# Clean Cooking in Africa 2026

## Progress report



International Energy Agency

World Energy Outlook Special Report

# INTERNATIONAL ENERGY AGENCY

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## *Lack of access to clean cooking remains an urgent but solvable challenge*

**Nearly two billion people still cook using wood, charcoal and other fuels that produce harmful smoke, with dire implications for health, development, and the environment.** Globally, the lack of access to clean cooking contributes to 2.5 million premature deaths each year due to household air pollution. Households that lack access spend an average of four hours per day collecting fuel and cooking over inefficient stoves, with far-reaching impacts on productivity and education, with women and children bearing the greatest burden. Traditional cooking methods also emit 1.2 Gt carbon dioxide equivalent ($CO_2$-eq) annually from direct emissions and forest degradation, comparable to the combined emissions of international aviation and shipping.

**Rapid progress on expanding access to clean cooking is possible, with developing Asia halving the number of people without access since 2010.** Over this period, around 1.7 billion people have gained access to clean cooking fuels globally, led by efforts in countries like India and Indonesia. Progress in sub-Saharan Africa has not matched this pace, meaning that half of the two billion people still lacking access globally live in Africa. If Africa were to replicate the best historical pace of progress seen in leading countries, IEA projections show that Africa could close the clean cooking gap by 2040.

**Efforts to accelerate clean cooking access are beginning to translate into measurable progress.** In 2024, the IEA hosted an international Summit on clean cooking in Africa, resulting in USD 2.2 billion in new public and private sector commitments. This annual progress report takes stock of advances in clean cooking access, including progress toward delivering on Summit commitments. Drawing on the IEA's most up-to-date information, it provides a data-driven snapshot of investment flows, infrastructure expansion and policy implementation, offering a timely assessment of progress and remaining gaps.

## *Progress is accelerating across Africa, with early data indicating 2025 is on track for a record year for clean cooking*

**The pace of clean cooking delivery in sub-Saharan Africa is now triple the rate seen in 2010.** As of 2024, 23% of sub-Saharan Africans have access to clean cooking, an increase of almost 1 percentage point from the previous year. Nearly 12 million people gained access to clean cooking solutions in 2024, compared with around 4 million in 2010, with 17 countries in the region recording faster progress than the year prior. Early data on stove and fuel imports indicate that this momentum continued into 2025 and could surpass the best pace of progress on record for Africa. However, population growth still outpaced progress, with the number of people without access increasing by around 14 million in 2024.

**New access to clean cooking continues to be led by liquefied petroleum gas (LPG)**. LPG accounted for more than 70% of those with access in Africa and represents the vast majority of new connections in 2024. Electric cooking is the second most widely used option, serving around one quarter of African households, largely concentrated in South Africa, where earlier electrification efforts have resulted in one of the highest shares of electric cooking globally. Improved biomass cookstoves also remain an important solution in Africa, with

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transitional cookstoves accounting for a large segment and reaching at least 4 million additional people annually over the past five years.

**Investment in sub-Saharan Africa's clean cooking sector has increased significantly driven by private sector investment.** In 2024, investment in stoves and related infrastructure reached USD 770 million, up from USD 590 million in 2020. Around 60% went to end-use equipment, including stoves and cylinders, with the remainder directed toward infrastructure. Financing for these projects has largely come from private capital and consumer spending – around 70% of the total. Investment growth was uneven across technologies, with biomass cookstove investment falling in 2024 following a slowdown in development finance and carbon credit activity.

### *One-third of the 2024 Summit commitments have been disbursed*

**As of end of May 2026, nearly USD 740 million of the 2.2 billion pledged have been disbursed to projects across almost 30 African countries**. At the current pace, the full package of commitments is on track to be delivered by 2030, with more than 40% of public sector and one-third of private sector commitments already disbursed. All twelve African countries that committed to policy reforms at the Summit have implemented at least one since 2024, as have around 20 additional African countries.

**Most disbursements were directed to in-country projects spanning a range of technologies and financing channels.** Around three-quarters of funds were channelled directly to in-country investments or projects, with Kenya the largest recipient (19%), followed by Uganda, Tanzania, and South Africa (7% each). Around two-thirds of disbursements went toward the distribution and installation of end-use equipment such as cookstoves and cylinders, while 14% went to technical assistance and market development, 13% to investment funds and direct stakes in clean cooking companies, and 7% to infrastructure. Nearly half of disbursements went to LPG, with the remainder spread across improved biomass, electric cooking, biogas, and multi-fuel and cross-cutting support.

### *Policies and infrastructure coming into place point to an improving outlook*

**Clean cooking policy frameworks have strengthened significantly across Africa in the last two years.** From 2024 to the first quarter of 2026, more than 120 new policies and programmes supporting clean cooking were implemented or announced. On average, one quarter of the population without access in Africa saw some positive policy improvements on clean cooking each year from 2020 to 2023. This share rose sharply to 46% in 2024 and 84% in 2025. Much of the momentum centred on national strategies and access targets – with more than 30 new targets set since 2024. Many accompanying regulatory reforms and implementation efforts remain under development, including measures such as tariff reforms, standards, and carbon credit legislation. Only 20 such measures have been fully implemented since 2024.

**Investment in infrastructure is laying the groundwork for scaling up clean cooking supply chains.** The IEA has established new tracking of clean cooking infrastructure across Africa, taking stock of equipment sales, import and industry data, as well as satellite detection. This tracking finds LPG storage capacity has reached 800 kt, with more than 10% added over the past five years and at least 250 kt under construction. The pace of new household electricity

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grid connections increased by 11% in 2024, concentrated in urban areas. Modern bioenergy supply chains are also expanding rapidly: since early 2024, at least 200 kt of new pellet production capacity has come online, bringing total capacity to 600 kt per year, with a further 600 kt under development. Bioethanol production capacity reached 1 billion litres, up 20% over five years. Around 20 major cookstove manufacturing facilities are now operating across the region – most commissioned since 2020 – with stated expansion plans set to double manufacturing capacity.

### *The closure of the Strait of Hormuz disrupted supply for the world's most widely used cooking fuel*

**Around 30% of global seaborne LPG trade passes through the Strait of Hormuz, exposing the 3.4 billion people who rely on LPG as their primary cooking fuel to supply disruptions and price shocks.** In Asia, countries such as India and Bangladesh responded to supply disruptions with rationing, increased refinery output, emergency imports and incentives to accelerate fuel switching. In Africa, physical supplies largely remained available, but sharply higher prices put LPG beyond the reach of many households, especially in markets without state-set fuel pricing like Nigeria and Uganda. Many countries had thin domestic fuel reserves to help buffer the impacts of the crisis, with less than 35 countries in emerging and developing economies holding enough LPG storage – both operational and strategic – to cover more than 30 days of domestic LPG demand.

**Government responses are shaping future clean cooking policy trends, with a growing focus on resilience, affordability, and leveraging domestic energy resources.** As of May 2026, the IEA has tracked 23 policy measures introduced in response to the clean cooking crisis stemming from the closure of the Strait of Hormuz. More than half of the policies focused on strengthening supply resilience through strategic reserves, emergency protocols and supply chain reforms. Some countries introduced policies incentivising consumers to switch to alternative fuels to reduce LPG import dependency, such as electric cooking campaigns in India and Indonesia, where 80-90% of households rely on LPG today. Many governments adjusted prices and taxes to cushion the shock, increasing fiscal burdens and drawing down foreign exchange reserves, effects that could persist long after prices stabilise, particularly in Africa, where fiscal space is more limited.

### *The outlook for clean cooking remains positive, despite new challenges*

**While the energy crisis presents a new risk for clean cooking progress in Africa, the outlook for clean cooking remains stronger than before.** Stronger policy frameworks and a robust pipeline of infrastructure investment are expected to sustain access gains above pre-crisis trends through 2030. LPG supply disruptions from the crisis have been partly cushioned by market adjustments and elevated North American inventories coming to bear, moderating expected medium-term impacts on LPG supply and pricing, although higher fiscal pressures may weigh on future progress. Putting Africa on a trajectory similar to the rapid gains achieved in Asia, however, will require further policy action, sustained international partnerships, and continued public and private investment. Maintaining political attention on clean cooking will be critical to extending recent progress and translating momentum into lasting, transformative impacts for Africa's future.

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## Introduction

Access to clean cooking has risen steadily up the international energy agenda in recent years. For over 25 years, the International Energy Agency (IEA) has been at the forefront of this effort – collecting data, tracking progress, and working with governments, industry, and development partners to identify the pathways, policies and investments needed to close the access gap. Building on this long-standing engagement, the IEA hosted the first-ever international Summit dedicated to clean cooking in Africa. Held in Paris in May 2024 and co-chaired by the governments of Norway and the United Republic of Tanzania (hereafter "Tanzania"), the African Development Bank (AfDB) and the IEA, the Summit mobilised USD 2.2 billion in public and private commitments, secured the endorsement of more than 130 countries, institutions, companies and civil society organisations to the Clean Cooking Declaration and saw twelve African governments commit to concrete policy action.

The Summit also elevated clean cooking on the multilateral agenda. In 2024, clean cooking featured for the first time in the G7 Leaders' Statement (G7 ITALIA, 2024), and Brazil's G20 Presidency launched a dedicated Clean Cooking Strategy roadmap (IEA et al., 2024). Following the Africa Energy Summit in January 2025, 29 countries included explicit clean cooking commitments in their National Energy Compacts under the Mission 300 initiative. The year closed with another milestone: under South Africa's G20 Presidency, G20 members endorsed a Clean Cooking Infrastructure Investment Action Plan in November 2025 – the first dedicated G20 action plan to accelerate clean cooking access across Africa (G20 South Africa, 2025). Both COP29 and COP30 also had clean cooking as a core component of their action agenda for energy.

Despite the progress made so far, the landscape in 2026 is more complex. The ongoing crisis in the Middle East is having far-reaching effects on clean cooking supply chains, particularly for liquefied petroleum gas (LPG), with some households and institutions facing fuel shortages that constrain their ability to cook, while many others are exposed to price increases beyond their financial means, pushing some to revert to traditional cooking methods. In this context, the IEA is co-organising a second Summit on Clean Cooking in Africa to ensure a continued focus on clean cooking, secure new commitments, support implementation on the ground, and enhance resilience of clean cooking systems.

This report is intended to inform these discussions by providing an update on progress and development across the sector. It assesses progress towards universal access to clean cooking in Africa across key dimensions. It also examines the impact of the crisis in the Middle East on clean cooking systems while also tracking the delivery of financial and policy commitments made at the 2024 Summit in Paris by governments, the private sector and



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development partners. The analysis is based on the latest available data, with ongoing efforts by the IEA to address remaining gaps in global clean cooking data and improve the tracking of progress. Readers seeking a broader treatment of clean cooking challenges and solutions in Africa – including scenario projections, policy recommendations, affordability of clean cooking solutions, supply chain descriptions, and health, gender and environmental dimensions – are referred to the IEA's *Universal Access to Clean Cooking in Africa* (IEA, 2025a) and *A Vision for Clean Cooking Access for All* (IEA, 2023a) reports. This report is structured into five sections:

- **Section 1: Setting the scene,** which provides an overview of global access to clean cooking and examines the impact of the ongoing crisis in the Middle East on the sector.
- **Section 2: Clean cooking trends in sub-Saharan Africa**, which presents an assessment of recent progress in access across Africa, including preliminary estimates of clean cooking trends for 2025.
- **Section 3: Investment trends**, which provides an overview of clean cooking investment by source and destination, along with an update on financial commitments made at the 2024 Summit on Clean Cooking in Africa.
- **Section 4: Clean cooking infrastructure,** which maps key clean cooking infrastructure across all clean cooking solutions in sub-Saharan Africa and reviews recent developments.
- **Section 5: Policy inventory and progress,** which tracks clean cooking policies across sub-Saharan Africa up to the first quarter of 2026.

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## Setting the scene

Access to clean cooking solutions remains an urgent yet often overlooked challenge, with disproportionately severe impacts on the most vulnerable across health, development, and education, as well as broader consequences for the environment. Nearly 2 billion people still lack access to clean cooking globally, half of which are living in sub-Saharan Africa (see Box 1 for definitions). Many more have gained access to clean cooking but still rely on traditional biomass for some cooking tasks. Household air pollution causes around 2.5 million premature deaths annually, the majority attributable to traditional cooking methods – with sub-Saharan Africa accounting for an estimated 840 000 of these deaths. Women and children bear a disproportionate share of this burden, both through greater exposure to harmful smoke, physical risk, and through the time demands of fuel collection and cooking, which consume on average four hours a day per household in Africa – time taken from education, paid work, and public life. Globally, the negative health impacts associated with cooking with polluting fuels are estimated to cost around USD 1.4 trillion a year (World Bank, 2020), and the traditional use of biomass for cooking generates around 1.2 Gt carbon dioxide equivalent ($CO_2$-eq) annually, comparable in scale to the combined emissions of international aviation and shipping, when counting both direct emissions and the associated contribution to forest loss.

### Box 1 ▷ Defining clean cooking fuels and technologies

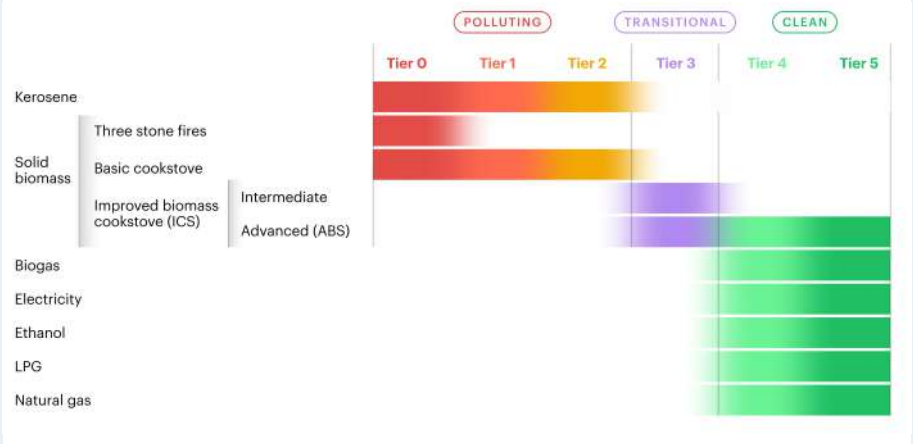
In this report, the definition of clean cooking follows the World Health Organization (WHO) definition of clean, transitional and polluting fuels and technologies which is based on the ISO-tier framework (Figure 1). In this definition, a stove-fuel combination is counted as clean only if it achieves at least Tier 4 for PM2.5 emissions and Tier 5 for carbon monoxide (CO) emissions. Tier 3 devices are treated as transitional, while those in Tiers 0-2 are classified as polluting and fall outside the scope of clean cooking access. Greenhouse gas emissions associated with a stove-fuel combination are not considered in this classification. Consequently, certain fossil fuel-based technologies, including natural gas and LPG stoves, are classified as clean cooking solutions as they meet the required indoor air pollution thresholds.

Most fuel and stove combinations are relatively straightforward but there are nuances within solid biomass cooking. For the purposes of this report, there are three broad types of solid biomass cooking commonly referred to. First, the three stone fire which is an open fire cooking setup where three stones or similar supports are arranged to hold a cooking pot above the flames. Second is basic biomass stoves (Tier 0-2), which are usually made of clay or metal and produced in the home or in artisanal workshops and offer only slight improvements over open fires in terms of efficiency and indoor air quality. Together, three stone fires and basic cookstoves, make up the combined category of traditional use of biomass (up to and including stoves of ISO Tier 2).

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Improved biomass cookstoves are the next tier up and are further delineated between intermediate improved biomass cookstoves (ICS) and advanced biomass cookstoves (ABS), the latter being a subset of ICS. ICS encompass stoves that use engineered enhancements and standardised manufacturing to improve thermal efficiency and reduce emissions. ICS include both intermediate designs (typically ISO Tier 3, considered transitional solutions) and advanced biomass cookstoves (ABS), which integrate technologies such as fans or gasifiers to achieve higher efficiency and lower emissions (ISO Tier 3-5, with the highest tiers classified as clean cooking solutions under WHO guidelines).

**Figure 1 ▻ Classification of stove types by Tier and access levels**




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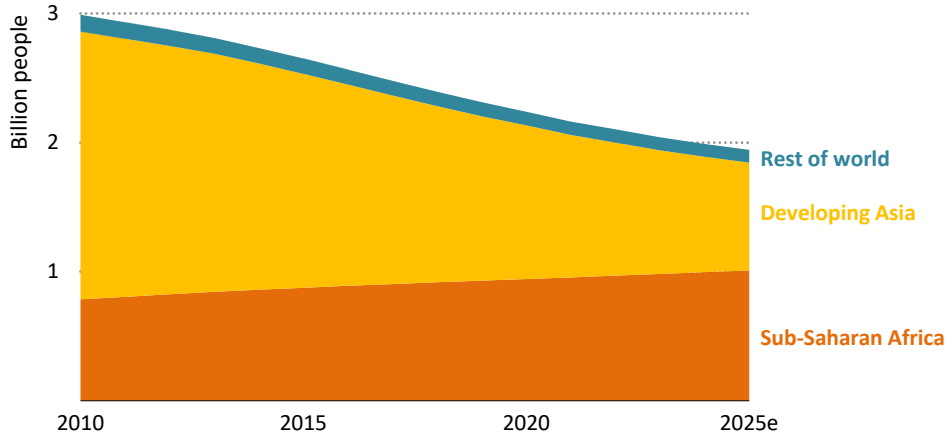
*The improvements of ICS and ABS cookstoves over the last decade, have pushed several biomass models into higher tiers of access*

Notes: LPG = Liquefied petroleum gas. Tiers follow the WHO-ISO clean cooking framework, which rates stoves by thermal efficiency, safety, carbon monoxide (CO) and PM2.5 emissions WHO (2014).

A household is considered to have access to clean cooking if it cooks primarily with a clean cooking solution. These solutions include biogas, electricity, ethanol, LPG, natural gas, and advanced biomass cookstoves. In practice, however, fuel stacking – the concurrent use of multiple fuel types – is widespread across sub-Saharan Africa, meaning that many households classified as having clean cooking access continue to rely on traditional biomass for some cooking tasks. This partially offsets the health, environmental, and economic benefits that clean cooking solutions are intended to deliver. Full adoption of clean cooking solutions is therefore a critical dimension of the transition towards universal access.

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**Figure 2 ▷ Population without access to clean cooking by region, 2010-2025e**




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*Globally, the number of people without access to clean cooking is declining, however in sub-Saharan Africa the number is rising*

Source: IEA analysis based on WHO (2026).

The world has demonstrated that rapid progress on clean cooking is possible (Figure 2). Since 2010, countries in Asia have collectively provided access to clean cooking fuels to around 1.5 billion people, more than halving the number of people in the region without access to clean cooking in the span of 15 years – with around 85% of those gains attributable to the People's Republic of China (hereafter "China"), India and Indonesia. Major government programmes subsidising stoves and fuels were the primary drivers of this progress, with liquefied petroleum gas (LPG) accounting for roughly 80% of all people gaining access, followed by electricity (10%) and other solutions. Sub-Saharan Africa, however, has not yet replicated this trajectory. Some countries made notable progress – such as Côte d'Ivoire, Kenya, and Nigeria – and the regional access rate almost doubled over the same period. Yet this was insufficient to offset rapid population growth, and the number of people without access has continued to rise. Today, roughly three in every four households in the region lack access to clean cooking, representing half of all people without access globally.

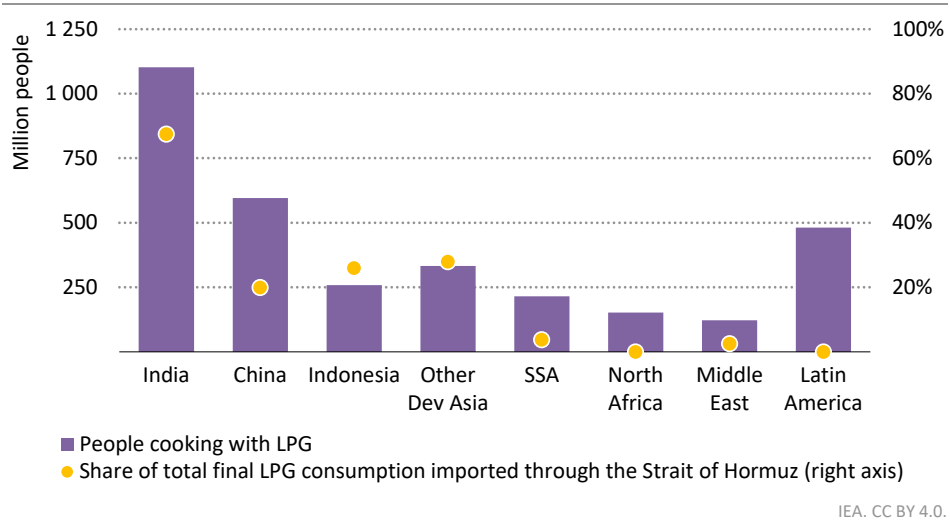
However, hard-won progress in clean cooking across emerging market and developing economies over recent decades has been threatened by the conflict in the Middle East. The closure of the Strait of Hormuz has triggered a global energy crisis of unprecedented magnitude, far outweighing the losses seen during the 1970s oil crises. LPG supply chains have been particularly impacted, with the strait accounting for 30% of all seaborne LPG exports in 2025.

Around 3.4 billion people across emerging market and developing economies rely on LPG as their primary cooking fuel – making it the world's most widely used energy source for

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cooking. This disruption confronted hundreds of millions of households with a severe challenge: whether there is enough fuel to cook a meal, and whether they can still afford it. Supply disruptions have been particularly severe in developing Asia – where 2.4 billion people cook with LPG. Countries such as India and Indonesia have relied on LPG in large-scale campaigns to rapidly expand clean cooking access over the past two decades. Today 80% of India and 90% of Indonesia's populations cook with LPG and both countries are net importers heavily dependent on Middle East suppliers. In India's case, around two-thirds of the LPG consumed in 2025 transited through the Strait of Hormuz (Figure 3). In Africa, supplies have remained available over the first three months of the crisis, but soaring prices have already pushed clean cooking options beyond the threshold of affordability for many households.

**Figure 3 ▷ People primarily cooking with LPG and share of total final LPG consumption imported through the Strait of Hormuz in EMDE, 2024**




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*Almost 3.4 billion people in EMDE rely on LPG as their primary cooking fuel. A substantial share of Asian supply transits through the Strait of Hormuz.*

Notes: SSA = Sub-Saharan Africa; Other Dev Asia = Developing Asia excluding China, India and Indonesia; EMDE = emerging market and developing economies.

Sources: IEA analysis based on data provided by Kpler and WHO (2026).

For regions where clean cooking transitions have relied heavily on LPG to extend access, the crisis underscores both the scale of what has been achieved and the vulnerability that comes with it – and makes the case for securing the clean cooking supply chain and diversifying fuels and technologies where possible even more pressing. A dedicated spotlight below provides further analysis of the global LPG crisis, its consequences for cooking access in Asia and Africa, and government responses.

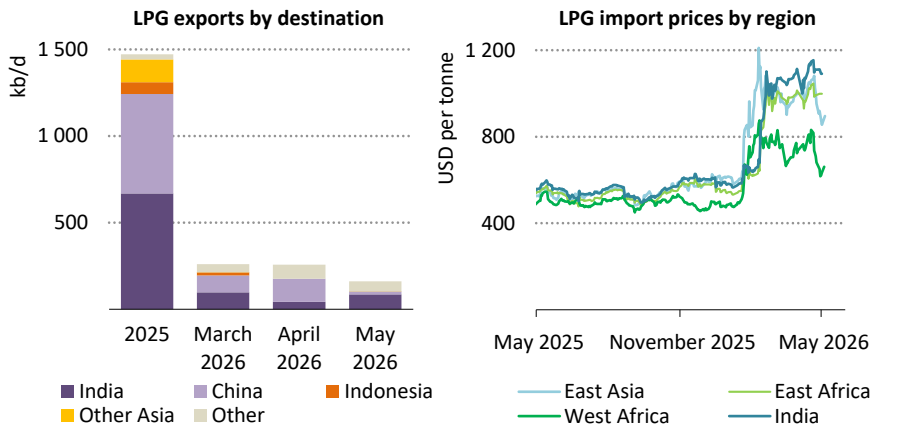
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S P O T L I G H T

## Impacts of the closure of the Strait of Hormuz on clean cooking

In March 2026, as shipping flows through the Strait of Hormuz plunged amid the conflict in the Middle East, the volumes of LPG exported through the strait fell by around 80%, dropping from 1.5 million barrels per day (mb/d) on average in 2025 to 0.3 mb/d (Figure 4). Almost all of the LPG exported from the Middle East in 2025 was delivered to Asia. Nearly 60% of the volumes exported to Asia served cooking needs across households, restaurants, street food vendors and other commercial or public establishments. This amount was sufficient to meet the cooking needs of 820 million people. The remainder was mostly used for water heating and as a feedstock in the petrochemical industry, a segment dominated by China, where there is some flexibility to switch to alternative feedstocks when more cost-effective.

**Figure 4 ▷ LPG export through the Strait of Hormuz and LPG import prices**




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*The Strait of Hormuz closure triggered an unprecedented cooking fuel crisis. Developing Asia faced severe LPG supply disruptions, while Africa saw import prices soar.*

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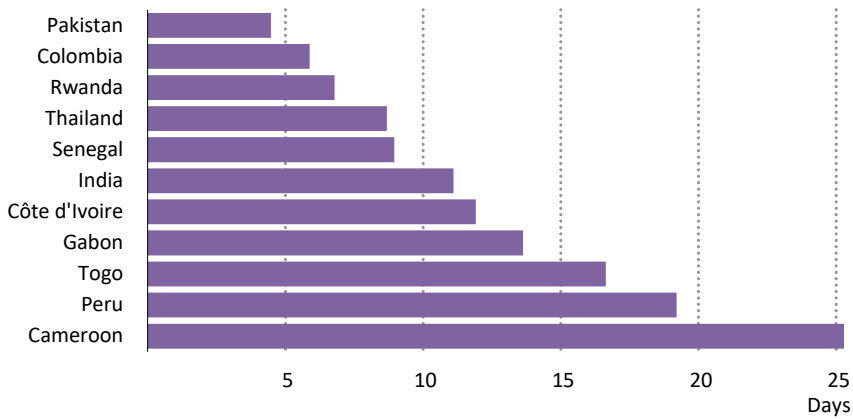
India's LPG imports have been particularly affected, dropping by more than half over the first two months of the conflict, a loss of around 430 kb/d. The government responded by instructing domestic refineries to maximise LPG output, adding an estimated 180 kb/d. Additional demand-side measures have been introduced to limit the impact on household cooking, including the prioritisation of LPG for residential use and incentives to accelerate fuel switching. Companies have also secured some supplementary supply from alternative sources, but a vessel from the United States needs around 40 days to reach Mumbai, compared with 4 to 5 days from the Strait of Hormuz. The amount of LPG India can hold in storage, meanwhile, covers just over 10 days of consumption, providing

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only a limited buffer during supply disruptions. The reported impacts include commercial consumers not being able to access their pre-conflict LPG volumes, and both commercial and household consumers facing significantly higher prices on unregulated markets. According to the latest available information, the government has issued orders to ensure commercial customers receive at least 70% of their pre-conflict LPG volumes. Local media have also reported increased population movements from cities to rural areas, where some consumers expected to be able to access cooking fuels, including wood and charcoal, more easily.

The impacts of the closure of the Strait of Hormuz on cooking fuels have been felt beyond India. Few countries maintain strategic LPG reserves, and in many emerging market and developing economies, total known LPG storage capacity – including both strategic and operational storage – amounts to less than 30 days of national consumption, providing only a limited buffer against supply disruptions (Figure 5). Moreover, not all of the operational storage capacity is necessarily accessible to meet domestic demand during a crisis. Recognising this vulnerability, several countries across Africa and developing Asia, including Rwanda and Viet Nam, had already begun expanding their domestic LPG reserves in recent years. As the current crisis has evolved, many others have announced similar plans. Countries with the highest LPG dependence, including India and Indonesia, have also reaffirmed and accelerated efforts to diversify their cooking energy mix, reducing their long-term exposure to a single imported fuel.

**Figure 5 ▷ Known LPG storage capacity expressed in number of days of consumption in selected countries**




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*Operational and strategic LPG storage capacity is limited in many countries, including some of those that rely most on LPG to provide clean cooking for their populations*

Notes: Known LPG storage capacity includes both operational and strategic LPG storage capacity. Operational storage covers commercial import, export and domestic storage facilities.

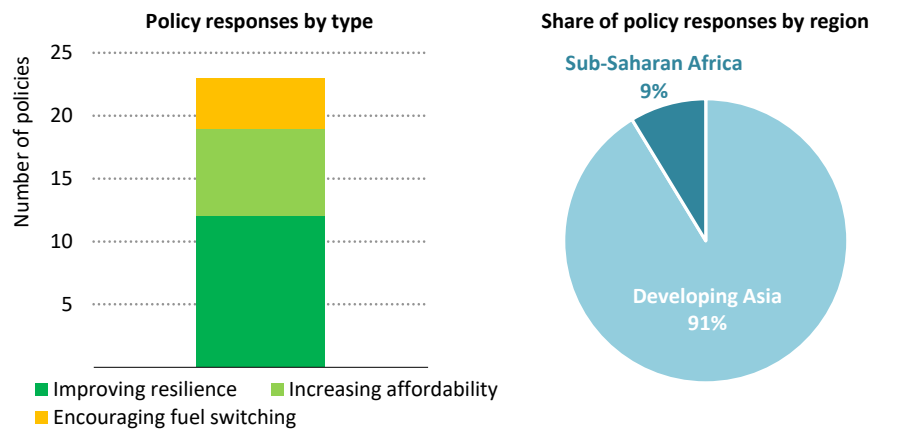
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Beyond supply disruptions, LPG import prices surged sharply across all major benchmarks in March, with India and East Africa peaking at around twice their 2025 average and West Africa at 70% above (Figure 4). The price spike in West Africa was not driven by any local supply shortage, as the region sources almost none of its LPG from Gulf countries. It reflects the global nature of LPG markets, where supply disruptions in one region rapidly affect prices in others. African LPG importers were therefore not spared from the price shock, which was further compounded by rising costs of oil products used to transport LPG inland – sometimes over long distances – pushing retail prices even higher. This has eroded the affordability of LPG for households in countries where prices are deregulated. It has also increased fiscal pressures where governments or state-owned enterprises have often absorbed the higher costs.

Known damage to LPG-related infrastructure sites in the Islamic Republic of Iran, Oman and Qatar has already resulted in a production loss of around 170 kb/d. Eight additional LPG-related sites in the region have reportedly been hit, but the full extent of the damage to them is unknown at this stage.

**Figure 6 ▻ Cooking fuel measures implemented following the conflict in the Middle East, March-May 2026**




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*Governments responded swiftly to the crisis, implementing measures to strengthen clean cooking resilience, safeguard affordability, and encourage fuel switching*

Across the board, the policy reaction to the crisis has been swift and varied (Figure 6). The majority of responses recorded to date have come from developing Asia – particularly India, Indonesia, Bangladesh and the Philippines – though African countries such as South Sudan and Tanzania have also taken measures. Around half of the measures tracked focused on supply-side resilience, through intentions to enhance national reserves, increase local production, or ration and prioritise fuel availability in the

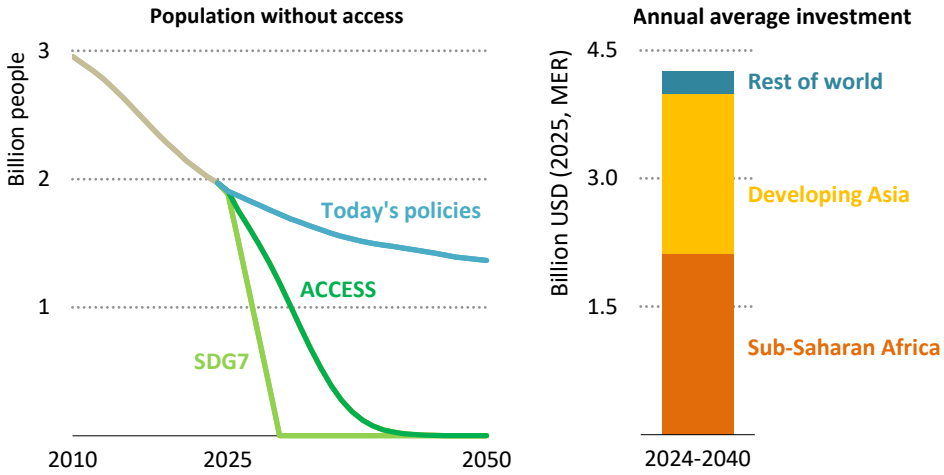


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short term. 30% targeted household affordability through price caps, tax exemptions or direct subsidies. The remaining 20% seek to diversify cooking fuels and technologies – particularly by supporting electric stoves – to ease pressures in the short term and improve energy security over the long term.

To counter the impacts of the disruptions to oil supplies through the Strait of Hormuz, the IEA on 11 March launched the largest ever release of emergency oil stocks by its Member countries, bolstering the supply of oil products, including LPG, available on the market. The IEA also published on 20 March the *Sheltering from Oil Shocks* report (IEA, 2026), highlighting specific measures that governments can take to help ensure LPG for cooking remains available to households. Securing past clean cooking gains and enabling future progress will require greater attention to the resilience of clean cooking systems, an issue that will be explored through a Clean Cooking Security Programme at the IEA.

**Figure 7 ▷ Global population lacking access to clean cooking by scenario and annual investment needed in the ACCESS**




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***By matching best historical performance, Africa could reach universal clean cooking access around 2040, costing just USD 2 billion per year***

Note: ACCESS = Accelerating Clean Cooking and Electricity Services Scenario; SDG7 = Sustainable Development Goal 7.

Progress on clean cooking remains fragile, and the overall trajectory falls well short of achieving universal access in a near future. Under today's policies and trends, 1.4 billion people will still lack access by 2050, with more than two-thirds of them living in sub-Saharan Africa (Figure 7). To explore what a more concerted response could achieve, the IEA developed the Accelerating Clean Cooking and Electricity Services Scenario (ACCESS),

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described in detail in the IEA 2025 report *Universal Access to Clean Cooking in Africa* (IEA, 2025a). The scenario charts a pathway in which all countries with clean cooking gaps replicate the best historical rates of progress seen globally in comparable contexts, finding that universal access could be reached by 2040 at a cost of just over USD 4 billion per year – half of which would be needed in sub-Saharan Africa. This represents around 0.1% of today's global energy investment, yet the benefits would be substantial: by 2040, premature deaths from household air pollution would be cut by almost two-thirds, the time saved by households switching to clean cooking would be roughly equivalent to the total hours worked annually in Indonesia today, and net greenhouse gas emissions would fall by 1.25 Gt $CO_2$-eq per year.

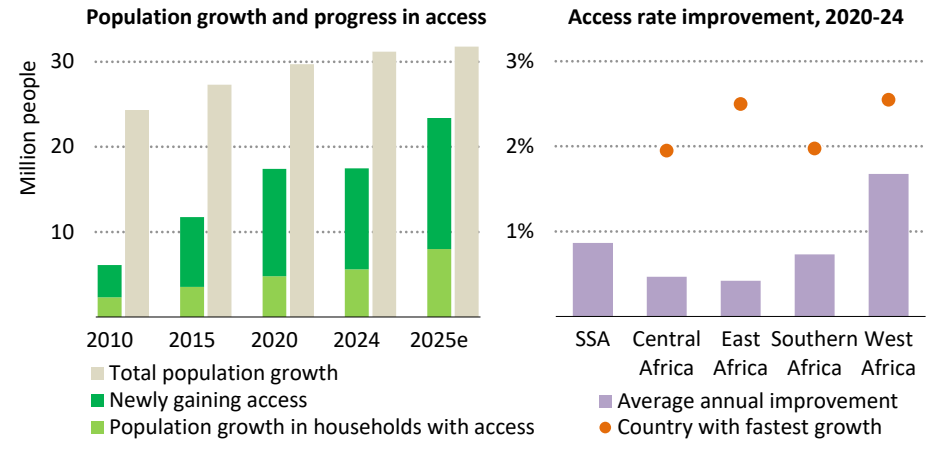
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## Clean cooking trends in sub-Saharan Africa

Access to clean cooking continues to expand in sub-Saharan Africa with access rates improving in 90% of countries in the region. Based on the latest available survey data, the clean cooking access rate in the region reached 23% in 2024 – up 0.8 percentage points on the previous year, with 17 countries recording larger gains than in 2023. Around 12 million people gained access during the year. This is broadly consistent with gains in 2023 and in line with the upward trend since 2010, reaching levels now three times higher than in 2010. Preliminary estimates for 2025 point to a strong acceleration in progress, with around 15 million people potentially gaining access – a record high in the region (Figure 8). The annual number of people gaining access slowed between 2020 and 2022, as the coronavirus (Covid-19) pandemic and elevated energy prices following Russia's full-scale invasion of Ukraine led some households to temporarily revert to traditional biomass use. Progress has since rebounded for a second consecutive year in 2024, and 2025 may mark the year annual access gains surpass pre-pandemic peak levels for the first time.

Despite continued improvements, population growth continues to outpace progress in two-thirds of sub-Saharan Africa countries. At the regional level, only Southern Africa recorded a decline in its population without clean cooking access in 2024, while Central Africa saw the largest increase, at almost 3%. Overall, the number of people without access in sub-Saharan Africa reached around 1 billion in 2024, an increase of 14 million compared with 2023.

**Figure 8 ▷ Progress in clean cooking access compared to population growth, and annual average access rate improvement, 2020-24**




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***Access to clean cooking continues to expand, gradually catching up with population growth. West Africa has led gains in access in sub-Saharan Africa over the past five years.***

Notes: SSA = sub-Saharan Africa. Estimates for 2025 are based on econometric projections. The average annual improvements in access rates are measured in percentage points, not as percentage growth.

Source: IEA analysis based on WHO (2026).

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**Table 1 ▷ Access rates and population without access to clean cooking in Africa, 2020-2025e**

| | Access rate | Access rate | Population without access (million) | Annual increase in access rate | Population gaining access annually (million) |
|---|---|---|---|---|---|
| | 2024 | 2025e | 2024 | 2020-2024 | 2020-2024 |
| **Africa** | **34%** | **35%** | **998** | **0.6%** | **11.9** |
| North Africa | >95% | >95% | 2 | 0.0% | <0.1 |
| Sub-Saharan Africa | 23% | 24% | 996 | 0.9% | 11.9 |
| **Central Africa** | **13%** | **14%** | **153** | **0.5%** | **0.8** |
| Cameroon | 32% | 33% | 20 | 1.1% | 0.3 |
| Chad | 11% | 12% | 18 | 1.0% | 0.2 |
| Congo | 40% | 40% | 4 | 2.0% | 0.1 |
| DR Congo | <5% | <5% | 104 | 0.2% | 0.2 |
| Gabon | 93% | 94% | <1 | 0.6% | <0.1 |
| **East Africa** | **14%** | **15%** | **473** | **0.4%** | **2.6** |
| Burundi | <5% | <5% | 14 | 0.0% | <0.1 |
| Ethiopia | 7% | 8% | 122 | 0.3% | 0.4 |
| Kenya | 32% | 33% | 38 | 2.5% | 1.4 |
| Madagascar | <5% | <5% | 31 | 0.2% | <0.1 |
| Mozambique | 8% | 9% | 32 | 0.5% | 0.1 |
| Rwanda | 9% | 10% | 13 | 1.4% | 0.2 |
| Somalia | <5% | 5% | 18 | 0.3% | <0.1 |
| Tanzania | 11% | 11% | 61 | 0.8% | 0.5 |
| Uganda | <5% | <5% | 49 | 0.2% | <0.1 |
| Zimbabwe | 37% | 38% | 10 | 0.8% | 0.1 |
| **West Africa** | **25%** | **26%** | **344** | **1.7%** | **7.7** |
| Benin | 8% | 9% | 13 | 0.5% | <0.1 |
| Côte d'Ivoire | 48% | 49% | 16 | 2.6% | 0.8 |
| Ghana | 35% | 39% | 22 | 1.8% | 0.6 |
| Mali | <5% | <5% | 24 | 0.1% | <0.1 |
| Mauritania | 56% | 56% | 2 | 1.2% | <0.1 |
| Niger | 6% | 7% | 25 | 0.7% | 0.2 |
| Nigeria | 28% | 31% | 168 | 2.3% | 5.4 |
| Senegal | 39% | 48% | 11 | 1.5% | 0.3 |
| **Southern Africa** | **76%** | **77%** | **27** | **0.7%** | **0.9** |
| Angola | 56% | 57% | 17 | 1.4% | 0.4 |
| Botswana | 71% | 71% | <1 | 0.8% | <0.1 |
| Namibia | 46% | 46% | 2 | 0.5% | <0.1 |
| South Africa | 90% | 90% | 6 | 0.6% | 0.4 |

Notes: Congo = Republic of the Congo; DR Congo = Democratic Republic of the Congo; Tanzania = United Republic of Tanzania.

Source: IEA analysis based on WHO (2026).

Progress on clean cooking access remains heavily concentrated. Just five countries – Nigeria, Kenya, Côte d'Ivoire, Ghana, and Tanzania – accounted for almost three quarters of all people who gained access in sub-Saharan Africa over the past five years, each achieving annual growth of 8% to 13% in the number of people with access, underpinned by active national

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programmes, infrastructure development and sustained policy improvements (Table 1). At the other end of the spectrum, one in five countries recorded annual improvement rates below 3% over the same period. On a regional basis, West Africa led progress over the 2020–2024 period, with access rates growing more than two times faster than in other regions.

Within countries, gains are driven largely by urban areas, which accounted for almost 90% of all new adoptions over the past five years, reflecting ongoing rural-to-urban migration, the shift from charcoal towards cleaner cooking solutions, and the expansion of services in underserved urban areas. The urban-rural divide in access remains stark, with clean cooking access in cities standing at 40%, compared to less than 10% in rural areas. Displacement settings – often at the periphery of peri-urban areas – are frequently overlooked in the clean cooking transition, with modern cooking solutions rarely reaching these communities. The number of refugees, internally displaced people, and asylum seekers peaked at around 40 million in 2024 following the conflict in Sudan, before declining by around 10% in 2025 (UNHCR, 2026). Further analysis of the clean cooking challenge in displacement settings can be found in *Universal Access to Clean Cooking in Africa* (IEA, 2025a).

LPG remains the dominant clean cooking fuel in sub-Saharan Africa, with more than 70% of the population with clean cooking access primarily cooking with LPG in 2024, and the vast majority of those gaining access over the past five years having done so through this fuel (Figure 9). West Africa has led progress in expanding clean cooking access through LPG over the past five years, with most new access concentrated in Nigeria, supported by its maritime import infrastructure. Significant progress has also been achieved in Côte d'Ivoire, Ghana and Senegal.

Electricity is the second most widely used clean cooking fuel, accounting for around 25% of households with access. Electric cookstoves are particularly widespread in South Africa, which alone accounts for almost 70% of people cooking with electricity in sub-Saharan Africa, reflecting the country's historically high level of grid access – though the load-shedding crisis of recent years has driven greater promotion of LPG as an alternative cooking fuel (Statistics South Africa, 2024). Outside South Africa, nine countries have more than half of their urban population with access to clean cooking relying on electric cookstoves. However, adoption is still limited overall, as constrained grid access beyond urban centres and unreliable electricity supply continue to constrain adoption. Nonetheless, renewed efforts to expand electricity access and modernise grids, combined with recent policy developments, point to a growing role for electric cooking in these regions: countries such as Ethiopia and Kenya have placed it at the centre of their clean cooking roadmaps, six sub-Saharan African countries explicitly mentioned it in their recently updated Nationally Determined Contributions, and utility-led initiatives promoting electric cooking have gained momentum in some countries, including Kenya and Tanzania.

Market signals point to a sharp acceleration in electric stove imports in sub-Saharan Africa, which increased by almost 60% between 2020 and 2024. Most of these stoves were imported into South and East Africa. However, this trend is not yet fully reflected in survey-based clean cooking tracking, where very few households have been recorded as gaining access through

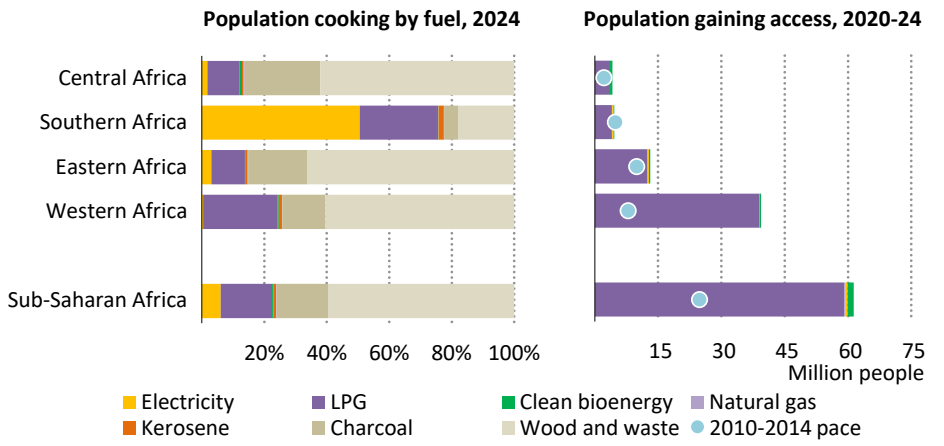
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electricity over the same period. This disconnect may partly reflect the inherent lag of survey-based approaches, given that household surveys are typically conducted only every three to five years. It may also reflect the fact that a share of imported electric stoves has either not yet been sold or is currently used to complement rather than replace existing cooking solutions and has therefore not yet been adopted as a primary cooking fuel.

Bioethanol provided access to clean cooking for more than 5 million people between 2020 and 2024, according to company reporting, driven largely by the expansion of KOKO Networks in East Africa. This progress is not yet reflected in household survey data, and the company's bankruptcy in early 2026 represents a setback for bioethanol's role as a clean cooking solution in the region. Uptake of advanced biomass cookstoves remains limited, although pilot projects for institutional cooking (Box 3) and expanding local pellet production point to growing interest. A similar pattern is observed for piped natural gas, with modest growth limited to areas where domestic production and upstream infrastructure are in place.

Although transitional biomass cookstoves are not considered clean, they remain an important part of Africa's cookstove landscape, particularly in affordability-constrained and rural markets, where they serve as a stepping stone to clean cooking. Carbon market data and tracked stove distribution programmes indicate that at least 4 million people gained access to a transitional stove each year over the past five years.

**Figure 9 ▷ Share of population primarily cooking by fuel in sub-Saharan Africa, 2024, and people gaining access by fuel, 2020-2024**




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***LPG is the primary clean cooking fuel in sub-Saharan Africa (70%), followed by electricity (25%), with most new access over the past five years driven by LPG adoption***

Note: This graph is based on survey data and may not fully reflect recent rapid developments in certain fuels or countries, owing to the time lag between national surveys.

Source: IEA Analysis based on WHO (2026).

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Primary IEA analysis for 2025, based on import, investment, economic and policy data points to an acceleration in clean cooking progress. Using an econometric approach to integrate relevant tracking data, the findings suggest that the number of people gaining clean cooking access could have reached 15 million in 2025, around 35% above the average of the past five years. Progress appears particularly notable in West Africa. In Senegal, for instance, strong economic growth, significant policy advances in recent years, and a near-doubling of butane imports to around 11 kb/d in 2025 collectively point to a substantial increase in access in the country. While a portion of these imports to Senegal may have been re-exported by land to neighbouring countries, the volumes involved are sufficient to meet the cooking needs of around 5 million people. These early findings should nonetheless be interpreted with caution and will require confirmation from household surveys in the coming years, which remain the most reliable source of data on clean cooking access today, but whose availability is increasingly under strain (Box 2).

### **Box 2** ▷ Data limitations in tracking clean cooking progress

Reliable and timely data on progress towards universal clean cooking access is essential for policy makers designing clean cooking roadmaps, assessing policy effectiveness, or to structure affordability support in times of crisis. Data on the current user-base and the speed of transition also supports the private sector in future expansions planning and investment decisions.

The World Health Organisation (WHO) serves as custodian agency for clean cooking access data. The WHO maintains the *Household Energy Database*, which contains nationally representative data from surveys and censuses on cooking fuels (WHO, 2025). This database, which includes surveys for more than 150 countries ranging back to 1970 forms the basis of global clean cooking progress tracking, as well as the UN's Sustainable Development Goal 7 (SDG7) indicator. While surveys provide a detailed snapshot of fuel use in a country, they are expensive to conduct and not carried out frequently. For example, the Demographic and Health Surveys (DHS) – a household survey widely used in emerging market and developing economies to track health and development indicators – costs on average USD 1.6 million, with costs varying widely depending on the size of the country (Worges et al., 2025). Surveys also often only track primary fuel use, even though fuel stacking is prevalent across Africa (Box 1.1). This may not fully capture important dimensions of household cooking behaviour, including the continued use of polluting secondary fuels, the uptake of clean secondary cookstoves, and the distinction between traditional three-stone fires and more advanced biomass stoves.

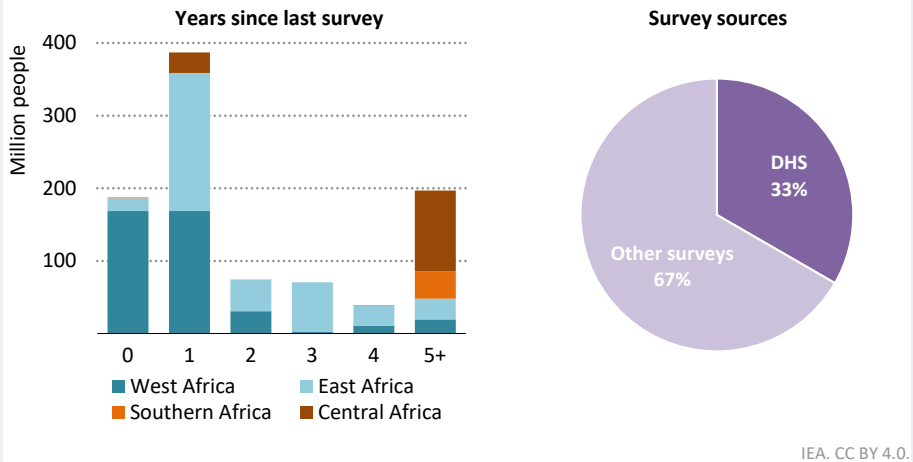
To bridge gaps between survey data and the latest reporting year, the WHO uses a Bayesian hierarchical model that projects existing fuel transition trends across six fuels (Stoner et al., 2021). These estimates are based on households' reported primary cooking fuel, so they do not capture fuel stacking and exclude advanced biomass stoves from being counted in the clean cooking category. Because surveys take time to collect,

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process and analyse, even the most recent global stocktake reflects a two-year lag. To provide an up-to-date picture, the IEA has developed an econometric approach that combines changes in income, policy tracking and clean cooking investments, calibrated against supply-side data, to estimate recent access progress and project future access rates.

Currently, across sub-Saharan Africa, more than 750 million people without access live in countries without a survey in the latest collection year (Figure 10). For nearly 200 million of them, the most recent survey is over five years old, meaning the true access levels in these countries could differ substantially from current estimates. Estimates are particularly uncertain in Central and East Africa, where recent survey data are missing for several countries. This uncertainty is set to intensify, as the average interval between surveys is expected to rise, given that one in three datapoints in Africa included in the *Household Energy Database* were collected through the DHS programme, which saw its funding discontinued in 2025.

**Figure 10 ▷ Clean cooking population without access since last survey, and access surveys by source 2000-2023**




*Survey coverage is uneven across Africa, with Central Africa relying most heavily on older data*

Notes: The figure is based on the Household Energy Database and includes surveys available up to the 2023 reporting year. Years since last survey refers to the gap between the survey year and the reporting year. DHS = Demographic and Health Surveys.

Source: IEA Analysis based on WHO (2025).

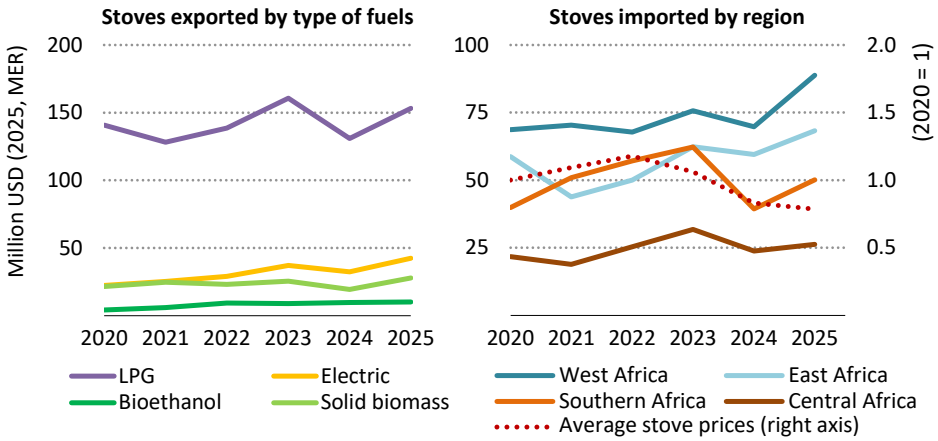
Against this backdrop and given the need for countries to understand what is driving progress and which interventions are effective, tracking supply-side data can provide a useful complement to household surveys. Supply-side trends can, for example, be

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proxied through stove import data, fuel sales, LPG cylinder sales and carbon credit project data, offering more timely insights into clean cooking adoption. The IEA developed a supply side tracking approach for electricity access in the *Guidebook for Improved Electricity Access Statistics* (IEA, 2023b) and was the methodological basis for the African Energy Commission's similar guidebook for clean cooking, which will be rolled out in African countries in the coming years. That said, supply-side indicators need to be calibrated against survey data. Establishing a new household survey programme in sub-Saharan Africa would therefore be critical.

Cookstove import data from China – which supplies three in every four cookstoves imported to sub-Saharan Africa – provide further evidence of an acceleration of clean cooking progress in 2025, with exports to the region rising by more than 20% in value terms, from USD 190 million in 2024 to USD 235 million in 2025. This follows a 17% decline in 2024, which was largely driven by a 22% drop in the average export value per cookstove rather than an actual contraction in volumes. The sharp value-based rebound in 2025 occurred despite a further 5% decline in prices, indicating an even stronger increase in the number of units shipped.

**Figure 11 ▹ Exports of cooking stoves from China to sub-Saharan Africa, by fuel type and destination region, 2020-2025**




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***Imports of cookstoves from China increased across all fuel types and regions in 2025, rising by more than 20%, with the strongest growth observed for LPG stoves and in West Africa***

Notes: Electric stoves include electric cookers and electric frying pans, but not other cooking appliances such as ovens and kettles. China accounts for around 75% of cookstoves imported into sub-Saharan Africa, followed by Turkey at 15%.

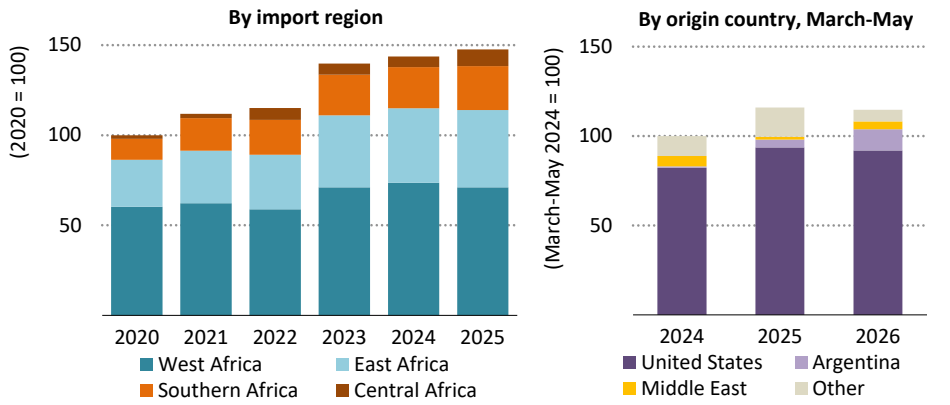
Source: IEA analysis based on GACC (2026).

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Growth was broad-based across all stove types. LPG cookstoves recorded the largest increase in value terms, rising by more than USD 22 million, representing a 17% increase compared to 2024 (Figure 11). Electric cookstoves also grew strongly, with imports from China up more than 30%, while bioethanol stoves recorded a more modest increase of 5%. Imports of solid biomass cookstoves also grew by almost 45%, though the majority remain transitional (Tier 3) or basic (Tier 0–2) models that fall short of the World Health Organization definition of clean cooking. Geographically, imports rose across all sub-regions, led by West Africa and Southern Africa (27%), followed by East Africa (15%) and Central Africa (10%).

Trends in LPG import volumes provide an additional indication of clean cooking progress in sub-Saharan Africa. LPG imports to the region grew by 3% in 2025, broadly in line with the pace recorded in 2024, though both years fell short of the 20% increase observed in 2023 (Figure 12). This moderation in import growth does not, however, signal a slowdown in consumption. Domestic LPG production expanded over the period, most notably with the commissioning of Nigeria's 650 kb/d Dangote refinery, which produces LPG alongside other refined products, partially substituting for imports. Official LPG consumption data for recent years are not yet available, but the strong growth in LPG cookstove imports across the region in 2025, combined with rising fuel imports and domestic production, points to continued expansion in LPG use and accelerated progress on clean cooking access. In monetary terms, LPG imports in sub-Saharan Africa totalled around USD 2.2 billion in 2025, down from a peak of USD 2.8 billion in 2022 when prices surged during the global energy crisis.

**Figure 12 ▷ Annual LPG imports by region in sub-Saharan Africa, 2020-2025, and March to May imports by country of origin, 2024-2026**




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*LPG imports in sub-Saharan Africa have grown steadily in recent years, and proved resilient to supply disruptions in 2026 thanks to the region's limited dependence on Gulf supply*

Source: IEA analysis based on data provided by Kpler.

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The closure of the Strait of Hormuz in early 2026 caused the most severe LPG supply disruption on record (see spotlight in section 1.2). In sub-Saharan Africa, however, data from the first three months of the crisis show that LPG imports remained stable compared to the same period in 2025, indicating that the regional supply chain has remained resilient to the shock over this period. This reflects the region's limited exposure to Middle Eastern supply, with less than 5% of sub-Saharan Africa's LPG imports in 2025 originated from Gulf countries and the vast majority (80%) sourced from the United States. Imports from Argentina have also grown over the past two years, following the liberalisation of its LPG sector, which has spurred a significant increase in domestic production and exports. This supply resilience should not, however, be mistaken for insulation from the crisis. Import price increases linked to global market disruption have weighed on affordability across the continent, threatening to reverse recent clean cooking progress. Higher gasoline and diesel prices add another layer of cost pressure, particularly in land-locked countries where transportation cost make up a larger share of the end-user price. Looking ahead, Africa's current LPG supply chain, while favourable during this episode, is not without vulnerabilities, and securing clean cooking systems in the continent will be essential to sustaining clean cooking progress.

### Box 3 ▷ Schools as a new frontier to scale access to clean cooking

Clean cooking in schools remains an underexplored but important opportunity for accelerating access. Based on the latest Global Child Nutrition Foundation (GCNF) survey for the 2022–2023 school year, school feeding programmes currently reach around 70 million students in sub-Saharan Africa – 16% of the school-age population – with wide regional variation, from nearly 40% coverage in Southern Africa to just 2% in Central Africa (Figure 13). Although participation in school feeding programmes remains low relative to other regions globally, sub-Saharan Africa has seen the fastest growth in recent years, driven by countries such as Chad, Ethiopia, Madagascar and Rwanda (WFP, 2024).

Cooking in schools remains largely reliant on traditional fuels, and biomass use for school meals can represent a significant share of total cooking demand, although this remains largely overlooked due to data gaps. In Kenya, for example, only about 10% of schools use clean cooking solutions, while biomass use for school meals is estimated at 1 million tonnes (Invest Kenya, 2026), around 4% of national demand of traditional biomass used for cooking. As programmes expand, demand for firewood could rise if current practices persist. However, schools also offer strong potential for clean cooking deployment, given their predictable, high-volume demand profiles.

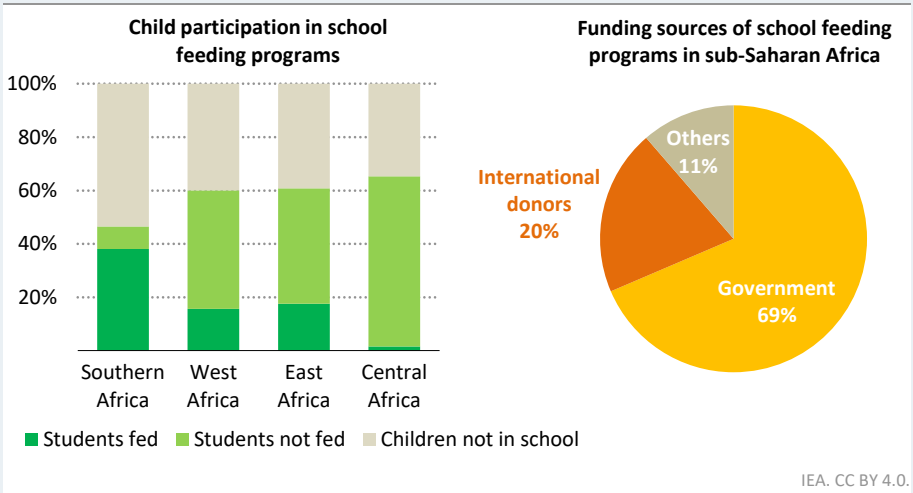
Financing and policy support remain critical enablers. Funding is largely government- and donor-driven, with varying levels of national ownership – strong in Rwanda, which has a strategy explicitly integrating clean cooking, but still reliant on household contributions in countries such as Tanzania. Broader initiatives, including the Platform for Clean Cooking in Schools launched at COP30, alongside emerging models such as carbon

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financing and demand aggregation, are helping build momentum. Implementation is advancing through both pilot projects and scaled models, including electric cooking in Madagascar and Tanzania, pellet-based solutions in Rwanda, and large-scale delivery such as Food4Education in Kenya, which serves around 600 000 meals daily and operates the largest modern cooking kitchen in Africa using recycled wood briquettes.

Further progress will depend on stronger government coordination and improved data, which are critical to guide investment and scale deployment as school feeding programmes continue to expand. In this context, the IEA could help lay the foundations for tracking progress through improved data frameworks and regular monitoring of clean cooking in schools.

**Figure 13 ▷ Children enrolled and funding sources of school feeding programs in sub-Saharan Africa**




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*At least 70 million children receive a meal at school in sub-Saharan Africa, a low coverage but rising faster than any other region*

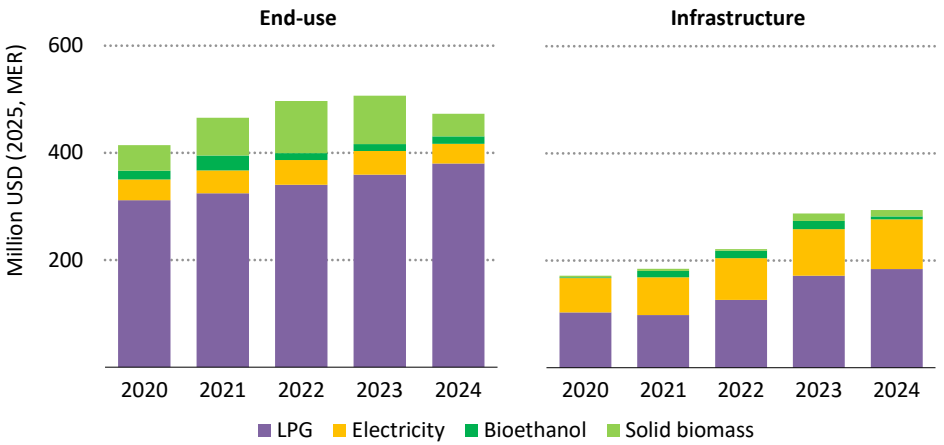
Source: IEA analysis based on GCNF (2024).

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## Investment trends

Investments into sub-Saharan Africa's cooking sector reached around USD 770 million in 2024, up from around USD 590 million in 2020. Roughly six in every ten dollars went into end-use equipment while the remainder supported infrastructure (Figure 14).

**Figure 14 ▷ Investments in cooking equipment and infrastructure sub-Saharan Africa, 2020-2024**




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*Direct investment in infrastructure and end-use equipment was split around three-quarters to LPG and one quarter to other solutions and totalled around USD 770 million in 2024*

Notes: Infrastructure investment by technology is estimated as the share of total infrastructure investment attributable to cooking. Infrastructure investment figures exclude local stove manufacturing. End-use investments in solid biomass include basic, intermediate and advanced biomass cookstoves.

Sources: IEA analysis based on AlliedOffsets (2026), GACC (2026), World Bioenergy Association (2026), OECD (2026), UN Comtrade (2026) and Argus Media group. All rights reserved.

End-use investment, which includes household cooking equipment such as stoves and cylinders, reached around USD 480 million in 2024. LPG dominated this category, with end-use investment rising to around USD 380 million, reflecting continued purchases of cylinders and stoves. Non-LPG end-use investment fell from around USD 150 million in 2023 to around USD 90 million in 2024. This was mainly driven by a decline in solid biomass stove investment, which fell from around USD 90 million to around USD 40 million, reflecting lower volumes of development assistance flowing to cookstove projects, and the effect of falling new carbon credit issuances (Box 5). Electric cooking appliance investment declined slightly to around USD 40 million, while bioethanol stove investment remained broadly stable at around USD 10 million.

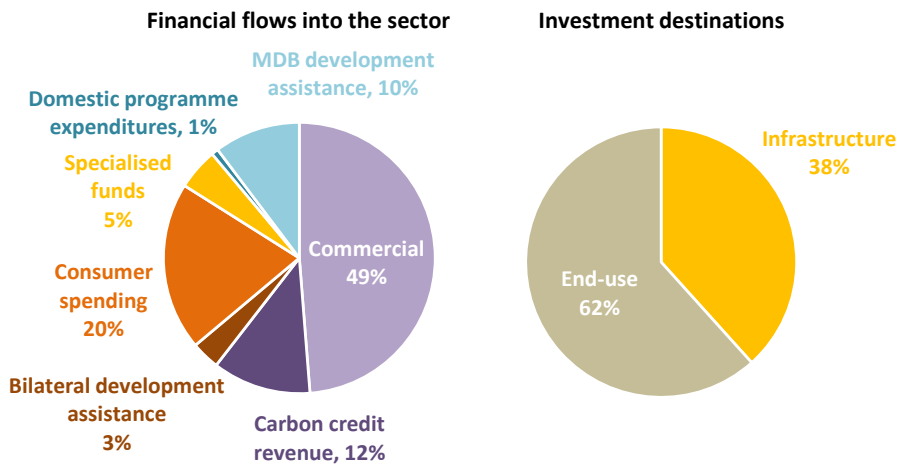
Infrastructure investment remained concentrated in LPG and electricity. LPG infrastructure investment reached around USD 190 million in 2024, supporting refilling infrastructure and

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primary storage[1]. Electricity infrastructure investment reached around USD 90 million. If these investments result in improved reliability, this could help catalyse greater electric cooking uptake in the future. Infrastructure investment for bioethanol and solid biomass remained smaller and mostly project driven.

Commercial investment is the main source of investment into the African cooking sector, accounting for 49% of the flows in 2024 (Figure 15). Direct consumer spending on stoves and associated equipment accounted for a further 20%. Carbon credit revenue accounted for 12% of flows, while multilateral development bank financing followed at 10%. Specialised funds, bilateral development assistance and domestic programme expenditures accounted for the remaining share. Only a few African governments provide direct financial support for clean cooking end-use equipment and infrastructure from public funds, with most government programmes receiving funding via development assistance. These figures include all upfront investment costs, net of taxes.

**Figure 15 ▷ Share of cooking sector total investment and financial support by source and final destination, 2024**




IEA. CC BY 4.0.

*Commercial financing was half of financial flows into the cooking sector in 2024. Overall flows primarily support end-use equipment and cookstoves*

Sources: IEA analysis based on AlliedOffsets (2026), GACC (2026), World Bioenergy Association (2026), World Bank (2026), OECD (2026), UN Comtrade (2026) and Argus Media group. All rights reserved.

[1] Investments in LPG production is not included in this tracking



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### Box 4 ▷ Fuel subsidies and market reform

Experience in developing Asia shows that affordability programmes can accelerate clean cooking access at scale. India's Pradhan Mantri Ujjwala Yojana (PMUY) programme delivered subsidies directly to the bank account of 103 million women from below-poverty-line households in 2025. Indonesia's subsidised three-kilogram LPG cylinder programme, which served more than 40 million customers in 2024, resulted in some of the best historic rates of progress observed. Yet, these programmes also came with significant fiscal costs, amounting to around USD 1.3 billion in India and USD 4.5 billion in Indonesia in 2024 (Government of India, 2025; Ministry of Finance of the Republic of Indonesia, 2025). Although selected examples from Ecuador and India suggest that health and environmental benefits can outweigh subsidy costs or foregone revenue by around five times to more than ten times, respectively, these benefits mostly accrue outside the government budget (Gould et al., 2024). Where subsidies are linked to imported fuel consumption, governments remain exposed to international fuel prices, exchange-rate movements and import-cost volatility.

These issues are particularly relevant for sub-Saharan Africa, where fuel price regulation remains widespread, many countries rely on imported LPG for clean cooking, and limited fiscal space constrains the ability to absorb subsidy costs or price shocks. Explicit LPG subsidies, defined as the extent of undercharging for supply costs, are estimated at USD 1.2 billion in 2024, or more than one-and-half times the total investments in clean cooking in sub-Saharan Africa (IEA, 2025b).

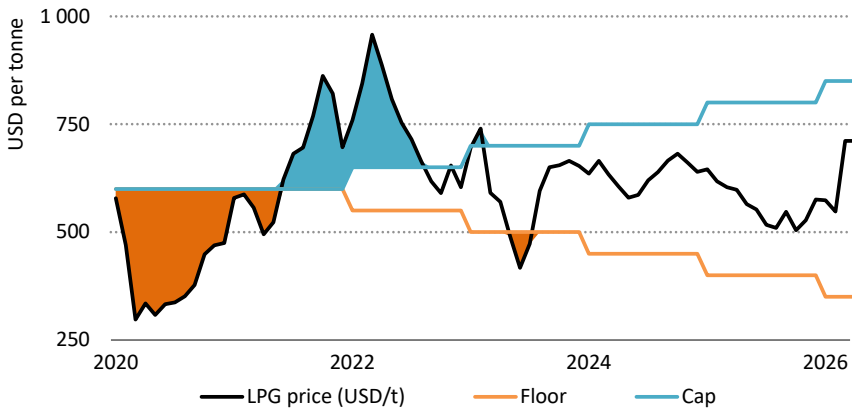
Government-set prices are the most common form of price regulation in sub-Saharan Africa. Frozen fossil fuel prices for more than three months have been reported in 22 countries in 2025. Bottled LPG price data show a similar pattern, with frozen prices in 15 of the 20 countries for which data are available. In several countries, including Angola, Cameroon and Mauritania, LPG prices have remained fixed for more than five years (World Bank, 2025). Such prolonged freezes can make public finances more vulnerable to import costs, inflation and currency depreciation. Where governments compensate suppliers for the gap between regulated prices and market costs, administered prices create explicit fiscal costs. If compensation is incomplete, it can instead generate arrears, supply shortages, or weaker incentives to invest in infrastructure.

The distributional effects of untargeted LPG price subsidies are often regressive, with higher-income households capturing a disproportionate share of the benefit because they consume more fuel. In Ghana, more than 40% of LPG subsidy benefits accrue to the richest quintile, while the poorest quintile receives only 1% of the benefits (Wilson, 2024). Targeting subsidies to the poorest households, as India has done, can reduce impacts on government and state-owned enterprise balance sheets of subsidy schemes, but the social infrastructure to delineate households by income level is often limited in many developing countries. Furthermore, changing fuel pricing regimes can prompt public disapproval if not handled sensitively.

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Gradual price reform can help reduce fiscal exposure without creating sudden affordability shocks. One option is to periodically widen the regulated pricing between a price cap and floor that can allow for international price movements to pass through to consumers while avoiding abrupt changes in retail prices (Figure 16). Over time, this reduces the scale and frequency of government intervention while giving households and suppliers a more predictable adjustment path.

**Figure 16 ▷ Illustrative example of an LPG price-freeze phase out facilitated by a cap and floor mechanism, 2020-26**



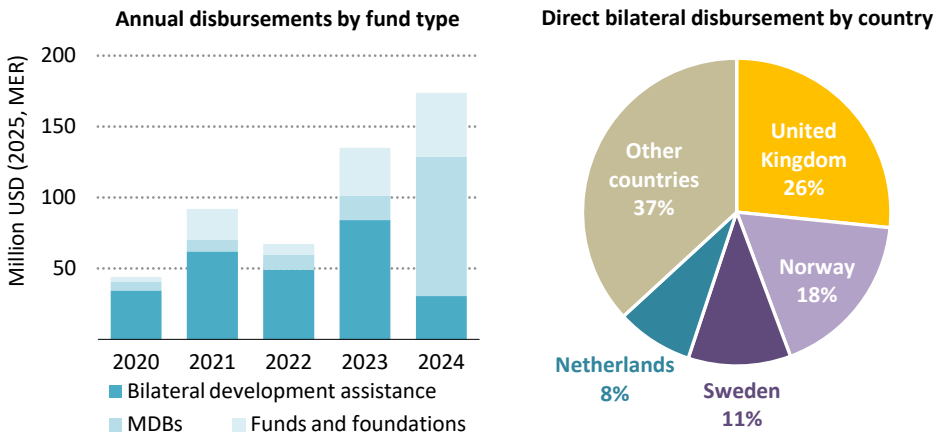

*Cap-and-floor mechanisms can be used to gradually phase out LPG price freezes*

Source: IEA analysis based on data provided by Argus Media group. All rights reserved.

Concessional financial flows into the cooking sector in sub-Saharan Africa reached new highs in 2024 (Figure 17). Concessional sources include grants, concessional loans, guarantees and technical assistance, as well as funds specialised in supporting clean cooking with blended finance. In total, disbursements of concessional funds for the cooking sector in Africa grew to around USD 175 million in 2024, the highest levels since 2020. In 2024 the amount of bilateral development assistance declined, but this was more than offset by a significant increase in financial flows from Multilateral Development Banks (MDB) to clean cooking in Africa, which was driven by the disbursement of a large AfDB policy-based loan. These projects disburse based on a policy condition, in this case a national clean cooking strategy being adopted. MDB spending outside of this policy loan, was a more modest increase of around USD 10 million. Another large disbursement driving the spike in 2024 was an increase from the OPEC Fund for International Development, which disbursed to clean cooking projects in Madagascar and Somalia.

Since 2020 the United Kingdom (UK) has had the largest share of bilateral development assistance for clean cooking in Africa, accounting for around 26%. Norway (18%), Sweden (11%), and the Netherlands (8%) were other major contributors. European countries collectively account for above 90% of these flows. Disbursements from the 2024 Summit on Clean Cooking have not yet appeared as disbursements in the OECD Development Assistance Committee (DAC) database but are expected to in the 2025 data.

**Figure 17 ▷ Disbursements from concessional sources for cooking in sub-Saharan Africa, 2020-2024**




IEA. CC BY 4.0.

*In 2024 a large MDB project drove an expansion of concessional funds, which continue to increase despite a drop in disbursement from bilateral development assistance*

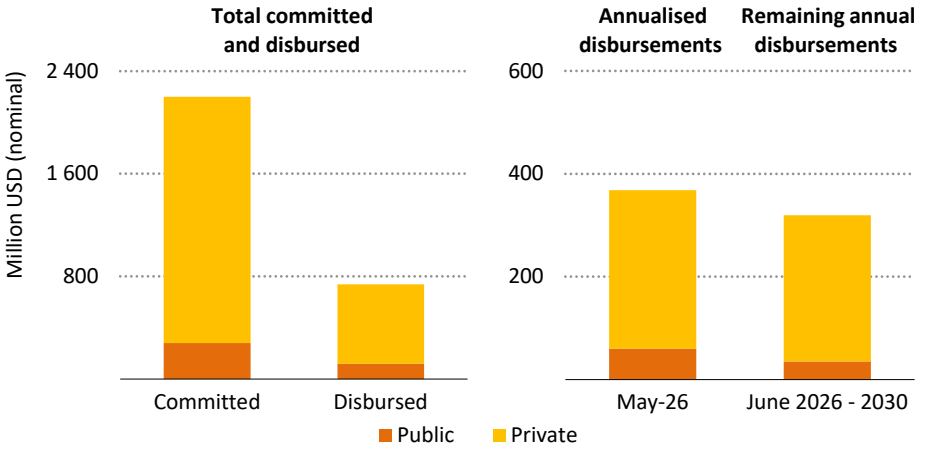
Notes: MDB = Multilateral Development Bank. Organisations included under bilateral development assistance are based on the OECD DAC Database.

Sources: IEA analysis based on OECD (2026) and World Bank (2026).

## *Tracking commitments from the Summit on Clean Cooking in Africa*

As of June 2026, the IEA has tracked USD 737 million in disbursements against the pledges, with 16% of the total coming from governments and 84% by private sector actors (Figure 18). Accordingly, two years since the 2024 Summit, public sector entities have mobilised 43% of their targeted total commitments while the private sector has disbursed 32% of its total commitments. The annualised disbursement rate, in aggregate, is on track to achieve full disbursement of the USD 2.2 billion by 2030. The public sector is exceeding the annual rate of disbursements needed – it has disbursed USD 60 million on an annual basis and can fulfil its pledges by disbursing USD 35 million annually between now and 2030. The private sector is also exceeding the rate needed to reach full disbursement by 2030 (USD 284 million), with an annual disbursement rate of USD 308 million.

**Figure 18 ▷ Progress tracking of IEA's 2024 Summit on Clean Cooking in Africa commitments**




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*Average annual investments by 2030 are on track to meet financial commitments made at the 2024 Summit on Clean Cooking in Africa*

Most of the investments (75%) have been channelled directly into countries, with the largest recipients of total investments being Kenya (19%), followed by Uganda, Tanzania, and South Africa (7% each). Over half of the investments (66%) went towards end-use equipment, including stoves, cylinders, biodigesters, and stove connections. The next largest category of disbursement flows was technical assistance and market development at 14%. This includes affordability support through results-based financing. Capitalising investment funds or companies received 13% and fuel supply infrastructure, which includes LPG storage and bottling facilities, stove and fuel manufacturing, received 7% of total investments.

The investments from Summit commitments have supported a range of clean cooking technologies, with LPG receiving half of the disbursements (49%), mainly driven by private sector investments. Biomass received 17% of total disbursements, while electric cooking and biogas each received around 8%. Multi-fuel support was 26% of the disbursements and includes support such as non-fuel specific affordability support for households and market development support (e.g. awareness campaigns).

### Box 5 ▷ Cookstove carbon credits market

Cookstove carbon credit issuances, after years of strong growth saw the market cool slightly in 2025. Since 2020, cookstove carbon credit issuances increased threefold, however in 2024 credit issuances declined to around 35 million credits from a peak of 39 million, while associated revenue amounted to around USD 110 million (Figure 19). The

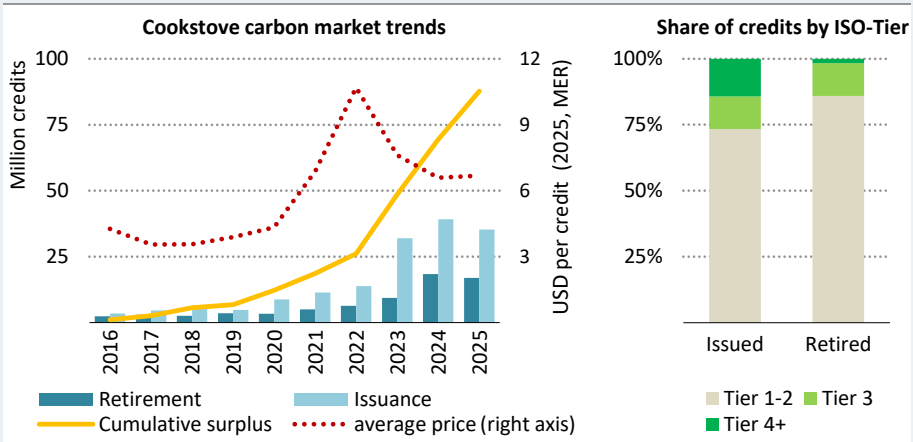
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acceleration in credit issuances followed a steady increase in prices that reached a peak of nearly USD 11 per credit on average in 2022.

While the supply of cookstove credits has increased, retirements have lagged, resulting in a surplus of cookstove credits on the market. In 2025, twice as many cookstove carbon credits were issued as were retired. This disparity is contributing to broader concerns about carbon credit market dynamics, as this surplus has been building for several years, and concerns on sufficient demand remain. Compliance markets such as Article 6 and the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) are being looked to as an important source of demand growth for cookstove carbon credits. In 2025, Ghana completed the first issuance and first transfer to Switzerland of Internationally Traded Mitigation Outcomes (ITMOs) from a clean cooking project, and Rwanda, Tanzania, and Malawi have issued Letters of Authorisation (LOAs) for cookstove projects.

The majority of cookstove carbon credits still come from lower tier cookstoves, although the issuances linked to higher tier stoves is growing. Since 2016, nearly three quarters of cookstove carbon credit issuances relate to Tier 1-2 cookstoves, which fall below the WHO threshold for clean cooking but can already deliver efficiency gains and emissions reductions for households cooking on open fires. 12% of credits have been for transitional stoves (Tier 3), with around 14% being for clean cooking stove that are Tier 4 or above. Issuance of Tier 3 and Tier 4+ credits is growing, with their share of issuances accounting for 38% of total issuances in 2024, up from 28% in 2020.

**Figure 19 ▷ Cookstove carbon market trends and shares of cookstove carbon credits by tiers in Africa, 2016-2025**




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*The cookstove carbon market has increased credit issuances, but a lower rate of credit retirement has resulted in a surplus of unretired credits on the market*

Source: IEA analysis based on AlliedOffsets (2026).



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Cookstove credits have also faced questions on the veracity of emissions reductions, particularly for Tier 1-2 stoves. However, the sector has since taken steps to strengthen integrity, most notably through the submission of crediting methodologies to initiatives such as the Integrity Council for the Voluntary Carbon Market (ICVCM)'s Core Carbon Principles (CCPs) and the new carbon methodology, Comprehensive Lowered Emission Assessment and Reporting (CLEAR). Technical advances, such as the use of digital monitoring and usage verification, are also strengthening integrity as they provide more reliable accounting of stove usage and are now reflected in methodologies.

In early 2026, KOKO Networks, a bioethanol cooking company operating in Kenya, announced that it was filing for bankruptcy. The company's business model relied in part on carbon credit revenues to subsidise stove and fuel costs, including the planned issuance of ITMOs under Article 6.2. However, the company did not obtain the LOA required from the Kenyan government to transfer credits internationally, affecting expected future revenue streams and contributing to the challenges facing the business. The case – which remains subject to ongoing legal proceedings – has highlighted the importance of aligning clean cooking projects with evolving national carbon market frameworks and ensuring clarity around authorisation processes.

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## Clean cooking infrastructure

Progress in clean cooking uptake remains closely linked to the availability, reliability and geographic reach of supporting energy infrastructure. While fuel-specific supply chains are described in detail in previous editions of the IEA's clean cooking analysis (IEA, 2025a), this section tracks recent developments in infrastructure deployment by monitoring key metrics – such as import capacity, storage, production facilities – that are critical to scaling each clean cooking fuel, highlighting the changes observed over the past few years. The degree of emphasis across clean cooking solutions reflects the varying complexity of supply chains, with some fuels relying on more developed infrastructure than others, as well as differences in data availability. The IEA has increasingly leveraged innovative approaches – most notably the use of satellite imagery – to complement existing datasets and strengthen the mapping of clean cooking infrastructure where information is limited.

Based on the results of IEA's tracking activity, Table 2 summarises developments of key clean cooking infrastructure in sub-Saharan Africa, with a focus on major known facilities. The different supply chains are discussed in detail in the following subsections.

**Table 2 ▷ Major existing and planned clean cooking enabling infrastructure**

| | | Capacity | | | |
|---|---|---|---|---|---|
| | Type of infrastructure | 2020 | Today | Growth last 5 years | Pipeline |
| LPG | Storage | 720 kt | 800 kt | 12% | 260 kt |
| Electricity | Grid connections | 4 million/y | 6 million/y | 51% | n.a. |
| Ethanol | Production plants | 780 ML/y | 960 ML/y | 22% | 180 ML/y |
| Pellets Forced Draft | Production plants | 320 kt/y | 570 kt/y | 75% | 570 kt/y |
| Cookstoves Tier 3 or above | Production plants | 5 million stoves/y | 7 million stoves/y | 41% | 12 million stoves/y |

Notes: LPG = Liquified Petroleum Gas; ML = million litres; kt = kilotonne; /y = per year. Grid connections include bulk network and mini-grids.

### *Liquified Petroleum Gas and other gaseous fuels*

Import and storage infrastructure for LPG are expanding across the region. More than 40 ports across sub-Saharan Africa currently import LPG, around 70% of which are in West and East Africa. Recent additions include Kenya's Kilifi LPG terminal, which received its first shipment in mid-2025. Further development of dedicated LPG facilities is also planned in the ports of Tanga, Tanzania, and Durban, South Africa. Several ports across the continent also host idle or underused LPG infrastructure, with imports resuming in some locations as demand increases, in certain cases after prolonged periods of limited activity.

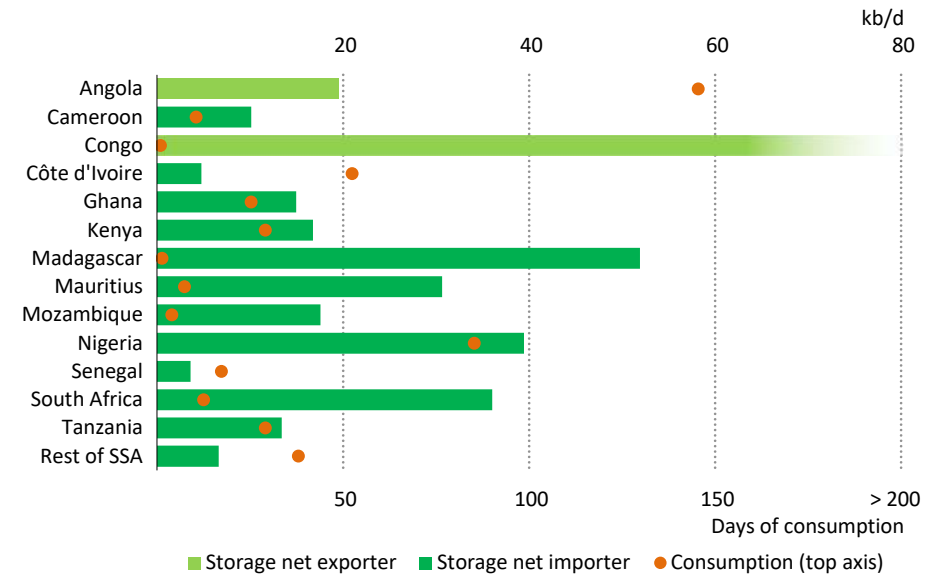
Known inland and coastal storage capacity in sub-Saharan Africa stands at 800 kt, with more than 10% commissioned over the past five years. Capacity additions are expected to accelerate, with at least 250 kt currently under construction across the region. Storage remains highly concentrated in Nigeria and Angola, linked to their own LPG production. Nigeria alone accounts for 300 kt, almost 40% of LPG storage capacity in sub-Saharan Africa

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(Figure 20). Nigerian domestic LPG production meets only half of national demand, with imports coming from the United States, Argentina and other African countries, with several additional projects – accounting for 100 kt – announced over the past years. Angola holds 250 kt or one third of LPG storage capacity in sub-Saharan Africa; domestic production levels broadly match demand, and storage capacity of 50 days serves its position as a net exporter within the region. In the Republic of the Congo (hereafter "Congo"), the commissioning of a liquefied natural gas (LNG) project in 2025 to export associated gas production significantly increased available LPG volumes, with storage capacity now sufficient to cover several months of domestic consumption. Beyond these exceptions, storage capacity in most countries is quite limited, leaving these markets more exposed to international supply disruptions and price volatility. Only 11 countries in sub-Saharan Africa have more than 30 days of storage.

Some countries are taking steps to address the issue; for example, in Rwanda, the construction of a 9 kt storage facility is nearing completion – roughly equivalent to 60 days of its consumption – and is due to come into operation this year. The infrastructure was planned as the country is land-locked and entirely dependent on imports through neighbouring regions which pose additional risks for supply disruptions.

**Figure 20 ▷ Known LPG storage capacity in number of days of consumption and total consumption of LPG in sub-Saharan Africa, 2024**




IEA. CC BY 4.0.

*LPG storage coverage differs markedly across countries, shaping exposure to supply disruptions*

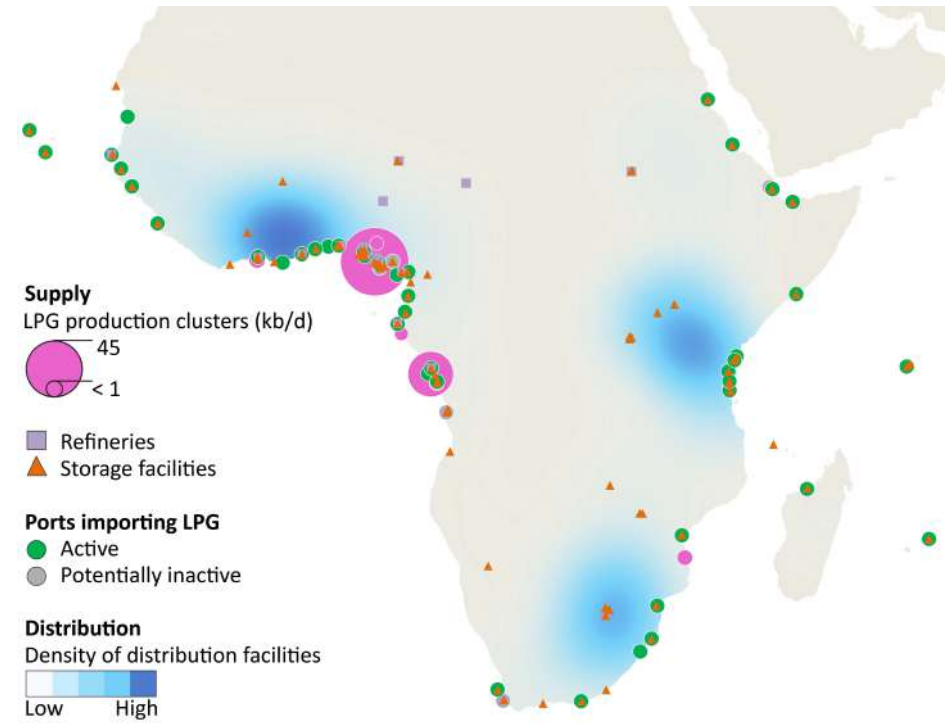
Note: SSA = sub-Saharan Africa

Source: IEA analysis based on data provided by Argus Media group. All rights reserved.

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Africa's domestic LPG supply currently stands at 3 600 kt per annum. Almost 90% is linked to natural gas processing, which is concentrated in a small number of countries – chiefly Nigeria, Angola and Equatorial Guinea – with output decreasing by 30% over the past five years. More than 80% of this production is propane, which is often no more than 15% of the LPG blend used as cooking fuel in most of Africa today. Refinery-based LPG production accounts for 12% of regional supply with its contribution declining in several markets – namely Liberia, Tanzania and Zambia. Only around 20 refineries remain operational across sub-Saharan Africa (Figure 21). In Nigeria, the commissioning of the 650 kb/d Dangote refinery represents a major addition to regional supply, with production still ramping up. Further capacity expansions are planned in Angola, Congo and Nigeria, while new refinery projects are under development in Ethiopia, Ghana and Uganda.

**Figure 21 ▻ LPG production sites, storage, port infrastructure, and distribution density in sub-Saharan Africa, Q1 2026**




IEA. CC BY 4.0.

*LPG supply in sub-Saharan Africa remains largely linked to ports and coastal infrastructure as reliance on imports continues to grow*

Sources: IEA analysis based on data provided by Kpler, Rystad Energy and Argus Media group. All rights reserved.

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Beyond supply and storage capacity, the scale-up of LPG increasingly depends on the development of last-mile distribution infrastructure. Bottlenecks related to cylinder availability and recertification, refill-point density, safety standards, distributor working capital and access to consumer financing can all constrain uptake, even where national supply is sufficient. Distribution networks are unevenly developed, with a large share of infrastructure concentrated in a limited number of countries, leaving significant gaps elsewhere.

Natural gas infrastructure plays only a limited role in residential energy use in sub-Saharan Africa, as pipeline networks are primarily oriented towards power generation and industrial demand. As a result, gas distribution to households remains confined to a small number of locations. Residential networks are currently present in only 14 cities across the region. Tanzania stands out as an exception, having commissioned a new distribution network in January this year, with further pilot projects underway, signalling emerging interest in expanding gas access to buildings. In parallel, projects installing biodigesters in rural areas, targeting both households and institutions, are being deployed in countries such as Nigeria and Kenya, through partnerships between governments, development partners and private companies, supporting decentralised energy access and offering locally produced cooking solutions in areas with limited fuel supply chains.

### *Electric cooking*

Reliable, stable electrical connections are the key infrastructure component for expanding electric cooking access. Annual grid connections increased by more than 11% in 2024, with notable gains in countries such as the Democratic Republic of the Congo, Tanzania and Uganda. Consumer uptake of electric cooking solutions depends heavily on the perceived quality and reliability of supply as well as the capacity of distribution infrastructure. In many countries, transmission and distribution remain binding constraints, with uneven coverage and frequent outages limiting uptake. In addition, not all household connections are suitable for cooking; for example, in Kenya, the government has assessed that less than half of grid-connected households could support electric cooking (Ministry of Energy and Petroleum of Kenya, 2024).

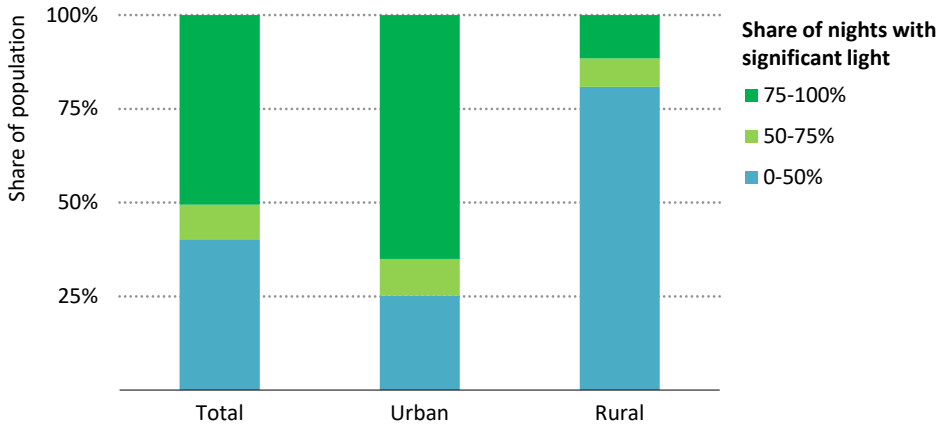
Gradual improvements are evident: IEA analysis relying on various proxies, including nighttime lights, indicates that electricity was available at least 75% of the time for more than half of the population in 2025, up from 44% in 2020, reflecting ongoing efforts to extend and reinforce networks. However, these gains remain uneven: around 65% of the urban population exhibits consistent electricity availability, compared with only around 12% in rural areas (Figure 22).

Enhancing grid reliability is also supported by stronger regional integration. Major transmission projects across West, East and Southern Africa are improving system flexibility and reducing outage risks, contributing to more stable supply conditions. By contrast, Central Africa's weaker interconnection limits reliability gains. At the same time, growing electricity

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demand – including from emerging uses such as electric cooking – can support improvements in grid performance by strengthening utility revenues and incentivising investments in service quality (MECS, 2024).

**Figure 22 ▷ Share of population living in areas with significant night-time lights in sub-Saharan Africa, 2025**




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*Reliable supply, essential for electric cooking adoption, is available to 65% of urban population and to only 12% of people living in rural areas*

Note: Nighttime lights are classified as "significant" when a settlement pixel is statistically brighter than surrounding uninhabited land observed that same night, filtering out background noise from moonlight, weather, and sensor effects.

Source: IEA analysis based on Earth Engine (2025).

Efforts to explore off-grid solutions are starting to emerge, particularly in areas with weak grid access, including Nigeria's initiative to distribute solar-powered cookers to more than 4 million households. Based on current LPG prices, the off-grid solar solution would be cost-competitive in only a few states in the country, limiting near-term scalability.

Demand for electric cooking appliances is strengthening. In 2025, markets in West Africa recorded around 70% growth in value terms in imports of electric appliances from China – covering most of total imports, while private-sector signals indicate increasing traction, with manufacturers reporting strong performance of electric cooking product lines in recent years.

Technology choices play an important role in enabling this uptake. Energy-efficient appliances, such as electric pressure cookers, can significantly reduce electricity demand and cooking times, helping to smooth peak loads and ease pressure on constrained grids. Across both residential and institutional users, electric cooking can provide a sizable and predictable load profile, supporting improved system planning and load management.

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Beyond infrastructure, behavioural and economic factors continue to influence adoption. Perceptions of high electricity costs, alongside preferences linked to cooking practices and food preparation, remain important barriers, highlighting the need for complementary measures alongside infrastructure improvements.

SPOTLIGHT

## Is electric cooking a viable option for those most impacted by the energy crisis?

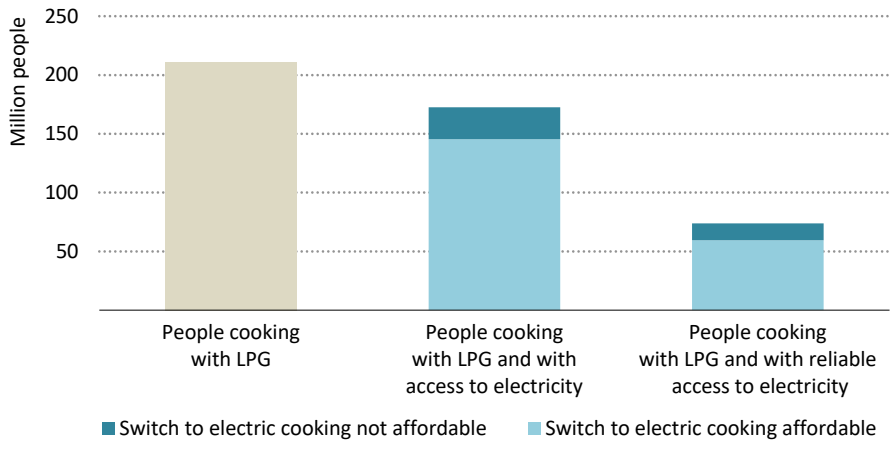
In response to the heightened volatility in global fuel markets since the outbreak of the energy crisis in March, governments have adopted a range of measures to shield consumers from the impacts (see Spotlight in section 1.2). Many policy responses are increasingly aimed at encouraging households to shift away from imported fuels, particularly toward electricity for cooking. India launched a programme to procure and deploy 500 000 induction cooktops and Indonesia is also seeking to accelerate the deployment of electric stoves.

Similar trends are emerging in parts of Africa, where higher LPG prices since early 2026 have further increased the relative attractiveness of electric cooking in urban areas. For countries that depend heavily on LPG imports, an increased uptake of electric cooking could also reduce exposure to international fuel price volatility and foreign exchange pressures. The broader economic implications of such a shift depend on national circumstances, including the extent of LPG import dependence and the electricity generation mix.

However, reliability remains a binding constraint. While around 80% of LPG users live in cities, only about one-third have access to reliable electricity (Figure 23). Most of these households could already afford to switch to electric cooking at prevailing electricity and appliance prices, pointing to reliability – rather than affordability – as one of the primary barriers in these settings. Addressing this constraint requires continued investment in electricity infrastructure and service quality. In LPG-importing countries, a gradual reduction in the need to support imported cooking fuels could help create fiscal and foreign exchange savings that can be redirected toward improving the reliability and capacity of power systems, further supporting the transition to electric cooking. IEA estimates suggest that if current LPG users in sub-Saharan Africa with access to reliable and affordable electricity were to switch to electric cooking, yearly electricity demand would increase by more than 10 TWh – representing a modest increase in regional power demand – while LPG demand could decline by more than 50 kb/d, or around 30% of current consumption.

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**Figure 23 ▷ Availability and affordability of electric cooking for people primarily cooking with LPG in sub-Saharan Africa**




IEA. CC BY 4.0.

*Switching to electric cooking can be cost-competitive for LPG users, though reliability and connection capacity continue to limit adoption*

Notes: Affordability is assessed as the share of households' disposable income spent on upfront costs, namely capital expenditure for clean cooking equipment, plus one year of fuel. Affordability threshold is set at 5% of household income.

## *Solid and liquid bioenergy*

Modern biomass supply chains in Africa are expanding and at least 38 pellet plants are currently operating across 14 countries, with an additional 11 under development or planned (Figure 24). Since early 2024, at least 200 kt of new pellet production capacity have come online – more than a 50% increase – and nearly 600 kt are in the project pipeline, more than half of which is located in Central Africa, reflecting a growing policy focus in some countries on leveraging local resources to increase agricultural revenues and stimulate local job creation.

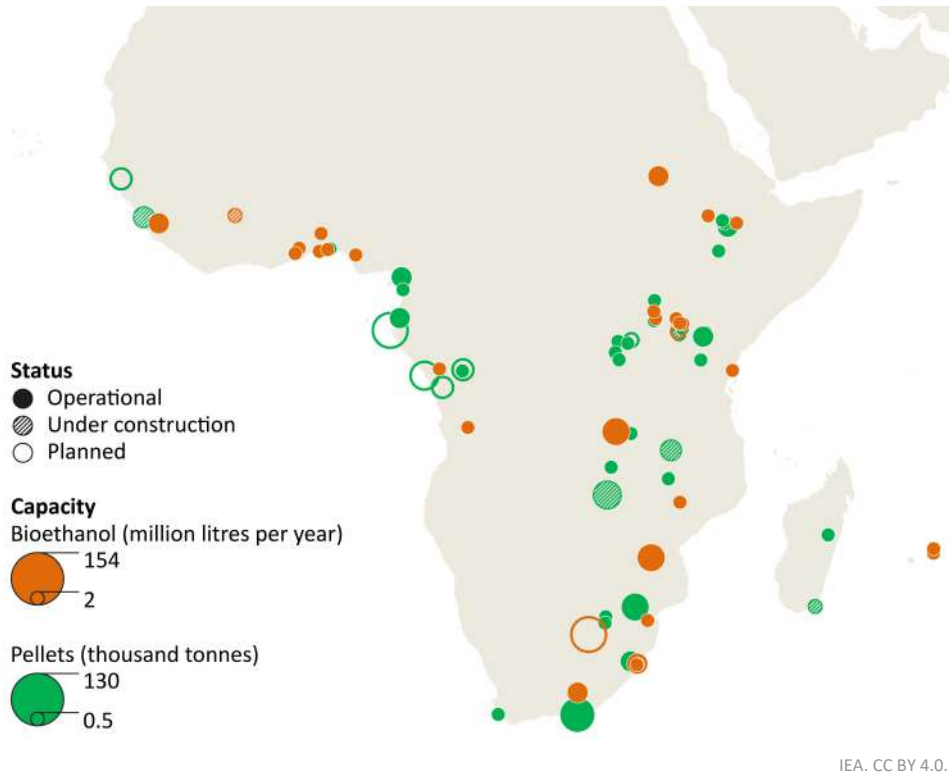
Expansion is increasingly targeting residential and institutional cooking markets, alongside established roles in industrial applications and exports to European power and heating markets. This shift is also reflected in market developments, with local producers reporting strong growth in pellet sales in recent years. In many contexts, pellets and other processed biomass fuels are viewed as promising substitutes for charcoal and commercial firewood because they can often be integrated into existing cooking practices with relatively limited behavioural change.

Following the commissioning of two new plants in 2025, in Congo and Uganda, bioethanol production capacity reached almost 1 billion litres, up 20% over five years. The vast majority

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of the production stays within Africa for domestic or intra-regional use to partially supply the demand for potable alcohol and other industrial uses, as well as blending in transportation fuels. Imports remain concentrated through a limited number of ports, primarily Lagos and Tema, while around 30 production facilities are currently active in sub-Saharan Africa – half of them in East Africa.

**Figure 24 ▷ Bioethanol and pellet production facilities in sub-Saharan Africa, Q1 2026**




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*Since 2020, bioethanol and pellet production capacity grew by more than 20% and 70% respectively*

Source: IEA analysis based on World Bioenergy Association (2026).

## *Cookstove manufacturing*

Cookstove manufacturing capacity is expanding, albeit unevenly. Almost 20 major transitional or clean cookstove manufacturing facilities are currently identified across sub-Saharan Africa, most commissioned since 2020 (Figure 25). Since early 2025, at least three new plants have begun operations in Kenya, Ghana and Malawi, while previously planned facilities have progressed into construction. Total documented active capacity exceeds 7 million clean and transitional cookstoves per year – potentially more than half of

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stove volumes imported annually – and is projected to more than double once projects currently in the pipeline enter operation. All identified facilities are equipped to manufacture stoves meeting at least Tier 3 performance standards, with most designed to produce Tier 4 or higher technologies, and many facilities manufacturing a mix of solutions.

**Figure 25 ▻ Major transitional or clean cookstove manufacturing facilities in sub-Saharan Africa, Q1 2026**




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*In the past year, at least four cookstove manufacturing facilities progressed to construction or operation, with active production capacity concentrated in East Africa*

Note: The map only includes major facilities manufacturing cookstoves of Tier 3 or above. Other types of equipment, e.g. LPG cylinders and valves, are not included.

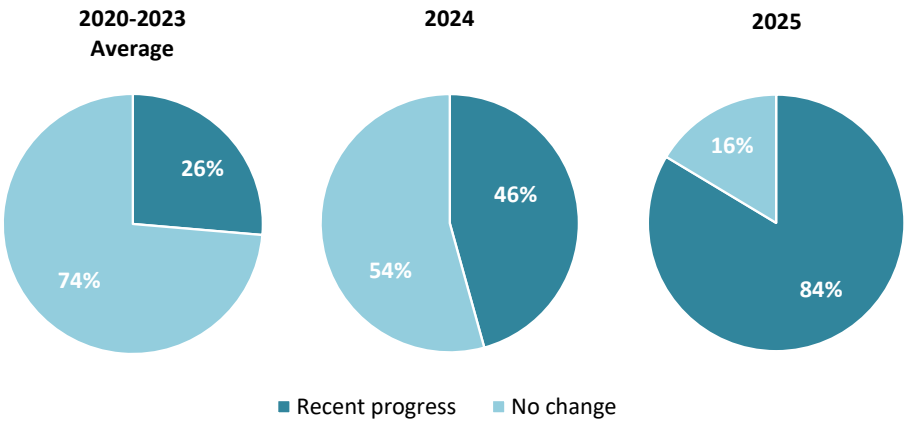
Limited recent information for some facilities suggests a degree of turnover, pointing to a fragmented manufacturing landscape characterised by both consolidation and new investment. Scaling local production sustainably will require greater demand aggregation and trade facilitation, and will also depend on the development of last-mile distribution networks, including retail channels, after-sales services and consumer financing. Additional opportunities may also emerge through increased local assembly of cooking appliances, particularly in markets where fiscal regimes favour imported components over fully assembled products.

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## Policy inventory and progress

Since 2024, growing multilateral momentum has translated into increased political attention to clean cooking. Policy action across Africa has intensified with over 120 new policies related to clean cooking implemented or announced since 2024. The number of countries introducing or announcing new measures each year rose sharply in 2024 and accelerated further in 2025. From 2020 to 2023, on average, each year, 26% of the population without access in Africa lived in countries with new policy development. That share surged to 46% in 2024 and 84% in 2025 (Figure 26).

**Figure 26 ▷ Share of population without clean cooking access living in countries with policy progress in sub-Saharan Africa per year**




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*2024 marks a turning point in clean cooking policy momentum, with further acceleration in 2025, where 84% of the population without access lived in countries adopting new policies*

Notes: Recent progress = new policy introduced or announced; No change = no new policy.

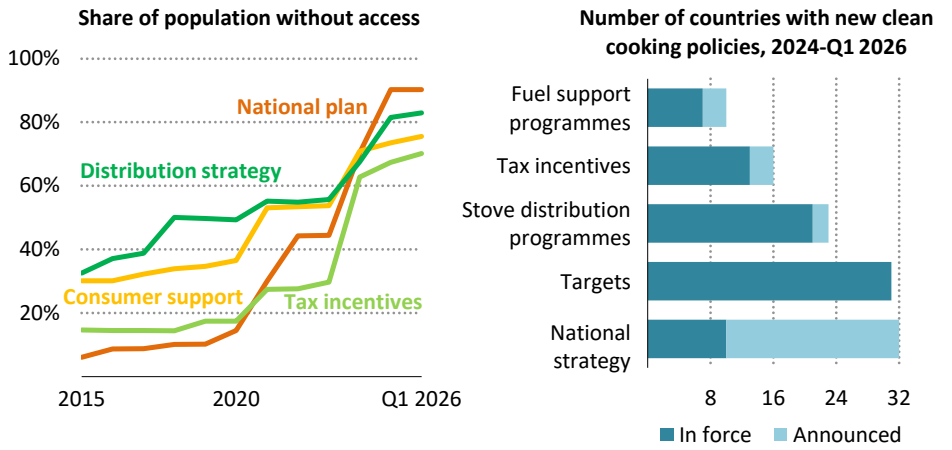
Clean cooking is increasingly integrated into broader energy and climate policy frameworks. In 2025, two major international processes offered countries an opportunity to embed clean cooking within their energy and climate strategies: the update of Nationally Determined Contributions (NDC 3.0) under the Paris Agreement and the establishment of National Energy Compacts under the Mission 300 initiative. All 29 countries that published a National Energy Compact in 2025 included targets or commitments to scale up clean cooking access, and together these countries are home to almost four out of five people without access to clean cooking in sub-Saharan Africa today. Clean cooking also gained ground in climate planning, with 23 sub-Saharan African countries including it in their NDC 3.0 – representing around 80% of those that released updated NDCs, up from 62% in the previous round.

In total, since 2024, the cumulative number of clean cooking policies and programmes tracked by the IEA across the region increased from 39 in 2024 to 112 in 2025 and 121 in the

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first quarter of 2026 (Figure 27). These measures span national strategies, clean cooking targets, government stove distribution and fuel support programmes, and fiscal incentives. Beyond the policy progress highlighted in the previous IEA Clean Cooking report (IEA, 2025a), which tracked policies up to the second quarter of 2025, notable advances have since been recorded in Congo, Sierra Leone, Togo and Zambia. All 12 African countries that endorsed the Clean Cooking Declaration in 2024 – Cote d'Ivoire, Ghana, Kenya, Madagascar, Malawi, Mozambique, Senegal, Sierra Leone, Tanzania, Togo, Uganda and Zambia – have since made progress in at least one of these policy categories.

**Figure 27 ▷ Share of population without access to clean cooking and number of countries by policy type in sub-Saharan Africa**




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*Governments have stepped up clean cooking policy action across all policy types, with each now covering at least 70% of the population without access*

Notes: Fuel support programmes = measures to reduce fuel costs such as subsidies and vouchers; Stove distribution programmes = initiatives to distribute cookstove at low or no cost; Targets = national goals set to increase access to clean cooking solutions; National strategy = official government plan outlining the path to scale up clean cooking; Tax incentives = fiscal exemptions or reductions for clean cooking fuels or appliances.

Sources: IEA policy tracking, complemented by data from the Regulatory Indicators for Sustainable Energy (RISE) database for the period prior to 2024 (World Bank, 2024).

National clean cooking strategies have seen significant progress. Between 2024 and 2026, 32 countries launched or announced at least one strategy or plan, with 10 doing so in 2024 and 22 in 2025. A majority have been announced but not yet developed – particularly those recently announced in the National Energy Compacts – though ten countries have already developed theirs over this period, such as Ethiopia, Kenya, Nigeria and Tanzania. The strategies developed to date reflect a diversity of approaches shaped by national contexts and priorities. Nigeria, for instance, has placed LPG at the centre of its clean cooking transition plan, drawing on its domestic refining capacity and maritime import facilities, while

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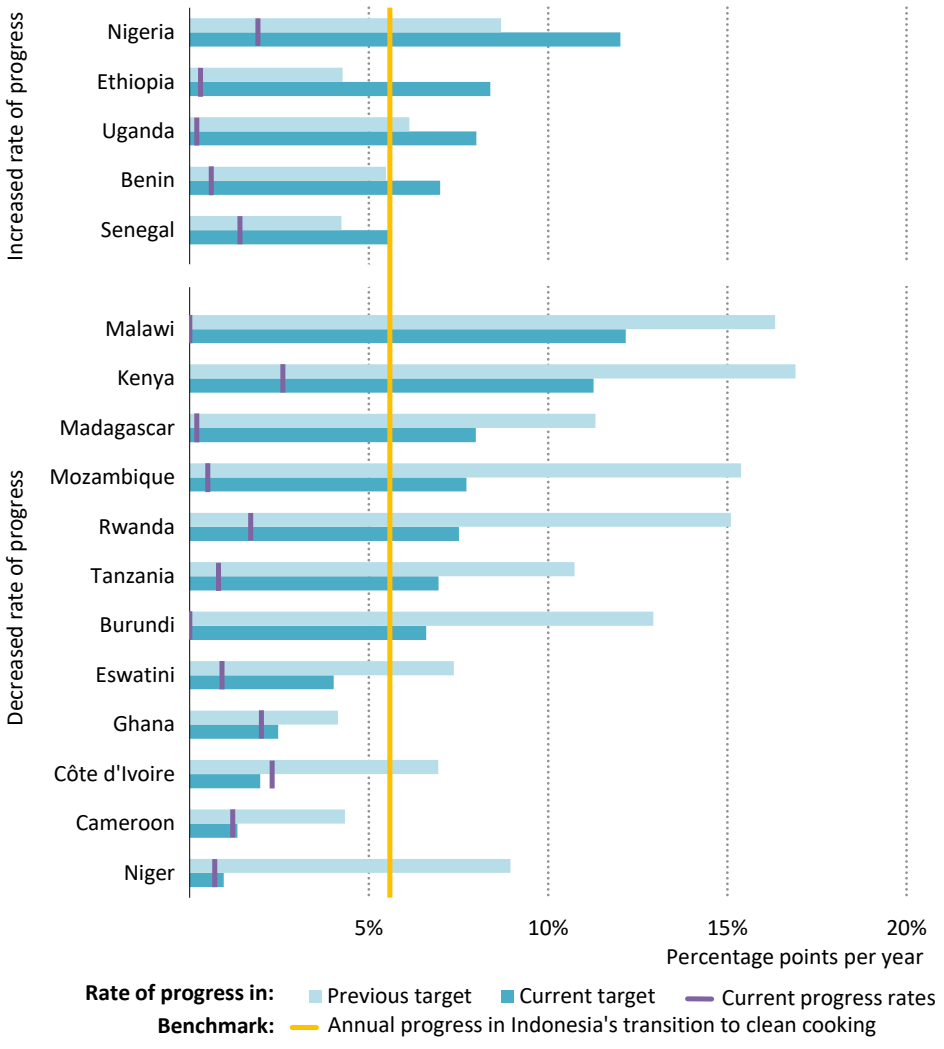
Ethiopia – landlocked and still facing foreign exchange constraints on import capacity – has grounded its clean cooking roadmap in electricity. Few of these strategies have been fully integrated into broader energy planning, despite the significant shifts in energy demand that transitioning households away from traditional biomass would entail. Countries relying heavily on electricity, for instance, would need to carefully sequence the uptake of electric cooking with grid modernisation and expansion efforts. In some roadmaps, the electricity demand for cooking alone exceeds current national generation capacity, underscoring both the scale of the transition and the importance of embedding clean cooking plans within broader energy system development frameworks.

Clean cooking targets now cover over 85% of the population without access in sub-Saharan Africa, with a growing shift away from aspirational goals toward roadmap-based objectives. Since 2024, 31 countries in sub-Saharan Africa have published a clean cooking target – 8 in 2024 and 23 in 2025 – whether reaffirming a previous commitment, updating an existing target, or announcing one for the first time. These targets vary in scope, spanning access goals, fuel-specific objectives and time-bound milestones. Of the 31 countries that have published a target since 2024, 17 have revised it, with the prevailing trend being a reduction in the annual pace of progress required to meet the targeted access rate: 12 countries have lowered their targets, either by reducing the access rate they aim to achieve by a given year or by pushing back the timeline, while 5 have increased their targeted rate of progress (Figure 28). Malawi, Mozambique and Rwanda, for instance, have each replaced a target of universal clean cooking access by 2030 with a new objective grounded in a national roadmap. These revisions may reflect a maturing of the policy process. Many of the original Sustainable Development Goal 7 (SDG7)-aligned targets implied rates of progress with no historical precedent globally, even in countries such as India and Indonesia that made rapid clean cooking transitions. Targets grounded in detailed roadmaps are more likely to translate into actual progress on the ground. The IEA estimates that if Africa were to match the best historical rates of progress observed globally, the continent could reach universal clean cooking access around 2040.

The inclusion of clean cooking in NDCs and National Energy Compacts, the establishment of national targets, and the development of roadmaps are essential steps in the clean cooking transition and send an important political signal. Yet they alone are not sufficient to guarantee progress on the ground. References to clean cooking in NDCs are often qualitative rather than quantitative, and quantified clean cooking targets and plans remain at the level of announced intentions and do not guarantee implementation. Translating political commitment into robust implementation plans – with clear funding strategies and measurable outcomes – remains one of the central challenges ahead and will be at the heart of the forthcoming Summit on Clean Cooking in Africa. Dedicated clean cooking delivery units within governments could play a key role in creating accountability and ensuring that commitments are followed through. Systematically embedding the clean cooking transition into broader energy system planning would further strengthen the conditions for implementation at scale.

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**Figure 28 ▷** **Countries that updated their policy target for clean cooking access since 2024, and change in the annual average pace required to achieve these**




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***Of the countries that updated their clean cooking targets over 2024–2026, over 70% now imply a lower annual rate of progress than under their previous commitment***

Beyond national plans and targets, a range of policy instruments are already being deployed to drive progress on the ground. In some countries, fiscal incentives, including exemptions or reductions on taxes and import duties, are being used to improve the affordability of clean cooking solutions by lowering both upfront equipment costs and recurring fuel expenditure.

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From 2024 to the first quarter of 2026, 16 countries introduced or announced such measures. These efforts reflect a broader recognition that price barriers remain among the most significant obstacles to adoption, particularly for low-income households. Sierra Leone offers a recent example: the 2026 Finance Act removed import duties on LPG fuel and cylinders and improved cookstoves, with the aim of bringing down retail prices across the supply chain. Geopolitical developments have also shaped the fiscal policy landscape in Africa. In response to the ongoing conflict in the Middle East and its effects on global LPG prices, some governments, such as Tanzania, have removed or reduced value added taxes (VAT) or fuel taxes on LPG and related equipment, providing short-term relief to consumers while sustaining demand (Box 6).

### Box 6 ▷ The effectiveness of tax reforms to improve affordability of clean cooking solutions

Affordability is a key determinant of progress in clean cooking transitions in sub-Saharan Africa, both for expanding uptake and for preventing households from reverting to polluting fuels. For many households, clean cooking options remain only marginally affordable, and sustained progress depends on keeping both upfront and ongoing costs within reach. Today, around 60% of the population in sub-Saharan Africa without access to clean cooking would spend more than 5% of household income to make this transition.

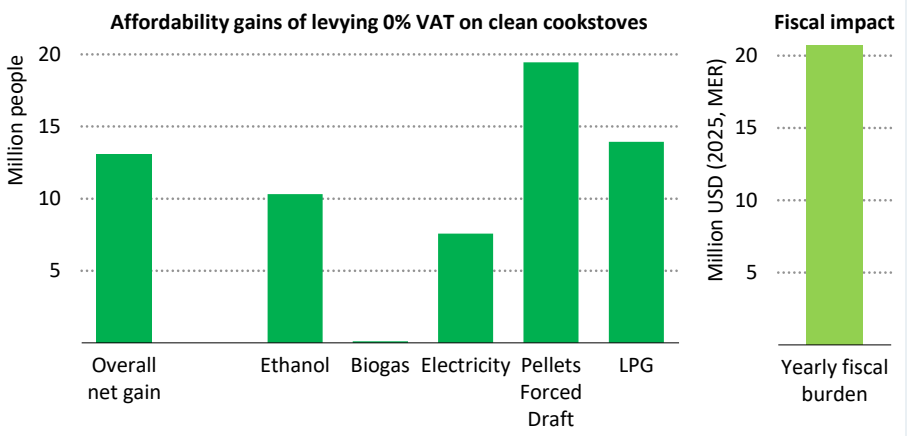
In this context, adjusting tax regimes has become a common policy approach in sub-Saharan Africa to improve the affordability of clean cooking solutions. While fuel related measures dominate policy measures to date, fiscal reforms targeting equipment costs can be particularly efficient in stimulating adoption by lowering upfront barriers and typically come with a lower associated fiscal burden over time. This applies both to households currently without access to clean cooking and to existing users seeking to switch technologies. Where alternative options are available, VAT reductions on equipment can facilitate fuel switching and diversification.

Today, average VAT on clean cookstoves in sub-Saharan Africa is around 15%. Based on IEA estimates, levying 0% VAT on these appliances would entail foregone tax revenues of more than USD 20 million annually across the region, while enabling 13 million additional people to access at least one clean cooking option with upfront costs – covering equipment and one year of fuel – below 5% of annual income (Figure 29). Some households may have affordable access to more than one technology, meaning that while individual technologies show large gross affordability gains, overlaps across options reduce the net effect to around 13 million people. Applying a 0% VAT generates the largest gains for pellets, followed by LPG, ethanol and electricity, while impacts for biogas remain limited due to limited availability of suitable feedstock and high upfront system costs. In these cases, alternative measures – such as infrastructure improvements or business models that reduce upfront costs – can have a larger impact on uptake, although they may shift affordability challenges towards ongoing fuel expenditures.

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The fiscal cost of implementing VAT reforms on clean cookstoves would be USD 20 million across sub-Saharan Africa – equivalent to 0.3% of government energy spending in South Africa alone – and would be distributed unevenly across technologies, with a larger share associated with those with higher stove sales volumes, as tax revenues are foregone across a greater number of transactions. Targeting tax reductions – taking into account not only current adoption levels but also relative affordability, technology costs and potential uptake – could help limit fiscal pressures while maximising affordability gains.

**Figure 29 ▷ Affordability gains of levying 0% VAT on clean cookstoves and fiscal impact in sub-Saharan Africa**




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*Levying 0% VAT on clean cookstoves would make clean cooking affordable for a net 13 million people across technologies, at the yearly cost of USD 20 million*

Notes: Affordability is assessed as the share of households' disposable income spent on upfront costs, namely capital expenditure for clean cooking equipment, plus one year of fuel. A clean cooking solution is considered affordable if related expenditure is below 5% of household income. Overall net gain counts how many people without access to clean cooking go from no affordable option before the implementation of the VAT reform to at least one option available at less than 5% of income. The yearly fiscal burden corresponds to the estimated yearly public fiscal revenue from cookstove sales.

Source: IEA analysis based on the OnStove model developed by KTH Royal Institute of Technology (Khavari et al., 2023).

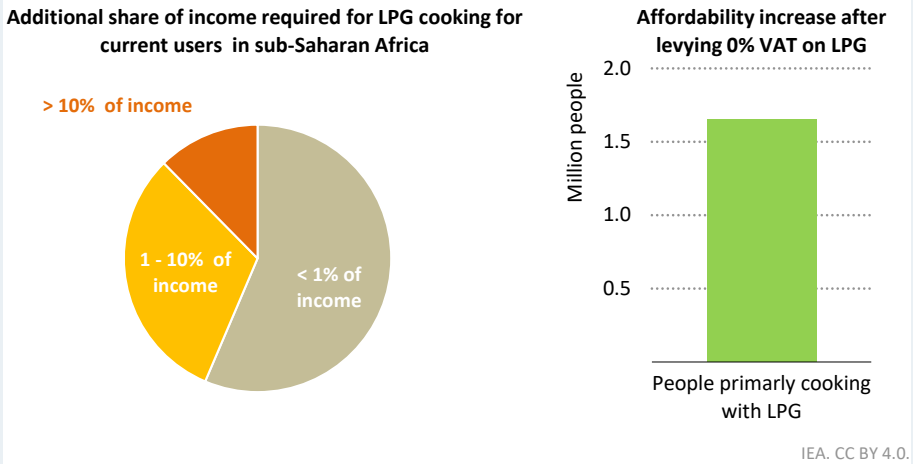
VAT reductions on clean cooking fuels are more widely in place today across Africa, especially as a crisis-response instrument. Recent increases in LPG prices pushed more than 10 million users to spend over 5% of household income on cooking fuel, with one in eight households seeing an additional burden of at least 10% of income (Figure 30). Extending 0% VAT to markets where it is not yet applied – more than half of LPG users already live in countries where LPG is zero-rated for VAT – could enable around

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1.5 million people to remain within affordability thresholds, although at a relatively high fiscal cost per household reached.

The effectiveness of such measures varies widely across countries. In Sudan, LPG prices have risen sharply following the outbreak of civil war in 2023, placing the fuel far beyond affordability thresholds and limiting the impact of tax reforms. Similarly, in Somalia nearly one million LPG users already spend a significant share of income on cooking fuel even at pre-crisis price levels. By contrast, in countries such as Cameroon and Côte d'Ivoire, where LPG remains relatively affordable and retail prices are regulated, price increases have had a more limited impact on consumers. Even with higher cost pass-through, affordability would remain comparatively high, suggesting only modest gains from zero-rated VAT.

**Figure 30 ▷ Additional share of income required for LPG cooking for current users compared to pre-crisis levels and impact on affordability of levying 0% VAT on LPG in sub-Saharan Africa**




*Recent price shocks pushed 45% of households relying on LPG to spend at least 1% more of their income on cooking fuel and tax reforms could only partially revert it*

Note: Cooking with LPG is considered affordable if household spends no more than 5% of monthly income on cooking fuel.

Source: IEA analysis based on the OnStove model developed by KTH Royal Institute of Technology (Khavari et al., 2023)

More broadly, VAT and tariff adjustments are widely used policy tools in the region and require relatively limited administrative capacity. Their effectiveness depends on adequate governance and on clear communication to ensure a visible signal to consumers and investors. However, these measures are typically untargeted and can significantly affect the tax base, with no guarantee of full pass-through to consumers:

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while pass-through for internationally traded fuels like LPG can be high, often only around half is reflected in cookstove prices (CCA, 2021; World Bank, 2025). Complementary measures, such as price monitoring, may therefore be needed. Any introduction of reduced VAT should also include a clear sunset clause. Measures should be time-bound and subject to periodic evaluation, helping to limit fiscal risks and facilitating a transition to more targeted instruments – such as vouchers or cash transfers – as administrative capacity improves.

Fuel and stove delivery programmes represent another area of measurable progress. Countries have notably introduced or planned 26 new cookstove distribution initiatives and 11 fuel support programmes since 2024, reflecting growing recognition that supply-side and demand-side interventions are essential to overcome persistent affordability and access barriers and accelerate the adoption of clean cooking solutions. In 2026, through its Green Economy Empowerment 774 (GEE774) program, Nigeria committed to deploy 4 million solar electric cookstove. Rwanda, with support from Saudi Arabia's Forward7 initiative, has launched a new program in 2025 to distribute 50 000 LPG cooking kits to low-income households. In 2024, Kenya has introduced an LPG programme targeting public institutions including schools and Ghana has launched an initiative to distribute a million more efficient cookstoves to reduce fuel costs.

Progress has also been recorded across a range of other policy areas since 2024, including the establishment of cookstove performance standards, support for domestic manufacturing and the use of carbon market frameworks to mobilise finance for clean cooking (Table 3). Five countries have introduced measures to promote or support local production of clean cooking technologies, with the aim of reducing import dependence, building domestic industrial capacity and lowering costs over time. Uganda's Value Added Tax (Amendment) Act 2024 illustrates this approach, providing a VAT exemption effective until June 2028 for ethanol stoves assembled domestically and directly incentivising local value addition along clean cooking supply chains. Ethiopia also identifies clean cooking as a priority sector in its National Carbon Market Strategy (2025-2035), emphasising the role of carbon finance in scaling access. Ghana plans to develop and implement performance standards and labelling regulations for improved cookstoves in its energy compact. Complementing these efforts, Uganda and Tanzania have launched the eCooking Scale and Support Programmes with support from UKAid and the Modern Energy Cooking Services (MECS) programme. These programmes take a broader market-transformation approach, combining interventions on appliance standards and certification, repair and maintenance ecosystems, institutional electric cooking, utility and regulatory demand-side measures, and consumer engagement to address barriers to the large-scale adoption of electric cooking.

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**Table 3 ▷ Clean cooking policy landscape in selected countries in sub-Saharan Africa, 2024-2026**

| Country | Target | Framework | | Financial support | | | Regulations | | |
|---|---|---|---|---|---|---|---|---|---|
| | | National strategy | NDC provisions | Designated authority | Tax incentives | Domestic manufacturing | Carbon market | Government monitoring | Cookstoves standards |
| Angola | – | – | – | ● | ● | – | – | ● | – |
| Cameroon | 40% by 2030 | ◇ | ● | ● | – | – | – | ● | – |
| Congo | 81% by 2030 | ◇ | ◆ | ● | ● | – | – | – | – |
| Côte d'Ivoire | 70% by 2035* | ◇ | ◆ | ● | ● | – | – | ◇ | – |
| DR Congo | 30% by 2030 | ◇ | ● | ● | △ | – | – | ● | – |
| Ethiopia | 58% by 2030 | ◆ | ◆ | ● | – | ● | ◆ | ● | ● |
| Ghana | 50% by 2030** | ◇ | ● | ● | – | △ | ◆ | ● | △ |
| Kenya | 100% by 2030* | ● | ◆ | ● | ● | ◆ | ● | ● | ● |
| Liberia | – | ○ | ◆ | ● | – | – | – | ○ | – |
| Madagascar | 50% by 2030 | ◇ | ● | ● | ● | – | – | ● | – |
| Malawi | 75% by 2030 | ● | ● | ● | ● | – | ◆ | ● | ● |
| Mali | 100% by 2030 | – | ● | ● | – | – | – | ● | – |
| Mauritania | 12% per year | ○ | ◆ | ○ | ● | – | – | ○ | – |
| Mozambique | 54% by 2030 | ◇ | ◆ | ● | ● | ● | △ | ● | – |
| Niger | 12% by 2030 | ○ | ● | ● | ◆ | – | – | ● | – |
| Nigeria | 100% by 2030 | ● | ◆ | ● | ● | ● | – | ◇ | ● |
| São Tomé and P. | 75% by 2030 | ● | ◆ | ● | ◇ | – | – | ◇ | ◇ |
| Senegal | 100% by 2035 | ◆ | ● | ● | ● | – | – | ◆ | – |
| Sierra Leone | 25% by 2030* | ◆ | ◆ | ◇ | ▲ | ● | – | ◇ | – |
| South Africa | – | – | – | ● | – | – | ● | ● | – |
| Tanzania | 80% by 2034 | ● | ● | ● | ● | ● | ● | ● | ○ |
| Togo | 80% by 2030 | ◇ | ● | ● | ◇ | – | ● | ● | – |
| Uganda | 50% by 2030 | ◇ | ● | ◇ | ● | ● | ◆ | ● | – |
| Zambia | 40% by 2030 | ◇ | ◆ | ● | ● | – | ● | ◇ | – |
| Zimbabwe | 70% by 2030 | ● | ● | ● | ◆ | – | ◆ | ◇ | ● |

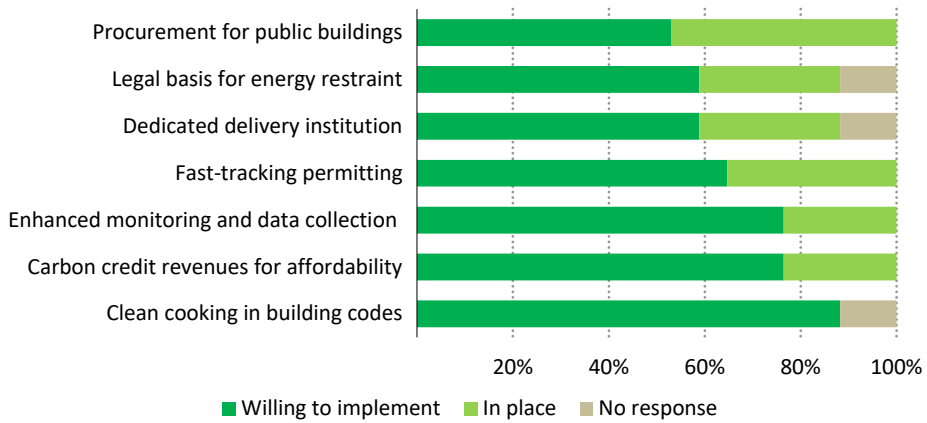
Notes: ● = policy change; ○ = announced; ● = before 2024; ● = 2024; ◆ = 2025; ▲ = 2026; – = no known policy; * = countries with two targets; ** = target focus on LPG fuel; Target = national goal to increase access to clean cooking solutions; National strategy = official government plan outlining the path to scale up clean cooking; NDC (Nationally Determined Contribution) provisions = clean cooking is included in the NDC; Tax incentives = fiscal exemptions or reductions for clean cooking fuels or appliances; Domestic manufacturing = policies supporting local supply of clean cooking technologies; Carbon market = legal framework on carbon market; Cookstoves standards = regulation requiring the use or sale of certain clean cooking technologies. Congo = Republic of the Congo; DR Congo = Democratic Republic of the Congo; São Tomé and P.= São Tomé and Principe; Tanzania = United Republic of Tanzania.

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Recent policy developments on clean cooking reflect a strengthening of commitments by governments and international partners to close the access gap across Africa. A key milestone was the endorsement by G20 members, under South Africa's Presidency, of the Clean Cooking Voluntary Infrastructure Investment Action Plan in December 2025. The plan marks the first coordinated G20 framework dedicated to accelerating clean cooking access in Africa, with a focus on scaling infrastructure investments across the value chain – from fuel supply and distribution to appliances and enabling systems – while mobilising both public and private finance and improving coordination among development partners.

Emerging evidence also points to growing policy ambition at the country level. A recent survey jointly conducted by the IEA and the African Energy Commission (AFREC) highlights strong interest among African governments in advancing clean cooking policy frameworks, although implementation remains uneven. Measures most frequently identified as priorities include integrating clean cooking into building codes, leveraging carbon credit revenues to improve affordability, and strengthening data collection and monitoring systems (Figure 31). At the same time, fewer countries reported these measures as already in place, pointing to a gap between policy ambition and delivery. Other areas of growing interest include fast-tracking permitting processes, establishing dedicated delivery institutions, and using public procurement – particularly for schools and other public buildings – as a lever to scale demand.

**Figure 31 ▷ Policy ambitions based on survey circulated to African countries by the IEA and AFREC**




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*Policy ambition is outpacing implementation across all African countries surveyed*

Source: IEA and AFREC (2026)

Despite this progress, the pace and scale of implementation remain insufficient to achieve universal access in the near term. The forthcoming Summit on Clean Cooking in Africa

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provides a critical opportunity to translate commitments into action. Discussions will focus on three key pillars – policies, financing and fuels and technologies – presents a critical opportunity to reinforce commitments and accelerate implementation, particularly by scaling up measures that can help mobilise investment, reduce affordability gaps and fiscal barriers, and improve the resilience of the clean cooking supply chain.

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# ANNEXES

# Commitment tracking

## A.1 Overview of tracking exercise

The IEA's Summit on Clean Cooking in Africa in 2024 delivered USD 2.2 billion in public and private sector commitments to support efforts to reach universal access to clean cooking. To ensure accountability and transparency, the IEA tracks the disbursement of the financial commitments made at that Summit. The first tracking update was published in July 2025 in Annex A of the IEA's *Universal Access to Clean Cooking in Africa: Progress update and roadmap to implementation* (IEA, 2025). This annex provides detailed reporting on implementation of individual pledges as of 1 June 2026. Three countries have fulfilled their commitments, Ireland, United Kingdom, and the United States. Shell is the only company that has fulfilled its pledge. The IEA will continue to monitor progress on the Summit commitments annually through 2030.

The commitments are based on the Summit Outcome Document and Action Plan (IEA, 2024). Data on implementation has been self-reported to the IEA by governments and organisations that made investment commitments. The IEA reviewed and analysed the data, consulting reporting entities as needed to ensure consistency. Final reporting data was shared with governments and organisations for review prior to publication.

Table A.1 reports on financial commitments made by governments at the Summit. Table A.2 reports the investment data for the private sector. Each table has two sections, both of which reflect the financial commitment made, the disbursements since 2024, and what remains to fulfil the commitments by 2030. The first section reports on their overall commitment to clean cooking. The second section reports on the portion of that commitment made at the Summit on Clean Cooking in Africa in 2024 that was new and directed toward clean cooking in sub-Saharan Africa, the subsequent disbursements and the amount of disbursement since the last tracking update. The commitments in the second sections of these two tables account for the USD 2.2 billion.

Where necessary, explanatory notes clarifying the commitment or disbursements are included following each table. Following the tables is a list of corresponding commitments as worded by the organisation in the Summit Outcome Document and Action Plan (IEA, 2024). Some of these organisations have made commitments to clean cooking in Africa outside of the context of the Summit and these are not reflected in this reporting. New or additional commitments are expected to be announced at the second Summit on Clean Cooking in Africa and an updated tracking framework will be developed to ensure consistency.

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**Table A.1 ▷ Reporting on public sector Summit commitments (million USD)**

| | Commitments on clean cooking | | | Of which are linked to new commitments for sub-Saharan Africa made at the Summit | | | |
|---|---|---|---|---|---|---|---|
| | Committed amount | Progress since 2024 | Implied progress to fulfil | Committed amount | Progress since 2024 | Implied progress to fulfil | Change since 2025[1] |
| Denmark[2] | 75 | 26 | 49 | 75 | 26 | 49 | 11 |
| European Commission[3, 4] | 175 | No data[3] | No data | 13 | 0.6 | 12.4 | 0 |
| France[3] | 108 | 12 | 96 | 108 | 12 | 96 | 6 |
| Ireland[3] | 0.8 | 0.8 | 0 | 0.8 | 0.8 | 0 | 0 |
| Netherlands[3, 5] | 5 | 2 | 3 | 5 | 2 | 3 | -1 |
| Norway[6] | 50 | 49 | 1 | 30 | 30 | 0 | 16 |
| United Kingdom[7] | 9 | 9 | 0 | 9 | 9 | 0 | 6 |
| United States | 40 | 40 | 0 | 40 | 40 | 0 | 0 |

[1] The first tracking report was based on disbursements up to 1 July 2025.

[2] DKK/USD exchange rate of 0.15 in 2024 and 2025. Progress amount in Danish Krone (DKK) is 175 million.

[3] Based on EUR/USD exchange rate of 1.08 for 2024 and 1.13 for 2025.

[4] EU's original Summit commitment included clean cooking disbursements made prior to 14 May 2024 as part of the AEGEI project. Data on disbursement on the EU investments in AEGEI was not reported.

[5] The downward revision from 2025 reporting for the Netherlands is due to an update to the implementation and disbursement schedule.

[6] Norway's commitment at the Summit includes, in part, funding allocated to clean cooking initiatives prior to 14 May 2024. These earlier disbursements, made under the same agreements and to the same partners as subsequent allocations, are credited in accordance with the agreed-upon framework to reflect Norway's progress toward fulfilling its stated pledge.

[7] GBP/USD exchange rate of 1.28 used for 2024 and 1.32 for 2025.

### *Commitment statements*

**Denmark:** Denmark will provide at least DKK 500 million (Danish kroner; USD 70-75 million) over the coming years, starting with USD 20 million new funding for the World Bank Clean Cooking Fund.

**European Commission:** The European Union (EU) / Team Europe is currently implementing under AEGEI, the Africa Europe Green Energy Initiative, actions on clean cooking amounting to more than EUR 400 million, with an EU contribution of EUR 150 million. The EU / Team Europe will soon launch a new initiative, the Regional Clean Cooking Action for West Africa – ReCCAWA, with an EU contribution of EUR 12 million, co-financed by the Netherlands with EUR 5 million.

**France:** France pledges to invest EUR 100 million (by 2030) in clean cooking methods and will mobilise even more through the Paris Pact for People and the Planet and Finance in Common. Agence Française de Développement (AFD) commits to implement the roadmap dedicated

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to clean cooking that was developed as a deliverable of the Summit in order to mainstream and scale up Clean Cooking in its operations.

**Ireland:** In May 2024, Ireland disbursed EUR 750 000 to the Clean Cooking Alliance (CCA) for the Delivery Units Network in Africa. The Delivery Units will be located within the President's offices – first countries to establish units include Sierra Leone and Kenya. With Ireland's funding, CCA plans to provide a range of network services to the Clean Cooking Delivery Units Network, through the CCA Delivery Units Network Secretariat. These services include: technical assistance to national governments; resource mobilisation support; catalytic funding for special projects; leadership training and professional development for Delivery Unit staff; and a peer-to-peer action network to accelerate knowledge transfer and regional coalition-building.

**Netherlands:** The EU and The Netherlands have jointly mobilised EUR 10.5 million to support clean cooking in West Africa. The Netherlands' contribution amounts to EUR 5 million to the Regional Clean Cooking Action in West Africa, which will be implemented by RVO and AECID.

**Norway:** Norway has committed to provide about USD 50 million in support for clean cooking.

**United Kingdom:** The United Kingdom (UK) announced the delivery of GBP 8.5 million on Modern Energy Cooking Services (MECS) programme from 2024-2026 in two African countries. The United Kingdom is committed to expanding accelerator programmes; our demonstrators in Uganda and Tanzania which we announced at this Summit are doing just this, and the United Kingdom will continue to drive this agenda forward. Since 2016 our Transforming Energy Access programme has been delivering GBP 265 million of UK support through effective partnerships and collaboration with country institutions, academics, and small businesses to support incubation, acceleration, and scaling of innovative solutions to long term financing challenges.

**United States:** The United States announced it is increasing its ambitions in the field of clean cooking through policy or programmatic support totalling some USD 40 million, which will encompass complementary and wide-ranging activities across the White House, EPA, USAID, DOE, NIH, Agriculture, and other agencies. The United States announced that the Clean Cooking and Climate Consortium, which it helped launch and support, will release their draft Cooking and Carbon methodology for public comment this summer. This methodology is designed to cover all cooking transition scenarios, incentivise best practices, and incorporate latest science on key parameters. The methodology will set a level playing field for project developers and standards bodies and will build certainty, confidence, consistency, and transparency in the cooking and carbon market, which the United States believes will attract more investment to the clean cooking sector and result in proper credit for each ton of carbon offset.



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**Table A.2 ▷ Reporting on private Sector Summit commitments (million USD)**

| | Commitments on clean cooking | | | Of which are linked to new commitments for sub-Saharan Africa made at the Summit | | | |
|---|---|---|---|---|---|---|---|
| | Committed amount | Progress since 2024 | Implied progress to fulfil | Committed amount | Progress since 2024 | Implied progress to fulfil | Change since 2025[1] |
| Africa50[2] | 150 | 0 | 150 | 150 | 0 | 150 | 0 |
| BioLite[3] | 60 | 21 | 39 | 60 | 21 | 39 | -2 |
| BURN | 275 | 81 | 194 | 275 | 81 | 194 | 63 |
| Circle Gas ltd. | 75 | 69 | 6 | 75 | 69 | 6 | 21 |
| Eni[4] | 20 million beneficiaries | 4.6 million beneficiaries | 15.4 million beneficiaries | 19.7 million beneficiaries | 4.3 million beneficiaries | 15.4 million beneficiaries | 3.1 million beneficiaries |
| Oryx Energies | 50 | 23 | 27 | 50 | 23 | 27 | 18 |
| Shell[5] | 200 | 200 | 0 | 85 | 85 | 0 | 0 |
| Sistema.bio | 20 | 7 | 13 | 20 | 6 | 14 | 3 |
| TotalEnergies[6] | 400 | 130 | 270 | 355 | 115 | 240 | 33 |
| Vitol/Vivo Energy | 550 | 151 | 399 | 550 | 151 | 399 | 50 |

[1] The first tracking report was based on disbursements up to 1 July 2025.

[2] Africa50's commitment of USD 150 million reflects the expected contribution from Africa50's balance sheet, intended to leverage additional public and private funding to reach the overall USD 500 million target included in their written commitment.

[3] The downward revision from 2025 reporting is due to a temporary pause in a portion of partially disbursed funding following regulatory changes outside of BioLite's control.

[4] Eni's official commitment made at the Summit is based on numbers of beneficiaries, although they provided an estimate for the total value of the commitment at USD 300 million. Eni's commitment at the Summit includes, in part, funding allocated to clean cooking initiatives prior to 14 May 2024. These earlier disbursements are credited by the agreed-upon framework to reflect Eni's progress toward fulfilling its stated pledge. IEA estimated associated financial outlays with the commitment at around USD 65 million as of May 2026. These are based on IEA estimates for the equivalent investment value based on number of beneficiaries and technology type and are only provided for a harmonized comparison of tracking against the Summit commitments and do not reflect investment data reported from Eni.

[5] Shell has disbursed its commitment to the Lightrock's Accelerate7 energy access fund, which will make future investments. The IEA has made an assessment regarding Shell's commitment that will be for clean cooking in Africa. This is only intended as an estimate.

[6] TotalEnergies' commitment of USD 400 million includes investments in both sub-Saharan Africa and India, of which USD 355 million are intended in Africa.

### *Commitment statements*

**Africa50:** will mobilise up to USD 500 million in blended finance, project development funding, equity and debt investments to support LPG infrastructure and value chain expansion in several African countries.

**BioLite:** commits to expanding our distribution partnerships and carbon credits program to deliver clean cookstoves to an additional three million households in sub-Saharan Africa by 2030. BioLite plans to deploy USD 60 million to deliver this scale of energy access.

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**BURN Manufacturing:** plans to deploy over USD 275 million of project financing for stove subsidies by 2030.

**Circle Gas ltd.:** has launched MGas Resources in Tanzania and will be investing USD 75 million to expand its total customer base in East Africa from current 350 000 to 750 000 by the end of 2025, in both Kenya and Tanzania. By doing so, Circle Gas investments in Clean Cooking will increase to over USD 230 million. Circle Gas Limited has launched their latest generation LPG Pay As you Go smart meter the "PX", which is being manufactured in Italy by their subsidiary Circle Manufacturing Italia Srl. The production of the new generation PX meter has enabled improved durability, prolonged battery life and substantial enhanced user interface.

**Eni:** voluntarily launched its Clean Cooking Program in 2018 and has already involved about 500 thousand beneficiaries located in Côte d'Ivoire, Mozambique, Rwanda, Angola and the Republic of the Congo. Our plan is to provide access to clean cooking to more than 10 million beneficiaries in sub-Saharan Africa by 2027. Fostering the shift from improved to clean cooking solutions, Eni's ambition is to reach 20 million beneficiaries by 2030, associated to an estimated spending of USD 300 million, and even more in the following years.

**Oryx Energies:** Since 2015, Oryx Energies has invested approximately USD 100 million, in Tanzanian LPG market, through its local affiliate Oryx Gas Tanzania Ltd "OGTL". OGTL, pioneer of Clean Cooking in Tanzania, is committed to converting a further 6 million Tanzanian households from charcoal and firewood to LPG by the year 2032. This pledge implies OGTL will continue to invest in the necessary infrastructure to reach this goal at an approximate value of USD 50 million by 2030.

**Shell:** recognises the importance of closing energy access gaps. Shell is pleased to share today at the Summit hosted by IEA, AfDB, Tanzania and Norway governments that it has pledged USD 200 million as part of a broader initiative to help people get access to energy in the near and medium terms. The initiative will focus on several regions including sub-Saharan Africa and aims to help millions of people in underserved communities get access to electricity and improved cooking conditions (as defined by the World Bank Multi-Tier Framework).

**Sistema.bio:** is proud to announce it has launched a program to provide renewable energy cooking solutions through biogas to more than 1 million people in 200 000 households. This creates health, gender, climate and agriculture outcomes across 10 countries in sub-Saharan Africa. Sistema.bio will bring over USD 20 million in outside financing to discount the investment by family farmers in rural areas. Sistema.bio will provide unprecedented transparency and integrity in reporting through a fully digital measurement, reporting and verification (MRV) structure for its carbon credits.

**TotalEnergies:** To increase clean cooking access, TotalEnergies announced at the Summit on Clean Cooking hosted by the IEA, AfDB and governments of Tanzania and Norway, its ambition to impact 100 million people by investing over USD 400 million in LPG for Clean Cooking in Africa and in India, focused on investing in additional assets (storage, filling, bottles). In addition, the company will partner to develop pay-as-you-cook technologies in order to increase access to clean cooking.



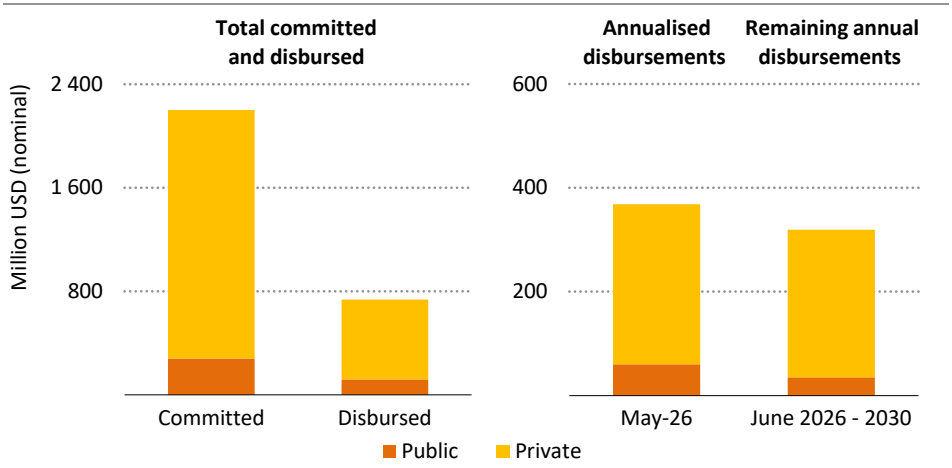
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**Vitol/Vivo Energy:** Vitol, and its daughter company, Vivo Energy, announced today at the Summit hosted by the IEA, AfDB and governments of Tanzania and Norway, their intention to invest more than USD 550 million by 2030 in the infrastructure required to facilitate cleaner cooking solutions in Africa. This pan-African investment comprises both LPG infrastructure, from marine terminals to the high-quality cylinders required for the safe distribution of LPG, and investment in clean cooking carbon projects.

## A.2 Tracking Summit commitment disbursement flows[1]

As of June 2026, the IEA has tracked USD 737 million in disbursements against the pledges, with 16% coming from governments and 84% by private sector actors (Figure A.1). As a result, two years since the 2024 Summit, public sector entities have mobilised 43% of their targeted total commitments while the private sector has disbursed 32% of its total commitments. The annualised disbursement rate, in aggregate, is on track to achieve full disbursement of the USD 2.2 billion by 2030. The public sector is exceeding the annual rate of disbursements needed – it has disbursed USD 60 million on an annual basis and can fulfil its pledges by disbursing USD 35 million annually between now and 2030. The private sector is also exceeding the rate needed to reach full disbursement by 2030 (USD 284 million), with an annual disbursement rate of USD 308 million.

**Figure A.1 ▷ Progress tracking of IEA's 2024 Summit on Clean Cooking in Africa commitments**




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*Average annual investments by 2030 are on track to meet financial commitments made at the 2024 Summit on Clean Cooking in Africa*

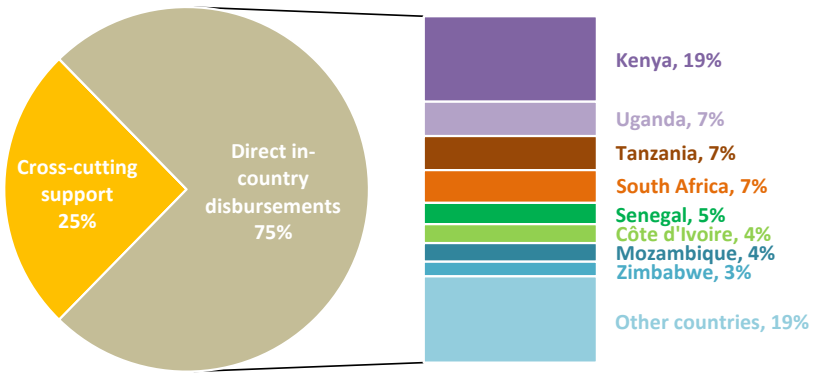
[1] Summit commitment tracking reports only on progress towards the new commitments for Africa made at the Summit.

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Most of the investments (75%) have been channelled directly into countries, with cross-cutting support receiving the remaining 25%. Cross-cutting support includes funding from a Summit disbursement that supports clean cooking in a way that is not easily confined to one country. For example, this includes research on the benefits of clean cooking or financing that is re-invested via an intermediary institution, such as multilateral development banks that provide affordability support or investment funds that capitalise clean cooking companies.

28 African countries received investments from either or both public and private sector commitments, with the IEA tracking public sector direct investments in 14 countries and private sector disbursements in 23 countries (Figure A.2). These investments support development programmes that are implemented in these countries or investments in infrastructure or cookstove deployment in the countries. The largest recipients of in-country investments are Kenya, 19% of total investments, followed by Uganda, Tanzania, and South Africa (7% each).

**Figure A.2 ▷ Total disbursements by flow and direct in-country disbursements, 2024-2026**




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*Most disbursements were made directly into countries, with Kenya (19%), Uganda, Tanzania, and South Africa (7% each) receiving the most investment*

Note: Other countries that received disbursements that were 3% or less of total disbursements include Ghana, Angola, Cameroon, Zambia, Republic of the Congo, Malawi, Nigeria, Namibia, Madagascar, Democratic Republic of the Congo, Rwanda, Mauritius, Cabo Verde, Sierra Leone, Togo, Ethiopia, Mali, Benin, Burkina Faso, Somalia.

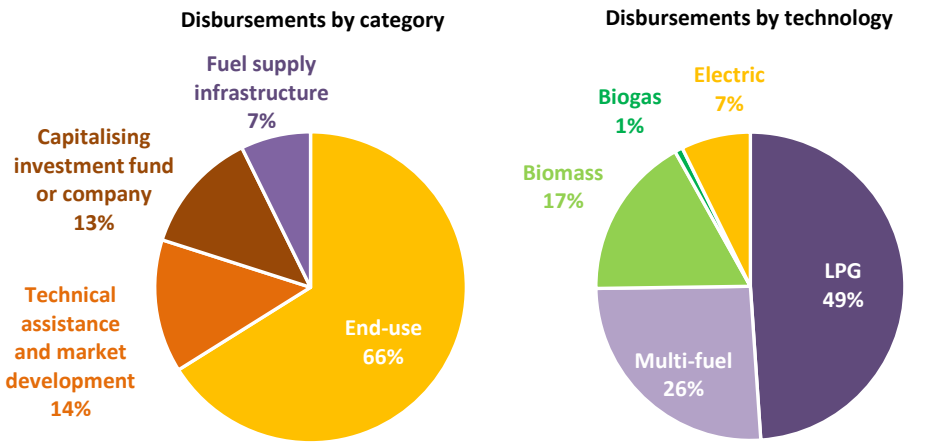


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Two-thirds of the investments (66%) went towards end-use equipment, including stoves and appliances, cylinders, and biodigesters (Figure A.3). The next category of investments was technical assistance and market development at 14%, which includes affordability support through results-based financing. Capitalising investment funds or companies received 13% and includes providing funds to Lightrock's Accelerate7 energy access fund. Fuel supply infrastructure, which includes LPG storage and bottling facilities, stove and fuel manufacturing, received 7% of total investments.

The investments from Summit commitments have supported a range of clean cooking technologies, with LPG receiving half of the disbursements (49%), mainly driven by private sector investments. Biomass received 17%, with electric cooking and biogas received around 8% of total disbursements each. Multi-fuel support was 26% of the disbursements and includes support such as non-fuel specific affordability support for households and market development support (e.g. awareness campaigns).

**Figure A.3 ▷ Total disbursements by category and technology, 2024-2026**




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*End-use equipment and cookstoves were the largest recipient of disbursements by category and around half of the total disbursements supported LPG solutions by technology*

Note: Multi-fuel support includes funds that went towards intermediary institutions, such as investment funds or development programmes that support the clean cooking sector through activities such as capacity development or re-lending. LPG includes supply infrastructure such as storage facilities, distribution support infrastructure and end-use equipment, such as cylinders and cookstoves.

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Examples of the development programmes supported by the public sector disbursements are listed in Table A.3.

**Table A.3 ▷ Examples of public sector programmes supported by Summit commitments**

| Country | Programmes supported |
|---|---|
| Denmark | • World Bank Clean Cooking Fund, IRENA work on Clean Cooking |
| EU | • Regional Clean Cooking for West Africa (ReCCAWA) |
| France | • Clean cooking in biodiversity and forestry projects, Fund for Innovation and Development (FID), Digital Energy Facility, Fund "Civil Society Organisation", Proparco, Biomass Energy Africa |
| Ireland | • Clean Cooking Delivery Units Network (Clean Cooking Alliance) |
| The Netherlands | • ReCCAWA |
| Norway | • Energy Sector Management Assistance Program (ESMAP), GIZ, Norad's Enterprise Development Scheme for Renewable Energy (EDRE), Energy Environment Partnership (EEP), Modern Cooking Facility for Africa (NEFCO), GET.pro, World Food Programme (WFP), Safe Access to Fuel and Energy (phase 2), Forests for Sustainable Development (FSD), REDD+ Investment Programme, Proenergia+, Climate Friendly Cooking Initiative, Tanzania Ministry of Finance, Norwegian Refugee Council/NORCAP |
| UK | • Modern Electric Cooking Services (MECS) |
| USA | • Clean cooking climate and health research at the National Institute of Health (NIH) |

Examples of projects that are supported by public and private investment pledges made at the Summit include:

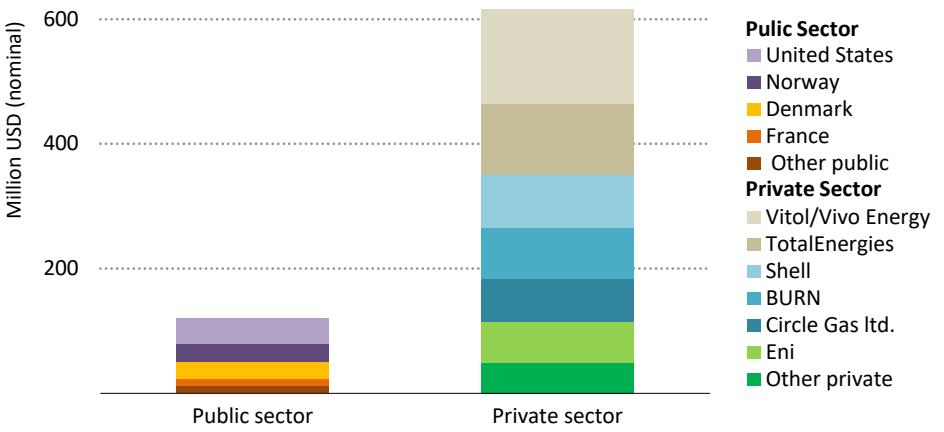
- New LPG infrastructure in many countries throughout Africa, including distribution network expansion in Kenya, storage in Tanzania and Uganda, and a bottling facility and depot in Namibia
- New factories for manufacturing biomass stoves in Nigeria and Malawi. The latter will produce over half a million biomass stoves per year
- Support for innovative electric cooking financing schemes that reduce the affordability barrier through on-bill financing and bulk purchasing of electric cooking appliances in Tanzania
- Development assistance for cookstove deployment to support economic and climate resilience for fragile populations in rural areas of Senegal
- Development assistance to distribute electric cooking in Virunga National Park in the Democratic Republic of the Congo
- Support for a clean cooking delivery units establish in the Kenyan, Sierra Leone, and Ugandan governments



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Since the Summit, Vitol/Vivo has made the largest disbursement from the private sector (25% of total private sector investments), with investments in new LPG storage facilities, bottling plants, and LPG facilities (Figure A.4). Over the past year, BURN Manufacturing has made the most private sector investments, with USD 63 million supporting manufacturing facilities and carbon financing for cookstove deployment in 13 African countries. In the public sector, Norway made the most progress since the 2025 reporting, with USD 16 million disbursed. Denmark also made notable progress with USD 11 million disbursed, while the UK disbursed an additional USD 6 million to fulfil its pledge.

**Figure A.4 ▷ Disbursements of Summit commitments by organization 2024-2026**




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*Vitol, Total, Shell, and BURN have made the largest disbursements among the private sector, while Norway made the most progress in the past year in the public sector*

Notes: Other public includes: United Kingdom, Netherlands, Ireland, and the European Commission. Other private includes: Oryx Energies, BioLite, Sistema.Bio, Africa50.

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# Definitions

This annex provides general information on terminology used in this report including units and general conversion factors; definitions of fuels, processes and sectors; regional and country groupings; and abbreviations and acronyms.

## Units

| | | |
|---|---|---|
| **Emissions** | Gt $CO_2$-eq | gigatonnes of carbon-dioxide equivalent (using 100-year global warming potentials for different greenhouse gases) |
| **Energy** | J | joule |
| | EJ | exajoule (1 joule x $10^{18}$) |
| | kb/d | thousand barrels per day |
| | mb/d | million barrels per day |
| | Wh | watt-hour |
| | GWh | gigawatt-hour (1 Wh x $10^9$) |
| | TWh | terawatt-hour (1 Wh x $10^{12}$) |
| | cal | calorie |
| | Gcal | gigacalorie (1 calorie x $10^9$) |
| | toe | tonne of oil equivalent |
| | Mtoe | million tonnes of oil equivalent (1 toe x $10^6$) |
| | boe | barrel of oil equivalent |
| | Btu | British thermal units |
| | MBtu | million British thermal units (1 Btu x $10^6$) |
| | bcme | billion cubic metres of natural gas equivalent |
| **Liquid** | L | litre |
| | ML | million litres (1 litre x $10^6$) |
| | GL | billion litres (1 litre x $10^9$) |
| | ML/year | million litres per year |
| **Mass** | kg | kilogramme |
| | t | tonne (1 tonne = 1 000 kg) |
| | kt | kilotonne (1 tonne x $10^3$) |
| | Mt | million tonnes (1 tonne x $10^6$) |
| | Gt | gigatonne (1 tonne x $10^9$) |
| **Monetary** | USD million | 1 US dollar x $10^6$ |
| | USD billion | 1 US dollar x $10^9$ |
| | USD per tonne | US dollars per tonne of product |
| | USD per credit | US dollars per carbon credit |
| | million credits | 1 carbon credit x $10^6$ |

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## General conversion factors for energy

| | | Multiplier to convert to: | | | | | |
|---|---|---|---|---|---|---|---|
| | | EJ | Gcal | Mtoe | MBtu | bcme | GWh |
| Convert from: | EJ | 1 | $2.388 \times 10^{8}$ | 23.88 | $9.478 \times 10^{8}$ | 27.78 | $2.778 \times 10^{5}$ |
| | Gcal | $4.1868 \times 10^{-9}$ | 1 | $10^{-7}$ | 3.968 | $1.163 \times 10^{-7}$ | $1.163 \times 10^{-3}$ |
| | Mtoe | $4.1868 \times 10^{-2}$ | $10^{7}$ | 1 | $3.968 \times 10^{7}$ | 1.163 | 11 630 |
| | MBtu | $1.0551 \times 10^{-9}$ | 0.252 | $2.52 \times 10^{-8}$ | 1 | $2.932 \times 10^{-8}$ | $2.931 \times 10^{-4}$ |
| | bcme | 0.036 | $8.60 \times 10^{6}$ | 0.86 | $3.41 \times 10^{7}$ | 1 | 9 999 |
| | GWh | $3.6 \times 10^{-6}$ | 860 | $8.6 \times 10^{-5}$ | 3 412 | $1 \times 10^{-4}$ | 1 |

Note: There is no generally accepted definition of boe; typically, the conversion factors used vary from 7.15 to 7.40 boe per toe. Natural gas is attributed a low heating value of 1 MJ per 44.1 kg. Conversions to and from billion cubic metres of natural gas equivalent (bcme) are given as representative multipliers but may differ from the average values obtained by converting natural gas volumes between IEA balances due to the use of country-specific energy densities. Lower heating values (LHV) are used throughout.

## Currency conversions

| Exchange rates *(2025 annual average)* | 1 US dollar (USD) equals: |
|---|---|
| British Pound | 0.76 |
| Chinese Yuan Renminbi | 7.19 |
| Danish Krone | 6.62 |
| Euro | 0.88 |
| Indian Rupee | 87.16 |
| Japanese Yen | 149.66 |
| Korean Won | 1 422.44 |
| Norwegian Krone | 10.40 |

Note: Local Currency Units per USD, period average

Source: World Bank

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## *Definitions*

**Access to clean cooking:** When a household has the equipment and reliable access to the fuels that allow cooking to be carried out primarily in a fashion which ascribes to the World Health Organization's (WHO) performance criteria for Tier 4 and above in terms of $PM_{2.5}$ and Tier 5 for CO. This excludes traditional cooking options that make use of solid biomass (such as a three-stone fire), coal or kerosene. It includes clean advanced biomass cook stoves, biogas/biodigester systems, electric stoves, liquefied petroleum gas, natural gas and ethanol stoves.

**Advanced biomass stove:** Stoves that burn solid biomass, such as wood, charcoal, or pellets and employ a forced draft (fan-assisted combustion) or gasification to achieve significantly higher thermal efficiency and much lower emissions – WHO standards for Tier 3 to 5 for emissions and thermal efficiency. This is part of the broader classification of improved biomass cookstoves.

**Affordability:** In this report, affordability is assessed as the share of households' disposable income spent on upfront costs, namely capital expenditure for clean cooking equipment plus one year of operating expenses. A clean cooking solution is considered affordable if related expenditure is below 5% of household income.

**Basic biomass cookstoves**: Describes the simplest forms of solid fuel stoves, often artisanal or locally produced from clay, metal, or a combination of materials. These stoves provide small improvements over an open fire in terms of fuel efficiency or emissions reduction. They fall within ISO Tiers 0–2 and are considered polluting under WHO guidelines.

**Biodigester:** A biodigester breaks down organic material (such as animal manure, agriculture residues, food waste) to produce biogas (see definition below). This can be a source of energy for clean cooking solutions.

**Bioenergy:** Energy content in solid, liquid and gaseous products derived from biomass feedstocks and biogas. It includes solid bioenergy, liquid biofuels and biogases.

**Biogas:** A mixture of methane, $CO_2$ and small quantities of other gases produced by anaerobic digestion of organic matter in an oxygen-free environment.

**Blended finance:** A broad category of development finance arrangements that blend relatively small amounts of concessional donor funds into investments, in order to mitigate specific investment risks. This can catalyse important investments that would otherwise be unable to proceed under conventional commercial terms. These arrangements can be structured as debt, equity, risk-sharing or guarantee products. Specific terms of these arrangements, such as interest rates, tenor, security or rank, can vary across scenarios.

**Carbon credit:** A tradable certificate that allows buyers to claim the reduction or removal of one tonne of $CO_2$ or its equivalent in other greenhouse gasses. The carbon credits are generated by projects that reduce or remove emissions against a counterfactual baseline.



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**Carbon dioxide ($CO_2$):** Is a gas consisting of one part carbon and two parts oxygen. It is an important greenhouse (heat-trapping) gas.

**Clean cooking systems:** Methods for cooking food that meet the WHO performance criteria for Tier 4 and above in terms of key indoor air pollutants. This excludes traditional cooking options that make use of solid biomass (such as a three-stone fire, coal or kerosene). It includes clean advanced biomass cook stoves, biogas/biodigester systems, electric stoves, liquefied petroleum gas, natural gas and ethanol stoves.

**Concessional financing:** Resources extended at terms more favourable than those available in the market. This can be achieved through one or a combination of the following factors: interest rates below those available on the market; maturity, grace period, security, rank or back-weighted repayment profile that would not be accepted/extended by a commercial financial institution; and/or by providing financing to the recipient otherwise not served by commercial financing.

**Electric cooking or e-cooking:** Stoves powered by electricity including resistance and induction stoves and hotplates. The broader term electric cooking devices includes all devices that use electricity to produce heat for food preparation which beyond stoves, also includes appliances like kettles, electric pressure cookers, and counter-top ovens.

**Ethanol:** Refers to bioethanol only. Ethanol is produced from fermenting any biomass high in carbohydrates. Currently, ethanol is made from starches and sugars, but second-generation technologies will allow it to be made from cellulose and hemicellulose, the fibrous material that makes up the bulk of most plant matter. Bioethanol cookstoves are considered a clean cooking solution.

**Fossil fuels:** Include coal, natural gas and oil.

**Geospatial analysis:** Process of gathering, interpreting, and analysing data that is associated with specific locations on the Earth's surface. It involves using spatial information – such as coordinates, addresses, or regions – to uncover patterns, relationships, and trends. The IEA GIS modelling approach combines the most recent available country-level data with high resolution spatial data and Earth observation to track infrastructure developments and perform socio-economic analyses.

**Improved biomass cookstoves (ICS):** Delineated between intermediate improved biomass cookstoves (ICS) and advanced biomass cookstoves (ABS), the latter being a subset of ICS. ICS encompass stoves that use engineered enhancements and standardised manufacturing to improve thermal efficiency and reduce emissions. ICS include both intermediate designs (typically ISO Tier 3, considered transitional solutions) and advanced biomass cookstoves (ABS), which integrate technologies such as fans or gasifiers to achieve higher efficiency and lower emissions (ISO Tier 3-5, with the highest tiers classified as clean cooking solutions under WHO guidelines).

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**Investment:** Capital expenditure for any physical kit, including end use and infrastructure, net of taxes. End-use investment includes the purchase of equipment for clean cooking, namely cookstoves and cylinders (and piping in the case of biogas as cooking fuel). Infrastructure investment includes spending on fuel processing, storage, distribution, and delivery infrastructure across clean cooking fuels. Data and projections reflect spending over the lifetime of projects and are presented in real terms in USD 2025 US unless otherwise stated. Total investment reported for a year reflects the amount spent in that year.

**Kerosene:** Liquid mix of hydrocarbons that is used to produce jet fuel as well as for heating, cooking, and lighting. Kerosene used for cooking is not considered a clean cooking solution.

**Liquefied petroleum gas (LPG):** A stable, clean burning gas consisting of propane, butane, or a mixture of the two. LPG used for cooking is considered a clean cooking solution.

**Modern energy:** Modern energy includes LPG, electricity, biogas, ethanol, and modern biomass burned in advanced biomass stoves (ABS).

**Modern liquid bioenergy:** Includes biogasoline, biodiesel, biojet kerosene and other liquid biofuels.

**Modern solid bioenergy:** Includes all solid bioenergy products (see solid bioenergy definition) except the traditional use of biomass. It also includes the use of solid bioenergy in intermediate and advanced improved biomass cook stoves (ISO Tier 3+).

**Natural gas:** Includes gas occurring in deposits, whether liquefied or gaseous, consisting mainly of methane. It includes both non-associated gas originating from fields producing hydrocarbons only in gaseous form, and associated gas produced in association with crude oil production as well as methane recovered from coal mines (colliery gas). Natural gas liquids, manufactured gas (produced from municipal or industrial waste, or sewage) and quantities vented or flared are not included. Gas data in cubic metres are expressed on a gross calorific value basis and are measured at 15°C and at 760 mm Hg (standard conditions). Gas data expressed in tonnes of oil equivalent, mainly for comparison reasons with other fuels, are on a net calorific basis. The difference between the net and the gross calorific value is the latent heat of vaporisation of the water vapour produced during combustion of the fuel (for gas the net calorific value is 10% lower than the gross calorific value). Natural gas used for cooking is considered a clean cooking solution.

**Off-grid systems:** Mini-grids and stand-alone systems for individual households or groups of consumers not connected to a main grid.

**Oil:** Includes both conventional and unconventional oil production. Petroleum products include refinery gas, ethane, liquid petroleum gas, aviation gasoline, motor gasoline, jet fuels, kerosene, gas/diesel oil, heavy fuel oil, naphtha, white spirits, lubricants, bitumen, paraffin, waxes and petroleum coke.



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**People gaining access:** Is not the same as the change in people with clean cooking access, but rather an estimate of the number of people gaining clean cooking access due to new connections, excluding those born into households already with clean cooking access.

**Residential:** Energy used by households including space heating and cooling, water heating, lighting, appliances, electronic devices and cooking.

**Solid bioenergy:** Includes charcoal, fuel-wood, animal waste, agricultural residues, wood waste and other solid wastes.

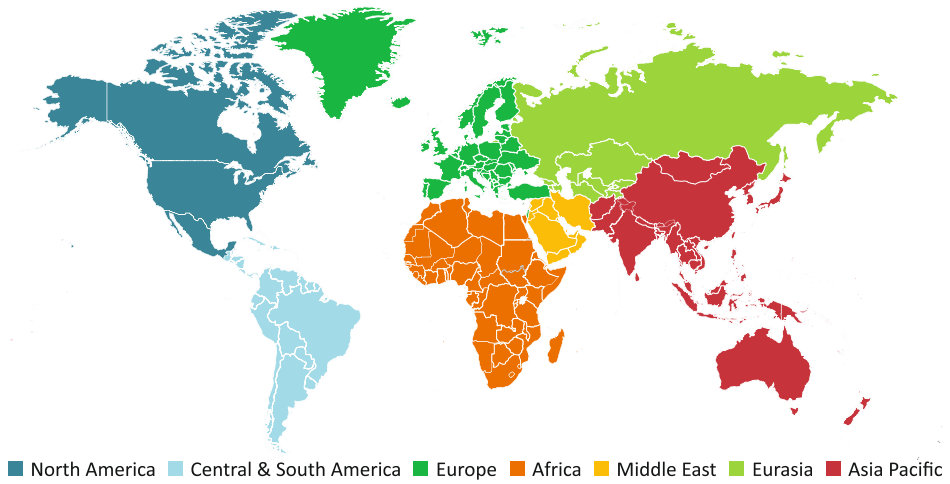
**Traditional use of biomass (TUOB):** Refers to the use of solid biomass with basic cooking technologies, such as a three-stone fire or basic improved cook stoves (ISO Tier 0-2), often with no or poorly operating chimneys. Forms of biomass used include wood, wood waste, charcoal, agricultural residues and other bio-sourced fuels such as animal waste.

**Three-stone fire:** Traditional cooking set-up where the cooking vessel is placed near an open flame to limit heat loss.

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## *Regional and country groupings*

**Figure B.1 ▷ Main country groupings**




Note: This map is without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

**Advanced economies:** OECD regional grouping and Bulgaria, Croatia, Cyprus[1,2], Malta and Romania.

**Africa:** North Africa and sub-Saharan Africa regional groupings.

**Asia Pacific:** Southeast Asia regional grouping and Australia, Bangladesh, Democratic People's Republic of Korea (North Korea), India, Japan, Korea, Mongolia, Nepal, New Zealand, Pakistan, People's Republic of China (China), Sri Lanka, Chinese Taipei, and other Asia Pacific countries and territories.[3]

**Caspian:** Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan.

**Central Africa:** Cameroon, Central African Republic, Chad, Congo, Democratic Republic of the Congo, Equatorial Guinea, Gabon and São Tomé and Príncipe.

**Central and South America:** Argentina, Plurinational State of Bolivia (Bolivia), Brazil, Chile, Colombia, Costa Rica, Cuba, Curaçao, Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Jamaica, Nicaragua, Panama, Paraguay, Peru, Suriname, Trinidad and Tobago, Uruguay, Bolivarian Republic of Venezuela (Venezuela), and other Central and South American countries and territories.[4]

**China:** Includes the People's Republic of China and Hong Kong.

**Developing Asia:** Asia Pacific regional grouping excluding Australia, Japan, Korea and New Zealand.



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**East Africa:** Burundi, Comoros, Djibouti, Eritrea, Ethiopia, Kenya, Madagascar, Malawi, Mauritius, Mozambique, Rwanda, Seychelles, Somalia, South Sudan, Sudan, United Republic of Tanzania, Uganda, Zambia and Zimbabwe.

**East Africa Community:** Burundi, Kenya, Rwanda, South Sudan, United Republic of Tanzania, and Uganda.

**Emerging market and developing economies (EMDE):** All other countries not included in the advanced economies regional grouping.

**Eurasia:** Caspian regional grouping and the Russian Federation (Russia).

**Europe:** European Union regional grouping and Albania, Belarus, Bosnia and Herzegovina, North Macedonia, Gibraltar, Iceland, Israel[5], Kosovo, Montenegro, Norway, Serbia, Switzerland, Republic of Moldova, Türkiye, Ukraine and United Kingdom.

**European Union:** Austria, Belgium, Bulgaria, Croatia, Cyprus[1,2], Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain and Sweden.

**International Energy Agency (IEA):** OECD regional grouping excluding Chile, Colombia, Costa Rica, Iceland, Israel, and Slovenia.

**Latin America:** Central and South America regional grouping and Mexico.

**Middle East:** Bahrain, Islamic Republic of Iran (Iran), Iraq, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syrian Arab Republic (Syria), United Arab Emirates and Yemen.

**Non-OECD:** All other countries not included in the OECD regional grouping.

**Non-OPEC:** All other countries not included in the OPEC regional grouping.

**North Africa:** Algeria, Egypt, Libya, Morocco and Tunisia.

**North America:** Canada, Mexico and United States.

**Organisation for Economic Co-operation and Development (OECD):** Australia, Austria, Belgium, Canada, Chile, Czech Republic, Colombia, Costa Rica, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Latvia, Lithuania, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Türkiye, United Kingdom and United States.

**Organisation of the Petroleum Exporting Countries (OPEC):** Algeria, Angola, Republic of the Congo (Congo), Equatorial Guinea, Gabon, the Islamic Republic of Iran (Iran), Iraq, Kuwait, Libya, Nigeria, Saudi Arabia, United Arab Emirates and Bolivarian Republic of Venezuela (Venezuela).

**Southern Africa:** Angola, Botswana, Kingdom of Eswatini (Eswatini), Lesotho, Namibia, and South Africa.

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**Southeast Asia:** Brunei Darussalam, Cambodia, Indonesia, Lao People's Democratic Republic (Lao PDR), Malaysia, Myanmar, Philippines, Singapore, Thailand and Viet Nam. These countries are all members of the Association of Southeast Asian Nations (ASEAN).

**Southern African Development Community:** Angola, Botswana, Comoros, Democratic Republic of the Congo, Eswatini, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, United Republic of Tanzania, Zambia and Zimbabwe.

**Sub-Saharan Africa:** Angola, Benin, Botswana, Burkina Faso, Burundi, Cabo Verde, Cameroon, Central African Republic, Chad, Comoros, Republic of the Congo (Congo), Côte d'Ivoire, Democratic Republic of the Congo, Djibouti, Eritrea, Kingdom of Eswatini (Eswatini), Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Rwanda, São Tomé and Príncipe, Senegal, Sierra Leone, Somalia, South Africa, South Sudan, Sudan, Uganda, United Republic of Tanzania (Tanzania), Togo, Zambia, Zimbabwe and other African countries and territories.[6]

**West Africa:** Benin, Burkina Faso, Cabo Verde, Côte d'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone, and Togo.

### *Country notes*

[1] Note by Republic of Türkiye: The information in this document with reference to "Cyprus" relates to the southern part of the island. There is no single authority representing both Turkish and Greek Cypriot people on the island. Türkiye recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, Türkiye shall preserve its position concerning the "Cyprus issue".

[2] Note by all the European Union Member States of the OECD and the European Union: The Republic of Cyprus is recognised by all members of the United Nations with the exception of Türkiye. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

[3] Individual data are not available and are estimated in aggregate for: Afghanistan, Bhutan, Cook Islands, Fiji, French Polynesia, Kiribati, Macau (China), Maldives, New Caledonia, Palau, Papua New Guinea, Samoa, Solomon Islands, Timor-Leste and Tonga and Vanuatu.

[4] Individual data are not available and are estimated in aggregate for: Anguilla, Antigua and Barbuda, Aruba, Bahamas, Barbados, Belize, Bermuda, Bonaire, British Virgin Islands, Cayman Islands, Dominica, Falkland Islands (Malvinas), French Guiana, Grenada, Guadeloupe, Guyana, Martinique, Montserrat, Saba, Saint Eustatius, Saint Kitts and Nevis, Saint Lucia, Saint Pierre and Miquelon, Saint Vincent and Grenadines, Saint Maarten, Turks and Caicos Islands.

[5] The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD and/or the IEA is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

[6] Individual data are not available and are estimated in aggregate for: Réunion and Seychelles.



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## *Abbreviations and acronyms*

| | |
|---|---|
| **ABS** | advanced biomass stove |
| **ACCESS** | Accelerating Clean Cooking and Electricity Services Scenario |
| **AfDB** | African Development Bank Group |
| **AFREC** | African Energy Commission |
| **CCA** | Clean Cooking Alliance |
| **CCPs** | Core Carbon Principles |
| **CLEAR** | Comprehensive Lowered Emission Assessment and Reporting |
| **CO** | carbon monoxide |
| **$CO_2$** | carbon dioxide |
| **$CO_2$-eq** | carbon-dioxide equivalent |
| **COP** | Conference of the Parties (UNFCCC) |
| **DAC** | development assistance committee |
| **DFI** | development finance institutions |
| **DHS** | Demographic and Health Surveys |
| **DRC** | Democratic Republic of the Congo |
| **EMDE** | emerging market and developing economies |
| **EU** | European Union |
| **FDI** | foreign direct investment |
| **GACC** | General Administration of Customs of the People' Republic of China |
| **GeCCo** | Global Electric Cooking Coalition |
| **GEE774** | Green Economy Empowerment 774 |
| **GDP** | gross domestic product |
| **GNCF** | Global Child Nutrition Foundation |
| **G7** | Group of 7 |
| **G20** | Group of 20 |
| **ICS** | improved biomass cookstove |
| **ICVCM** | Integrity Council for the Voluntary Carbon Market |
| **IEA** | International Energy Agency |
| **IIASA** | International Institute for Applied Systems Analysis |
| **IMF** | International Monetary Fund |
| **IPCC** | Intergovernmental Panel on Climate Change |
| **ITMOs** | Internationally Traded Mitigation Outcomes |
| **KTH** | Kungliga Tekniska Hogskolan (KTH Royal Institute of Technology) |
| **LNG** | liquefied natural gas |
| **LOAs** | Letters of Authorisation |
| **LPG** | liquefied petroleum gas |
| **MDB** | multilateral development bank |
| **MECS** | Modern Energy Cooking Services |
| **MER** | market exchange rate |
| **MTF** | multi-tier framework |
| **NDC** | Nationally Determined Contribution |
| **OECD** | Organisation for Economic Co-operation and Development |

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| | |
|---|---|
| **OPEC** | Organisation of the Petroleum Exporting Countries |
| **$PM_{2.5}$** | particulate matter 2.5 |
| **PMUY** | Pradhan Mantri Ujjwala Yojana |
| **RISE** | Regulatory Indicators for Sustainable Energy |
| **SDG** | Sustainable Development Goal (United Nations) |
| **UN** | United Nations |
| **UNEP** | United Nations Environment Programme |
| **UNFCCC** | United Nations Framework Convention on Climate Change |
| **UNHCR** | United Nations High Commissioner for Refugees |
| **US** | United States |
| **USD** | United States Dollar |
| **VAT** | value added tax |
| **WBA** | World Bioenergy Association |
| **WEO** | World Energy Outlook |
| **WFP** | World Food Programme |
| **WHO** | World Health Organization |



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## Clean Cooking in Africa 2026

### World Energy Outlook Special Report

Nearly 2 billion people worldwide still lack access to clean cooking solutions, half of them in sub-Saharan Africa. The traditional use of biomass for cooking is one of the world's leading causes of premature death, responsible for 2.5 million deaths annually, disproportionately affecting women and children. It also burdens households with hours of time collecting fuel each day – time lost to education and other productive activities – and generates emissions comparable to those from international aviation and shipping combined. Yet closing the clean cooking gap could be achieved with an investment of just USD 4 billion a year.

Despite its importance, clean cooking has long been overlooked by the international community. While the number of people without access has halved globally since 2010, driven by rapid progress in Asia, it continues to rise in sub-Saharan Africa. Recognising clean cooking access as a defining challenge for Africa's prosperity, the International Energy Agency (IEA) hosted the first International Summit on Clean Cooking in Africa in Paris in 2024, elevating the challenge on the global agenda and mobilising USD 2.2 billion in commitments.

In a new report, Clean Cooking in Africa: Progress Report 2026, the IEA offers a new stocktake of progress and remaining gaps across sub-Saharan Africa. The report assesses progress towards universal access across key dimensions, examines the impact of the ongoing conflict in the Middle East, and tracks delivery of the financial and policy commitments made at the 2024 Summit.

The analysis draws on the latest available data, with ongoing efforts by the IEA to address remaining gaps in global clean cooking data and strengthen the tracking of progress. This report is the latest entry in the IEA's 25-year history of tracking progress on energy access and promoting clean cooking as a crucial part of the global energy agenda. The tracking in this report will continue to be updated in the future.

