



The lifeline electricity tariff classification policy in Ghana: a hit or miss!

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- The study provides evidence on lifeline electricity tariffs in Ghana using data from a survey involving 1098 households, 10 focus group discussions, and five expert interviews. Mixed method approach was used to identify who benefits from the policy (poor or non-poor households), examine the welfare impact and the effect of the change in the lifeline tariff threshold
- We found that poor households benefit from the electricity lifeline tariffs compared to non-poor households, but the beneficiaries are few, and many poor households are not aware of the lifeline tariff policy. Also, lifeline tariffs have some perceived positive welfare outcomes on education, healthcare, food, and water. Finally, the reduction in threshold (from 50kwh to 30 kwh) has increased consumption bunching, forcing energy deprivation rather than energy efficiency.
- We recommend a redesign of Ghana's lifeline tariff into a hybrid, better-targeted, and less "cliff-edge" protection package. The regulator can keep the lifeline band but soften the price jump after the threshold by using micro-steps and a near-threshold cushion. Targeting leakages and exclusions can be fixed by ensuring one meter per household and informing the eligibility criteria with socio-economic data. By implementing low-cost energy-efficient appliances interventions and increasing policy awareness through public education, more poor households can benefit from the lifeline tariff policy.

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Introduction

In order for utilities to recover long term cost, the most efficient pricing sets price equal long term marginal cost. Reforming tariffs to this principle often leads to steep increases in electricity prices (Mpholo et al., 2020). While many developing countries have built infrastructure for electricity supply, many households are unable to afford and remain deprived of electricity (Quartey et al., 2022). To offer minimum affordable service for poor households to meet basic electricity needs, Lifeline tariff rate is set below the marginal cost.

Fundamentally, while charging higher rate for high consuming class, the lifeline tariff policy enables poor households to access a minimum amount of electricity at a low cost. It is a long-term approach to improve home energy support programs for households facing vulnerability (Wilson et al., 2023). Lifeline tariff can therefore be seen as a social protection tool, which helps to ensure that the poorest families can afford essential energy services like lighting, cooking, and essential appliances. Consistent with the SDGs, lifeline tariffs help promote inclusive development, social justice, reduce energy poverty, enhance political stability, and potentially improve energy efficiency.

This study provides evidence on Ghana's lifeline tariff policy, answering three main research questions: (1) Does the lifeline tariff benefit non-poor households more than poor households? (2) How does the lifeline tariff policy contribute to the welfare of poor households? (3) What is the impact of the reduction in the lifeline tariff band from 0-50kWh to 0- 30kWh on poor households?

The Ghana case

Lifeline tariffs and energy sector reforms are inseparably linked, especially as Ghana grapples with debt, inefficiencies, and inequitable access to electricity. Ghana started implementing the lifeline tariff policy before the 1990s. Since then, the policy has seen several reviews. Historically, the threshold began with 0-100kWh but for the most part has been 0–50 kWh until it was reduced to 30 kWh in 2022. The rationale was to align subsidies for low-income users while minimizing fiscal burdens on utilities such as ECG and NEDCo (Kumi, 2021). Yet, electricity access has expanded by over 86 percent nationally (Energy Commission, 2024), raising questions about whether the lifeline effectively targets the poor (World Bank, 2022). When the lifeline tariff band was reduced from 0-50kWh to 0-30kWh in September 2022, the rate was pegged at Ghp 79.530. By October 2025, the rate had increased to 80.4389. The current rate is Ghp 88.3713 since January 2026.

The Public Utilities Regulatory Commission (PURC) reduced the threshold to enhance utility revenue generation and improve targeting. The importance of the

energy sector in citizens' welfare is seen in the fact that the lifeline policy was one of the key elements of the Poverty and Social Impact Analysis (PSIA) in Ghana's preparation of the Public Sector Reform's Poverty Reduction Strategy in 2003. However, reducing the lifeline threshold from 50 to 30 kWh/month would have negative consequences for poor households. Also, the reduction is expected to lead to a decrease in the number of beneficiaries and deepen energy poverty. If nothing is done to mitigate these negative effects, then the lifeline tariff as a social protection mechanism will be weakened as many poor households consume over 50kwh/month, especially those that use shared meters (Amaka-Okyerere et al., 2025; Sustainable Energy for All, 2020).

Methodology

The study employed a mixed method approach, using data from a survey of 1098 households and 10 focus group discussions in 10 districts in the Greater Accra and Central regions of Ghana based on ECG demarcations. Five expert interviews were also conducted. The districts covered in the Greater Accra region include Adenta, Dodowa, Mampong Dansoman, Achimota, and Amasaman and Kasoa North, Kasoa South, Winneba, and Cape Coast in the Central region.

For beneficiary profiling, we defined a three-level treatment based on monthly electricity consumption (0–30 kWh, 31–50 kWh, and >50 kWh) and estimated a multinomial logit model to assess how household characteristics such as income, education, dwelling type, and household size predict selection into each consumption block. This enabled us to distinguish whether households within the lifeline band (0–30 kWh) are indeed poor. To examine the impact of lifeline tariff policy on welfare outcomes, we defined two level treatment outcomes (0-30 treated and 31-50 near neighbour control). Conditioning on the propensity score, we ensured that the treated and the control groups have the same characteristics apart from exposure to the treatment (lifeline tariff). We then implemented a double-robust inverse probability weighting regression adjustment (DR-IPWRA) to estimate the effect of the treatment on electricity bill, income, education, health, food and water, and mobile data and credit. To assess the impact of the change in the threshold, we implemented a regression discontinuity design at the policy cut-off point and then examined what has happened to households with consumption just above the 30-kWh threshold. We implemented several robustness checks to ensure that the results are consistent.

Findings

- **Who benefits from lifeline tariff Policy?** A small share of households benefits from the lifeline tariff. The beneficiaries are poor households found in districts with a heavy concentration of low-income households. They have

smaller households with limited appliance stock and lower education. Fewer households sharing a dwelling also qualify.

- **Welfare effects at 30 kWh threshold.** Lifeline eligibility delivers bill relief, but its broader welfare gains are muted. The electricity bill for households within 0 – 30 kWh band is 56.2% lower than the nearest neighbor (those within the 0-50kWh band). Near the threshold, many households limit consumption to remain below 30 kWh, implying conservation via deprivation rather than efficiency. This crowds out potential positive spill overs to expenditure on education, health, food/water, mobile credit and internet data.
- **Effect of tightening policy from 50kWh to 30kWh.** The discrete price jump after 30 kWh induces bunching just below the cut-off and raises bills sharply for households just above 30 kWh. Given similar socio-economic profiles on either side of the cut-off, the tightening risks distributional inequities—penalizing near-poor or larger households that narrowly exceed 30 kWh.

Policy recommendations

We recommend a redesign Ghana's lifeline tariff into a hybrid, better-targeted and less “cliff-edge” protection package. Specifically, the regulator can do the following:

- Keep the lifeline band but soften the cliff after 30 kWh by introducing multiple micro-bands (e.g., 0–30, 30–35, 35–40 kWh) instead of the single steep jump after the current threshold. This can smoothen increasing block tariff around the threshold and preserve household level conservation incentives while at the same time reducing bill shocks for near-threshold users can be implemented.
- Implement a targeted cushioning for “near-miss” households. For example, automatic, time-limited rebates or credits can be given to customers repeatedly billed in the 30–40 kWh range, who will most likely bunch and deprive themselves of electricity usage.
- Pair pricing with efficiency, not deprivation. The regulator can bundle a lifeline tariff with low-cost but efficient energy appliances and SMS usage alerts to help poor households stay within the 30 kWh limit. In this way, instead of cutting essential services, households can reduce consumption through efficiency. Intervention to make energy efficient appliances affordable to poor households needs to be implemented.
- Targeting leakages and exclusions can be fixed by ensuring one meter per household and informing the eligibility criteria with socio protection register such as LEAP. Currently, separate meters are only given to applicants with

consumption levels of 300KWh and above. This limitation has to be removed to allow lifeline consumers with consumption 0-30kWh to also acquire separate meters.

- Run district-tailored public education to increase awareness of the lifeline policy. Attention should be given to consumers in rural areas and in poor urban communities. The education should focus on the policy provisions and how poor households can remain within the band. Awareness of the policy can enable poor households to take the necessary steps such as avoiding waste and adopting of energy efficient practices to benefit.

References

- Amaka-Otchere, A. B., Mawuko, G., Adebajji, A. O., Quarcoo, M. M., Aziz, F., Dramani, J. B., & Oduro-Ofori, E. (2025). *Toward sustainable energy transition: Understanding electricity-use behavior among low-income urban households in Kumasi*. *African Geographical Review*, 44(5), 479–496.
- Keener, S., & Banerjee, S. G. (2006). *Electricity tariff reform*. In *Poverty and social impact analysis of reforms: Lessons and examples from implementation* (pp. 257–—). World Bank.
- Mpholo, M., Mothala, M., Mohasoa, L., Eager, D., Thamae, R., Molapo, T., & Jardine, T. (2020). *Determination of the lifeline electricity tariff for Lesotho*. *Energy Policy*, 140, 111381.
- Quartey, J., Ametorwotia, W., & Laari, P. (2022). *Household effective demand for electricity in Ghana: Analysis and implication for tariffs*. *Management & Economics Research Journal*, 4(2), 1–24.
- Sustainable Energy for All (SEforALL). 2020. *Energy Safety Nets: A Guide for Policymakers*
- Wilson, E., Ambrose, M., Qian-Khoo, J., Bedggood, R., Rinnovasi, K., Cairns, M., ... Maile, S. (2023). *“It’s a lifeline”: A long-term approach to improving home energy support programs for households facing vulnerability*.