable potential for the measure.

FIGURE A-2. POTENTIAL STUDY RAMP RATES



Appendix B. Detailed Assumptions and Energy Efficiency Potential provides the potential study measure ramp rate for each measure included in the study.

Achievable Potential for Energy Efficiency

Cadmus calculated base-case achievable energy efficiency potential by multiplying economic potential by the percentage of customers’ willingness to adopt an efficiency measure (for each measure type and incentive scenario shown in Table A-11), and by spreading discretionary and lost opportunity savings over the study horizon using a ramp-rate selection based on recent NYS energy efficiency program achievements. Appendix B provides the selected ramp rate for each energy efficiency measure.

Table A-11 presents the 10-year cumulative, achievable, energy efficiency potential for each scenario (total zero incentive, total low incentive, total moderate incentive, total high incentive, and total maximum incentive) and for each fuel type as a percentage of 2028 forecasted sales. Available achievable potential ranges from 16.5% of total 2028 forecasted sales in the zero-incentive scenario to 18.6% in the maximum incentive scenario, corresponding to annual savings as percentage of sales ranging from 1.8% to 2.1%.

Table A-12 and Table A-13 provide similar detail for the five-year and three-year achievable potential.

**TABLE A-11. TEN-YEAR ACHIEVABLE POTENTIAL BY FUEL TYPE,
PERCENTAGE OF FORECAST SALES**

Fuel Type	2028 Forecast Sales (BBtu)	Zero Incentive	Total Achievable Potential as Percentage of Sales			Maximum Incentive
			Low Incentive	Moderate Incentive	High Incentive	
Electricity	125,541	14.5%	14.9%	15.2%	15.4%	15.5%
Natural Gas	353,928	13.1%	13.6%	14.1%	14.4%	14.6%
Other Fossil Fuels	106,267	16.3%	18.0%	19.3%	20.3%	21.1%
Total	585,737	14.0%	14.7%	15.3%	15.7%	16.0%

**TABLE A-12. FIVE-YEAR ACHIEVABLE POTENTIAL BY FUEL TYPE,
PERCENTAGE OF FORECAST SALES**

Fuel Type	2023 Forecast Sales (BBtu)	Zero Incentive	Total Achievable Potential as Percentage of Sales			Maximum Incentive
			Low Incentive	Moderate Incentive	High Incentive	
Electricity	128,388	6.9%	7.1%	7.2%	7.3%	7.4%
Natural Gas	352,035	5.5%	5.7%	5.9%	6.0%	6.1%
Other Fossil Fuels	107,043	6.8%	7.5%	8.1%	8.5%	8.9%
Total	587,466	6.0%	6.3%	6.6%	6.7%	6.9%

**TABLE A-13. THREE-YEAR ACHIEVABLE POTENTIAL BY FUEL TYPE,
PERCENTAGE OF FORECAST SALES**

Fuel Type	2021 Forecast Sales (BBtu)	Zero Incentive	Total Achievable Potential as Percentage of Sales			Maximum Incentive
			Low Incentive	Moderate Incentive	High Incentive	
Electricity	132,481	4.4%	4.4%	4.4%	4.5%	4.5%
Natural Gas	351,861	2.9%	2.9%	3.0%	3.1%	3.2%
Other Fossil Fuels	107,455	3.7%	3.7%	4.0%	4.2%	4.3%
Total	591,797	3.4%	3.4%	3.5%	3.6%	3.7%

Appendix B. Baseline Forecast Data

This appendix to the NYSERDA 2019 Single-Family Potential Study report provides detailed tables and figures related to the baseline forecast, such as baseline forecast assumptions.

FIGURE B-1. NEW YORK STATE CLIMATE ZONES

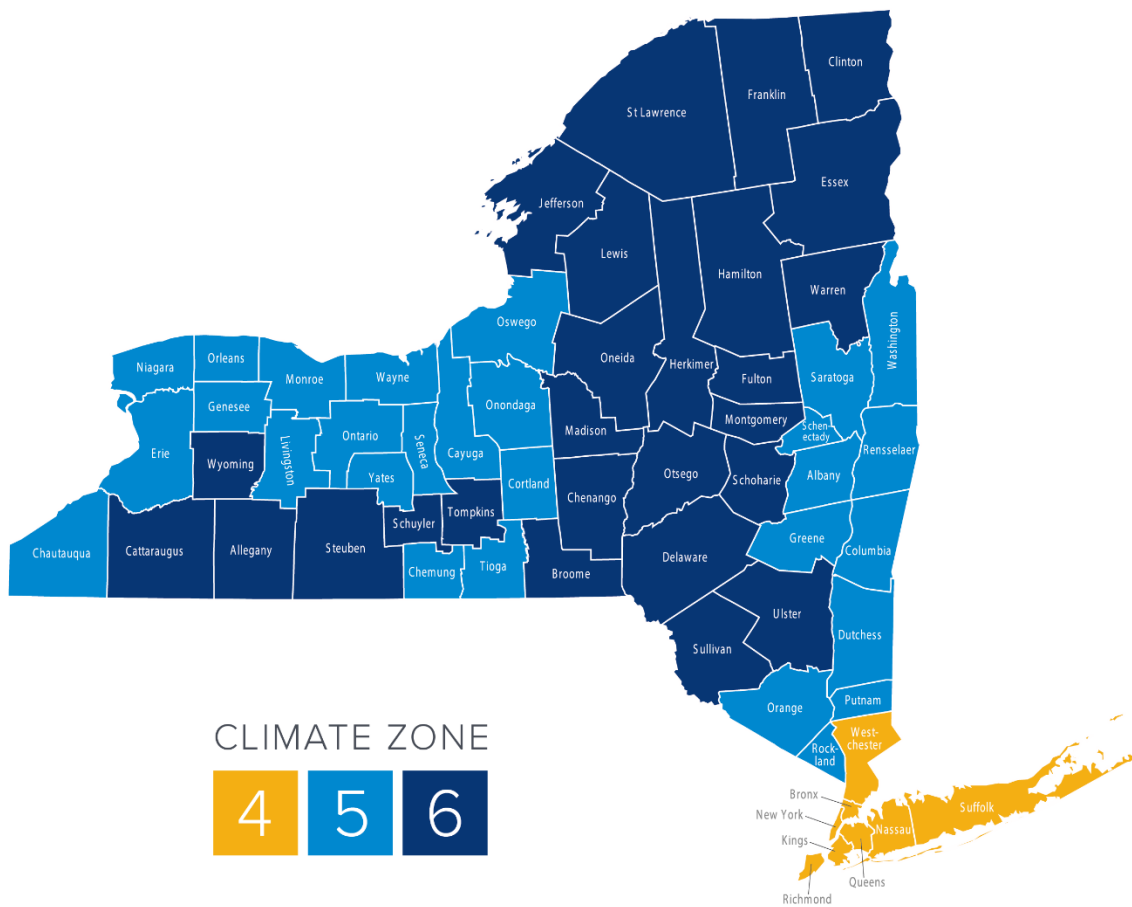


FIGURE B-2. RESIDENTIAL SINGLE-FAMILY BASELINE FORECAST BY REGION—ELECTRIC

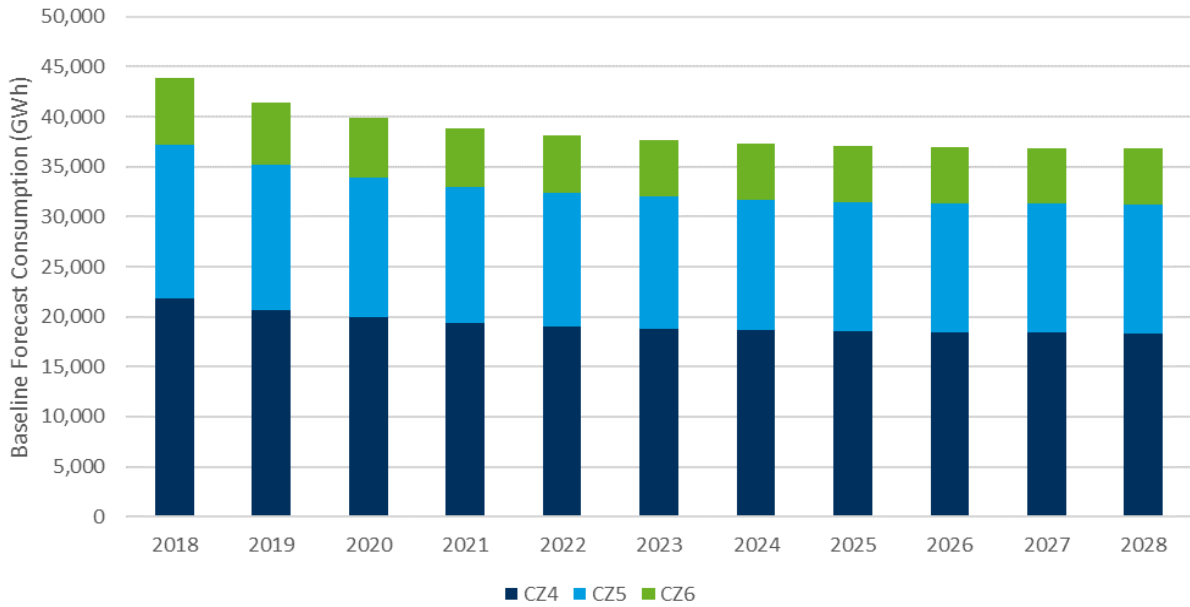


FIGURE B-3. RESIDENTIAL SINGLE-FAMILY BASELINE FORECAST BY END USE—ELECTRIC

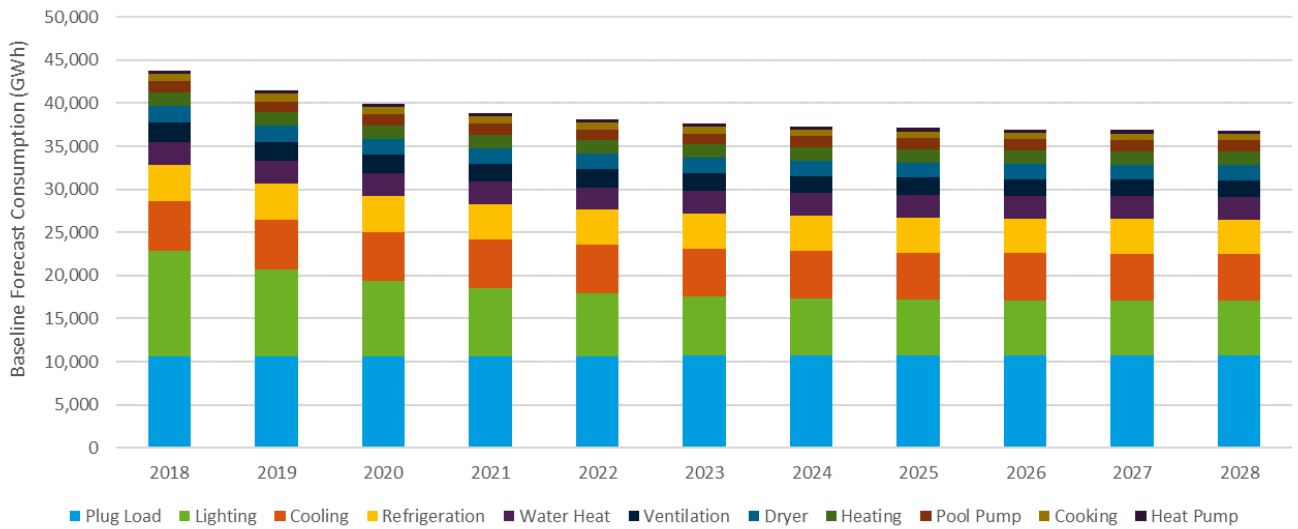


FIGURE B-4. RESIDENTIAL SINGLE-FAMILY FORECAST OF SAVINGS FROM FUTURE FEDERAL STANDARDS—ELECTRIC

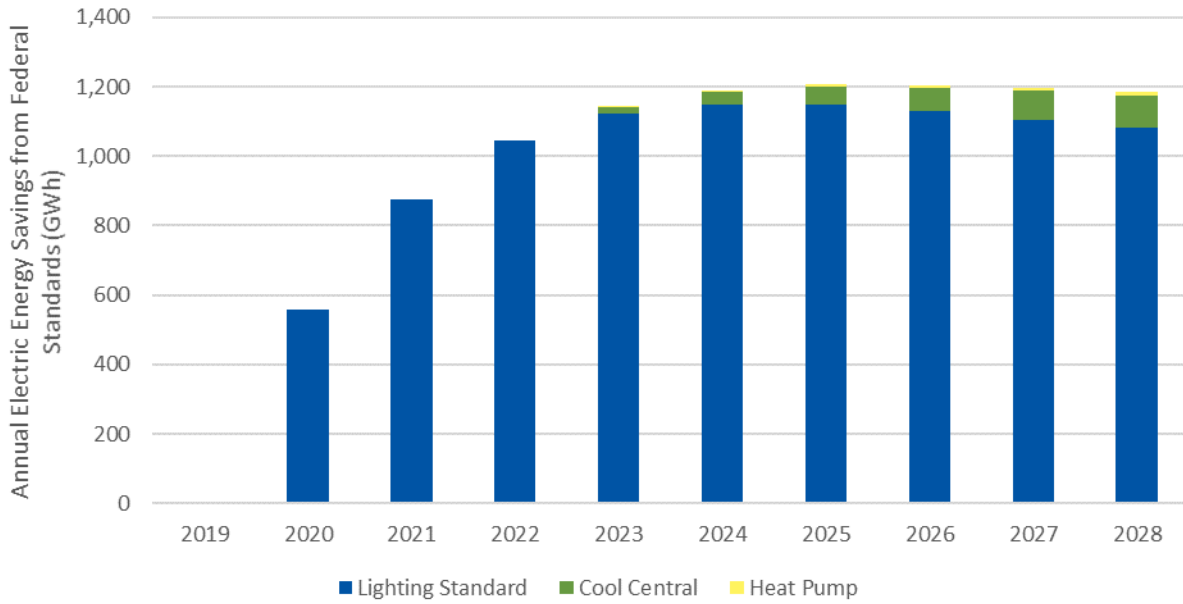


TABLE B-1. BASELINE FORECAST ASSUMPTIONS—ELECTRIC HOME FORECAST

Region	NYS
2018	5,319,221
2019	5,331,551
2020	5,343,881
2021	5,356,211
2022	5,368,541
2023	5,380,871
2024	5,393,201
2025	5,405,531
2026	5,417,861
2027	5,430,191
2028	5,442,521

TABLE B-2. BASELINE FORECAST ASSUMPTIONS—ELECTRIC HOME FORECAST BY CLIMATE ZONE

Year	CZ4	CZ5	CZ6
2018	2,536,364	1,967,170	815,688
2019	2,542,243	1,971,730	817,578
2020	2,548,122	1,976,290	819,469
2021	2,554,002	1,980,850	821,360
2022	2,559,881	1,985,409	823,251
2023	2,565,760	1,989,969	825,141
2024	2,571,639	1,994,529	827,032
2025	2,577,519	1,999,089	828,923
2026	2,583,398	2,003,649	830,814
2027	2,589,277	2,008,209	832,705

TABLE B-3. BASELINE FORECAST ASSUMPTIONS—ELECTRIC END-USE SATURATIONS AND FUEL SHARES

Region	Fuel Type	Segment	Location	End Use	Vintage	Saturation	Fuel Share
NYS	Electric	Single Family	CZ4	Air Purifier	Existing	18%	100%
NYS	Electric	Single Family	CZ4	Computer	Existing	208%	100%
NYS	Electric	Single Family	CZ4	Cooking Oven	Existing	115%	38%
NYS	Electric	Single Family	CZ4	Cooking Range	Existing	113%	29%
NYS	Electric	Single Family	CZ4	Cool Central	Existing	65%	100%
NYS	Electric	Single Family	CZ4	Cool Room	Existing	166%	100%
NYS	Electric	Single Family	CZ4	Dehumidifier	Existing	51%	100%
NYS	Electric	Single Family	CZ4	Dryer	Existing	99%	50%
NYS	Electric	Single Family	CZ4	Freezer	Existing	39%	100%
NYS	Electric	Single Family	CZ4	Heat Central Electric Furnace	Existing	0%	100%
NYS	Electric	Single Family	CZ4	Heat Pump	Existing	0%	100%
NYS	Electric	Single Family	CZ4	Heat Room Electric	Existing	0%	100%
NYS	Electric	Single Family	CZ4	Lighting Linear Fluorescent	Existing	637%	100%
NYS	Electric	Single Family	CZ4	Lighting Specialty	Existing	1119%	100%
NYS	Electric	Single Family	CZ4	Lighting Standard	Existing	6229%	100%
NYS	Electric	Single Family	CZ4	Microwave	Existing	91%	100%
NYS	Electric	Single Family	CZ4	Other Electric	Existing	100%	100%
NYS	Electric	Single Family	CZ4	Plug Load Other	Existing	100%	100%
NYS	Electric	Single Family	CZ4	Pool Pump	Existing	11%	100%
NYS	Electric	Single Family	CZ4	Refrigerator	Existing	139%	100%
NYS	Electric	Single Family	CZ4	Tv	Existing	274%	100%
NYS	Electric	Single Family	CZ4	Ventilation And Circulation	Existing	57%	100%
NYS	Electric	Single Family	CZ4	Water Heat GT 55 Gal	Existing	7%	14%
NYS	Electric	Single Family	CZ4	Water Heat LE 55 Gal	Existing	96%	14%
NYS	Electric	Single Family	CZ5	Air Purifier	Existing	18%	100%
NYS	Electric	Single Family	CZ5	Computer	Existing	208%	100%
NYS	Electric	Single Family	CZ5	Cooking Oven	Existing	115%	38%
NYS	Electric	Single Family	CZ5	Cooking Range	Existing	113%	29%
NYS	Electric	Single Family	CZ5	Cool Central	Existing	55%	100%
NYS	Electric	Single Family	CZ5	Cool Room	Existing	47%	100%
NYS	Electric	Single Family	CZ5	Dehumidifier	Existing	51%	100%
NYS	Electric	Single Family	CZ5	Dryer	Existing	99%	50%
NYS	Electric	Single Family	CZ5	Freezer	Existing	39%	100%
NYS	Electric	Single Family	CZ5	Heat Central Electric Furnace	Existing	1%	100%
NYS	Electric	Single Family	CZ5	Heat Pump	Existing	2%	100%
NYS	Electric	Single Family	CZ5	Heat Room Electric	Existing	3%	100%
NYS	Electric	Single Family	CZ5	Lighting Linear Fluorescent	Existing	637%	100%
NYS	Electric	Single Family	CZ5	Lighting Specialty	Existing	1119%	100%
NYS	Electric	Single Family	CZ5	Lighting Standard	Existing	6229%	100%
NYS	Electric	Single Family	CZ5	Microwave	Existing	91%	100%
NYS	Electric	Single Family	CZ5	Other Electric	Existing	100%	100%
NYS	Electric	Single Family	CZ5	Plug Load Other	Existing	100%	100%
NYS	Electric	Single Family	CZ5	Pool Pump	Existing	11%	100%
NYS	Electric	Single Family	CZ5	Refrigerator	Existing	139%	100%
NYS	Electric	Single Family	CZ5	Tv	Existing	274%	100%
NYS	Electric	Single Family	CZ5	Ventilation And Circulation	Existing	57%	100%
NYS	Electric	Single Family	CZ5	Water Heat GT 55 Gal	Existing	7%	14%
NYS	Electric	Single Family	CZ5	Water Heat LE 55 Gal	Existing	96%	14%
NYS	Electric	Single Family	CZ6	Air Purifier	Existing	18%	100%
NYS	Electric	Single Family	CZ6	Computer	Existing	208%	100%
NYS	Electric	Single Family	CZ6	Cooking Oven	Existing	115%	38%
NYS	Electric	Single Family	CZ6	Cooking Range	Existing	113%	29%

Region	Fuel Type	Segment	Location	End Use	Vintage	Saturation	Fuel Share
NYS	Electric	Single Family	CZ6	Cool Central	Existing	14%	100%
NYS	Electric	Single Family	CZ6	Cool Room	Existing	100%	100%
NYS	Electric	Single Family	CZ6	Dehumidifier	Existing	51%	100%
NYS	Electric	Single Family	CZ6	Dryer	Existing	99%	50%
NYS	Electric	Single Family	CZ6	Freezer	Existing	39%	100%
NYS	Electric	Single Family	CZ6	Heat Central Electric Furnace	Existing	0%	100%
NYS	Electric	Single Family	CZ6	Heat Pump	Existing	3%	100%
NYS	Electric	Single Family	CZ6	Heat Room Electric	Existing	8%	100%
NYS	Electric	Single Family	CZ6	Lighting Linear Fluorescent	Existing	637%	100%
NYS	Electric	Single Family	CZ6	Lighting Specialty	Existing	1119%	100%
NYS	Electric	Single Family	CZ6	Lighting Standard	Existing	6229%	100%
NYS	Electric	Single Family	CZ6	Microwave	Existing	91%	100%
NYS	Electric	Single Family	CZ6	Other Electric	Existing	100%	100%
NYS	Electric	Single Family	CZ6	Plug Load Other	Existing	100%	100%
NYS	Electric	Single Family	CZ6	Pool Pump	Existing	11%	100%
NYS	Electric	Single Family	CZ6	Refrigerator	Existing	139%	100%
NYS	Electric	Single Family	CZ6	Tv	Existing	274%	100%
NYS	Electric	Single Family	CZ6	Ventilation And Circulation	Existing	57%	100%
NYS	Electric	Single Family	CZ6	Water Heat GT 55 Gal	Existing	7%	14%
NYS	Electric	Single Family	CZ6	Water Heat LE 55 Gal	Existing	96%	14%
NYS	Electric	Single Family	CZ4	Air Purifier	New	8%	100%
NYS	Electric	Single Family	CZ4	Computer	New	189%	100%
NYS	Electric	Single Family	CZ4	Cooking Oven	New	90%	38%
NYS	Electric	Single Family	CZ4	Cooking Range	New	89%	29%
NYS	Electric	Single Family	CZ4	Cool Central	New	98%	100%
NYS	Electric	Single Family	CZ4	Cool Room	New	2%	100%
NYS	Electric	Single Family	CZ4	Dehumidifier	New	58%	100%
NYS	Electric	Single Family	CZ4	Dryer	New	101%	50%
NYS	Electric	Single Family	CZ4	Freezer	New	32%	100%
NYS	Electric	Single Family	CZ4	Heat Central Electric Furnace	New	0%	100%
NYS	Electric	Single Family	CZ4	Heat Pump	New	11%	100%
NYS	Electric	Single Family	CZ4	Heat Room Electric	New	5%	100%
NYS	Electric	Single Family	CZ4	Lighting Linear Fluorescent	New	112%	100%
NYS	Electric	Single Family	CZ4	Lighting Specialty	New	1319%	100%
NYS	Electric	Single Family	CZ4	Lighting Standard	New	7342%	100%
NYS	Electric	Single Family	CZ4	Microwave	New	84%	100%
NYS	Electric	Single Family	CZ4	Other Electric	New	100%	100%
NYS	Electric	Single Family	CZ4	Plug Load Other	New	100%	100%
NYS	Electric	Single Family	CZ4	Pool Pump	New	13%	100%
NYS	Electric	Single Family	CZ4	Refrigerator	New	120%	100%
NYS	Electric	Single Family	CZ4	Tv	New	289%	100%
NYS	Electric	Single Family	CZ4	Ventilation And Circulation	New	79%	100%
NYS	Electric	Single Family	CZ4	Water Heat GT 55 Gal	New	13%	14%
NYS	Electric	Single Family	CZ4	Water Heat LE 55 Gal	New	91%	14%
NYS	Electric	Single Family	CZ5	Air Purifier	New	8%	100%
NYS	Electric	Single Family	CZ5	Computer	New	189%	100%
NYS	Electric	Single Family	CZ5	Cooking Oven	New	90%	38%
NYS	Electric	Single Family	CZ5	Cooking Range	New	89%	29%
NYS	Electric	Single Family	CZ5	Cool Central	New	78%	100%
NYS	Electric	Single Family	CZ5	Cool Room	New	0%	100%
NYS	Electric	Single Family	CZ5	Dehumidifier	New	58%	100%
NYS	Electric	Single Family	CZ5	Dryer	New	101%	50%
NYS	Electric	Single Family	CZ5	Freezer	New	32%	100%
NYS	Electric	Single Family	CZ5	Heat Central Electric Furnace	New	0%	100%
NYS	Electric	Single Family	CZ5	Heat Pump	New	19%	100%

Region	Fuel Type	Segment	Location	End Use	Vintage	Saturation	Fuel Share
NYS	Electric	Single Family	CZ5	Heat Room Electric	New	7%	100%
NYS	Electric	Single Family	CZ5	Lighting Linear Fluorescent	New	112%	100%
NYS	Electric	Single Family	CZ5	Lighting Specialty	New	1319%	100%
NYS	Electric	Single Family	CZ5	Lighting Standard	New	7342%	100%
NYS	Electric	Single Family	CZ5	Microwave	New	84%	100%
NYS	Electric	Single Family	CZ5	Other Electric	New	100%	100%
NYS	Electric	Single Family	CZ5	Plug Load Other	New	100%	100%
NYS	Electric	Single Family	CZ5	Pool Pump	New	13%	100%
NYS	Electric	Single Family	CZ5	Refrigerator	New	120%	100%
NYS	Electric	Single Family	CZ5	Tv	New	289%	100%
NYS	Electric	Single Family	CZ5	Ventilation And Circulation	New	79%	100%
NYS	Electric	Single Family	CZ5	Water Heat GT 55 Gal	New	13%	14%
NYS	Electric	Single Family	CZ5	Water Heat LE 55 Gal	New	91%	14%
NYS	Electric	Single Family	CZ6	Air Purifier	New	8%	100%
NYS	Electric	Single Family	CZ6	Computer	New	189%	100%
NYS	Electric	Single Family	CZ6	Cooking Oven	New	90%	38%
NYS	Electric	Single Family	CZ6	Cooking Range	New	89%	29%
NYS	Electric	Single Family	CZ6	Cool Central	New	48%	100%
NYS	Electric	Single Family	CZ6	Cool Room	New	9%	100%
NYS	Electric	Single Family	CZ6	Dehumidifier	New	58%	100%
NYS	Electric	Single Family	CZ6	Dryer	New	101%	50%
NYS	Electric	Single Family	CZ6	Freezer	New	32%	100%
NYS	Electric	Single Family	CZ6	Heat Central Electric Furnace	New	0%	100%
NYS	Electric	Single Family	CZ6	Heat Pump	New	9%	100%
NYS	Electric	Single Family	CZ6	Heat Room Electric	New	9%	100%
NYS	Electric	Single Family	CZ6	Lighting Linear Fluorescent	New	112%	100%
NYS	Electric	Single Family	CZ6	Lighting Specialty	New	1319%	100%
NYS	Electric	Single Family	CZ6	Lighting Standard	New	7342%	100%
NYS	Electric	Single Family	CZ6	Microwave	New	84%	100%
NYS	Electric	Single Family	CZ6	Other Electric	New	100%	100%
NYS	Electric	Single Family	CZ6	Plug Load Other	New	100%	100%
NYS	Electric	Single Family	CZ6	Pool Pump	New	13%	100%
NYS	Electric	Single Family	CZ6	Refrigerator	New	120%	100%
NYS	Electric	Single Family	CZ6	Tv	New	289%	100%
NYS	Electric	Single Family	CZ6	Ventilation And Circulation	New	79%	100%
NYS	Electric	Single Family	CZ6	Water Heat GT 55 Gal	New	13%	14%
NYS	Electric	Single Family	CZ6	Water Heat LE 55 Gal	New	91%	14%

TABLE B-4. BASELINE FORECAST ASSUMPTIONS—ELECTRIC END-USE EFFICIENCY SHARES

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	Eff. Share
NYS	CZ4	Air Purifier	1	Standard Air Purifier	Existing	76%
NYS	CZ4	Air Purifier	2	ENERGY STAR Air Purifier	Existing	24%
NYS	CZ4	Air Purifier	1	Standard Air Purifier	New	71%
NYS	CZ4	Air Purifier	2	ENERGY STAR Air Purifier	New	29%
NYS	CZ4	Computer	1	Standard Computer	Existing	25%
NYS	CZ4	Computer	2	ENERGY STAR Computer	Existing	75%
NYS	CZ4	Computer	1	Standard Computer	New	13%
NYS	CZ4	Computer	2	ENERGY STAR Computer	New	87%
NYS	CZ4	Cooking Oven	1	Below Standard Cooking Oven	Existing	63%
NYS	CZ4	Cooking Oven	2	Federal Standard 2012 Cooking Oven	Existing	37%
NYS	CZ4	Cooking Oven	1	Below Standard Cooking Oven	New	0%
NYS	CZ4	Cooking Oven	2	Federal Standard 2012 Cooking Oven	New	100%
NYS	CZ4	Cooking Range	1	Below Standard Cooking Range	Existing	63%
NYS	CZ4	Cooking Range	2	Federal Standard 2012 Cooking Range	Existing	37%
NYS	CZ4	Cooking Range	1	Below Standard Cooking Range	New	0%
NYS	CZ4	Cooking Range	2	Federal Standard 2012 Cooking Range	New	100%
NYS	CZ4	Cool Central	1	Below Standard Central Air Conditioner - SEER/EER 10/9.2 (Split System)	Existing	29%
NYS	CZ4	Cool Central	2	Federal Standard 2015 Central Air Conditioner - SEER/EER 13/11.2 (Split System)	Existing	52%
NYS	CZ4	Cool Central	3	Federal Standard 2023 Central Air Conditioner - SEER/EER 14/12 (Split System)	Existing	5%
NYS	CZ4	Cool Central	4	ENERGY STAR Central Air Conditioner - SEER/EER 15/12.5 (Split System)	Existing	5%
NYS	CZ4	Cool Central	5	CEE Tier 2 Central Air Conditioner - SEER/EER 16/13 (Split System)	Existing	8%
NYS	CZ4	Cool Central	6	CEE Tier 3 Central Air Conditioner - SEER/EER 18/13 (Split System)	Existing	0%
NYS	CZ4	Cool Central	7	Enhanced Central Air Conditioner - SEER/EER 20/14 (Split System)	Existing	0%
NYS	CZ4	Cool Central	1	Below Standard Central Air Conditioner - SEER/EER 10/9.2 (Split System)	New	0%
NYS	CZ4	Cool Central	2	Federal Standard 2015 Central Air Conditioner - SEER/EER 13/11.2 (Split System)	New	81%
NYS	CZ4	Cool Central	3	Federal Standard 2023 Central Air Conditioner - SEER/EER 14/12 (Split System)	New	5%
NYS	CZ4	Cool Central	4	ENERGY STAR Central Air Conditioner - SEER/EER 15/12.5 (Split System)	New	5%
NYS	CZ4	Cool Central	5	CEE Tier 2 Central Air Conditioner - SEER/EER 16/13 (Split System)	New	8%
NYS	CZ4	Cool Central	6	CEE Tier 3 Central Air Conditioner - SEER/EER 18/13 (Split System)	New	0%
NYS	CZ4	Cool Central	7	Enhanced Central Air Conditioner - SEER/EER 20/14 (Split System)	New	0%
NYS	CZ4	Cool Room	1	Below Standard Room AC - CEER 9.7 (8,000-13,999 Btuh)	Existing	91%
NYS	CZ4	Cool Room	2	Federal Standard 2015 Room AC - CEER 10.9 (8,000-13,999 Btuh)	Existing	4%
NYS	CZ4	Cool Room	3	ENERGY STAR Room AC - CEER 12.0 (8,000-13,999 Btuh)	Existing	5%
NYS	CZ4	Cool Room	1	Below Standard Room AC - CEER 9.7 (8,000-13,999 Btuh)	New	0%

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	Eff. Share
NYS	CZ4	Cool Room	2	Federal Standard 2015 Room AC - CEER 10.9 (8,000-13,999 Btuh)	New	46%
NYS	CZ4	Cool Room	3	ENERGY STAR Room AC - CEER 12.0 (8,000-13,999 Btuh)	New	54%
NYS	CZ4	Dehumidifier	1	Below Standard Dehumidifier	Existing	8%
NYS	CZ4	Dehumidifier	2	Federal Standard 2013 Dehumidifier	Existing	8%
NYS	CZ4	Dehumidifier	3	ENERGY STAR Dehumidifier	Existing	84%
NYS	CZ4	Dehumidifier	1	Below Standard Dehumidifier	New	0%
NYS	CZ4	Dehumidifier	2	Federal Standard 2013 Dehumidifier	New	16%
NYS	CZ4	Dehumidifier	3	ENERGY STAR Dehumidifier	New	84%
NYS	CZ4	Dryer	1	Below Standard Dryer - CEF/EF 2.27/2.72 (Electric Dryer)	Existing	51%
NYS	CZ4	Dryer	2	Federal Standard 2016 Dryer - CEF/EF 3.11/3.73 (Electric Dryer)	Existing	26%
NYS	CZ4	Dryer	3	ENERGY STAR Dryer - CEF 3.93 (Electric Dryer)	Existing	24%
NYS	CZ4	Dryer	1	Below Standard Dryer - CEF/EF 2.27/2.72 (Electric Dryer)	New	0%
NYS	CZ4	Dryer	2	Federal Standard 2016 Dryer - CEF/EF 3.11/3.73 (Electric Dryer)	New	77%
NYS	CZ4	Dryer	3	ENERGY STAR Dryer - CEF 3.93 (Electric Dryer)	New	24%
NYS	CZ4	Freezer	1	Below Standard Freezer	Existing	46%
NYS	CZ4	Freezer	2	Federal Standard 2015 Freezer	Existing	23%
NYS	CZ4	Freezer	3	ENERGY STAR Freezer	Existing	30%
NYS	CZ4	Freezer	1	Below Standard Freezer	New	0%
NYS	CZ4	Freezer	2	Federal Standard 2015 Freezer	New	70%
NYS	CZ4	Freezer	3	ENERGY STAR Freezer	New	30%
NYS	CZ4	Heat Central Electric Furnace	1	Standard Electric Furnace - HSPF 3.41	Existing	100%
NYS	CZ4	Heat Central Electric Furnace	1	Standard Electric Furnace - HSPF 3.41	New	100%
NYS	CZ4	Heat Pump	1	Below Standard Air Source Heat Pump - SEER/EER 10/9.8 and HSPF 7.2 (Split System)	Existing	33%
NYS	CZ4	Heat Pump	2	Federal Standard 2015 Air Source Heat Pump - SEER/EER 14/12 and HSPF 8.2 (Split System)	Existing	45%
NYS	CZ4	Heat Pump	3	ENERGY STAR Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Existing	11%
NYS	CZ4	Heat Pump	4	Federal Standard 2023 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.8 (Split System)	Existing	2%
NYS	CZ4	Heat Pump	5	CEE Tier 2 Air Source Heat Pump - SEER/EER 16/13 and HSPF 9.0 (Split System)	Existing	0%
NYS	CZ4	Heat Pump	6	CEE Tier 3 Air Source Heat Pump - SEER/EER 18/13 and HSPF 9.6 (Split System)	Existing	7%
NYS	CZ4	Heat Pump	7	Enhanced Air Source Heat Pump - SEER/EER 20/14 and HSPF 10.0 (Split System)	Existing	3%
NYS	CZ4	Heat Pump	8	ENERGY STAR Geothermal Heat Pump - EER 17.1 and 3.6 COP (Split System)	Existing	0%
NYS	CZ4	Heat Pump	9	ENERGY STAR Geothermal Heat Pump - Variable Speed Drive	Existing	0%
NYS	CZ4	Heat Pump	1	Below Standard Air Source Heat Pump - SEER/EER 10/9.8 and HSPF 7.2 (Split System)	New	0%
NYS	CZ4	Heat Pump	2	Federal Standard 2015 Air Source Heat Pump - SEER/EER 14/12 and HSPF 8.2 (Split System)	New	78%
NYS	CZ4	Heat Pump	3	ENERGY STAR Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	New	11%

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	Eff. Share
NYS	CZ4	Heat Pump	4	Federal Standard 2023 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.8 (Split System)	New	2%
NYS	CZ4	Heat Pump	5	CEE Tier 2 Air Source Heat Pump - SEER/EER 16/13 and HSPF 9.0 (Split System)	New	0%
NYS	CZ4	Heat Pump	6	CEE Tier 3 Air Source Heat Pump - SEER/EER 18/13 and HSPF 9.6 (Split System)	New	7%
NYS	CZ4	Heat Pump	7	Enhanced Air Source Heat Pump - SEER/EER 20/14 and HSPF 10.0 (Split System)	New	3%
NYS	CZ4	Heat Pump	8	ENERGY STAR Geothermal Heat Pump - EER 17.1 and 3.6 COP (Split System)	New	0%
NYS	CZ4	Heat Pump	9	ENERGY STAR Geothermal Heat Pump - Variable Speed Drive	New	0%
NYS	CZ4	Heat Room Electric	1	Standard Baseboard Heating - HSPF 3.41	Existing	17%
NYS	CZ4	Heat Room Electric	2	Ductless Heat Pump - SEER/EER 18/12.5, HSPF 10.0	Existing	56%
NYS	CZ4	Heat Room Electric	3	Ductless Heat Pump - SEER/EER 21/12.5, HSPF 11.0	Existing	27%
NYS	CZ4	Heat Room Electric	1	Standard Baseboard Heating - HSPF 3.41	New	67%
NYS	CZ4	Heat Room Electric	2	Ductless Heat Pump - SEER/EER 18/12.5, HSPF 10.0	New	23%
NYS	CZ4	Heat Room Electric	3	Ductless Heat Pump - SEER/EER 21/12.5, HSPF 11.0	New	11%
NYS	CZ4	Lighting Linear Fluorescent	1	Below Standard T8 Linear Fluorescent Lamp	Existing	63%
NYS	CZ4	Lighting Linear Fluorescent	2	Federal Standard 2018 T8 Linear Fluorescent Lamp	Existing	37%
NYS	CZ4	Lighting Linear Fluorescent	3	TLED Linear Lamp	Existing	0%
NYS	CZ4	Lighting Linear Fluorescent	1	Below Standard T8 Linear Fluorescent Lamp	New	0%
NYS	CZ4	Lighting Linear Fluorescent	2	Federal Standard 2018 T8 Linear Fluorescent Lamp	New	100%
NYS	CZ4	Lighting Linear Fluorescent	3	TLED Linear Lamp	New	0%
NYS	CZ4	Lighting Specialty	1	Specialty Lamp - Incandescent/Halogen (EISA Exempt)	Existing	70%
NYS	CZ4	Lighting Specialty	2	Specialty Lamp - CFL	Existing	0%
NYS	CZ4	Lighting Specialty	3	Specialty Lamp - ENERGY STAR LED	Existing	24%
NYS	CZ4	Lighting Specialty	4	Specialty Lamp - CEE Tier 2 LED	Existing	6%
NYS	CZ4	Lighting Specialty	1	Specialty Lamp - Incandescent/Halogen (EISA Exempt)	New	70%
NYS	CZ4	Lighting Specialty	2	Specialty Lamp - CFL	New	0%
NYS	CZ4	Lighting Specialty	3	Specialty Lamp - ENERGY STAR LED	New	24%
NYS	CZ4	Lighting Specialty	4	Specialty Lamp - CEE Tier 2 LED	New	6%
NYS	CZ4	Lighting Standard	1	General Service Lamp - Incandescent	Existing	8%

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	Eff. Share
NYS	CZ4	Lighting Standard	2	EISA Standard 2014 General Service Lamp - Halogen	Existing	30%
NYS	CZ4	Lighting Standard	3	General Service Lamp - CFL	Existing	1%
NYS	CZ4	Lighting Standard	4	EISA Standard 2020 Backstop General Service Lamp - LED	Existing	36%
NYS	CZ4	Lighting Standard	5	General Service Lamp - ENERGY STAR LED	Existing	12%
NYS	CZ4	Lighting Standard	6	General Service Lamp - CEE Tier 2 LED	Existing	12%
NYS	CZ4	Lighting Standard	1	General Service Lamp - Incandescent	New	0%
NYS	CZ4	Lighting Standard	2	EISA Standard 2014 General Service Lamp - Halogen	New	38%
NYS	CZ4	Lighting Standard	3	General Service Lamp - CFL	New	1%
NYS	CZ4	Lighting Standard	4	EISA Standard 2020 Backstop General Service Lamp - LED	New	36%
NYS	CZ4	Lighting Standard	5	General Service Lamp - ENERGY STAR LED	New	12%
NYS	CZ4	Lighting Standard	6	General Service Lamp - CEE Tier 2 LED	New	12%
NYS	CZ4	Microwave	1	Below Standard Microwave	Existing	73%
NYS	CZ4	Microwave	2	Federal Standard 2016 Microwave	Existing	27%
NYS	CZ4	Microwave	1	Below Standard Microwave	New	0%
NYS	CZ4	Microwave	2	Federal Standard 2016 Microwave	New	100%
NYS	CZ4	Other Electric	1	Standard Other Equipment	Existing	100%
NYS	CZ4	Other Electric	1	Standard Other Equipment	New	100%
NYS	CZ4	Plug Load Other	1	Standard Plug Load Other Equipment	Existing	100%
NYS	CZ4	Plug Load Other	1	Standard Plug Load Other Equipment	New	100%
NYS	CZ4	Pool Pump	1	Single Speed Pool Pump	Existing	84%
NYS	CZ4	Pool Pump	2	Pool Pump with Variable Speed Drive (VSD)	Existing	16%
NYS	CZ4	Pool Pump	1	Single Speed Pool Pump	New	36%
NYS	CZ4	Pool Pump	2	Pool Pump with Variable Speed Drive (VSD)	New	64%
NYS	CZ4	Refrigerator	1	Below Standard Refrigerator	Existing	23%
NYS	CZ4	Refrigerator	2	Federal Standard 2015 Refrigerator	Existing	11%
NYS	CZ4	Refrigerator	3	ENERGY STAR Refrigerator	Existing	61%
NYS	CZ4	Refrigerator	4	CEE Tier 2 Refrigerator	Existing	3%
NYS	CZ4	Refrigerator	5	CEE Tier 3 Refrigerator	Existing	3%
NYS	CZ4	Refrigerator	1	Below Standard Refrigerator	New	0%
NYS	CZ4	Refrigerator	2	Federal Standard 2015 Refrigerator	New	34%
NYS	CZ4	Refrigerator	3	ENERGY STAR Refrigerator	New	61%
NYS	CZ4	Refrigerator	4	CEE Tier 2 Refrigerator	New	3%
NYS	CZ4	Refrigerator	5	CEE Tier 3 Refrigerator	New	3%
NYS	CZ4	Tv	1	Standard TV	Existing	13%
NYS	CZ4	Tv	2	ENERGY STAR TV	Existing	87%
NYS	CZ4	Tv	1	Standard TV	New	11%
NYS	CZ4	Tv	2	ENERGY STAR TV	New	89%
NYS	CZ4	Ventilation And Circulation	1	Below Standard Furnace Fan	Existing	80%
NYS	CZ4	Ventilation And Circulation	2	Federal Standard 2019 Furnace Fan	Existing	20%
NYS	CZ4	Ventilation And Circulation	1	Below Standard Furnace Fan	New	0%

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	Eff. Share
NYS	CZ4	Ventilation And Circulation	2	Federal Standard 2019 Furnace Fan	New	100%
NYS	CZ4	Water Heat GT 55 Gal	1	Below Standard Water Heater > 55 GAL - UEF 0.88	Existing	60%
NYS	CZ4	Water Heat GT 55 Gal	2	Federal Standard 2017 Heat Pump Water Heater > 55 GAL - UEF 2.04	Existing	40%
NYS	CZ4	Water Heat GT 55 Gal	3	Enhanced Efficiency Heat Pump Water Heater > 55 GAL - UEF 2.2	Existing	0%
NYS	CZ4	Water Heat GT 55 Gal	4	Advanced Efficiency (No Resistance/Split System) HPWH > 55 GAL - UEF 3.1	Existing	0%
NYS	CZ4	Water Heat GT 55 Gal	1	Below Standard Water Heater > 55 GAL - UEF 0.88	New	0%
NYS	CZ4	Water Heat GT 55 Gal	2	Federal Standard 2017 Heat Pump Water Heater > 55 GAL - UEF 2.04	New	100%
NYS	CZ4	Water Heat GT 55 Gal	3	Enhanced Efficiency Heat Pump Water Heater > 55 GAL - UEF 2.2	New	0%
NYS	CZ4	Water Heat GT 55 Gal	4	Advanced Efficiency (No Resistance/Split System) HPWH > 55 GAL - UEF 3.1	New	0%
NYS	CZ4	Water Heat LE 55 Gal	1	Below Standard Water Heater ≤ 55 GAL - UEF 0.88	Existing	61%
NYS	CZ4	Water Heat LE 55 Gal	2	Federal Standard 2017 Storage Water Heater ≤ 55 GAL - UEF 0.92	Existing	35%
NYS	CZ4	Water Heat LE 55 Gal	3	Enhanced Efficiency Heat Pump Water Heater ≤ 55 GAL - UEF 2.2	Existing	0%
NYS	CZ4	Water Heat LE 55 Gal	4	Advanced Efficiency (No Resistance/Split System) HPWH ≤ 55 GAL - UEF 3.1	Existing	4%
NYS	CZ4	Water Heat LE 55 Gal	1	Below Standard Water Heater ≤ 55 GAL - UEF 0.88	New	0%
NYS	CZ4	Water Heat LE 55 Gal	2	Federal Standard 2017 Storage Water Heater ≤ 55 GAL - UEF 0.92	New	88%
NYS	CZ4	Water Heat LE 55 Gal	3	Enhanced Efficiency Heat Pump Water Heater ≤ 55 GAL - UEF 2.2	New	0%
NYS	CZ4	Water Heat LE 55 Gal	4	Advanced Efficiency (No Resistance/Split System) HPWH ≤ 55 GAL - UEF 3.1	New	12%
NYS	CZ5	Air Purifier	1	Standard Air Purifier	Existing	76%
NYS	CZ5	Air Purifier	2	ENERGY STAR Air Purifier	Existing	24%
NYS	CZ5	Air Purifier	1	Standard Air Purifier	New	71%
NYS	CZ5	Air Purifier	2	ENERGY STAR Air Purifier	New	29%
NYS	CZ5	Computer	1	Standard Computer	Existing	25%
NYS	CZ5	Computer	2	ENERGY STAR Computer	Existing	75%
NYS	CZ5	Computer	1	Standard Computer	New	13%
NYS	CZ5	Computer	2	ENERGY STAR Computer	New	87%
NYS	CZ5	Cooking Oven	1	Below Standard Cooking Oven	Existing	63%
NYS	CZ5	Cooking Oven	2	Federal Standard 2012 Cooking Oven	Existing	37%
NYS	CZ5	Cooking Oven	1	Below Standard Cooking Oven	New	0%
NYS	CZ5	Cooking Oven	2	Federal Standard 2012 Cooking Oven	New	100%
NYS	CZ5	Cooking Range	1	Below Standard Cooking Range	Existing	63%
NYS	CZ5	Cooking Range	2	Federal Standard 2012 Cooking Range	Existing	37%
NYS	CZ5	Cooking Range	1	Below Standard Cooking Range	New	0%
NYS	CZ5	Cooking Range	2	Federal Standard 2012 Cooking Range	New	100%
NYS	CZ5	Cool Central	1	Below Standard Central Air Conditioner - SEER/EER 10/9.2 (Split System)	Existing	34%
NYS	CZ5	Cool Central	2	Federal Standard 2015 Central Air Conditioner - SEER/EER 13/11.2 (Split System)	Existing	48%

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	Eff. Share
NYS	CZ5	Cool Central	3	Federal Standard 2023 Central Air Conditioner - SEER/EER 14/12 (Split System)	Existing	5%
NYS	CZ5	Cool Central	4	ENERGY STAR Central Air Conditioner - SEER/EER 15/12.5 (Split System)	Existing	5%
NYS	CZ5	Cool Central	5	CEE Tier 2 Central Air Conditioner - SEER/EER 16/13 (Split System)	Existing	8%
NYS	CZ5	Cool Central	6	CEE Tier 3 Central Air Conditioner - SEER/EER 18/13 (Split System)	Existing	0%
NYS	CZ5	Cool Central	7	Enhanced Central Air Conditioner - SEER/EER 20/14 (Split System)	Existing	0%
NYS	CZ5	Cool Central	1	Below Standard Central Air Conditioner - SEER/EER 10/9.2 (Split System)	New	0%
NYS	CZ5	Cool Central	2	Federal Standard 2015 Central Air Conditioner - SEER/EER 13/11.2 (Split System)	New	82%
NYS	CZ5	Cool Central	3	Federal Standard 2023 Central Air Conditioner - SEER/EER 14/12 (Split System)	New	5%
NYS	CZ5	Cool Central	4	ENERGY STAR Central Air Conditioner - SEER/EER 15/12.5 (Split System)	New	5%
NYS	CZ5	Cool Central	5	CEE Tier 2 Central Air Conditioner - SEER/EER 16/13 (Split System)	New	8%
NYS	CZ5	Cool Central	6	CEE Tier 3 Central Air Conditioner - SEER/EER 18/13 (Split System)	New	0%
NYS	CZ5	Cool Central	7	Enhanced Central Air Conditioner - SEER/EER 20/14 (Split System)	New	0%
NYS	CZ5	Cool Room	1	Below Standard Room AC - CEER 9.7 (8,000-13,999 Btuh)	Existing	89%
NYS	CZ5	Cool Room	2	Federal Standard 2015 Room AC - CEER 10.9 (8,000-13,999 Btuh)	Existing	5%
NYS	CZ5	Cool Room	3	ENERGY STAR Room AC - CEER 12.0 (8,000-13,999 Btuh)	Existing	6%
NYS	CZ5	Cool Room	1	Below Standard Room AC - CEER 9.7 (8,000-13,999 Btuh)	New	0%
NYS	CZ5	Cool Room	2	Federal Standard 2015 Room AC - CEER 10.9 (8,000-13,999 Btuh)	New	46%
NYS	CZ5	Cool Room	3	ENERGY STAR Room AC - CEER 12.0 (8,000-13,999 Btuh)	New	54%
NYS	CZ5	Dehumidifier	1	Below Standard Dehumidifier	Existing	8%
NYS	CZ5	Dehumidifier	2	Federal Standard 2013 Dehumidifier	Existing	8%
NYS	CZ5	Dehumidifier	3	ENERGY STAR Dehumidifier	Existing	84%
NYS	CZ5	Dehumidifier	1	Below Standard Dehumidifier	New	0%
NYS	CZ5	Dehumidifier	2	Federal Standard 2013 Dehumidifier	New	16%
NYS	CZ5	Dehumidifier	3	ENERGY STAR Dehumidifier	New	84%
NYS	CZ5	Dryer	1	Below Standard Dryer - CEF/EF 2.27/2.72 (Electric Dryer)	Existing	51%
NYS	CZ5	Dryer	2	Federal Standard 2016 Dryer - CEF/EF 3.11/3.73 (Electric Dryer)	Existing	26%
NYS	CZ5	Dryer	3	ENERGY STAR Dryer - CEF 3.93 (Electric Dryer)	Existing	24%
NYS	CZ5	Dryer	1	Below Standard Dryer - CEF/EF 2.27/2.72 (Electric Dryer)	New	0%
NYS	CZ5	Dryer	2	Federal Standard 2016 Dryer - CEF/EF 3.11/3.73 (Electric Dryer)	New	77%
NYS	CZ5	Dryer	3	ENERGY STAR Dryer - CEF 3.93 (Electric Dryer)	New	24%
NYS	CZ5	Freezer	1	Below Standard Freezer	Existing	46%
NYS	CZ5	Freezer	2	Federal Standard 2015 Freezer	Existing	23%
NYS	CZ5	Freezer	3	ENERGY STAR Freezer	Existing	30%

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	Eff. Share
NYS	CZ5	Freezer	1	Below Standard Freezer	New	0%
NYS	CZ5	Freezer	2	Federal Standard 2015 Freezer	New	70%
NYS	CZ5	Freezer	3	ENERGY STAR Freezer	New	30%
NYS	CZ5	Heat Central Electric Furnace	1	Standard Electric Furnace - HSPF 3.41	Existing	100%
NYS	CZ5	Heat Central Electric Furnace	1	Standard Electric Furnace - HSPF 3.41	New	100%
NYS	CZ5	Heat Pump	1	Below Standard Air Source Heat Pump - SEER/EER 10/9.8 and HSPF 7.2 (Split System)	Existing	33%
NYS	CZ5	Heat Pump	2	Federal Standard 2015 Air Source Heat Pump - SEER/EER 14/12 and HSPF 8.2 (Split System)	Existing	45%
NYS	CZ5	Heat Pump	3	ENERGY STAR Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Existing	11%
NYS	CZ5	Heat Pump	4	Federal Standard 2023 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.8 (Split System)	Existing	2%
NYS	CZ5	Heat Pump	5	CEE Tier 2 Air Source Heat Pump - SEER/EER 16/13 and HSPF 9.0 (Split System)	Existing	0%
NYS	CZ5	Heat Pump	6	CEE Tier 3 Air Source Heat Pump - SEER/EER 18/13 and HSPF 9.6 (Split System)	Existing	7%
NYS	CZ5	Heat Pump	7	Enhanced Air Source Heat Pump - SEER/EER 20/14 and HSPF 10.0 (Split System)	Existing	3%
NYS	CZ5	Heat Pump	8	ENERGY STAR Geothermal Heat Pump - EER 17.1 and 3.6 COP (Split System)	Existing	0%
NYS	CZ5	Heat Pump	9	ENERGY STAR Geothermal Heat Pump - Variable Speed Drive	Existing	0%
NYS	CZ5	Heat Pump	1	Below Standard Air Source Heat Pump - SEER/EER 10/9.8 and HSPF 7.2 (Split System)	New	0%
NYS	CZ5	Heat Pump	2	Federal Standard 2015 Air Source Heat Pump - SEER/EER 14/12 and HSPF 8.2 (Split System)	New	78%
NYS	CZ5	Heat Pump	3	ENERGY STAR Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	New	11%
NYS	CZ5	Heat Pump	4	Federal Standard 2023 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.8 (Split System)	New	2%
NYS	CZ5	Heat Pump	5	CEE Tier 2 Air Source Heat Pump - SEER/EER 16/13 and HSPF 9.0 (Split System)	New	0%
NYS	CZ5	Heat Pump	6	CEE Tier 3 Air Source Heat Pump - SEER/EER 18/13 and HSPF 9.6 (Split System)	New	7%
NYS	CZ5	Heat Pump	7	Enhanced Air Source Heat Pump - SEER/EER 20/14 and HSPF 10.0 (Split System)	New	3%
NYS	CZ5	Heat Pump	8	ENERGY STAR Geothermal Heat Pump - EER 17.1 and 3.6 COP (Split System)	New	0%
NYS	CZ5	Heat Pump	9	ENERGY STAR Geothermal Heat Pump - Variable Speed Drive	New	0%
NYS	CZ5	Heat Room Electric	1	Standard Baseboard Heating - HSPF 3.41	Existing	72%
NYS	CZ5	Heat Room Electric	2	Ductless Heat Pump - SEER/EER 18/12.5, HSPF 10.0	Existing	19%
NYS	CZ5	Heat Room Electric	3	Ductless Heat Pump - SEER/EER 21/12.5, HSPF 11.0	Existing	9%
NYS	CZ5	Heat Room Electric	1	Standard Baseboard Heating - HSPF 3.41	New	59%
NYS	CZ5	Heat Room Electric	2	Ductless Heat Pump - SEER/EER 18/12.5, HSPF 10.0	New	28%
NYS	CZ5	Heat Room Electric	3	Ductless Heat Pump - SEER/EER 21/12.5, HSPF 11.0	New	13%

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	Eff. Share
NYS	CZ5	Lighting Linear Fluorescent	1	Below Standard T8 Linear Fluorescent Lamp	Existing	63%
NYS	CZ5	Lighting Linear Fluorescent	2	Federal Standard 2018 T8 Linear Fluorescent Lamp	Existing	37%
NYS	CZ5	Lighting Linear Fluorescent	3	TLED Linear Lamp	Existing	0%
NYS	CZ5	Lighting Linear Fluorescent	1	Below Standard T8 Linear Fluorescent Lamp	New	0%
NYS	CZ5	Lighting Linear Fluorescent	2	Federal Standard 2018 T8 Linear Fluorescent Lamp	New	100%
NYS	CZ5	Lighting Linear Fluorescent	3	TLED Linear Lamp	New	0%
NYS	CZ5	Lighting Specialty	1	Specialty Lamp - Incandescent/Halogen (EISA Exempt)	Existing	70%
NYS	CZ5	Lighting Specialty	2	Specialty Lamp - CFL	Existing	0%
NYS	CZ5	Lighting Specialty	3	Specialty Lamp - ENERGY STAR LED	Existing	24%
NYS	CZ5	Lighting Specialty	4	Specialty Lamp - CEE Tier 2 LED	Existing	6%
NYS	CZ5	Lighting Specialty	1	Specialty Lamp - Incandescent/Halogen (EISA Exempt)	New	70%
NYS	CZ5	Lighting Specialty	2	Specialty Lamp - CFL	New	0%
NYS	CZ5	Lighting Specialty	3	Specialty Lamp - ENERGY STAR LED	New	24%
NYS	CZ5	Lighting Specialty	4	Specialty Lamp - CEE Tier 2 LED	New	6%
NYS	CZ5	Lighting Standard	1	General Service Lamp - Incandescent	Existing	8%
NYS	CZ5	Lighting Standard	2	EISA Standard 2014 General Service Lamp - Halogen	Existing	30%
NYS	CZ5	Lighting Standard	3	General Service Lamp - CFL	Existing	1%
NYS	CZ5	Lighting Standard	4	EISA Standard 2020 Backstop General Service Lamp - LED	Existing	36%
NYS	CZ5	Lighting Standard	5	General Service Lamp - ENERGY STAR LED	Existing	12%
NYS	CZ5	Lighting Standard	6	General Service Lamp - CEE Tier 2 LED	Existing	12%
NYS	CZ5	Lighting Standard	1	General Service Lamp - Incandescent	New	0%
NYS	CZ5	Lighting Standard	2	EISA Standard 2014 General Service Lamp - Halogen	New	38%
NYS	CZ5	Lighting Standard	3	General Service Lamp - CFL	New	1%
NYS	CZ5	Lighting Standard	4	EISA Standard 2020 Backstop General Service Lamp - LED	New	36%
NYS	CZ5	Lighting Standard	5	General Service Lamp - ENERGY STAR LED	New	12%
NYS	CZ5	Lighting Standard	6	General Service Lamp - CEE Tier 2 LED	New	12%
NYS	CZ5	Microwave	1	Below Standard Microwave	Existing	73%
NYS	CZ5	Microwave	2	Federal Standard 2016 Microwave	Existing	27%
NYS	CZ5	Microwave	1	Below Standard Microwave	New	0%

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	Eff. Share
NYS	CZ5	Microwave	2	Federal Standard 2016 Microwave	New	100%
NYS	CZ5	Other Electric	1	Standard Other Equipment	Existing	100%
NYS	CZ5	Other Electric	1	Standard Other Equipment	New	100%
NYS	CZ5	Plug Load Other	1	Standard Plug Load Other Equipment	Existing	100%
NYS	CZ5	Plug Load Other	1	Standard Plug Load Other Equipment	New	100%
NYS	CZ5	Pool Pump	1	Single Speed Pool Pump	Existing	84%
NYS	CZ5	Pool Pump	2	Pool Pump with Variable Speed Drive (VSD)	Existing	16%
NYS	CZ5	Pool Pump	1	Single Speed Pool Pump	New	36%
NYS	CZ5	Pool Pump	2	Pool Pump with Variable Speed Drive (VSD)	New	64%
NYS	CZ5	Refrigerator	1	Below Standard Refrigerator	Existing	23%
NYS	CZ5	Refrigerator	2	Federal Standard 2015 Refrigerator	Existing	11%
NYS	CZ5	Refrigerator	3	ENERGY STAR Refrigerator	Existing	61%
NYS	CZ5	Refrigerator	4	CEE Tier 2 Refrigerator	Existing	3%
NYS	CZ5	Refrigerator	5	CEE Tier 3 Refrigerator	Existing	3%
NYS	CZ5	Refrigerator	1	Below Standard Refrigerator	New	0%
NYS	CZ5	Refrigerator	2	Federal Standard 2015 Refrigerator	New	34%
NYS	CZ5	Refrigerator	3	ENERGY STAR Refrigerator	New	61%
NYS	CZ5	Refrigerator	4	CEE Tier 2 Refrigerator	New	3%
NYS	CZ5	Refrigerator	5	CEE Tier 3 Refrigerator	New	3%
NYS	CZ5	Tv	1	Standard TV	Existing	13%
NYS	CZ5	Tv	2	ENERGY STAR TV	Existing	87%
NYS	CZ5	Tv	1	Standard TV	New	11%
NYS	CZ5	Tv	2	ENERGY STAR TV	New	89%
NYS	CZ5	Ventilation And Circulation	1	Below Standard Furnace Fan	Existing	80%
NYS	CZ5	Ventilation And Circulation	2	Federal Standard 2019 Furnace Fan	Existing	20%
NYS	CZ5	Ventilation And Circulation	1	Below Standard Furnace Fan	New	0%
NYS	CZ5	Ventilation And Circulation	2	Federal Standard 2019 Furnace Fan	New	100%
NYS	CZ5	Water Heat GT 55 Gal	1	Below Standard Water Heater > 55 GAL - UEF 0.88	Existing	60%
NYS	CZ5	Water Heat GT 55 Gal	2	Federal Standard 2017 Heat Pump Water Heater > 55 GAL - UEF 2.04	Existing	40%
NYS	CZ5	Water Heat GT 55 Gal	3	Enhanced Efficiency Heat Pump Water Heater > 55 GAL - UEF 2.2	Existing	0%
NYS	CZ5	Water Heat GT 55 Gal	4	Advanced Efficiency (No Resistance/Split System) HPWH > 55 GAL - UEF 3.1	Existing	0%
NYS	CZ5	Water Heat GT 55 Gal	1	Below Standard Water Heater > 55 GAL - UEF 0.88	New	0%
NYS	CZ5	Water Heat GT 55 Gal	2	Federal Standard 2017 Heat Pump Water Heater > 55 GAL - UEF 2.04	New	100%
NYS	CZ5	Water Heat GT 55 Gal	3	Enhanced Efficiency Heat Pump Water Heater > 55 GAL - UEF 2.2	New	0%
NYS	CZ5	Water Heat GT 55 Gal	4	Advanced Efficiency (No Resistance/Split System) HPWH > 55 GAL - UEF 3.1	New	0%
NYS	CZ5	Water Heat LE 55 Gal	1	Below Standard Water Heater ≤ 55 GAL - UEF 0.88	Existing	61%
NYS	CZ5	Water Heat LE 55 Gal	2	Federal Standard 2017 Storage Water Heater ≤ 55 GAL - UEF 0.92	Existing	35%
NYS	CZ5	Water Heat LE 55 Gal	3	Enhanced Efficiency Heat Pump Water Heater ≤ 55 GAL - UEF 2.2	Existing	0%
NYS	CZ5	Water Heat LE 55 Gal	4	Advanced Efficiency (No Resistance/Split System) HPWH ≤ 55 GAL - UEF 3.1	Existing	4%

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	Eff. Share
NYS	CZ5	Water Heat LE 55 Gal	1	Below Standard Water Heater ≤ 55 GAL - UEF 0.88	New	0%
NYS	CZ5	Water Heat LE 55 Gal	2	Federal Standard 2017 Storage Water Heater ≤ 55 GAL - UEF 0.92	New	88%
NYS	CZ5	Water Heat LE 55 Gal	3	Enhanced Efficiency Heat Pump Water Heater ≤ 55 GAL - UEF 2.2	New	0%
NYS	CZ5	Water Heat LE 55 Gal	4	Advanced Efficiency (No Resistance/Split System) HPWH ≤ 55 GAL - UEF 3.1	New	12%
NYS	CZ6	Air Purifier	1	Standard Air Purifier	Existing	76%
NYS	CZ6	Air Purifier	2	ENERGY STAR Air Purifier	Existing	24%
NYS	CZ6	Air Purifier	1	Standard Air Purifier	New	71%
NYS	CZ6	Air Purifier	2	ENERGY STAR Air Purifier	New	29%
NYS	CZ6	Computer	1	Standard Computer	Existing	25%
NYS	CZ6	Computer	2	ENERGY STAR Computer	Existing	75%
NYS	CZ6	Computer	1	Standard Computer	New	13%
NYS	CZ6	Computer	2	ENERGY STAR Computer	New	87%
NYS	CZ6	Cooking Oven	1	Below Standard Cooking Oven	Existing	63%
NYS	CZ6	Cooking Oven	2	Federal Standard 2012 Cooking Oven	Existing	37%
NYS	CZ6	Cooking Oven	1	Below Standard Cooking Oven	New	0%
NYS	CZ6	Cooking Oven	2	Federal Standard 2012 Cooking Oven	New	100%
NYS	CZ6	Cooking Range	1	Below Standard Cooking Range	Existing	63%
NYS	CZ6	Cooking Range	2	Federal Standard 2012 Cooking Range	Existing	37%
NYS	CZ6	Cooking Range	1	Below Standard Cooking Range	New	0%
NYS	CZ6	Cooking Range	2	Federal Standard 2012 Cooking Range	New	100%
NYS	CZ6	Cool Central	1	Below Standard Central Air Conditioner - SEER/EER 10/9.2 (Split System)	Existing	31%
NYS	CZ6	Cool Central	2	Federal Standard 2015 Central Air Conditioner - SEER/EER 13/11.2 (Split System)	Existing	51%
NYS	CZ6	Cool Central	3	Federal Standard 2023 Central Air Conditioner - SEER/EER 14/12 (Split System)	Existing	5%
NYS	CZ6	Cool Central	4	ENERGY STAR Central Air Conditioner - SEER/EER 15/12.5 (Split System)	Existing	5%
NYS	CZ6	Cool Central	5	CEE Tier 2 Central Air Conditioner - SEER/EER 16/13 (Split System)	Existing	8%
NYS	CZ6	Cool Central	6	CEE Tier 3 Central Air Conditioner - SEER/EER 18/13 (Split System)	Existing	0%
NYS	CZ6	Cool Central	7	Enhanced Central Air Conditioner - SEER/EER 20/14 (Split System)	Existing	0%
NYS	CZ6	Cool Central	1	Below Standard Central Air Conditioner - SEER/EER 10/9.2 (Split System)	New	0%
NYS	CZ6	Cool Central	2	Federal Standard 2015 Central Air Conditioner - SEER/EER 13/11.2 (Split System)	New	82%
NYS	CZ6	Cool Central	3	Federal Standard 2023 Central Air Conditioner - SEER/EER 14/12 (Split System)	New	5%
NYS	CZ6	Cool Central	4	ENERGY STAR Central Air Conditioner - SEER/EER 15/12.5 (Split System)	New	5%
NYS	CZ6	Cool Central	5	CEE Tier 2 Central Air Conditioner - SEER/EER 16/13 (Split System)	New	8%
NYS	CZ6	Cool Central	6	CEE Tier 3 Central Air Conditioner - SEER/EER 18/13 (Split System)	New	0%
NYS	CZ6	Cool Central	7	Enhanced Central Air Conditioner - SEER/EER 20/14 (Split System)	New	0%
NYS	CZ6	Cool Room	1	Below Standard Room AC - CEER 9.7 (8,000-13,999 Btuh)	Existing	81%

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	Eff. Share
NYS	CZ6	Cool Room	2	Federal Standard 2015 Room AC - CEER 10.9 (8,000-13,999 Btuh)	Existing	9%
NYS	CZ6	Cool Room	3	ENERGY STAR Room AC - CEER 12.0 (8,000-13,999 Btuh)	Existing	10%
NYS	CZ6	Cool Room	1	Below Standard Room AC - CEER 9.7 (8,000-13,999 Btuh)	New	0%
NYS	CZ6	Cool Room	2	Federal Standard 2015 Room AC - CEER 10.9 (8,000-13,999 Btuh)	New	46%
NYS	CZ6	Cool Room	3	ENERGY STAR Room AC - CEER 12.0 (8,000-13,999 Btuh)	New	54%
NYS	CZ6	Dehumidifier	1	Below Standard Dehumidifier	Existing	8%
NYS	CZ6	Dehumidifier	2	Federal Standard 2013 Dehumidifier	Existing	8%
NYS	CZ6	Dehumidifier	3	ENERGY STAR Dehumidifier	Existing	84%
NYS	CZ6	Dehumidifier	1	Below Standard Dehumidifier	New	0%
NYS	CZ6	Dehumidifier	2	Federal Standard 2013 Dehumidifier	New	16%
NYS	CZ6	Dehumidifier	3	ENERGY STAR Dehumidifier	New	84%
NYS	CZ6	Dryer	1	Below Standard Dryer - CEF/EF 2.27/2.72 (Electric Dryer)	Existing	51%
NYS	CZ6	Dryer	2	Federal Standard 2016 Dryer - CEF/EF 3.11/3.73 (Electric Dryer)	Existing	26%
NYS	CZ6	Dryer	3	ENERGY STAR Dryer - CEF 3.93 (Electric Dryer)	Existing	24%
NYS	CZ6	Dryer	1	Below Standard Dryer - CEF/EF 2.27/2.72 (Electric Dryer)	New	0%
NYS	CZ6	Dryer	2	Federal Standard 2016 Dryer - CEF/EF 3.11/3.73 (Electric Dryer)	New	77%
NYS	CZ6	Dryer	3	ENERGY STAR Dryer - CEF 3.93 (Electric Dryer)	New	24%
NYS	CZ6	Freezer	1	Below Standard Freezer	Existing	46%
NYS	CZ6	Freezer	2	Federal Standard 2015 Freezer	Existing	23%
NYS	CZ6	Freezer	3	ENERGY STAR Freezer	Existing	30%
NYS	CZ6	Freezer	1	Below Standard Freezer	New	0%
NYS	CZ6	Freezer	2	Federal Standard 2015 Freezer	New	70%
NYS	CZ6	Freezer	3	ENERGY STAR Freezer	New	30%
NYS	CZ6	Heat Central Electric Furnace	1	Standard Electric Furnace - HSPF 3.41	Existing	100%
NYS	CZ6	Heat Central Electric Furnace	1	Standard Electric Furnace - HSPF 3.41	New	100%
NYS	CZ6	Heat Pump	1	Below Standard Air Source Heat Pump - SEER/EER 10/9.8 and HSPF 7.2 (Split System)	Existing	33%
NYS	CZ6	Heat Pump	2	Federal Standard 2015 Air Source Heat Pump - SEER/EER 14/12 and HSPF 8.2 (Split System)	Existing	45%
NYS	CZ6	Heat Pump	3	ENERGY STAR Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Existing	11%
NYS	CZ6	Heat Pump	4	Federal Standard 2023 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.8 (Split System)	Existing	2%
NYS	CZ6	Heat Pump	5	CEE Tier 2 Air Source Heat Pump - SEER/EER 16/13 and HSPF 9.0 (Split System)	Existing	0%
NYS	CZ6	Heat Pump	6	CEE Tier 3 Air Source Heat Pump - SEER/EER 18/13 and HSPF 9.6 (Split System)	Existing	7%
NYS	CZ6	Heat Pump	7	Enhanced Air Source Heat Pump - SEER/EER 20/14 and HSPF 10.0 (Split System)	Existing	3%
NYS	CZ6	Heat Pump	8	ENERGY STAR Geothermal Heat Pump - EER 17.1 and 3.6 COP (Split System)	Existing	0%
NYS	CZ6	Heat Pump	9	ENERGY STAR Geothermal Heat Pump - Variable Speed Drive	Existing	0%

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	Eff. Share
NYS	CZ6	Heat Pump	1	Below Standard Air Source Heat Pump - SEER/EER 10/9.8 and HSPF 7.2 (Split System)	New	0%
NYS	CZ6	Heat Pump	2	Federal Standard 2015 Air Source Heat Pump - SEER/EER 14/12 and HSPF 8.2 (Split System)	New	78%
NYS	CZ6	Heat Pump	3	ENERGY STAR Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	New	11%
NYS	CZ6	Heat Pump	4	Federal Standard 2023 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.8 (Split System)	New	2%
NYS	CZ6	Heat Pump	5	CEE Tier 2 Air Source Heat Pump - SEER/EER 16/13 and HSPF 9.0 (Split System)	New	0%
NYS	CZ6	Heat Pump	6	CEE Tier 3 Air Source Heat Pump - SEER/EER 18/13 and HSPF 9.6 (Split System)	New	7%
NYS	CZ6	Heat Pump	7	Enhanced Air Source Heat Pump - SEER/EER 20/14 and HSPF 10.0 (Split System)	New	3%
NYS	CZ6	Heat Pump	8	ENERGY STAR Geothermal Heat Pump - EER 17.1 and 3.6 COP (Split System)	New	0%
NYS	CZ6	Heat Pump	9	ENERGY STAR Geothermal Heat Pump - Variable Speed Drive	New	0%
NYS	CZ6	Heat Room Electric	1	Standard Baseboard Heating - HSPF 3.41	Existing	78%
NYS	CZ6	Heat Room Electric	2	Ductless Heat Pump - SEER/EER 18/12.5, HSPF 10.0	Existing	15%
NYS	CZ6	Heat Room Electric	3	Ductless Heat Pump - SEER/EER 21/12.5, HSPF 11.0	Existing	7%
NYS	CZ6	Heat Room Electric	1	Standard Baseboard Heating - HSPF 3.41	New	67%
NYS	CZ6	Heat Room Electric	2	Ductless Heat Pump - SEER/EER 18/12.5, HSPF 10.0	New	23%
NYS	CZ6	Heat Room Electric	3	Ductless Heat Pump - SEER/EER 21/12.5, HSPF 11.0	New	11%
NYS	CZ6	Lighting Linear Fluorescent	1	Below Standard T8 Linear Fluorescent Lamp	Existing	63%
NYS	CZ6	Lighting Linear Fluorescent	2	Federal Standard 2018 T8 Linear Fluorescent Lamp	Existing	37%
NYS	CZ6	Lighting Linear Fluorescent	3	TLED Linear Lamp	Existing	0%
NYS	CZ6	Lighting Linear Fluorescent	1	Below Standard T8 Linear Fluorescent Lamp	New	0%
NYS	CZ6	Lighting Linear Fluorescent	2	Federal Standard 2018 T8 Linear Fluorescent Lamp	New	100%
NYS	CZ6	Lighting Linear Fluorescent	3	TLED Linear Lamp	New	0%
NYS	CZ6	Lighting Specialty	1	Specialty Lamp - Incandescent/Halogen (EISA Exempt)	Existing	70%
NYS	CZ6	Lighting Specialty	2	Specialty Lamp - CFL	Existing	0%
NYS	CZ6	Lighting Specialty	3	Specialty Lamp - ENERGY STAR LED	Existing	24%
NYS	CZ6	Lighting Specialty	4	Specialty Lamp - CEE Tier 2 LED	Existing	6%
NYS	CZ6	Lighting Specialty	1	Specialty Lamp - Incandescent/Halogen (EISA Exempt)	New	70%
NYS	CZ6	Lighting Specialty	2	Specialty Lamp - CFL	New	0%

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	Eff. Share
NYS	CZ6	Lighting Specialty	3	Specialty Lamp - ENERGY STAR LED	New	24%
NYS	CZ6	Lighting Specialty	4	Specialty Lamp - CEE Tier 2 LED	New	6%
NYS	CZ6	Lighting Standard	1	General Service Lamp - Incandescent	Existing	8%
NYS	CZ6	Lighting Standard	2	EISA Standard 2014 General Service Lamp - Halogen	Existing	30%
NYS	CZ6	Lighting Standard	3	General Service Lamp - CFL	Existing	1%
NYS	CZ6	Lighting Standard	4	EISA Standard 2020 Backstop General Service Lamp - LED	Existing	36%
NYS	CZ6	Lighting Standard	5	General Service Lamp - ENERGY STAR LED	Existing	12%
NYS	CZ6	Lighting Standard	6	General Service Lamp - CEE Tier 2 LED	Existing	12%
NYS	CZ6	Lighting Standard	1	General Service Lamp - Incandescent	New	0%
NYS	CZ6	Lighting Standard	2	EISA Standard 2014 General Service Lamp - Halogen	New	38%
NYS	CZ6	Lighting Standard	3	General Service Lamp - CFL	New	1%
NYS	CZ6	Lighting Standard	4	EISA Standard 2020 Backstop General Service Lamp - LED	New	36%
NYS	CZ6	Lighting Standard	5	General Service Lamp - ENERGY STAR LED	New	12%
NYS	CZ6	Lighting Standard	6	General Service Lamp - CEE Tier 2 LED	New	12%
NYS	CZ6	Microwave	1	Below Standard Microwave	Existing	73%
NYS	CZ6	Microwave	2	Federal Standard 2016 Microwave	Existing	27%
NYS	CZ6	Microwave	1	Below Standard Microwave	New	0%
NYS	CZ6	Microwave	2	Federal Standard 2016 Microwave	New	100%
NYS	CZ6	Other Electric	1	Standard Other Equipment	Existing	100%
NYS	CZ6	Other Electric	1	Standard Other Equipment	New	100%
NYS	CZ6	Plug Load Other	1	Standard Plug Load Other Equipment	Existing	100%
NYS	CZ6	Plug Load Other	1	Standard Plug Load Other Equipment	New	100%
NYS	CZ6	Pool Pump	1	Single Speed Pool Pump	Existing	84%
NYS	CZ6	Pool Pump	2	Pool Pump with Variable Speed Drive (VSD)	Existing	16%
NYS	CZ6	Pool Pump	1	Single Speed Pool Pump	New	36%
NYS	CZ6	Pool Pump	2	Pool Pump with Variable Speed Drive (VSD)	New	64%
NYS	CZ6	Refrigerator	1	Below Standard Refrigerator	Existing	23%
NYS	CZ6	Refrigerator	2	Federal Standard 2015 Refrigerator	Existing	11%
NYS	CZ6	Refrigerator	3	ENERGY STAR Refrigerator	Existing	61%
NYS	CZ6	Refrigerator	4	CEE Tier 2 Refrigerator	Existing	3%
NYS	CZ6	Refrigerator	5	CEE Tier 3 Refrigerator	Existing	3%
NYS	CZ6	Refrigerator	1	Below Standard Refrigerator	New	0%
NYS	CZ6	Refrigerator	2	Federal Standard 2015 Refrigerator	New	34%
NYS	CZ6	Refrigerator	3	ENERGY STAR Refrigerator	New	61%
NYS	CZ6	Refrigerator	4	CEE Tier 2 Refrigerator	New	3%
NYS	CZ6	Refrigerator	5	CEE Tier 3 Refrigerator	New	3%
NYS	CZ6	Tv	1	Standard TV	Existing	13%
NYS	CZ6	Tv	2	ENERGY STAR TV	Existing	87%
NYS	CZ6	Tv	1	Standard TV	New	11%
NYS	CZ6	Tv	2	ENERGY STAR TV	New	89%

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	Eff. Share
NYS	CZ6	Ventilation And Circulation	1	Below Standard Furnace Fan	Existing	80%
NYS	CZ6	Ventilation And Circulation	2	Federal Standard 2019 Furnace Fan	Existing	20%
NYS	CZ6	Ventilation And Circulation	1	Below Standard Furnace Fan	New	0%
NYS	CZ6	Ventilation And Circulation	2	Federal Standard 2019 Furnace Fan	New	100%
NYS	CZ6	Water Heat GT 55 Gal	1	Below Standard Water Heater > 55 GAL - UEF 0.88	Existing	60%
NYS	CZ6	Water Heat GT 55 Gal	2	Federal Standard 2017 Heat Pump Water Heater > 55 GAL - UEF 2.04	Existing	40%
NYS	CZ6	Water Heat GT 55 Gal	3	Enhanced Efficiency Heat Pump Water Heater > 55 GAL - UEF 2.2	Existing	0%
NYS	CZ6	Water Heat GT 55 Gal	4	Advanced Efficiency (No Resistance/Split System) HPWH > 55 GAL - UEF 3.1	Existing	0%
NYS	CZ6	Water Heat GT 55 Gal	1	Below Standard Water Heater > 55 GAL - UEF 0.88	New	0%
NYS	CZ6	Water Heat GT 55 Gal	2	Federal Standard 2017 Heat Pump Water Heater > 55 GAL - UEF 2.04	New	100%
NYS	CZ6	Water Heat GT 55 Gal	3	Enhanced Efficiency Heat Pump Water Heater > 55 GAL - UEF 2.2	New	0%
NYS	CZ6	Water Heat GT 55 Gal	4	Advanced Efficiency (No Resistance/Split System) HPWH > 55 GAL - UEF 3.1	New	0%
NYS	CZ6	Water Heat LE 55 Gal	1	Below Standard Water Heater ≤ 55 GAL - UEF 0.88	Existing	61%
NYS	CZ6	Water Heat LE 55 Gal	2	Federal Standard 2017 Storage Water Heater ≤ 55 GAL - UEF 0.92	Existing	35%
NYS	CZ6	Water Heat LE 55 Gal	3	Enhanced Efficiency Heat Pump Water Heater ≤ 55 GAL - UEF 2.2	Existing	0%
NYS	CZ6	Water Heat LE 55 Gal	4	Advanced Efficiency (No Resistance/Split System) HPWH ≤ 55 GAL - UEF 3.1	Existing	4%
NYS	CZ6	Water Heat LE 55 Gal	1	Below Standard Water Heater ≤ 55 GAL - UEF 0.88	New	0%
NYS	CZ6	Water Heat LE 55 Gal	2	Federal Standard 2017 Storage Water Heater ≤ 55 GAL - UEF 0.92	New	88%
NYS	CZ6	Water Heat LE 55 Gal	3	Enhanced Efficiency Heat Pump Water Heater ≤ 55 GAL - UEF 2.2	New	0%
NYS	CZ6	Water Heat LE 55 Gal	4	Advanced Efficiency (No Resistance/Split System) HPWH ≤ 55 GAL - UEF 3.1	New	12%

TABLE B-5. BASELINE FORECAST ASSUMPTIONS—ELECTRIC END-USE
UNIT ENERGY CONSUMPTION

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	EUL	Measure Consumption (kWh/yr)
NY	CZ4	Air Purifier	1	Standard Air Purifier	Existing	9	569
NY	CZ4	Air Purifier	2	ENERGY STAR Air Purifier	Existing	9	191
NY	CZ4	Air Purifier	1	Standard Air Purifier	New	9	569
NY	CZ4	Air Purifier	2	ENERGY STAR Air Purifier	New	9	191
NY	CZ4	Computer	1	Standard Computer	Existing	4	83
NY	CZ4	Computer	2	ENERGY STAR Computer	Existing	4	48
NY	CZ4	Computer	1	Standard Computer	New	4	83
NY	CZ4	Computer	2	ENERGY STAR Computer	New	4	48
NY	CZ4	Cooking Oven	1	Below Standard Cooking Oven	Existing	10	289
NY	CZ4	Cooking Oven	2	Federal Standard 2012 Cooking Oven	Existing	19	165
NY	CZ4	Cooking Oven	1	Below Standard Cooking Oven	New	10	289
NY	CZ4	Cooking Oven	2	Federal Standard 2012 Cooking Oven	New	19	165
NY	CZ4	Cooking Range	1	Below Standard Cooking Range	Existing	10	227
NY	CZ4	Cooking Range	2	Federal Standard 2012 Cooking Range	Existing	19	121
NY	CZ4	Cooking Range	1	Below Standard Cooking Range	New	10	227
NY	CZ4	Cooking Range	2	Federal Standard 2012 Cooking Range	New	19	121
NY	CZ4	Cool Central	1	Below Standard Central Air Conditioner - SEER/EER 10/9.2 (Split System)	Existing	8	2405
NY	CZ4	Cool Central	2	Federal Standard 2015 Central Air Conditioner - SEER/EER 13/11.2 (Split System)	Existing	15	1964
NY	CZ4	Cool Central	3	Federal Standard 2023 Central Air Conditioner - SEER/EER 14/12 (Split System)	Existing	15	1823
NY	CZ4	Cool Central	4	ENERGY STAR Central Air Conditioner - SEER/EER 15/12.5 (Split System)	Existing	15	1702
NY	CZ4	Cool Central	5	CEE Tier 2 Central Air Conditioner - SEER/EER 16/13 (Split System)	Existing	15	1595
NY	CZ4	Cool Central	6	CEE Tier 3 Central Air Conditioner - SEER/EER 18/13 (Split System)	Existing	15	1418
NY	CZ4	Cool Central	7	Enhanced Central Air Conditioner - SEER/EER 20/14 (Split System)	Existing	15	1276
NY	CZ4	Cool Central	1	Below Standard Central Air Conditioner - SEER/EER 10/9.2 (Split System)	New	8	1830
NY	CZ4	Cool Central	2	Federal Standard 2015 Central Air Conditioner - SEER/EER 13/11.2 (Split System)	New	15	1494
NY	CZ4	Cool Central	3	Federal Standard 2023 Central Air Conditioner - SEER/EER 14/12 (Split System)	New	15	1387
NY	CZ4	Cool Central	4	ENERGY STAR Central Air Conditioner - SEER/EER 15/12.5 (Split System)	New	15	1295

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	EUL	Measure Consumption (kWh/yr)
NY	CZ4	Cool Central	5	CEE Tier 2 Central Air Conditioner - SEER/EER 16/13 (Split System)	New	15	1214
NY	CZ4	Cool Central	6	CEE Tier 3 Central Air Conditioner - SEER/EER 18/13 (Split System)	New	15	1079
NY	CZ4	Cool Central	7	Enhanced Central Air Conditioner - SEER/EER 20/14 (Split System)	New	15	971
NY	CZ4	Cool Room	1	Below Standard Room AC - CEER 9.7 (8,000-13,999 Btuh)	Existing	6	293
NY	CZ4	Cool Room	2	Federal Standard 2015 Room AC - CEER 10.9 (8,000-13,999 Btuh)	Existing	12	263
NY	CZ4	Cool Room	3	ENERGY STAR Room AC - CEER 12.0 (8,000-13,999 Btuh)	Existing	12	239
NY	CZ4	Cool Room	1	Below Standard Room AC - CEER 9.7 (8,000-13,999 Btuh)	New	6	229
NY	CZ4	Cool Room	2	Federal Standard 2015 Room AC - CEER 10.9 (8,000-13,999 Btuh)	New	12	206
NY	CZ4	Cool Room	3	ENERGY STAR Room AC - CEER 12.0 (8,000-13,999 Btuh)	New	12	187
NY	CZ4	Dehumidifier	1	Below Standard Dehumidifier	Existing	6	826
NY	CZ4	Dehumidifier	2	Federal Standard 2013 Dehumidifier	Existing	12	622
NY	CZ4	Dehumidifier	3	ENERGY STAR Dehumidifier	Existing	12	508
NY	CZ4	Dehumidifier	1	Below Standard Dehumidifier	New	6	826
NY	CZ4	Dehumidifier	2	Federal Standard 2013 Dehumidifier	New	12	622
NY	CZ4	Dehumidifier	3	ENERGY STAR Dehumidifier	New	12	508
NY	CZ4	Dryer	1	Below Standard Dryer - CEF/EF 2.27/2.72 (Electric Dryer)	Existing	6	853
NY	CZ4	Dryer	2	Federal Standard 2016 Dryer - CEF/EF 3.11/3.73 (Electric Dryer)	Existing	12	622
NY	CZ4	Dryer	3	ENERGY STAR Dryer - CEF 3.93 (Electric Dryer)	Existing	12	590
NY	CZ4	Dryer	1	Below Standard Dryer - CEF/EF 2.27/2.72 (Electric Dryer)	New	6	853
NY	CZ4	Dryer	2	Federal Standard 2016 Dryer - CEF/EF 3.11/3.73 (Electric Dryer)	New	12	622
NY	CZ4	Dryer	3	ENERGY STAR Dryer - CEF 3.93 (Electric Dryer)	New	12	590
NY	CZ4	Freezer	1	Below Standard Freezer	Existing	6	617
NY	CZ4	Freezer	2	Federal Standard 2015 Freezer	Existing	12	433
NY	CZ4	Freezer	3	ENERGY STAR Freezer	Existing	12	390
NY	CZ4	Freezer	1	Below Standard Freezer	New	6	617
NY	CZ4	Freezer	2	Federal Standard 2015 Freezer	New	12	433
NY	CZ4	Freezer	3	ENERGY STAR Freezer	New	12	390
NY	CZ4	Heat Central Electric Furnace	1	Standard Electric Furnace - HSPF 3.41	Existing	22	10483
NY	CZ4	Heat Central Electric Furnace	1	Standard Electric Furnace - HSPF 3.41	New	22	6367
NY	CZ4	Heat Pump	1	Below Standard Air Source Heat Pump - SEER/EER 10/9.8 and HSPF 7.2 (Split System)	Existing	8	7023

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	EUL	Measure Consumption (kWh/yr)
NY	CZ4	Heat Pump	2	Federal Standard 2015 Air Source Heat Pump - SEER/EER 14/12 and HSPF 8.2 (Split System)	Existing	15	5737
NY	CZ4	Heat Pump	3	ENERGY STAR Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Existing	15	5476
NY	CZ4	Heat Pump	4	Federal Standard 2023 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.8 (Split System)	Existing	15	5349
NY	CZ4	Heat Pump	5	CEE Tier 2 Air Source Heat Pump - SEER/EER 16/13 and HSPF 9.0 (Split System)	Existing	15	5160
NY	CZ4	Heat Pump	6	CEE Tier 3 Air Source Heat Pump - SEER/EER 18/13 and HSPF 9.6 (Split System)	Existing	15	4758
NY	CZ4	Heat Pump	7	Enhanced Air Source Heat Pump - SEER/EER 20/14 and HSPF 10.0 (Split System)	Existing	15	4480
NY	CZ4	Heat Pump	8	ENERGY STAR Geothermal Heat Pump - EER 17.1 and 3.6 COP (Split System)	Existing	25	4228
NY	CZ4	Heat Pump	9	ENERGY STAR Geothermal Heat Pump - Variable Speed Drive	Existing	25	3960
NY	CZ4	Heat Pump	1	Below Standard Air Source Heat Pump - SEER/EER 10/9.8 and HSPF 7.2 (Split System)	New	8	4348
NY	CZ4	Heat Pump	2	Federal Standard 2015 Air Source Heat Pump - SEER/EER 14/12 and HSPF 8.2 (Split System)	New	15	3544
NY	CZ4	Heat Pump	3	ENERGY STAR Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	New	15	3381
NY	CZ4	Heat Pump	4	Federal Standard 2023 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.8 (Split System)	New	15	3304
NY	CZ4	Heat Pump	5	CEE Tier 2 Air Source Heat Pump - SEER/EER 16/13 and HSPF 9.0 (Split System)	New	15	3186
NY	CZ4	Heat Pump	6	CEE Tier 3 Air Source Heat Pump - SEER/EER 18/13 and HSPF 9.6 (Split System)	New	15	2936
NY	CZ4	Heat Pump	7	Enhanced Air Source Heat Pump - SEER/EER 20/14 and HSPF 10.0 (Split System)	New	15	2763
NY	CZ4	Heat Pump	8	ENERGY STAR Geothermal Heat Pump - EER 17.1 and 3.6 COP (Split System)	New	25	2596
NY	CZ4	Heat Pump	9	ENERGY STAR Geothermal Heat Pump - Variable Speed Drive	New	25	2425
NY	CZ4	Heat Room Electric	1	Standard Baseboard Heating - HSPF 3.41	Existing	20	9294
NY	CZ4	Heat Room Electric	2	Ductless Heat Pump - SEER/EER 18/12.5, HSPF 10.0	Existing	15	4626

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	EUL	Measure Consumption (kWh/yr)
NY	CZ4	Heat Room Electric	3	Ductless Heat Pump - SEER/EER 21/12.5, HSPF 11.0	Existing	15	4130
NY	CZ4	Heat Room Electric	1	Standard Baseboard Heating - HSPF 3.41	New	20	5644
NY	CZ4	Heat Room Electric	2	Ductless Heat Pump - SEER/EER 18/12.5, HSPF 10.0	New	15	2856
NY	CZ4	Heat Room Electric	3	Ductless Heat Pump - SEER/EER 21/12.5, HSPF 11.0	New	15	2548
NY	CZ4	Lighting Linear Fluorescent	1	Below Standard T8 Linear Fluorescent Lamp	Existing	10	29
NY	CZ4	Lighting Linear Fluorescent	2	Federal Standard 2018 T8 Linear Fluorescent Lamp	Existing	20	27
NY	CZ4	Lighting Linear Fluorescent	3	TLED Linear Lamp	Existing	20	16
NY	CZ4	Lighting Linear Fluorescent	1	Below Standard T8 Linear Fluorescent Lamp	New	10	28
NY	CZ4	Lighting Linear Fluorescent	2	Federal Standard 2018 T8 Linear Fluorescent Lamp	New	20	26
NY	CZ4	Lighting Linear Fluorescent	3	TLED Linear Lamp	New	20	16
NY	CZ4	Lighting Specialty	1	Below Standard T8 Linear Fluorescent Lamp	Existing	1	51
NY	CZ4	Lighting Specialty	2	Federal Standard 2018 T8 Linear Fluorescent Lamp	Existing	7	9
NY	CZ4	Lighting Specialty	3	TLED Linear Lamp	Existing	12	5
NY	CZ4	Lighting Specialty	4	Specialty Lamp - CEE Tier 2 LED	Existing	12	5
NY	CZ4	Lighting Specialty	1	Specialty Lamp - Incandescent/Halogen (EISA Exempt)	New	1	49
NY	CZ4	Lighting Specialty	2	Specialty Lamp - CFL	New	7	9
NY	CZ4	Lighting Specialty	3	Specialty Lamp - ENERGY STAR LED	New	12	5
NY	CZ4	Lighting Specialty	4	Specialty Lamp - CEE Tier 2 LED	New	12	5
NY	CZ4	Lighting Standard	1	General Service Lamp - Incandescent	Existing	1	65
NY	CZ4	Lighting Standard	2	EISA Standard 2014 General Service Lamp - Halogen	Existing	3	47
NY	CZ4	Lighting Standard	3	General Service Lamp - CFL	Existing	7	15
NY	CZ4	Lighting Standard	4	EISA Standard 2020 Backstop General Service Lamp - LED	Existing	21	14
NY	CZ4	Lighting Standard	5	General Service Lamp - ENERGY STAR LED	Existing	21	12
NY	CZ4	Lighting Standard	6	General Service Lamp - CEE Tier 2 LED	Existing	21	11
NY	CZ4	Lighting Standard	1	General Service Lamp - Incandescent	New	1	63
NY	CZ4	Lighting Standard	2	EISA Standard 2014 General Service Lamp - Halogen	New	3	45

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	EUL	Measure Consumption (kWh/yr)
NY	CZ4	Lighting Standard	3	General Service Lamp - CFL	New	7	15
NY	CZ4	Lighting Standard	4	EISA Standard 2020 Backstop General Service Lamp - LED	New	21	13
NY	CZ4	Lighting Standard	5	General Service Lamp - ENERGY STAR LED	New	21	11
NY	CZ4	Lighting Standard	6	General Service Lamp - CEE Tier 2 LED	New	21	11
NY	CZ4	Microwave	1	Below Standard Microwave	Existing	6	138
NY	CZ4	Microwave	2	Federal Standard 2016 Microwave	Existing	11	127
NY	CZ4	Microwave	1	Below Standard Microwave	New	6	138
NY	CZ4	Microwave	2	Federal Standard 2016 Microwave	New	11	127
NY	CZ4	Other Electric	1	Standard Other Equipment	Existing	10	0
NY	CZ4	Other Electric	1	Standard Other Equipment	New	10	0
NY	CZ4	Plug Load Other	1	Standard Plug Load Other Equipment	Existing	5	1156
NY	CZ4	Plug Load Other	1	Standard Plug Load Other Equipment	New	5	1156
NY	CZ4	Pool Pump	1	Single Speed Pool Pump	Existing	10	2485
NY	CZ4	Pool Pump	2	Pool Pump with Variable Speed Drive (VSD)	Existing	10	486
NY	CZ4	Pool Pump	1	Single Speed Pool Pump	New	10	2485
NY	CZ4	Pool Pump	2	Pool Pump with Variable Speed Drive (VSD)	New	10	486
NY	CZ4	Refrigerator	1	Below Standard Refrigerator	Existing	6	498
NY	CZ4	Refrigerator	2	Federal Standard 2015 Refrigerator	Existing	12	445
NY	CZ4	Refrigerator	3	ENERGY STAR Refrigerator	Existing	12	403
NY	CZ4	Refrigerator	4	CEE Tier 2 Refrigerator	Existing	12	374
NY	CZ4	Refrigerator	5	CEE Tier 3 Refrigerator	Existing	12	342
NY	CZ4	Refrigerator	1	Below Standard Refrigerator	New	6	498
NY	CZ4	Refrigerator	2	Federal Standard 2015 Refrigerator	New	12	445
NY	CZ4	Refrigerator	3	ENERGY STAR Refrigerator	New	12	403
NY	CZ4	Refrigerator	4	CEE Tier 2 Refrigerator	New	12	374
NY	CZ4	Refrigerator	5	CEE Tier 3 Refrigerator	New	12	342
NY	CZ4	Tv	1	Standard TV	Existing	6	118
NY	CZ4	Tv	2	ENERGY STAR TV	Existing	6	80
NY	CZ4	Tv	1	Standard TV	New	6	118
NY	CZ4	Tv	2	ENERGY STAR TV	New	6	80
NY	CZ4	Ventilation And Circulation	1	Below Standard Furnace Fan	Existing	8	813
NY	CZ4	Ventilation And Circulation	2	Federal Standard 2019 Furnace Fan	Existing	15	569
NY	CZ4	Ventilation And Circulation	1	Below Standard Furnace Fan	New	8	947
NY	CZ4	Ventilation And Circulation	2	Federal Standard 2019 Furnace Fan	New	15	663

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	EUL	Measure Consumption (kWh/yr)
NY	CZ4	Water Heat GT 55 Gal	1	Below Standard Water Heater > 55 GAL - UEF 0.88	Existing	7	3752
NY	CZ4	Water Heat GT 55 Gal	2	Federal Standard 2017 Heat Pump Water Heater > 55 GAL - UEF 2.04	Existing	10	1427
NY	CZ4	Water Heat GT 55 Gal	3	Enhanced Efficiency Heat Pump Water Heater > 55 GAL - UEF 2.2	Existing	10	1281
NY	CZ4	Water Heat GT 55 Gal	4	Advanced Efficiency (No Resistance/Split System) HPWH > 55 GAL - UEF 3.1	Existing	10	740
NY	CZ4	Water Heat GT 55 Gal	1	Below Standard Water Heater > 55 GAL - UEF 0.88	New	7	3752
NY	CZ4	Water Heat GT 55 Gal	2	Federal Standard 2017 Heat Pump Water Heater > 55 GAL - UEF 2.04	New	10	1427
NY	CZ4	Water Heat GT 55 Gal	3	Enhanced Efficiency Heat Pump Water Heater > 55 GAL - UEF 2.2	New	10	1281
NY	CZ4	Water Heat GT 55 Gal	4	Advanced Efficiency (No Resistance/Split System) HPWH > 55 GAL - UEF 3.1	New	10	740
NY	CZ4	Water Heat LE 55 Gal	1	Below Standard Water Heater ≤ 55 GAL - UEF 0.88	Existing	7	3699
NY	CZ4	Water Heat LE 55 Gal	2	Federal Standard 2017 Storage Water Heater ≤ 55 GAL - UEF 0.92	Existing	13	3589
NY	CZ4	Water Heat LE 55 Gal	3	Enhanced Efficiency Heat Pump Water Heater ≤ 55 GAL - UEF 2.2	Existing	10	982
NY	CZ4	Water Heat LE 55 Gal	4	Advanced Efficiency (No Resistance/Split System) HPWH ≤ 55 GAL - UEF 3.1	Existing	10	528
NY	CZ4	Water Heat LE 55 Gal	1	Below Standard Water Heater ≤ 55 GAL - UEF 0.88	New	7	3699
NY	CZ4	Water Heat LE 55 Gal	2	Federal Standard 2017 Storage Water Heater ≤ 55 GAL - UEF 0.92	New	13	3589
NY	CZ4	Water Heat LE 55 Gal	3	Enhanced Efficiency Heat Pump Water Heater ≤ 55 GAL - UEF 2.2	New	10	982
NY	CZ4	Water Heat LE 55 Gal	4	Advanced Efficiency (No Resistance/Split System) HPWH ≤ 55 GAL - UEF 3.1	New	10	528
NY	CZ5	Air Purifier	1	Standard Air Purifier	Existing	9	569
NY	CZ5	Air Purifier	2	ENERGY STAR Air Purifier	Existing	9	191
NY	CZ5	Air Purifier	1	Standard Air Purifier	New	9	569
NY	CZ5	Air Purifier	2	ENERGY STAR Air Purifier	New	9	191
NY	CZ5	Computer	1	Standard Computer	Existing	4	83
NY	CZ5	Computer	2	ENERGY STAR Computer	Existing	4	48
NY	CZ5	Computer	1	Standard Computer	New	4	83
NY	CZ5	Computer	2	ENERGY STAR Computer	New	4	48
NY	CZ5	Cooking Oven	1	Below Standard Cooking Oven	Existing	10	289
NY	CZ5	Cooking Oven	2	Federal Standard 2012 Cooking Oven	Existing	19	165
NY	CZ5	Cooking Oven	1	Below Standard Cooking Oven	New	10	289
NY	CZ5	Cooking Oven	2	Federal Standard 2012 Cooking Oven	New	19	165
NY	CZ5	Cooking Range	1	Below Standard Cooking Range	Existing	10	227

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	EUL	Measure Consumption (kWh/yr)
NY	CZ5	Cooking Range	2	Federal Standard 2012 Cooking Range	Existing	19	121
NY	CZ5	Cooking Range	1	Below Standard Cooking Range	New	10	227
NY	CZ5	Cooking Range	2	Federal Standard 2012 Cooking Range	New	19	121
NY	CZ5	Cool Central	1	Below Standard Central Air Conditioner - SEER/EER 10/9.2 (Split System)	Existing	8	899
NY	CZ5	Cool Central	2	Federal Standard 2015 Central Air Conditioner - SEER/EER 13/11.2 (Split System)	Existing	15	734
NY	CZ5	Cool Central	3	Federal Standard 2023 Central Air Conditioner - SEER/EER 14/12 (Split System)	Existing	15	681
NY	CZ5	Cool Central	4	ENERGY STAR Central Air Conditioner - SEER/EER 15/12.5 (Split System)	Existing	15	636
NY	CZ5	Cool Central	5	CEE Tier 2 Central Air Conditioner - SEER/EER 16/13 (Split System)	Existing	15	596
NY	CZ5	Cool Central	6	CEE Tier 3 Central Air Conditioner - SEER/EER 18/13 (Split System)	Existing	15	530
NY	CZ5	Cool Central	7	Enhanced Central Air Conditioner - SEER/EER 20/14 (Split System)	Existing	15	477
NY	CZ5	Cool Central	1	Below Standard Central Air Conditioner - SEER/EER 10/9.2 (Split System)	New	8	834
NY	CZ5	Cool Central	2	Federal Standard 2015 Central Air Conditioner - SEER/EER 13/11.2 (Split System)	New	15	681
NY	CZ5	Cool Central	3	Federal Standard 2023 Central Air Conditioner - SEER/EER 14/12 (Split System)	New	15	632
NY	CZ5	Cool Central	4	ENERGY STAR Central Air Conditioner - SEER/EER 15/12.5 (Split System)	New	15	590
NY	CZ5	Cool Central	5	CEE Tier 2 Central Air Conditioner - SEER/EER 16/13 (Split System)	New	15	553
NY	CZ5	Cool Central	6	CEE Tier 3 Central Air Conditioner - SEER/EER 18/13 (Split System)	New	15	492
NY	CZ5	Cool Central	7	Enhanced Central Air Conditioner - SEER/EER 20/14 (Split System)	New	15	443
NY	CZ5	Cool Room	1	Below Standard Room AC - CEER 9.7 (8,000-13,999 Btuh)	Existing	6	186
NY	CZ5	Cool Room	2	Federal Standard 2015 Room AC - CEER 10.9 (8,000-13,999 Btuh)	Existing	12	167
NY	CZ5	Cool Room	3	ENERGY STAR Room AC - CEER 12.0 (8,000-13,999 Btuh)	Existing	12	151
NY	CZ5	Cool Room	1	Below Standard Room AC - CEER 9.7 (8,000-13,999 Btuh)	New	6	192
NY	CZ5	Cool Room	2	Federal Standard 2015 Room AC - CEER 10.9 (8,000-13,999 Btuh)	New	12	172
NY	CZ5	Cool Room	3	ENERGY STAR Room AC - CEER 12.0 (8,000-13,999 Btuh)	New	12	156
NY	CZ5	Dehumidifier	1	Below Standard Dehumidifier	Existing	6	826

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	EUL	Measure Consumption (kWh/yr)
NY	CZ5	Dehumidifier	2	Federal Standard 2013 Dehumidifier	Existing	12	622
NY	CZ5	Dehumidifier	3	ENERGY STAR Dehumidifier	Existing	12	508
NY	CZ5	Dehumidifier	1	Below Standard Dehumidifier	New	6	826
NY	CZ5	Dehumidifier	2	Federal Standard 2013 Dehumidifier	New	12	622
NY	CZ5	Dehumidifier	3	ENERGY STAR Dehumidifier	New	12	508
NY	CZ5	Dryer	1	Below Standard Dryer - CEF/EF 2.27/2.72 (Electric Dryer)	Existing	6	853
NY	CZ5	Dryer	2	Federal Standard 2016 Dryer - CEF/EF 3.11/3.73 (Electric Dryer)	Existing	12	622
NY	CZ5	Dryer	3	ENERGY STAR Dryer - CEF 3.93 (Electric Dryer)	Existing	12	590
NY	CZ5	Dryer	1	Below Standard Dryer - CEF/EF 2.27/2.72 (Electric Dryer)	New	6	853
NY	CZ5	Dryer	2	Federal Standard 2016 Dryer - CEF/EF 3.11/3.73 (Electric Dryer)	New	12	622
NY	CZ5	Dryer	3	ENERGY STAR Dryer - CEF 3.93 (Electric Dryer)	New	12	590
NY	CZ5	Freezer	1	Below Standard Freezer	Existing	6	617
NY	CZ5	Freezer	2	Federal Standard 2015 Freezer	Existing	12	433
NY	CZ5	Freezer	3	ENERGY STAR Freezer	Existing	12	390
NY	CZ5	Freezer	1	Below Standard Freezer	New	6	617
NY	CZ5	Freezer	2	Federal Standard 2015 Freezer	New	12	433
NY	CZ5	Freezer	3	ENERGY STAR Freezer	New	12	390
NY	CZ5	Heat Central Electric Furnace	1	Standard Electric Furnace - HSPF 3.41	Existing	22	13044
NY	CZ5	Heat Central Electric Furnace	1	Standard Electric Furnace - HSPF 3.41	New	22	11100
NY	CZ5	Heat Pump	1	Below Standard Air Source Heat Pump - SEER/EER 10/9.8 and HSPF 7.2 (Split System)	Existing	8	6731
NY	CZ5	Heat Pump	2	Federal Standard 2015 Air Source Heat Pump - SEER/EER 14/12 and HSPF 8.2 (Split System)	Existing	15	5705
NY	CZ5	Heat Pump	3	ENERGY STAR Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Existing	15	5476
NY	CZ5	Heat Pump	4	Federal Standard 2023 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.8 (Split System)	Existing	15	5317
NY	CZ5	Heat Pump	5	CEE Tier 2 Air Source Heat Pump - SEER/EER 16/13 and HSPF 9.0 (Split System)	Existing	15	5166
NY	CZ5	Heat Pump	6	CEE Tier 3 Air Source Heat Pump - SEER/EER 18/13 and HSPF 9.6 (Split System)	Existing	15	4805
NY	CZ5	Heat Pump	7	Enhanced Air Source Heat Pump - SEER/EER 20/14 and HSPF 10.0 (Split System)	Existing	15	4571

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	EUL	Measure Consumption (kWh/yr)
NY	CZ5	Heat Pump	8	ENERGY STAR Geothermal Heat Pump - EER 17.1 and 3.6 COP (Split System)	Existing	25	4590
NY	CZ5	Heat Pump	9	ENERGY STAR Geothermal Heat Pump - Variable Speed Drive	Existing	25	4440
NY	CZ5	Heat Pump	1	Below Standard Air Source Heat Pump - SEER/EER 10/9.8 and HSPF 7.2 (Split System)	New	8	5676
NY	CZ5	Heat Pump	2	Federal Standard 2015 Air Source Heat Pump - SEER/EER 14/12 and HSPF 8.2 (Split System)	New	15	4818
NY	CZ5	Heat Pump	3	ENERGY STAR Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	New	15	4625
NY	CZ5	Heat Pump	4	Federal Standard 2023 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.8 (Split System)	New	15	4491
NY	CZ5	Heat Pump	5	CEE Tier 2 Air Source Heat Pump - SEER/EER 16/13 and HSPF 9.0 (Split System)	New	15	4364
NY	CZ5	Heat Pump	6	CEE Tier 3 Air Source Heat Pump - SEER/EER 18/13 and HSPF 9.6 (Split System)	New	15	4060
NY	CZ5	Heat Pump	7	Enhanced Air Source Heat Pump - SEER/EER 20/14 and HSPF 10.0 (Split System)	New	15	3864
NY	CZ5	Heat Pump	8	ENERGY STAR Geothermal Heat Pump - EER 17.1 and 3.6 COP (Split System)	New	25	3889
NY	CZ5	Heat Pump	9	ENERGY STAR Geothermal Heat Pump - Variable Speed Drive	New	25	3766
NY	CZ5	Heat Room Electric	1	Standard Baseboard Heating - HSPF 3.41	Existing	20	11564
NY	CZ5	Heat Room Electric	2	Ductless Heat Pump - SEER/EER 18/12.5, HSPF 10.0	Existing	15	4640
NY	CZ5	Heat Room Electric	3	Ductless Heat Pump - SEER/EER 21/12.5, HSPF 11.0	Existing	15	4182
NY	CZ5	Heat Room Electric	1	Standard Baseboard Heating - HSPF 3.41	New	20	9841
NY	CZ5	Heat Room Electric	2	Ductless Heat Pump - SEER/EER 18/12.5, HSPF 10.0	New	15	3920
NY	CZ5	Heat Room Electric	3	Ductless Heat Pump - SEER/EER 21/12.5, HSPF 11.0	New	15	3535
NY	CZ5	Lighting Linear Fluorescent	1	Below Standard T8 Linear Fluorescent Lamp	Existing	10	29
NY	CZ5	Lighting Linear Fluorescent	2	Federal Standard 2018 T8 Linear Fluorescent Lamp	Existing	20	27
NY	CZ5	Lighting Linear Fluorescent	3	TLED Linear Lamp	Existing	20	16
NY	CZ5	Lighting Linear Fluorescent	1	Below Standard T8 Linear Fluorescent Lamp	New	10	28
NY	CZ5	Lighting Linear Fluorescent	2	Federal Standard 2018 T8 Linear Fluorescent Lamp	New	20	26

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	EUL	Measure Consumption (kWh/yr)
NY	CZ5	Lighting Linear Fluorescent	3	TLED Linear Lamp	New	20	16
NY	CZ5	Lighting Specialty	1	Specialty Lamp - Incandescent/Halogen (EISA Exempt)	Existing	1	51
NY	CZ5	Lighting Specialty	2	Specialty Lamp - CFL	Existing	7	9
NY	CZ5	Lighting Specialty	3	Specialty Lamp - ENERGY STAR LED	Existing	12	5
NY	CZ5	Lighting Specialty	4	Specialty Lamp - CEE Tier 2 LED	Existing	12	5
NY	CZ5	Lighting Specialty	1	Specialty Lamp - Incandescent/Halogen (EISA Exempt)	New	1	49
NY	CZ5	Lighting Specialty	2	Specialty Lamp - CFL	New	7	9
NY	CZ5	Lighting Specialty	3	Specialty Lamp - ENERGY STAR LED	New	12	5
NY	CZ5	Lighting Specialty	4	Specialty Lamp - CEE Tier 2 LED	New	12	5
NY	CZ5	Lighting Standard	1	General Service Lamp - Incandescent	Existing	1	65
NY	CZ5	Lighting Standard	2	EISA Standard 2014 General Service Lamp - Halogen	Existing	3	47
NY	CZ5	Lighting Standard	3	General Service Lamp - CFL	Existing	7	15
NY	CZ5	Lighting Standard	4	EISA Standard 2020 Backstop General Service Lamp - LED	Existing	21	14
NY	CZ5	Lighting Standard	5	General Service Lamp - ENERGY STAR LED	Existing	21	12
NY	CZ5	Lighting Standard	6	General Service Lamp - CEE Tier 2 LED	Existing	21	11
NY	CZ5	Lighting Standard	1	General Service Lamp - Incandescent	New	1	63
NY	CZ5	Lighting Standard	2	EISA Standard 2014 General Service Lamp - Halogen	New	3	45
NY	CZ5	Lighting Standard	3	General Service Lamp - CFL	New	7	15
NY	CZ5	Lighting Standard	4	EISA Standard 2020 Backstop General Service Lamp - LED	New	21	13
NY	CZ5	Lighting Standard	5	General Service Lamp - ENERGY STAR LED	New	21	11
NY	CZ5	Lighting Standard	6	General Service Lamp - CEE Tier 2 LED	New	21	11
NY	CZ5	Microwave	1	Below Standard Microwave	Existing	6	138
NY	CZ5	Microwave	2	Federal Standard 2016 Microwave	Existing	11	127
NY	CZ5	Microwave	1	Below Standard Microwave	New	6	138
NY	CZ5	Microwave	2	Federal Standard 2016 Microwave	New	11	127
NY	CZ5	Other Electric	1	Standard Other Equipment	Existing	10	0
NY	CZ5	Other Electric	1	Standard Other Equipment	New	10	0
NY	CZ5	Plug Load Other	1	Standard Plug Load Other Equipment	Existing	5	1156

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	EUL	Measure Consumption (kWh/yr)
NY	CZ5	Plug Load Other	1	Standard Plug Load Other Equipment	New	5	1156
NY	CZ5	Pool Pump	1	Single Speed Pool Pump	Existing	10	2485
NY	CZ5	Pool Pump	2	Pool Pump with Variable Speed Drive (VSD)	Existing	10	486
NY	CZ5	Pool Pump	1	Single Speed Pool Pump	New	10	2485
NY	CZ5	Pool Pump	2	Pool Pump with Variable Speed Drive (VSD)	New	10	486
NY	CZ5	Refrigerator	1	Below Standard Refrigerator	Existing	6	498
NY	CZ5	Refrigerator	2	Federal Standard 2015 Refrigerator	Existing	12	445
NY	CZ5	Refrigerator	3	ENERGY STAR Refrigerator	Existing	12	403
NY	CZ5	Refrigerator	4	CEE Tier 2 Refrigerator	Existing	12	374
NY	CZ5	Refrigerator	5	CEE Tier 3 Refrigerator	Existing	12	342
NY	CZ5	Refrigerator	1	Below Standard Refrigerator	New	6	498
NY	CZ5	Refrigerator	2	Federal Standard 2015 Refrigerator	New	12	445
NY	CZ5	Refrigerator	3	ENERGY STAR Refrigerator	New	12	403
NY	CZ5	Refrigerator	4	CEE Tier 2 Refrigerator	New	12	374
NY	CZ5	Refrigerator	5	CEE Tier 3 Refrigerator	New	12	342
NY	CZ5	Tv	1	Standard TV	Existing	6	118
NY	CZ5	Tv	2	ENERGY STAR TV	Existing	6	80
NY	CZ5	Tv	1	Standard TV	New	6	118
NY	CZ5	Tv	2	ENERGY STAR TV	New	6	80
NY	CZ5	Ventilation And Circulation	1	Below Standard Furnace Fan	Existing	8	813
NY	CZ5	Ventilation And Circulation	2	Federal Standard 2019 Furnace Fan	Existing	15	569
NY	CZ5	Ventilation And Circulation	1	Below Standard Furnace Fan	New	8	947
NY	CZ5	Ventilation And Circulation	2	Federal Standard 2019 Furnace Fan	New	15	663
NY	CZ5	Water Heat GT 55 Gal	1	Below Standard Water Heater > 55 GAL - UEF 0.88	Existing	7	3752
NY	CZ5	Water Heat GT 55 Gal	2	Federal Standard 2017 Heat Pump Water Heater > 55 GAL - UEF 2.04	Existing	10	1427
NY	CZ5	Water Heat GT 55 Gal	3	Enhanced Efficiency Heat Pump Water Heater > 55 GAL - UEF 2.2	Existing	10	1281
NY	CZ5	Water Heat GT 55 Gal	4	Advanced Efficiency (No Resistance/Split System) HPWH > 55 GAL - UEF 3.1	Existing	10	740
NY	CZ5	Water Heat GT 55 Gal	1	Below Standard Water Heater > 55 GAL - UEF 0.88	New	7	3752
NY	CZ5	Water Heat GT 55 Gal	2	Federal Standard 2017 Heat Pump Water Heater > 55 GAL - UEF 2.04	New	10	1427
NY	CZ5	Water Heat GT 55 Gal	3	Enhanced Efficiency Heat Pump Water Heater > 55 GAL - UEF 2.2	New	10	1281

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	EUL	Measure Consumption (kWh/yr)
NY	CZ5	Water Heat GT 55 Gal	4	Advanced Efficiency (No Resistance/Split System) HPWH > 55 GAL - UEF 3.1	New	10	740
NY	CZ5	Water Heat LE 55 Gal	1	Below Standard Water Heater ≤ 55 GAL - UEF 0.88	Existing	7	3699
NY	CZ5	Water Heat LE 55 Gal	2	Federal Standard 2017 Storage Water Heater ≤ 55 GAL - UEF 0.92	Existing	10	3589
NY	CZ5	Water Heat LE 55 Gal	3	Enhanced Efficiency Heat Pump Water Heater ≤ 55 GAL - UEF 2.2	Existing	10	982
NY	CZ5	Water Heat LE 55 Gal	4	Advanced Efficiency (No Resistance/Split System) HPWH ≤ 55 GAL - UEF 3.1	Existing	10	528
NY	CZ5	Water Heat LE 55 Gal	1	Below Standard Water Heater ≤ 55 GAL - UEF 0.88	New	7	3699
NY	CZ5	Water Heat LE 55 Gal	2	Federal Standard 2017 Storage Water Heater ≤ 55 GAL - UEF 0.92	New	13	3589
NY	CZ5	Water Heat LE 55 Gal	3	Enhanced Efficiency Heat Pump Water Heater ≤ 55 GAL - UEF 2.2	New	10	982
NY	CZ5	Water Heat LE 55 Gal	4	Advanced Efficiency (No Resistance/Split System) HPWH ≤ 55 GAL - UEF 3.1	New	10	528
NY	CZ6	Air Purifier	1	Standard Air Purifier	Existing	9	569
NY	CZ6	Air Purifier	2	ENERGY STAR Air Purifier	Existing	9	191
NY	CZ6	Air Purifier	1	Standard Air Purifier	New	9	569
NY	CZ6	Air Purifier	2	ENERGY STAR Air Purifier	New	9	191
NY	CZ6	Computer	1	Standard Computer	Existing	4	83
NY	CZ6	Computer	2	ENERGY STAR Computer	Existing	4	48
NY	CZ6	Computer	1	Standard Computer	New	4	83
NY	CZ6	Computer	2	ENERGY STAR Computer	New	4	48
NY	CZ6	Cooking Oven	1	Below Standard Cooking Oven	Existing	10	289
NY	CZ6	Cooking Oven	2	Federal Standard 2012 Cooking Oven	Existing	19	165
NY	CZ6	Cooking Oven	1	Below Standard Cooking Oven	New	10	289
NY	CZ6	Cooking Oven	2	Federal Standard 2012 Cooking Oven	New	19	165
NY	CZ6	Cooking Range	1	Below Standard Cooking Range	Existing	10	227
NY	CZ6	Cooking Range	2	Federal Standard 2012 Cooking Range	Existing	19	121
NY	CZ6	Cooking Range	1	Below Standard Cooking Range	New	10	227
NY	CZ6	Cooking Range	2	Federal Standard 2012 Cooking Range	New	19	121
NY	CZ6	Cool Central	1	Below Standard Central Air Conditioner - SEER/EER 10/9.2 (Split System)	Existing	8	725
NY	CZ6	Cool Central	2	Federal Standard 2015 Central Air Conditioner - SEER/EER 13/11.2 (Split System)	Existing	15	592
NY	CZ6	Cool Central	3	Federal Standard 2023 Central Air Conditioner - SEER/EER 14/12 (Split System)	Existing	15	549
NY	CZ6	Cool Central	4	ENERGY STAR Central Air Conditioner - SEER/EER 15/12.5 (Split System)	Existing	15	513

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	EUL	Measure Consumption (kWh/yr)
NY	CZ6	Cool Central	5	CEE Tier 2 Central Air Conditioner - SEER/EER 16/13 (Split System)	Existing	15	481
NY	CZ6	Cool Central	6	CEE Tier 3 Central Air Conditioner - SEER/EER 18/13 (Split System)	Existing	15	427
NY	CZ6	Cool Central	7	Enhanced Central Air Conditioner - SEER/EER 20/14 (Split System)	Existing	15	385
NY	CZ6	Cool Central	1	Below Standard Central Air Conditioner - SEER/EER 10/9.2 (Split System)	New	8	610
NY	CZ6	Cool Central	2	Federal Standard 2015 Central Air Conditioner - SEER/EER 13/11.2 (Split System)	New	15	498
NY	CZ6	Cool Central	3	Federal Standard 2023 Central Air Conditioner - SEER/EER 14/12 (Split System)	New	15	462
NY	CZ6	Cool Central	4	ENERGY STAR Central Air Conditioner - SEER/EER 15/12.5 (Split System)	New	15	432
NY	CZ6	Cool Central	5	CEE Tier 2 Central Air Conditioner - SEER/EER 16/13 (Split System)	New	15	405
NY	CZ6	Cool Central	6	CEE Tier 3 Central Air Conditioner - SEER/EER 18/13 (Split System)	New	15	360
NY	CZ6	Cool Central	7	Enhanced Central Air Conditioner - SEER/EER 20/14 (Split System)	New	15	324
NY	CZ6	Cool Room	1	Below Standard Room AC - CEER 9.7 (8,000-13,999 Btuh)	Existing	6	141
NY	CZ6	Cool Room	2	Federal Standard 2015 Room AC - CEER 10.9 (8,000-13,999 Btuh)	Existing	12	127
NY	CZ6	Cool Room	3	ENERGY STAR Room AC - CEER 12.0 (8,000-13,999 Btuh)	Existing	12	115
NY	CZ6	Cool Room	1	Below Standard Room AC - CEER 9.7 (8,000-13,999 Btuh)	New	6	121
NY	CZ6	Cool Room	2	Federal Standard 2015 Room AC - CEER 10.9 (8,000-13,999 Btuh)	New	12	109
NY	CZ6	Cool Room	3	ENERGY STAR Room AC - CEER 12.0 (8,000-13,999 Btuh)	New	12	99
NY	CZ6	Dehumidifier	1	Below Standard Dehumidifier	Existing	6	826
NY	CZ6	Dehumidifier	2	Federal Standard 2013 Dehumidifier	Existing	12	622
NY	CZ6	Dehumidifier	3	ENERGY STAR Dehumidifier	Existing	12	508
NY	CZ6	Dehumidifier	1	Below Standard Dehumidifier	New	6	826
NY	CZ6	Dehumidifier	2	Federal Standard 2013 Dehumidifier	New	12	622
NY	CZ6	Dehumidifier	3	ENERGY STAR Dehumidifier	New	12	508
NY	CZ6	Dryer	1	Below Standard Dryer - CEF/EF 2.27/2.72 (Electric Dryer)	Existing	6	853
NY	CZ6	Dryer	2	Federal Standard 2016 Dryer - CEF/EF 3.11/3.73 (Electric Dryer)	Existing	12	622
NY	CZ6	Dryer	3	ENERGY STAR Dryer - CEF 3.93 (Electric Dryer)	Existing	12	590
NY	CZ6	Dryer	1	Below Standard Dryer - CEF/EF 2.27/2.72 (Electric Dryer)	New	6	853
NY	CZ6	Dryer	2	Federal Standard 2016 Dryer - CEF/EF 3.11/3.73 (Electric Dryer)	New	12	622

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	EUL	Measure Consumption (kWh/yr)
NY	CZ6	Dryer	3	ENERGY STAR Dryer - CEF 3.93 (Electric Dryer)	New	12	590
NY	CZ6	Freezer	1	Below Standard Freezer	Existing	6	617
NY	CZ6	Freezer	2	Federal Standard 2015 Freezer	Existing	12	433
NY	CZ6	Freezer	3	ENERGY STAR Freezer	Existing	12	390
NY	CZ6	Freezer	1	Below Standard Freezer	New	6	617
NY	CZ6	Freezer	2	Federal Standard 2015 Freezer	New	12	433
NY	CZ6	Freezer	3	ENERGY STAR Freezer	New	12	390
NY	CZ6	Heat Central Electric Furnace	1	Standard Electric Furnace - HSPF 3.41	Existing	22	14151
NY	CZ6	Heat Central Electric Furnace	1	Standard Electric Furnace - HSPF 3.41	New	22	9828
NY	CZ6	Heat Pump	1	Below Standard Air Source Heat Pump - SEER/EER 10/9.8 and HSPF 7.2 (Split System)	Existing	8	6954
NY	CZ6	Heat Pump	2	Federal Standard 2015 Air Source Heat Pump - SEER/EER 14/12 and HSPF 8.2 (Split System)	Existing	15	5941
NY	CZ6	Heat Pump	3	ENERGY STAR Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	Existing	15	5708
NY	CZ6	Heat Pump	4	Federal Standard 2023 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.8 (Split System)	Existing	15	5537
NY	CZ6	Heat Pump	5	CEE Tier 2 Air Source Heat Pump - SEER/EER 16/13 and HSPF 9.0 (Split System)	Existing	15	5386
NY	CZ6	Heat Pump	6	CEE Tier 3 Air Source Heat Pump - SEER/EER 18/13 and HSPF 9.6 (Split System)	Existing	15	5019
NY	CZ6	Heat Pump	7	Enhanced Air Source Heat Pump - SEER/EER 20/14 and HSPF 10.0 (Split System)	Existing	15	4785
NY	CZ6	Heat Pump	8	ENERGY STAR Geothermal Heat Pump - EER 17.1 and 3.6 COP (Split System)	Existing	25	4863
NY	CZ6	Heat Pump	9	ENERGY STAR Geothermal Heat Pump - Variable Speed Drive	Existing	25	4733
NY	CZ6	Heat Pump	1	Below Standard Air Source Heat Pump - SEER/EER 10/9.8 and HSPF 7.2 (Split System)	New	8	4747
NY	CZ6	Heat Pump	2	Federal Standard 2015 Air Source Heat Pump - SEER/EER 14/12 and HSPF 8.2 (Split System)	New	15	4067
NY	CZ6	Heat Pump	3	ENERGY STAR Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.5 (Split System)	New	15	3910
NY	CZ6	Heat Pump	4	Federal Standard 2023 Air Source Heat Pump - SEER/EER 15/12.5 and HSPF 8.8 (Split System)	New	15	3791

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	EUL	Measure Consumption (kWh/yr)
NY	CZ6	Heat Pump	5	CEE Tier 2 Air Source Heat Pump - SEER/EER 16/13 and HSPF 9.0 (Split System)	New	15	3690
NY	CZ6	Heat Pump	6	CEE Tier 3 Air Source Heat Pump - SEER/EER 18/13 and HSPF 9.6 (Split System)	New	15	3440
NY	CZ6	Heat Pump	7	Enhanced Air Source Heat Pump - SEER/EER 20/14 and HSPF 10.0 (Split System)	New	15	3282
NY	CZ6	Heat Pump	8	ENERGY STAR Geothermal Heat Pump - EER 17.1 and 3.6 COP (Split System)	New	25	3350
NY	CZ6	Heat Pump	9	ENERGY STAR Geothermal Heat Pump - Variable Speed Drive	New	25	3267
NY	CZ6	Heat Room Electric	1	Standard Baseboard Heating - HSPF 3.41	Existing	20	12545
NY	CZ6	Heat Room Electric	2	Ductless Heat Pump - SEER/EER 18/12.5, HSPF 10.0	Existing	15	4841
NY	CZ6	Heat Room Electric	3	Ductless Heat Pump - SEER/EER 21/12.5, HSPF 11.0	Existing	15	4372
NY	CZ6	Heat Room Electric	1	Standard Baseboard Heating - HSPF 3.41	New	20	8712
NY	CZ6	Heat Room Electric	2	Ductless Heat Pump - SEER/EER 18/12.5, HSPF 10.0	New	15	3316
NY	CZ6	Heat Room Electric	3	Ductless Heat Pump - SEER/EER 21/12.5, HSPF 11.0	New	15	2997
NY	CZ6	Lighting Linear Fluorescent	1	Below Standard T8 Linear Fluorescent Lamp	Existing	10	29
NY	CZ6	Lighting Linear Fluorescent	2	Federal Standard 2018 T8 Linear Fluorescent Lamp	Existing	20	27
NY	CZ6	Lighting Linear Fluorescent	3	TLED Linear Lamp	Existing	20	16
NY	CZ6	Lighting Linear Fluorescent	1	Below Standard T8 Linear Fluorescent Lamp	New	10	28
NY	CZ6	Lighting Linear Fluorescent	2	Federal Standard 2018 T8 Linear Fluorescent Lamp	New	20	26
NY	CZ6	Lighting Linear Fluorescent	3	TLED Linear Lamp	New	20	16
NY	CZ6	Lighting Specialty	1	Specialty Lamp - Incandescent/Halogen (EISA Exempt)	Existing	1	51
NY	CZ6	Lighting Specialty	2	Specialty Lamp - CFL	Existing	7	9
NY	CZ6	Lighting Specialty	3	Specialty Lamp - ENERGY STAR LED	Existing	12	5
NY	CZ6	Lighting Specialty	4	Specialty Lamp - CEE Tier 2 LED	Existing	12	5
NY	CZ6	Lighting Specialty	1	Specialty Lamp - Incandescent/Halogen (EISA Exempt)	New	1	49
NY	CZ6	Lighting Specialty	2	Specialty Lamp - CFL	New	7	9
NY	CZ6	Lighting Specialty	3	Specialty Lamp - ENERGY STAR LED	New	12	5

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	EUL	Measure Consumption (kWh/yr)
NY	CZ6	Lighting Specialty	4	Specialty Lamp - CEE Tier 2 LED	New	12	5
NY	CZ6	Lighting Standard	1	General Service Lamp - Incandescent	Existing	1	65
NY	CZ6	Lighting Standard	2	EISA Standard 2014 General Service Lamp - Halogen	Existing	3	47
NY	CZ6	Lighting Standard	3	General Service Lamp - CFL	Existing	7	15
NY	CZ6	Lighting Standard	4	EISA Standard 2020 Backstop General Service Lamp - LED	Existing	21	14
NY	CZ6	Lighting Standard	5	General Service Lamp - ENERGY STAR LED	Existing	21	12
NY	CZ6	Lighting Standard	6	General Service Lamp - CEE Tier 2 LED	Existing	21	11
NY	CZ6	Lighting Standard	1	General Service Lamp - Incandescent	New	1	63
NY	CZ6	Lighting Standard	2	EISA Standard 2014 General Service Lamp - Halogen	New	3	45
NY	CZ6	Lighting Standard	3	General Service Lamp - CFL	New	7	15
NY	CZ6	Lighting Standard	4	EISA Standard 2020 Backstop General Service Lamp - LED	New	21	13
NY	CZ6	Lighting Standard	5	General Service Lamp - ENERGY STAR LED	New	21	11
NY	CZ6	Lighting Standard	6	General Service Lamp - CEE Tier 2 LED	New	21	11
NY	CZ6	Microwave	1	Below Standard Microwave	Existing	6	138
NY	CZ6	Microwave	2	Federal Standard 2016 Microwave	Existing	11	127
NY	CZ6	Microwave	1	Below Standard Microwave	New	6	138
NY	CZ6	Microwave	2	Federal Standard 2016 Microwave	New	11	127
NY	CZ6	Other Electric	1	Standard Other Equipment	Existing	10	0
NY	CZ6	Other Electric	1	Standard Other Equipment	New	10	0
NY	CZ6	Plug Load Other	1	Standard Plug Load Other Equipment	Existing	5	1156
NY	CZ6	Plug Load Other	1	Standard Plug Load Other Equipment	New	5	1156
NY	CZ6	Pool Pump	1	Single Speed Pool Pump	Existing	10	2485
NY	CZ6	Pool Pump	2	Pool Pump with Variable Speed Drive (VSD)	Existing	10	486
NY	CZ6	Pool Pump	1	Single Speed Pool Pump	New	10	2485
NY	CZ6	Pool Pump	2	Pool Pump with Variable Speed Drive (VSD)	New	10	486
NY	CZ6	Refrigerator	1	Below Standard Refrigerator	Existing	6	498
NY	CZ6	Refrigerator	2	Federal Standard 2015 Refrigerator	Existing	12	445
NY	CZ6	Refrigerator	3	ENERGY STAR Refrigerator	Existing	12	403
NY	CZ6	Refrigerator	4	CEE Tier 2 Refrigerator	Existing	12	374
NY	CZ6	Refrigerator	5	CEE Tier 3 Refrigerator	Existing	12	342
NY	CZ6	Refrigerator	1	Below Standard Refrigerator	New	6	498
NY	CZ6	Refrigerator	2	Federal Standard 2015 Refrigerator	New	12	445
NY	CZ6	Refrigerator	3	ENERGY STAR Refrigerator	New	12	403

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	EUL	Measure Consumption (kWh/yr)
NY	CZ6	Refrigerator	4	CEE Tier 2 Refrigerator	New	12	374
NY	CZ6	Refrigerator	5	CEE Tier 3 Refrigerator	New	12	342
NY	CZ6	Tv	1	Standard TV	Existing	6	118
NY	CZ6	Tv	2	ENERGY STAR TV	Existing	6	80
NY	CZ6	Tv	1	Standard TV	New	6	118
NY	CZ6	Tv	2	ENERGY STAR TV	New	6	80
NY	CZ6	Ventilation And Circulation	1	Below Standard Furnace Fan	Existing	8	813
NY	CZ6	Ventilation And Circulation	2	Federal Standard 2019 Furnace Fan	Existing	15	569
NY	CZ6	Ventilation And Circulation	1	Below Standard Furnace Fan	New	8	947
NY	CZ6	Ventilation And Circulation	2	Federal Standard 2019 Furnace Fan	New	15	663
NY	CZ6	Water Heat GT 55 Gal	1	Below Standard Water Heater > 55 GAL - UEF 0.88	Existing	7	3752
NY	CZ6	Water Heat GT 55 Gal	2	Federal Standard 2017 Heat Pump Water Heater > 55 GAL - UEF 2.04	Existing	10	1427
NY	CZ6	Water Heat GT 55 Gal	3	Enhanced Efficiency Heat Pump Water Heater > 55 GAL - UEF 2.2	Existing	10	1281
NY	CZ6	Water Heat GT 55 Gal	4	Advanced Efficiency (No Resistance/Split System) HPWH > 55 GAL - UEF 3.1	Existing	10	740
NY	CZ6	Water Heat GT 55 Gal	1	Below Standard Water Heater > 55 GAL - UEF 0.88	New	7	3752
NY	CZ6	Water Heat GT 55 Gal	2	Federal Standard 2017 Heat Pump Water Heater > 55 GAL - UEF 2.04	New	10	1427
NY	CZ6	Water Heat GT 55 Gal	3	Enhanced Efficiency Heat Pump Water Heater > 55 GAL - UEF 2.2	New	10	1281
NY	CZ6	Water Heat GT 55 Gal	4	Advanced Efficiency (No Resistance/Split System) HPWH > 55 GAL - UEF 3.1	New	10	740
NY	CZ6	Water Heat LE 55 Gal	1	Below Standard Water Heater ≤ 55 GAL - UEF 0.88	Existing	7	3699
NY	CZ6	Water Heat LE 55 Gal	2	Federal Standard 2017 Storage Water Heater ≤ 55 GAL - UEF 0.92	Existing	13	3589
NY	CZ6	Water Heat LE 55 Gal	3	Enhanced Efficiency Heat Pump Water Heater ≤ 55 GAL - UEF 2.2	Existing	10	982
NY	CZ6	Water Heat LE 55 Gal	4	Advanced Efficiency (No Resistance/Split System) HPWH ≤ 55 GAL - UEF 3.1	Existing	10	528
NY	CZ6	Water Heat LE 55 Gal	1	Below Standard Water Heater ≤ 55 GAL - UEF 0.88	New	7	3699
NY	CZ6	Water Heat LE 55 Gal	2	Federal Standard 2017 Storage Water Heater ≤ 55 GAL - UEF 0.92	New	13	3589
NY	CZ6	Water Heat LE 55 Gal	3	Enhanced Efficiency Heat Pump Water Heater ≤ 55 GAL - UEF 2.2	New	10	982

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	EUL	Measure Consumption (kWh/yr)
NY	CZ6	Water Heat LE 55 Gal	4	Advanced Efficiency (No Resistance/Split System) HPWH ≤ 55 GAL - UEF 3.1	New	10	528

FIGURE B-5. RESIDENTIAL SINGLE-FAMILY BASELINE FORECAST BY REGION—NATURAL GAS

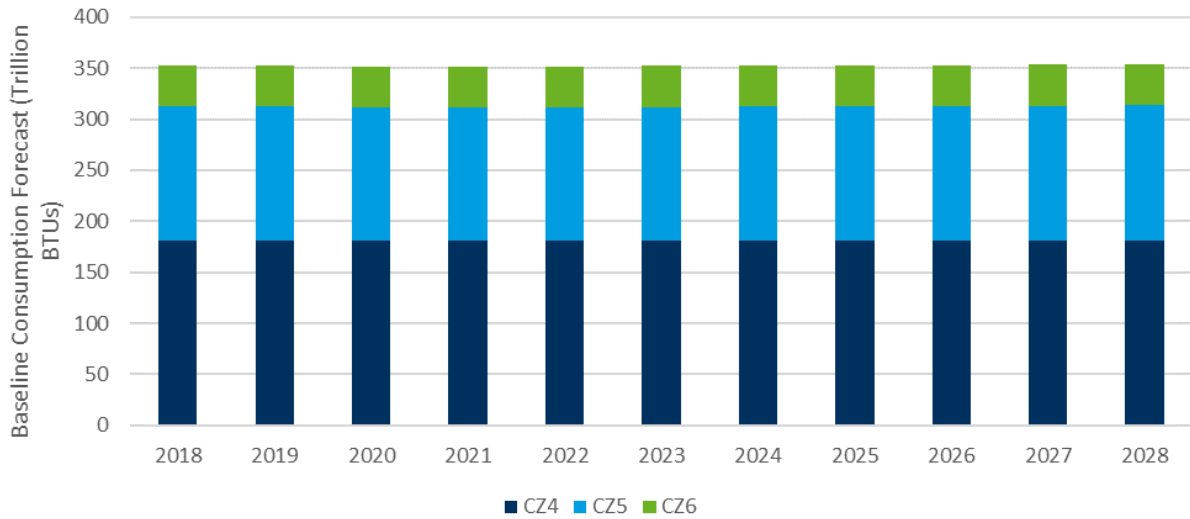


FIGURE B-6. RESIDENTIAL SINGLE-FAMILY BASELINE FORECAST BY END USE—NATURAL GAS

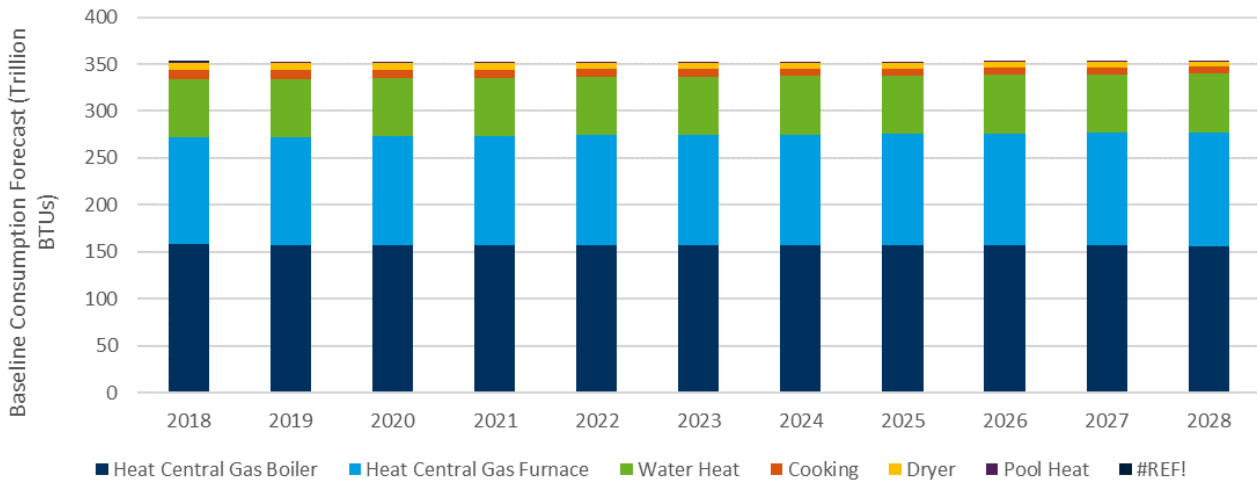


FIGURE B-7. RESIDENTIAL SINGLE-FAMILY FORECAST OF SAVINGS FROM FUTURE FEDERAL STANDARDS—NATURAL GAS

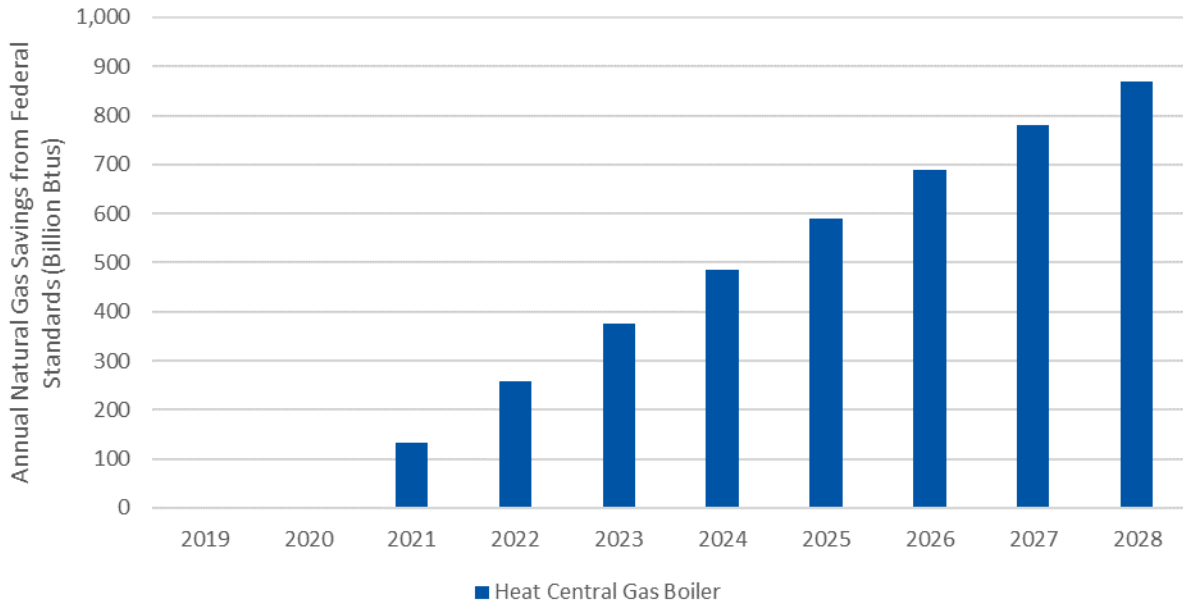


TABLE B-6. RESIDENTIAL SINGLE-FAMILY BASELINE ASSUMPTIONS—NATURAL GAS

Region	New York State
2018	3,352,277
2019	3,364,607
2020	3,376,937
2021	3,389,267
2022	3,401,597
2023	3,413,927
2024	3,426,257
2025	3,438,587
2026	3,450,917
2027	3,463,247
2028	3,475,577

TABLE B-7. RESIDENTIAL SINGLE-FAMILY BASELINE ASSUMPTIONS—NATURAL GAS

Year	CZ4	CZ5	CZ6
2018	1,646,633	1,354,411	351,233
2019	1,652,689	1,359,393	352,525
2020	1,658,746	1,364,375	353,816
2021	1,664,802	1,369,356	355,108
2022	1,670,859	1,374,338	356,400
2023	1,676,915	1,379,320	357,692
2024	1,682,972	1,384,301	358,984
2025	1,689,028	1,389,283	360,276
2026	1,695,085	1,394,265	361,568
2027	1,701,141	1,399,246	362,859
2028	1,707,198	1,404,228	364,151

TABLE B-8. RESIDENTIAL SINGLE-FAMILY BASELINE ASSUMPTIONS—NATURAL GAS

Region	Fuel Type	Segment	Location	End Use	Vintage	Saturation	Fuel Share
NYS	Natural Gas	Single Family	CZ4	Cooking Oven	Existing	115%	72%
NYS	Natural Gas	Single Family	CZ4	Cooking Range	Existing	113%	82%
NYS	Natural Gas	Single Family	CZ4	Dryer	Existing	99%	65%
NYS	Natural Gas	Single Family	CZ4	Heat Central Gas Boiler	Existing	64%	100%
NYS	Natural Gas	Single Family	CZ4	Heat Central Gas Furnace	Existing	22%	100%
NYS	Natural Gas	Single Family	CZ4	Other Gas	Existing	100%	100%
NYS	Natural Gas	Single Family	CZ4	Pool Heat	Existing	3%	31%
NYS	Natural Gas	Single Family	CZ4	Water Heat GT 55 Gal	Existing	7%	92%
NYS	Natural Gas	Single Family	CZ4	Water Heat LE 55 Gal	Existing	96%	92%
NYS	Natural Gas	Single Family	CZ5	Cooking Oven	Existing	115%	72%
NYS	Natural Gas	Single Family	CZ5	Cooking Range	Existing	113%	82%
NYS	Natural Gas	Single Family	CZ5	Dryer	Existing	99%	65%
NYS	Natural Gas	Single Family	CZ5	Heat Central Gas Boiler	Existing	20%	100%
NYS	Natural Gas	Single Family	CZ5	Heat Central Gas Furnace	Existing	74%	100%
NYS	Natural Gas	Single Family	CZ5	Other Gas	Existing	100%	100%
NYS	Natural Gas	Single Family	CZ5	Pool Heat	Existing	3%	31%
NYS	Natural Gas	Single Family	CZ5	Water Heat GT 55 Gal	Existing	7%	92%
NYS	Natural Gas	Single Family	CZ5	Water Heat LE 55 Gal	Existing	96%	92%
NYS	Natural Gas	Single Family	CZ6	Cooking Oven	Existing	115%	72%
NYS	Natural Gas	Single Family	CZ6	Cooking Range	Existing	113%	82%
NYS	Natural Gas	Single Family	CZ6	Dryer	Existing	99%	65%
NYS	Natural Gas	Single Family	CZ6	Heat Central Gas Boiler	Existing	41%	100%
NYS	Natural Gas	Single Family	CZ6	Heat Central Gas Furnace	Existing	56%	100%
NYS	Natural Gas	Single Family	CZ6	Other Gas	Existing	100%	100%
NYS	Natural Gas	Single Family	CZ6	Pool Heat	Existing	3%	31%
NYS	Natural Gas	Single Family	CZ6	Water Heat GT 55 Gal	Existing	7%	92%
NYS	Natural Gas	Single Family	CZ6	Water Heat LE 55 Gal	Existing	96%	92%
NYS	Natural Gas	Single Family	CZ4	Cooking Oven	New	90%	72%
NYS	Natural Gas	Single Family	CZ4	Cooking Range	New	89%	82%
NYS	Natural Gas	Single Family	CZ4	Dryer	New	101%	65%
NYS	Natural Gas	Single Family	CZ4	Heat Central Gas Boiler	New	12%	100%
NYS	Natural Gas	Single Family	CZ4	Heat Central Gas Furnace	New	84%	100%
NYS	Natural Gas	Single Family	CZ4	Other Gas	New	100%	100%
NYS	Natural Gas	Single Family	CZ4	Pool Heat	New	11%	31%
NYS	Natural Gas	Single Family	CZ4	Water Heat GT 55 Gal	New	13%	92%
NYS	Natural Gas	Single Family	CZ4	Water Heat LE 55 Gal	New	91%	92%
NYS	Natural Gas	Single Family	CZ5	Cooking Oven	New	90%	72%
NYS	Natural Gas	Single Family	CZ5	Cooking Range	New	89%	82%
NYS	Natural Gas	Single Family	CZ5	Dryer	New	101%	65%
NYS	Natural Gas	Single Family	CZ5	Heat Central Gas Boiler	New	2%	100%
NYS	Natural Gas	Single Family	CZ5	Heat Central Gas Furnace	New	88%	100%
NYS	Natural Gas	Single Family	CZ5	Other Gas	New	100%	100%
NYS	Natural Gas	Single Family	CZ5	Pool Heat	New	11%	31%
NYS	Natural Gas	Single Family	CZ5	Water Heat GT 55 Gal	New	13%	92%
NYS	Natural Gas	Single Family	CZ5	Water Heat LE 55 Gal	New	91%	92%
NYS	Natural Gas	Single Family	CZ6	Cooking Oven	New	90%	72%
NYS	Natural Gas	Single Family	CZ6	Cooking Range	New	89%	82%
NYS	Natural Gas	Single Family	CZ6	Dryer	New	101%	65%
NYS	Natural Gas	Single Family	CZ6	Heat Central Gas Boiler	New	12%	100%
NYS	Natural Gas	Single Family	CZ6	Heat Central Gas Furnace	New	84%	100%
NYS	Natural Gas	Single Family	CZ6	Other Gas	New	100%	100%
NYS	Natural Gas	Single Family	CZ6	Pool Heat	New	11%	31%
NYS	Natural Gas	Single Family	CZ6	Water Heat GT 55 Gal	New	13%	92%
NYS	Natural Gas	Single Family	CZ6	Water Heat LE 55 Gal	New	91%	92%

TABLE B-9. BASELINE FORECAST ASSUMPTIONS—NATURAL GAS END-USE EFFICIENCY SHARES

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	E-Share
NYS	CZ4	Cooking Oven	1	Below Standard Cooking Oven	Existing	63%
NYS	CZ4	Cooking Oven	2	Federal Standard 2012 Cooking Oven	Existing	37%
NYS	CZ4	Cooking Oven	1	Below Standard Cooking Oven	New	0%
NYS	CZ4	Cooking Oven	2	Federal Standard 2012 Cooking Oven	New	100%
NYS	CZ4	Cooking Range	1	Below Standard Cooking Range	Existing	63%
NYS	CZ4	Cooking Range	2	Federal Standard 2012 Cooking Range	Existing	37%
NYS	CZ4	Cooking Range	1	Below Standard Cooking Range	New	0%
NYS	CZ4	Cooking Range	2	Federal Standard 2012 Cooking Range	New	100%
NYS	CZ4	Dryer	1	Below Standard Dryer - CEF/EF 1.57/1.82 (Gas Dryer)	Existing	51%
NYS	CZ4	Dryer	2	Federal Standard 2016 Dryer - CEF/EF 2.84/3.30 (Gas Dryer)	Existing	26%
NYS	CZ4	Dryer	3	ENERGY STAR Dryer - CEF 3.48 (Gas Dryer)	Existing	24%
NYS	CZ4	Dryer	1	Below Standard Dryer - CEF/EF 1.57/1.82 (Gas Dryer)	New	0%
NYS	CZ4	Dryer	2	Federal Standard 2016 Dryer - CEF/EF 2.84/3.30 (Gas Dryer)	New	77%
NYS	CZ4	Dryer	3	ENERGY STAR Dryer - CEF 3.48 (Gas Dryer)	New	24%
NYS	CZ4	Heat Central Gas Boiler	1	Below Standard Boiler - 78% AFUE	Existing	42%
NYS	CZ4	Heat Central Gas Boiler	2	Federal Standard 2012 Gas Boiler (Water) - 82% AFUE	Existing	18%
NYS	CZ4	Heat Central Gas Boiler	3	Federal Standard 2021 Gas Boiler (Water) - 84% AFUE	Existing	24%
NYS	CZ4	Heat Central Gas Boiler	4	90% AFUE	Existing	4%
NYS	CZ4	Heat Central Gas Boiler	5	95% AFUE	Existing	12%
NYS	CZ4	Heat Central Gas Boiler	1	Below Standard Boiler - 78% AFUE	New	0%
NYS	CZ4	Heat Central Gas Boiler	2	Federal Standard 2012 Gas Boiler (Water) - 82% AFUE	New	60%
NYS	CZ4	Heat Central Gas Boiler	3	Federal Standard 2021 Gas Boiler (Water) - 84% AFUE	New	24%
NYS	CZ4	Heat Central Gas Boiler	4	90% AFUE	New	4%
NYS	CZ4	Heat Central Gas Boiler	5	95% AFUE	New	12%
NYS	CZ4	Heat Central Gas Furnace	1	Below Standard Furnace - 76% AFUE	Existing	0%
NYS	CZ4	Heat Central Gas Furnace	2	Federal Standard 2015 Gas Furnace - 80% AFUE	Existing	41%
NYS	CZ4	Heat Central Gas Furnace	3	High Efficiency Furnace - 90% AFUE	Existing	16%
NYS	CZ4	Heat Central Gas Furnace	4	High Efficiency Furnace - 95% AFUE	Existing	43%
NYS	CZ4	Heat Central Gas Furnace	5	High Efficiency Furnace - 98% AFUE	Existing	0%
NYS	CZ4	Heat Central Gas Furnace	1	Below Standard Furnace - 76% AFUE	New	0%
NYS	CZ4	Heat Central Gas Furnace	2	Federal Standard 2015 Gas Furnace - 80% AFUE	New	41%
NYS	CZ4	Heat Central Gas Furnace	3	High Efficiency Furnace - 90% AFUE	New	16%

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	E-Share
NYS	CZ4	Heat Central Gas Furnace	4	High Efficiency Furnace - 95% AFUE	New	43%
NYS	CZ4	Heat Central Gas Furnace	5	High Efficiency Furnace - 98% AFUE	New	0%
NYS	CZ4	Other Gas	1	Standard Other Equipment	Existing	100%
NYS	CZ4	Other Gas	1	Standard Other Equipment	New	100%
NYS	CZ4	Pool Heat	1	Below Standard Pool Heater - 78% Efficient	Existing	37%
NYS	CZ4	Pool Heat	2	Federal Standard 2014 Pool Heater - 82% Efficient	Existing	61%
NYS	CZ4	Pool Heat	3	Efficient Pool Heater - 88% Efficient	Existing	3%
NYS	CZ4	Pool Heat	1	Below Standard Pool Heater - 78% Efficient	New	0%
NYS	CZ4	Pool Heat	2	Federal Standard 2014 Pool Heater - 82% Efficient	New	98%
NYS	CZ4	Pool Heat	3	Efficient Pool Heater - 88% Efficient	New	3%
NYS	CZ4	Water Heat GT 55 Gal	1	Below Standard Water Heater > 55 GAL - UEF 0.54	Existing	8%
NYS	CZ4	Water Heat GT 55 Gal	2	Federal Standard 2017 Condensing Water Heater > 55 GAL - UEF 0.76	Existing	71%
NYS	CZ4	Water Heat GT 55 Gal	3	ENERGY STAR Condensing Water Heater > 55 GAL - UEF 0.78	Existing	18%
NYS	CZ4	Water Heat GT 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing > 55 GAL) - UEF 0.87	Existing	1%
NYS	CZ4	Water Heat GT 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing > 55 GAL) - UEF 0.92	Existing	2%
NYS	CZ4	Water Heat GT 55 Gal	1	Below Standard Water Heater > 55 GAL - UEF 0.54	New	0%
NYS	CZ4	Water Heat GT 55 Gal	2	Federal Standard 2017 Condensing Water Heater > 55 GAL - UEF 0.76	New	79%
NYS	CZ4	Water Heat GT 55 Gal	3	ENERGY STAR Condensing Water Heater > 55 GAL - UEF 0.78	New	18%
NYS	CZ4	Water Heat GT 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing > 55 GAL) - UEF 0.87	New	1%
NYS	CZ4	Water Heat GT 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing > 55 GAL) - UEF 0.92	New	2%
NYS	CZ4	Water Heat LE 55 Gal	1	Below Standard Water Heater ≤ 55 GAL - UEF 0.55	Existing	8%
NYS	CZ4	Water Heat LE 55 Gal	2	Federal Standard 2017 Storage Water Heater ≤ 55 GAL - UEF 0.58	Existing	71%
NYS	CZ4	Water Heat LE 55 Gal	3	ENERGY STAR Storage Water Heater ≤ 55 GAL - UEF 0.64	Existing	18%
NYS	CZ4	Water Heat LE 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.87	Existing	1%
NYS	CZ4	Water Heat LE 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.92	Existing	2%
NYS	CZ4	Water Heat LE 55 Gal	1	Below Standard Water Heater ≤ 55 GAL - UEF 0.55	New	0%
NYS	CZ4	Water Heat LE 55 Gal	2	Federal Standard 2017 Storage Water Heater ≤ 55 GAL - UEF 0.58	New	24%
NYS	CZ4	Water Heat LE 55 Gal	3	ENERGY STAR Storage Water Heater ≤ 55 GAL - UEF 0.64	New	58%
NYS	CZ4	Water Heat LE 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.87	New	0%
NYS	CZ4	Water Heat LE 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.92	New	18%
NYS	CZ5	Cooking Oven	1	Below Standard Cooking Oven	Existing	63%
NYS	CZ5	Cooking Oven	2	Federal Standard 2012 Cooking Oven	Existing	37%
NYS	CZ5	Cooking Oven	1	Below Standard Cooking Oven	New	0%

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	E-Share
NYS	CZ5	Cooking Oven	2	Federal Standard 2012 Cooking Oven	New	100%
NYS	CZ5	Cooking Range	1	Below Standard Cooking Range	Existing	63%
NYS	CZ5	Cooking Range	2	Federal Standard 2012 Cooking Range	Existing	37%
NYS	CZ5	Cooking Range	1	Below Standard Cooking Range	New	0%
NYS	CZ5	Cooking Range	2	Federal Standard 2012 Cooking Range	New	100%
NYS	CZ5	Dryer	1	Below Standard Dryer - CEF/EF 1.57/1.82 (Gas Dryer)	Existing	51%
NYS	CZ5	Dryer	2	Federal Standard 2016 Dryer - CEF/EF 2.84/3.30 (Gas Dryer)	Existing	26%
NYS	CZ5	Dryer	3	ENERGY STAR Dryer - CEF 3.48 (Gas Dryer)	Existing	24%
NYS	CZ5	Dryer	1	Below Standard Dryer - CEF/EF 1.57/1.82 (Gas Dryer)	New	0%
NYS	CZ5	Dryer	2	Federal Standard 2016 Dryer - CEF/EF 2.84/3.30 (Gas Dryer)	New	77%
NYS	CZ5	Dryer	3	ENERGY STAR Dryer - CEF 3.48 (Gas Dryer)	New	24%
NYS	CZ5	Heat Central Gas Boiler	1	Below Standard Boiler - 78% AFUE	Existing	42%
NYS	CZ5	Heat Central Gas Boiler	2	Federal Standard 2012 Gas Boiler (Water) - 82% AFUE	Existing	18%
NYS	CZ5	Heat Central Gas Boiler	3	Federal Standard 2021 Gas Boiler (Water) - 84% AFUE	Existing	24%
NYS	CZ5	Heat Central Gas Boiler	4	90% AFUE	Existing	4%
NYS	CZ5	Heat Central Gas Boiler	5	95% AFUE	Existing	12%
NYS	CZ5	Heat Central Gas Boiler	1	Below Standard Boiler - 78% AFUE	New	0%
NYS	CZ5	Heat Central Gas Boiler	2	Federal Standard 2012 Gas Boiler (Water) - 82% AFUE	New	60%
NYS	CZ5	Heat Central Gas Boiler	3	Federal Standard 2021 Gas Boiler (Water) - 84% AFUE	New	24%
NYS	CZ5	Heat Central Gas Boiler	4	90% AFUE	New	4%
NYS	CZ5	Heat Central Gas Boiler	5	95% AFUE	New	12%
NYS	CZ5	Heat Central Gas Furnace	1	Below Standard Furnace - 76% AFUE	Existing	2%
NYS	CZ5	Heat Central Gas Furnace	2	Federal Standard 2015 Gas Furnace - 80% AFUE	Existing	40%
NYS	CZ5	Heat Central Gas Furnace	3	High Efficiency Furnace - 90% AFUE	Existing	15%
NYS	CZ5	Heat Central Gas Furnace	4	High Efficiency Furnace - 95% AFUE	Existing	42%
NYS	CZ5	Heat Central Gas Furnace	5	High Efficiency Furnace - 98% AFUE	Existing	0%
NYS	CZ5	Heat Central Gas Furnace	1	Below Standard Furnace - 76% AFUE	New	0%
NYS	CZ5	Heat Central Gas Furnace	2	Federal Standard 2015 Gas Furnace - 80% AFUE	New	43%
NYS	CZ5	Heat Central Gas Furnace	3	High Efficiency Furnace - 90% AFUE	New	15%
NYS	CZ5	Heat Central Gas Furnace	4	High Efficiency Furnace - 95% AFUE	New	42%
NYS	CZ5	Heat Central Gas Furnace	5	High Efficiency Furnace - 98% AFUE	New	0%
NYS	CZ5	Other Gas	1	Standard Other Equipment	Existing	100%
NYS	CZ5	Other Gas	1	Standard Other Equipment	New	100%

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	E-Share
NYS	CZ5	Pool Heat	1	Below Standard Pool Heater - 78% Efficient	Existing	37%
NYS	CZ5	Pool Heat	2	Federal Standard 2014 Pool Heater - 82% Efficient	Existing	61%
NYS	CZ5	Pool Heat	3	Efficient Pool Heater - 88% Efficient	Existing	3%
NYS	CZ5	Pool Heat	1	Below Standard Pool Heater - 78% Efficient	New	0%
NYS	CZ5	Pool Heat	2	Federal Standard 2014 Pool Heater - 82% Efficient	New	98%
NYS	CZ5	Pool Heat	3	Efficient Pool Heater - 88% Efficient	New	3%
NYS	CZ5	Water Heat GT 55 Gal	1	Below Standard Water Heater > 55 GAL - UEF 0.54	Existing	8%
NYS	CZ5	Water Heat GT 55 Gal	2	Federal Standard 2017 Condensing Water Heater > 55 GAL - UEF 0.76	Existing	71%
NYS	CZ5	Water Heat GT 55 Gal	3	ENERGY STAR Condensing Water Heater > 55 GAL - UEF 0.78	Existing	18%
NYS	CZ5	Water Heat GT 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing > 55 GAL) - UEF 0.87	Existing	1%
NYS	CZ5	Water Heat GT 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing > 55 GAL) - UEF 0.92	Existing	2%
NYS	CZ5	Water Heat GT 55 Gal	1	Below Standard Water Heater > 55 GAL - UEF 0.54	New	0%
NYS	CZ5	Water Heat GT 55 Gal	2	Federal Standard 2017 Condensing Water Heater > 55 GAL - UEF 0.76	New	79%
NYS	CZ5	Water Heat GT 55 Gal	3	ENERGY STAR Condensing Water Heater > 55 GAL - UEF 0.78	New	18%
NYS	CZ5	Water Heat GT 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing > 55 GAL) - UEF 0.87	New	1%
NYS	CZ5	Water Heat GT 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing > 55 GAL) - UEF 0.92	New	2%
NYS	CZ5	Water Heat LE 55 Gal	1	Below Standard Water Heater ≤ 55 GAL - UEF 0.55	Existing	8%
NYS	CZ5	Water Heat LE 55 Gal	2	Federal Standard 2017 Storage Water Heater ≤ 55 GAL - UEF 0.58	Existing	71%
NYS	CZ5	Water Heat LE 55 Gal	3	ENERGY STAR Storage Water Heater ≤ 55 GAL - UEF 0.64	Existing	18%
NYS	CZ5	Water Heat LE 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.87	Existing	1%
NYS	CZ5	Water Heat LE 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.92	Existing	2%
NYS	CZ5	Water Heat LE 55 Gal	1	Below Standard Water Heater ≤ 55 GAL - UEF 0.55	New	0%
NYS	CZ5	Water Heat LE 55 Gal	2	Federal Standard 2017 Storage Water Heater ≤ 55 GAL - UEF 0.58	New	24%
NYS	CZ5	Water Heat LE 55 Gal	3	ENERGY STAR Storage Water Heater ≤ 55 GAL - UEF 0.64	New	58%
NYS	CZ5	Water Heat LE 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.87	New	0%
NYS	CZ5	Water Heat LE 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.92	New	18%
NYS	CZ6	Cooking Oven	1	Below Standard Cooking Oven	Existing	63%
NYS	CZ6	Cooking Oven	2	Federal Standard 2012 Cooking Oven	Existing	37%
NYS	CZ6	Cooking Oven	1	Below Standard Cooking Oven	New	0%
NYS	CZ6	Cooking Oven	2	Federal Standard 2012 Cooking Oven	New	100%
NYS	CZ6	Cooking Range	1	Below Standard Cooking Range	Existing	63%
NYS	CZ6	Cooking Range	2	Federal Standard 2012 Cooking Range	Existing	37%
NYS	CZ6	Cooking Range	1	Below Standard Cooking Range	New	0%
NYS	CZ6	Cooking Range	2	Federal Standard 2012 Cooking Range	New	100%
NYS	CZ6	Dryer	1	Below Standard Dryer - CEF/EF 1.57/1.82 (Gas Dryer)	Existing	51%

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	E-Share
NYS	CZ6	Dryer	2	Federal Standard 2016 Dryer - CEF/EF 2.84/3.30 (Gas Dryer)	Existing	26%
NYS	CZ6	Dryer	3	ENERGY STAR Dryer - CEF 3.48 (Gas Dryer)	Existing	24%
NYS	CZ6	Dryer	1	Below Standard Dryer - CEF/EF 1.57/1.82 (Gas Dryer)	New	0%
NYS	CZ6	Dryer	2	Federal Standard 2016 Dryer - CEF/EF 2.84/3.30 (Gas Dryer)	New	77%
NYS	CZ6	Dryer	3	ENERGY STAR Dryer - CEF 3.48 (Gas Dryer)	New	24%
NYS	CZ6	Heat Central Gas Boiler	1	Below Standard Boiler - 78% AFUE	Existing	44%
NYS	CZ6	Heat Central Gas Boiler	2	Federal Standard 2012 Gas Boiler (Water) - 82% AFUE	Existing	17%
NYS	CZ6	Heat Central Gas Boiler	3	Federal Standard 2021 Gas Boiler (Water) - 84% AFUE	Existing	24%
NYS	CZ6	Heat Central Gas Boiler	4	90% AFUE	Existing	4%
NYS	CZ6	Heat Central Gas Boiler	5	95% AFUE	Existing	11%
NYS	CZ6	Heat Central Gas Boiler	1	Below Standard Boiler - 78% AFUE	New	0%
NYS	CZ6	Heat Central Gas Boiler	2	Federal Standard 2012 Gas Boiler (Water) - 82% AFUE	New	61%
NYS	CZ6	Heat Central Gas Boiler	3	Federal Standard 2021 Gas Boiler (Water) - 84% AFUE	New	24%
NYS	CZ6	Heat Central Gas Boiler	4	90% AFUE	New	4%
NYS	CZ6	Heat Central Gas Boiler	5	95% AFUE	New	11%
NYS	CZ6	Heat Central Gas Furnace	1	Below Standard Furnace - 76% AFUE	Existing	0%
NYS	CZ6	Heat Central Gas Furnace	2	Federal Standard 2015 Gas Furnace - 80% AFUE	Existing	41%
NYS	CZ6	Heat Central Gas Furnace	3	High Efficiency Furnace - 90% AFUE	Existing	16%
NYS	CZ6	Heat Central Gas Furnace	4	High Efficiency Furnace - 95% AFUE	Existing	43%
NYS	CZ6	Heat Central Gas Furnace	5	High Efficiency Furnace - 98% AFUE	Existing	0%
NYS	CZ6	Heat Central Gas Furnace	1	Below Standard Furnace - 76% AFUE	New	0%
NYS	CZ6	Heat Central Gas Furnace	2	Federal Standard 2015 Gas Furnace - 80% AFUE	New	41%
NYS	CZ6	Heat Central Gas Furnace	3	High Efficiency Furnace - 90% AFUE	New	16%
NYS	CZ6	Heat Central Gas Furnace	4	High Efficiency Furnace - 95% AFUE	New	43%
NYS	CZ6	Heat Central Gas Furnace	5	High Efficiency Furnace - 98% AFUE	New	0%
NYS	CZ6	Other Gas	1	Standard Other Equipment	Existing	100%
NYS	CZ6	Other Gas	1	Standard Other Equipment	New	100%
NYS	CZ6	Pool Heat	1	Below Standard Pool Heater - 78% Efficient	Existing	37%
NYS	CZ6	Pool Heat	2	Federal Standard 2014 Pool Heater - 82% Efficient	Existing	61%
NYS	CZ6	Pool Heat	3	Efficient Pool Heater - 88% Efficient	Existing	3%
NYS	CZ6	Pool Heat	1	Below Standard Pool Heater - 78% Efficient	New	0%
NYS	CZ6	Pool Heat	2	Federal Standard 2014 Pool Heater - 82% Efficient	New	98%
NYS	CZ6	Pool Heat	3	Efficient Pool Heater - 88% Efficient	New	3%

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	E-Share
NYS	CZ6	Water Heat GT 55 Gal	1	Below Standard Water Heater > 55 GAL - UEF 0.54	Existing	8%
NYS	CZ6	Water Heat GT 55 Gal	2	Federal Standard 2017 Condensing Water Heater > 55 GAL - UEF 0.76	Existing	71%
NYS	CZ6	Water Heat GT 55 Gal	3	ENERGY STAR Condensing Water Heater > 55 GAL - UEF 0.78	Existing	18%
NYS	CZ6	Water Heat GT 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing > 55 GAL) - UEF 0.87	Existing	1%
NYS	CZ6	Water Heat GT 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing > 55 GAL) - UEF 0.92	Existing	2%
NYS	CZ6	Water Heat GT 55 Gal	1	Below Standard Water Heater > 55 GAL - UEF 0.54	New	0%
NYS	CZ6	Water Heat GT 55 Gal	2	Federal Standard 2017 Condensing Water Heater > 55 GAL - UEF 0.76	New	79%
NYS	CZ6	Water Heat GT 55 Gal	3	ENERGY STAR Condensing Water Heater > 55 GAL - UEF 0.78	New	18%
NYS	CZ6	Water Heat GT 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing > 55 GAL) - UEF 0.87	New	1%
NYS	CZ6	Water Heat GT 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing > 55 GAL) - UEF 0.92	New	2%
NYS	CZ6	Water Heat LE 55 Gal	1	Below Standard Water Heater ≤ 55 GAL - UEF 0.55	Existing	8%
NYS	CZ6	Water Heat LE 55 Gal	2	Federal Standard 2017 Storage Water Heater ≤ 55 GAL - UEF 0.58	Existing	71%
NYS	CZ6	Water Heat LE 55 Gal	3	ENERGY STAR Storage Water Heater ≤ 55 GAL - UEF 0.64	Existing	18%
NYS	CZ6	Water Heat LE 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.87	Existing	1%
NYS	CZ6	Water Heat LE 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.92	Existing	2%
NYS	CZ6	Water Heat LE 55 Gal	1	Below Standard Water Heater ≤ 55 GAL - UEF 0.55	New	0%
NYS	CZ6	Water Heat LE 55 Gal	2	Federal Standard 2017 Storage Water Heater ≤ 55 GAL - UEF 0.58	New	24%
NYS	CZ6	Water Heat LE 55 Gal	3	ENERGY STAR Storage Water Heater ≤ 55 GAL - UEF 0.64	New	58%
NYS	CZ6	Water Heat LE 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.87	New	0%
NYS	CZ6	Water Heat LE 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.92	New	18%

TABLE B-10. BASELINE FORECAST ASSUMPTIONS – NATURAL GAS END USE UNIT ENERGY CONSUMPTION

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	EUL	Measure Consumption (MMBtu/yr)
NY	CZ4	Cooking Oven	1	Below Standard Cooking Oven	Existing	10	1.63
NY	CZ4	Cooking Oven	2	Federal Standard 2012 Cooking Oven	Existing	19	1.04
NY	CZ4	Cooking Oven	1	Below Standard Cooking Oven	New	10	1.63
NY	CZ4	Cooking Oven	2	Federal Standard 2012 Cooking Oven	New	19	1.04
NY	CZ4	Cooking Range	1	Below Standard Cooking Range	Existing	10	2.74
NY	CZ4	Cooking Range	2	Federal Standard 2012 Cooking Range	Existing	19	0.72
NY	CZ4	Cooking Range	1	Below Standard Cooking Range	New	10	2.74
NY	CZ4	Cooking Range	2	Federal Standard 2012 Cooking Range	New	19	0.72
NY	CZ4	Dryer	1	Below Standard Dryer - CEF/EF 1.57/1.82 (Gas Dryer)	Existing	6	4.48
NY	CZ4	Dryer	2	Federal Standard 2016 Dryer - CEF/EF 2.84/3.30 (Gas Dryer)	Existing	12	2.47
NY	CZ4	Dryer	3	ENERGY STAR Dryer - CEF 3.48 (Gas Dryer)	Existing	12	2.34
NY	CZ4	Dryer	1	Below Standard Dryer - CEF/EF 1.57/1.82 (Gas Dryer)	New	6	4.48
NY	CZ4	Dryer	2	Federal Standard 2016 Dryer - CEF/EF 2.84/3.30 (Gas Dryer)	New	12	2.47
NY	CZ4	Dryer	3	ENERGY STAR Dryer - CEF 3.48 (Gas Dryer)	New	12	2.34
NY	CZ4	Heat Central Gas Boiler	1	Below Standard Boiler - 78% AFUE	Existing	13	110.93
NY	CZ4	Heat Central Gas Boiler	2	Federal Standard 2012 Gas Boiler (Water) - 82% AFUE	Existing	25	108.40
NY	CZ4	Heat Central Gas Boiler	3	Federal Standard 2021 Gas Boiler (Water) - 84% AFUE	Existing	25	105.82
NY	CZ4	Heat Central Gas Boiler	4	90% AFUE	Existing	25	98.77
NY	CZ4	Heat Central Gas Boiler	5	95% AFUE	Existing	25	93.57
NY	CZ4	Heat Central Gas Boiler	1	Below Standard Boiler - 78% AFUE	New	13	73.81
NY	CZ4	Heat Central Gas Boiler	2	Federal Standard 2012 Gas Boiler (Water) - 82% AFUE	New	25	72.13
NY	CZ4	Heat Central Gas Boiler	3	Federal Standard 2021 Gas Boiler (Water) - 84% AFUE	New	25	70.41
NY	CZ4	Heat Central Gas Boiler	4	90% AFUE	New	25	65.71
NY	CZ4	Heat Central Gas Boiler	5	95% AFUE	New	25	62.26
NY	CZ4	Heat Central Gas Furnace	1	Below Standard Furnace - 76% AFUE	Existing	11	75.74
NY	CZ4	Heat Central Gas Furnace	2	Federal Standard 2015 Gas Furnace - 80% AFUE	Existing	22	71.95
NY	CZ4	Heat Central Gas Furnace	3	High Efficiency Furnace - 90% AFUE	Existing	22	63.96
NY	CZ4	Heat Central Gas Furnace	4	High Efficiency Furnace - 95% AFUE	Existing	22	60.59
NY	CZ4	Heat Central Gas Furnace	5	High Efficiency Furnace - 98% AFUE	Existing	22	58.74

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	EUL	Measure Consumption (MMBtu/yr)
NY	CZ4	Heat Central Gas Furnace	1	Below Standard Furnace - 76% AFUE	New	11	50.39
NY	CZ4	Heat Central Gas Furnace	2	Federal Standard 2015 Gas Furnace - 80% AFUE	New	22	47.87
NY	CZ4	Heat Central Gas Furnace	3	High Efficiency Furnace - 90% AFUE	New	22	42.55
NY	CZ4	Heat Central Gas Furnace	4	High Efficiency Furnace - 95% AFUE	New	22	40.31
NY	CZ4	Heat Central Gas Furnace	5	High Efficiency Furnace - 98% AFUE	New	22	39.08
NY	CZ4	Other Gas	1	Standard Other Equipment	Existing	10	0.00
NY	CZ4	Other Gas	1	Standard Other Equipment	New	10	0.00
NY	CZ4	Pool Heat	1	Below Standard Pool Heater - 78% Efficient	Existing	4	38.20
NY	CZ4	Pool Heat	2	Federal Standard 2014 Pool Heater - 82% Efficient	Existing	8	36.40
NY	CZ4	Pool Heat	3	Efficient Pool Heater - 88% Efficient	Existing	8	32.85
NY	CZ4	Pool Heat	1	Below Standard Pool Heater - 78% Efficient	New	4	38.20
NY	CZ4	Pool Heat	2	Federal Standard 2014 Pool Heater - 82% Efficient	New	8	36.40
NY	CZ4	Pool Heat	3	Efficient Pool Heater - 88% Efficient	New	8	32.85
NY	CZ4	Water Heat GT 55 Gal	1	Below Standard Water Heater > 55 GAL - UEF 0.54	Existing	6	21.51
NY	CZ4	Water Heat GT 55 Gal	2	Federal Standard 2017 Condensing Water Heater > 55 GAL - UEF 0.76	Existing	11	15.28
NY	CZ4	Water Heat GT 55 Gal	3	ENERGY STAR Condensing Water Heater > 55 GAL - UEF 0.78	Existing	11	14.89
NY	CZ4	Water Heat GT 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing > 55 GAL) - UEF 0.87	Existing	20	13.35
NY	CZ4	Water Heat GT 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing > 55 GAL) - UEF 0.92	Existing	20	12.63
NY	CZ4	Water Heat GT 55 Gal	1	Below Standard Water Heater > 55 GAL - UEF 0.54	New	6	21.51
NY	CZ4	Water Heat GT 55 Gal	2	Federal Standard 2017 Condensing Water Heater > 55 GAL - UEF 0.76	New	11	15.28
NY	CZ4	Water Heat GT 55 Gal	3	ENERGY STAR Condensing Water Heater > 55 GAL - UEF 0.78	New	11	14.89
NY	CZ4	Water Heat GT 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing > 55 GAL) - UEF 0.87	New	20	13.35
NY	CZ4	Water Heat GT 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing > 55 GAL) - UEF 0.92	New	20	12.63
NY	CZ4	Water Heat LE 55 Gal	1	Below Standard Water Heater ≤ 55 GAL - UEF 0.55	Existing	6	22.59
NY	CZ4	Water Heat LE 55 Gal	2	Federal Standard 2017 Storage Water Heater ≤ 55 GAL - UEF 0.58	Existing	11	20.03
NY	CZ4	Water Heat LE 55 Gal	3	ENERGY STAR Storage Water Heater ≤ 55 GAL - UEF 0.64	Existing	11	18.15
NY	CZ4	Water Heat LE 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.87	Existing	20	13.35
NY	CZ4	Water Heat LE 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.92	Existing	20	12.63
NY	CZ4	Water Heat LE 55 Gal	1	Below Standard Water Heater ≤ 55 GAL - UEF 0.55	New	6	22.59

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	EUL	Measure Consumption (MMBtu/yr)
NY	CZ4	Water Heat LE 55 Gal	2	Federal Standard 2017 Storage Water Heater ≤ 55 GAL - UEF 0.58	New	11	20.03
NY	CZ4	Water Heat LE 55 Gal	3	ENERGY STAR Storage Water Heater ≤ 55 GAL - UEF 0.64	New	11	18.15
NY	CZ4	Water Heat LE 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.87	New	20	13.35
NY	CZ4	Water Heat LE 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.92	New	20	12.63
NY	CZ5	Cooking Oven	1	Below Standard Cooking Oven	Existing	10	1.63
NY	CZ5	Cooking Oven	2	Federal Standard 2012 Cooking Oven	Existing	19	1.04
NY	CZ5	Cooking Oven	1	Below Standard Cooking Oven	New	10	1.63
NY	CZ5	Cooking Oven	2	Federal Standard 2012 Cooking Oven	New	19	1.04
NY	CZ5	Cooking Range	1	Below Standard Cooking Range	Existing	10	2.74
NY	CZ5	Cooking Range	2	Federal Standard 2012 Cooking Range	Existing	19	0.72
NY	CZ5	Cooking Range	1	Below Standard Cooking Range	New	10	2.74
NY	CZ5	Cooking Range	2	Federal Standard 2012 Cooking Range	New	19	0.72
NY	CZ5	Dryer	1	Below Standard Dryer - CEF/EF 1.57/1.82 (Gas Dryer)	Existing	6	4.48
NY	CZ5	Dryer	2	Federal Standard 2016 Dryer - CEF/EF 2.84/3.30 (Gas Dryer)	Existing	12	2.47
NY	CZ5	Dryer	3	ENERGY STAR Dryer - CEF 3.48 (Gas Dryer)	Existing	12	2.34
NY	CZ5	Dryer	1	Below Standard Dryer - CEF/EF 1.57/1.82 (Gas Dryer)	New	6	4.48
NY	CZ5	Dryer	2	Federal Standard 2016 Dryer - CEF/EF 2.84/3.30 (Gas Dryer)	New	12	2.47
NY	CZ5	Dryer	3	ENERGY STAR Dryer - CEF 3.48 (Gas Dryer)	New	12	2.34
NY	CZ5	Heat Central Gas Boiler	1	Below Standard Boiler - 78% AFUE	Existing	13	112.25
NY	CZ5	Heat Central Gas Boiler	2	Federal Standard 2012 Gas Boiler (Water) - 82% AFUE	Existing	25	109.69
NY	CZ5	Heat Central Gas Boiler	3	Federal Standard 2021 Gas Boiler (Water) - 84% AFUE	Existing	25	107.08
NY	CZ5	Heat Central Gas Boiler	4	90% AFUE	Existing	25	99.94
NY	CZ5	Heat Central Gas Boiler	5	95% AFUE	Existing	25	94.68
NY	CZ5	Heat Central Gas Boiler	1	Below Standard Boiler - 78% AFUE	New	13	98.94
NY	CZ5	Heat Central Gas Boiler	2	Federal Standard 2012 Gas Boiler (Water) - 82% AFUE	New	25	96.68
NY	CZ5	Heat Central Gas Boiler	3	Federal Standard 2021 Gas Boiler (Water) - 84% AFUE	New	25	94.38
NY	CZ5	Heat Central Gas Boiler	4	90% AFUE	New	25	88.09
NY	CZ5	Heat Central Gas Boiler	5	95% AFUE	New	25	83.45
NY	CZ5	Heat Central Gas Furnace	1	Below Standard Furnace - 76% AFUE	Existing	11	78.41
NY	CZ5	Heat Central Gas Furnace	2	Federal Standard 2015 Gas Furnace - 80% AFUE	Existing	22	74.49
NY	CZ5	Heat Central Gas Furnace	3	High Efficiency Furnace - 90% AFUE	Existing	22	66.22

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	EUL	Measure Consumption (MMBtu/yr)
NY	CZ5	Heat Central Gas Furnace	4	High Efficiency Furnace - 95% AFUE	Existing	22	62.73
NY	CZ5	Heat Central Gas Furnace	5	High Efficiency Furnace - 98% AFUE	Existing	22	60.81
NY	CZ5	Heat Central Gas Furnace	1	Below Standard Furnace - 76% AFUE	New	11	69.11
NY	CZ5	Heat Central Gas Furnace	2	Federal Standard 2015 Gas Furnace - 80% AFUE	New	22	65.66
NY	CZ5	Heat Central Gas Furnace	3	High Efficiency Furnace - 90% AFUE	New	22	58.36
NY	CZ5	Heat Central Gas Furnace	4	High Efficiency Furnace - 95% AFUE	New	22	55.29
NY	CZ5	Heat Central Gas Furnace	5	High Efficiency Furnace - 98% AFUE	New	22	53.60
NY	CZ5	Other Gas	1	Standard Other Equipment	Existing	10	0.00
NY	CZ5	Other Gas	1	Standard Other Equipment	New	10	0.00
NY	CZ5	Pool Heat	1	Below Standard Pool Heater - 78% Efficient	Existing	4	38.20
NY	CZ5	Pool Heat	2	Federal Standard 2014 Pool Heater - 82% Efficient	Existing	8	36.40
NY	CZ5	Pool Heat	3	Efficient Pool Heater - 88% Efficient	Existing	8	32.85
NY	CZ5	Pool Heat	1	Below Standard Pool Heater - 78% Efficient	New	4	38.20
NY	CZ5	Pool Heat	2	Federal Standard 2014 Pool Heater - 82% Efficient	New	8	36.40
NY	CZ5	Pool Heat	3	Efficient Pool Heater - 88% Efficient	New	8	32.85
NY	CZ5	Water Heat GT 55 Gal	1	Below Standard Water Heater > 55 GAL - UEF 0.54	Existing	6	21.51
NY	CZ5	Water Heat GT 55 Gal	2	Federal Standard 2017 Condensing Water Heater > 55 GAL - UEF 0.76	Existing	11	15.28
NY	CZ5	Water Heat GT 55 Gal	3	ENERGY STAR Condensing Water Heater > 55 GAL - UEF 0.78	Existing	11	14.89
NY	CZ5	Water Heat GT 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing > 55 GAL) - UEF 0.87	Existing	20	13.35
NY	CZ5	Water Heat GT 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing > 55 GAL) - UEF 0.92	Existing	20	12.63
NY	CZ5	Water Heat GT 55 Gal	1	Below Standard Water Heater > 55 GAL - UEF 0.54	New	6	21.51
NY	CZ5	Water Heat GT 55 Gal	2	Federal Standard 2017 Condensing Water Heater > 55 GAL - UEF 0.76	New	11	15.28
NY	CZ5	Water Heat GT 55 Gal	3	ENERGY STAR Condensing Water Heater > 55 GAL - UEF 0.78	New	11	14.89
NY	CZ5	Water Heat GT 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing > 55 GAL) - UEF 0.87	New	20	13.35
NY	CZ5	Water Heat GT 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing > 55 GAL) - UEF 0.92	New	20	12.63
NY	CZ5	Water Heat LE 55 Gal	1	Below Standard Water Heater ≤ 55 GAL - UEF 0.55	Existing	6	22.59
NY	CZ5	Water Heat LE 55 Gal	2	Federal Standard 2017 Storage Water Heater ≤ 55 GAL - UEF 0.58	Existing	11	20.03
NY	CZ5	Water Heat LE 55 Gal	3	ENERGY STAR Storage Water Heater ≤ 55 GAL - UEF 0.64	Existing	11	18.15
NY	CZ5	Water Heat LE 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.87	Existing	20	13.35

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	EUL	Measure Consumption (MMBtu/yr)
NY	CZ5	Water Heat LE 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.92	Existing	20	12.63
NY	CZ5	Water Heat LE 55 Gal	1	Below Standard Water Heater ≤ 55 GAL - UEF 0.55	New	6	22.59
NY	CZ5	Water Heat LE 55 Gal	2	Federal Standard 2017 Storage Water Heater ≤ 55 GAL - UEF 0.58	New	11	20.03
NY	CZ5	Water Heat LE 55 Gal	3	ENERGY STAR Storage Water Heater ≤ 55 GAL - UEF 0.64	New	11	18.15
NY	CZ5	Water Heat LE 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.87	New	20	13.35
NY	CZ5	Water Heat LE 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.92	New	20	12.63
NY	CZ6	Cooking Oven	1	Below Standard Cooking Oven	Existing	10	1.63
NY	CZ6	Cooking Oven	2	Federal Standard 2012 Cooking Oven	Existing	19	1.04
NY	CZ6	Cooking Oven	1	Below Standard Cooking Oven	New	10	1.63
NY	CZ6	Cooking Oven	2	Federal Standard 2012 Cooking Oven	New	19	1.04
NY	CZ6	Cooking Range	1	Below Standard Cooking Range	Existing	10	2.74
NY	CZ6	Cooking Range	2	Federal Standard 2012 Cooking Range	Existing	19	0.72
NY	CZ6	Cooking Range	1	Below Standard Cooking Range	New	10	2.74
NY	CZ6	Cooking Range	2	Federal Standard 2012 Cooking Range	New	19	0.72
NY	CZ6	Dryer	1	Below Standard Dryer - CEF/EF 1.57/1.82 (Gas Dryer)	Existing	6	4.48
NY	CZ6	Dryer	2	Federal Standard 2016 Dryer - CEF/EF 2.84/3.30 (Gas Dryer)	Existing	12	2.47
NY	CZ6	Dryer	3	ENERGY STAR Dryer - CEF 3.48 (Gas Dryer)	Existing	12	2.34
NY	CZ6	Dryer	1	Below Standard Dryer - CEF/EF 1.57/1.82 (Gas Dryer)	New	6	4.48
NY	CZ6	Dryer	2	Federal Standard 2016 Dryer - CEF/EF 2.84/3.30 (Gas Dryer)	New	12	2.47
NY	CZ6	Dryer	3	ENERGY STAR Dryer - CEF 3.48 (Gas Dryer)	New	12	2.34
NY	CZ6	Heat Central Gas Boiler	1	Below Standard Boiler - 78% AFUE	Existing	13	116.00
NY	CZ6	Heat Central Gas Boiler	2	Federal Standard 2012 Gas Boiler (Water) - 82% AFUE	Existing	25	113.35
NY	CZ6	Heat Central Gas Boiler	3	Federal Standard 2021 Gas Boiler (Water) - 84% AFUE	Existing	25	110.65
NY	CZ6	Heat Central Gas Boiler	4	90% AFUE	Existing	25	103.28
NY	CZ6	Heat Central Gas Boiler	5	95% AFUE	Existing	25	97.84
NY	CZ6	Heat Central Gas Boiler	1	Below Standard Boiler - 78% AFUE	New	13	89.58
NY	CZ6	Heat Central Gas Boiler	2	Federal Standard 2012 Gas Boiler (Water) - 82% AFUE	New	25	87.54
NY	CZ6	Heat Central Gas Boiler	3	Federal Standard 2021 Gas Boiler (Water) - 84% AFUE	New	25	85.46
NY	CZ6	Heat Central Gas Boiler	4	90% AFUE	New	25	79.76
NY	CZ6	Heat Central Gas Boiler	5	95% AFUE	New	25	75.56
NY	CZ6	Heat Central Gas Furnace	1	Below Standard Furnace - 76% AFUE	Existing	11	90.81

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	EUL	Measure Consumption (MMBtu/yr)
NY	CZ6	Heat Central Gas Furnace	2	Federal Standard 2015 Gas Furnace - 80% AFUE	Existing	22	86.27
NY	CZ6	Heat Central Gas Furnace	3	High Efficiency Furnace - 90% AFUE	Existing	22	76.69
NY	CZ6	Heat Central Gas Furnace	4	High Efficiency Furnace - 95% AFUE	Existing	22	72.65
NY	CZ6	Heat Central Gas Furnace	5	High Efficiency Furnace - 98% AFUE	Existing	22	70.43
NY	CZ6	Heat Central Gas Furnace	1	Below Standard Furnace - 76% AFUE	New	11	70.13
NY	CZ6	Heat Central Gas Furnace	2	Federal Standard 2015 Gas Furnace - 80% AFUE	New	22	66.63
NY	CZ6	Heat Central Gas Furnace	3	High Efficiency Furnace - 90% AFUE	New	22	59.22
NY	CZ6	Heat Central Gas Furnace	4	High Efficiency Furnace - 95% AFUE	New	22	56.11
NY	CZ6	Heat Central Gas Furnace	5	High Efficiency Furnace - 98% AFUE	New	22	54.39
NY	CZ6	Other Gas	1	Standard Other Equipment	Existing	10	0.00
NY	CZ6	Other Gas	1	Standard Other Equipment	New	10	0.00
NY	CZ6	Pool Heat	1	Below Standard Pool Heater - 78% Efficient	Existing	4	38.20
NY	CZ6	Pool Heat	2	Federal Standard 2014 Pool Heater - 82% Efficient	Existing	8	36.40
NY	CZ6	Pool Heat	3	Efficient Pool Heater - 88% Efficient	Existing	8	32.85
NY	CZ6	Pool Heat	1	Below Standard Pool Heater - 78% Efficient	New	4	38.20
NY	CZ6	Pool Heat	2	Federal Standard 2014 Pool Heater - 82% Efficient	New	8	36.40
NY	CZ6	Pool Heat	3	Efficient Pool Heater - 88% Efficient	New	8	32.85
NY	CZ6	Water Heat GT 55 Gal	1	Below Standard Water Heater > 55 GAL - UEF 0.54	Existing	6	21.51
NY	CZ6	Water Heat GT 55 Gal	2	Federal Standard 2017 Condensing Water Heater > 55 GAL - UEF 0.76	Existing	11	15.28
NY	CZ6	Water Heat GT 55 Gal	3	ENERGY STAR Condensing Water Heater > 55 GAL - UEF 0.78	Existing	11	14.89
NY	CZ6	Water Heat GT 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing > 55 GAL) - UEF 0.87	Existing	20	13.35
NY	CZ6	Water Heat GT 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing > 55 GAL) - UEF 0.92	Existing	20	12.63
NY	CZ6	Water Heat GT 55 Gal	1	Below Standard Water Heater > 55 GAL - UEF 0.54	New	6	21.51
NY	CZ6	Water Heat GT 55 Gal	2	Federal Standard 2017 Condensing Water Heater > 55 GAL - UEF 0.76	New	11	15.28
NY	CZ6	Water Heat GT 55 Gal	3	ENERGY STAR Condensing Water Heater > 55 GAL - UEF 0.78	New	11	14.89
NY	CZ6	Water Heat GT 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing > 55 GAL) - UEF 0.87	New	20	13.35
NY	CZ6	Water Heat GT 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing > 55 GAL) - UEF 0.92	New	20	12.63
NY	CZ6	Water Heat LE 55 Gal	1	Below Standard Water Heater ≤ 55 GAL - UEF 0.55	Existing	6	22.59
NY	CZ6	Water Heat LE 55 Gal	2	Federal Standard 2017 Storage Water Heater ≤ 55 GAL - UEF 0.58	Existing	11	20.03

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	EUL	Measure Consumption (MMBtu/yr)
NY	CZ6	Water Heat LE 55 Gal	3	ENERGY STAR Storage Water Heater ≤ 55 GAL - UEF 0.64	Existing	11	18.15
NY	CZ6	Water Heat LE 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.87	Existing	20	13.35
NY	CZ6	Water Heat LE 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.92	Existing	20	12.63
NY	CZ6	Water Heat LE 55 Gal	1	Below Standard Water Heater ≤ 55 GAL - UEF 0.55	New	6	22.59
NY	CZ6	Water Heat LE 55 Gal	2	Federal Standard 2017 Storage Water Heater ≤ 55 GAL - UEF 0.58	New	11	20.03
NY	CZ6	Water Heat LE 55 Gal	3	ENERGY STAR Storage Water Heater ≤ 55 GAL - UEF 0.64	New	11	18.15
NY	CZ6	Water Heat LE 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.87	New	20	13.35
NY	CZ6	Water Heat LE 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.92	New	20	12.63

FIGURE B-8. RESIDENTIAL SINGLE-FAMILY BASELINE FORECAST BY REGION—FUEL OIL

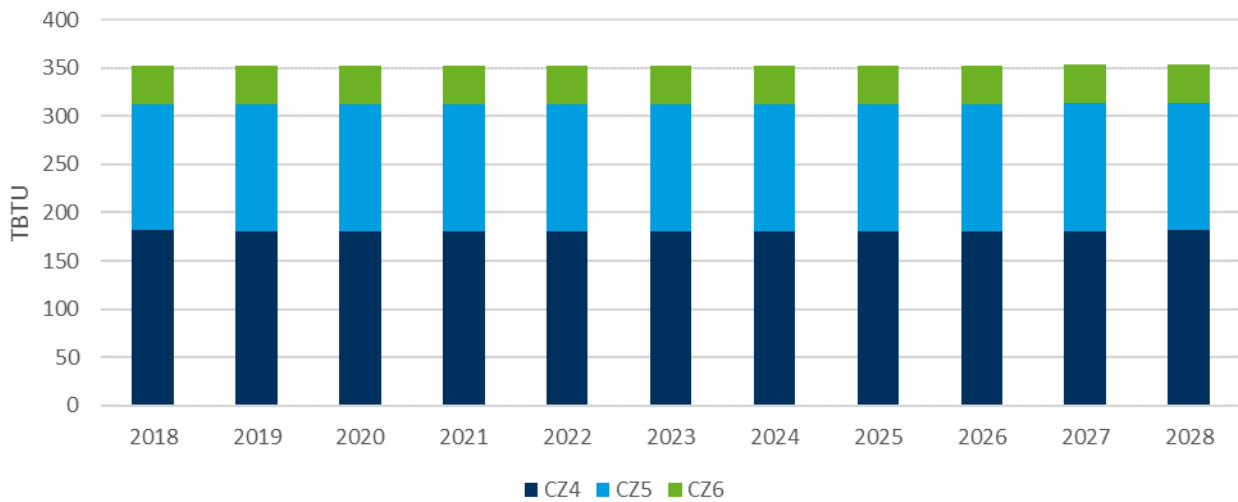


FIGURE B-9. RESIDENTIAL SINGLE-FAMILY BASELINE FORECAST BY END USE—FUEL OIL

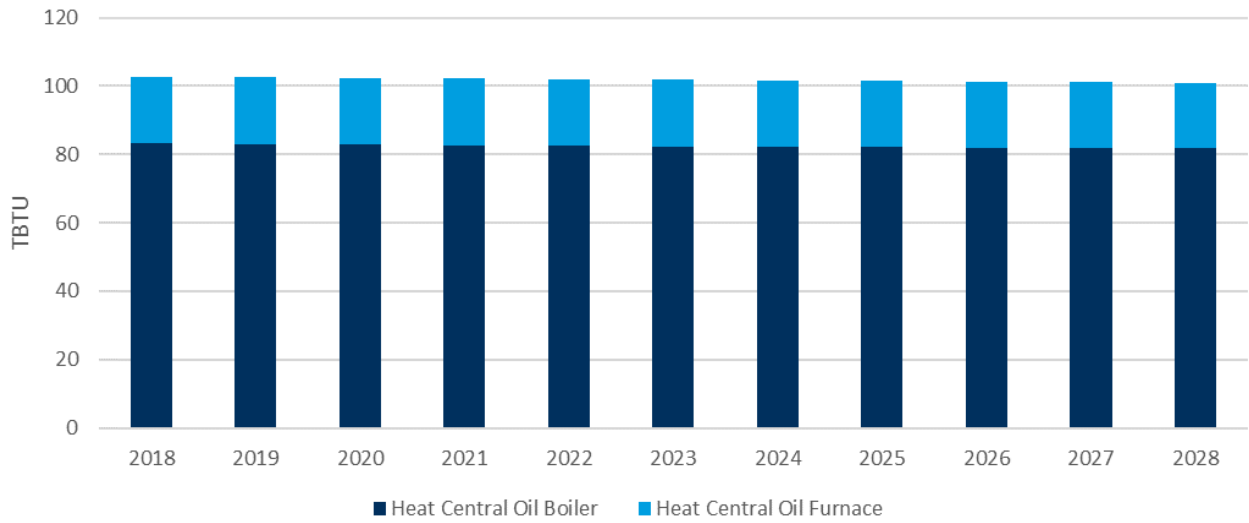


FIGURE B-10. RESIDENTIAL SINGLE-FAMILY FORECAST OF SAVINGS FROM FUTURE FEDERAL STANDARDS—FUEL OIL

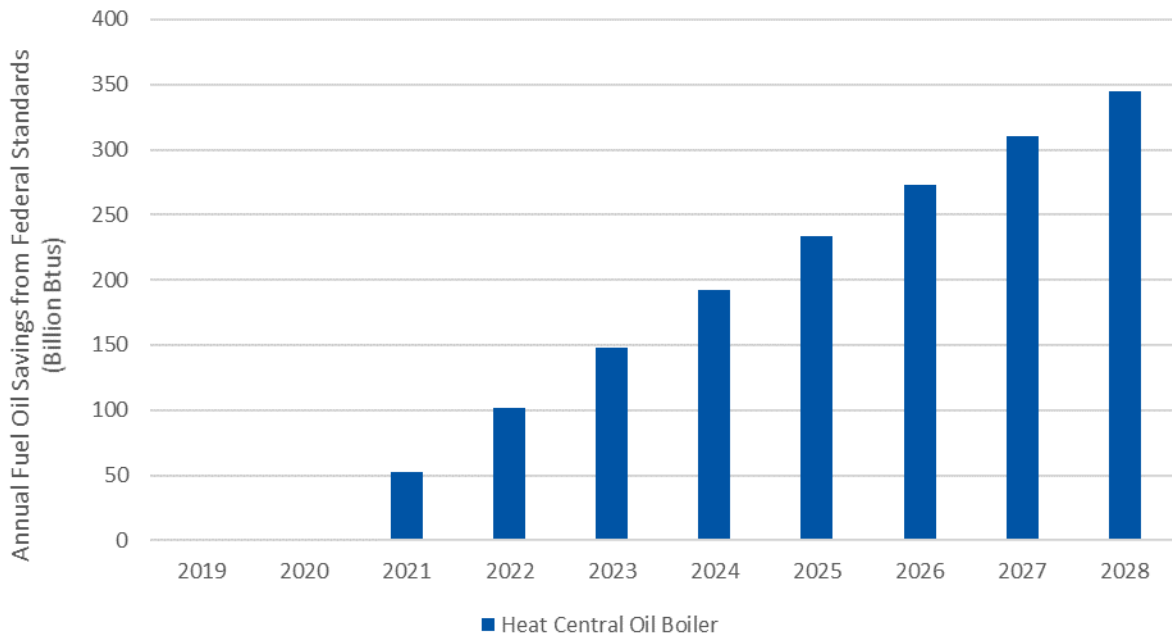


TABLE B-11. BASELINE FORECAST ASSUMPTIONS—FUEL OIL HOME FORECAST

Region	NYS
2018	1,174,734
2019	1,174,734
2020	1,174,734
2021	1,174,734
2022	1,174,734
2023	1,174,734
2024	1,174,734
2025	1,174,734
2026	1,174,734
2027	1,174,734
2028	1,174,734

TABLE B-12. BASELINE FORECAST ASSUMPTIONS—FUEL OIL HOME FORECAST BY CLIMATE ZONE

Year	CZ4	CZ5	CZ6
2018	698,519	269,660	206,555
2019	698,519	269,660	206,555
2020	698,519	269,660	206,555
2021	698,519	269,660	206,555
2022	698,519	269,660	206,555
2023	698,519	269,660	206,555
2024	698,519	269,660	206,555
2025	698,519	269,660	206,555
2026	698,519	269,660	206,555
2027	698,519	269,660	206,555

TABLE B-13. RESIDENTIAL SINGLE-FAMILY BASELINE ASSUMPTIONS—FUEL OIL SATURATIONS AND FUEL SHARES

Region	Fuel Type	Segment	Location	End Use	Vintage	Saturation	Fuel Share
NYS	Fuel Oil	Single Family	CZ4	Heat Central Oil Boiler	Existing	88%	100%
NYS	Fuel Oil	Single Family	CZ4	Heat Central Oil Furnace	Existing	12%	100%
NYS	Fuel Oil	Single Family	CZ5	Heat Central Oil Boiler	Existing	57%	100%
NYS	Fuel Oil	Single Family	CZ5	Heat Central Oil Furnace	Existing	39%	100%
NYS	Fuel Oil	Single Family	CZ6	Heat Central Oil Boiler	Existing	50%	100%
NYS	Fuel Oil	Single Family	CZ6	Heat Central Oil Furnace	Existing	25%	100%
NYS	Fuel Oil	Single Family	CZ4	Heat Central Oil Boiler	New	0%	100%
NYS	Fuel Oil	Single Family	CZ4	Heat Central Oil Furnace	New	0%	100%
NYS	Fuel Oil	Single Family	CZ5	Heat Central Oil Boiler	New	100%	100%
NYS	Fuel Oil	Single Family	CZ5	Heat Central Oil Furnace	New	0%	100%
NYS	Fuel Oil	Single Family	CZ6	Heat Central Oil Boiler	New	100%	100%
NYS	Fuel Oil	Single Family	CZ6	Heat Central Oil Furnace	New	0%	100%

TABLE B-14. RESIDENTIAL SINGLE-FAMILY BASELINE ASSUMPTIONS—FUEL OIL EFFICIENCY SHARES

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	E-Share
NYS	CZ4	Heat Central Oil Boiler	1	Below Standard Oil Boiler - 80% AFUE	Existing	36%
NYS	CZ4	Heat Central Oil Boiler	2	Federal Standard 2012 Oil Boiler (Water) - 84% AFUE	Existing	8%
NYS	CZ4	Heat Central Oil Boiler	3	Federal Standard 2021 Oil Boiler (Water) - 86% AFUE	Existing	56%
NYS	CZ4	Heat Central Oil Boiler	1	Below Standard Oil Boiler - 80% AFUE	New	0%
NYS	CZ4	Heat Central Oil Boiler	2	Federal Standard 2012 Oil Boiler (Water) - 84% AFUE	New	44%
NYS	CZ4	Heat Central Oil Boiler	3	Federal Standard 2021 Oil Boiler (Water) - 86% AFUE	New	56%
NYS	CZ4	Heat Central Oil Furnace	1	Below Standard Oil Furnace - 78% AFUE	Existing	64%
NYS	CZ4	Heat Central Oil Furnace	2	Federal Standard 2013 Oil Furnace - 83% AFUE	Existing	20%
NYS	CZ4	Heat Central Oil Furnace	3	High Efficiency Oil Furnace - 86% AFUE	Existing	16%
NYS	CZ4	Heat Central Oil Furnace	1	Below Standard Oil Furnace - 78% AFUE	New	0%
NYS	CZ4	Heat Central Oil Furnace	2	Federal Standard 2013 Oil Furnace - 83% AFUE	New	84%
NYS	CZ4	Heat Central Oil Furnace	3	High Efficiency Oil Furnace - 86% AFUE	New	16%
NYS	CZ4	Other Fuel Oil	1	Standard Other Equipment	Existing	100%
NYS	CZ4	Other Fuel Oil	1	Standard Other Equipment	New	100%
NYS	CZ5	Heat Central Oil Boiler	1	Below Standard Oil Boiler - 80% AFUE	Existing	37%
NYS	CZ5	Heat Central Oil Boiler	2	Federal Standard 2012 Oil Boiler (Water) - 84% AFUE	Existing	7%
NYS	CZ5	Heat Central Oil Boiler	3	Federal Standard 2021 Oil Boiler (Water) - 86% AFUE	Existing	56%
NYS	CZ5	Heat Central Oil Boiler	1	Below Standard Oil Boiler - 80% AFUE	New	0%
NYS	CZ5	Heat Central Oil Boiler	2	Federal Standard 2012 Oil Boiler (Water) - 84% AFUE	New	44%
NYS	CZ5	Heat Central Oil Boiler	3	Federal Standard 2021 Oil Boiler (Water) - 86% AFUE	New	56%
NYS	CZ5	Heat Central Oil Furnace	1	Below Standard Oil Furnace - 78% AFUE	Existing	64%
NYS	CZ5	Heat Central Oil Furnace	2	Federal Standard 2013 Oil Furnace - 83% AFUE	Existing	20%
NYS	CZ5	Heat Central Oil Furnace	3	High Efficiency Oil Furnace - 86% AFUE	Existing	16%
NYS	CZ5	Heat Central Oil Furnace	1	Below Standard Oil Furnace - 78% AFUE	New	0%
NYS	CZ5	Heat Central Oil Furnace	2	Federal Standard 2013 Oil Furnace - 83% AFUE	New	84%
NYS	CZ5	Heat Central Oil Furnace	3	High Efficiency Oil Furnace - 86% AFUE	New	16%
NYS	CZ5	Other Fuel Oil	1	Standard Other Equipment	Existing	100%
NYS	CZ5	Other Fuel Oil	1	Standard Other Equipment	New	100%
NYS	CZ6	Heat Central Oil Boiler	1	Below Standard Oil Boiler - 80% AFUE	Existing	37%
NYS	CZ6	Heat Central Oil Boiler	2	Federal Standard 2012 Oil Boiler (Water) - 84% AFUE	Existing	7%
NYS	CZ6	Heat Central Oil Boiler	3	Federal Standard 2021 Oil Boiler (Water) - 86% AFUE	Existing	56%
NYS	CZ6	Heat Central Oil Boiler	1	Below Standard Oil Boiler - 80% AFUE	New	0%
NYS	CZ6	Heat Central Oil Boiler	2	Federal Standard 2012 Oil Boiler (Water) - 84% AFUE	New	44%
NYS	CZ6	Heat Central Oil Boiler	3	Federal Standard 2021 Oil Boiler (Water) - 86% AFUE	New	56%
NYS	CZ6	Heat Central Oil Furnace	1	Below Standard Oil Furnace - 78% AFUE	Existing	64%
NYS	CZ6	Heat Central Oil Furnace	2	Federal Standard 2013 Oil Furnace - 83% AFUE	Existing	20%
NYS	CZ6	Heat Central Oil Furnace	3	High Efficiency Oil Furnace - 86% AFUE	Existing	16%
NYS	CZ6	Heat Central Oil Furnace	1	Below Standard Oil Furnace - 78% AFUE	New	0%
NYS	CZ6	Heat Central Oil Furnace	2	Federal Standard 2013 Oil Furnace - 83% AFUE	New	84%
NYS	CZ6	Heat Central Oil Furnace	3	High Efficiency Oil Furnace - 86% AFUE	New	16%
NYS	CZ6	Other Fuel Oil	1	Standard Other Equipment	Existing	100%
NYS	CZ6	Other Fuel Oil	1	Standard Other Equipment	New	100%

TABLE B-15. BASELINE FORECAST ASSUMPTIONS—FUEL OIL END-USE UNIT ENERGY CONSUMPTION

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	EUL	Measure Consumption (MMBtu/yr)
NY	CZ4	Heat Central Oil Boiler	1	Below Standard Oil Boiler - 80% AFUE	Existing	13	100.32
NY	CZ4	Heat Central Oil Boiler	2	Federal Standard 2012 Oil Boiler (Water) - 84% AFUE	Existing	25	94.47
NY	CZ4	Heat Central Oil Boiler	3	Federal Standard 2021 Oil Boiler (Water) - 86% AFUE	Existing	25	92.28
NY	CZ4	Heat Central Oil Boiler	1	Below Standard Oil Boiler - 80% AFUE	New	13	72.78
NY	CZ4	Heat Central Oil Boiler	2	Federal Standard 2012 Oil Boiler (Water) - 84% AFUE	New	25	68.54
NY	CZ4	Heat Central Oil Boiler	3	Federal Standard 2021 Oil Boiler (Water) - 86% AFUE	New	25	66.95
NY	CZ4	Heat Central Oil Furnace	1	Below Standard Oil Furnace - 78% AFUE	Existing	11	100.14
NY	CZ4	Heat Central Oil Furnace	2	Federal Standard 2013 Oil Furnace - 83% AFUE	Existing	22	95.31
NY	CZ4	Heat Central Oil Furnace	3	High Efficiency Oil Furnace - 86% AFUE	Existing	22	91.99
NY	CZ4	Heat Central Oil Furnace	1	Below Standard Oil Furnace - 78% AFUE	New	11	48.48
NY	CZ4	Heat Central Oil Furnace	2	Federal Standard 2013 Oil Furnace - 83% AFUE	New	22	46.14
NY	CZ4	Heat Central Oil Furnace	3	High Efficiency Oil Furnace - 86% AFUE	New	22	44.53
NY	CZ4	Other Fuel Oil	1	Standard Other Equipment	Existing	10	0.00
NY	CZ4	Other Fuel Oil	1	Standard Other Equipment	New	10	0.00
NY	CZ5	Heat Central Oil Boiler	1	Below Standard Oil Boiler - 80% AFUE	Existing	13	102.44
NY	CZ5	Heat Central Oil Boiler	2	Federal Standard 2012 Oil Boiler (Water) - 84% AFUE	Existing	25	96.47
NY	CZ5	Heat Central Oil Boiler	3	Federal Standard 2021 Oil Boiler (Water) - 86% AFUE	Existing	25	94.23
NY	CZ5	Heat Central Oil Boiler	1	Below Standard Oil Boiler - 80% AFUE	New	13	105.00
NY	CZ5	Heat Central Oil Boiler	2	Federal Standard 2012 Oil Boiler (Water) - 84% AFUE	New	25	98.88
NY	CZ5	Heat Central Oil Boiler	3	Federal Standard 2021 Oil Boiler (Water) - 86% AFUE	New	25	96.58
NY	CZ5	Heat Central Oil Furnace	1	Below Standard Oil Furnace - 78% AFUE	Existing	11	64.90
NY	CZ5	Heat Central Oil Furnace	2	Federal Standard 2013 Oil Furnace - 83% AFUE	Existing	22	61.77
NY	CZ5	Heat Central Oil Furnace	3	High Efficiency Oil Furnace - 86% AFUE	Existing	22	59.62
NY	CZ5	Heat Central Oil Furnace	1	Below Standard Oil Furnace - 78% AFUE	New	11	66.49
NY	CZ5	Heat Central Oil Furnace	2	Federal Standard 2013 Oil Furnace - 83% AFUE	New	22	63.28
NY	CZ5	Heat Central Oil Furnace	3	High Efficiency Oil Furnace - 86% AFUE	New	22	61.08
NY	CZ5	Other Fuel Oil	1	Standard Other Equipment	Existing	10	0.00

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	EUL	Measure Consumption (MMBtu/yr)
NY	CZ5	Other Fuel Oil	1	Standard Other Equipment	New	10	0.00
NY	CZ6	Heat Central Oil Boiler	1	Below Standard Oil Boiler - 80% AFUE	Existing	13	98.41
NY	CZ6	Heat Central Oil Boiler	2	Federal Standard 2012 Oil Boiler (Water) - 84% AFUE	Existing	25	92.67
NY	CZ6	Heat Central Oil Boiler	3	Federal Standard 2021 Oil Boiler (Water) - 86% AFUE	Existing	25	90.52
NY	CZ6	Heat Central Oil Boiler	1	Below Standard Oil Boiler - 80% AFUE	New	13	88.21
NY	CZ6	Heat Central Oil Boiler	2	Federal Standard 2012 Oil Boiler (Water) - 84% AFUE	New	25	83.07
NY	CZ6	Heat Central Oil Boiler	3	Federal Standard 2021 Oil Boiler (Water) - 86% AFUE	New	25	81.14
NY	CZ6	Heat Central Oil Furnace	1	Below Standard Oil Furnace - 78% AFUE	Existing	11	94.34
NY	CZ6	Heat Central Oil Furnace	2	Federal Standard 2013 Oil Furnace - 83% AFUE	Existing	22	89.79
NY	CZ6	Heat Central Oil Furnace	3	High Efficiency Oil Furnace - 86% AFUE	Existing	22	86.66
NY	CZ6	Heat Central Oil Furnace	1	Below Standard Oil Furnace - 78% AFUE	New	11	67.47
NY	CZ6	Heat Central Oil Furnace	2	Federal Standard 2013 Oil Furnace - 83% AFUE	New	22	64.22
NY	CZ6	Heat Central Oil Furnace	3	High Efficiency Oil Furnace - 86% AFUE	New	22	61.98
NY	CZ6	Other Fuel Oil	1	Standard Other Equipment	Existing	10	0.00
NY	CZ6	Other Fuel Oil	1	Standard Other Equipment	New	10	0.00

FIGURE A-11. RESIDENTIAL SINGLE-FAMILY BASELINE FORECAST BY REGION—PROPANE

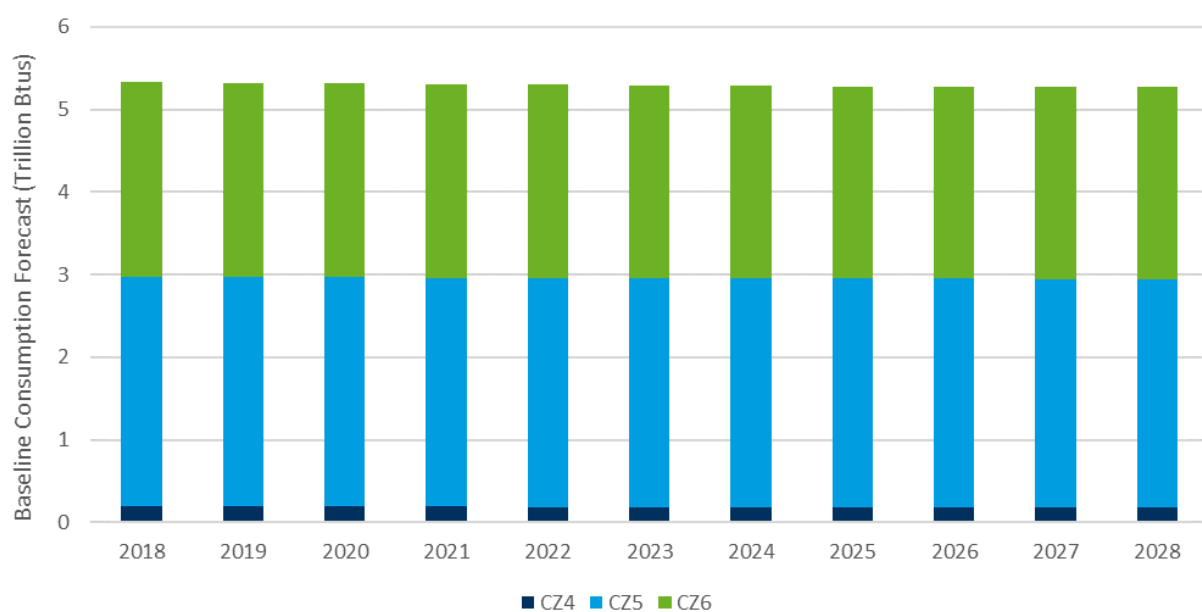


FIGURE B-12. RESIDENTIAL SINGLE-FAMILY BASELINE FORECAST BY END USE—PROPANE

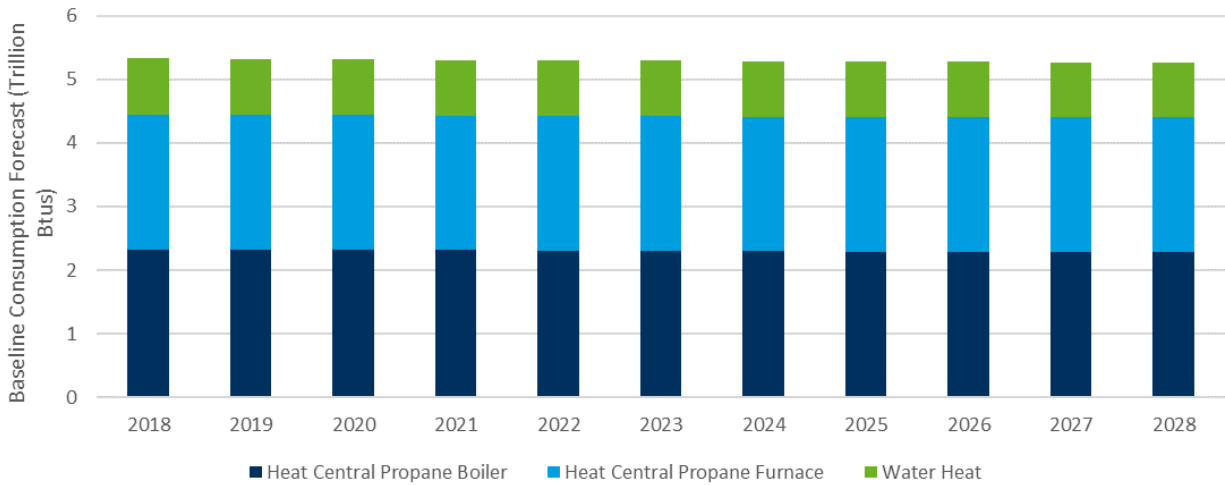


FIGURE B-13. RESIDENTIAL SINGLE-FAMILY FORECAST OF SAVINGS FROM FUTURE FEDERAL STANDARDS—PROPANE

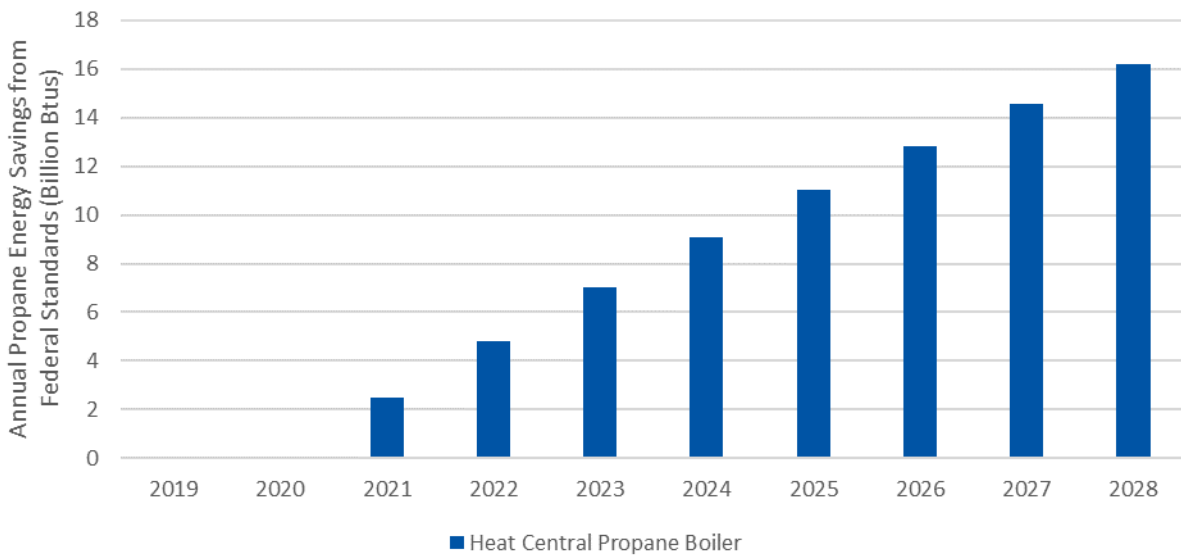


TABLE B-16. RESIDENTIAL SINGLE-FAMILY BASELINE ASSUMPTIONS—PROPANE

Region	Fuel Type	Segment	Location	End Use	Vintage	Saturation	Fuel Share
NYS	Propane	Single Family	CZ4	Heat Central Propane Boiler	Existing	0%	100%
NYS	Propane	Single Family	CZ4	Heat Central Propane Furnace	Existing	0%	100%
NYS	Propane	Single Family	CZ4	Other Propane	Existing	100%	100%
NYS	Propane	Single Family	CZ4	Water Heat GT 55 Gal	Existing	7%	23%
NYS	Propane	Single Family	CZ4	Water Heat LE 55 Gal	Existing	95%	23%
NYS	Propane	Single Family	CZ5	Heat Central Propane Boiler	Existing	10%	100%
NYS	Propane	Single Family	CZ5	Heat Central Propane Furnace	Existing	30%	100%
NYS	Propane	Single Family	CZ5	Other Propane	Existing	100%	100%

Region	Fuel Type	Segment	Location	End Use	Vintage	Saturation	Fuel Share
NYS	Propane	Single Family	CZ5	Water Heat GT 55 Gal	Existing	7%	23%
NYS	Propane	Single Family	CZ5	Water Heat LE 55 Gal	Existing	95%	23%
NYS	Propane	Single Family	CZ6	Heat Central Propane Boiler	Existing	24%	100%
NYS	Propane	Single Family	CZ6	Heat Central Propane Furnace	Existing	10%	100%
NYS	Propane	Single Family	CZ6	Other Propane	Existing	100%	100%
NYS	Propane	Single Family	CZ6	Water Heat GT 55 Gal	Existing	7%	23%
NYS	Propane	Single Family	CZ6	Water Heat LE 55 Gal	Existing	95%	23%
NYS	Propane	Single Family	CZ4	Heat Central Propane Boiler	New	0%	100%
NYS	Propane	Single Family	CZ4	Heat Central Propane Furnace	New	0%	100%
NYS	Propane	Single Family	CZ4	Other Propane	New	100%	100%
NYS	Propane	Single Family	CZ4	Water Heat GT 55 Gal	New	13%	23%
NYS	Propane	Single Family	CZ4	Water Heat LE 55 Gal	New	90%	23%
NYS	Propane	Single Family	CZ5	Heat Central Propane Boiler	New	19%	100%
NYS	Propane	Single Family	CZ5	Heat Central Propane Furnace	New	44%	100%
NYS	Propane	Single Family	CZ5	Other Propane	New	100%	100%
NYS	Propane	Single Family	CZ5	Water Heat GT 55 Gal	New	13%	23%
NYS	Propane	Single Family	CZ5	Water Heat LE 55 Gal	New	90%	23%
NYS	Propane	Single Family	CZ6	Heat Central Propane Boiler	New	27%	100%
NYS	Propane	Single Family	CZ6	Heat Central Propane Furnace	New	64%	100%
NYS	Propane	Single Family	CZ6	Other Propane	New	100%	100%
NYS	Propane	Single Family	CZ6	Water Heat GT 55 Gal	New	13%	23%
NYS	Propane	Single Family	CZ6	Water Heat LE 55 Gal	New	90%	23%

TABLE B-17. RESIDENTIAL SINGLE-FAMILY BASELINE ASSUMPTIONS—PROPANE EFFICIENCY SHARES

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	E-Share
NYS	CZ4	Heat Central Propane Boiler	1	Below Standard Boiler - 78% AFUE	Existing	42%
NYS	CZ4	Heat Central Propane Boiler	2	Federal Standard 2012 Propane Boiler (Water) - 82% AFUE	Existing	18%
NYS	CZ4	Heat Central Propane Boiler	3	Federal Standard 2021 Propane Boiler (Water) - 84% AFUE	Existing	24%
NYS	CZ4	Heat Central Propane Boiler	4	90% AFUE	Existing	4%
NYS	CZ4	Heat Central Propane Boiler	5	95% AFUE	Existing	12%
NYS	CZ4	Heat Central Propane Boiler	1	Below Standard Boiler - 78% AFUE	New	0%
NYS	CZ4	Heat Central Propane Boiler	2	Federal Standard 2012 Propane Boiler (Water) - 82% AFUE	New	60%
NYS	CZ4	Heat Central Propane Boiler	3	Federal Standard 2021 Propane Boiler (Water) - 84% AFUE	New	24%
NYS	CZ4	Heat Central Propane Boiler	4	90% AFUE	New	4%
NYS	CZ4	Heat Central Propane Boiler	5	95% AFUE	New	12%
NYS	CZ4	Heat Central Propane Furnace	1	Below Standard Furnace - 76% AFUE	Existing	0%
NYS	CZ4	Heat Central Propane Furnace	2	Federal Standard 2015 Propane Furnace - 80% AFUE	Existing	41%

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	E-Share
NYS	CZ4	Heat Central Propane Furnace	3	High Efficiency Furnace - 90% AFUE	Existing	16%
NYS	CZ4	Heat Central Propane Furnace	4	High Efficiency Furnace - 95% AFUE	Existing	43%
NYS	CZ4	Heat Central Propane Furnace	5	High Efficiency Furnace - 98% AFUE	Existing	0%
NYS	CZ4	Heat Central Propane Furnace	1	Below Standard Furnace - 76% AFUE	New	0%
NYS	CZ4	Heat Central Propane Furnace	2	Federal Standard 2015 Propane Furnace - 80% AFUE	New	41%
NYS	CZ4	Heat Central Propane Furnace	3	High Efficiency Furnace - 90% AFUE	New	16%
NYS	CZ4	Heat Central Propane Furnace	4	High Efficiency Furnace - 95% AFUE	New	43%
NYS	CZ4	Heat Central Propane Furnace	5	High Efficiency Furnace - 98% AFUE	New	0%
NYS	CZ4	Other Propane	1	Standard Other Equipment	Existing	100%
NYS	CZ4	Other Propane	1	Standard Other Equipment	New	100%
NYS	CZ4	Water Heat GT 55 Gal	1	Below Standard Water Heater > 55 GAL - UEF 0.54	Existing	8%
NYS	CZ4	Water Heat GT 55 Gal	2	Federal Standard 2017 Condensing Water Heater > 55 GAL - UEF 0.76	Existing	71%
NYS	CZ4	Water Heat GT 55 Gal	3	ENERGY STAR Condensing Water Heater > 55 GAL - UEF 0.78	Existing	18%
NYS	CZ4	Water Heat GT 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing > 55 GAL) - UEF 0.87	Existing	1%
NYS	CZ4	Water Heat GT 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing > 55 GAL) - UEF 0.92	Existing	2%
NYS	CZ4	Water Heat GT 55 Gal	1	Below Standard Water Heater > 55 GAL - UEF 0.54	New	0%
NYS	CZ4	Water Heat GT 55 Gal	2	Federal Standard 2017 Condensing Water Heater > 55 GAL - UEF 0.76	New	79%
NYS	CZ4	Water Heat GT 55 Gal	3	ENERGY STAR Condensing Water Heater > 55 GAL - UEF 0.78	New	18%
NYS	CZ4	Water Heat GT 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing > 55 GAL) - UEF 0.87	New	1%
NYS	CZ4	Water Heat GT 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing > 55 GAL) - UEF 0.92	New	2%
NYS	CZ4	Water Heat LE 55 Gal	1	Below Standard Water Heater ≤ 55 GAL - UEF 0.55	Existing	8%
NYS	CZ4	Water Heat LE 55 Gal	2	Federal Standard 2017 Storage Water Heater ≤ 55 GAL - UEF 0.58	Existing	71%
NYS	CZ4	Water Heat LE 55 Gal	3	ENERGY STAR Storage Water Heater ≤ 55 GAL - UEF 0.64	Existing	18%
NYS	CZ4	Water Heat LE 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.87	Existing	1%

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	E-Share
NYS	CZ4	Water Heat LE 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.92	Existing	2%
NYS	CZ4	Water Heat LE 55 Gal	1	Below Standard Water Heater ≤ 55 GAL - UEF 0.55	New	0%
NYS	CZ4	Water Heat LE 55 Gal	2	Federal Standard 2017 Storage Water Heater ≤ 55 GAL - UEF 0.58	New	24%
NYS	CZ4	Water Heat LE 55 Gal	3	ENERGY STAR Storage Water Heater ≤ 55 GAL - UEF 0.64	New	58%
NYS	CZ4	Water Heat LE 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.87	New	0%
NYS	CZ4	Water Heat LE 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.92	New	18%
NYS	CZ5	Heat Central Propane Boiler	1	Below Standard Boiler - 78% AFUE	Existing	42%
NYS	CZ5	Heat Central Propane Boiler	2	Federal Standard 2012 Propane Boiler (Water) - 82% AFUE	Existing	18%
NYS	CZ5	Heat Central Propane Boiler	3	Federal Standard 2021 Propane Boiler (Water) - 84% AFUE	Existing	24%
NYS	CZ5	Heat Central Propane Boiler	4	90% AFUE	Existing	4%
NYS	CZ5	Heat Central Propane Boiler	5	95% AFUE	Existing	12%
NYS	CZ5	Heat Central Propane Boiler	1	Below Standard Boiler - 78% AFUE	New	0%
NYS	CZ5	Heat Central Propane Boiler	2	Federal Standard 2012 Propane Boiler (Water) - 82% AFUE	New	60%
NYS	CZ5	Heat Central Propane Boiler	3	Federal Standard 2021 Propane Boiler (Water) - 84% AFUE	New	24%
NYS	CZ5	Heat Central Propane Boiler	4	90% AFUE	New	4%
NYS	CZ5	Heat Central Propane Boiler	5	95% AFUE	New	12%
NYS	CZ5	Heat Central Propane Furnace	1	Below Standard Furnace - 76% AFUE	Existing	2%
NYS	CZ5	Heat Central Propane Furnace	2	Federal Standard 2015 Propane Furnace - 80% AFUE	Existing	40%
NYS	CZ5	Heat Central Propane Furnace	3	High Efficiency Furnace - 90% AFUE	Existing	15%
NYS	CZ5	Heat Central Propane Furnace	4	High Efficiency Furnace - 95% AFUE	Existing	42%
NYS	CZ5	Heat Central Propane Furnace	5	High Efficiency Furnace - 98% AFUE	Existing	0%
NYS	CZ5	Heat Central Propane Furnace	1	Below Standard Furnace - 76% AFUE	New	0%
NYS	CZ5	Heat Central Propane Furnace	2	Federal Standard 2015 Propane Furnace - 80% AFUE	New	43%

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	E-Share
NYS	CZ5	Heat Central Propane Furnace	3	High Efficiency Furnace - 90% AFUE	New	15%
NYS	CZ5	Heat Central Propane Furnace	4	High Efficiency Furnace - 95% AFUE	New	42%
NYS	CZ5	Heat Central Propane Furnace	5	High Efficiency Furnace - 98% AFUE	New	0%
NYS	CZ5	Other Propane	1	Standard Other Equipment	Existing	100%
NYS	CZ5	Other Propane	1	Standard Other Equipment	New	100%
NYS	CZ5	Water Heat GT 55 Gal	1	Below Standard Water Heater > 55 GAL - UEF 0.54	Existing	8%
NYS	CZ5	Water Heat GT 55 Gal	2	Federal Standard 2017 Condensing Water Heater > 55 GAL - UEF 0.76	Existing	71%
NYS	CZ5	Water Heat GT 55 Gal	3	ENERGY STAR Condensing Water Heater > 55 GAL - UEF 0.78	Existing	18%
NYS	CZ5	Water Heat GT 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing > 55 GAL) - UEF 0.87	Existing	1%
NYS	CZ5	Water Heat GT 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing > 55 GAL) - UEF 0.92	Existing	2%
NYS	CZ5	Water Heat GT 55 Gal	1	Below Standard Water Heater > 55 GAL - UEF 0.54	New	0%
NYS	CZ5	Water Heat GT 55 Gal	2	Federal Standard 2017 Condensing Water Heater > 55 GAL - UEF 0.76	New	79%
NYS	CZ5	Water Heat GT 55 Gal	3	ENERGY STAR Condensing Water Heater > 55 GAL - UEF 0.78	New	18%
NYS	CZ5	Water Heat GT 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing > 55 GAL) - UEF 0.87	New	1%
NYS	CZ5	Water Heat GT 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing > 55 GAL) - UEF 0.92	New	2%
NYS	CZ5	Water Heat LE 55 Gal	1	Below Standard Water Heater ≤ 55 GAL - UEF 0.55	Existing	8%
NYS	CZ5	Water Heat LE 55 Gal	2	Federal Standard 2017 Storage Water Heater ≤ 55 GAL - UEF 0.58	Existing	71%
NYS	CZ5	Water Heat LE 55 Gal	3	ENERGY STAR Storage Water Heater ≤ 55 GAL - UEF 0.64	Existing	18%
NYS	CZ5	Water Heat LE 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.87	Existing	1%
NYS	CZ5	Water Heat LE 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.92	Existing	2%
NYS	CZ5	Water Heat LE 55 Gal	1	Below Standard Water Heater ≤ 55 GAL - UEF 0.55	New	0%
NYS	CZ5	Water Heat LE 55 Gal	2	Federal Standard 2017 Storage Water Heater ≤ 55 GAL - UEF 0.58	New	24%
NYS	CZ5	Water Heat LE 55 Gal	3	ENERGY STAR Storage Water Heater ≤ 55 GAL - UEF 0.64	New	58%
NYS	CZ5	Water Heat LE 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.87	New	0%
NYS	CZ5	Water Heat LE 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.92	New	18%
NYS	CZ6	Heat Central Propane Boiler	1	Below Standard Boiler - 78% AFUE	Existing	44%
NYS	CZ6	Heat Central Propane Boiler	2	Federal Standard 2012 Propane Boiler (Water) - 82% AFUE	Existing	17%

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	E-Share
NYS	CZ6	Heat Central Propane Boiler	3	Federal Standard 2021 Propane Boiler (Water) - 84% AFUE	Existing	24%
NYS	CZ6	Heat Central Propane Boiler	4	90% AFUE	Existing	4%
NYS	CZ6	Heat Central Propane Boiler	5	95% AFUE	Existing	11%
NYS	CZ6	Heat Central Propane Boiler	1	Below Standard Boiler - 78% AFUE	New	0%
NYS	CZ6	Heat Central Propane Boiler	2	Federal Standard 2012 Propane Boiler (Water) - 82% AFUE	New	61%
NYS	CZ6	Heat Central Propane Boiler	3	Federal Standard 2021 Propane Boiler (Water) - 84% AFUE	New	24%
NYS	CZ6	Heat Central Propane Boiler	4	90% AFUE	New	4%
NYS	CZ6	Heat Central Propane Boiler	5	95% AFUE	New	11%
NYS	CZ6	Heat Central Propane Furnace	1	Below Standard Furnace - 76% AFUE	Existing	0%
NYS	CZ6	Heat Central Propane Furnace	2	Federal Standard 2015 Propane Furnace - 80% AFUE	Existing	41%
NYS	CZ6	Heat Central Propane Furnace	3	High Efficiency Furnace - 90% AFUE	Existing	16%
NYS	CZ6	Heat Central Propane Furnace	4	High Efficiency Furnace - 95% AFUE	Existing	43%
NYS	CZ6	Heat Central Propane Furnace	5	High Efficiency Furnace - 98% AFUE	Existing	0%
NYS	CZ6	Heat Central Propane Furnace	1	Below Standard Furnace - 76% AFUE	New	0%
NYS	CZ6	Heat Central Propane Furnace	2	Federal Standard 2015 Propane Furnace - 80% AFUE	New	41%
NYS	CZ6	Heat Central Propane Furnace	3	High Efficiency Furnace - 90% AFUE	New	16%
NYS	CZ6	Heat Central Propane Furnace	4	High Efficiency Furnace - 95% AFUE	New	43%
NYS	CZ6	Heat Central Propane Furnace	5	High Efficiency Furnace - 98% AFUE	New	0%
NYS	CZ6	Other Propane	1	Standard Other Equipment	Existing	100%
NYS	CZ6	Other Propane	1	Standard Other Equipment	New	100%
NYS	CZ6	Water Heat GT 55 Gal	1	Below Standard Water Heater > 55 GAL - UEF 0.54	Existing	8%
NYS	CZ6	Water Heat GT 55 Gal	2	Federal Standard 2017 Condensing Water Heater > 55 GAL - UEF 0.76	Existing	71%
NYS	CZ6	Water Heat GT 55 Gal	3	ENERGY STAR Condensing Water Heater > 55 GAL - UEF 0.78	Existing	18%

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	E-Share
NYS	CZ6	Water Heat GT 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing > 55 GAL) - UEF 0.87	Existing	1%
NYS	CZ6	Water Heat GT 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing > 55 GAL) - UEF 0.92	Existing	2%
NYS	CZ6	Water Heat GT 55 Gal	1	Below Standard Water Heater > 55 GAL - UEF 0.54	New	0%
NYS	CZ6	Water Heat GT 55 Gal	2	Federal Standard 2017 Condensing Water Heater > 55 GAL - UEF 0.76	New	79%
NYS	CZ6	Water Heat GT 55 Gal	3	ENERGY STAR Condensing Water Heater > 55 GAL - UEF 0.78	New	18%
NYS	CZ6	Water Heat GT 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing > 55 GAL) - UEF 0.87	New	1%
NYS	CZ6	Water Heat GT 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing > 55 GAL) - UEF 0.92	New	2%
NYS	CZ6	Water Heat LE 55 Gal	1	Below Standard Water Heater ≤ 55 GAL - UEF 0.55	Existing	8%
NYS	CZ6	Water Heat LE 55 Gal	2	Federal Standard 2017 Storage Water Heater ≤ 55 GAL - UEF 0.58	Existing	71%
NYS	CZ6	Water Heat LE 55 Gal	3	ENERGY STAR Storage Water Heater ≤ 55 GAL - UEF 0.64	Existing	18%
NYS	CZ6	Water Heat LE 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.87	Existing	1%
NYS	CZ6	Water Heat LE 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.92	Existing	2%
NYS	CZ6	Water Heat LE 55 Gal	1	Below Standard Water Heater ≤ 55 GAL - UEF 0.55	New	0%
NYS	CZ6	Water Heat LE 55 Gal	2	Federal Standard 2017 Storage Water Heater ≤ 55 GAL - UEF 0.58	New	24%
NYS	CZ6	Water Heat LE 55 Gal	3	ENERGY STAR Storage Water Heater ≤ 55 GAL - UEF 0.64	New	58%
NYS	CZ6	Water Heat LE 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.87	New	0%
NYS	CZ6	Water Heat LE 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.92	New	18%

TABLE B-18. RESIDENTIAL SINGLE-FAMILY BASELINE ASSUMPTIONS—PROPANE UNIT ENERGY CONSUMPTION

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	EUL	Measure Consumption (MMBtu/yr)
NY	CZ4	Heat Central Propane Boiler	1	Below Standard Boiler - 78% AFUE	Existing	13	95.40
NY	CZ4	Heat Central Propane Boiler	2	Federal Standard 2012 Propane Boiler (Water) - 82% AFUE	Existing	25	90.75
NY	CZ4	Heat Central Propane Boiler	3	Federal Standard 2021 Propane Boiler (Water) - 84% AFUE	Existing	25	88.59
NY	CZ4	Heat Central Propane Boiler	4	90% AFUE	Existing	25	82.68
NY	CZ4	Heat Central Propane Boiler	5	95% AFUE	Existing	25	78.33
NY	CZ4	Heat Central Propane Boiler	1	Below Standard Boiler - 78% AFUE	New	13	75.82
NY	CZ4	Heat Central Propane Boiler	2	Federal Standard 2012 Propane Boiler (Water) - 82% AFUE	New	25	72.13
NY	CZ4	Heat Central Propane Boiler	3	Federal Standard 2021 Propane Boiler (Water) - 84% AFUE	New	25	70.41
NY	CZ4	Heat Central Propane Boiler	4	90% AFUE	New	25	65.71
NY	CZ4	Heat Central Propane Boiler	5	95% AFUE	New	25	62.26
NY	CZ4	Heat Central Propane Furnace	1	Below Standard Furnace - 76% AFUE	Existing	11	75.74
NY	CZ4	Heat Central Propane Furnace	2	Federal Standard 2015 Propane Furnace - 80% AFUE	Existing	22	90.26
NY	CZ4	Heat Central Propane Furnace	3	High Efficiency Furnace - 90% AFUE	Existing	22	80.23
NY	CZ4	Heat Central Propane Furnace	4	High Efficiency Furnace - 95% AFUE	Existing	22	76.01
NY	CZ4	Heat Central Propane Furnace	5	High Efficiency Furnace - 98% AFUE	Existing	22	73.68
NY	CZ4	Heat Central Propane Furnace	1	Below Standard Furnace - 76% AFUE	New	11	50.39
NY	CZ4	Heat Central Propane Furnace	2	Federal Standard 2015 Propane Furnace - 80% AFUE	New	22	47.87
NY	CZ4	Heat Central Propane Furnace	3	High Efficiency Furnace - 90% AFUE	New	22	42.55
NY	CZ4	Heat Central Propane Furnace	4	High Efficiency Furnace - 95% AFUE	New	22	40.31
NY	CZ4	Heat Central Propane Furnace	5	High Efficiency Furnace - 98% AFUE	New	22	39.08
NY	CZ4	Other Propane	1	Standard Other Equipment	Existing	10	0.00

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	EUL	Measure Consumption (MMBtu/yr)
NY	CZ4	Other Propane	1	Standard Other Equipment	New	10	0.00
NY	CZ4	Water Heat GT 55 Gal	1	Below Standard Water Heater > 55 GAL - UEF 0.54	Existing	6	21.51
NY	CZ4	Water Heat GT 55 Gal	2	Federal Standard 2017 Condensing Water Heater > 55 GAL - UEF 0.76	Existing	11	15.28
NY	CZ4	Water Heat GT 55 Gal	3	ENERGY STAR Condensing Water Heater > 55 GAL - UEF 0.78	Existing	11	14.89
NY	CZ4	Water Heat GT 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing > 55 GAL) - UEF 0.87	Existing	20	13.35
NY	CZ4	Water Heat GT 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing > 55 GAL) - UEF 0.92	Existing	20	12.63
NY	CZ4	Water Heat GT 55 Gal	1	Below Standard Water Heater > 55 GAL - UEF 0.54	New	6	21.51
NY	CZ4	Water Heat GT 55 Gal	2	Federal Standard 2017 Condensing Water Heater > 55 GAL - UEF 0.76	New	11	15.28
NY	CZ4	Water Heat GT 55 Gal	3	ENERGY STAR Condensing Water Heater > 55 GAL - UEF 0.78	New	11	14.89
NY	CZ4	Water Heat GT 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing > 55 GAL) - UEF 0.87	New	20	13.35
NY	CZ4	Water Heat GT 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing > 55 GAL) - UEF 0.92	New	20	12.63
NY	CZ4	Water Heat LE 55 Gal	1	Below Standard Water Heater ≤ 55 GAL - UEF 0.55	Existing	6	22.59
NY	CZ4	Water Heat LE 55 Gal	2	Federal Standard 2017 Storage Water Heater ≤ 55 GAL - UEF 0.58	Existing	11	20.03
NY	CZ4	Water Heat LE 55 Gal	3	ENERGY STAR Storage Water Heater ≤ 55 GAL - UEF 0.64	Existing	11	18.15
NY	CZ4	Water Heat LE 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.87	Existing	20	13.35
NY	CZ4	Water Heat LE 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.92	Existing	20	12.63
NY	CZ4	Water Heat LE 55 Gal	1	Below Standard Water Heater ≤ 55 GAL - UEF 0.55	New	6	22.59
NY	CZ4	Water Heat LE 55 Gal	2	Federal Standard 2017 Storage Water Heater ≤ 55 GAL - UEF 0.58	New	11	20.03
NY	CZ4	Water Heat LE 55 Gal	3	ENERGY STAR Storage Water Heater ≤ 55 GAL - UEF 0.64	New	11	18.15
NY	CZ4	Water Heat LE 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.87	New	20	13.35
NY	CZ4	Water Heat LE 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.92	New	20	12.63
NY	CZ5	Heat Central Propane Boiler	1	Below Standard Boiler - 78% AFUE	Existing	13	95.75
NY	CZ5	Heat Central Propane Boiler	2	Federal Standard 2012 Propane Boiler (Water) - 82% AFUE	Existing	25	91.08
NY	CZ5	Heat Central Propane Boiler	3	Federal Standard 2021 Propane Boiler (Water) - 84% AFUE	Existing	25	88.91
NY	CZ5	Heat Central Propane Boiler	4	90% AFUE	Existing	25	82.98

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	EUL	Measure Consumption (MMBtu/yr)
NY	CZ5	Heat Central Propane Boiler	5	95% AFUE	Existing	25	78.61
NY	CZ5	Heat Central Propane Boiler	1	Below Standard Boiler - 78% AFUE	New	13	101.64
NY	CZ5	Heat Central Propane Boiler	2	Federal Standard 2012 Propane Boiler (Water) - 82% AFUE	New	25	96.68
NY	CZ5	Heat Central Propane Boiler	3	Federal Standard 2021 Propane Boiler (Water) - 84% AFUE	New	25	94.38
NY	CZ5	Heat Central Propane Boiler	4	90% AFUE	New	25	88.09
NY	CZ5	Heat Central Propane Boiler	5	95% AFUE	New	25	83.45
NY	CZ5	Heat Central Propane Furnace	1	Below Standard Furnace - 76% AFUE	Existing	11	65.14
NY	CZ5	Heat Central Propane Furnace	2	Federal Standard 2015 Propane Furnace - 80% AFUE	Existing	22	61.88
NY	CZ5	Heat Central Propane Furnace	3	High Efficiency Furnace - 90% AFUE	Existing	22	55.00
NY	CZ5	Heat Central Propane Furnace	4	High Efficiency Furnace - 95% AFUE	Existing	22	52.11
NY	CZ5	Heat Central Propane Furnace	5	High Efficiency Furnace - 98% AFUE	Existing	22	50.51
NY	CZ5	Heat Central Propane Furnace	1	Below Standard Furnace - 76% AFUE	New	11	69.11
NY	CZ5	Heat Central Propane Furnace	2	Federal Standard 2015 Propane Furnace - 80% AFUE	New	22	65.66
NY	CZ5	Heat Central Propane Furnace	3	High Efficiency Furnace - 90% AFUE	New	22	58.36
NY	CZ5	Heat Central Propane Furnace	4	High Efficiency Furnace - 95% AFUE	New	22	55.29
NY	CZ5	Heat Central Propane Furnace	5	High Efficiency Furnace - 98% AFUE	New	22	53.60
NY	CZ5	Other Propane	1	Standard Other Equipment	Existing	10	0.00
NY	CZ5	Other Propane	1	Standard Other Equipment	New	10	0.00
NY	CZ5	Water Heat GT 55 Gal	1	Below Standard Water Heater > 55 GAL - UEF 0.54	Existing	6	21.51
NY	CZ5	Water Heat GT 55 Gal	2	Federal Standard 2017 Condensing Water Heater > 55 GAL - UEF 0.76	Existing	11	15.28
NY	CZ5	Water Heat GT 55 Gal	3	ENERGY STAR Condensing Water Heater > 55 GAL - UEF 0.78	Existing	11	14.89
NY	CZ5	Water Heat GT 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing > 55 GAL) - UEF 0.87	Existing	20	13.35

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	EUL	Measure Consumption (MMBtu/yr)
NY	CZ5	Water Heat GT 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing > 55 GAL) - UEF 0.92	Existing	20	12.63
NY	CZ5	Water Heat GT 55 Gal	1	Below Standard Water Heater > 55 GAL - UEF 0.54	New	6	21.51
NY	CZ5	Water Heat GT 55 Gal	2	Federal Standard 2017 Condensing Water Heater > 55 GAL - UEF 0.76	New	11	15.28
NY	CZ5	Water Heat GT 55 Gal	3	ENERGY STAR Condensing Water Heater > 55 GAL - UEF 0.78	New	11	14.89
NY	CZ5	Water Heat GT 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing > 55 GAL) - UEF 0.87	New	20	13.35
NY	CZ5	Water Heat GT 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing > 55 GAL) - UEF 0.92	New	20	12.63
NY	CZ5	Water Heat LE 55 Gal	1	Below Standard Water Heater ≤ 55 GAL - UEF 0.55	Existing	6	22.59
NY	CZ5	Water Heat LE 55 Gal	2	Federal Standard 2017 Storage Water Heater ≤ 55 GAL - UEF 0.58	Existing	11	20.03
NY	CZ5	Water Heat LE 55 Gal	3	ENERGY STAR Storage Water Heater ≤ 55 GAL - UEF 0.64	Existing	11	18.15
NY	CZ5	Water Heat LE 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.87	Existing	20	13.35
NY	CZ5	Water Heat LE 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.92	Existing	20	12.63
NY	CZ5	Water Heat LE 55 Gal	1	Below Standard Water Heater ≤ 55 GAL - UEF 0.55	New	6	22.59
NY	CZ5	Water Heat LE 55 Gal	2	Federal Standard 2017 Storage Water Heater ≤ 55 GAL - UEF 0.58	New	11	20.03
NY	CZ5	Water Heat LE 55 Gal	3	ENERGY STAR Storage Water Heater ≤ 55 GAL - UEF 0.64	New	11	18.15
NY	CZ5	Water Heat LE 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.87	New	20	13.35
NY	CZ5	Water Heat LE 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.92	New	20	12.63
NY	CZ6	Heat Central Propane Boiler	1	Below Standard Boiler - 78% AFUE	Existing	13	92.32
NY	CZ6	Heat Central Propane Boiler	2	Federal Standard 2012 Propane Boiler (Water) - 82% AFUE	Existing	25	87.82
NY	CZ6	Heat Central Propane Boiler	3	Federal Standard 2021 Propane Boiler (Water) - 84% AFUE	Existing	25	85.73
NY	CZ6	Heat Central Propane Boiler	4	90% AFUE	Existing	25	80.01
NY	CZ6	Heat Central Propane Boiler	5	95% AFUE	Existing	25	75.80
NY	CZ6	Heat Central Propane Boiler	1	Below Standard Boiler - 78% AFUE	New	13	92.03
NY	CZ6	Heat Central Propane Boiler	2	Federal Standard 2012 Propane Boiler (Water) - 82% AFUE	New	25	87.54
NY	CZ6	Heat Central Propane Boiler	3	Federal Standard 2021 Propane Boiler (Water) - 84% AFUE	New	25	85.46
NY	CZ6	Heat Central Propane Boiler	4	90% AFUE	New	25	79.76

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	EUL	Measure Consumption (MMBtu/yr)
NY	CZ6	Heat Central Propane Boiler	5	95% AFUE	New	25	75.56
NY	CZ6	Heat Central Propane Furnace	1	Below Standard Furnace - 76% AFUE	Existing	11	88.18
NY	CZ6	Heat Central Propane Furnace	2	Federal Standard 2015 Propane Furnace - 80% AFUE	Existing	22	83.77
NY	CZ6	Heat Central Propane Furnace	3	High Efficiency Furnace - 90% AFUE	Existing	22	74.46
NY	CZ6	Heat Central Propane Furnace	4	High Efficiency Furnace - 95% AFUE	Existing	22	70.54
NY	CZ6	Heat Central Propane Furnace	5	High Efficiency Furnace - 98% AFUE	Existing	22	68.38
NY	CZ6	Heat Central Propane Furnace	1	Below Standard Furnace - 76% AFUE	New	11	70.13
NY	CZ6	Heat Central Propane Furnace	2	Federal Standard 2015 Propane Furnace - 80% AFUE	New	22	66.63
NY	CZ6	Heat Central Propane Furnace	3	High Efficiency Furnace - 90% AFUE	New	22	59.22
NY	CZ6	Heat Central Propane Furnace	4	High Efficiency Furnace - 95% AFUE	New	22	56.11
NY	CZ6	Heat Central Propane Furnace	5	High Efficiency Furnace - 98% AFUE	New	22	54.39
NY	CZ6	Other Propane	1	Standard Other Equipment	Existing	10	0.00
NY	CZ6	Other Propane	1	Standard Other Equipment	New	10	0.00
NY	CZ6	Water Heat GT 55 Gal	1	Below Standard Water Heater > 55 GAL - UEF 0.54	Existing	6	21.51
NY	CZ6	Water Heat GT 55 Gal	2	Federal Standard 2017 Condensing Water Heater > 55 GAL - UEF 0.76	Existing	11	15.28
NY	CZ6	Water Heat GT 55 Gal	3	ENERGY STAR Condensing Water Heater > 55 GAL - UEF 0.78	Existing	11	14.89
NY	CZ6	Water Heat GT 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing > 55 GAL) - UEF 0.87	Existing	20	13.35
NY	CZ6	Water Heat GT 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing > 55 GAL) - UEF 0.92	Existing	20	12.63
NY	CZ6	Water Heat GT 55 Gal	1	Below Standard Water Heater > 55 GAL - UEF 0.54	New	6	21.51
NY	CZ6	Water Heat GT 55 Gal	2	Federal Standard 2017 Condensing Water Heater > 55 GAL - UEF 0.76	New	11	15.28
NY	CZ6	Water Heat GT 55 Gal	3	ENERGY STAR Condensing Water Heater > 55 GAL - UEF 0.78	New	11	14.89
NY	CZ6	Water Heat GT 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing > 55 GAL) - UEF 0.87	New	20	13.35

Region	Location	End Use	Eff. Level	Efficiency Description	Vintage	EUL	Measure Consumption (MMBtu/yr)
NY	CZ6	Water Heat GT 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing > 55 GAL) - UEF 0.92	New	20	12.63
NY	CZ6	Water Heat LE 55 Gal	1	Below Standard Water Heater ≤ 55 GAL - UEF 0.55	Existing	6	22.59
NY	CZ6	Water Heat LE 55 Gal	2	Federal Standard 2017 Storage Water Heater ≤ 55 GAL - UEF 0.58	Existing	11	20.03
NY	CZ6	Water Heat LE 55 Gal	3	ENERGY STAR Storage Water Heater ≤ 55 GAL - UEF 0.64	Existing	11	18.15
NY	CZ6	Water Heat LE 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.87	Existing	20	13.35
NY	CZ6	Water Heat LE 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.92	Existing	20	12.63
NY	CZ6	Water Heat LE 55 Gal	1	Below Standard Water Heater ≤ 55 GAL - UEF 0.55	New	6	22.59
NY	CZ6	Water Heat LE 55 Gal	2	Federal Standard 2017 Storage Water Heater ≤ 55 GAL - UEF 0.58	New	11	20.03
NY	CZ6	Water Heat LE 55 Gal	3	ENERGY STAR Storage Water Heater ≤ 55 GAL - UEF 0.64	New	11	18.15
NY	CZ6	Water Heat LE 55 Gal	4	ENERGY STAR Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.87	New	20	13.35
NY	CZ6	Water Heat LE 55 Gal	5	CEE Tier 2 Tankless Water Heater (Replacing ≤ 55 GAL) - UEF 0.92	New	20	12.63

Appendix C. Detailed Assumptions and Energy Efficiency Potential

The attached Excel file contains measure-level detailed assumptions and energy efficiency potential.

Cadmus provided NYSERDA with additional data fields used in the modeling (such as sources used for inputs, detailed breakdowns of costs and savings, and assessments of technical feasibility and saturations used for modeling), and these data are available upon request.

Appendix D. Detailed Measure List Inputs

The attached Excel file contains measure-level detailed input assumptions and sources for equipment and retrofit measures for electric, natural gas, and other fuel types.