

An Economic Analysis of SB26-002, Energy Affordability Act

Introduction

Households depend on electricity for temperature control, communication, lighting as well as basic health and safety needs. Most households in Colorado receive electricity from Investor Owned Utilities (IOUs). There are two main ones in Colorado; Black Hill Energy and Public Service Company of Colorado (Xcel Energy). Together, these two companies serve over 4.1 million individuals in Colorado (Xcel, 2025) (Black Hills Energy, 2023) .

IOUs in Colorado are not explicitly required to charge uniform residential rates across their service territories. However, under cost of service regulation implemented by the Colorado Public Utilities Commission (PUC), residential electricity rates are approved as uniform average cost tariffs within each service territory (Black Hills Energy, 2024).

IOUs set electricity prices uniformly for residential consumers. Uniform pricing of essential services ignores differences in ability to pay. This generates unequal welfare impacts across income groups

Senate Bill 26-002 proposes a “First Allotment of Residential Electricity” (FARE) program for IOUs. It proposes a minimum level of electricity provided at a marginal cost based rate for low-income customers. This would replace the current average cost based rate for the specified minimum level of electricity.

Importantly, the bill prohibits utilities from shifting the resulting revenue losses onto other customers. The bill instead requires the utility company to reduce profits accordingly.

In doing so, SB26-002 embeds redistribution directly into its regulated rate design. The goal of the bill is not economic efficiency. Rather it is to ensure that essential electricity needs are met at the lowest economically efficient price.

The analysis in this paper supports adopting SB26-002 with amendments. These amendments should clarify the minimum allotment of electricity and strengthen enrollment mechanisms.

Analysis

The electricity sector operates as a natural monopoly. Electricity provision is characterized by large, long term fixed investments in generation, transmission and distribution infrastructure. As a result, the marginal costs of supplying additional electricity are relatively low. Furthermore, average costs decline as output increases. Consequently, the duplication of poles, wires and substations is economically inefficient.

For this reason, IOUs are granted exclusive service territories and report their total costs to the PUC. The State regulates IOUs through cost of service regulation. The PUC approves the IOUs residential rates that allow them to recover those costs plus an authorized return on invested capital.

In simplified terms this can be expressed as;

$$Rate_{res} = \frac{F+VC+ROE \times Rate\ Base}{Q}$$

Here, F = fixed costs (costs of infrastructure ect), VC= variable costs (fuel costs, purchased power, operations and maintenance (O&M) costs), ROE = return on equity which is the allowed profit rate that a utility company can earn. It is set by the Public Utilities commission and simply is their allowed profit percentage.

Finally, Q represents forecasted electricity sales from a provider's network over a measuring period (Black Hills Electricity, 2019). This structure promotes financial viability and productive efficiency. However it is distribution-neutral. Rates are set to recover costs uniformly, rather than account for income differences (Horowitz & Lave, 2014).

The rate is determined by dividing required revenue by predicted electricity sales. Consequently, the rate is effectively the average cost of producing electricity. Average Cost Pricing does not account for income heterogeneity among customers.

Bill Analysis

Short-run demand for electricity is highly inelastic. This means that, in economic terms, electricity is a necessity (Mubiinzi et al., 2024). Consequently, low-income households are unable to significantly reduce consumption in response to higher price levels without sacrificing basic services.

SB26-002 restructures how electricity consumption is priced for income qualified households. In doing so, it introduces an explicitly redistributive element to the electricity pricing protocol. The bill defines marginal cost as the incremental cost of providing one more unit of electricity including fuel, purchasing power, O&M, incremental capital additions, overhead, taxes and fees;

$$mc = c_{fuel} + c_{purchased} + c_{O\&M} + c_{capital}^{inc} + c_{overhead}^{inc} + c_{tax\ \&\ fees}$$

SB26-002 requires utilities to charge income qualified customers marginal costs for a minimum block of electricity that covers basic needs. By pricing the first block of electricity at marginal cost, the FARE program improves distributional equity for basic household electricity use. Consumption for basic goods such as heating, cooling, refrigeration and lighting would be priced at the marginal cost level.

As short-run residential electricity demand is inelastic, the policy is unlikely to generate large increases in the usage of individual households. If it did, they would not be priced at the marginal cost level. Instead, benefits accrue primarily as lowered electricity bills to income-qualified households.

The bill defines “income-qualified Utility customer” by referencing the Colorado Revised Statutes Title 40 § 40-3-106 (d)(II). The definition includes households earning up to 200% of the federal poverty line, less than 80% of the area median income or meeting other eligibility criteria by the Department of Human Services. This implies that a substantial share of Colorado households are eligible, with over 450,000 renter households potentially qualifying (White Paper, 2024).

The effectiveness of the program would depend on enrollment design. Automatic enrollment would result in high participation and a substantial redistributive impact. Whereas enrollment mechanisms that require active application or impose administrative burdens would reduce participation and limit the redistributive impact.

Residential electricity accounts for 20.7% of total electricity use in Colorado (EIA, 2025). Thus, even high program participation would likely reduce overall utility profits by a limited margin.

The bill does not specify the size of this minimum allotment. Instead it delegates this decision to the IOUs. This introduces uncertainty into both the economic impact and the distributional effects of the policy. A larger block would increase the consumer benefits and revenue losses, while a smaller block would limit both.

SB26-002 explicitly prohibits utilities from increasing rates on other customers to offset lost revenue. Instead the IOU must reduce profits by the amount of revenue forgone. This makes the economic incidence of the policy fall primarily on their shareholders. Thus the policy represents a direct redistribution from regulated capital returns to low-income customers.

In a capital intensive industry such as electricity, expected returns influence both the timing and scale of infrastructure investment. Even relatively small changes in allowed

profitability can affect long run capital allocation (Billingsley & Ullrich, 2011). Consequently the policy introduces a tradeoff between short run affordability improvements against possible long run impacts on grid modernization and system expansion.

Xcel Energy and Black Hills Energy are publicly traded firms. Any reductions in expected profitability may influence share prices. This could affect investor perceptions and potentially increase the cost of capital in future regulatory proceedings.

Conclusion

Colorado's average residential electricity bills are among the lowest in the United States (Bridges & Bedrich, 2026). Nevertheless, uniform pricing still places a disproportionate burden on low-income households (Sheehan, 2025). Colorado does operate low-income utility subsidies such as the LEAP program. However these subsidies address income deficits directly, rather than altering the pricing structure.

The analysis of this paper indicates that SB26-002 should proceed. Although the policy would reduce utility profits, the economic impact on IOUs would be manageable. This is reflected by the limited share of consumption affected. In contrast, the benefits to low-income households would be substantial. The program would partially reduce the financial strain associated with utility bills.

There should be particular attention paid to defining the minimum service block and designing automatic enrollment mechanisms. With these safeguards, the FARE program is likely to meet its stated social and economic objectives. It represents a sound policy step toward improved energy affordability in Colorado.

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