



COST-BENEFIT ANALYSIS OF TAX EXEMPTION ON ELECTRIC COOKING APPLIANCES FOR DIFFERENT ACTORS IN TANZANIA

(Electric Pressure Cookers (JULEP/EPC), Induction Stoves and Air Fryers)



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Preamble

Prepared from: 1. *Tax Incentive Proposal on Sustainable Clean Cooking Solutions – 2026*, Tanzania Renewable Energy Association (TAREA), submitted to the Permanent Secretary, Ministry of Finance and Planning 2. *Proposal for Tax Exemption on Electric Pressure Cooker Stoves (JULEP)*, TaTEDO

Scope: This report merges and synthesizes the two source documents but is restricted **only to electric cooking appliances** — the Electric Pressure Cooker (EPC, locally known as JULEP), Induction Stoves, and Air Fryers. Improved biomass cookstoves (ICS) and briquette-related content from the source documents have been excluded, as they fall outside the requested scope.

1.0 Introduction and Background

Access to clean cooking energy remains one of Tanzania’s most pressing development gaps. Over 55 million Tanzanians — more than three-quarters of the population — still lack access to clean cooking solutions, with the large majority relying on firewood and charcoal. National survey data (REA/NBS) shows 63.5% of households depend on firewood, 26.2% on charcoal, 5.1% on LPG, and only 3.0% on electricity as their primary cooking fuel. Most biomass cooking is done on unimproved stoves — the traditional three-stone fire (efficiency below 10%, used by more than 95% of rural households) or the basic charcoal tin stove (efficiency below 15%) common in urban areas.

This pattern persists despite considerable progress on electrification: national electricity access has risen from roughly 15% in 2010 to about 78% today, although the share of connected households actually consuming electricity in meaningful quantities remains far lower (around 37–40%), and even electrified households continue to cook with charcoal, firewood or LPG because they perceive electric cooking as too costly.

The Government of Tanzania has responded with the **National Clean Cooking Strategy (2024–2034)**, which targets 75–80% access to clean cooking solutions by 2034 and explicitly commits to reducing taxes and fees on clean cooking energy, appliances and efficient stoves by June 2026. Progress is real but insufficient: clean cooking access rose from 6.9% in 2021 to 23.2% in 2025 (NBS), yet only 10.6% of Tanzanians currently use Tier 3–5 efficient cooking solutions (NBS, 2023).



Electric Pressure Cookers



Induction Stove



Air Fryer

Tanzania Renewable Energy Association (TAREA), coordinating the Clean Cooking Tax Reform Task Force, first advocated for clean cooking tax incentives with the Presidential Commission for Tax Reform from December 2024, submitting an initial proposal in March 2025. The Finance Act 2025

responded by exempting only two items — LPG cylinders and furnaces used to decarbonize briquettes — leaving electric cooking appliances (EPCs, induction stoves and, by extension, air fryers) still subject to full taxation. This report resubmits, and quantifies, the case specifically for exempting electric cooking appliances from VAT and import duty.

Complementing the TAREA submission, TaTEDO's dedicated proposal focuses on the Electric Pressure Cooker (locally branded JULEP — *Jiko Sanifu la Umeme Lenye Presha*), an appliance that cooks using retained steam heat and pressure inside an insulated vacuum flask/hot-box system combined with an electric heating unit and pot. It is available in 4, 6, 8, 10 and 12-litre sizes, with the 6-litre model suited to a typical household of 5–8 people. Comparative research conducted by TaTEDO with Gamos (UK) found that cooking with charcoal consumes roughly **5.5 times more energy** than cooking with LPG, and about **13 times more energy** than cooking the same meal electrically with an EPC/JULEP. A household using JULEP can cook on under 2 units (kWh) of electricity per day (about TZS 720/day at national grid tariffs), and with good cooking practice this can fall to about 1 unit/day. TaTEDO estimates an average family of 5–8 people can cover its entire month's cooking needs on JULEP for around TZS 21,900 — with roughly 85% energy savings compared to conventional methods.



Training of TANESCO staff on How to Use eCooking Appliances

2.0 The Core Problem: High Taxation Suppresses Adoption

Tanzania's current tax treatment of electric cooking appliances is the single largest structural barrier to adoption identified in both source documents.

Table 1: Existing tax structure on electric cooking appliances (as of January 2025)

Appliance	VAT (% CIF)	Import Duty (% CIF)	Total Tax (% CIF)
Electric Pressure Cooker (EPC/JULEP)	18%	10%	28%
Induction Stove	18%	10%	28%
Air Fryer	18%	10%	28%
Spare Parts and Accessories	18%	25%	43%

Source: TAREA, 2026.

Because VAT is applied not only at import but again at the wholesale/distribution stage, and is compounded with duty, freight, port charges, clearing fees, levies and margins, the **effective cumulative tax burden across the full value chain is far higher than the headline 28%** — TAREA's and TaTEDO's independent cost-chain analyses converge on a figure of roughly **46–48% of the final consumer price**:

- **EPC/JULEP (6-litre, SESCOM-type unit):** total tax along the value chain is approximately **46–48.1%** of the retail price. TaTEDO's breakdown shows a wholesale price including VAT of TZS 157,457–157,928, against a price without tax of TZS 113,352. TaTEDO estimates that full exemption would cut the retail price of a JULEP unit from roughly **TZS 160,000 to TZS 110,000** — a reduction of about 31%.
- **Induction Stove:** using BURN Manufacturing's value chain as a reference, the appliance retails at TZS 313,000 including VAT versus TZS 256,660 without VAT alone (VAT of TZS 56,340), with total identified taxes and levies of TZS 32,515 across the chain.
- **Air Fryer:** wholesale price including VAT is TZS 232,058 versus TZS 161,164 without tax — VAT alone represents 44.3% of the CIF value.

These taxes translate into **retail price increases of 40–60%** relative to the untaxed cost, pushing electric cooking out of reach for the low- and middle-income households who most need an affordable alternative to charcoal.

Table 2: Cost and tax breakdown — EPC/JULEP (6-litre unit)

Item	TZS	Tax rate
CIF price (Dar es Salaam)	67,680	—
Import Duty	6,768	10%
Railway Development Levy	1,015–1,354	1.5–2%
Customs Processing Fee	406	0.6%
Freight, insurance, wharfage, port, clearing, TBS agent charges	~7,850	—
Manufacturer/importer price	63,450	—

Item	TZS	Tax rate
Operational cost + importer margin	~40,199	—
VAT (importer + distributor stages)	~24,000–37,700	18% (applied twice)
Wholesale/retail price including VAT	~157,500–160,000	Total tax ≈ 46–48%
Price without VAT and duty	~110,000–113,352	—

Table 3: Cost and tax breakdown — Induction Stove and Air Fryer

Item	Induction Stove (TZS)	Air Fryer (TZS)
CIF price (Dar es Salaam)	—	110,000
Import Price	63,754	196,659
Import Duty	6,635 (10% cooker / 25% accessories)	11,000 (10%)
Railway Development Levy (2%)	1,327	2,200
Customs Processing Fee (0.6%)	383	660
VAT (import + distribution stages)	80,510 (18% each stage)	57,694 (18% each stage)
Profit margin	44,047 (21%)	30,000
Selling price incl. VAT	313,000	232,058
Selling price excl. VAT/duty	256,660	161,164
VAT as % of price	~18–20% (compounded)	44.3%

Sources: TAREA, 2026 (BURN Manufacturing induction stove reference; generic air fryer value chain).

3.0 Regional Benchmarking

Neighbouring East African countries have already moved to reduce fiscal barriers on clean/electric cooking, with measurable results:

- **Uganda** granted a one-year 0% duty remission on inputs for manufacturing energy-saving stoves, and introduced a dedicated **electric cooking tariff of UGX 412/kWh** ($\approx$ TZS 272/kWh) for consumption between the 81st and 150th unit per month — well below the standard tariff of UGX 747.5/kWh ($\approx$ TZS 494/kWh). By 2024, Uganda had raised clean cooking access to 15% alongside 58% electricity connectivity.
- **Rwanda** granted a one-year 0% duty rate on inputs/raw materials for assembling and manufacturing ovens, gas cookers and cooking stoves, and distributed 833,611 improved cookstoves in FY2022/23, cutting household biomass dependency from 79.9% to 42%.
- **Kenya**, without comparable fiscal incentives on electric appliances, recorded only 20% clean cooking access as of 2020.

The comparison indicates that duty remission and preferential electricity tariffs — not price alone — are the policy levers that have moved adoption fastest in the region, and that Tanzania’s current 28–48% tax burden on electric cooking appliances leaves it lagging behind Uganda and Rwanda’s incentive frameworks.

4.0 Projected Revenue Impact of Exemption (Electric Cooking Appliances)

TAREA’s market model projects electric cooking appliance sales volumes and associated government revenue under two scenarios — the current taxed regime and a scenario with VAT/duty exemption — over 2025–2034.

Table 4: Projected sales volumes and government revenue, with vs. without tax (2025–2034)

Year	Volume – with tax	Revenue with tax (TZS '000)	Volume – without tax	Revenue without tax (TZS '000)
2025	10,500	1,658,248	10,500	1,190,199
2026	11,025	1,741,161	11,000	1,246,875
2027	11,576	1,828,179	12,650	1,433,906
2028	12,155	1,919,620	15,180	1,720,687
2029	12,763	2,015,640	18,975	2,150,859
2030	13,401	2,116,399	24,688	2,798,440
2031	14,071	2,222,211	33,301	3,774,743
2032	14,775	2,333,392	46,622	5,284,709
2033	15,513	2,449,943	67,601	7,662,726
2034	16,289	2,572,496	101,402	11,494,145

Source: TAREA, 2026.

The model shows that although each individual unit generates less direct tax revenue once exempted, the resulting surge in sales volumes (roughly 6× higher by 2034 without tax vs. with tax) drives total revenues associated with the electric cooking value chain to nearly **TZS 11.5 trillion by 2034**, more than four times the ~TZS 2.6 trillion projected under continued taxation — revenue that is recouped indirectly through electricity sales, logistics, distribution, retail margins, corporate and income taxes, rather than through direct VAT/duty on the appliance itself.

5.0 Cost-Benefit Analysis by Actors

5.1 Government / Ministry of Finance and Planning

Costs (short-term): - Direct loss of VAT and import duty revenue currently collected on EPCs, induction stoves, air fryers and accessories (an estimated TZS 1.6–2.6 trillion in cumulative direct-tax revenue over 2025–2034 under the current regime is what would be forgone at the unit level).
 - Administrative cost of designing and enforcing a certified-product exemption regime (to prevent abuse, per TAREA’s recommendation to limit exemptions to TBS-certified, quality-assured products).

Benefits (medium to long-term): - Indirect tax gains from a much larger formal market: higher corporate tax from manufacturers/importers/distributors, income tax from new jobs across the value chain, and VAT on complementary services (transport, retail, after-sales/maintenance). - Substantially higher electricity revenue as household electric cooking demand rises — TAREA cites potential incremental electricity revenue “of more than three trillion shillings” from converting existing urban charcoal-using, grid-connected households to electric cooking. - Reduced public expenditure on healthcare (treatment of respiratory illness linked to indoor air pollution) and on environmental remediation/afforestation. - Alignment with, and progress toward, the legally adopted National Clean Cooking Strategy (2024–2034) target and NDC/Paris Agreement climate commitments — reducing reputational and diplomatic risk of policy misalignment. - Positions Tanzania competitively against Uganda and Rwanda, which already offer stronger fiscal incentives for clean/electric cooking.

Net assessment: A near-term, bounded revenue loss in exchange for a modelled multi-trillion-shilling gain in indirect revenue within 5–10 years, plus non-fiscal savings on health and environment. The Ministry’s own stated concern — that exemptions on imported goods do not reliably pass through to consumer prices — is addressed by TAREA’s recommendation to condition exemptions on TBS certification and Fair Competition Act enforcement, rather than by withholding the exemption altogether.

5.2 Consumers / Households

Costs (short-term): None directly; households are net beneficiaries. The only “cost” is the opportunity cost of continuing to pay the current 28–48% embedded tax while exemption is not yet enacted.

Benefits: - Lower purchase price: EPC/JULEP retail price falls from roughly TZS 160,000 to TZS 110,000 (a ~31% cut); induction stoves and air fryers see comparable 40–60% price relief once VAT and duty are removed. - Lower running cost: JULEP users pay as little as TZS 720/day (under 2 kWh) or roughly TZS 21,900/month for a family of 5–8 — substantially below typical monthly charcoal spend for the same household size, with reported energy savings of up to 85% versus traditional methods and a 5.5–13× energy-efficiency advantage over charcoal/gas. - Health benefits from eliminating indoor smoke exposure, particularly for women and children who do most household cooking. - Time savings: households no longer need to source, purchase or wait for charcoal/firewood; women and girls, in particular, are freed from fuel-collection time, which TAREA and TaTEDO both link to increased income-generating activity for women and improved school attendance for girls. - Better food outcomes: electric pressure cooking is reported to retain more nutrients and produce better-tasting food than charcoal or gas cooking, while reducing the risk of burnt food and requiring less supervision.

Net assessment: Households are the clearest and most direct beneficiaries of exemption, gaining on price, running cost, health, time and food quality simultaneously.

5.3 Manufacturers, Importers and Distributors (Private Sector)

Costs (short-term): - TAREA and TaTEDO both note that under current tax and cost structures, trading margins on electric cooking appliances remain thin, because the market is still young and requires continued investment to build demand — meaning importers/distributors are currently

absorbing much of the affordability gap rather than profiting from it. - Possible near-term margin compression if exemption savings are required (via certification conditions) to be passed through to consumers rather than retained as profit.

Benefits: - A dramatically larger addressable market: TAREA's model projects unit sales roughly 6× higher by 2034 without tax than with tax (101,402 vs 16,289 units/year), which — even at thinner per-unit margins — expands aggregate revenue and profit opportunity substantially. - Lower working-capital and inventory-financing costs, since importers currently pre-finance VAT and duty on stock. - Reduced risk of demand volatility as products become affordable to a much broader income segment, supporting business planning and investment in local assembly/manufacturing. - Long-term opportunity to establish domestic JULEP/EPC manufacturing for both the local and regional (export) market, as flagged by TaTEDO, once volumes justify local production.

Net assessment: A short period of tighter unit margins is outweighed by a much larger, more predictable, and faster-growing market; the sector's investment case improves materially.

5.4 TANESCO / Energy Sector

Costs: None identified; increased electricity demand from cooking uses existing or planned grid capacity.

Benefits: - Materially higher electricity consumption and revenue as electric cooking shifts from a minority (3%) to a mainstream cooking method — TAREA cites over TZS 3 trillion in potential additional non-direct-tax government revenue tied to this demand growth. - More efficient utilization of existing electrification investment: Tanzania has expanded grid access from 15% (2010) to ~78% today, but only 3% of households cook with electricity — exemption helps convert connection into consumption, improving the return on electrification infrastructure already built. - Supports the case for time-of-use or “cooking tariff” innovations (as piloted in Uganda) that could further smooth demand and grow TANESCO's revenue base.

Net assessment: Strongly positive; electric cooking adoption is one of the highest-value uses of existing and planned grid capacity.

5.5 Public Health System and Health Outcomes

Costs: Administrative/negligible.

Benefits: - Direct reduction in Acute Lower Respiratory Infections and other conditions linked to household air pollution, which currently contributes to an estimated 27,000–33,000 premature deaths per year in Tanzania, disproportionately affecting women and children. - Reduced public and household healthcare expenditure associated with treating smoke-related illness. - Improved child and maternal health outcomes from cleaner cooking environments.

Net assessment: One of the highest-value, lowest-cost benefit streams identified in either source document, given the appliance itself requires no new health-system investment to deliver the gain.

5.6 Environment and Forestry

Costs: None identified.

Benefits: - Reduced deforestation: Tanzania currently loses roughly 469,000–470,000 hectares of natural forest per year, driven substantially by charcoal and firewood demand; shifting demand to electric cooking directly reduces this pressure. - Reduced greenhouse gas emissions, supporting Tanzania's Nationally Determined Contributions (NDCs) under the Paris Agreement. - Protection of water catchment areas and rainfall patterns, which TAREA links to forest cover loss. - Reduced foreign exchange outflow currently spent importing LPG and related equipment, an indirect environmental/economic co-benefit TaTEDO highlights for electricity (a domestically generated resource) over imported fuels.

Net assessment: Strongly positive, with environmental gains that compound over time as adoption scales, and no identified offsetting environmental cost.

5.7 Women, Children and Social Equity

Costs: None identified.

Benefits: - Time formerly spent collecting firewood or purchasing charcoal — disproportionately borne by women and girls — is freed for income-generating activities (agriculture, small business) and, for girls, for school attendance. - Reduced smoke-related health burden, which falls most heavily on women (as primary cooks) and young children. - Greater household disposable income from lower cooking-energy costs, improving overall household welfare and gender equity in time-use.

Net assessment: A significant, well-evidenced equity benefit that reinforces the health and economic cases above.

5.8 National Economy (Macro View)

Costs: Short-term fiscal revenue adjustment as outlined under Government (5.1); a modest, temporary reduction in direct tax collection during the transition period.

Benefits: - A positive fiscal multiplier: TAREA's own framing is that "short-term tax reduction catalyzes long-term revenue growth and economic development," through indirect taxes, job creation, corporate tax growth, and electricity revenue. - Reduced reliance on imported LPG, improving Tanzania's balance of trade and energy security, since electricity is a domestically generated resource. - New employment and local manufacturing opportunities across the electric cooking value chain (importation, distribution, retail, after-sales service, and eventually local assembly/manufacturing). - Progress toward Vision-aligned development goals (SDG 7 – Affordable and Clean Energy; SDG 13 – Climate Action; SDG 3 – Health; SDG 5 – Gender Equality) that underpin Tanzania's broader development financing and investment climate.

Net assessment: Positive on a 5–10-year horizon, converting a bounded near-term fiscal cost into broader, compounding economic gains.

6.0 Summary Comparison Table

Actor	Short-Term Cost	Long-Term Benefit	Net Direction
Government Treasury /	Forgone VAT & import duty on appliances	Indirect taxes, electricity revenue (>TZS 3 trillion potential), lower health/environment spending	Positive (medium-term)
Consumers Households /	None	31–60% lower prices, ~85% energy savings, health & time gains	Strongly positive
Manufacturers Importers Distributors /	Possible margin compression if savings passed through	~6x larger market by 2034, lower working-capital cost, local manufacturing potential	Positive
TANESCO / Energy Sector	None	Higher electricity consumption & revenue, better ROI on grid investment	Strongly positive
Public Health System	None	Fewer smoke-related illnesses/deaths (27,000–33,000/year at risk), lower treatment costs	Strongly positive
Environment Forestry /	None	~469,000 ha/year deforestation pressure reduced, lower emissions	Strongly positive
Women, Children & Equity	None	Time and income gains, reduced health burden, improved girls' education	Strongly positive
National Economy	Temporary fiscal adjustment	Positive fiscal multiplier, forex savings, jobs, SDG/NDC alignment	Positive (5–10-year horizon)



Demonstrations of Electric Cooking by using Efficient Household and Institutional Electric Pressure Cookers

7.0 Recommendations

1. **Exempt VAT and import duty** on efficient electric cooking appliances — EPC/JULEP, induction cookers, and air fryers — consistent with the National Clean Cooking Strategy’s own commitment to reduce clean cooking taxes by June 2026.
2. **Condition the exemption on TBS certification**, applying it only to certified, quality-assured products, and enforce the Fair Competition Act, 2003 and TBS Act, 1975 (Cap. 130) to ensure savings are passed through to consumer prices rather than absorbed as importer margin — directly addressing the Ministry of Finance’s stated concern about pass-through (raised in response to the earlier proposal, using sanitary pads as a comparator).
3. **Pair the exemption with a dedicated “cooking tariff”** for electricity, similar to Uganda’s UGX 412/kWh block tariff, to further lower the running cost of electric cooking and accelerate the shift from charcoal among already-electrified urban households.
4. **Sequence revenue-offset measures** as outlined in Section 4.0 and 5.1 — indirect tax, electricity revenue, corporate/income tax growth — and monitor them against the projected trajectory so that any near-term revenue shortfall is tracked against the medium-term gain.
5. **Monitor and report** annual progress against National Clean Cooking Strategy targets, health outcomes (respiratory illness incidence), and deforestation rates, to build the evidence base for further fiscal reform.

8.0 Conclusion

Electric cooking appliances — the EPC/JULEP, induction stoves and air fryers — currently carry a cumulative tax burden of roughly 28% at headline VAT-plus-duty rates, rising to an effective 46–48% once compounded VAT, levies and margins across the full value chain are accounted for. This tax structure keeps clean, efficient, domestically-fuelled cooking technology out of reach for the majority of Tanzanian households, even as the country invests heavily in expanding electricity access. The cost-benefit analysis above shows that while the Government would forgo a bounded, near-term amount of direct tax revenue, every other actor in the system — households, the private sector, TANESCO, the health system, the environment, and women and children in particular — stands to gain substantially, and the Government itself is projected to recover and exceed the forgone revenue through indirect taxation and electricity sales within 5–10 years. Exempting electric cooking appliances from VAT and import duty, on the same terms already extended to LPG cylinders and briquette-decarbonization furnaces under the Finance Act 2025, is therefore consistent with Tanzania’s National Clean Cooking Strategy, its NDC commitments, and its own stated fiscal-multiplier logic for clean cooking reform.