

An Assessment of Energy Affordability in New Jersey and Alternative Policy and Rate Options

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Glossary of Acronyms

ACS	American Community Survey
AMI	Advanced Metering Infrastructure
BGS	Basic Generation Service
BGSS	Basic Gas Supply Service
CPP	Critical Peak Pricing
EAG	Energy Assistance Grant
EDECA	Electric Discount and Energy Competition Act
EMP	Energy Master Plan
EV	Electric Vehicle
FPG	Federal Policy Guidelines
FPL	Federal Poverty Level
GA	General Assistance
IBR	Inclining Block Rate
kWh	Kilowatt Hour
LIHEAP	Low-Income Home Energy Assistance Program
LMI	Low- and Moderate-Income
MAA	Medical Assistance to the Aged
MAO	Medical Assistance Only
NEM	Net Energy Metering
NJ	New Jersey
NJBPU	New Jersey Board of Public Utilities
New Jersey SHARES	New Jersey Statewide Heating Assistance and Referral for Energy Services
PAAD	Pharmaceutical Assistance to the Aged & Disabled
PAGE	Payment Assistance for Gas and Electric
PIPP	Percentage of Income Payment Plan
PTR	Peak Time Rebate
PV	Photovoltaics
REAP	Residential Energy Assistance Payment
SBC	Societal Benefits Charge
SMART	SHARES Mortgage Assistance, Rent and Tax Program
SMI	State Median Income
SNA	Safety Net Assistance (New York State)
SNAP	Supplemental Nutrition Assistance Program
SSI	Supplemental Security Income

SUT	Sales and Use Tax
TANF	Temporary Assistance for Needy Families
TOU	Time-of-Use
TVR	Time Varying Rate
USF	Universal Service Fund
VA	Veteran Affairs
WAP	Weatherization Assistance Program
WTP	Winter Termination Program

Executive Summary

New Jersey (“NJ”) is aiming to decarbonize its economy and achieve 100% clean electricity by 2035. As the state’s energy economy undergoes a major transition, it will be essential to ensure that **low- and moderate-income (LMI) customers** are not left behind and can equally benefit from this shift. The 2022 Energy Master Plan Ratepayer Impact Study¹ showed that LMI customers already face high energy burdens and may become more vulnerable to rising electricity and gas rates. Policies and rate designs targeting LMI customers will be crucial to reducing their energy burden, which is a measure of energy affordability and commonly defined as the share of household income spent on home energy bills, typically including the costs of electricity, natural gas, or other fuels used at home.

This study focuses on addressing energy affordability for LMI customers through energy assistance programs and rate options. While decarbonization may raise electricity and gas rates for all customers, cost-effective strategies such as load flexibility, energy efficiency, time-varying rates, and prudent infrastructure investments can help mitigate these increases. However, the scope of this study does not include analyzing these broader cost-reduction strategies that would reduce the costs for *all* customers; instead, **the study examines targeted policies and rate options to reduce the energy burden for LMI customers**, who are most vulnerable to the net costs of the energy transition.

The study starts with an overview of the status of the electricity and gas rates offered to residential utility customers in New Jersey to place New Jersey’s rates into broader context. New Jersey’s average all-in residential electricity rates have moved in a similar trend as those in other Mid-Atlantic states, and average residential gas rates trended lower than the Mid-Atlantic and US averages. New Jersey’s typical electricity rate for residential customers is an inclining block rate (IBR), a rate structure historically offered to encourage conservation. IBRs impose higher rates once usage exceeds certain thresholds—regardless of when electricity is consumed. However, the timing of consumption significantly impacts grid investments, as the grid is scaled to handle peak demand. IBRs can also hinder cost-effective electrification of heating and transportation, as higher electricity consumption from electrification will move customers into

¹ S. Sergici, G. Kavlak, K. Spees, R. Janakiraman, [New Jersey Energy Master Plan Ratepayer Impact Study](#), August 2022.

the higher-priced blocks of the IBR. The study recommends New Jersey to **evaluate the effectiveness of the IBRs in incentivizing conservation** and consider flattening its IBR. As advanced metering infrastructure (AMI) deployment advances in New Jersey, the state will benefit from **transitioning to time-varying rates (TVRs)**. New Jersey utilities should test TVR options to ensure they can offer these rates to all residential customers promptly when AMI meters are deployed.

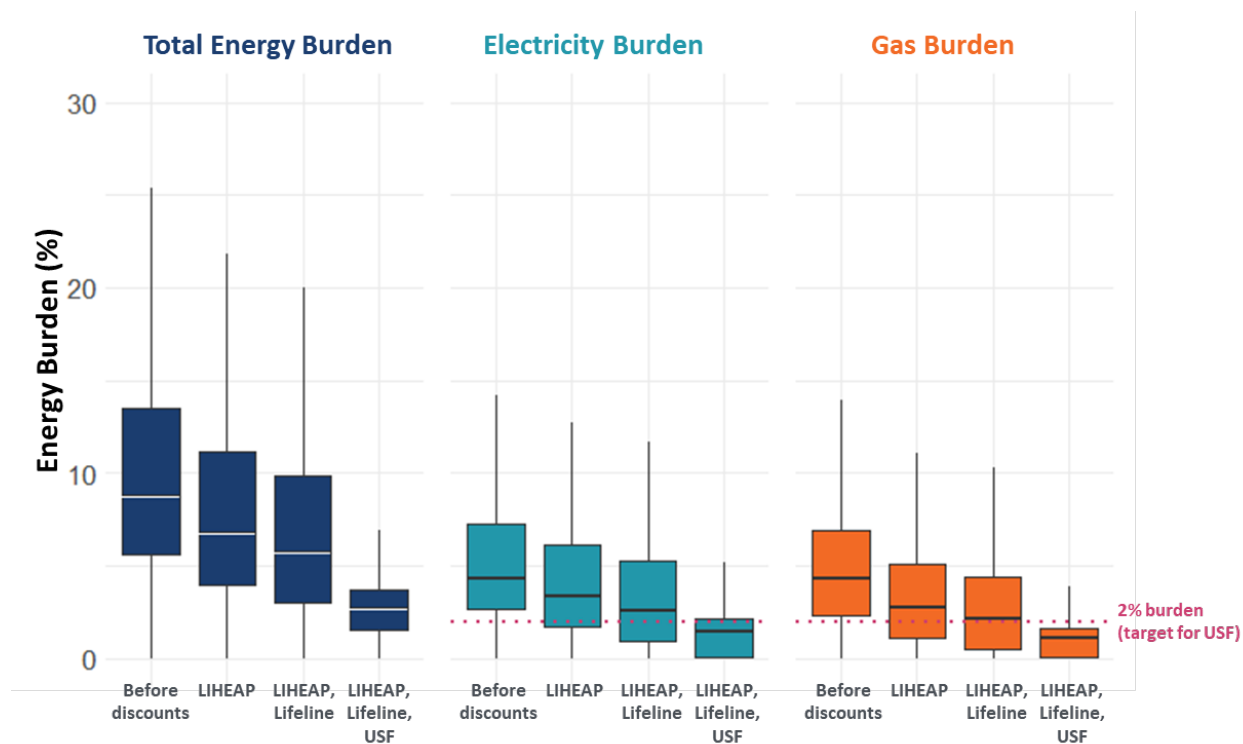
Our jurisdictional scan of energy assistance programs across the country shows that **New Jersey offers a wide variety of programs** addressing LMI customer energy assistance needs through different mechanisms. Furthermore, New Jersey is **positioned ahead of many other states particularly due to its comprehensive bill discount program, the Universal Service Fund (USF)**, which is a Percentage of Income Payment Program (PIPP) providing an individualized discount to each participating household based on household income and energy costs. The program auto-enrolls low-income customers from other assistance programs such as Supplemental Nutrition Assistance Program (SNAP) and Pharmaceutical Assistance to the Aged & Disabled (PAAD), facilitating outreach to target populations.

The study evaluates the effectiveness of the energy bill assistance programs currently available in New Jersey (LIHEAP, USF, Lifeline, and New Jersey SHARES programs) based on how much they reduce energy burden for participating households using a large data set covering more than 200,000 New Jersey households receiving assistance in the 2023–2024 timeframe. Our quantitative analysis shows that **USF successfully reduces the median energy burden for recipients to below 4% (below 2% for electricity and 2% for natural gas)**, meeting the program’s target energy burden level. Figure ES 1 illustrates the reduction in energy burden due to the energy bill assistance programs for a subset of the population that receive LIHEAP, USF, and Lifeline. The median total energy burden is reduced from 8.7% to 6.8% by LIHEAP, to 5.7% by Lifeline, and further reduced to 2.7% by USF. Our analysis further reveals that despite having a monthly cap of \$185 per household, USF reduces the electricity and gas energy burden to target levels for 90% of participating households, indicating that the program is highly effective in achieving its targets.

While New Jersey’s existing energy bill assistance programs are effective in reducing energy burden for participants, New Jersey has opportunities to advance its programs and enhance its rate offerings to support a broader base of customers and safeguard LMI customers from potential future rate increases. The study identifies alternative policy options regarding **bill assistance programs** and **rate design** to further relieve energy burden for LMI customers in New Jersey. These options are not meant to be prescriptive but are rather presented as policy

options for New Jersey to consider to further improve its well-functioning programs, especially as the energy costs are expected to rise. A comprehensive analysis should be performed to evaluate the feasibility and the impact of implementing any of the presented policy options.

FIGURE ES 1: EFFECT OF LIHEAP, LIFELINE, AND USF ON ENERGY BURDEN OF RECIPIENTS



Note: The median total energy burden is reduced from 8.7% to 6.8% by LIHEAP, 5.7% by Lifeline, and further reduced to 2.7% by USF.

Alternative Policy Options Related to Bill Assistance Programs

1. Increase USF participation. While USF is effective in reducing energy burden for participating customers, we find that currently 20% of the eligible households participate in USF, indicating that there is an untapped potential to extend the reach of the program to more low-income households. New Jersey can boost program participation by improving its enrollment process and implementing targeted outreach strategies. This could include expanding the list of programs that automatically qualify customers for USF, conducting analyses to identify the characteristics of eligible but non-participating customers and focusing outreach on these specific groups. Additionally, a more holistic approach to affordability could be achieved by stronger coordination between state agencies, integrating assistance databases across programs, and collaborating on enrollment initiatives.

Since USF is a fully funded program, where any eligible household can receive funding, an increasing participation rate would lead to an increase in the amount of total funding needed to support the program. Nevertheless, our analysis shows that an average New Jersey household would continue to contribute only a small fraction of their energy bills towards USF—not exceeding 3.5% of the average energy bill even when participation rate is increased from 20% to 100%. New Jersey should continue to focus on increasing participation in USF and other programs, while monitoring the funding needs and bill impacts on non-participating customers.

- 2. Introduce Income Tiers to USF.** USF applies the same energy burden target to *all* eligible households (i.e., 2% for electricity bill and 2% for gas bill separately, and 4% for electricity if heating is electric). These targets are the lowest and therefore the most ambitious across all the states reviewed in our jurisdictional scan. Alternatively, the USF program structure could be modified by the New Jersey Board of Public Utilities (“NJBPU”) to introduce income tiers and setting a lower energy burden target for the lowest-income households and a reasonable but higher energy burden target for other eligible low-income households. The potential benefit of a tiered energy burden structure could be a more efficient allocation of funds across income tiers, where the needs of the lowest income households are prioritized. Before adjusting the program structure, it is recommended to conduct a detailed analysis to determine the impact of specific design changes.
- 3. Increase USF Discount Cap Per Household.** Our analysis shows that USF reduces electricity and gas energy burden to target levels for 90% of participating households, indicating that the program is highly effective in achieving its targets. For the remaining 10% of households, the current maximum USF discounts are insufficient to reduce their burdens to target levels. If energy bills were to increase and the current discount caps were maintained, the percentage of customers whose energy burden would be reduced by USF to target levels would decrease. We find that a 50% increase in bills would require the cap to increase to \$312/month to maintain the coverage of the program at current levels (i.e., at 90%). We recommend that New Jersey regularly monitor the coverage of the USF program and assess whether adjustments to the discount cap are needed to better align with the program's goals.
- 4. Introduce Further Assistance Options for Moderate-Income Households.** Moderate-income households that are ineligible for USF may exceedingly need targeted assistance, as they may lack the resources to manage financial hardships resulting from rising energy costs and to invest in energy-efficient technologies. Households with income levels only slightly above the eligibility limits for low-income programs may be particularly disadvantaged and may also experience high energy burdens. Our jurisdictional scan showed that New Jersey is

among the few states that offer moderate-income bill assistance programs, through New Jersey SHARES programs such as PAGE, although these programs are smaller than USF and LIHEAP. To address energy affordability for moderate-income customers more holistically, one option is to expand the current USF program by adding a moderate-income tier, by setting a reasonable but potentially higher energy burden limit such as 6%. Another, potentially a more straightforward option is to create a new bill discount program for moderate-income households that provides fixed dollar amount discounts to qualified customers while also enrolling these participants in energy efficiency programs as a prerequisite for receiving the bill discounts.

- 5. Move USF Funding to State Tax Base.** Currently New Jersey's USF program is funded through electricity and natural gas rates, similar to how several other states recover state energy assistance program costs. Each utility customer contributes the same amount of funds per unit of energy consumed (per kilowatt-hour (kWh) of electricity or therm of gas) – irrespective of their income. An alternative and a more progressive option would be to move the USF funding to the state tax base. This would imply that taxpayers would contribute funds towards USF in proportion to their income and associated tax obligations. New Jersey would have to consider changes in legislation, restructure the administration and funding processes, and collaborate closely across agencies to be able to implement this policy option.

Alternative Options Related to Rates and Rate Design

- 1. Time Varying Rates (TVRs) and Load Flexibility.** While AMI is not fully deployed across New Jersey today, New Jersey is making progress toward the goal of widespread AMI deployment. It will be important for all New Jersey utilities to start piloting and/or testing TVR options so that by the time AMI meters are deployed, they will be able to offer TVRs to all residential customers without further delays. TVRs provide price signals that fluctuate throughout the day, more accurately reflecting the true costs of providing electricity to customers. When customers shift their usage from higher-priced periods to lower-priced periods, it results in lower electricity system costs and helps slow down electricity rate increases for all customers. Evidence shows that low-income customers respond to TVR price signals just as effectively as other residential customers and can achieve similar cost savings after transitioning to TVRs. However, it is important to note that making TVRs available to customers is not a substitute for targeted bill assistance programs. TVRs are rather an effective complement, as they can reduce the pace of rate increases for all customers by leading to avoided capacity investments if adopted at scale, and they give customers opportunity to achieve bill savings through responding to price signals.

- 2. Income-Tiered Fixed Charges.** This option involves differentiating the monthly fixed charge in electricity rates based on income levels, which would involve increasing fixed charges for higher-income customers. Low-income customers would be exposed to lower volumetric charges as well as lower fixed charges, improving affordability. However, lower volumetric charges may negatively impact conservation incentives, while advancing electrification incentives. This study has found that the affordability benefits that this option could bring are already achieved through the USF, and this view is also supported by stakeholders. In addition, since New Jersey is not ready at this time to undermine conservation signals by reducing volumetric rates, we recommend that the state closely monitor developments in this area, draw lessons from California’s experience, and comprehensively evaluate all relevant factors before deciding whether to implement this option.
- **Exempting LMI Customers from USF and SBC Surcharges and Tax.** The study considered the option of exempting low-income customers from USF and SBC surcharges and New Jersey Sales and Use Tax, and their impact on low-income customer bills. We find that exempting low-income customers from USF and SBC surcharges does not impact the effective bills of USF recipients, since USF ensures a certain energy burden target irrespective of underlying bill changes. On the other hand, exempting low-income customers from New Jersey’s Sales and Use Tax would lower their bills, lower the USF funding needs accordingly and can be considered as an alternative policy option to reduce the energy burden of low-income customers. The decrease in tax revenue would be offset by contributions from other taxpayers, all else being equal.

I. Introduction

New Jersey is pursuing several coordinated clean energy policies to decarbonize its economy and achieve 100% clean electricity by 2035. Ambitious goals of the most recent Energy Master Plan (EMP) and the subsequent clean energy policy in New Jersey represent a major transition in the state's energy economy. It is crucial to ensure that **low- and moderate-income (LMI) customers** are not left behind in the clean energy transition and the benefits are shared equitably across society. In the 2022 EMP Ratepayer Impact Study,² we found that **low-income customers in New Jersey are currently experiencing a high energy burden (before considering the impact of energy assistance programs), and in the future, they may be even more vulnerable to changes in electricity and gas rates** that come with the energy transition. This finding highlights the importance of assessing the effectiveness of NJ's existing energy assistance programs and rates and exploring alternative policies and rate designs that may help keep energy affordable for New Jersey's LMI customers.

This study aims to:

- Evaluate the effectiveness of the current LMI energy assistance programs and electricity and gas rate designs in New Jersey and identify the gaps;
- Assess the progressiveness of energy rates in New Jersey, drawing upon experience in other jurisdictions and literature studies; and
- Provide recommendations for policies, assistance programs, and changes to rate design to provide a progressive and equitable approach to managing energy costs for LMI households.

This study particularly **focuses on addressing affordability concerns for LMI customers through mechanisms such as energy assistance programs and rate options**. We acknowledge that achieving decarbonization goals will put pressure on electricity and gas rates and rates may increase for *all* customers in the future. These increases can be mitigated by pursuing cost-effective load flexibility programs, energy efficiency measures, and non-wires and non-pipes alternative programs. These efforts would avoid or reduce generation and delivery

² S. Sergici, G. Kavlak, K. Spees, R. Janakiraman, [New Jersey Energy Master Plan Ratepayer Impact Study](#), August 2022.

infrastructure costs, therefore lowering rates **for all customers**. However, the scope of this study does not include analyzing these broader cost reduction mechanisms that would affect all customers. Instead, **this study is focused on alternative and enhanced policy and rate options that target reducing the energy burden of LMI customers, as these customers can be disproportionately affected by the costs of energy transition**. This is the context in which we have evaluated New Jersey's current rates and energy assistance programs and identified the alternative policy and rate options.

Energy assistance programs generally fall under two high-level categories: bill assistance and energy efficiency/weatherization. While our review of energy assistance programs offered in New Jersey and other jurisdictions included both bill assistance programs and energy efficiency/weatherization programs, **this report mainly focuses on and evaluates bill assistance programs**.

This report is organized as follows:

- **Section I. Introduction** introduces the study in the context of New Jersey's clean energy goals and describes the study scope and report contents.
- **Section II. Status of New Jersey Electric and Gas Rates**. The section presents an overview of the status of the electricity and gas rates offered to residential utility customers in New Jersey to place New Jersey's rates into broader context. The study compares the rate levels observed in the last two decades in New Jersey to those in other jurisdictions; describes the electricity rate design trends across the country as many jurisdictions are similarly advancing clean energy goals and how New Jersey is making progress towards these key trends.
- **Section III. Jurisdictional Scan of Energy Assistance Programs**. This section describes the major, federally funded ratepayer and state funded energy assistance programs in the country. A jurisdictional scan of ratepayer energy assistance programs is presented, along with examples for each program type from various states. This jurisdictional scan provides the context for comparing New Jersey's programs to the program types offered across the country and identifying opportunities for improvement in the next section.
- **Section IV. Energy Assistance Programs in New Jersey**. This section focuses on the energy assistance programs currently offered to LMI customers in New Jersey and provides key information on each of the energy assistance programs. Participation rates in New Jersey's major energy assistance programs are estimated to provide a metric of program effectiveness. This section culminates in a "gap analysis," which identifies the strengths and

improvement opportunities for New Jersey’s programs based on a several dimensions including assistance structures, eligibility criteria, enrollment, outreach, and funding.

- **Section V. Assessment of New Jersey’s Existing Bill Assistance Programs.** This section evaluates the effectiveness of the major bill assistance programs in New Jersey (LIHEAP, USF, Lifeline, and New Jersey SHARES programs) based on how much they reduce energy burden for participating households. The analysis involves the calculation of energy bills and energy burden for a large number of New Jersey households (over 200,000) receiving assistance in the 2023–2024 timeframe. Using this large data set allows us to capture the variations in energy burden across households and draw robust conclusions about the effectiveness of programs.
- **Section VI. Alternative Policy and Rate Options.** Based on the findings from the previous sections, this section presents alternative options regarding bill assistance programs and rate design to further relieve energy burden for LMI customers in New Jersey. Along with a qualitative discussion of the benefits and challenges, an indicative analysis of the impacts associated with some of the policy options is provided to assist with further investigation.
- **Section VII. Conclusions.** This section summarizes the conclusions of the report drawing from the analysis and observations from the previous sections.

We provide further detail of the analysis in the Appendices. Appendix A contains our state-by-state research results for the jurisdictional scan of energy assistance programs. Appendix B contains details regarding the program participation rate analysis presented in Section IV. Appendix C contains the details on the energy burden analysis for New Jersey’s major energy assistance programs. Appendix D contains details on the indicative analyses performed for the alternative policy options.

All dollar values shown in this report are 2024 dollars unless stated otherwise.

II. Status of New Jersey Electric and Gas Rates

A. Residential Electric and Gas Rates in New Jersey

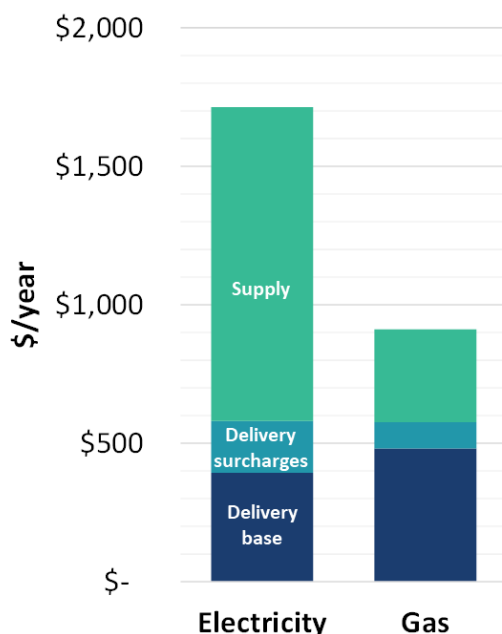
New Jersey's residential rates consist of two components: delivery charges and supply charges. The NJBPU oversees the operations of electric and gas utilities and ensures they provide reliable service at reasonable rates.

- **Delivery charges** for electricity include the costs of using and maintaining local wires, transformers, substations, and other equipment, and administering customer account services such as metering and billing. For natural gas, delivery charges include the costs of the utility pipeline network as well as metering and billing. The electric and natural gas delivery rates are regulated by the NJBPU. Delivery charges also include various clauses that fund statewide energy programs to achieve public policy goals, such as the low-income energy assistance programs and other programs promoting energy efficiency, clean energy, and electric vehicles (EVs).
- **Supply charges** for electricity recover the costs of generation (including wholesale energy and capacity costs and the cost of Class I renewables) and transmission. For natural gas, supply charges are the commodity costs for natural gas including the cost of interstate gas transportation and storage. Since New Jersey allows residential customers to shop for electric and natural gas supplies per the Electric Discount and Energy Competition Act (EDECA), customers can choose to purchase energy from a third-party supplier licensed by the NJBPU.³ The rates charged by third-party suppliers are not regulated by the NJBPU. If a customer chooses not to switch to a third-party supplier, the electric utility is required to provide electricity supply to the customer under Basic Generation Service (BGS), and the gas utility is required to provide gas supply under Basic Gas Supply Service (BGSS). NJBPU oversees BGS and BGSS rates and ensures the rates are reasonable and consistent with market conditions.

³ N.J.S.A. 48:3-49, Electric Discount and Energy Competition Act (EDECA), 1999.

Figure 1 shows the composition of an average annual residential customer electricity and natural gas bill as of May 2024.⁴ On average, 34% of the annual electricity bill covers the electricity delivery (including delivery surcharges) and while the remaining 66% covers the electricity supply. For natural gas, 63% of the bill goes towards delivery charges, while the remaining 37% covers natural gas commodity costs. The delivery portion is under the direct purview of the NJBPU, while the supply portion is broadly under the purview of FERC.

FIGURE 1: COMPOSITION OF AN AVERAGE NEW JERSEY RESIDENTIAL CUSTOMER’S ANNUAL BILL



For both electricity and gas service, **residential rates are structured to include a monthly fixed charge (\$ per month) and a volumetric charge (\$ per kWh for electricity or \$ per therm gas consumed), which is typical for residential rates across the country.** The typical residential rate for natural gas includes a monthly fixed charge in the range of \$9–11 per month across various natural gas utilities as well as a flat volumetric charge. The level of the volumetric charge may differ for heating and non-heating gas customers. The typical rate for electricity is an **inclining block rate (IBR)** in summer and a flat rate in winter, coupled with a monthly customer charge of \$5–7 per month. Under the inclining block rate structure, customers pay a higher rate above a

⁴ This is an average bill based on the assumption that a New Jersey residential customer consumes 8,263 kWh of electricity per year and 660 therms of natural gas per year on average and based on typical utility rates as of May 2024. Bills may vary across households and across seasons. Energy consumption values are obtained from EIA RECS U.S. Energy Information Administration Residential Energy Consumption Survey (RECS), [“Table CE2.2 Annual household site fuel consumption in the Northeast—totals and averages, 2020,”](#) March 2024.

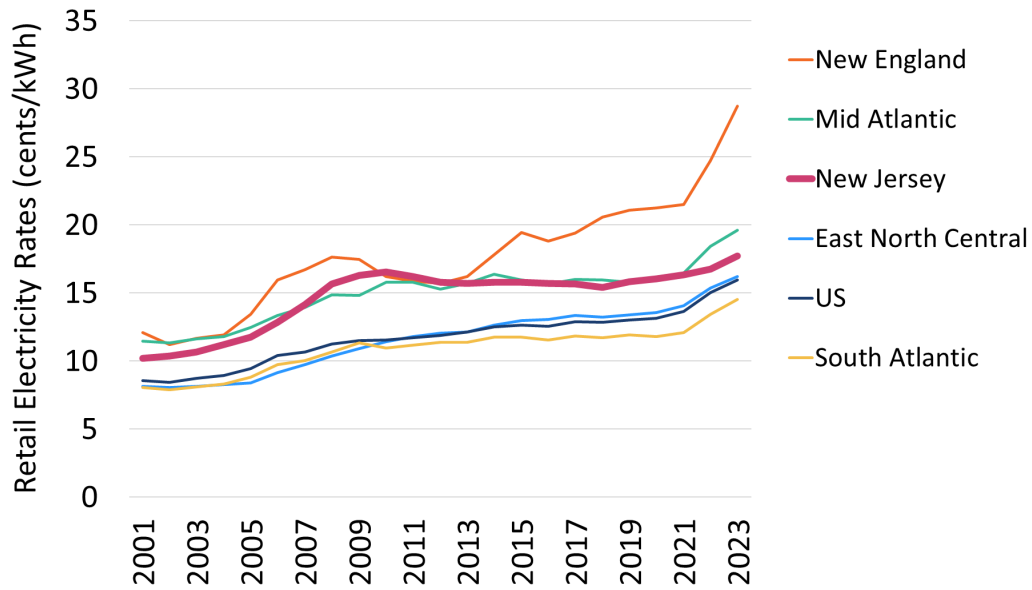
certain consumption threshold. Inclining block rates have been historically offered to residential electricity customers to promote energy conservation, since they incentivize customers to consume less electricity to avoid the higher rate block.

While the IBR structure is simple and can be implemented without AMI, it is outdated and not cost-reflective. IBRs became popular after the oil embargo of 1973 to promote conservation, even though they are not cost-reflective (the cost of producing and delivering electricity does not increase with larger amounts of consumption over a billing cycle). IBRs impose higher rates once usage exceeds certain thresholds—regardless of *when* electricity is consumed. However, the timing of consumption significantly impacts grid investments, as the grid is built to handle peak demand. While higher electricity consumption during peak periods drives new investments and costs, higher electricity consumption during off-peak periods can be accommodated without additional infrastructure. Given the lack of cost basis for IBR structure as discussed above, it is advisable to eliminate IBRs in favor of flat or preferably time-varying rates (TVRs). TVRs send price signals that vary through the day and thus better reflect the underlying costs of providing electricity service to customers. Despite the few optional/voluntary TVRs offered by New Jersey utilities, TVR implementation is nascent in New Jersey. However, this is likely to change with the more wide-spread deployment of AMI expected to take place in the upcoming years.⁵

Regardless of the rate design features, New Jersey’s average all-in residential electricity rates (including both delivery and supply charges) have moved in a similar trend as those in other Mid-Atlantic states in the last two decades, although more recently trending lower than the Mid-Atlantic regional average (Figure 2). New Jersey’s average residential gas rates trended lower than the Mid-Atlantic and US averages as well as most other regions over the last decade, while following the similar gas commodity price trends observed across various regions in the United States (Figure 3).

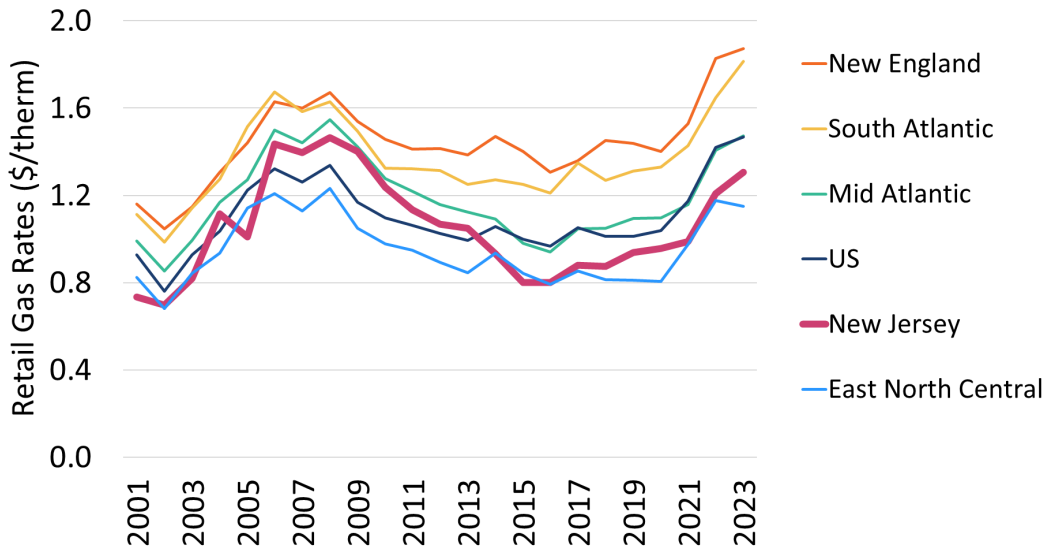
⁵ New Jersey has been taking steps towards more modern TVRs. NJBPU recently approved PSE&G’s proposal of a new residential time-of-use rate (“RS-TOU”) that aims to encourage customers, especially electric vehicle users, to shift their electricity usage to off-peak periods. Source: [NJBPU Order](#), Docket No. ER23120924, October 9, 2024.

FIGURE 2: AVERAGE RESIDENTIAL ELECTRICITY RATES IN NEW JERSEY AND OTHER REGIONS⁶



Source: U.S. Energy Information Administration. [Average Retail Price of Electricity](#), Accessed May 2024. Prices are in nominal dollars.

FIGURE 3: AVERAGE RESIDENTIAL NATURAL GAS RATES IN NEW JERSEY AND OTHER REGIONS⁷



Source: U.S. Energy Information Administration. [Natural Gas Prices: Average Residential Price](#), Accessed May 2024. Prices are in nominal dollars.

⁶ According to EIA’s definition: Mid-Atlantic includes New Jersey, New York, and Pennsylvania. South Atlantic includes Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, and West Virginia. New England includes Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont. East North Central includes Illinois, Indiana, Michigan, Ohio, and Wisconsin.

⁷ See footnote 6 for region definitions.

B. Rate Design Trends Across the Country

Power systems are changing at an unprecedented pace. This change brings with it other changes and evolutions in many areas of utility planning and operations, including how the rates are designed and utilized to mitigate grid constraints and advance affordability. Below we discuss some of these key rate design trends, and how New Jersey is making progress towards these trends.

1. Increasing focus on time-varying rate deployments

With the deployment of AMI in many jurisdictions, the primary barrier before the large-scale roll-out of time-varying rates is being addressed. TVRs improve cost reflectivity, as they charge higher prices for peak and lower prices for off-peak periods, tracking the cost of generating and delivering electricity. When customers respond to higher peak prices by shifting their usage to the lower-priced periods, they also reduce their peak usage creating avoided capacity and energy benefits. To the extent that this usage is shifted to lower priced periods, and these periods correspond to higher renewable production times, they also reduce curtailments and increase integration of renewable resources. While TVRs help mitigate rate increases for all customers in the long-term by reducing system capacity needs, participating customers also benefit from these rates in the near term by achieving bill savings. While these bill savings are typically moderate, they could still be meaningful for low-income customers.

Achieving system benefits of TVRs depend on the average customer response and the level of participation. If the goal is to achieve system benefits of TVRs quickly, default deployments typically lead to 90–95% of the customers staying on the rates, whereas opt-in deployments typically achieve 15–20% of the customers participating on the rates.⁸ Most implementations of TVRs currently are voluntary/opt-in rates, however several jurisdictions have already transitioned to time-of-use (TOU) rates as their default rate option (e.g. California, Michigan, Missouri).⁹

New Jersey is currently in the process of deploying AMI. It will be important for New Jersey utilities to start experimenting with time-varying rates, and to undertake operational feasibility assessments to ensure they can offer these rates to the customers, if/when approved by the

⁸ Arizona Public Service (APS) and Salt River Project (SRP) in Arizona respectively achieved 60% and 40% participation in TOU rates, however they have achieved these participation numbers over 20 plus years.

⁹ The “default rate” refers to the rate a customer is automatically enrolled in by their utility unless the customer chooses to enroll in an optional rate offering.

NJBPU. Time-varying rates are an important complement to the clean energy reforms pursued in New Jersey, as they have the potential to improve load flexibility, and slow down the pace of required investments by reducing peak capacity requirements.

2. Rate reforms to improve equity and reduce cross-subsidies

As the penetration of distributed solar photovoltaics (PV) is increasing, concerns related to potential cost shifts from PV customers to non-PV customers are increasing. To the extent that PV owners are more likely to be higher-income customers and homeowners, the degree of these concerns is exacerbated as the costs are shifted from higher income customers to low-income customers.

Cost shifts are material under most first-generation net energy metering (NEM) programs, mainly because underlying rate designs are not cost reflective. In a typical utility system, while up to 50% of the costs could be customer and demand related and largely fixed in the near term, only 5 to 10% of these costs are recovered through fixed charges, and an overwhelming 90–95% of the costs are recovered through volumetric charges. This implies that when a distributed PV customer is able to reduce their volumetric consumption of grid electricity, they bypass paying for their fair share of the fixed costs.

Many jurisdictions are gradually reforming their NEM policies by moving from net metering to net billing and/or reforming their underlying rate designs. One implementation is moving distributed PV customers on to time-varying rates (e.g., California), while others are considering the institution of demand charges along with TOU rates for all residential customers (e.g., Hawaii).

New Jersey's Assembly Bill No. 3723 authorizes the NJBPU to limit NEM to 5.8% of the annual kWh sold by utilities.¹⁰ This threshold was surpassed in 2024, and the NJBPU is currently considering development of a NEM successor policy. Motivations for refining NEM include providing certainty on compensation going forward, improving economic efficiency, fairness in allocation of costs and benefits, continuing to support a strong solar industry in the state, and improving equity and access for disadvantaged communities. In parallel to refining the compensation mechanism for customer generation, improving the cost-reflectivity of the underlying rate designs for consumption will be another effective way to improve equity and address cost shifts, which disproportionately affect low-income customers.

¹⁰ New Jersey Assembly Bill 3723 ([AB 3723](#)), March 22, 2018.

3. Use of rate design to facilitate policy goals

Many jurisdictions with ambitious decarbonization goals have set equally ambitious goals for increased reliance on energy efficiency, transportation, and heating electrification. Since these goals require customers to take an action and make investments in these resources, utilities often resort to rates to incentivize customers to adopt energy efficiency measures and/or electrify their heating and transportation.

The most prevalent example of a rate design to facilitate electrification is the introduction of TOU rates that specifically focus on encouraging overnight home EV charging, during times of otherwise low demand. Such rates can improve the economics of EV ownership while also reducing the risk that new EV charging will contribute to local or system-level demand-related capacity constraints. Similarly, California's income-graduated fixed charge rate is intended to reduce the volumetric rates through the introduction of a tiered fixed charge and improve the economics of electrification. Some jurisdictions with inclining block rates still have them as they do not want to undermine incentives for energy efficiency.

An important consideration when using rates as a tool for achieving policy goals is the tradeoff between cost-reflectivity and advancing policy goals. If rates are designed to incentivize certain policy goals in a way to deviate from cost-reflectivity, then they start to fall short on their main premise which is to ensure the recovery of utility's revenue requirement in the most economically efficient and equitable manner. These technology-oriented rates, if they are not cost-reflective, may lead to inefficient price signals that result in suboptimal levels of electricity consumption and suboptimal levels of technology adoption.

As discussed earlier, New Jersey electric utilities currently have IBR in the summer months. This rate structure can potentially provide an efficiency incentive, as customers may reduce their usage to avoid reaching the higher priced tiers. We note, however, that an IBR is not guaranteed to produce a conservation effect. This partly depends on the share of usage that resides in the lower versus higher priced tiers and whether customers respond to average or marginal price.^{11,12} Moreover, it is difficult to establish a cost basis for IBRs, as the marginal cost of providing electricity does not increase with usage over a billing cycle. IBRs can reduce the

¹¹ A. Faruqui, R. Hledik, W. Davis, "[The Paradox of Inclining Block Rates](#)," Public Utilities Fortnightly, April 2015.

¹² K. Ito, "[Do Consumers Respond to Marginal or Average Price?](#)" American Economic Review, Vol 104, Issue 2. 2014.

cost-effectiveness of heating and transportation electrification, as increased usage due to the adoption of these technologies will push customers to the higher tiers of an IBR.

While energy efficiency represents a major focus in New Jersey's Clean Energy Program portfolio and the IBRs are seemingly consistent with this policy goal, we recommend that New Jersey evaluates the effectiveness of the IBR in incentivizing conservation. In the absence of this evidence, it may be reasonable for New Jersey to consider flattening its IBR.

4. Increased availability of rate choice

Customers are increasingly becoming engaged in their energy choices. They explore reducing their bills through adoption of rooftop PVs and battery storage or they undertake investments in energy efficiency. Some customers are interested in reducing their carbon footprint and pay a premium for cleaner electricity, while others value bill stability and choose to have fixed bills despite the higher risk premiums. Given the evolution of the utility customers and their energy-related preferences, many utilities now offer alternative rate options relative to the default rate option, which remains a flat or tiered volumetric charge in most jurisdictions in North America. While it is possible to design and offer many alternative rate options to match diverse customer preferences, the best practice for offering rate choice is to create two to three rate options that cater to broad customer groups and are meaningfully different from each other.

New Jersey utilities may consider developing a few alternative rate options for their residential customers. Once AMI is fully deployed, it will be possible to design and implement a broader set of rates, including those with time-varying and demand rate elements.

III. Jurisdictional Scan of Energy Assistance Programs

Nearly a third of U.S. households experience difficulty paying energy bills or keep their home at an unhealthy or unsafe temperature because of concerns about energy bills.¹³ Certain demographic groups such as low-income households, renters, and households that identify as Black, Hispanic, or Latino report higher rates of energy insecurity compared to other households. The 2022 EMP Ratepayer Impact Study¹⁴ found that **low-income customers in New Jersey are currently experiencing a high energy burden (before considering the impact of energy assistance programs), and in the future may be even more vulnerable to changes in electricity and gas rates** that come with the energy transition.

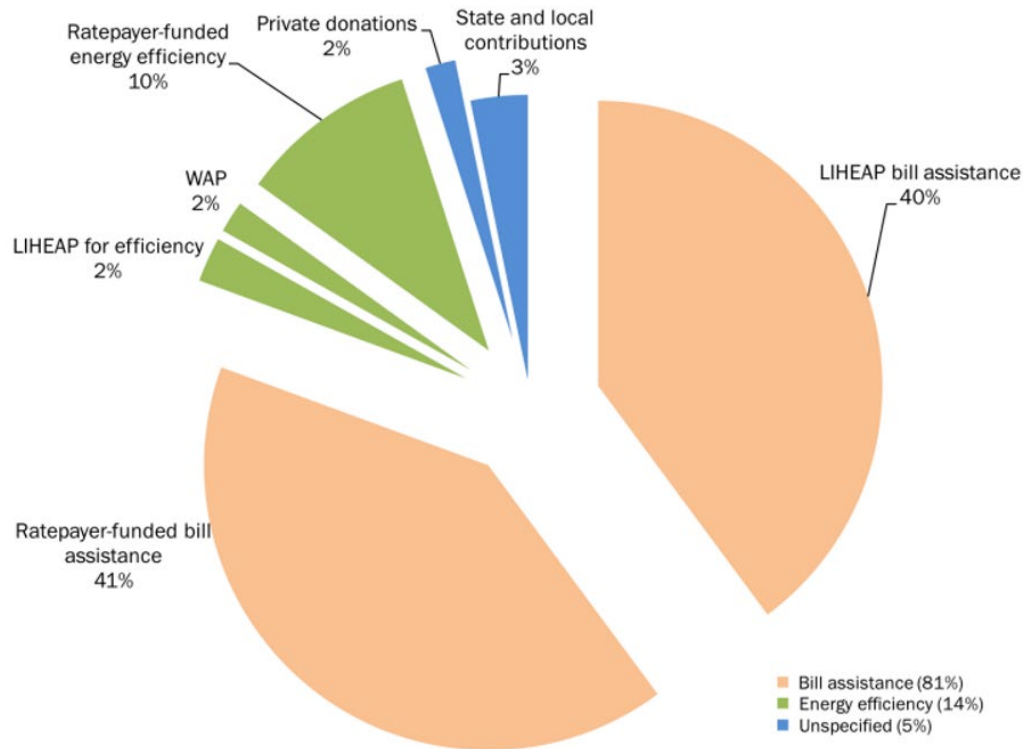
Energy assistance programs have historically played a significant role in helping households achieve healthier and more comfortable living conditions by providing bill discounts, arrears management plans, and energy efficiency assistance. **These programs generally fall within two high-level categories: bill assistance and energy efficiency/weatherization.** Roughly 80% of total energy assistance funding in the United States targets bill assistance and another 15% targets energy efficiency (Figure 4).

The funding for energy assistance programs is mainly provided through federal funds and ratepayers. Additional funding is also generated from outside contributions. The two main federally funded programs include the Low-Income Home Energy Assistance Program (LIHEAP) that is a block grant administered to states and the U.S. Department of Energy Weatherization Assistance Program (WAP). Ratepayer-funded programs vary across states and are commonly administered through state agencies and utilities.

¹³ US Energy Information Administration, Today in Energy: [In 2020, 27% of U.S. households had difficulty meeting their energy needs - U.S. Energy Information Administration \(EIA\)](#), April 2022.

¹⁴ S. Sergici, G. Kavlak, K. Spees, R. Janakiraman, [New Jersey Energy Master Plan Ratepayer Impact Study](#), August 2022.

FIGURE 4: FUNDING SOURCES FOR LOW-INCOME ENERGY ASSISTANCE (NATIONAL LEVEL)



Source: American Council for an Energy Efficient Economy (ACEEE), [Building Better Energy Efficiency Programs for Low-Income Households](#), March 2016.

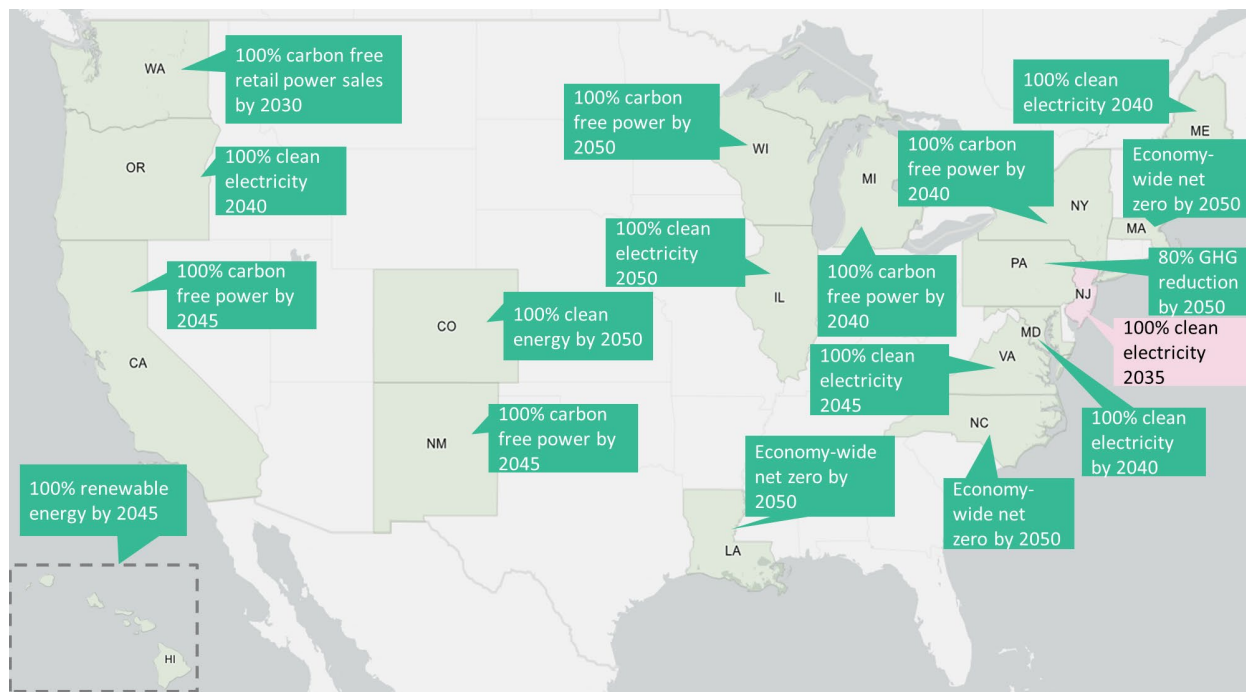
This section provides a jurisdictional scan of energy assistance programs offered across the United States to provide context for New Jersey’s programs and to help identify potential gaps and opportunities for New Jersey to further improve its assistance programs. The goal is not to provide an exhaustive list of programs at the national level, but rather to provide examples for each program type for the surveyed states that have similar climate goals as New Jersey. The jurisdictional scan is then used to compare New Jersey’s programs to the program types offered across the country and identify opportunities for improvement. **While the survey included both bill assistance programs and energy efficiency/weatherization programs, this section and the rest of the report mainly focus on bill assistance.**

Seventeen states besides New Jersey were selected for the survey due to their ambitious clean energy goals (Figure 5) and this selection was supplemented with research on other states that offer innovative assistance programs.¹⁵ The survey identified the types of program offerings,

¹⁵ These states include California, Colorado, Hawaii, Illinois, Louisiana, Maine, Maryland, Massachusetts, Michigan, New Mexico, New York, North Carolina, Oregon, Pennsylvania, Virginia, Washington, and Wisconsin.

eligibility requirements for assistance, and typical benefit levels. A summary of findings is provided by program type below.

FIGURE 5: STATES INCLUDED IN THE JURISDICTIONAL SCAN



A. Bill Assistance Programs

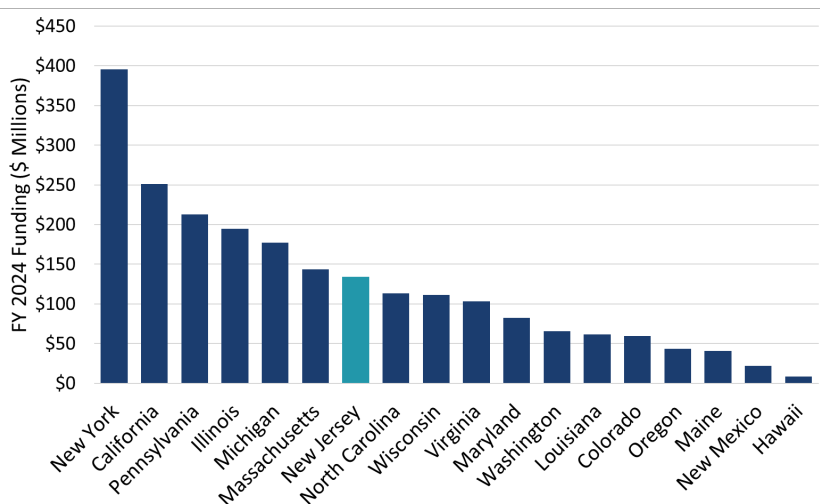
1. Federally Funded Bill Assistance

The Low-Income Home Energy Assistance Program (LIHEAP) is a federally funded program with a budget of \$4.12 billion in federal fiscal year 2024, and implemented across states, territories, and federally recognized tribes and tribal organizations.¹⁶ LIHEAP helps reduce the costs associated with home energy bills, energy crises, weatherization, and minor energy-related home repairs. The program is administered as a block grant that allows states flexibility in setting their own income thresholds and benefit amounts. Allocation to states is determined through formulas that calculate heating and cooling consumption and expenditures by low-income households (see Figure 6 for the range of funding received by the states in the survey). Administration of LIHEAP benefits at the local level is often conducted through state agencies or Community Action Agencies that are local private and public organizations that facilitate

¹⁶ LIHEAP Clearinghouse, [LIHEAP Funding](#), August 2024.

grants like LIHEAP, among others. A state’s share of funding is based on the ratio of low-income household expenditures on home energy in the state to all expenditures of low-income households in the country.¹⁷ The LIHEAP programs of every state in this survey include heating, crisis, and weatherization benefits while an additional nine states besides New Jersey also included cooling benefits.¹⁸ Benefit levels for each individual component vary across states. In the surveyed states, Maryland offered the highest maximum benefit of \$2,350 for heating in FY 2024. In the same period, New Jersey offered a maximum benefit of \$1,278 for heating.

FIGURE 6: LIHEAP FUNDING FOR SURVEYED STATES (FY 2024)¹⁹



States use several metrics to determine benefit amounts for households such as income, household size, participation in other means-tested programs, energy cost, heating fuel type, energy burden, dwelling type, and region. Households that are already approved for means-tested programs may automatically qualify for LIHEAP. Means-tested programs that states use to qualify participants for LIHEAP include Temporary Assistance for Needy Families (TANF), Supplemental Security Income (SSI), Supplemental Nutrition Assistance Program (SNAP), and Veterans Affairs (VA). Eleven states in the survey consider at least one means-tested program for LIHEAP eligibility.²⁰ For other households, the distribution of funds relies on an application system. Households submit applications, either online or in person through the agencies, and provide necessary documentation to prove that they meet the eligibility criteria.

¹⁷ Congressional Research Service, [The LIHEAP Formula](#), May 2019.

¹⁸ California, Hawaii, Louisiana, Maryland, New Mexico, New Jersey, New York, North Carolina, Oregon, and Virginia have cooling benefits, as shown in Figure 7.

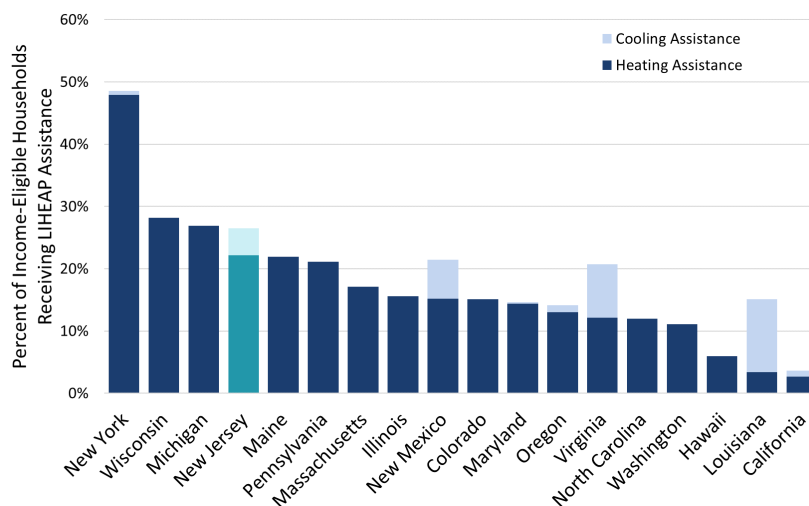
¹⁹ LIHEAP Clearinghouse, [LIHEAP Funding](#), August 2024. LIHEAP Clearinghouse.

²⁰ These states include California, Hawaii, Illinois, Maine, Maryland, Massachusetts, Michigan, New Jersey, New York, Oregon, and Washington.

LIHEAP income thresholds are based on federal poverty guidelines (FPG) or state median income (SMI). Eligibility limits are capped at 150% of FPG, except where 60% of SMI is higher, and cannot fall below 110% FPG. Eight states in this survey use 60% SMI as the income threshold while the remainder use varying levels of the FPG.^{21,22} Additionally, households with elderly, disabled, and/or young children may be given priority when administering benefits.

LIHEAP benefits are distributed on a first-come, first-served basis until funds are expended. This leads to some households not receiving any assistance despite applying and being eligible. From 2020 through 2023, approximately 20% of eligible households in the surveyed states received benefits. **Nationwide, the participation rate was 18%. New Jersey’s average participation rate was higher in the same period at 25%.** There is a considerable range in average participation across states with New York having the highest rates and California with the lowest (Figure 7).

FIGURE 7: AVERAGE LIHEAP PARTICIPATION RATE OF ELIGIBLE HOUSEHOLDS (2020–2023)²³



²¹ The states that use 60% SMI for determining income eligibility include California, Colorado, Louisiana, Maine, Massachusetts, New York, Oregon, Wisconsin, as well as New Jersey. The LIHEAP statute established 150% FPG as a maximum income level allowed in determining LIHEAP eligibility, except where 60% SMI is higher in a given state. Source: [The LIHEAP Clearinghouse, Income Eligibility](#), Accessed November 4, 2024.

²² In New Jersey, 60% SMI was \$57,684 per year for a two-person household and \$84,830 per year for a four-person household in 2023–2024 (See Figure B-1 for a full list for all household sizes for the same year). In 2024, 150% FPG was \$30,660 and \$46,800 per year for a two-person and four-person household, respectively. New Jersey’s SMI values and assistance program eligibility limits are updated every year and published on NJBPU’s website <https://www.nj.gov/bpu/assistance/programs/>. FPG values can be found the U.S. Department of Health & Human Services website <https://aspe.hhs.gov/topics/poverty-economic-mobility/poverty-guidelines>.

²³ [LIHEAP Performance Management](#), Custom Reports, Accessed July 17, 2024.

2. Ratepayer or State Funded Bill Assistance

Other bill assistance programs are administered and implemented with collaboration from public utility commissions, state agencies, and utilities. These programs provide bill discounts or bill payment plans using various structures. The types of bill assistance programs include flat percentage discounts, flat dollar discounts, rate discounts, tiered discounts, percentage of income payment plan (PIPP), and bill payment plans. Below we provide examples for each category, along with details on the assistance and eligibility criteria. Appendix A lists the programs identified for each state in the survey for further detail.

FLAT PERCENTAGE DISCOUNT PROGRAMS

Flat percentage discount programs apply a pre-determined percentage discount to customer’s monthly bills. The benefit of this approach is that it is simple to implement, however, the assistance is not as granular as other approaches like tiered discounts (i.e., all participants receive the same percentage discount regardless of differences in income). Table 1 provides examples of programs offered in various jurisdictions.

TABLE 1: EXAMPLES OF FLAT PERCENTAGE DISCOUNT PROGRAMS

Program/Utility	Discount	Eligibility Criteria
PG&E, California Alternate Rates for Energy (CARE) Program	30–35% discount on electric bills; 20% on gas bills	Household income less than 200% FPG Or enrollment in public assistance programs such as LIHEAP, Medicaid, SNAP, SSI Usage thresholds apply for continued eligibility
PG&E, Family Electric Rate Assistance Program (FERA)	18% discount on electric bills	Household income between 200–250% FPG
Green Mountain Power, VT	25% discount on electric bills	Household income less than 185% FPG
Arizona Public Service Company, AZ	25% discount on electric bills	Household income less than 150% FPG

FLAT DOLLAR DISCOUNT PROGRAMS

Flat dollar discount programs have similar characteristics to the flat percentage programs but provide fixed payments rather than fixed percentages of bills. Generally, the same level of discount is provided regardless of differences in income. Table 2 provides examples of programs offered in various jurisdictions.

TABLE 2: EXAMPLES OF FLAT DOLLAR DISCOUNT PROGRAMS

Program/Utility	Discount	Eligibility Criteria
New Jersey Lifeline	\$225 annual credit on utility bills	Be a recipient of PAAD, Medicare D, MAA, or MAO. Alternatively, satisfy two criteria: (1) be age 65 or older, or 18-64 and receiving SSD, and (2) annual income of \$52,142 if single and \$59,209 if married
Central Maine Power, ME	Credit of up to \$900/year based on annual electricity usage and income	LIHEAP eligible (<150% FPG) or living in subsidized housing, or enrollment in oxygen pump or ventilator program
Michigan Home Heating Credit	Standard tax allowance of \$562 that increases with additional tax exemptions	Household income less than 110% FPG
UniSource Energy Services, AZ	\$16/month discount on electric bills	Household income less than 200% FPG
Minnesota Power, MN	\$20/month discount on electric bills	Qualifying for Minnesota's Energy Assistance Program (EAP) by having household income less than 60% SMI . Customers of senior age or living with a disability will automatically enroll
Tucson Electric Power Co, AZ	\$18/month discount on electric bills	Household income less than 200% FPG

RATE DISCOUNTS

Rate discounts apply directly to the volumetric or fixed charge components of customer’s rates rather than to the total bill as with flat percentage or dollar discounts. Table 3 provides examples of programs offered in various jurisdictions.

TABLE 3: EXAMPLES OF RATE DISCOUNT PROGRAMS

Program/Utility	Discount	Eligibility Criteria
UniSource Energy Services, AZ	\$3 discount on the standard Basic Service and Meter Charge as well as a 15¢/therm discount for up to 100 therms of gas use each month from November through April	Household income less than 150% FPG
Liberty Utilities, NH	60% discount on gas delivery charges	Eligibility for LIHEAP benefits or benefits from certain other programs

TIERED DISCOUNT PROGRAMS

Tiered discount programs provide varying discounts based on income. These programs often split eligible customers into three to six tiers. This format requires more involved administrative processing (e.g., data sharing and processing for verifying income and determining discount amounts) compared to flat dollar discounts or flat percentage discounts. However, the benefits are more specific to each customer’s needs (i.e., lower income customers receive higher benefits). Table 4 provides examples of programs offered in various jurisdictions.

TABLE 4: EXAMPLES OF TIERED DISCOUNT PROGRAMS

Program/Utility	Discount	Eligibility Criteria
Eversource, NH	<ul style="list-style-type: none"> • 151–200% FPG: 8% discount • 126–150% FPG: 22% discount • 101–125% FPG: 36% discount • 76–100% FPG: 52% discount • 0–75% FPG: 76% discount for the first 750 kWh of monthly usage	Household income less than 200% FPG
Consolidated Edison, NY	Varies by tier and service type such as gas vs electric, heating vs non-heating; \$40–68/month for electric; up to \$150/month for gas heating	Enrollment in LIHEAP, and receiving various other benefit programs
Pacific Power, WA	<ul style="list-style-type: none"> • Greater of 101–200% FPL or 80% AMI: 15% discount • 76–100% FPL: 25% discount • 0–75% FPL: 70% discount 	Household income less than the greater of 200% FPL or 80% AMI
National Grid, MA	<ul style="list-style-type: none"> • 200% FPG—60% SMI: 32% discount • 150–200% FPG: 43% discount • 125–150% FPG: 57% discount • 100–125% FPG: 64% discount • 0–100% FPG: 71% discount 	Household income less than 60% SMI

PERCENTAGE OF INCOME PAYMENT PLANS (PIPP)

PIPP programs are the most granular bill discount program type as the benefit amounts are individualized for each customer. PIPP programs determine a percentage of household income that customers should pay for energy and aim to cap bills at this amount. These programs are the most administratively intensive because they require the utility to track each participant’s household income and bills and share the data with administrating agencies. Table 5 provides examples of programs offered in various jurisdictions.

TABLE 5: EXAMPLES OF PERCENTAGE INCOME PAYMENT PLAN (PIPP) PROGRAMS

Program/Utility	Discount	Eligibility Criteria
New Jersey USF	Set electric and gas bills at 2% of income; or 4% with electric heating with discounts up to \$185/month	Household income less than 60% SMI
Dominion Energy, VA	Set electric bills at 6% of income without electric heating, or 10% with electric heating	Household income less than 150% FPG
Xcel Energy, CO	Set electric and gas bills each at 3% of income; or 6% with electric heating	Household income less than 185% FPG, or 60% SMI, or 80% of Area Median Income
Ohio utilities	Set electric and gas bills each at 5% of income; or 6% with electric heating. Minimum monthly payment of \$10	Household income less than 175% FPG
Nevada utilities	Cap bills to reduce the energy burden of the customer statewide median household energy burden (e.g., 2.29% in 2023)	Household income less than 150% FPG
Peoples Natural Gas Co, PA	Bills are fixed at \$25/month or a given percentage of income, whichever is greater: <ul style="list-style-type: none"> • 101–150% FPG: Bills capped at 6% of income • 51–100% FPG: Bills capped at 5% of income • 0–50% FPG: Bills capped at 4% of income 	Household income less than 150% FPG , broken payment agreement
New York Energy Affordability Guarantee Pilot	Cap electric bills at 6% of income	Household income less than 60% SMI ; Limited to Empower+ electrification program participants

BILL PAYMENT PLANS

Bill payment plans include services that provide customers with arrears forgiveness and budget billing, which makes it easier to meet monthly bill obligations. Payment plan programs may contain both of these components. Arrears forgiveness programs reduce a household’s past due balance on the condition that they make their monthly payments. This is helpful for customers that are experiencing delays in paying their utility bills. Budget billing programs divide customer bills into even monthly payments to make utility bills more predictable and manageable. Table 6 provides examples of programs offered in various jurisdictions.

TABLE 6: EXAMPLES OF BILL PAYMENT PLANS

Program/Utility	Discount	Eligibility Criteria
New Jersey USF – Fresh Start	Forgives 1/12 overdue balance each month	Household income less than 60% SMI ; minimum due balance of \$60; available once every five years to USF enrollees
New Jersey PAGE	Provides grants to pay for past due balances; up to \$500 for low-income customers and \$700 for moderate-income	Household income less than 60% SMI for low-income, and 100% SMI for moderate-income customers
Maine Arrearage Management Program (AMP)	Forgives past balance on electric utility bills up to \$6,000	Minimum due balance of \$500; eligible for HEAP or LIAP; need to meet monthly bill payments
Maryland Electric Universal Service Program (EUSP)	Provides budget billing plan and help with paying monthly bill	Household income less than 150% FPG
Maryland Arrearage Retirement Assistance	Helps customers pay past due balance with grants up to \$2,000	Household income less than 150% FPG ; due bill must be at least \$300
Pennsylvania Customer Assistance Program (PCAP)	Puts low-income customers on equal payment plan with monthly credits towards bills and opportunity to have due balance forgiven	Household income less than 150% FPG

B. Energy Efficiency and Weatherization Assistance

Energy efficiency and weatherization programs provide services that can help customers reduce monthly energy usage through improving the efficiency of the appliances and building envelopes including walls, windows, roofs. The most prominent federal program is the

Weatherization Assistance Program (WAP) that is funded by the Department of Energy. The WAP was created in 1976 and has helped weatherize over seven million homes across the country. In addition to WAP, several states offer ratepayer-funded programs to provide assistance for energy efficiency measures for LMI households. Table 7 provides examples of similar programs offered in various jurisdictions.

TABLE 7: EXAMPLES OF ENERGY EFFICIENCY AND WEATHERIZATION PROGRAMS

Program/Utility	Discount	Eligibility Criteria
New Jersey Comfort Partners	Provides weatherization and energy efficiency appliance replacement services	Household income less than 250% FPG or participation in HEAP, USF, PAAD, SSI, TANF, SNAP, GA
California Energy Savings Assistance Program	Provides home weatherization services	Household income less than 250% FPG
Colorado Affordable Residential Energy Program (CARE)	Provides free home energy efficiency upgrades	Customer of select utilities companies; household income less than limit set by county
Efficiency Maine Weatherization	Provides up to \$9,200 in weatherization rebates for low-income to moderate-income customers	Low-income program: Participation in HEAP, SNAP, TANF, or MaineCare Moderate-income program: Household income less than \$70K for individual filers and \$100K for joint filers
EmPOWER Maryland Limited Income EE Program	Installation of energy efficiency measures at no cost	Household income less than 80% SMI
Pennsylvania Low-income Usage Reduction Program	Provides energy efficiency measures to low-income customers	Household income less than 200% FPG

The next section will review energy assistance programs offered in New Jersey and identify key gaps and opportunities given the learnings from the jurisdictional scan.

IV. Energy Assistance Programs in New Jersey

A. Program Descriptions

New Jersey has a wide variety of energy assistance programs that use federal, state, and ratepayer funding.^{24,25} Each major program is described briefly below, and Table 8 provides further information on the benefits, administrator, funding source, and eligibility criteria for these major programs as well as a few other additional programs. The funding amounts and sources for the major bill assistance programs in New Jersey are shown in Figure 8.

LIHEAP. The federal Low-Income Home Energy Assistance Program (LIHEAP) helps New Jersey households pay for heating costs, certain medically necessary cooling expenses, and emergency funds for LIHEAP recipients who are in danger of shut off. The program provides assistance for the costs of heating from delivered fuel, gas or electricity, either directly or included in the rent.²⁶ Applications for LIHEAP are accepted from October 1st through June 30th, while funds are available. New Jersey’s annual LIHEAP budget in FY2024 was \$134 million.²⁷ The LIHEAP program shares its application with the USF program.

Universal Service Fund (USF). The largest of the state’s ratepayer programs is the USF, a PIPP program that caps a household’s annual electricity and natural gas bills to 2% of annual income each or caps annual electricity bills to 4% of annual income if the household uses electricity for heating. The USF provides monthly credits on income-eligible residential electric and natural gas bills. Benefits have a cap of \$180 per month for electric and natural gas combined.²⁸ Income-eligible households that do not spend more than the required percentage of income on energy receive the minimum \$5 monthly credit. Credits from LIHEAP and Lifeline programs are deducted from energy costs before USF is calculated. USF also contains arrears forgiveness

²⁴ NJBPU, [2025 Energy Assistance Brochure](#), Accessed August 25, 2024.

²⁵ NJBPU, [FY2025 USFHEA Factsheet](#), Accessed August 25, 2024.

²⁶ LIHEAP also provides emergency grants to LIHEAP heating recipients who receive a shut off notice after Winter Termination Program (WTP) is over (see WTP description below).

²⁷ LIHEAP Clearinghouse, [LIHEAP Funding](#), August 2024. LIHEAP Clearinghouse.

²⁸ USF sets a discount cap of \$180 per month for electricity and natural gas bills combined per household. In some cases where a customer receives service from different utilities for electric and gas, if one utility benefit is calculated at \$180 before the other utility record comes in, the other utility can receive the \$5 minimum benefit. Therefore, the maximum monthly USF benefit a household can receive is effectively \$185 per month.

through USF Fresh Start, which forgives 1/12 of a customer’s past due balance at the time of USF enrollment each month the customer pays their current monthly charges in full. New Jersey’s annual USF budget was \$134.5 million for 2023/2024 and \$236.5 million for 2024/2025.²⁹

Lifeline. Lifeline is a state utility assistance program for older adults and people with disabilities. Lifeline offers a \$225 annual benefit to persons who meet the Pharmaceutical Assistance to the Aged & Disabled (PAAD) eligibility requirements or who receive the federal Supplemental Security Income (SSI). This includes utility customers as well as tenants whose utility bills are included in their rent. New Jersey’s annual Lifeline program budget was \$75 million in 2023/2024 and 2024/2025.³⁰

New Jersey SHARES Programs. These state programs provide assistance to income-eligible moderate-income and low-income households for paying their energy and other utility bills. New Jersey SHARES offers several energy bill assistance programs called Payment Assistance for Gas and Electric (PAGE), NJ SHARES Mortgage Assistance, Rent and Tax Program (SMART), and Energy Assistance Grant (EAG).³¹ These programs provide annual grants to eligible households experiencing *temporary* financial crisis to help pay for energy consumption and prevent disconnection of service or restore service. Households are advised to apply for USF or LIHEAP first before seeking additional assistance through PAGE. The programs are funded by the State of New Jersey and donations. In 2024, New Jersey SHARES introduced a new Municipal Customer Assistance Program, which provides a grant of up to \$200 per utility for municipal electric, water, and wastewater customers.

Winter Termination Program (WTP). The state’s WTP protects residential customers from disconnection of natural gas, electric, water, and sewer service from November 15th–March 15th. Households are eligible if they participate in federal programs such as Temporary Assistance to Needy Families (TANF), Federal Supplemental Security Income (SSI), Low-Income Household Water Assistance Program, and LIHEAP or state programs such as USF, Lifeline, PAAD, Work First New Jersey, and General Assistance (GA); or cannot pay their bill due to circumstances beyond their control.

²⁹ The 2023/2024 budget was approved by [NJBPU Order](#) in Docket No. ER23060409, 9/27/23. The 2024/2025 budget was approved by [NJBPU Order](#) in Docket No. ER24070486, 9/25/24.

³⁰ Id, p.3.

³¹ New Jersey SHARES also administers other assistance programs in New Jersey such as water bill discounts, e.g., NJ American Water Universal Affordability Discount Program and Veolia Cares Program.

New Jersey Natural Gas Company Gift of Warmth Program. New Jersey Natural Gas Company's Gift of Warmth provides a one-time grant of up to \$500 to homes facing unanticipated financial hardship to help reconnect or continue their gas service.

Residential Energy Assistance Payment (REAP). New Jersey's REAP was an initiative that provided *one-time bill credit* to New Jersey households that qualify for utility assistance based on their enrollment in the NJBPU's Winter Termination Program during the winter of 2023-2024. Over 275,000 qualifying households received a one-time bill credit of \$175 automatically applied to their electric or gas utility bill in autumn 2024.

Weatherization Assistance Program (WAP). This federally-funded program assists qualified, low-income households in weatherizing their homes, improving their heating system efficiency, and conserving energy. This program is available for all fuels or energy sources used at home. Households that apply for USF or LIHEAP can check a box on that application to request weatherization assistance.³²

Comfort Partners. This state program helps eligible customers reduce electricity and gas bills through energy efficiency upgrades that directly installs energy savings measures free of charge for qualified low-income customers. These measures may include efficient lighting, thermostats, insulation, hot water conservation measures, replacement of inefficient refrigerators, equipment maintenance, and others. Households that use fuel oil and propane can be referred by Comfort Partners to WAP.

Community Solar Energy Program. This state program provides incentives to eligible community solar facilities to enable the orderly development of solar electric generating sources. The Community Solar Energy Program enables utility customers to participate in a solar energy project that is remotely located from their property. All community solar projects are required to subscribe or reserve at least 51 percent of facility capacity for eligible LMI subscribers.

³² New Jersey Department of Community Affairs, [FY2025 LIHEAP Application](#), Accessed August 25, 2024.

TABLE 8: DESCRIPTION OF NEW JERSEY ENERGY ASSISTANCE PROGRAMS

Program	Benefits	Administrator	Funding Source	Income Eligibility
BILL ASSISTANCE (BILL DISCOUNTS AND PAYMENT PLANS)				
LIHEAP	Heating: \$118–\$1278 per year; Medically necessary cooling: \$300 per year; Emergency grants	NJ Department of Community Affairs	Federal	Household income below 60% SMI ³³
USF	Provides credits to cap electric and gas bills at 2% of income; or 4% with electric heating (\$5 minimum and \$180 maximum per month)	NJ Department of Community Affairs	Ratepayer	Household income below 60% SMI
Lifeline	\$225 annual credit on utility bills	NJ Department of Human Services	Ratepayer	Be a recipient of PAAD, Medicare D, MAA, or MAO. Alternatively, satisfy two criteria: (1) be age 65 or older, or 18-64 and receiving SSD, and (2) annual income of \$52,142 if single and \$59,209 if married
NJ SHARES—PAGE	Up to \$500 per utility per year for low-income and \$700 for moderate-income	New Jersey SHARES	NJ Department of the Treasury, NJ Public Power Authority	Household income below 60% SMI for low-income, and 100% SMI for moderate income
NJ SHARES—SMART	Up to \$500 per utility per year	New Jersey SHARES	NJ Department of Community Affairs	Household income below 100% SMI
NJ SHARES—Energy Assistance Grant	Up to \$700 per utility per year	New Jersey SHARES	Utility donations	Household income over the LIHEAP/USF income limits up to 400% FPL

³³ In New Jersey, 60% SMI corresponded to \$57,684 per year for a two-person household and \$84,830 per year for a four-person household in 2023–2024 (See Figure B-1 for a full list for all household sizes for the same year). New Jersey’s SMI values and assistance program eligibility limits are updated every year and published on NJBPU’s website <https://www.nj.gov/bpu/assistance/programs/>.

Program	Benefits	Administrator	Funding Source	Income Eligibility
NJ SHARES—Municipal Customer Assistance Program	Up to \$200 for each utility (water, sewage, electric)	New Jersey SHARES	Utility contributions	Household income below 400% FPL
Winter Termination Program (WTP)	Protection from gas, electric, water, and wastewater service disconnection during winter months	NJBPU/Utilities	Protects vulnerable customers from shut off during winter months	Recipient of LIHEAP, TANF, SSI, PAAD, GA, USF, Lifeline; or circumstances beyond customer's control
New Jersey Natural Gas Gift of Warmth	One-time annual grant up to \$500	Utility	Donations from NJNG utility customers	No income limits. Good faith payment of \$100 required in past two months
REAP	One-time bill discount of \$175 (only in 2024)	NJBPU/Utilities	Uncommitted Clean Energy Program funds	Households eligible for 2023–2024 WTP auto-enrolled
ENERGY EFFICIENCY, WEATHERIZATION, CLEAN ENERGY ACCESS				
Weatherization Assistance Program	Weatherization and energy efficient appliance replacement services	Department of Community Affairs	Federal	Household income below 60% SMI
Comfort Partners	Provides free weatherization and appliance replacement services	BPU/Utilities	Ratepayer	Household income below 250% FPG or participant in specific low-income programs such as USF and LIHEAP
Utility-Administered Energy Efficiency and Weatherization Programs	Provides free energy efficiency assessment and energy efficiency upgrades	Utilities	Ratepayer	Household income between 250% FPG and 400% FPG
Community Solar Energy Program	Reserves 51% capacity for LMI; provides bill discounts of 20-25% for subscribers to community solar	BPU/Utilities/Developers	Ratepayer	Household income below 80% Area Median Income

Notes: The benefit figures pertain to FY2024 and are obtained from NJBPU. The table lists the major programs and is not meant to be exhaustive of all energy assistance programs in New Jersey. There are a number of other programs such as those run by nonprofit organizations and utilities that may not be included in this table.

FIGURE 8: FUNDING AMOUNTS AND SOURCES FOR THE MAJOR BILL ASSISTANCE PROGRAMS IN NEW JERSEY (2024)

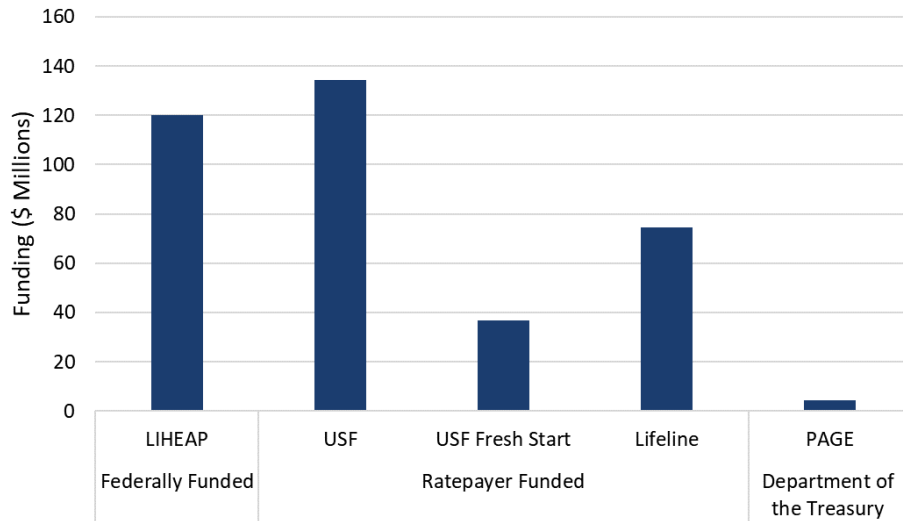
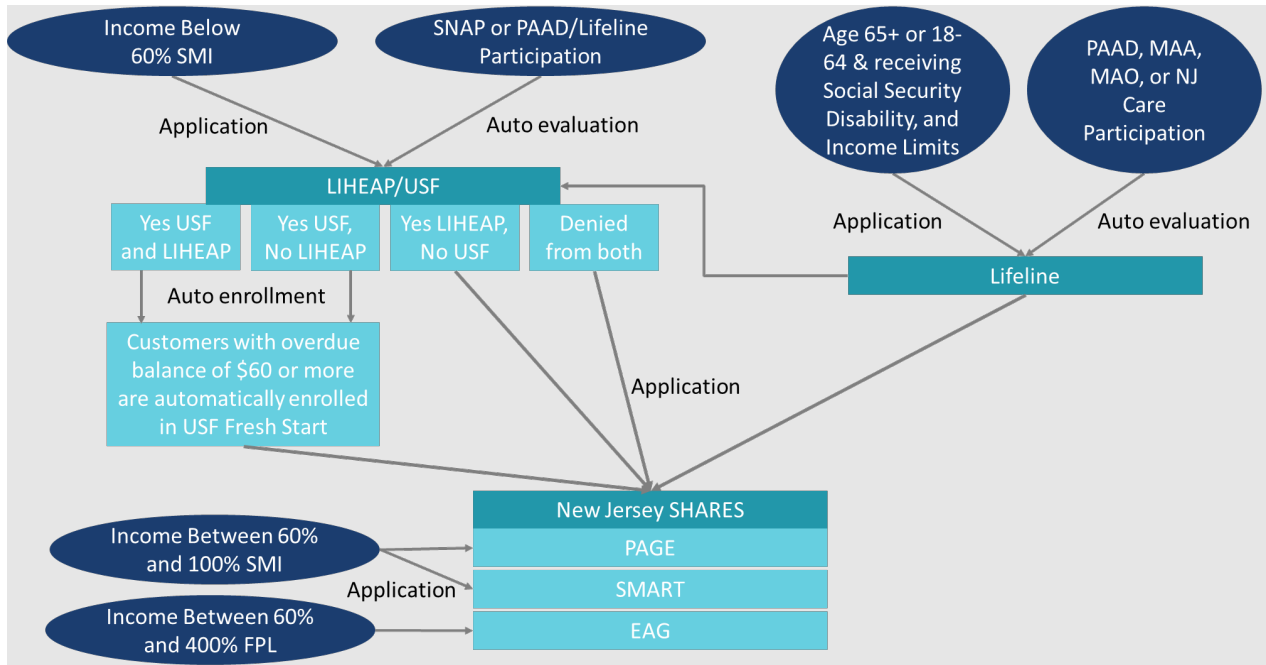


Figure 9 shows a flow chart of program eligibility for New Jersey’s major bill assistance programs USF, LIHEAP, Lifeline, and New Jersey SHARES and how eligibility for different programs interacts. It is important to note that while each program is separated in the diagram, the populations eligible for each program are not distinct and may overlap with one another.

FIGURE 9: NEW JERSEY ENERGY BILL ASSISTANCE PROGRAM ELIGIBILITY DIAGRAM



Note: USF Fresh Start is available to USF customers who have not participated in Fresh Start during the past five years. While each program is separated in the diagram, the populations eligible for each program are not distinct and may overlap with one another. Benefits from different programs can be stacked, e.g., a household may receive both Lifeline, LIHEAP, and USF. Customers who are income eligible for LIHEAP/USF are required to apply for those programs first before seeking supplemental assistance from New Jersey SHARES.

B. Participation Rates in LIHEAP/USF Bill Assistance

One metric to evaluate the effectiveness of energy assistance programs is the **participation rate**, which can be defined as the percentage of eligible households that receive assistance.

Quantifying the number of eligible households under different income thresholds can be useful for evaluating the effectiveness of programs reaching a target group of customers or informing low-income or moderate-income designations if New Jersey were to modify existing programs or develop alternative assistance programs and rates in the future.

To obtain the participation rate for New Jersey's major bill assistance programs, we estimated the number of households in the state that are eligible for LIHEAP/USF and compared that to the number of currently participating households. Eligibility for programs is usually defined based on comparing household income to a percentage of the federal poverty guidelines (FPG) and/or state median income (SMI) level. Since FPG and SMI depend on the household size, the eligibility thresholds depend on the household size (see Table 9). Therefore, we developed an approach that identifies the number of households below a certain income level *by household size*.

We obtained the New Jersey household income and household size data from the US Census Bureau. We leverage American Community Survey (ACS) Microdata published by the US Census Bureau to develop household income distributions by household size for New Jersey.³⁴ We then use income eligibility thresholds (accounting for household size) to estimate the number of households eligible for each program. Although participation in means-tested programs such as SNAP and PAAD benefits automatically qualifies customers for some programs, this analysis focuses mainly on the eligible households based on the income thresholds used by the energy bill assistance programs. Appendix B provides further details on the analysis.

The key result is that approximately **31% of New Jersey households (about 1.1 million households)** are eligible for programs that use the 60% SMI threshold (LIHEAP/USF) (Table 9). **Of the eligible households, roughly 20% of eligible households receive LIHEAP/USF** (Table 10). This number is consistent with the reported LIHEAP participation rate of 20% for heating assistance (see Section III.A.1, Figure 7).

³⁴ United States Census Bureau, <https://data.census.gov/mdat/#/>. Please see Appendix B for further detail.

TABLE 9: SHARE OF NEW JERSEY HOUSEHOLDS BELOW VARIOUS SMI-BASED THRESHOLDS

SMI-Based Threshold (% of SMI)	Count of New Jersey Households	Share of New Jersey Households
10%	146,141	4.2%
20%	313,902	9.0%
30%	506,869	14.5%
40%	700,313	20.0%
50%	894,793	25.6%
60%	1,090,596	31.2%
70%	1,272,721	36.4%
80%	1,474,616	42.2%
90%	1,652,043	47.2%
100%	1,822,071	52.1%

Source: “[ACS 1-Year Estimates Public Use Microdata Sample \(2021\)](#)”, American Community Survey, United States Census Bureau.

TABLE 10: APPROXIMATE PARTICIPATION RATE FOR MAJOR ENERGY BILL ASSISTANCE PROGRAMS

Program	Eligibility Criteria	Number of Participants	Number of Eligible Households	Percentage of Eligible Households Participating
LIHEAP	60% SMI	227k	1.1M	21%
USF	60% SMI	222k	1.1M	20%

Note: Note that the numbers of eligible households shown in the table are *not additive*; the same household may qualify for multiple programs. The numbers of eligible households are ballpark estimates and are derived based on assumptions discussed in further detail in Appendix B.

C. Gap Analysis of New Jersey Energy Assistance Programs

In this section, we evaluate whether there are any gaps to be filled in New Jersey’s energy assistance program portfolio, based on our jurisdictional scan of seventeen other states and their energy assistance program offerings. Table 11 summarizes the program types offered by other jurisdictions and indicates whether New Jersey offers any programs that fall under each of these categories. This mapping shows that **New Jersey offers a wide variety of program types addressing energy assistance needs through different mechanisms.**

- Under **bill discount programs**, New Jersey offers a flat dollar amount discount through Lifeline, which provides a \$225 annual credit on utility bills. LIHEAP can be categorized under tiered discounts since the benefit levels are calculated based on household income tiers as well as other factors.³⁵ USF is a PIPP program, which provides an individualized discount level to each participating household based on household income and energy costs. The fact that New Jersey does not offer flat percentage discounts or rate discounts is not a deficiency in offerings, but rather indicates that New Jersey has prioritized and developed more effective measures such as USF.
- Under **bill payment plans**, New Jersey offers bill forgiveness, arrears management, and disconnection prevention programs through USF Fresh Start, New Jersey SHARES, and WTP.
- Under **energy efficiency, weatherization, and clean energy access programs**, New Jersey offers a wide range of programs for low-income as well as moderate-income households. New Jersey's community solar program sets aside 51% of solar capacity and participants to LMI households, facilitating participation in clean energy options while providing bill discounts.

³⁵ LIHEAP discounts are determined based on a matrix of household income, household size, location, and heating fuel, see [FY2025 Benefit Matrix](#). Sussex and Warren counties receive higher LIHEAP heating benefits due to their higher elevations and colder temperatures.

TABLE 11: MAPPING NEW JERSEY'S ENERGY ASSISTANCE PROGRAMS ONTO PROGRAM TYPES OFFERED BY OTHER JURISDICTIONS

Program Type	Does New Jersey Offer This Type of Program?
BILL DISCOUNT PROGRAMS	
Flat Percentage Discounts	×
Flat Dollar Discounts	✓ Lifeline
Rate Discounts	×
Tiered Discounts	✓ LIHEAP and New Jersey SHARES programs offer discounts based on income as well as other factors
Percentage of Income Payment Plans	✓ USF
BILL PAYMENT PLANS	
Bill Forgiveness	✓ USF Fresh Start
Arrears Management	✓ LIHEAP Emergency, USF Fresh Start, New Jersey SHARES PAGE, SMART, EAG
Budget Billing	✓ Programs offered by utilities
Disconnection Prevention	✓ Winter Termination Program
ENERGY EFFICIENCY, WEATHERIZATION, CLEAN ENERGY ACCESS	
Energy Efficiency Assistance for Low-Income Households	✓ Weatherization Assistance Program, Comfort Partners
Energy Efficiency Assistance for Moderate-Income Households	✓ Utility-administered programs such as New Jersey Natural Gas SAVEGREEN and South Jersey Gas Home Weatherization
Assistance for Participation in Clean Energy	✓ Community Solar Energy Program with LMI set-aside

The jurisdictional scan provided several observations on the types of programs offered by various US states. Besides the program types offered, specific program design elements and implementation practices such as enrollment processes and funding mechanisms play an important role in program effectiveness. A review of these practices leads to insights on the similarities and differences of New Jersey's programs, their strengths as well as opportunities for further improvement. We group these insights under five key dimensions that are important for the effectiveness of energy bill assistance programs:

1. Assistance Structures

- New Jersey offers **flat dollar discounts** and **tiered discounts that depend on income level** with Lifeline, LIHEAP, and New Jersey SHARES, and **PIPP** assistance through USF.
- Having a PIPP program like **USF puts New Jersey ahead of most other states** reviewed in the jurisdictional scan.
 - Other states in the jurisdictional scan that offer PIPP are Colorado, Pennsylvania, Virginia, and Illinois.
 - USF energy burden limit of 4% is lower than other PIPPs like Pennsylvania or Virginia that have limits of up to 10%, or 6% in Colorado.
 - Pennsylvania sets energy burden target based on income tiers for more targeted assistance to lowest income. Energy burden limit is 6% for households with income below 50% FPL, while the limit is 10% for incomes levels in the range of 51%–150% FPL.
- **PIPP can be combined with other types of programs** to achieve other goals such as electrification besides affordability.
 - New York is currently implementing a pilot program that aims to limit energy burden to 6% for 1,000 low-income households who will also fully electrify their space and water heating through the EmPower+ program.³⁶ New York also employs a state-wide tiered bill discount program, which indirectly addresses energy burden for different income tiers.

2. Eligibility Criteria

- **New Jersey USF income eligibility is aligned with LIHEAP at 60% SMI, simplifying criteria across programs.**
 - Similarly, New York and Colorado also use the same thresholds for LIHEAP and their state assistance programs. Aligning PIPP eligibility thresholds with LIHEAP is a common practice to streamline enrollment.
- **Moderate-income bill assistance programs such as New Jersey SHARES are less common across states;** however, some states started considering these programs to protect these customers from potential bill increases.

³⁶ [Governor Hochul Announces Energy Affordability Guarantee Pilot Program for Low-Income Utility Customers | Governor Kathy Hochul](#), August 15, 2024.

- While USF and LIHEAP are targeted specifically to low-income customers, **New Jersey also offers bill assistance to moderate-income customers** through New Jersey SHARES programs such as the Energy Assistance Grant. However, the funding for these programs is substantially smaller and the programs address temporary financial crises rather than ongoing needs. New policies may be needed to address this segment more holistically, as discussed in Section VI.
- A few programs such as California’s Family Electric Rate Assistance Program (FERA) and Illinois gas programs (Appendix A) with higher income thresholds are exceptions. A recent bill approved by Massachusetts directs utility providers to offer lower rates to eligible moderate-income utility customers in addition to low-income customers.³⁷

3. Enrollment

- Across all states, enrollment is commonly facilitated through an application system and categorical eligibility through other means-tested programs.
 - In New Jersey, **joint application for LIHEAP and USF provides convenience**; however, other programs such as Lifeline and New Jersey SHARES require separate applications.
 - Participants need to recertify for LIHEAP/USF every year unless also enrolled in SNAP or Lifeline.
- New Jersey’s LIHEAP/USF program automatically screens households receiving SNAP and Lifeline. **Roughly half of USF participants are automatically enrolled due to their participation in SNAP and 12% are enrolled through Lifeline**, while the remaining 38% enroll through a separate LIHEAP/USF application. Other programs such as New Jersey SHARES also use categorical eligibility for low income and other vulnerable customers.
 - Automatic enrollment mechanisms are a way to ensure that programs are reaching target populations. New York is an example where the tiered bill discount program auto-enrolls households from various means-tested programs including HEAP, SNAP, SSI, Direct Vendor or Utility Guarantee, TANF, SNA.³⁸
 - **New Jersey already has automatic enrollment mechanisms in place and can potentially improve the automatic enrollment processes by expanding the list of qualifying programs.**

³⁷ Massachusetts Bill [S.2967](#), An Act Promoting a Clean Energy Grid, Advancing Equity, and Protecting Ratepayers, November 14, 2024.

³⁸ Con Edison Energy Affordability Program, <https://www.coned.com/en/accounts-billing/payment-plans-assistance/help-paying-your-bill>, accessed on August 28, 2024.

- Additionally, New Jersey can adopt a more comprehensive approach to affordability, by enhancing **coordination between state agencies to integrate assistance databases across programs**, including but not limited to energy assistance, and collaborating on enrollment initiatives. **Consolidating the applications and databases across programs** will streamline processes and more efficiently direct customers to the programs for which they are eligible.
- Some states also set target program enrollment goals for certain income groups to track program performance.
 - PECO, an electric and gas utility in Pennsylvania, tracks several different metrics each year including the number of new enrollees and number of outreach events. The company targets a 5% participation increase year over year for the lowest income group (0–50% FPL), through targeted outreach towards the lowest income neighborhoods.
- Our analysis showed that the participation rates for LIHEAP/USF in New Jersey is approximately 20% (Section IV.B). This indicates that there is potential to increase participation in USF and reach a larger number of customers. New Jersey can boost program participation by improving its enrollment process and implementing targeted outreach strategies (as discussed further in the Outreach section below). This could include expanding the list of programs that automatically qualify customers for USF, conducting analyses to identify the characteristics of eligible but non-participating customers and focusing outreach on these specific groups. Section VI provides further analysis on the implications of increased participation in USF.

4. Outreach

- **Like many other states, New Jersey utilizes various channels for outreach:**
 - NJBPU has an outreach team that hosts outreach events throughout the state where customers can enroll in person and meet with utilities, state agencies, LIHEAP/USF local application agencies and New Jersey SHARES. NJBPU also hosts a Utility Assistance Week with utilities to raise awareness about energy assistance programs statewide. NJBPU also promotes assistance programs and outreach events through social media campaigns and on its website.
 - Statewide Utility Assistance Hotline is available with language line through NJ 211.
 - Utility companies run outreach through informational events and webinars, energy assistance sign-up events, and use general and targeted mailings to promote the programs, such as bill inserts and newsletters. The utilities send targeted emails, use social media and robocall campaigns, and customer service representative referrals. The

utilities also provide the Customer Bill of Rights to customers in multiple languages as a monthly bill insert.

- Each New Jersey utility is required to provide information to residential customers on an overdue utility bill regarding the availability of the Winter Termination Program and any utility assistance program administered by the state.
- New Jersey customers not previously enrolled in an assistance program during the prior year can call their utility company to have their service restored with proof of an application for USF, LIHEAP, or PAGE, if they make a down payment of up to 25% of the outstanding balance.
- Other states pursue similar outreach channels. Some examples include:
 - New York uses email campaigns, websites, walk-in centers, newsletter, advertising, social media, community presentations, bill messaging, call center messaging, customer contact employee referrals.
 - Similarly, Pennsylvania has multiple streams of identifying potential enrollees including call centers, outreach events, or by referrals from human service agencies. PECO has a dedicated Community Engagement team that is responsible for educating customers on low-income programs and organizing outreach events, and specifically targeting outreach towards the lowest income neighborhoods.
- New Jersey would benefit from **conducting analyses to identify the characteristics of eligible but non-participating customers and focusing outreach on these specific groups.**
 - For example, Public Service Electric & Gas Company, a New Jersey electric and gas utility, is conducting an internal analysis to understand more about customers who potentially qualify for assistance by studying demographic characteristics, types of programs enrolled, arrears and shutoff status, online account participation, outreach channels, and bills.³⁹ Such studies can be performed by the NJBPU, state agencies, and utilities to gain a deeper understanding of customer demographics and the factors influencing program enrollment and to guide outreach efforts. The research could include quantitative analyses using existing data from energy assistance and other means-tested programs, along with interviews and surveys to gather insights from non-participants about the barriers preventing their involvement.

³⁹ PSEG, Advanced Analytics: Payment Assistance Options (PAO) Indicator Analysis, September 24, 2024.

5. Funding

- **USF and Lifeline programs are fully funded through the Societal Benefits Charge (SBC),** which is a surcharge on electric and gas bills for all customer classes.
 - The SBC is a uniform volumetric charge and results in bill impacts of about \$50 per year for residential gas and electric customers for USF and Lifeline. This is comparable to average annual bill impacts seen in Pennsylvania which range from \$32–\$67 from 2020–2022.⁴⁰
 - Annual USF funding was over \$130 million in 2023/2024 and \$236.5 million in 2024/2025 and the NJBPU conducts a true-up at the end of the year to correct for any shortfalls.
- Other states like Pennsylvania and Virginia also fund PIPP through volumetric charges, while Colorado recovers funds through a fixed monthly charge on customer bills.
 - Unlike the *fully funded* program approach used in New Jersey, Pennsylvania and Virginia, the *capped* program approach used in Colorado can limit the total funds. The impact on residential rates from Colorado’s PIPP cannot exceed \$1 per month; utilities can recover costs up to this cap.
- In **New Jersey, SBC is applied to all customers, does not exempt low-income customers.**
 - One distinction with program funding is which ratepayers are assessed the surcharges. In some of the other states like Colorado and California, LMI customers are exempt while the non-LMI customers contribute to assistance funds.
 - For USF recipients, energy bills are limited to a certain percentage of income, therefore bills are dependent only on income and not rate levels.⁴¹ **USF guarantees that the target energy burden level will be achieved regardless of whether low-income customers are exempt from certain surcharges.** Section VI.B provides further discussion on this topic.

Overall, we find that:

USF, an advanced PIPP program, puts New Jersey ahead of most other states in the jurisdictional scan. It is the primary mechanism through which most low-income customers can reduce their bills aside from federal assistance.

⁴⁰ Pennsylvania Utility Commission, Universal Service Programs and Collections Performance, September 2023, p.88.

⁴¹ This statement is true only until the discount cap of \$185/month is reached.

PIPP programs like USF address affordability in a more targeted way as they are tailored for each household's needs.

Moderate-income programs such as New Jersey SHARES are less common across states. New policies may be needed to address this segment more holistically, as discussed in Section VI.

Automatic enrollment from means-tested programs is a strength of New Jersey's programs. However, separate applications are still needed for different programs. Outreach efforts can be increased, and application processes can be streamlined further.

V. Assessment of New Jersey’s Existing Bill Assistance Programs

New Jersey offers several energy assistance programs to improve energy affordability for low- and moderate-income customers. In this section, **we evaluate the effectiveness of the major bill assistance programs in New Jersey based on how much they reduce “energy burden” for participating households.** We calculate energy bills and energy burden for households receiving bill assistance before and after discounts and estimate the reduction in energy burden. We perform this analysis for a large number of households (over 200,000) receiving assistance. Using this large data set allows us to capture the variations in energy burden across households and draw robust conclusions about the effectiveness of programs.

Energy burden is an established metric used to measure energy affordability. It is commonly defined as the share of household income spent on home energy bills, typically involving the total home energy bill including the costs of electricity, natural gas, or other fuels used at home. Various energy burden thresholds have been used for evaluating whether a household may be experiencing an energy affordability issue. A widely used indicator of high energy burden is spending more than 6% of income on home energy bills.⁴² Spending more than 10% of income on home energy bills may indicate severe energy burden. As described in Section IV.A, New Jersey’s USF program provides discounts to ensure that a household’s annual electricity and natural gas bills are less than 2% of annual income each, or the annual electricity bills are less than 4% of annual income if the household uses electricity for heating.

The following steps were taken during this analysis:

- Household-level data on energy bills, household income, and program discounts were obtained from NJBPU. The data were compiled and cleaned to generate a final dataset of households that participated in bill discount programs in the **2023–2024 time frame.**

⁴² 6% was estimated based on the condition that housing costs should not exceed 30% of household income, and household energy costs should not exceed 20% of housing costs, according to [LIHEAP Energy Burden Study \(hhs.gov\)](#); [How High Are Household Energy Burdens? An Assessment of National and Metropolitan Energy Burdens across the U.S. | ACEEE](#)

- Total energy burden, electricity burden (the portion of total energy burden from electricity bills alone), and gas burden (the portion of total energy burden from gas bills alone) were computed for each household before and after applying discounts.
- The effectiveness of the programs was evaluated based on the extent to which they reduced household energy burden.

The goal of this analysis is to provide insight into the effectiveness of the programs in reducing energy burden for New Jersey customers that are receiving them. As discussed in Section IV, not all eligible households participate in programs and participation rates are around 20% for the major programs in New Jersey as well as across the country. There are households that have high energy burden but do not participate in energy bill assistance programs despite being eligible. Certain moderate-income households may not qualify despite struggling with energy costs. Policies aimed at increasing participation will be important to extend the reach of bill assistance programs, as discussed in more detail in Section VI.

While energy burden is an established and informative metric due to its consistency and ease-of-use, there are other considerations in measuring energy affordability. Energy burden as a metric does not distinguish between gross income and disposable income after taxes and other expenses such as rent or mortgage. Importantly, it does not capture whether a household is consuming “sufficient” amount of energy for their heating and cooling needs or limiting their energy use despite unhealthy temperatures either to save on energy bills or simply due to the lack of well-functioning appliances such as an air conditioner.⁴³ Studies show that while a portion of low- and moderate-income households may appear to have a low energy burden, they could actually be cutting back on energy use in ways that jeopardize their health, such as increasing the risk of heat stroke.⁴⁴ Therefore it will be important to conduct more granular analyses on the energy use behavior of individual households using AMI meter data as AMI deployment advances in New Jersey.⁴⁵

⁴³ S. Cong, D. Nock, Y. Qiu, B. Xing, [Unveiling hidden energy poverty using the energy equity gap](#), *Nature Communications* 13: 2456, 2022.

⁴⁴ L. Huang., D. Nock, S. Cong, Y. Qiu, [Inequalities across cooling and heating in households: Energy equity gaps](#), *Energy Policy* 182: 113748, 2023.

⁴⁵ See [Massachusetts Interagency Rates Working Group, Recommendations Based on the Near-Term Report](#) by D. Nock, November 19, 2024.

A. Methodology

1. Data Sources

The data used in this analysis were obtained for three program groups: **LIHEAP/USF, New Jersey SHARES energy assistance programs, and Lifeline**. The data sets provided necessary information for calculating energy burden: household-level annual electricity and gas bills without discounts, household income, and discount type and amount. We analyze all data on energy bills, household income, and discounts on an annual basis. Appendix C provides further detail on the data sets and data processing steps.

Given its wide coverage and the ability for its programs to be “stacked” with other programs, the LIHEAP/USF dataset was the basis for our analysis. After cleaning each dataset, we combined the LIHEAP/USF and New Jersey SHARES datasets and then merged the Lifeline data onto this core dataset by matching households by utility account number. Because the Lifeline dataset did not have information on energy bills, we only compute energy burden for Lifeline recipients whose account numbers match those in the LIHEAP/USF or New Jersey SHARES datasets that have energy bill information. Lifeline recipients whose energy bill information was not provided, as well as the Lifeline tenants without utility accounts, were therefore excluded from the final dataset.⁴⁶

The final dataset contains 214,017 households with either electricity utility account information, gas utility account information, or both. For our analysis, we divide this dataset into three subsets:

- Households with both electricity and gas utility account information (134,910 households)
- Households with electricity utility account information (203,470 households, that may or may not have gas account information)
- Households with gas utility account information (145,457 households, that may or may not have electricity account information)

These subsets allow us to accurately assess total energy burden, electricity burden, and gas burden, respectively, and how each program specifically affects each burden type. Table 12 outlines how program participation is spread across each subset and the final dataset.

⁴⁶ These exclusions amounted to about half of the Lifeline recipients, leading to 46,683 Lifeline recipients to be analyzed in the final data set (Table 12).

TABLE 12: NUMBER OF HOUSEHOLDS PARTICIPATING IN EACH PROGRAM IN FINAL DATASET

Dataset	LIHEAP	USF	LIHEAP and USF	LIHEAP or USF	Lifeline	Lifeline and Other	Any New Jersey SHARES	Any New Jersey SHARES and Other	Total
Both Electricity and Gas	116,270	132,173	114,427	134,016	25,715	25,708	1,085	354	134,910
Electricity	158,424	199,030	155,771	201,683	44,641	44,558	1,837	529	203,470
Gas	124,906	141,801	122,544	144,163	27,757	27,702	1,407	387	145,457
Final dataset	167,060	208,658	163,888	211,830	46,683	46,552	2,159	562	214,017

Note: "Other" indicates other programs shown in this table.

2. Energy Burden Calculation

The objective of this analysis is to estimate how much energy burden is reduced with bill discounts in New Jersey and to assess the effectiveness of existing bill assistance programs. We therefore compute energy burden before and after applying bill discounts. Discounts can be stacked so that a customer receives discounts from several programs. To observe the effect of each program in isolation, we compute energy burden at each step in the discount stack.

For each household, total electricity, total gas, and total energy bills were computed before applying any discounts. These bills were then recomputed after discounts under LIHEAP, as this program is generally applied to customers first and makes up a very large share of the discounts in our dataset. Next, bills were recomputed taking into account Lifeline discounts in addition to the LIHEAP discounts already applied. Finally, bills were recomputed after applying USF discounts in addition to LIHEAP and Lifeline. Since USF benefit amounts depend on the LIHEAP and Lifeline benefits a customer receives, USF was last in the discount stack. For New Jersey SHARES programs, we recomputed bills after applying discounts from New Jersey SHARES programs only. If at any point in the stack the discounted bill was less than zero (i.e., the cumulative discounts were greater than the bill), the discounted bill was set to zero.

Once discounted bills had been computed, energy burden was computed at each step in the discount stack by dividing each household's total energy bill by its household income. We then

computed electricity and gas burden at each step in the stack by considering only electricity bills and gas bills, respectively, in the energy burden calculation.⁴⁷

B. Effectiveness of New Jersey Bill Assistance Programs in Reducing Energy Burden

1. LIHEAP and USF

Key Result: LIHEAP and USF are effective in reducing energy burden for participating low-income customers. Median total energy burden is reduced from 8.8% to 6.9% by LIHEAP, and further reduced to 3.3% by USF. This shows USF currently achieves the energy burden target, which is 2% for electricity and 2% for gas, or 4% if heating with electricity.

This analysis shows that both LIHEAP and USF are effective in reducing energy burden for participating low-income customers. Figure 10 shows the energy burden distributions for households receiving LIHEAP and USF, but not Lifeline,⁴⁸ before and after LIHEAP and USF discounts. The dotted line represents the USF target for electricity and gas burden of 2% each. Both programs reduce energy burden, particularly USF, which brings median total energy burden from 6.9% to 3.3%, median electricity burden from 4.2% to 2.0% and median gas burden from 2.3% to 1.9%. For both electricity and gas, USF successfully reduces burden to 2% or below for most households.

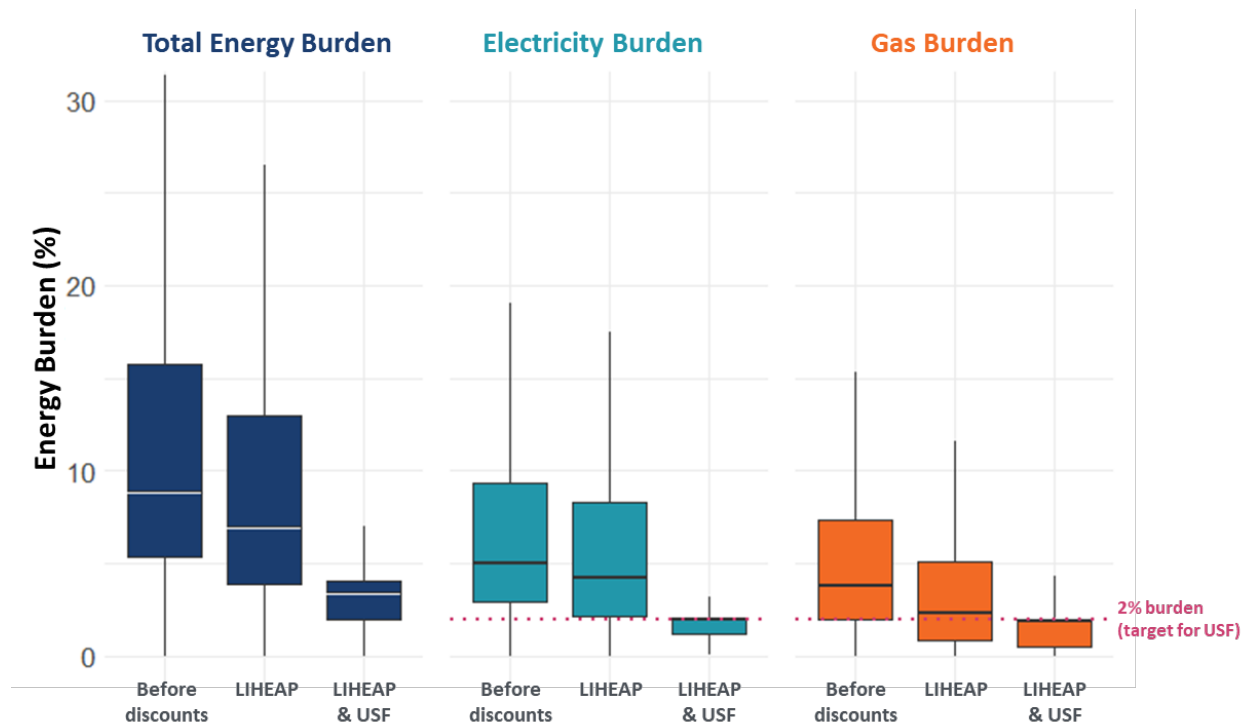
LIHEAP reduces gas burden by a greater magnitude than electricity burden (1.5 percentage points versus 0.8 percentage points). This is because far more households use gas heating than electric heating, meaning that a larger share of the LIHEAP heating benefits are applied to gas accounts. Additionally, the \$500 LIHEAP benefit for medically necessary cooling (which is mostly

⁴⁷ Some households had household incomes of zero, resulting in burdens of infinity. To address this as well as any potential outliers, we set the maximum energy burden to 200%; this affected only 4.6% of households, including those with household incomes of zero.

⁴⁸ To analyze the effects of LIHEAP and USF programs in isolation, we considered households that receive either LIHEAP or USF, but not Lifeline—this corresponded to 108,313 households in the electricity and gas account subset, 157,152 households in the electricity account subset, and 116,485 households in the gas account subset.

applied to electricity) has limited eligibility,⁴⁹ therefore affects the energy burden of only a smaller population.

FIGURE 10: EFFECT OF LIHEAP AND USF ON ENERGY BURDEN



Note: Appendix C.2 provides the energy bills before and after discounts.

2. Lifeline Stacked with LIHEAP and USF

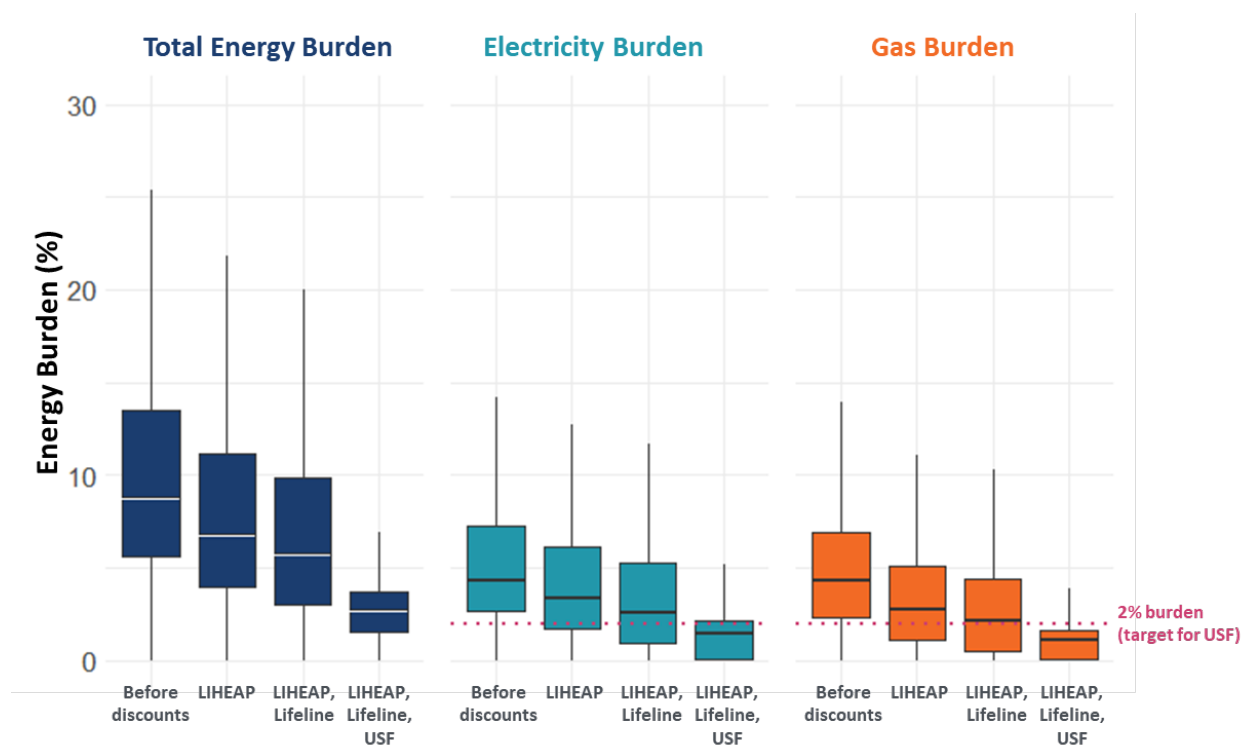
Key Result: Lifeline helps reduce energy burden further when stacked with LIHEAP and USF. For households receiving Lifeline as well as LIHEAP and USF (25,703 households), Lifeline reduces median energy burden from 6.8% to 5.7% after LIHEAP has been applied. Electricity and gas burden are brought below the USF target of 2% with the addition of USF to the discount stack.

Next, we analyzed the effect of Lifeline amongst LIHEAP and USF, focusing on households that receive either LIHEAP or USF *and* Lifeline. There were 25,703 such households in the electricity and gas account subset, 44,531 in the electricity account subset, and 27,678 in the gas account subset.

⁴⁹ In FY2024, medically necessary cooling assistance benefit amount was \$500. In FY2025, this was changed to \$300. See [FY2025 USFHEA Factsheet](#).

Figure 11 displays the shifts in the energy burden distributions when each discount is applied. Lifeline reduces median total energy burden from 6.8% to 5.7%, median electricity burden from 3.4% to 2.6%, and median gas burden from 2.7% to 2.1%.⁵⁰ Again for this population, median electricity and gas burden are brought below the USF target of 2% with the addition of USF to the discount stack.

FIGURE 11: EFFECT OF LIFELINE ON ENERGY BURDEN



Note: Appendix C.2 provides the energy bills before and after discounts.

3. New Jersey SHARES Programs

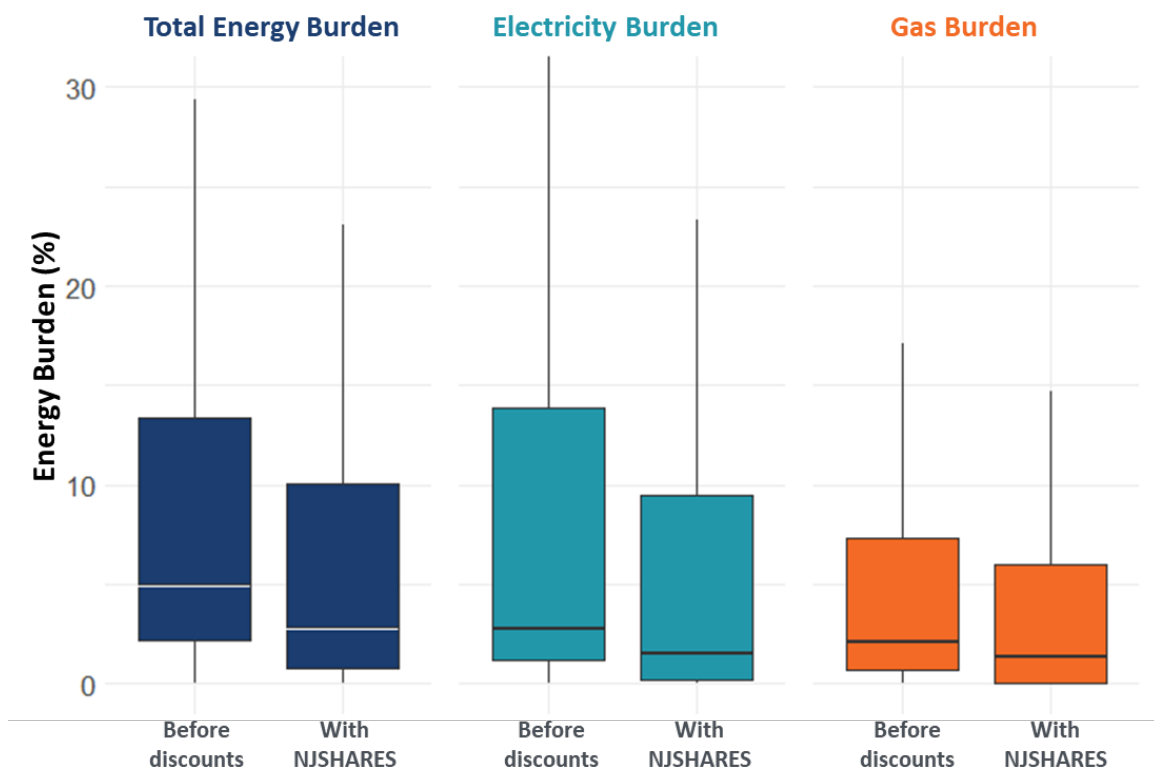
Key Result: New Jersey SHARES programs are effective in reducing energy burden. They reduce median energy burden from 4.9% to 2.8% for participating customers. Recipients of New Jersey SHARES programs tend to have higher incomes. Therefore, their energy burden is lower to begin with compared to the energy burden observed for other programs.

⁵⁰ The greater reduction due to Lifeline for electricity burden than gas burden is due to the fact that there are more households with only electricity accounts than there are households with only gas accounts. This means that more customers receive the full \$225 Lifeline credit on their electricity bill only than on their gas bill only.

Finally, we analyzed the effect of New Jersey SHARES discounts including the EAG, PAGE, and SMART. In the electricity and gas subset, 1,085 households receive some form of New Jersey SHARES discount, as do 1,837 households in the electricity account subset and 1,407 households in the gas account subset.

Figure 12 shows the reduction in energy burden due to these programs. In general, burden is lower for these households than in the other analyses, as New Jersey SHARES customers have higher incomes. New Jersey SHARES programs reduce median total energy burden from 4.9% to 2.8%, median electricity burden from 2.8% to 2.5% and median gas burden from 2.1% to 1.3%.

FIGURE 12: EFFECT OF NEW JERSEY SHARES BILL ASSISTANCE PROGRAMS ON ENERGY BURDEN



Note: Appendix C.2 provides the energy bills before and after discounts.

Key takeaways are: New Jersey’s major bill assistance programs are effective in reducing energy burden for households participating in programs. USF successfully achieves the energy burden target, which is 2% for electricity and 2% for gas, or 4% if heating with electricity, for most participating households.

There may be households that have high energy burden but do not participate despite being eligible, as well as households that are ineligible despite having high energy burden. Moderate-income households may not qualify despite struggling with energy costs.

Policy options to increase participation and supplement current assistance programs will be essential to safeguard against potential bill increases in the future, as discussed in Section VI.

VI. Alternative Policy and Rate Options

New Jersey offers a broad range of energy assistance programs and is ahead of its peers thanks to its USF program, which addresses affordability in a targeted way by tailoring discounts for each household's needs. However, currently 20% of the eligible households participate in this program, indicating that there is an untapped potential to expand the reach of the program to more low-income households. In addition, moderate-income households that are ineligible for USF may exceedingly need targeted assistance, as they may lack the resources to manage financial hardships resulting from rising energy costs and to invest in energy-efficient technologies.

Below we present alternative policy options regarding **bill assistance programs** and **rate design** to further relieve energy burden for low- and moderate-income customers in New Jersey. These options are not meant to be prescriptive but are rather presented as policy options for New Jersey to consider to further improve its well-functioning programs, especially as the energy costs are expected to rise. We include initial estimations of the impacts associated with several policy options to provide general sense of scale and direction. However, a comprehensive analysis should be performed to evaluate the feasibility and the impact of implementing any of these changes, either in combination with each other or individually.

A. Bill Assistance Programs

1. Increase USF Participation

Our analysis showed that the participation rate for USF is approximately 20% (Section IV.B). This indicates that there is potential to increase participation and assist a larger number of eligible households who are not currently enrolled in the program. This would enable USF to achieve a broader impact and help address affordability concerns due to potential rate increases in the future. As also discussed in the gap analysis in Section IV.C, New Jersey can boost program participation by improving its enrollment process and implementing targeted outreach strategies. This could include expanding the list of programs that automatically qualify customers for USF, conducting analyses to identify the characteristics of eligible but non-participating customers and focusing outreach on these specific groups. Additionally, a more holistic approach to affordability could be achieved by stronger coordination between state

agencies, integrating assistance databases across programs, and collaborating on enrollment initiatives.

Since USF is a fully funded program, where any eligible household can receive funding, an increasing participation rate would lead to an increase in the amount of total funding needed to support the program. Currently, USF funds are collected from all electricity and natural gas customers of investor-owned utilities in the state through the USF surcharge within electric and natural gas rates. Assuming the same funding mechanism is maintained, increased USF participation would have implications for electricity and gas bills of all utility customers.

Figure 13 shows the estimated funding requirements for USF under increased participation rates. At today's participation rate of 20%, USF's annual budget is \$134.5 million.⁵¹ The funding need increases up to approximately \$666 million at 100% participation from the eligible population. This ballpark estimate was obtained by assuming every additional eligible household would receive the average USF electricity and gas discounts based on our calculations in Section V. In practice, there will likely be variation in these estimates as more households receive USF. USF discount amounts are inherently dependent on the energy burden of each household and therefore will vary depending on the characteristics of the new USF recipients and any other discounts they may be receiving; furthermore, discount amounts may vary to offset increases in the USF surcharge on bills as more customers participate in the program. The sensitivity ranges in the figure indicate a range of potential funding values based on the USF discounts observed in our energy burden dataset. Appendix D provides further detail on this analysis.

Under higher participation rates, the USF electricity and gas surcharges levied on utility customers would have to increase to recover the required funding. Figure 14 estimates the annual amount the average household would have to pay for the USF surcharges each year under each participation rate. While annual USF surcharge payments increase in percentage terms as participation rate increases, **USF surcharge payments continue to represent a small fraction of New Jersey households' energy bills, with the greatest payment amount not exceeding 3.5% of the average bill of paying customers.**

⁵¹ This analysis is based on the 2023/2024 budget and participant information as described in Section V. The 2023/2024 budget was approved by [NJBPU Order](#) in Docket No. ER23060409, 9/27/23. The 2024/2025 budget approved by [NJBPU Order](#) in Docket No. ER24070486, 9/25/24, is higher at \$236.5 million.

FIGURE 13: TOTAL ESTIMATED ANNUAL USF FUNDING UNDER ALTERNATE PARTICIPATION RATES

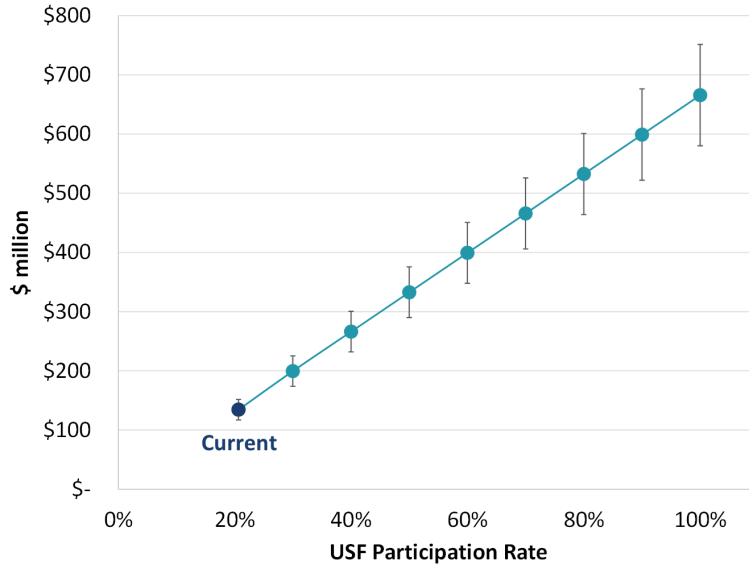
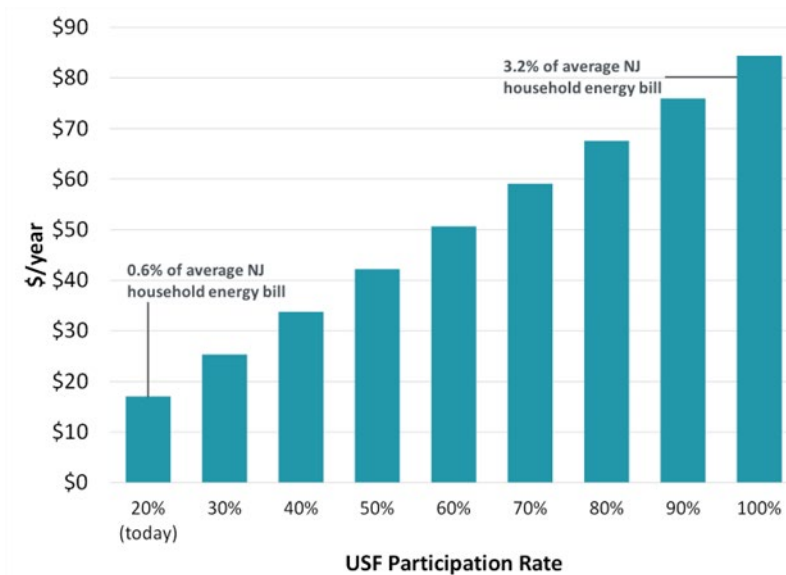


FIGURE 14: ESTIMATED ANNUAL USF SURCHARGE PER HOUSEHOLD UNDER ALTERNATE PARTICIPATION RATES



2. Introduce Income Tiers to USF

USF applies the same energy burden target to *all* eligible households. USF energy burden targets are 2% for electricity and gas bill separately, and 4% for electricity if heating is electric. These targets are the lowest and therefore the most ambitious across all the states reviewed in our jurisdictional scan, and USF effectively ensures that these targets are met (Figure 10).

Alternatively, the USF program structure could be modified by NJBPU to introduce income tiers and set a different energy burden target for each income tier.⁵² An example of such a structure is Pennsylvania’s PIPP program, which sets the energy burden target at 6% for the lowest income tier below 50% FPL, and at 10% for income levels in the range of 51%–150% FPL. **The potential benefit of a tiered energy burden structure would be a more efficient allocation of funds across income tiers, where the needs of the lowest income households are prioritized.** Furthermore, if funding requirements increase due to increasing energy bills per household or increasing participation rates as shown above in Figure 13, a tiered energy burden structure could potentially reduce the total funding needed while providing more targeted assistance for lowest income households and setting a reasonable energy burden target for other eligible households.

Before making adjustments to the program structure, it is recommended to conduct a detailed analysis to determine the impact of specific design changes (e.g., various levels of energy burden targets and income tiers) on household bills as well as the total funding needed for the program.

3. Increase USF Discount Cap Per Household

USF sets a discount cap of \$180 per month for electricity and natural gas bills combined per household. In some cases where a customer receives service from different utilities for electric and gas, if one utility benefit is calculated at \$180 before the other utility record comes in, the other utility can receive the \$5 minimum benefit. Therefore, the maximum monthly USF benefit a household can receive is effectively \$185 per month.

Our analysis shows that **USF reduces electricity and gas energy burden to target levels for 90% of participating households, indicating that the program is highly effective in achieving its targets.** For the remaining 10% of households, the current maximum USF discounts are insufficient to reduce their burdens to target levels.⁵³ If energy bills were to increase and the current discount caps were maintained, the percentage of customers whose energy burden would be reduced by USF to target levels would decrease. The left plot in Figure 15 shows that

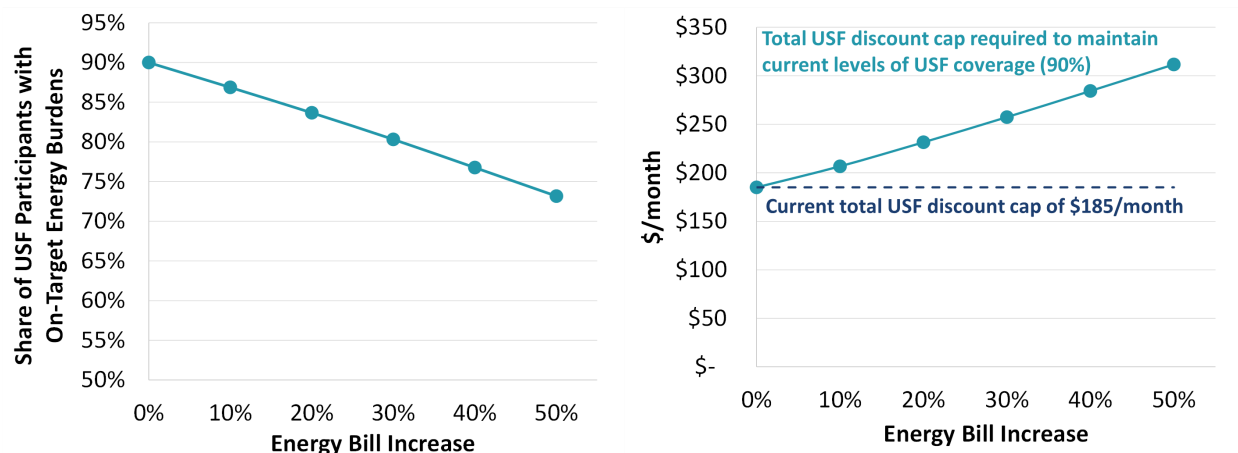
⁵² The Electric Discount and Energy Competition Act, N.J.S.A. 48:3–49 et seq. (“EDECA”), which established the USF, directs the NJBPU to determine the USF program structure, e.g., the level of funding, the administration of the fund, the purposes, and programs to be funded by the fund.

⁵³ Over three-quarters of these households are constrained by the total USF discount cap of \$185 per month, not the separate caps on electricity and gas discounts.

the percentage of customers whose energy burden would be reduced by USF to target levels decreases from 90% to 73% if energy bills increased 50% from today.⁵⁴

If energy bills were to increase, USF discount caps would need to be increased to maintain the coverage of the program at current levels (i.e., at 90%). The right plot in Figure 15 displays the total discount cap (electricity plus gas) that would be required to keep 90% of households at or below burden targets for a given increase in energy bills. We find that a 50% increase in bills would require the cap to increase to \$312/month. **We recommend that New Jersey regularly monitor the coverage of the USF program and assess whether adjustments to the discount cap are needed to better align with the program's goals.** Appendix D provides further detail on this analysis.

FIGURE 15: EFFECT OF POTENTIAL BILL INCREASES ON THE SHARE OF NEW JERSEY USF PARTICIPANTS WITH ON-TARGET ENERGY BURDENS (LEFT), AND TOTAL USF DISCOUNT CAP REQUIRED TO MAINTAIN ELECTRICITY AND GAS BURDEN BELOW USF TARGETS (RIGHT)



4. Introduce Further Assistance Options for Moderate-Income Households

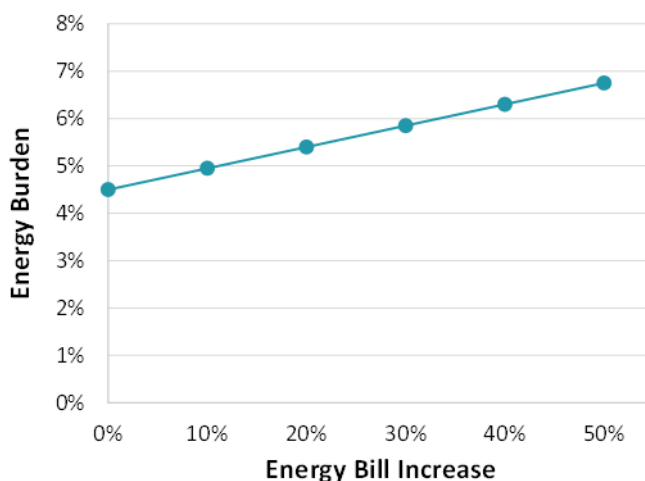
Most bill assistance programs target low-income households, as these households are the ones most in need of assistance. However, moderate-income households, usually defined as households with incomes between 60% SMI and 100% SMI,⁵⁵ may also be experiencing hardships with paying energy bills despite not qualifying for most energy assistance programs. Households with income levels only slightly above the eligibility limits for low-income programs may be particularly disadvantaged and may also experience high energy burdens. Figure 16

⁵⁴ Assuming no change in household income or other discounts for participating households.

⁵⁵ [New Jersey SHARES programs](#) offer assistance to low- and moderate-income customers, where the upper income limit is 100% SMI or 400% FPL across programs.

shows how the energy burden of a household of four with income at 65% SMI (just above the USF eligibility threshold of 60% SMI) and a current energy burden of 4.5% increases to above 6% once energy bills increase by a third.

FIGURE 16: IMPACT OF BILL INCREASES ON ENERGY BURDEN FOR AN ILLUSTRATIVE MODERATE-INCOME HOUSEHOLD



Note: This figure is an illustrative example of how the energy burden would change with increased energy bills for a household of four with a total household income at 65% SMI (\$91,900), just above the USF eligibility threshold of 60% SMI. This example assumes a current energy burden of 4.5% (median energy burden for NJSHARES recipients is 4.9%), which corresponds to an energy bill of \$4,135 per year, roughly the 75th percentile of energy bills for customers receiving NJSHARES (see Figure C-3 in Appendix C.2).

New Jersey SHARES utility assistance programs such as PAGE, EAG, and SMART address the needs of moderate-income customers that are experiencing temporary financial crises. Our jurisdictional scan showed that New Jersey is among the few states that offer moderate-income bill assistance programs. However, these programs are much smaller in scale compared to USF in terms of both funding and participant numbers.⁵⁶

Considering rising energy costs and potential bill increases in the future, and given that some moderate-income households may not have adequate resources to invest in technologies and housing upgrades to reduce their energy burden, new policies may be needed to address this

⁵⁶ USF supported more than 220 thousand households with \$134.5 million funding in the 2023/2024 program year. The PAGE program had approximately \$2.5 million in funding to provide grants to 3,300 households in need, using the unclaimed property held by the State’s electric and gas utilities. Source: NJBPU, In the Matter of the Energy Assistance Grant as Authorized under N.J.S.A. 48:2-29.39 AND N.J.S.A. 46:30B-74(b) Payment Assistance For Gas and Electric (PAGE) PROGRAM, [Order Authorizing Grant Award](#), Docket No. EO23050278, 10/25/23.

segment more holistically.⁵⁷ **One option is expanding the current USF program by adding a moderate-income tier.** Since expanding the program would increase the funding needed, a higher but still reasonable energy burden limit such as 6% can be considered for the moderate-income tier to alleviate budget concerns. **Another option is to create a new bill discount program for moderate-income households that provides fixed dollar amount discounts to qualified customers,** instead of offering individualized discounts (as is the case with USF). This could reduce the administrative effort involved, since all participants would receive the same discount amount. Besides the bill discounts, it will be important to enroll participants in energy efficiency programs to ensure energy conservation. Enrolling in energy efficiency programs and/or audits can be a prerequisite for receiving the bill discounts.

Developing a bill discount program for moderate-income households would increase the funding requirement. To demonstrate the order of magnitude of the impact, here we provide a ballpark estimate of the funding requirement for a program that targets households whose incomes are slightly above the low-income threshold. There are 180,000 New Jersey households with incomes between 60% SMI and 70% SMI (Table 9). For a 2-person household with an annual household income of \$65K, which is slightly above the 60% SMI threshold (Figure B-1), an annual discount of \$650 would be needed to reduce their energy burden by 1%. If half of the eligible households have energy burdens above the 6% threshold and receive \$650 in a given year, the funding requirement would be ~\$60 million—half of the USF or LIHEAP annual funding in 2024. While this is a useful data point to put the funding requirement for a potential bill discount program for moderate-income customers in context; the funding need may in reality be lower, as not all eligible households apply.

Since USF has well-functioning qualification and enrollment processes in place, these can be replicated for an expanded program or new programs. An evaluation of the implementation processes as well as an assessment of the impact on participating and non-participating households would be necessary to determine the most effective program structure.

5. Move USF Funding to State Tax Base

Currently New Jersey's USF program is funded through electricity and natural gas rates, similar to how several other states recover state energy assistance program costs. USF funding is

⁵⁷ Other states have started to offer bill assistance programs tailored for moderate income customers. A recently approved bill approved in Massachusetts directs utilities to offer discounts to moderate-income customers in addition to low-income customers. Massachusetts Bill [S.2967](#), An Act Promoting a Clean Energy Grid, Advancing Equity, and Protecting Ratepayers, November 14, 2024.

collected through a volumetric USF surcharge on all customers' electricity and gas bills. This means that every utility customer contributes the same amount of funds per unit of energy consumed (per kWh of electricity or therm of gas)—irrespective of their income.

An alternative and more progressive option would be to move the USF funding to the state tax base. This would imply that taxpayers would contribute funds towards USF in proportion to their income and associated tax obligations, where higher income households would contribute a larger amount towards the funds. This implementation would be a more equitable way of providing funding for a program that is supporting social welfare. However, to implement this change, New Jersey would have to consider changes in legislation, restructure the administration and funding processes, and collaborate closely across agencies.

B. Rate Design

1. Time Varying Rates (TVRs) and Load Flexibility

Residential rate design has emerged as a top regulatory priority in many North American utility jurisdictions over the past two decades. Among the many drivers for this focus on residential rate design are the ability to offer new rates by leveraging advanced metering infrastructure (AMI); the need to appropriately charge and compensate customers with distributed generation; the potential role of rate design in facilitating achievement of decarbonization and electrification policy goals; and the associated implications for energy affordability. As many jurisdictions are going through their own journey with the residential rate design, one important trend is the increased availability of time-varying rates to residential customers either as a default rate or an optional rate.

TVRs consist of several rate designs that feature variations in electricity prices by time period. The most common example is a time-of-use (TOU) rate, in which prices vary across two or more pricing periods in a day. The rates by pricing period are known in advance. A more complex version is critical peak pricing (CPP), where prices are designed to lower peak demands during the highest demand hours of the year. Targeting the top 1% of the hours of the year, CPP prices are known in advance to the customer while their timing may be disclosed only one day prior. Therefore, CPP rates constitute a form of dynamic pricing. Peak time rebates (PTRs) are a variation of CPP rates in which the customer pays the existing rate but has the opportunity to earn a rebate by lowering usage during certain critical hours. Full deployment of AMI, with accompanying billing solutions is the requirement for being able to deploy these rates at scale.

As of 2022, 73% of the US residential electric meters were AMI, but only 9% of all residential customers were enrolled on one of these time-varying rates.⁵⁸

The premise of the time-varying rates is that when they are developed in a way that reflects the underlying costs of generation and delivery of the electricity, they lead to price signals for higher-priced and lower-priced periods for consuming electricity. When customers respond to these price signals, they shift their usage from higher priced periods to lower priced periods, leading to reduced energy and capacity costs and help slow down the pace of electricity rate increases.⁵⁹ However, **for these benefits to materialize at the system level and have a material impact on resource costs and thereby energy bills, significant participation is necessary.** This is best achieved by deploying a default TVR, such as a default TOU rate. Otherwise, TVRs can be offered as optional rates, and while customers will have bill saving opportunities, it will take longer for system benefits to materialize compared to a default TVR.

TVRs are sometimes criticized for not being equitable, meaning low-income customers are likely to pay more when transitioning to these rates. Critics argue that low-income customers may not have the discretionary loads to respond to price signals, or because for various reasons, they will not change their usage patterns. However, this proposition has been proven false in many TVR tests, most recently in the TOU pricing pilot administered by three Maryland utilities. The Maryland PC44 TOU pilot included two treatment groups for each of the three utilities running the experiment in parallel: a low- and moderate-income (LMI) customer group and a higher-income customer group.⁶⁰ **The two-year pilot found that LMI customers were as equally responsive to price signals as the high-income group. On average, customers on the TOU rates, including LMI ones, had an annual bill savings of five to ten percent.**

This is an important result, especially during a time when affordability and equity are front-and-center considerations. Utility expenditures on hardening and modernizing the distribution grid are expected to increase in the next decade, both to improve resilience in the face of climate events and to accommodate new load expected due to wide-scale transportation

⁵⁸ EIA, [How many smart meters are installed in the United States, and who has them?](#) October 23, 2023.

⁵⁹ In addition to the avoided cost savings achieved through TVRs, load flexibility created through shifting and curtailing load enables the integration of more renewable resources. Moreover, to the extent that the higher priced periods are also higher emission periods, when load is shifted away from these time periods, greenhouse gas emissions are reduced.

⁶⁰ S. Sergici, A. Faruqui, N. Powers, S. Shetty, [PC44 Time of Use Pilots: End-of-Pilot Evaluation](#), The Brattle Group, prepared for Maryland Public Service Commission, 2021.

and building electrification. There is also the cost of building new renewable resources and retiring fossil-fueled generation. These expenses to enable clean energy transition will need to be recovered from utility customers via rate increases and will undoubtedly heighten affordability and equity concerns. In this environment, it will be particularly important for utilities to offer rates and programs for all customers, but particularly for LMI customers to moderate energy bill increases.

While AMI is not fully deployed across New Jersey today, New Jersey is making progress toward the goal of widespread AMI deployment. **It will be important for New Jersey utilities to start piloting and/or testing TVR options so that by the time AMI meters are deployed, they will be able to offer TVRs to all residential customers without further delays.** Unless New Jersey decides to make time-of-use rates the default residential rate option, it will be beneficial to provide optional TOU or other TVR options. Customers who are motivated to lower their electricity bills by responding to price signals or changing their usage patterns can opt into these rates, help reduce system costs, and achieve bill savings. However, **it is important to note that making TVRs available to customers is not a substitute for targeted bill assistance programs.** TVRs are rather an effective complement, as they can reduce the pace of rate increases for all customers by leading to avoided capacity investments if adopted at scale and giving customers an opportunity to achieve bill savings through responding to price signals.

2. Income-Tiered Fixed Charges

In the absence of AMI and being able to offer time-varying rates, there are not too many alternative rate options that may provide bill savings opportunities for low-income customers. Many jurisdictions still have a two-part rate consisting of a fixed monthly customer charge and a volumetric charge. The volumetric component could be flat or have an inclining or declining block structure.

A single fixed charge in tariffs for all customers is sometimes criticized because it may disproportionately impact low-income customers, who generally use less energy but still pay the same fixed amount as higher-usage customers. One solution is to **differentiate the fixed charge based on income levels, with low-income customers paying a smaller fixed customer charge while the higher income customers paying a higher fixed charge.** Since it is administratively difficult to collect, process, and tie the fixed charges directly to income levels, it may be reasonable to define the income tiers based on eligibility for existing low-income assistance programs. California's recently adopted income graduated fixed charge rate is a

novel example to this approach.⁶¹ Per this proposal, high energy burden customers that qualify for income-based assistance programs will pay a lower fixed charge while all other customers that do not rely on assistance programs will pay higher fixed charges.

There are several practical considerations for designing income-tiered fixed charges. First is to determine the level of customer-related costs based on the embedded cost of service study, as this would likely set the ceiling for the fixed customer charge that could be introduced in a rate design. Next is to determine the number of tiers, based on the existing low- and moderate-income assistance programs. For instance, in New Jersey's case, the tiers can be defined based on USF and New Jersey SHARES eligibility. Once the tiers are determined, the level of fixed charges for each of the tiers will need to be set. The charge for higher income customers can be set at the level from the embedded cost study, while the fixed charge for lower income customers can be set at a much lower level. Nevertheless, the rate design will need to recover the class revenue requirement, and therefore will require adjustments to the volumetric rates to balance the higher fixed charges imposed on the higher income customers. **Increasing fixed charges for higher income customers will typically imply lower volumetric charges for all customers. Lower volumetric charges, in combination with the lower fixed charges, will help improve affordability for low-income customers. However, lower volumetric charges may impact conservation incentives negatively, while advancing electrification incentives. These considerations should be reviewed holistically before advancing an income-tiered fixed charge in New Jersey.**

It is also important to note that **while an income-tiered fixed charge would be beneficial for low-income customers, similar and even larger benefits are already being achieved through the USF program.** Therefore, introducing an income-tiered fixed charge may not be an immediate priority in New Jersey. The primary motivation for California's income graduated fixed charges was to accelerate electrification through lower volumetric rates, and while meeting this objective, not to worsen affordability for lower income customers.

3. Exempting LMI Customers from Certain Surcharges and Tax

Currently New Jersey's low- and moderate-income customers that are receiving energy assistance are *not* exempted from the USF component of the Societal Benefits Charge (SBC)

⁶¹ California Public Utilities Commission, [CPUC Approves a New Billing Structure That Will Cut Residential Electricity Prices And Accelerate Electrification](#), May 9, 2024. Accessed on November 25, 2024.

surcharge,⁶² other components of the SBC, or taxes. In an alternative scenario, New Jersey could exempt these customers from paying the USF and SBC surcharges as well as taxes in an effort to reduce their bills.⁶³

Our analysis shows that **exempting low-income customers from USF and SBC surcharges does not impact the effective bills of USF recipients, since USF ensures a certain energy burden target irrespective of underlying bill changes.** Figure 17 shows that exempting low-income customers from the USF surcharge would initially reduce the average low-income household energy bills by approximately \$15 per year (0.8%), while waiving the entire SBC surcharge would reduce bills by \$88 per year (4.5%). **With lower initial bills, these customers would also require lower USF discounts.** As a result, the exemption would not affect the final energy burden of USF recipients. It would also not affect the amount of total funds recovered from other ratepayers as even though the overall USF fund will be lower, they will need to pick up the USF and SBC surcharge payments waived for the low-income customers. Therefore, we do not recommend that LMI customers be exempted from paying the USF and SBC at this time.

It is important to reiterate that under the USF construct, low-income energy bills are limited to a certain percentage of income, therefore bills are dependent only on income and not rate levels.⁶⁴ **USF guarantees that the target energy burden level will be achieved regardless of whether low-income customers are exempt from certain surcharges.** In fact, reducing volumetric rates (in \$ per kWh terms) through waiving surcharges could have the unintended consequence of decreasing rates and customers may respond to the lower rates by increasing their consumption. This could impact the delivery of the energy efficiency and conservation efforts in New Jersey. To avoid these unintended consequences, **“bill discounts” (such as USF) that reduce the total bill are preferable over “rate discounts” that reduce the rates.**

An alternative option would be exempting low-income customers from paying the New Jersey Sales and Use Tax (SUT, 6.625%) on their energy bills. SUT is applied to the total bill after all other charges have been applied. **Waiving SUT would reduce low-income energy bills by**

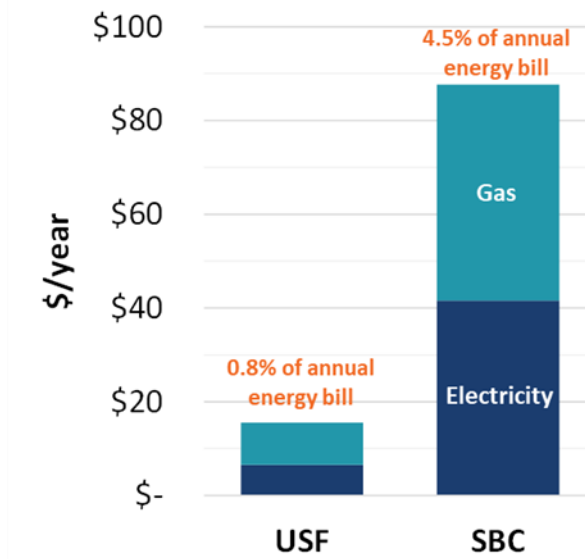
⁶² SBC surcharge collects funding for programs that provide societal benefits such as low-income programs, nuclear decommissioning, and funding for energy efficiency and renewable energy programs. New Jersey’s 1999 electric utility restructuring legislation (EDECA) authorized the NJBPU to permit utilities to continue collecting funds for these types of programs in a restructured utility market through the SBC surcharge. Source: [New Jersey’s Societal Benefits Charge FAQs](#)

⁶³ The rationale for exempting LMI customers from SBC, either partially or in its entirety, would be that LMI customers are not as likely to benefit from programs that support electric vehicles or heat pumps to the extent that these initiatives are utilized by customers with higher incomes.

⁶⁴ This statement is true only until the discount cap of \$185/month is reached.

\$120.16 per year (6.21%) on average. This exemption would decrease the funding needed for USF by a commensurate amount, since low-income customers would have lower bills to begin with. On the other hand, the decrease in tax revenue would be offset by contributions from other taxpayers. While this option does not improve the energy burden outcomes for the low-income customers, it would reduce the USF contributions paid by the non-low-income customers, and lead to the recovery of the tax revenue in a more progressive manner.

FIGURE 17: POTENTIAL REDUCTION IN THE INITIAL ANNUAL ENERGY BILL FOR LOW-INCOME CUSTOMERS IF EXEMPTED FROM USF AND SBC SURCHARGES*



*Note: Exempting low-income customers from USF and SBC surcharges does not impact the effective bills of USF recipients, since USF ensures a certain energy burden target irrespective of underlying bill changes. With lower initial bills, these customers would also require lower USF discounts.

VII. Conclusions

This study provides a comprehensive review of New Jersey's energy assistance programs and rates and presents alternative policy and rate options to improve energy affordability in New Jersey. Our jurisdictional scan provides context for evaluating New Jersey's energy assistance programs and shows that New Jersey offers a wide variety of programs addressing needs through different mechanisms and is positioned ahead of many peers particularly due to the Universal Service Fund (USF). USF serves as the primary mechanism for most low-income customers to lower their bills outside of federal assistance, with targeted discounts tailored to each household's needs. New Jersey has opportunities to advance its programs and enhance its rate offerings to support a broader base of customers and safeguard LMI customers from potential future rate increases. Below, we summarize the study's key findings in two areas: bill assistance programs and alternative rate designs.

Bill Assistance Programs

New Jersey is leading the way among its peer states with its robust and highly effective energy assistance programs. Universal Service Fund (USF), New Jersey's major bill assistance program besides the federal LIHEAP, effectively addresses affordability by tailoring support to each low-income customer's specific needs. Our quantitative analysis shows that low-income customers currently receiving USF assistance experience a median energy burden of less than 4%, which is the program's energy burden target level.⁶⁵ Our analysis further reveals that despite having a monthly cap of \$185 per household, USF reduces the electricity and gas energy burden to target levels for 90% of participating households, indicating that the program is highly effective in achieving its targets.

New Jersey can extend its reach to more low-income customers to increase USF participation. While USF is effective in addressing the energy burden for low-income households and New Jersey with its experience administering and managing this program is well positioned to aid its low-income customers, our analysis indicates that only 20% of eligible households participate in USF. This highlights an opportunity to extend its reach to more low-income families, especially

⁶⁵ USF provides bill credits to eligible customers to ensure that a customer's energy burden does not exceed 2% for electricity and 2% for gas, or 4% if heating with electricity.

considering potential rate increases in the future which will be brought about by investments supporting decarbonization and grid modernization. Low-income customers may lack the resources to adopt new technologies such as heat pumps, electric vehicles, solar panels, as well as energy efficiency measures that could potentially reduce their overall energy bills as shown in the 2022 Ratepayer Impact Study.⁶⁶ Consequently, low-income households may find themselves shouldering the cost of the decarbonization investments without immediately reaping the benefits, leading to increased financial strain.

This study has examined these considerations, highlighting areas for improvement, such as increasing USF participation and the associated effects on the program funding requirements. While the annual funding needs would rise with increasing participation, an average New Jersey household would continue to contribute only a small fraction of their bills towards USF (see Section VI for details). This suggests that New Jersey should continue its efforts to boost participation through targeted outreach, involving a coordinated initiative from the NJBPU, utilities, and other state and local agencies. New Jersey should also continue to monitor the funding needs as well as the bill impacts on non-participating customers.

New Jersey should consider developing bill assistance programs specifically designed for moderate-income customers. As energy rates and assistance program expenditures rise, moderate-income customers—particularly those with incomes only slightly above the low-income threshold—are at risk of facing significant energy burdens. To address this issue, this study also explored potential options for developing bill assistance programs specifically designed for moderate-income customers, including the introduction of a new bill discount program and a tier within the USF for this demographic in conjunction with energy efficiency programs.

New Jersey can consider moving the funding of the USF to the tax base as the fraction of customers requiring assistance is likely to increase. Currently, all New Jersey customers contribute to the funding of the USF. This study also explored the idea of moving the funding of USF to the tax base, which would allow for a more equitable recovery of these charges. This shift may be more helpful for those at the moderate-income level (i.e., their contribution to USF may be more equitable depending on their income) as low-income customers' bills are already moderated by USF. It is important to note that while this approach is more progressive, it would require legislative action.

⁶⁶ S. Sergici, G. Kavlak, K. Spees, R. Janakiraman, [New Jersey Energy Master Plan Ratepayer Impact Study](#), August 2022.

Alternative Rate Designs

New Jersey may consider gradually moving away from inclining block rates towards more cost-reflective rate designs. The default electricity rate for residential customers in New Jersey is an inclining block rate (IBR), a rate structure historically offered to encourage conservation. As discussed in more detail in Section II, IBRs can potentially incentivize customers to reduce their usage, but this effect is contingent upon various factors. Importantly, IBRs can hinder cost-effective electrification of heating and transportation, as higher electricity consumption from electrification will move customers into the higher-priced blocks of the IBR. This study recommends New Jersey to evaluate the effectiveness of the IBRs in incentivizing conservation and consider gradually flattening its IBR.

New Jersey should start testing TVR options with a goal to make these rates widely available to customers when AMI meters are fully deployed. As AMI deployment advances in New Jersey, the state may benefit from transitioning to TVRs. New Jersey utilities should start testing TVR options to ensure they can offer these rates to all residential customers promptly when AMI meters are deployed. TVRs provide price signals that fluctuate throughout the day, more accurately reflecting the true costs of providing electricity to customers. When customers shift their usage from higher-priced periods to lower-priced periods in response to the price signals, it results in lower electricity system costs and helps slow down electricity rate increases for all customers. Evidence shows that low-income customers respond to TVR price signals just as effectively as other residential customers and can achieve similar cost savings after transitioning to TVRs.⁶⁷

New Jersey should continue to monitor the merits of income-tiered fixed charges, but no immediate changes are necessary given that similar affordability benefits are being achieved through USF. This study also explored income-tiered fixed charges as an electricity rate design option to address energy affordability. This option involves differentiating the monthly fixed charge based on income levels, which would involve increasing fixed charges for higher-income customers. Low-income customers would be exposed to lower volumetric charges as well as lower fixed charges, improving affordability. However, lower volumetric charges may impact conservation incentives negatively, while advancing electrification incentives. This study found

⁶⁷ The Maryland PC 44 TOU pilot administered by three Maryland utilities included an LMI customer group and found that on average, customers on the TOU rates, including LMI customers, enjoyed an annual bill savings of five to ten percent. Source: S. Sergici, A. Faruqui, N. Powers, S. Shetty, [PC44 Time of Use Pilots: End-of-Pilot Evaluation](#). The Brattle Group, prepared for Maryland Public Service Commission, 2021.

that the affordability benefits that this option could bring are already achieved through the USF, and this view is supported by stakeholders. In addition, since New Jersey is not ready at this time to undermine conservation signals by reducing volumetric rates, we recommend that the state closely monitor developments in this area, draw lessons from California's experience, and comprehensively evaluate all relevant factors before deciding whether to implement this option.

New Jersey may consider exempting low-income customers from the New Jersey SUT to reduce the USF funding needs, however exempting them from USF and SBC charges would not impact effective bills for USF recipients. Lastly, the study considered the option of exempting low-income customers from USF and SBC surcharges and New Jersey SUT. Exempting low-income customers from USF and SBC surcharges would not impact the effective bills of USF recipients, since USF ensures a certain energy burden target irrespective of underlying bill changes. Waiving surcharges would lower rates for low-income customers, potentially leading to increased consumption, which would go against New Jersey's energy efficiency efforts. To prevent this, "bill discounts" like USF that reduce the total bill are preferable to "rate discounts" that lower rates. On the other hand, exempting low-income customers from New Jersey's SUT would lower their bills and also lower the USF funding needs accordingly. The SUT revenue can be recovered as part of the state tax base, leading to a more progressive recovery.

Appendix A: Energy Assistance Program Examples from Surveyed States

California

Assistance Type	Program	Discount/ Incentive	Eligibility	Funding
Bill Discount	LIHEAP	Heating: \$94–\$1500 Cooling: \$268–\$990	Income below 60% SMI	Federal
	California Alternate Rates for Energy (CARE)	30–35% discount on electric 20% discount on gas	Income below 200% FPG	Ratepayer
	Family Electric Rate Assistance Program (FERA)	18% discount on electric	Income below 200–250% FPG	Ratepayer
EE/Weatherization	Energy Savings Assistance Program	Provides EE and weatherization upgrades	Income below 250% FPG	Ratepayer

Colorado

Assistance Type	Program	Discount/ Incentive	Eligibility	Funding
Bill Discount	LEAP	Heating: \$200–\$1000	Income below 60% SMI	Federal
	Utility Bill Help	Limits total energy bills to no more than 6% of monthly income	Denied from LEAP Currently receives assistance from one of the qualifying benefit programs	Ratepayer
EE/Weatherization	Colorado Affordable Residential Energy Program (CARE)	Provides free home energy efficiency upgrades	Income below 80% AMI and live in participating county	Nonprofit

Hawaii

Assistance Type	Program	Discount/ Incentive	Eligibility	Funding
Bill Discount	H-LEAP	Heating: \$375–\$1400 Cooling: \$375–\$1400	Income below 150% FPG; 200% FPG for weatherization	Federal
EE/Weatherization	Green Energy Money Saver (GEM\$) On-Bill Program	Helps eligible customers reduce electricity costs with EE improvements like rooftop solar and solar hot water	Income below 140% AMI Expected post-installation bill savings need to be at least 10% No disconnection notices in past 12 month	Ratepayer

Illinois

Assistance Type	Program	Discount/ Incentive	Eligibility	Funding
Bill Discount	LIHEAP	Heating: \$170–\$2020 A PIPP benefit plan is also available under their LIHEAP. PIPP includes a level payment plan requiring a minimum monthly payment of 6% of the customers' gross monthly income	Income below 200% FPG	Federal
	Low Income Discount Rates	Gas: 5–83% discount based on utility and income Electric: Expected to begin in 2025	Income below 300% FPL	Ratepayer

Maine

Assistance Type	Program	Discount/ Incentive	Eligibility	Funding
Bill Discount	HEAP	Heating: \$176– \$2530	Income below 60% SMI	Federal
	Low-income Assistance Program (LIAP)	Provides credit on bill based on income and usage	Based on HEAP eligibility	Ratepayer
EE/Weatherization	Maine Housing programs (Central heating improvement, heat pump, weatherization)	EE programs including central heating repair/replacement, heat pump funding, and weatherization upgrades	Based on HEAP eligibility and structural condition of the home	Mortgage revenue bonds and federal funds

Maryland

Assistance Type	Program	Discount/ Incentive	Eligibility	Funding
Bill Discount	MEAP	Heating: \$120–\$2213 Cooling: \$120–\$2213	Income below 175% FPG, 200% FPG for weatherization	Federal
Bill Payment Plan	Electric Universal Service Program (EUSP)	Pays for a portion of customer's monthly bills and places them on a budget billing plan	Income below 200% FPL	Ratepayer and RGGI
EE/Weatherization	EmPOWER Maryland Limited Income EE Program	Provides installation of home energy efficiency measures	Income below 80% SMI	Ratepayer

Massachusetts

Assistance Type	Program	Discount/ Incentive	Eligibility	Funding
Bill Discount	LIHEAP	Heating: \$250–\$600	Income below 60% SMI	Federal
	National Grid bill discount	200% FPG—60% SMI: 32% discount 150–200% FPG: 43% discount 125–150% FPG: 57% discount 100–125% FPG: 64% discount 0–100% FPG: 71% discount	Income below 60% SMI	Ratepayer
EE/Weatherization	Heating System Repair and Replacement Program (HEARTWAP)	Provides emergency heating system repair and replacement	Income below 60% SMI	Federal

Michigan

Assistance Type	Program	Discount/ Incentive	Eligibility	Funding
Bill Discount	MEAP	Heating: \$250–\$600	Income below 60% SMI	Federal
	Home Heating Credit	Provides tax credit to pay for home heating bills	Income below limits published by Michigan Government	Tax Credit
	State Emergency Relief (SER)	Helps low-income households pay part of their energy bills in emergency situations	Demonstrated need of assistance and income below 150% FPL	Combination of federal and state sources

New Mexico

Assistance Type	Program	Discount/ Incentive	Eligibility	Funding
Bill Discount	LIHEAP	Heating: \$70–\$490 Cooling: \$70–\$490	Income below 150% FPG, 200% FPG for weatherization	Federal
EE/Weatherization	NM EnergySmart Program	Provides weatherization services	Income below 200% FPG	Federal

New York

Assistance Type	Program	Discount/ Incentive	Eligibility	Funding
Bill Discount	HEAP	Heating: \$21–\$976 Cooling: \$1–\$1000	Income below 60% SMI	Federal
	Energy Affordability Program (EAP)	Provides tiered monthly add-ons to HEAP bill credit: Tier 1: \$40.91 heat, \$3 non-heat Tier 2: \$68.35 heat, \$3 non-heat Tier 3: \$89.05 heat, \$3 non-heat Tier 4: \$82.85 heat, \$3 non-heat	Automatically enrolled with participation in HEAP	Ratepayer
EE/Weatherization	EmPower+	Provides free energy efficiency upgrades up to \$10k for low-income customers	Income below 80% SMI	State, RGGI, Clean Energy Fund

North Carolina

Assistance Type	Program	Discount/ Incentive	Eligibility	Funding
Bill Discount	LIEAP	Heating: \$300–\$500 Cooling: \$300–\$500	Income below 130% FPG for heat, 150% FPG for cooling, 200% FPG for weatherization	Federal
	Customer Assistance Program (CAP)	Provides a flat monthly bill credit up to \$42	Income based on LIEAP eligibility	Ratepayer

Oregon

Assistance Type	Program	Discount/ Incentive	Eligibility	Funding
Bill Discount	LIHEAP	Heating: \$70–\$490 Cooling: \$70–\$490	Income below 150% FPG, 200% FPG for weatherization	Federal
	Oregon Energy Assistance Program (OEAP)	Provides monthly bill discounts to Pacific Power and Portland General Electric customers	Income below 60% SMI	Ratepayer
	Income Qualified Bill discount	Provides a monthly bill discount ranging from 15–60% for Portland General Electric customers	Income below 60% SMI	Ratepayer

Pennsylvania

Assistance Type	Program	Discount/ Incentive	Eligibility	Funding
Bill Discount	LIHEAP	Heating: \$300–\$1000	Income below 150% FPG, 200% FPG for weatherization	Federal
	Customer Assistance Programs (CAP–PIPP)	Low-income customers make regular monthly payments to a discounted bill that is capped based on income	Income below 150% FPL	Ratepayer
EE/Weatherization	Low-income Usage Reduction Program	Provides weatherization services	Income below 200% FPL with average monthly usage above 600 kWh (500 for CAP customers)	Ratepayer

Virginia

Assistance Type	Program	Discount/ Incentive	Eligibility	Funding
Bill Discount	EAP	Heating: \$185–\$600 Cooling: \$50–700	Income below 150% FPG, 60% SMI for weatherization	Federal
	PIPP	Monthly bill is capped at 10% of income for electric heat customers or 6% for non-electric heat	Income below 150% FPL	Ratepayer

Washington

Assistance Type	Program	Discount/ Incentive	Eligibility	Funding
Bill Discount	LIHEAP	Heating: \$200–\$1000	Income below 150% FPG, 200% FPG weatherization	Federal
	Income Qualified Bill Discount Program	Provides a 15–80% bill discount for NW Natural customers	Income below 80% AMI	Ratepayer
	Low-income Bill Assistance	Provides a tiered bill discount for Pacific Power customers Tier 1: 70% Tier 2: 35% Tier 3: 15%	Tier 1: Income below 75% FPG Tier 2: Income between 76–100% FPG Tier 3: Income between 101–200% FPG	Ratepayer

Appendix B: Details on Program Eligibility

Eligibility is defined based on comparing household income to a percentage of the **federal poverty guidelines (FPG)** and **state median income (SMI)** level. FPG and SMI **depend on the household size**, therefore the eligibility thresholds depend on the household size (see Figure B-1). Because income eligibility thresholds for the programs depend on household size, we developed an approach that identifies the **number of households below a certain income level by household size**.

We obtained the New Jersey household income and household size data from the US Census Bureau. Steps of this analysis included:

- Leverage [American Community Survey \(ACS\) Microdata](#) published by the US Census Bureau to develop household income distributions by household size for the state of New Jersey
- Use LEAD tool methodology as a guide when choosing the survey variables
- Use income eligibility thresholds to estimate number of households eligible for each program

The latest year for which the [American Community Survey \(ACS\)](#) has sufficient income and population data is 2021. 2023 data was not published at the time of this analysis, and 2022 data has been published but it doesn't have the granularity we need to determine an income distribution by household size. Since our income distribution data is in 2021\$, we need to de-escalate the current income thresholds from 2024\$ to 2021\$. We use FRED's [CPI dataset](#) to obtain price escalation data between 2021 and 2024. We calculate overall price escalation based on change in CPI from July 2021 (midyear 2021) to July 2024 (midyear 2024; as of today, we only have data out to April 2024).

FIGURE B-1: INCOME ELIGIBILITY THRESHOLDS FOR NJ PROGRAMS (2023–2024)

	100% of SMI ↓	60% of SMI ↓	250% of FPG ↓	
Household Size	<u>PAGE*</u>	<u>USF/LIHEAP</u>	<u>Lifeline**</u>	<u>Comfort Partners</u>
1	\$73,518	\$44,111	\$52,142	\$37,650
2	\$96,140	\$57,684	\$59,209	\$51,100
3	\$118,762	\$71,257		\$64,550
4	\$141,384	\$84,830		\$78,000
5	\$164,003	\$98,402		\$91,450
6	\$186,625	\$111,975		\$104,900
7	\$190,867	\$114,520		\$118,350
8	\$195,109	\$117,065		\$131,800

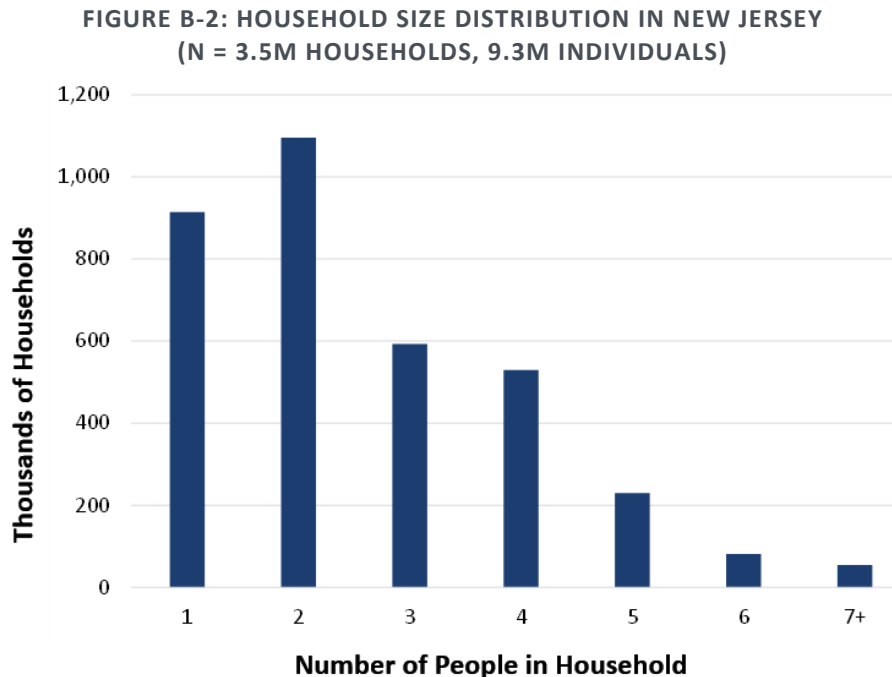
**If you are income eligible for USF/LIHEAP, apply for those programs first and then if still in need seek additional assistance from the PAGE program.*

***Lifeline determines income in terms of married or single only and is for seniors and the disabled.*

Source: NJBPU [Utility Assistance Programs](#), Accessed on August 30, 2024. These values are updated every year.

Household Size Distribution in New Jersey (Figure B-2)

- In 2021, the average household size in New Jersey was **2.6 people/household**
- Nearly $\frac{3}{4}$ of households had 3 people or fewer
- Just 4% of households had 6 people or more

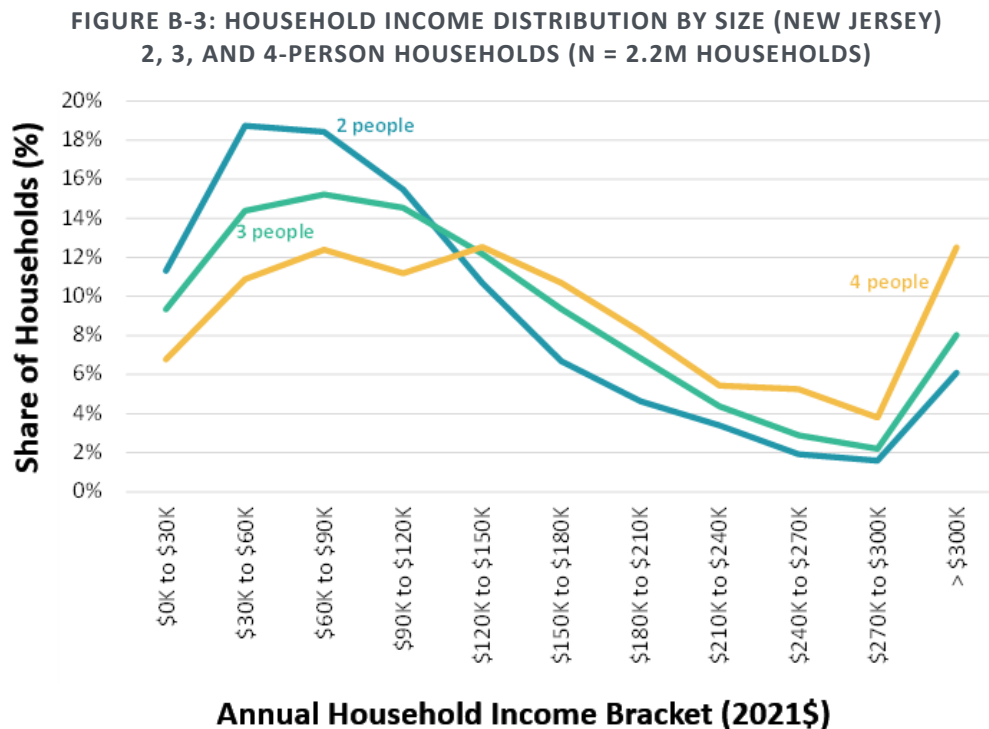


Source: [ACS 1-Year Estimates Public Use Microdata Sample \(2021\)](#), American Community Survey, United States Census Bureau.

Income Distribution in New Jersey (Figure B-3)

Income distributions vary significantly by household size with larger households tending to earn more than smaller households.

- 50% of 2-person households earn less than \$90,000 per year compared to 40% of 3-person households and 30% of 4-person households
- Just 6% of 2-person households earn more than \$300,000 per year compared to 8% of 3-person households and 13% of 4-person households



Source: [ACS 1-Year Estimates Public Use Microdata Sample \(2021\)](#), American Community Survey, United States Census Bureau.

Calculation of Lifeline Eligibility

We calculated the number of households eligible for Lifeline by segmenting eligible households into two groups: (1) Households headed by people over 65 who meet the listed income qualifications and (2) Household heads by disabled people between the ages of 18 and 64. We used the ACS [Microdata](#) to estimate the number of 65+ households that met the income qualifications and data from the [Social Security Administration](#) to estimate the number of disability claimants in New Jersey. Note that this is a ballpark estimate and uses many assumptions and approximations.

Results (Table B-1)

- **26%** of New Jersey households are below the 50% SMI threshold
- **42%** of New Jersey households are below the 80% SMI threshold

TABLE B-1: SHARE OF NEW JERSEY HOUSEHOLDS BELOW VARIOUS SMI-BASED THRESHOLDS

SMI-Based Threshold (% of SMI)	Count of New Jersey Households	Share of New Jersey Households (%)
10%	146,141	4.2%
20%	313,902	9.0%
30%	506,869	14.5%
40%	700,313	20.0%
50%	894,793	25.6%
60%	1,090,596	31.2%
70%	1,272,721	36.4%
80%	1,474,616	42.2%
90%	1,652,043	47.2%
100%	1,822,071	52.1%

Source: “[ACS 1-Year Estimates Public Use Microdata Sample \(2021\)](#)”, American Community Survey, United States Census Bureau.

TABLE B-2: UTILIZATION OF ENERGY ASSISTANCE PROGRAMS

Program	Eligibility Criteria	Number of Participants	Number of Eligible Households	Percentage of Eligible Households Participating
BILL ASSISTANCE				
LIHEAP	60% SMI	227k	1.1M	21%
USF	60% SMI	222k	1.1M	20%
Lifeline	\$52,142 for Single \$59,209 for Married	168k	544k	31%

Appendix C: Details on Energy Burden Analysis

C.1 Details on the Data Sources

The data used in this analysis were obtained for three program groups: LIHEAP/USF, New Jersey SHARES energy assistance programs, and Lifeline. The data included four distinct data sets: one for recipients of federal LIHEAP assistance and/or state USF assistance, one for recipients of any of the New Jersey SHARES energy assistance programs; and two for recipients of Lifeline assistance. Table C-1 describes these datasets in more detail.

TABLE C-1: OVERVIEW OF DATA SOURCES

Dataset	Granularity	Description	Datapoints
LIHEAP/USF	Household-level, with electricity and gas account numbers	<ul style="list-style-type: none"> Fields: annual electricity & gas bills (without EAP discounts), household income, household size, ZIP code, utility providers, LIHEAP discounts (electric heating, gas heating, electric cooling, emergency and supplemental electricity and gas assistance), USF discounts (electricity, gas) Date range: October 2023–June 2024 ~68,000 households with electricity account only, ~10,000 with gas account only 	213,406
	New Jersey SHARES	Household-level, with electricity and gas account numbers	<ul style="list-style-type: none"> Fields: annual electricity & gas bills (without EAP discounts), household income, household size, ZIP code, utility providers, EAG discounts (electricity, gas), PAGE discounts (electricity, gas), SMART discounts (electricity, gas) Date range: January 2024–June 2024
Lifeline – Utility credits	Account-level (gas or electricity not specified, multiple entries per household possible)	<ul style="list-style-type: none"> Fields: utility provider, Lifeline discount, household income, address (including ZIP code) Date range: July 2023–June 2024 (state financial year) Coverage: Lifeline recipients that received their discount as a credit on their utility bill 	91,427
Lifeline – Tenant checks	Individual-level	<ul style="list-style-type: none"> Fields: Lifeline discount, household income, address (including ZIP code) Date range: July 2023–June 2024 (state financial year) Coverage: Lifeline recipients that do not have a utility account and received their discount as a check 	8,916

Given its wide coverage and the ability for its programs to be stacked with other programs, the LIHEAP/USF dataset was the basis for our analysis. All data on energy bills, household income, and EAP discounts are provided on an annual basis.

C.2 Energy Bills Before and After Discounts

The figures below show the “energy bills” before and after discounts.

FIGURE C-1: EFFECT OF LIHEAP & USF ON ENERGY BILLS

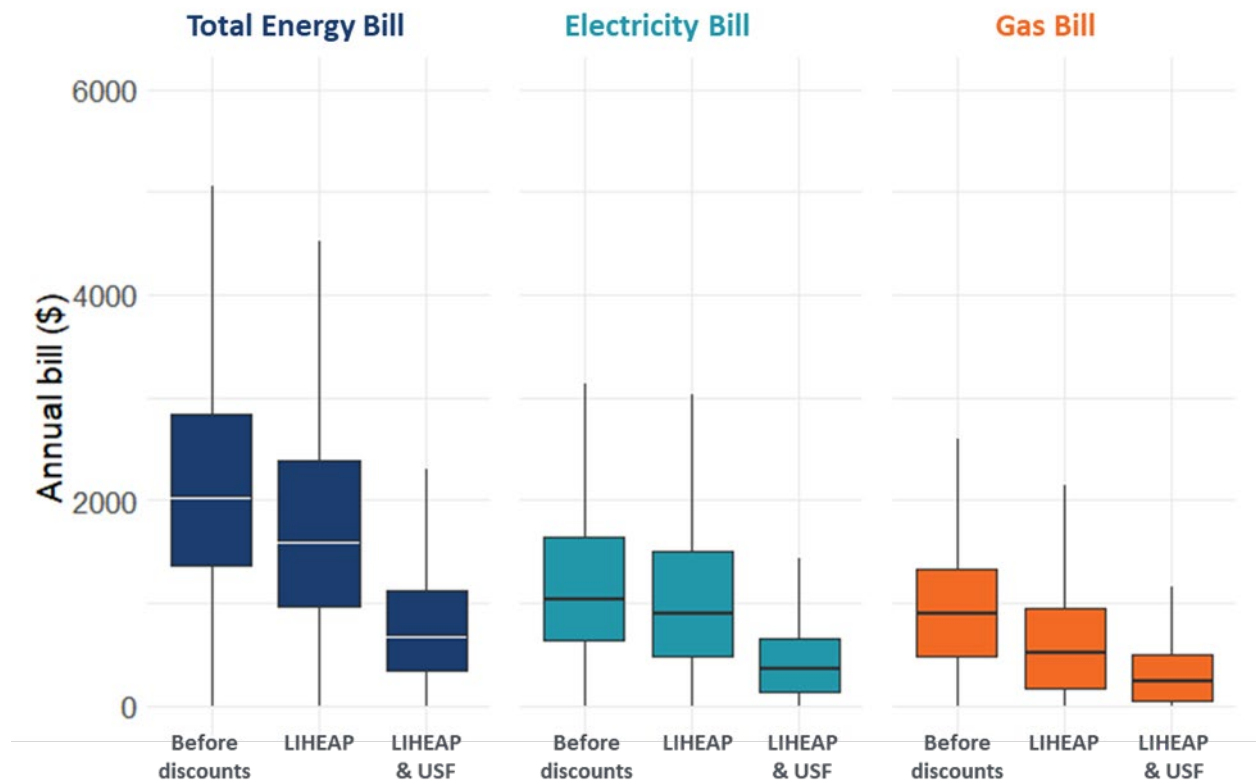


FIGURE C-2: EFFECT OF LIFELINE ON ENERGY BILLS

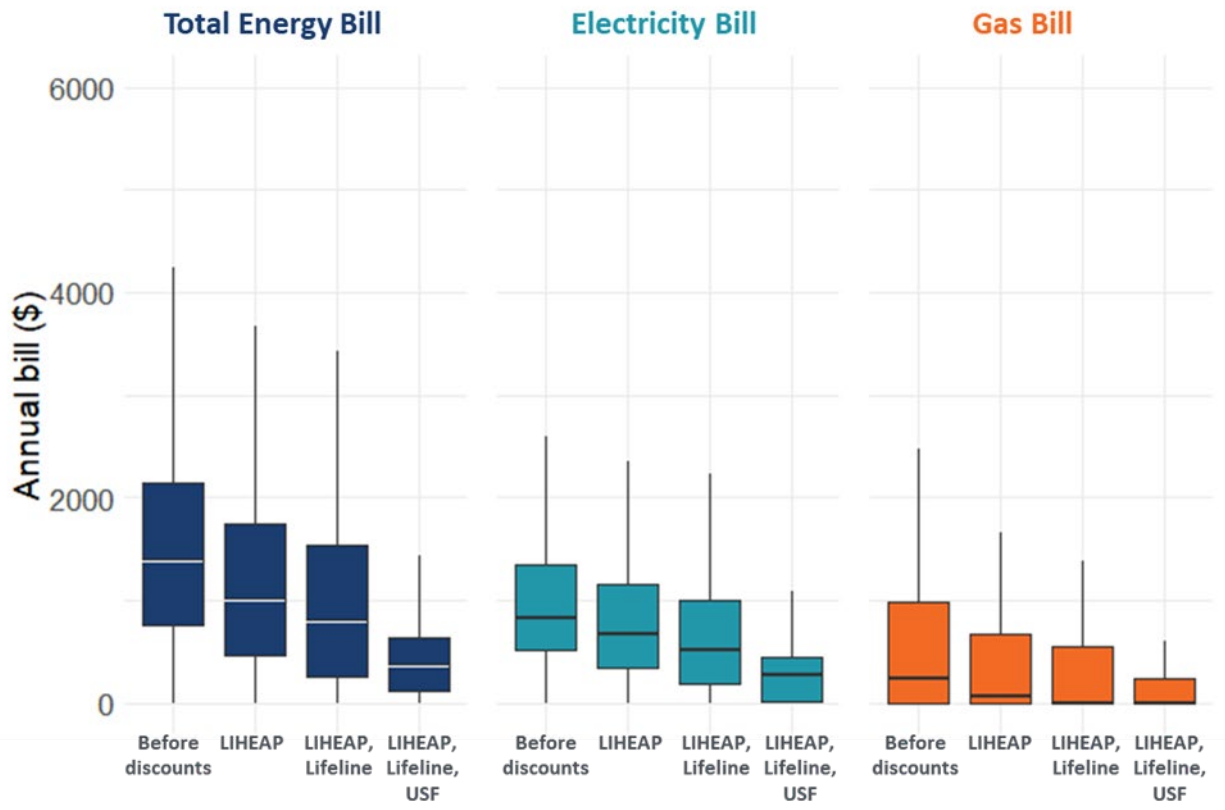
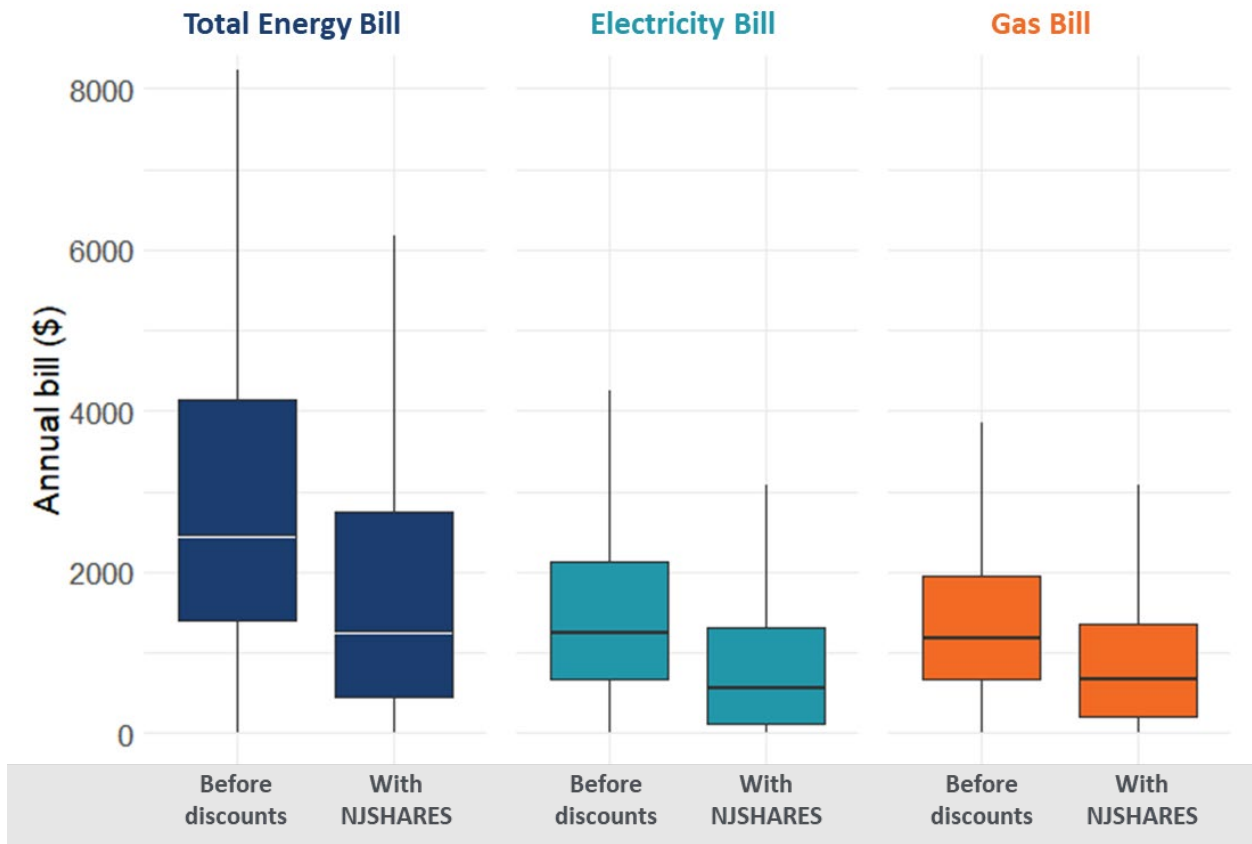


FIGURE C-3: EFFECT OF NEW JERSEY SHARES PROGRAM ON ENERGY BILLS

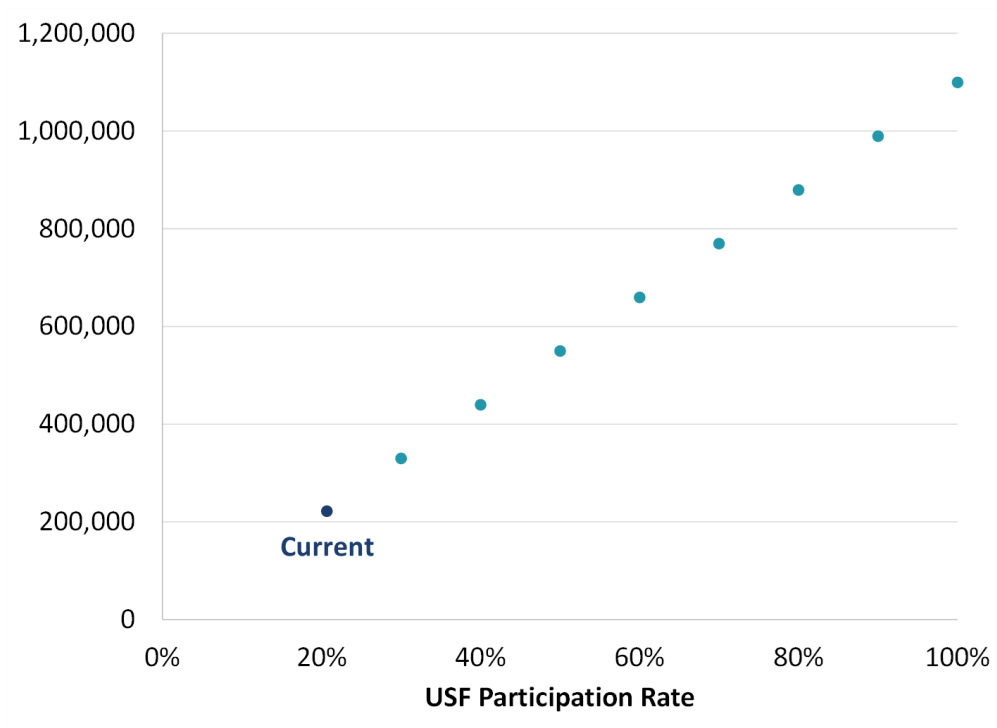


Appendix D: Details on Analysis of Alternate Bill Assistance Program Designs

D.1 Details on Increasing USF Participation

Figure D-1 shows the number of households receiving USF discounts under different USF participation rates, assuming no change in the eligible population. At 100% participation, all 1.1 million households that are eligible for USF receive either a gas or electricity discount, or both.

FIGURE D-1: NUMBER OF HOUSEHOLDS RECEIVING USF DISCOUNTS BY USF PARTICIPATION RATE



To estimate the total USF funding requirements under different USF participation rates as presented in Figure 13, we first estimated the USF funding requirements for electricity and gas discounts separately. Since USF discount amounts vary household to household based on each household’s energy burden, we projected these funding requirements using estimates of average per-household electricity and gas discounts based on the average discounts we observed in 2023/24.

We derived the average 2023/24 discounts using the total USF budget for 2023/24 of \$134.5 million, total NJ electricity and natural gas consumption,⁶⁸ and the 2023/24 USF electricity and gas surcharges. We varied the share of the total USF budget that was spent on electricity discounts versus gas discounts until the USF surcharges we derived matched the surcharge values for 2023/24. We then divided our estimates of USF spending on electricity and gas by the number of USF recipients in 2023/24 to obtain the average discounts for 2023/24. Finally, we used the average 2023/24 discounts to estimate spending at higher participation rates by multiplying them by the number of projected USF participants as displayed in Figure 13. Table D-1 summarizes the key inputs for this analysis.

TABLE D-1: INPUTS FOR FUNDING ESTIMATE DERIVATION

Input/Estimate	Value
2023/24 USF funding	\$134.5 million
2023/24 USF recipients	222,182
2023/24 USF electricity surcharge (before sales tax)	\$0.001243/kWh
2023/24 USF gas surcharge (before sales tax)	\$0.0108/therm
Funding estimate for electricity discounts	\$85 million
Funding estimate for gas discounts	\$50 million
Derived average electricity discount	\$374 /year
Uncertainty applied	± 14.5%
Derived average USF gas discount	\$218 /year
Uncertainty applied	± 10.2%

Figure D-2 and Figure D-3 display our USF spending estimates for electricity and gas discounts, respectively. To obtain lower and upper bound estimates, the energy burden dataset was used to generate a range of alternate average per-household discount values, and the percent difference between those estimates was used as a measure of uncertainty and applied to our central estimates. The final ranges widen as the USF participation rate increases—this is expected, as the USF discount administered per household depends on that households’ energy

⁶⁸ The USF electricity surcharge is levied across all electricity consumers, including industrial and commercial. The USF gas surcharge is levied across all natural gas consumers except the electric power sector. The total consumption figures used here reflect this.

burden. Since there is no data on the energy burden of households that *do not* currently receive EAP benefits, the uncertainty around USF funding estimates increases as more of such households are projected to receive USF support.

FIGURE D-2: ESTIMATED ANNUAL USF SPENDING ON ELECTRICITY DISCOUNTS UNDER ALTERNATE USF PARTICIPATION RATES

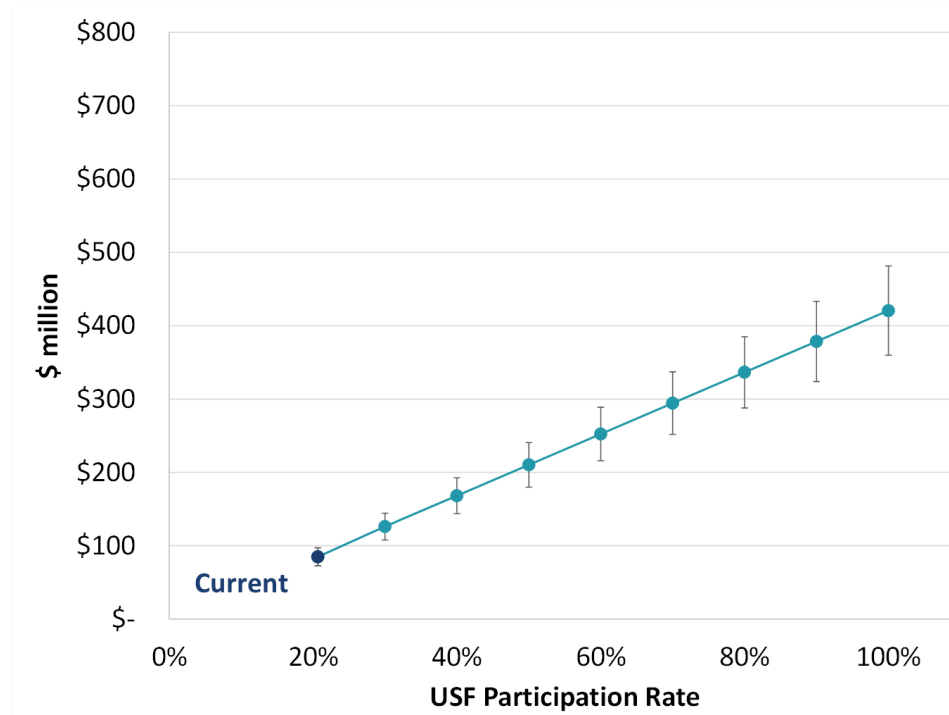
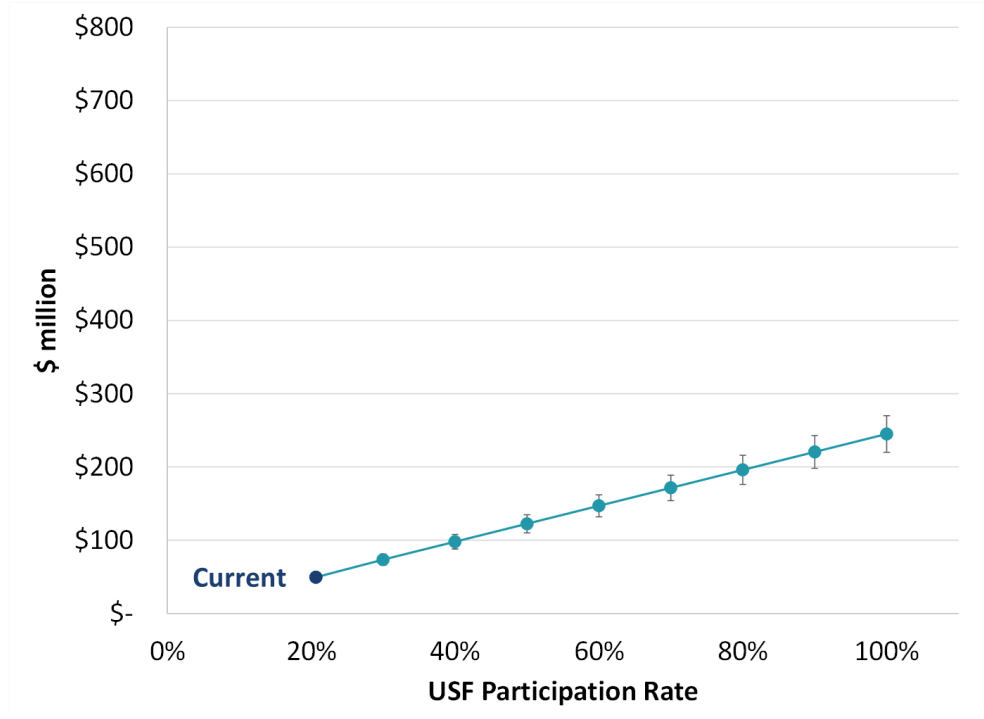


FIGURE D-3: ESTIMATED ANNUAL USF SPENDING ON GAS DISCOUNTS UNDER ALTERNATE USF PARTICIPATION RATES



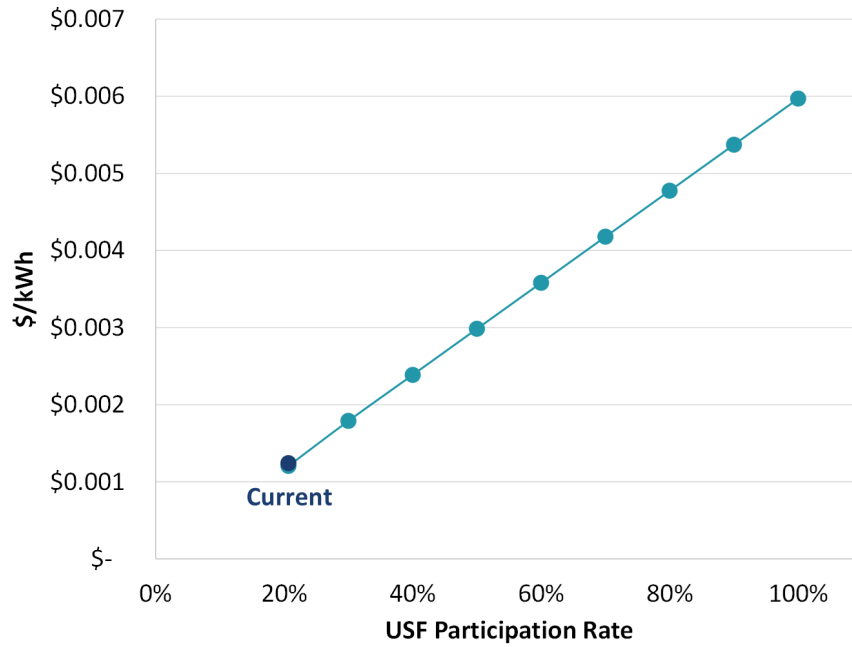
To estimate the total annual surcharge payments per household presented in Figure 14, it was necessary to estimate USF electricity and gas surcharges as well as average household electricity and gas consumption. We estimated these values where surcharges are levied against all consumers. To estimate the surcharges, we divided electricity and gas USF funding requirements by the total NJ electricity and gas consumption, respectively. Figure D-4 and Figure D-5 show the projected USF electricity and gas surcharges, respectively, for these scenarios under different participation rates.

Total annual surcharge payments per household were calculated by multiplying the derived surcharges by average NJ household electricity and gas consumption (Table D-2). The average electricity and gas rates used to determine the surcharge’s share of total NJ energy bills were calculated as a weighted average of rates across NJ utilities. Table D-2 outlines the key inputs used to derive both the projected USF surcharges and estimated annual surcharge payments.

TABLE D-2: INPUTS FOR SURCHARGE PAYMENT CALCULATION

Input		Value	Source
Average NJ household energy consumption	Electricity	8,263 kWh	RECS 2020 ⁶⁹
	Gas	660 therms	
Total NJ energy consumption	Electricity	70.5 TWh	EIA ⁷⁰
	Gas	4.6 billion therms	
Average NJ rates	Electricity	19.69 c/kWh	EIA ⁷¹ & NJBPU data
	Gas	\$1.3058/therm	

FIGURE D-4: ESTIMATED USF ELECTRICITY SURCHARGE UNDER ALTERNATE PARTICIPATION RATES

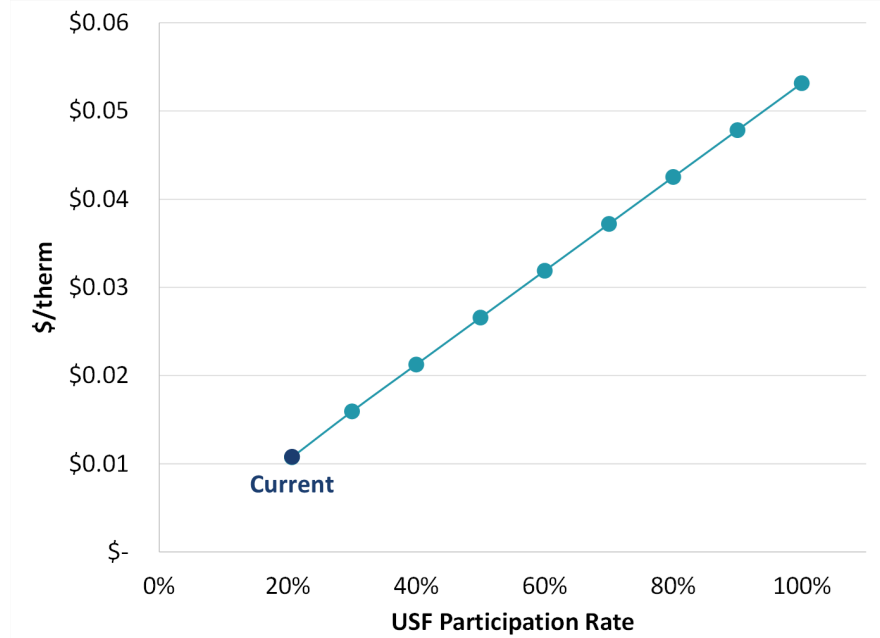


⁶⁹ US Energy Information Administration Residential Energy Consumption Survey (RECS), [“Table CE2.2 Annual household site fuel consumption in the Northeast—totals and averages, 2020,”](#) March 2024.

⁷⁰ US Energy Information Administration, [Retail Sales of Electricity, EIA-861/EIA-861M](#), October 2024; [New Jersey Natural Gas Consumption by End Use](#), September 2024.

⁷¹ US Energy Information Administration, [Natural Gas Annual Respondent Query System, EIA-176](#), September 2023.

FIGURE D-5: ESTIMATED USF GAS SURCHARGE UNDER ALTERNATE PARTICIPATION RATES



D.2 Details on Increasing USF Discount Cap

To analyze the effects of a potential energy bill increase on the energy burdens of USF recipients, we considered the 181,625 households⁷² in our dataset that receive USF discounts, at or below the current discount caps of \$180/month for electricity and gas accounts separately, or \$185/month together.

To calculate the percentage of households that reach the USF target, we calculated new energy bills for each household under each bill increase scenario and reapplied all relevant discounts besides USF. We then calculated the electricity and gas burden of each household before applying USF and calculated the USF discount required to bring these figures to the target of 2% (or 4% if the household is electricity-only). Finally, we calculated the share of total households whose actual USF discounts in 2023/24 were greater than or equal to the required USF discounts in each scenario. To estimate the cap required to keep coverage at current levels of 90%, we identified the discount cap value at the 90th percentile under each scenario.

⁷² As shown in Table 12, there are 208,658 households in our dataset who receive some form of USF funding. The subset analyzed here excludes households that appear as receiving USF discounts above the discount cap and households whose energy burdens remain above target although they received USF discounts below the discount cap. In both cases we assume the presence of these households in the data set is due to an administrative or data error.