

The blue flame has a chokepoint

Africa's clean-cooking acceleration and the fuel-security risk hidden inside it

Africa's clean-cooking push is finally attracting serious money and delivering record gains. It is also concentrating risk. Liquefied petroleum gas now provides more than 70 per cent of the continent's clean-cooking access, captured nearly half of recent summit disbursements, and remains exposed to imported-fuel prices and maritime chokepoints. The answer is not to retreat from LPG. It is to judge every clean-cooking pathway by whether households can keep using it when prices, suppliers or projects fail.



SECTION 01

Executive thesis

A clean stove is only as durable as the system behind it

The clean-cooking story has changed. After years at the edge of the energy agenda, it is beginning to look like a scaled infrastructure market. The International Energy Agency reports that almost US\$740 million of the US\$2.2 billion pledged at the 2024 Summit on Clean Cooking in Africa had been disbursed by the end of May 2026. Investment in stoves and related infrastructure reached US\$770 million in 2024. Nearly 12 million people in sub-Saharan Africa gained access that year, three times the annual gain recorded in 2010. Early indicators suggested 2025 could set a new regional record. [1][2]

That progress is real. It is also slower than demography. In 2024, population growth exceeded the increase in access, adding about 14 million people to the number without clean cooking. The World Health Organization estimates that roughly 970 million people in sub-Saharan Africa still lack access and that the figure could reach one billion in 2027. [1][3]

The market's fastest route to scale has been LPG. It accounts for more than 70 per cent of Africans with clean-cooking access and the vast majority of new access achieved in 2024. Nearly half of the summit money disbursed by May 2026 went to LPG. [1][2]

LPG is not a policy mistake. It is a powerful clean-cooking tool: familiar, controllable, fast, capable of handling many dishes and deployable without waiting for a reliable electricity connection. In cities where charcoal is costly and electricity service is weak, it can be the most practical immediate route away from smoke. Removing it from the transition would make universal access harder, not easier.

But a route can be useful and fragile at the same time. The 2026 disruption around the Strait of Hormuz exposed the structural risk. The IEA estimates that around 30 per cent of global seaborne LPG trade passes through the strait. Physical supply largely continued in Africa, but price increases pushed LPG beyond the reach of many households, especially in markets without state-set prices such as Nigeria and Uganda. Many emerging and developing economies held less than 30 days of LPG demand in operational and strategic storage. [1]

The strategic issue is therefore not whether Africa should choose LPG or reject it. It is whether clean-cooking policy can preserve the speed of LPG while reducing the consequences of dependence on any single fuel, importer, subsidy, digital platform or carbon-finance stream.

STONECOMMS ORIGINAL SYNTHESIS

Clean-cooking success should be measured as sustained displacement of polluting cooking, not the first delivery of a stove or cylinder. A solution is resilient only when it remains affordable, supplied, culturally usable and repairable through a shock. The appropriate policy unit is therefore the household's functioning cooking portfolio, supported by a diversified market, rather than one officially preferred appliance.

This reframes the transition. Households already behave as energy portfolio managers. A 2026 Clean Cooking Alliance study covering more than 3,000 surveys across seven companies found that customers typically used two or three fuels and used the promoted technology for around half of cooking tasks. Affordability, appliance characteristics, fuel availability and compatibility with local foods repeatedly drove that fuel stacking. [4]

Fuel stacking is often described as a failure to convert consumers. It is better understood as household risk management. Families retain charcoal, wood, kerosene or a second clean fuel because one device may be too expensive for long boiling, unsuitable for a large pot, unusable during a power cut, empty when a cylinder cannot be refilled, or stranded when a supplier disappears. A resilient policy does not simply tell households to stop stacking. It makes the clean portion of the stack more capable, affordable and reliable until polluting fallback becomes unnecessary.

SECTION 02

Key findings

01 | The acceleration is genuine, but the access deficit is still expanding

The pace of clean-cooking delivery in sub-Saharan Africa is now about three times its 2010 level. Yet only 23 per cent of the region's population had access in 2024, and the absolute number without access increased. A record year is not the same as convergence with universal access. [1]

02 | LPG is the transition's workhorse and its largest common exposure

LPG provides speed, cooking flexibility and a major reduction in household smoke compared with traditional biomass. Its dominance also links household welfare to shipping routes, foreign exchange, storage capacity, distribution margins and fiscal support. [1]

03 | A connection is not sustained adoption

Across the Clean Cooking Alliance cases, most customers continued to use two or three fuels. The promoted stove typically handled about half of cooking events; exclusive use was below roughly 20 per cent in most cases. Double-burner technologies performed materially better than single-burner options. [4]

04 | Supply failure can reverse years of health progress overnight

KOKO Networks' 2026 closure left a large installed base of ethanol stoves without their intended fuel network. Associated Press reporting described more than 3,000 inactive dispensing points and more than 1.5 million affected Kenyan households. The episode shows that project continuity, fuel logistics and regulatory permissions are household-health infrastructure, not back-office concerns. [5]

05 | Local value chains can improve resilience, but "local" does not automatically mean reliable

The DRC's FOREST programme uses results-based finance to support local stove manufacturers and distributors, with a target of 500,000 households and 2,000 full-time-equivalent jobs by 2030. Meanwhile, pellet and improved-biomass cases show that domestic production can still hit bottlenecks, quality problems or unsustainable feedstock constraints. [4][6]

06 | Finance is concentrated on equipment when markets also need continuity infrastructure

Two-thirds of the summit disbursements tracked by the IEA went to end-use equipment such as stoves and cylinders. Only 7 per cent went to infrastructure, while 14 per cent supported technical assistance and market development. Equipment is essential, but durable use also depends on storage, distribution, repair, testing, payments, consumer protection and substitute-fuel pathways. [1][2]

07 | The best portfolio differs by place

South Africa's earlier electrification supports extensive electric cooking. Kenya contains dense urban markets with LPG, electricity and ethanol experience. Nigeria and Uganda are especially exposed to LPG price transmission. The DRC is building a local improved-stove market from a very low access base. A Pan-African strategy should define outcomes and resilience tests, not impose one continental fuel hierarchy.

SECTION 03

Why this matters now

The transition has money, momentum and a new stress test

Three developments converged in 2026.

First, finance began to move. By the end of May, about one-third of the 2024 summit commitments had been disbursed across almost 30 African countries. Kenya received 19 per cent of the total, while Uganda, Tanzania and South Africa each received 7 per cent. New commitments announced in July increased the political and financial weight behind the sector. [1][2]

Second, enabling markets expanded. The IEA counted more than 120 clean-cooking policies or programmes announced or implemented from 2024 through the first quarter of 2026. LPG storage in Africa reached about 800 kilotonnes, with at least 250 kilotonnes under construction. Modern bioenergy capacity also grew: at least 200

kilotonnes of new pellet production capacity had come online since early 2024, and stated expansion plans for major stove factories could double manufacturing capacity. [1]

Third, the fuel-security shock revealed how quickly an access gain can become unaffordable. LPG is the primary cooking fuel for 3.4 billion people globally, and its supply chain is internationally traded. When disruption affected Hormuz, African countries generally avoided physical shortages, but price transmission strained household budgets and government finances. The IEA tracked 23 policy responses by May 2026, more than half focused on reserves, emergency protocols and supply-chain reform. [1]

The political temptation is to treat the crisis as a storage problem. More storage is useful, particularly in import-dependent markets, but it does not address the whole exposure. Foreign-exchange depreciation, port concentration, inland transport costs, cylinder availability, distributor margins and household liquidity can make LPG unaffordable even when national tanks are not empty.

The deeper policy question is how to keep the benefits of a fast-growing fuel without allowing one blue flame to become a single point of failure.

SECTION 04

Evidence and method

A desk study of access, continuity and household use

Research question. As clean-cooking finance accelerates across Africa, how should governments, development-finance institutions and investors balance rapid LPG-led access with affordability, supply resilience, local economic value and the practical ways households cook?

Unit of analysis. Public policy, finance flows, fuel and equipment infrastructure, company delivery models and household technology use affecting clean cooking in sub-Saharan Africa.

Geography. Pan-African synthesis with comparative evidence from Kenya, Nigeria, Uganda, South Africa, the Democratic Republic of Congo, Mozambique, Zambia and Malawi.

Period. The primary review period is 2024 to 30 August 2026. Older policy documents are used only where they establish relevant national strategy or access context.

Evidence base. The review prioritises the IEA's 2026 clean-cooking progress report, WHO's 2026 SDG household-energy update, the World Bank's DRC programme reporting, UNFCCC methodology work and official or institutionally supported national strategies. Clean Cooking Alliance surveys provide multi-company evidence on household fuel stacking. Associated Press and current local reporting are used for the KOKO closure and household-facing supply disruption. [1]-[10]

Method. Qualitative cross-source synthesis, descriptive comparison and construction of a resilience-adjusted decision framework. No proprietary market data, household survey, engineering test, fuel-price model or original fieldwork was conducted.

Comparability limits. "Access" is generally based on a household's primary cooking technology and can hide continued use of polluting fuels. Company customer counts and distribution claims are not consistently audited. The seven Clean Cooking Alliance cases used adapted questionnaires, different samples and different years, so their results should not be treated as a statistically representative regional survey or as directly comparable company rankings. [4]

Evidence rule. External facts are cited. New analytical connections and recommendations are labelled StoneComms original synthesis. No claim of original empirical collection is made.

SECTION 05

Main analysis

1 | LPG earned its position

LPG's dominance is not mysterious. Cooking is an energy service with demanding performance requirements. A household needs heat on demand, fine control, enough power for large pots, the ability to cook several components of a meal, and confidence that the fuel will be available at the next use. LPG can meet those requirements without requiring a strong electricity connection. It is cleaner at the point of use than wood, charcoal or kerosene and can be distributed through cylinders in dense urban and peri-urban markets.

That makes LPG especially valuable during the long period in which electricity access, reliability and household wiring remain uneven. Electric cooking already serves around one-quarter of African households with clean-cooking access, but the IEA reports that this is heavily concentrated in South Africa. Grid expansion alone will not instantly produce electric kitchens elsewhere: appliances, internal wiring, tariffs, reliability and cooking practices all matter. [1]

Nor is the climate-health case for immediate displacement of traditional fuels trivial. The IEA estimates that almost two billion people globally still cook with polluting fuels and technologies, contributing to 2.5 million premature deaths annually. Households without access spend an average of four hours a day collecting fuel and cooking over inefficient stoves, with women and children bearing most of that burden. [1]

In that context, insisting that every transition jump directly to an ideal future fuel could delay a large health gain. LPG may be a bridge, a long-term component or a dominant fuel depending on the country. The right critique is not that LPG is imperfect. It is that access strategies have too often treated initial adoption as the end of the problem.

2 | The import chain sits inside the household budget

The 2026 LPG shock translated a geopolitical event into kitchen economics. The effect was not uniform. Countries with regulated prices or fiscal buffers could cushion households, at a cost to public budgets. Markets with freer price transmission exposed consumers more directly. Import dependence added exchange-rate and freight risk. Thin reserves limited the time available for policy response. [1]

Recent reporting from Nigeria illustrates the continuing volatility. In August 2026, several major depots reportedly increased LPG prices by as much as 7.3 per cent while the federal government was distributing free cylinders and refills to support adoption. The same market could therefore reduce the entry cost of a stove while increasing the uncertainty of using it. [7]

In Uganda, a June market monitor reported increases of roughly 10 per cent since January across common household cylinder sizes. Its estimates are not official national statistics, but they align with the IEA's wider conclusion that households in Uganda were exposed to sharp affordability pressure. [1][8]

These examples reveal a design mismatch. Many access interventions subsidise the appliance or first cylinder because upfront cost is visible and administratively simple. The household's real exposure is recurrent: the next refill, the distance to a distributor, the smallest purchasable quantity, the volatility of income and the availability of a fallback.

Pay-as-you-go LPG responds to this problem by allowing small purchases and spreading equipment cost. It can improve liquidity, but it adds new dependencies: a functioning meter, mobile payments, data connectivity, supplier solvency and home-delivery logistics. The Clean Cooking Alliance study found that payment and equipment-power problems could make some systems unusable. [4]

3 | Households are already diversified because meals are complicated

The most important evidence in the fuel-stacking study is not that households retain polluting fuels. It is why.

Participants used the promoted technology for about 40 to 50 per cent of cooking events in most cases. The one observed double-burner LPG case reached around 80 per cent, and double-burner users were more than three times as likely as single-burner users to rely exclusively on the promoted device. [4]

Long boiling, grilling, roasting and baking frequently did not fit the new stove. In Kenya, foods such as beans and githeri can require hours of cooking. Induction users reported that the glass surface could be difficult for vigorous preparation of ugali. Some households did not understand flame regulation and therefore burned food or believed the promoted fuel was more expensive than it needed to be. Seasonal heating needs and power cuts altered the stack. [4]

This is not consumer irrationality. It is a rational response to the fact that "cooking" is a bundle of different tasks. A single-burner appliance that performs well for tea or rice may not displace a charcoal stove used for a large family meal. A technically clean device that is culturally awkward will deliver fewer health benefits than its distribution count suggests.

The investment implication is significant. Better product design - two burners, stable supports, compatible cookware and appliances suited to long boiling - can be as important as another consumer-awareness campaign. So can recipe-specific demonstrations, pressure-cooking support and repair services. The strongest clean-cooking company is not necessarily the one that distributes the cheapest stove. It is the one that earns a larger, sustained share of the household's cooking events.

4 | KOKO turned network continuity into a public-interest question

KOKO Networks offered Kenyan households ethanol through a dense retail network and small-quantity purchasing model. Its closure in February 2026 stranded both customers and retail infrastructure. Associated Press reported that more than 3,000 dispensing points became inactive and that more than 1.5 million households had used the system. The article linked the closure to unresolved import permissions and carbon-credit authorisation, while households described LPG refills as unaffordable and a return to charcoal as the likely fallback. [5]

The case should not be used to dismiss ethanol, carbon finance or private delivery. It should be used to recognise a category of risk that access policy has not managed well enough: provider-failure risk.

A proprietary stove-and-fuel network can deliver convenience while it operates. When it stops, the appliance may have little value outside that network. The clean-cooking equivalent of financial consumer protection would ask, before scale:

- Can the appliance use another compliant fuel?
- Can another distributor serve the installed base?
- Who maintains minimum supply during insolvency or regulatory dispute?
- Are customers warned when the system is single-supplier?
- Can carbon-credit and results-based-finance contracts fund an orderly transition rather than an abrupt stop?
- Who retains the usage and customer data needed to support continuity?

These are not reasons to ban integrated networks. Integration can improve quality and reduce transaction cost. They are reasons to require continuity planning when public money, carbon claims or development outcomes depend on the network's survival.

5 | Local production helps only when the full chain works

The DRC's FOREST programme illustrates a different route. Backed by US\$20 million from the International Development Association and the Energy Sector Management Assistance Program, it pays local companies for verified stove sales. The target is 500,000 households, including 110,000 stoves in the first phase and 390,000 in the second. By July 2026, supported operators had reportedly created 295 jobs, with a target of 2,000 full-time-equivalent positions by 2030. A Kinshasa laboratory is intended to strengthen testing and standards. [6]

This model links access to domestic enterprise, manufacturing, distribution and after-sales support. It also complements improved stoves with investment in sustainable wood-energy supply. That integrated view is important: an efficient stove does not make charcoal sustainable if the fuel supply continues to degrade forests, and a locally made stove does not deliver health improvement if households use it only occasionally.

The Clean Cooking Alliance cases provide a caution. A pellet supplier in Zambia experienced manufacturing bottlenecks, and customers shifted to other fuels when pellets were unavailable. Local supply shortens the geopolitical chain but does not abolish operational risk. Feedstock, working capital, quality control, equipment maintenance and seasonal production all become part of energy security. [4]

Localisation should therefore be evaluated across the chain: material inputs, appliance manufacturing, fuel production, storage, distribution, repair, testing, software and finance. Counting a locally assembled stove while importing its critical fuel or electronic controller can overstate resilience.

SECTION 06

StoneComms original synthesis

The resilience-adjusted clean-cooking test

Proposition. Public finance and policy should stop treating technologies as winners in the abstract. Every pathway should be assessed against the same six outcomes: health displacement, recurring affordability, continuity, task fit, local value and system flexibility.

Evidence base

- LPG is delivering most new access but is exposed to global trade, price and storage risk. [1]
- Households routinely use multiple fuels because of cost, availability, appliance design and cooking needs. [4]
- KOKO's closure shows that a proprietary network can strand households even when the technology itself remains functional. [5]
- The DRC model shows how finance can support local enterprises and standards, while pellet cases show that domestic supply can also fail. [4][6]
- WHO data show that the health burden persists when polluting fuels remain in the household portfolio. [3]

Analytical bridge

The first-sale metric records an input. Health and development benefits arise from repeated use. Repeated use requires a technology to survive four kinds of shock: household-income shock, fuel-price shock, provider or infrastructure failure, and mismatch with the cooking task. Therefore the value of an access intervention is not fully described by households reached. It is better represented by the durable share of cooking events shifted away from polluting fuels, adjusted for the system's ability to keep serving users.

A six-part scorecard

Test	Core question	Minimum evidence
Health displacement	How much polluting cooking is actually displaced?	Usage over time; stacking; kitchen air-quality or credible exposure proxy
Recurring affordability	Can target users keep buying energy after the introductory offer?	Cost per useful meal; refill or payment size; income sensitivity; shock scenario
Continuity	What happens when imports, power, a platform or a provider fails?	Storage days; alternative suppliers; outage plan; insolvency and transition protocol
Task fit	Can the system cook the foods, quantities and meal sequences people require?	Local dish trials; burner count; cookware compatibility; seasonal use
Local value	How much durable economic capability remains in-country?	Jobs, manufacturing depth, fuel inputs, repair, testing and supplier development
Flexibility	Can households and markets switch among clean options without returning to smoke?	Multi-fuel compatibility, modular appliances, shared standards and consumer data portability

No technology will lead every category. LPG can score strongly on task fit and speed, while scoring weakly on import exposure in some markets. Electric cooking can exploit domestic renewable power and eliminate cylinder logistics, while scoring poorly where outages, tariffs or wiring constrain use. Pellets and ethanol can create domestic value, but require dependable feedstock and dedicated distribution. Biogas can be resilient for suitable farms and institutions but is not a universal urban solution. Improved biomass stoves can deliver rapid transitional gains, yet may fall short of WHO clean-fuel standards and may not eliminate household smoke.

The scorecard is not designed to identify one winner. It is designed to expose the missing investment around each pathway.

Decision rule: diversify clean capability, not polluting fallback

Households already diversify. Policy should help them diversify within the clean side of the stack. A practical urban portfolio might combine LPG with an electric pressure cooker, allowing short, high-power or outage-sensitive tasks to stay on gas while long boiling shifts to efficient electricity when available. A rural productive-use portfolio might combine a high-quality biomass or pellet system with biogas where feedstock permits. Institutions such as schools can justify larger storage, heat-retention and bulk-fuel solutions.

This is different from promoting technology neutrality without direction. Minimum health, safety, emissions and performance standards still matter. The objective is clean optionality: enough substitutability that one failure does not push a household back to charcoal, wood, kerosene or waste.

Assumptions and confidence

The synthesis assumes that diversified clean capability reduces the probability of polluting fallback, but the available evidence does not quantify that effect across representative national samples. It also assumes that the additional appliance cost can be lower than the social and fiscal cost of recurrent access reversal. Confidence is high that affordability, supply and task fit drive stacking; medium that portfolio-based support will outperform single-technology programmes at scale; and low on the optimal technology bundle for any country without local household, tariff and supply-chain data.

SECTION 07

Pan-African scalability test

One outcome, several transition architectures

Market	Current signal	Resilience opportunity	Principal caution
Kenya	Largest recipient of tracked summit disbursements; dense LPG, ethanol and electric-cooking experimentation	Build LPG reserves and electric-cooking demand together; require continuity planning for network fuels; support appliances suited to Kenyan dishes	Nairobi evidence may not represent secondary cities or rural households; KOKO shows provider-failure risk
Nigeria	Large LPG market and active cylinder-support programmes; direct household exposure to price volatility	Use domestic gas potential, storage and transparent distribution pricing while accelerating reliable electric cooking where grids permit	Free cylinders do not guarantee affordable refills; domestic resource does not automatically produce low retail prices
Uganda	LPG identified by the IEA as exposed to the 2026 price shock; active clean-cooking strategy	Pair smaller-purchase LPG models with storage, consumer protection and electric/biogas alternatives	Import and currency exposure; limited official high-frequency household price data
South Africa	Electric cooking already widely used because of earlier electrification	Improve appliance efficiency, reliability and tariff design; apply experience to other electrifying markets carefully	Grid stress and income inequality can still drive fallback; national experience is not directly transferable
DRC	Clean-cooking access near 1 per cent in the Mission 300 baseline; FOREST supports local companies and 500,000 households	Build manufacturing, testing, sustainable fuel supply and results-based finance as one market	Stove sales are not sustained usage; improved biomass may not deliver full health protection
Zambia and Malawi	Emerging pellet and gasifier models	Develop local feedstock, manufacturing and service industries	Pellet shortages, fan-power needs and single-burner limitations can suppress use
Mozambique	Improved charcoal stoves can reduce fuel use without requiring fuel switching	Upgrade local manufacturing and pair efficiency with sustainable charcoal and stronger health pathways	Users may retain traditional stoves for grilling; efficiency is not equivalent to clean combustion

The comparison suggests four market archetypes.

Import-led urban transition. LPG can expand rapidly, but storage, competition, currency exposure and refill affordability dominate risk.

Electricity-anchored transition. E-cooking becomes attractive where power is reliable, tariffs are manageable and appropriate appliances exist. Grid connection statistics alone are insufficient.

Domestic-fuel transition. Ethanol, pellets, briquettes and biogas can retain value locally, but dedicated supply chains may create new single-provider or feedstock risks.

Transitional efficiency market. Improved biomass stoves can reduce fuel demand quickly, especially where clean fuels remain unaffordable. They should be judged honestly as a transitional health and forest intervention, not automatically counted as completion of the clean-cooking journey.

SECTION 08

Implications for policy, capital and implementation

1 | Governments: publish a national cooking-risk map

National strategies should identify where households are exposed to each failure mode: import dependence, low storage, weak grid reliability, unaffordable tariffs, single suppliers, scarce repair, unsustainable feedstock and limited clean alternatives. This map should guide infrastructure and social support rather than merely justify a technology target.

2 | Development-finance institutions: fund the missing system around the stove

Results-based payments should include sustained use, not only verified sale or installation. Finance can support storage, testing laboratories, distributor working capital, repair networks, appliance compatibility, consumer protection and transition plans for provider failure. Concessional capital is particularly valuable where these public-good functions do not generate an immediate private return.

3 | Investors: underwrite fuel and usage risk explicitly

Clean-cooking businesses should disclose their exposure to import routes, foreign exchange, one supplier, carbon-credit authorisation, mobile payments and regulated tariffs. Customer acquisition should be valued alongside retention, share of cooking events and refill continuity. An appliance installed but rarely used is not a durable customer asset.

4 | Carbon markets: protect the household when the credit model breaks

Carbon revenue can make clean cooking affordable and measurable. It can also create a hidden dependency if the appliance or fuel network relies on future credit issuance. Contracts should include reserve funding, data custody, customer notification and an orderly transition plan. The UNFCCC's continuing methodology work increases the importance of conservative baselines, usage monitoring and transparent treatment of stacking. [9]

5 | Manufacturers: design for real meals

Two burners, stable pot supports, pressure cooking, large-vessel compatibility and robust controls are not lifestyle extras. They determine how much polluting fuel a household displaces. Manufacturers should test appliances against local dishes, household size, cookware and power conditions, not only laboratory efficiency.

6 | Health agencies: become market-design participants

WHO's data make the health burden visible, but energy programmes often remain organised around equipment and fuel. Health agencies can help define exposure outcomes, target high-risk households, support behaviour and usage evidence, and ensure that transitional technologies are described accurately. [3]

7 | Regional institutions: coordinate resilience where scale helps

Regional standards for cylinders, appliance safety, stove testing, fuel quality and trade can reduce cost. Shared emergency protocols and supply intelligence can improve response to import shocks. Coordination should support multiple compliant systems rather than create a new continent-wide dependency on one design.

SECTION 09

Risks, counterarguments and limitations

LPG dependence may be a rational trade-off

A concentrated LPG pathway may still deliver more health benefit, faster, than a diversified programme with higher transaction cost. The report does not argue that resilience should override urgency. It argues that the exposure should be measured and funded rather than ignored.

Portfolios can dilute accountability

Technology-neutral or multi-fuel strategies can become an excuse for weak standards and fragmented programmes. The proposed approach requires common outcome measures, especially sustained displacement of polluting cooking, not a loose collection of projects.

Fuel stacking is not always protective

Continued use of wood or charcoal sustains harmful exposure. Describing stacking as risk management must not romanticise it. The policy objective is to move resilience into the clean portion of the portfolio and reduce polluting use toward zero.

Local production can be costlier

Domestic value creation may increase costs during early scale-up and can protect inefficient firms if poorly designed. Localisation should be pursued where it improves capability, service, resilience or long-run economics, not as a blanket procurement rule.

Access data overstate certainty

Primary-fuel classifications may count a household as having access while it continues significant polluting use. Company surveys are often drawn from active customers. Financing announcements, commitments, disbursements and household outcomes are different measures and should not be conflated.

This is a desk study

No representative household survey, price panel, emissions test, health measurement, business audit or supply-chain simulation was conducted. The framework is a hypothesis for empirical testing, not a claim that one portfolio will work everywhere.

SECTION 10

Commissionable research agenda

The next study should measure resilience at household and market level

1. Household cooking diaries. Track 1,500 households across six contrasting markets for 12 months, recording each cooking event, device, fuel, dish, cost, outage, refill failure and fallback.
2. Shock simulation. Model a 30-day import interruption, 20 per cent currency depreciation, two-week power shortage and provider insolvency for representative LPG, electric, pellet, ethanol and mixed portfolios.
3. Cost per clean meal. Replace stove-price comparison with the full cost of useful cooking tasks, including finance, fuel, maintenance, travel, cooking time and wasted food.
4. Provider-continuity audit. Assess customer concentration, fuel exclusivity, carbon-revenue dependence, data portability, insolvency planning and alternative supply for major networks.
5. Local-value account. Measure domestic wages, materials, fuel production, distribution, repair, testing and tax retained by each pathway rather than relying on assembly labels.
6. Health displacement study. Combine stove-use monitoring with kitchen air-quality measurement to identify what level and composition of clean stacking produces meaningful exposure reduction.
7. Women's economic-time study. Measure time saved, control over household energy spending, safety, enterprise use and access to jobs across the value chain.
8. Institutional-kitchen pilots. Test schools, clinics and food businesses, where bulk demand can anchor fuel supply and generate larger, more measurable health and productivity gains.
9. Secondary-city comparison. Compare capital-city markets with secondary cities and rural districts, where fuel availability, income, cooking practices and electricity reliability differ.
10. Resilience-adjusted finance tracker. Extend commitment reporting to show how much capital supports equipment, recurring affordability, infrastructure, local capability and continuity.

SECTION 11

Conclusion

Count the meal that stays clean

Africa's clean-cooking acceleration deserves confidence. Money is moving, policies are multiplying, factories and storage are being built, and millions more people are cooking without the smoke that has shaped household life for generations.

The next stage requires a harder definition of success.

A cylinder in a photograph is not continuity. A stove sale is not exclusive use. A national target is not a meal cooked during a price shock. A locally produced appliance is not resilience if its fuel disappears. And a clean network is not public infrastructure until someone has planned what happens when it stops.

LPG will remain central because it solves real cooking problems now. Electric cooking, bioenergy, biogas and better stoves will grow because they solve different problems in different places. The strategic opportunity is not to choose a single continental flame. It is to build markets in which households can move among safe, affordable and genuinely clean options without falling back into smoke.

That is the transition worth financing: not the first clean meal, but the next one after the shock.

SECTION 12

References and data notes

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Data notes

- Regional access figures and financing flows follow the IEA’s definitions and latest data available for its July 2026 report. 2025 access values cited by the IEA are estimates.
- WHO’s 970 million estimate is a modelled regional access indicator informed by household surveys, censuses and country consultation.
- Clean Cooking Alliance survey results describe seven company-linked samples across Kenya, Mozambique, Zambia and Malawi. They illuminate mechanisms but are not nationally representative.
- KOKO customer and network figures are attributed to Associated Press reporting and are not independently audited here.
- Nigeria and Uganda price examples are current market signals, not harmonised regional price series.
- “Clean cooking” and “improved cooking” are not interchangeable. Some improved biomass technologies reduce fuel use and emissions without meeting the strictest health-based clean-fuel standard.

SECTION 13

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This report is based on publicly available research, policy documents, programme reporting and reputable journalism available up to 30 August 2026. StoneComms original synthesis is explicitly labelled. No proprietary data, interviews or original fieldwork were used.

Editorial note

This publication provides informational research and policy analysis. It is not investment, legal, health or financial advice.