



# ELECTRIC PRESSURE COOKERS

## Solar Appliance Snapshot

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EFFICIENCY FOR ACCESS COALITION

**Electric pressure cookers have the potential to improve and expand access to clean cooking for the 2.6 billion people worldwide who rely primarily on polluting cooking fuels. Advances in technology and increased availability have the potential to accelerate adoption among these populations.**

### MARKET INSIGHTS

The potential electric pressure cooker (EPC) market in Sub-Saharan Africa (SSA) is substantial, where approximately [83% of the region's population](#) cook energy-intensive meals with biomass. The opportunity for these households to cook with an EPC has grown due to increased grid connections and access to distributed energy solutions.

Kenya, Tanzania, Zambia and Uganda [have the most favourable local market conditions](#) for rapid EPC uptake, especially in inaccessible off-grid areas. Yet despite incremental growth and significantly increased interest in EPCs, the market remains small, and potential demand is largely untapped.

### CONSUMER IMPACTS

Cooking with biomass is a primary source of indoor air pollution in the Global South, [causing approximately 4 million premature deaths each year](#). In 2020, Efficiency for Access conducted interviews with 400 EPC users to understand impacts on quality of life since accessing the technology. Close to 50% of these consumers reported improved quality of life, and 35% saw a reduction in household fuel expenses.

EPCs also have the potential to disproportionately improve women's health and socioeconomic standing, as well as eliminate or greatly reduce the need for fuel collection.



**20 Million**

People gained access to electricity each year between 2014 and 2019.



**8 Million**

EPCs were sold globally in 2018 and retailed for approximately USD 580 million, with 70% sold to household consumers.



**57%**

of women who participated in a results-based financing (RBF) Global LEAP EPC pilot relied on financing from suppliers and savings groups to purchase their EPCs.



**35%**

of 400 interviewed consumers who participated in a pilot EPC Global LEAP+RBF saw a reduction in household fuel expenses after purchasing an EPC.

## CURRENT SUCCESSES

Over the last five years, efforts to develop the EPC market have intensified. For example, an increasing number of mini-grid developers are conducting R&D and pilot projects focused on integrating EPCs into business models. In Kenya specifically, a small but significant EPC commercial ecosystem has taken root, with [7,100 EPCs sold nationwide in 2018](#). Additionally, in 2020, the Global LEAP Awards programme developed the first [test method](#) to assess the energy performance, quality and safety of EPCs. This test method holds important implications in building consistent, comparable performance data for stakeholders to make informed procurement and distribution decisions.

## REMAINING CHALLENGES

High upfront costs and lack of consumer financing continue to be significant barriers to adoption—EPCs can cost up to USD 352, while biomass stoves range between USD 2 and USD 10. EPC companies also struggle to secure adequate financing due to the perception among lenders that these businesses are high risk.

Additionally, local supply chains, from sales and marketing to product repair services, are nascent and underdeveloped in SSA. Finally, because EPCs are a relatively new cooking appliance, EPC consumers are early adopters and tend to practice some form of dirty fuel stacking, the use of polluting fuels and stoves in conjunction with cleaner fuels.

## RECOMMENDATIONS AND PATHWAYS TO SCALE

**Investment and market support have improved, but EPCs are still predominantly designed for and sold in on-grid environments. By scaling up innovative consumer financing and business models, raising awareness of the benefits of EPCs and prioritising accessibility, these technologies may transform more livelihoods.**



### Scale up innovative & equitable consumer financing

Innovative consumer financing mechanisms, such as pay-as-you-go and on-bill financing, are essential to break down the high upfront cost of EPCs into smaller, more affordable payments.



### Center women in EPC research & programming

As the primary cooks and decision-makers for EPC purchases, women hold insights into appliance usage. Companies, researchers and donors must increase the focus on women's needs and preferences in all market building efforts.



### Increase availability & quality of DC EPCs

Improvements in direct current (DC) EPC design and performance, especially around energy efficiency, which would reduce the product size and energy cost, can open up large new market segments.



### Help companies invest in more after-sales service

First-time EPC users may need instruction on proper usage, as they frequently encounter technical issues that often go unresolved. This has the potential to dampen customer enthusiasm and inhibit market growth.



### Reduce fuel stacking by raising awareness of health impacts

Consumer awareness initiatives must highlight fuel stacking's adverse health effects and demonstrate the range of local dishes that EPCs can prepare.



### Conduct user-focused research

Understanding how people use their EPCs has the potential to result in product design improvements that in turn accelerate market growth.