

Consumer Unity and Trust Society (CUTS) International – Zambia

Submission to the Energy Regulation Board

ZESCO's application for the upward adjustment of residential electricity tariffs
effective 1st May, 2019

23rd April, 2019

Executive Summary

ZESCO has applied to increase electricity tariffs, including on residential customers. The average proposed increase between 2018 and 2019, across different tariff bands, is over 100%.

This proposed increase comes on top of large increases already introduced in 2018. Taken together the average increase in tariffs *if the 2019 proposals are adopted in full* will be more than 200% - that is electricity prices for consumers will be three times higher on average. The implications of these steep increases are:

- Between 2018 and 2019 a 12.7% reduction in disposable incomes (“purchasing power”) for the poorest third of Zambians who are on the grid.
- Taken together the 2018 and 2019 changes will reduce the disposable incomes of the poorest Zambians on the grid by more than 20% (20.4%)
- Even “middle income” Zambians on the grid will experience a 12.6% hit to their incomes.
- Poorer Zambians will be hit more than twice as much as the richest.
- The cumulative effect of the (already implemented) 2018 and (proposed) 2019 increases will push 240,000 people into poverty.
- The 2019 changes alone will increase poverty by 165,000.

There is a good rationale for increasing tariffs. For example, it can help attract much needed investment into the energy sector. However, the rate of increase and the failure to protect poorer Zambians is not good policy. The rate of increase should be phased in more slowly and the poorest Zambians should receive better protection from the changes.

1. Introduction

In response to the Energy Regulation Board's (ERB) call for public comments on ZESCO's application for electricity tariff increases in 2019, we hereby make submissions on the likely adverse impacts of the proposed increases on residential customers' real household income and poverty in Zambia.

In line with the Public Consultation Paper (PCP) guidelines, we make submissions specifically relating to reference 12(b) in the PCP - ZESCO's proposal to increase electricity tariffs for Residential customers.

The specific objective of this analysis is to showcase the likely impact of the proposed residential electricity price increases on household budgets and poverty in Zambia. Specifically, we show both the impacts of the proposed 2019 increases and the cumulative impacts of the 2018 and 2019 increases on household incomes and poverty in Zambia.

The analyses that follow are based on most recent household survey¹ and input-output tables² for Zambia (CSO,2017), as well as ZESCO's proposed increases in the residential tariff rates.

The proposed 106% (weighted average) increase in electricity prices is likely to significantly affect household budgets both directly and indirectly even when we account for consumer behavioural response. The direct effects arise from reductions in household budgets (or expenditure) as a result of increases in expenditure in electricity consumed directly by households (for example for lighting, cooking etc). The indirect effect on the other hand arises when households consume goods and services that use electricity as an intermediate input (for example restaurant services). We therefore incorporate these effects in our analyses and then consider the likely effects on poverty as well.

2. Rapid steep increases in residential prices

Since early 2018, residential electricity prices have increased quite steeply and this is likely to negatively impact household real expenditures and wellbeing. To illustrate the size of the adjustment over the period 2017 to 2019, Table 1 shows the variable prices for residential electricity. As can be seen, all the tariff blocks have significantly more than doubled over the last one and a half years. The average variable tariff increase between 2017 and 2019, if the proposed 2019 changes are implemented, would be more than 200% - in other words variable tariffs would be about three times higher than they were just a few years ago.

¹ The 2015 Living conditions monitoring survey(CSO and World Bank, 2017)

² Input-output tables describe the structure and inter-relationships among economic sectors (including the electricity sector) in Zambia. These inter-connections allow the estimation of the indirect impacts of the electricity price increases on the household sector. The indirect and direct effects together form the total price effects of the electricity price changes.

Table 1: Variable electricity price movements (2017-2019)

2017		2018		2019*	
Bands	K/kWh	Bands	k/kWh	Bands	k/kWh
0-100kWh	0.15	0-200	0.15	0-100	0.47
101-300	0.31	200+	0.89	100-200	0.85
300+	0.51			200+	1.94
Average tariff[#]	<u>0.32</u>	-	<u>0.52</u>	-	<u>1.09</u>

*proposed tariff adjustments

[#] own calculation of simple average variable tariff increases

Therefore, assuming the 2019 proposed adjustments are awarded and ZESCO's residential weight average price increases of 106% is implemented, Zambian households are likely to face adverse effects in their budgets. This is more so considering the prevailing challenging economic environment.

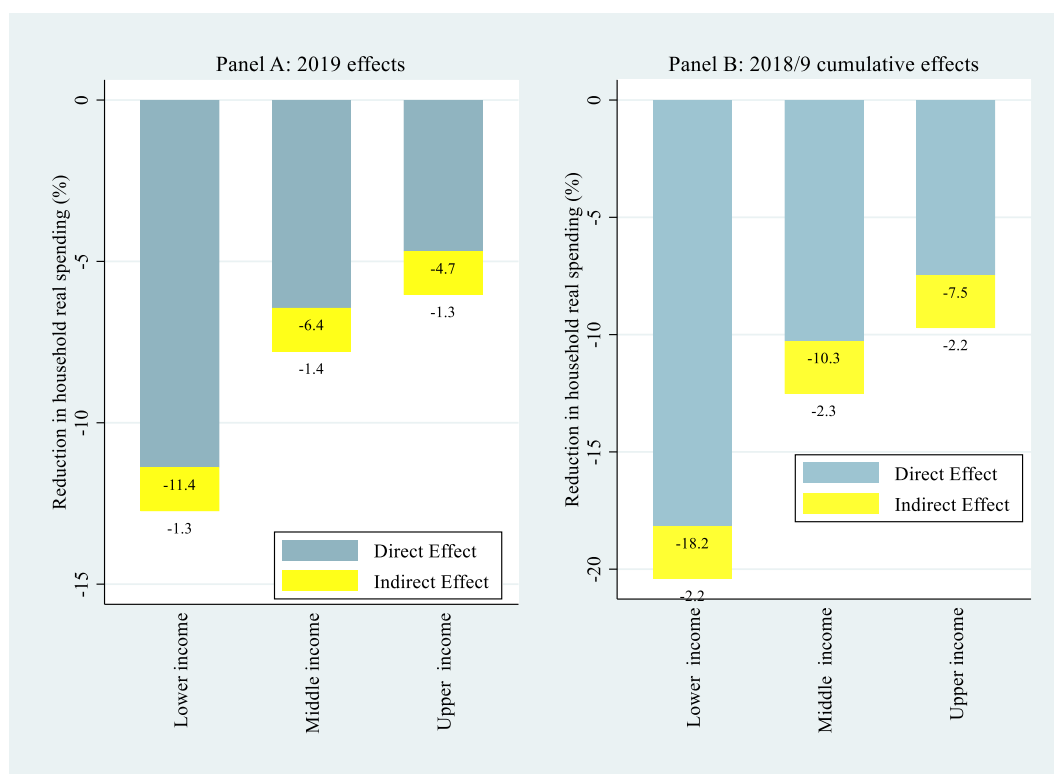
3. The effects of the proposed 2019 changes on household budgets.

Using the latest LCMS survey and IO Tables³, we simulated the likely impacts of the 2019 proposed increases on households' purchasing power. Below are the nationally representative likely effects of the 2019 electricity price increases. In particular, we show the likely reductions in household budgets (in % terms) if the 106% weighted average proposed 2019 residential price effects were implemented. This analysis is focused on those Zambians who are on the grid. So the poorest group of Zambians here will include predominantly the urban poor⁴, majority of whom are self-employed and largely live in informal settlements.

³ Our simulations employ the popular IMF cost-shifting model to simulate the likely direct and indirect price effects of the electricity price changes in Zambia

⁴ Estimated average household income for the poorest and middle income groups connected to the grid is about K814 and K1518 respectively in urban areas.

Figure 1: Reductions in Household real budgets



As can be seen in Figure 1, the proposed electricity price effects are likely to have an overall adverse effect on household real expenditure and budgets in Zambia. In particular, the 2019 proposed changes are likely to have a larger adverse impact on the low income group compared to the middle or high income groups⁵. This is perhaps expected, but the magnitude of the impact of the increases is quite concerning for the lower and middle income groups who lose about 12.7 and 7.8 percent of their total purchasing power (respectively) just due to the steep electricity price increases.

Given that the 2019 reforms are being implemented just a couple of months after the 2018 reforms, we also simulated the cumulative effects of the 2018/2019 residential electricity price increases, again using ZESCO’s own estimates of the weighted tariff increases⁶.

Taking the 2018 and proposed 2019 adjustments as a single price adjustment episode, we show that cumulatively, the adjustments started in 2018 (together with the proposed 2019 adjustments) are likely to very significantly devastate households’ budgets. The poorest one third of the household connected to the grid are likely to suffer an average 20% reduction in purchasing power compared to about 9.7% for the top income households⁷.

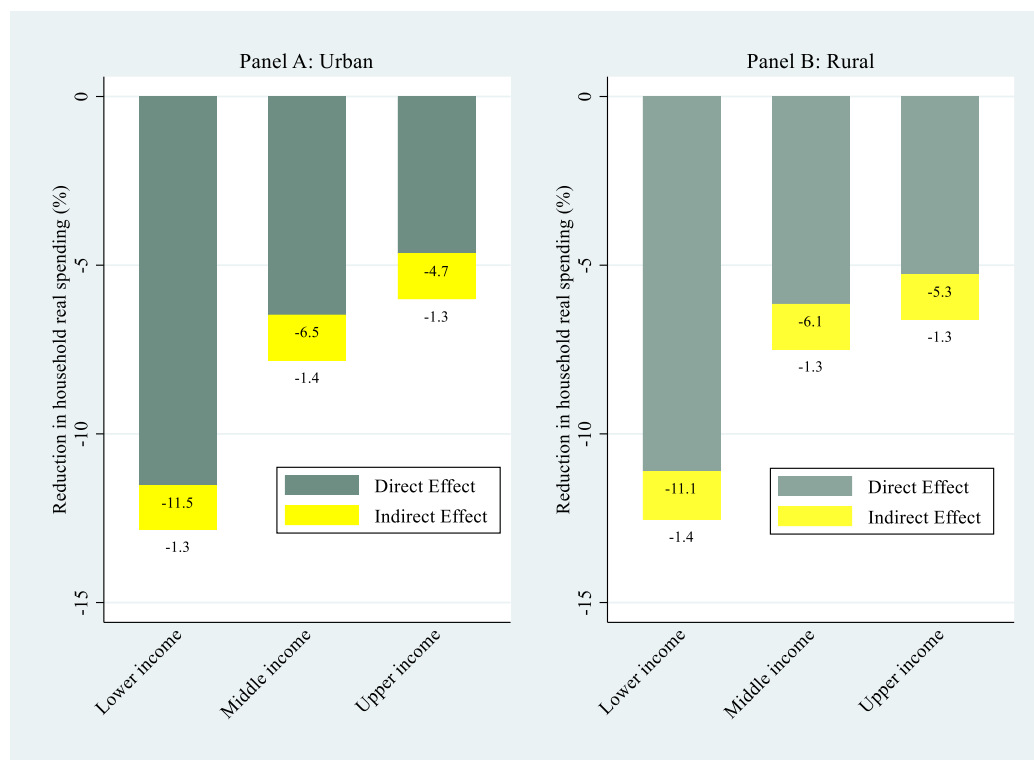
⁵ To simplify presentation and analysis, we created household ventiles (households ranks in groups of 3 based on their monthly expenditure budgets). This is appealing as it allows the reader to simply think of households in terms of belonging to either the low, middle or high income groups.

⁶ Cumulative effects are based on the 75% and 106% weighted average price increases for 2018 and 2019 respectively as provided by ZESCO.

⁷ Our simulations also take into account the behavioural response of households to the electricity price increases. We use an electricity elasticity demand estimate of 8% according to the literature (Maboshe et al, 2019)

To see if there are noticeable differences in the impacts of the proposed 2019 adjustments between the urban and rural households, we differentiated the impacts by location as indicated in Figure 2.

Figure 2: Reductions in household real budgets (Urban vs Rural households)



As shown in figure 2, the impact of the proposed 2019 adjustments are similar by location, although urban poor households connected to the grid have a slightly larger proportional reduction in real household budgets compared to the other consumer groups. This disaggregation largely highlights the fact that provided a household is connected to the grid, the 2019 price increase are likely to have adverse effects particularly among the lower and middle income groups regardless of location.

4. What is the overall impact of the 2019 changes on poverty?

Given that increases in electricity prices would affect all households regardless of whether they have an electricity connection or not⁸, we assessed the likely increases in extreme poverty arising from the 2019 ZESCO residential tariff adjustments.

Table 2: Simulated impacts on poverty

	Before	After	% change	People falling into poverty
2019 proposed adjustments	60.3%	61.4%	1.1%	165 000
2018/9 cumulative effects	60.3%	61.9%	1.6%	240 000

⁸ Through the direct and indirect effects highlighted above

As can be seen in Table 2 above, the proposed 2019 electricity reforms are likely to adversely increase overall poverty in Zambia. Using the moderate national poverty line of K217 (2017) per capita, we find that the proposed price adjustments are likely to push 165,000 people into poverty. Cumulative since 2018 (putting together the impact of the actual 2018 and proposed 2019 tariff increases), nearly a quarter a million Zambians are estimated to likely fall into (moderate) poverty due to ZESCO's recent price adjustments.

5. Summary

This submission has focussed on the likely economic impacts of the proposed 2019 ZESCO tariff changes for residential customers. Given the economic hardships that the household sector has suffered in the last couple of years due to challenges (such as droughts in the agricultural sector, employment cuts in the mining sector and general increase in the cost of living), it is vital that the ERB cautiously assesses the economic implications of further increasing the residential electricity tariffs in 2019 as proposed by ZESCO.

Our analysis based on the latest household survey, Input-Output tables from the CSO and ZESCO's own estimates of the weighted averages increases in residential tariffs finds that the proposed 2019 adjustments would significantly adversely affect household budgets and cause an increase in poverty. In particular, poverty would go up by more than 1% of the current national headcount rate, which translates to over 150,000 people falling into poverty just as a result of the ZESCO 2019 tariff adjustments and almost a quarter of a million people falling into poverty if one takes into consideration the 2018 tariff adjustments as well.

6. Recommendations

Based on the foregoing household survey based analyses, we make the following recommendations:

1. **ZESCO's proposed tariff increases should be revised downward to sustainable levels.** As shown, the proposed residential tariff increase (i.e. weighted average residential price of 106%) is likely to significantly decrease household real expenditure and cause increases in poverty. This is therefore simply unsustainable particularly in a struggling economy like Zambia.
2. **Any price increases must be phased-in gradually, and only effected in manageable and small increments.** The weighted average residential price increase of over 100% is too steep and could potentially completely kill off residential based small and micro enterprises such as hair salons and also likely fuel inflation on the other hand.
3. **Target the lifeline (R1) tariff band⁹ to only the poor and low-electricity consumers.** We recommend that ZESCO explores ways of targeting the R1 to only those households that are poor as low-income consumers are not necessarily those who use the least electricity. As is, by continuing to provide the R1 to all households in Zambia, ZESCO continues to subsidise even the wealthier and high electricity consumers. This practice is inefficient as it does not promote electricity conservation, and contributes to financial losses at ZESCO.

⁹ The R1 (lifeline tariff band) is the lowest priced tariff band currently applied to the first 0-200kWh. The main objective of the R1 according to the ERB is to ensure electricity remains accessible and affordable for the low income consumers.

7. References

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