

Stand Alone Solar (SAS)

MARKET UPDATE

Somalia

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Tetra Tech International Development

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Cover page: A man stands behind a solar panel in front of his home in Somalia as he talks on his cell phone.
Photo courtesy: Nichole Sobecki

The Somalia Stand-Alone Solar Market Update is one of a series of 14 national briefings published by the Africa Clean Energy (ACE) Technical Assistance Facility (TAF) to give stakeholders a snapshot of recent developments in the stand-alone solar sector, including those arising from the COVID-19 pandemic.

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ABBREVIATIONS AND ACRONYMS

Acronym	Definition
ESP	Electricity Service Provider
FGS	Federal Government of Somalia
GEEL	Growth, Enterprise, Employment & Livelihoods
HIPS	Heritage Institute for Policy Studies
IDP	Internally Displaced Persons
LA	Lighting Africa
LG	Lighting Global
MFIs	Microfinance institutions
MoEWR	Ministry of Energy and Water Resources
MSMEs	Micro, Small and Medium Enterprises
NGOs	Non-Governmental Organisations
PAYG	Pay-As-You-Go
SAS	Stand-Alone Solar
SEAP	Somalia Electricity Access Project
SHS	Solar Home System
USAID	United States Agency for International Development
USD	United States Dollar

EXECUTIVE SUMMARY

Somalia is a federal state made of the Federal Government of Somalia (FGS), the five Federal Member States (FMS) of Puntland, Galmudug, Hirshabelle, South-West and Jubbaland, and the self-declared independent state of Somaliland. The decentralised system has yielded benefits in terms of operationalising public and other development activities but created notable constitutional problems.¹ With the elections yet to take place (they were scheduled for December 2020 and February 2021) the current government is now acting as a caretaker. This means that most public activities are on hold until a new government is elected.

Despite government fiscal activities improving, including major debt relief by international creditors, the economy, which was expected to grow at an annualised rate of 3.2 per cent in 2020, has been severely affected by the COVID-19 pandemic. The pandemic reduced trade and remittances by almost 50 per cent. The effects of the pandemic were exacerbated by the extended flooding, cyclones and locust plague experienced in the last 24 months, thus negatively impacting the socioeconomic lives of many citizens.^{2,3} The FGS, for the first time, provided some direct household financial assistance to a small portion of the population.

The stand-alone solar (SAS) market in the country has the potential for steady growth over the next half decade, driven by mobile money, a large unelectrified market, and a vibrant private sector. Current estimates, mainly from unverified data collected from existing projects such as the Somalia Electricity Access Project (SEAP), show that small SAS systems sales have grown over the last two years, while larger productive use system sales remained flat. A nationwide consumer awareness campaign commissioned by the Ministry of Energy and Water (MoEWR) for 2021 strives to address some demand-side barriers such as understanding of product quality and financing options.

With government support in terms of policies and financing for SAS severely lacking, the private sector is picking up the slack, albeit insufficiently. Commercial banks offer small fee-free (*qardah hasanah*) and fee-paying loans to medium, small and micro enterprises (MSMEs) to help finance consumption. The banks also offer conventional Islamic loans (*murabaha*) for SAS companies to finance their businesses. Despite the availability of these loans, the procedures to obtain them are limiting and difficult for most companies.⁴

International grants for the SAS sector are growing. SEAP, for example, finances a solar grant facility with the objective of improving the quality of SAS products and services. Other projects include the Renewable Energy, Adaptation and Climate Change Technology Sub-Saharan Africa (REACT SSA) Somalia, a USD8.5 million dollar facility to help accelerate access to low cost, clean energy alternatives to grid power. Gargaara, a multi-partner fund, finances energy as one of four main target areas, the others being agriculture, fisheries and livestock.

The market intelligence in the country mostly focuses on basic needs such as food security and cost of living. Reports on livelihoods are quite extensive and offer insights into households and small businesses.^{5,6} Looking ahead, as with most other industries in Somalia, the private sector is key to the development of the SAS market. Simplified financial and investment options for suppliers to procure quality products, develop pay-as-you-go (PAYG) models, warranties and after-sales services, and upskill their workforce will help to grow the industry.



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1. Dominik, B. (2014). *Somalia's federal agenda: From fragility to fragmentation?*

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Figure 1: Somalia at a glance

i. International Energy Agency (2019)

ii. World Bank (2018)

iii. World Bank (2019)

iv. Esmap (2019)

v. Renewable Energy, Adaptation and Climate Change Technology Sub-Saharan Africa (REACT SSA)

1. NATIONAL OVERVIEW

1.1 Current Context

For more than two decades, Somalia was without any form of recognised government (1991–2004) or in transitional federal governance (2004–2012).⁷ In 2012, the Federal Government of Somalia (FGS) was formed with five federally administered regions and Somaliland, the self-declared independent state in the north. This decentralised system works well albeit with some constitutional challenges. Policies and laws are drafted both federally and at the state level, but there are constitutional demarcations in terms of what state and federal governments can legislate.⁸

Somalia's economy depends heavily on remittances, telecommunications and donor funding. The economy grew by an annualised rate of 2.9 per cent in 2019, and was expected to grow by 3.2 per cent in 2020.⁹ This was due to: confidence following the operationalisation of reforms in the financial and telecommunications sectors, which drive the services economy; better than expected rainfall increasing food security; and better than average growth in micro-investments in medium, small and micro enterprises (MSMEs).¹⁰ The situation was further improved by the World Bank and International Monetary Fund (IMF) agreement with the FGS on the Highly Indebted Poor Countries (HIPC) programme over debt relief.

The COVID-19 pandemic has disrupted these positive socioeconomic developments. A combination of slowdown in remittances (up to 50 per cent), disruption of trade with major trading partners, diminished livestock export to Middle Eastern countries (especially following the cancellation of the Hajj pilgrimage),

lockdowns and reduced consumer confidence are expected to negatively impact the whole economy well into 2021.¹¹ The lockdown, which was mainly an early evening curfew on business and gathering places, was implemented primarily in larger cities such as Mogadishu and Hargeisa¹² and lasted for about four weeks from March 18 up to April 15 2020. International flights remained suspended between March 18 and August 15, while borders with neighbouring countries remained porous during this time.¹³ Interstate air travel was highly restricted but land travel was not affected.

It is predicted that economic growth will return to normal at an annualised rate of 2.9 per cent in 2021 and 3.2 per cent in 2022, driven by most sectors except agriculture, which is expected to contract by 10 to 15 per cent as a result of the locust plague in 2020 and seasonal flooding.

1.2 Energy Access

Electricity access is estimated to be 60 per cent in major cities such as Mogadishu and Hargeisa. Power is mainly supplied by large private electricity service providers (ESPs) such as Banadir Electric company (BECO) in Mogadishu and Telesom Electric Company (TEC) in Hargeisa. Large institutions such as hotels and hospitals that use diesel generators are also included in these figures. In rural areas, estimates are less than 9 per cent.¹⁴ Electricity access through SAS systems, small or large, is not counted in the electricity access statistics. This is despite the fact that estimates show that up to 150,000 off-grid systems are sold annually in the country, albeit relatively low-cost and poor-quality products.¹⁵

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8. Dominic, B. (2014). *Somalia's federal agenda: From fragility to fragmentation?*

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12. Herring, E. et al (2020). *COVID-19 and sustainable development in Somalia/Somaliland.*

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15. *ibid.*



2. DEMAND-SIDE: CONSUMER INSIGHTS

As noted in the previous chapter, the primary electricity providers are large private ESPs that operate diesel and hybrid mini-grids in urban areas,¹⁶ leaving many of the peri-urban and rural areas underserved.¹⁷ Communities in IDP camps in and around cities are also not supplied sufficiently by ESPs.

COVID-19 has negatively affected most aspects of the country's socioeconomic infrastructure. A survey by Nexus in June-July 2020 showed that the greatest concern for Somalis at the time was food and livelihood insecurity due to the dire financial situation created by the first wave of the virus. Unemployment was reported to have increased by about 46 per cent and defaults on debt/loans by 59 per cent nationwide.¹⁸

Remittances play a significant role in the disposable incomes of most families in Somalia and therefore their ability to finance SAS;¹⁹ indeed some solar suppliers are considering pay-as-you-go (PAYG) mechanisms that include remittance receipts as part of the financing of SAS systems (see Section 5). However, in the first months of the pandemic COVID, remittance inflows fell by up to 50 per cent.²⁰ The United Nations estimates this figure to be on average a 17% decline for 2020.²¹ This has undoubtedly been a factor in the decline in consumer spending by an estimated 25 per cent during this period.²²

Women and minority communities have been affected disproportionately by the pandemic as they largely work in the informal economy with little to no social or economic safeguards. An International Organization for Migration (IOM) study found that 98 per cent of women

business owners reported reduced revenue and sales. About half either put their businesses on hold or shut them down for the period as they faced difficulties with loan repayments. A third of them reported closing their operations permanently.²³

The federal government provided a three-month import duty exemption on essential consumables as well as 50 per cent tax relief on food items such as wheat flour and cooking oil.²⁴ Whether these benefits were passed down to the consumer is not known. Additionally, through a programme called Baxnaano (Nurturing), the federal government for the first time initiated direct cash support for some of the most affected citizens, valued at approximately 1.3 per cent of the federal budget, roughly USD6 million.²⁵ The United States Agency for International Development (USAID) funded some COVID-19 related assistance to MSMEs to cover operational costs and loan repayments.²⁶

Unverified consumer data collected through SEAP shows that awareness of SAS products is very low, with only about 5 per cent of respondents (MSMEs and households) indicating a good understanding of solar power. More than 60 per cent of respondents said they have no knowledge of solar power. In another small survey of mostly women-led MSMEs, trust in SAS products was very low mainly due to lack of warranties and after-sales services. The Ministry of Energy and Water Resources (MoEWR) has commissioned a nationwide, year-long consumer awareness campaign on SAS, based on consumer research completed in early 2021.

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22. World Bank (2020). *Impact of COVID-19: Policies to manage the crisis and strengthen economic recovery*.

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24. World Bank (2020). *Impact of COVID-19: Policies to manage the crisis and strengthen economic recovery*.

25. *ibid.*

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3. SUPPLY-SIDE: STAND-ALONE SOLAR COMPANIES

Data on the SAS market is difficult to obtain – there is no formal collection of data from companies or by the customs agency. This, coupled with the informal nature of the channels of distribution, makes a detailed estimation of market size and characteristics difficult.

Uncorroborated figures from the Somalia Electricity Access Project (SEAP) indicate a growth in sales of SAS from 2019 to 2020, particularly in peri-urban and IDP communities, pointing to ongoing demand for energy services despite downward pressure on the economy. Informal interviews conducted by the author corroborated this anecdotally. There is no data available showing the extent to which the sector has been affected by the pandemic.

Anecdotally, there has also been a general increase in the proportion of quality verified SAS products on the market as well as the number of dedicated and quality-oriented SAS companies operating. Private sector assistance programmes such as the SAS Grant Facility may have supported some growth; an increase in consumer financing via microfinance options and credit from suppliers may also be contributing factors.

Currently the market is supplied by:

- Professional solar distribution companies that deal mainly in projects involving photovoltaic (PV) systems for large customers such as hospitals, ministries and hotels. These companies are considered the heavyweights of the industry, with highly structured and experienced teams that are mainly trained overseas. They include SECCCO, TESCO Solargen, Delta Engineering, Tamarso, Recon Energy, Dalsan Power and Dayax Power. Some, such as Tamarso and Delta, focus on larger institutional systems; others, such as Recon Energy, focus on SHS. Daisan, SAFA, SECCCO, and Somnuur offer negotiated credit terms for their customers; SECCCO also offers system-enabled PAYG. They dominate both donor and private financing accessed by the sector. None of these companies has a particular brand focus.

- Retailers in electronics who, as part of their other stocks, sell solar panels and pico-solar products. They carry a range of product but are more likely than the specialists above to offer low quality, low-cost products. Solar retailers include Green Power Energy, Hilal Eko, Nano Electrical and Energy, Power Off-Grid, Qoraxmaal, Read Sea and Samawait. Power Off-Grid has diversified (retail and project-based) operations, and offers a unique payment option whereby customers provide goats instead of cash for their purchases.
- Humanitarian and other development organisations who give away SAS products (mainly pico-solar) in low-income, rural and IDP communities.

There is no evidence of solar suppliers closing or leaving the market over the last two years.

The off-grid sector has as many challenges as it has potential. The primary challenge for companies is access to financing, mostly due to bank loan terms. Earlier challenges to do with humanitarian SAS giveaways distorting the market appear to have subsided. The prevalence of low-cost, low-quality product remains a defining feature as in other markets; procurement guidelines from donors requiring Lighting Africa certified product has had some mitigating effect. Additionally, these requirements are serving to encourage the market to offer after-sales and warranty services.²⁷

There is growing awareness of quality productive use systems, especially for irrigation. Development partners are supporting PUE solar projects such as boreholes, cold storage for fishing, powering government institutions and solar streetlights.

There is no national industry body representing only the solar sector. However, the Somaliland Renewable Energy Association (SOMRENA) was established in 2018 and has a relatively strong presence in the state's energy industry. There is no association in the FGS states.

27. SEAP (2018). Project appraisal document.

4. POLITICAL FRAMEWORK

The electricity market has been self-regulated for most of the past three decades. The self-regulation is mainly among the few large electricity service providers who command more than 99 per cent of the market, especially in urban areas.²⁸

However, governance of the energy sector has recently started to improve in FGS. MoEWR, which currently oversees and regulates the electricity sector, has developed an Energy Policy (2019) and Electricity Bill (2020). Both are awaiting Cabinet approval. The Electricity Bill directs the formation of an authority to take over day-to-day governance. In Somaliland, an energy directorate oversees the day-to-day activities of the energy sector.²⁹

There are no specific policies or laws that directly promote or govern the SAS sector. In Somalia, the concept of “grid” and “off-grid” does not apply as it does elsewhere. Under the Somali Customs and Tariffs Schedule of December 2020, SAS products (as electricity generation commodities) incur a 5 per cent tariff – less than what other goods incur. This lower tariff decision was taken mainly because these are items that are greatly needed in the country.³⁰ There is no record of similar schedules for Puntland or Somaliland. Trade within the Somali territories does not incur any fees. Table 2 presents the current policy and regulatory environment.

Table 1: Policies and regulations governing the energy sector

Policy/regulation	Description and relevance to the SAS sector
Energy	
Somalia Energy Policy, 2019	A broad document that outlines development of the nation’s energy infrastructure. Mandates the Electricity Bill, 2020. Pending adoption by Cabinet. Mentions SAS and renewable energy briefly, with a recommendation of incentives (tariff reduction, subsidies, awareness campaigns, development funds) to drive uptake of renewables. Both the policy and the Bill were put through rigorous national consultations, with participation from ESPs, SAS companies, federal and state governments and civil society groups before they were approved for tabling it to the Cabinet.
Somalia Electricity Bill, 2020	Once passed, it will govern the electricity sector. Waiting to be discussed by Cabinet. Mentions SAS within the wider scope of renewables.
Somaliland Ministry of Environment and Rural Development Strategic Plan (2017–2021)	Addresses energy needs of Somaliland for social and economic development in a cost-effective way that promotes sustainable energy production and use while minimising negative environmental impacts.
E-waste	
National Environmental Policy, 2019	Brief reference to hazardous waste management.
The Environmental and Social (Impact Assessment and Audit) Regulations, 2019	In early draft stage. The section on battery recycling and disposal management has not yet been developed.
Gender and Social Inclusion Mainstreaming	
National Gender Policy Somali Women’s Charter, 2019 Somaliland Gender Policy	<ul style="list-style-type: none"> • Aim to further gender mainstreaming in peace and state-building. • Charter calls for “full inclusion of women across the political, economic and social spectrum in Somalia”.³¹

28. MoEWR (2018). *Power Master Plan – Draft*.

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5. FINANCING

5.1 Supply Chain Financing

Local financing of SAS is mostly through lending by private banks. The banks lend based on Islamic financing principles by which they do not charge interest, rather a service fee based on different Islamic financial products. The banks also provide small no-interest and no-fee loans called *qardah hasanah* of up to USD2,000 to MSMEs in an annual quota scheme where, for example, only the first 100 applicants are granted such loans.³²

These loans are fairly readily available, and many SAS companies finance their business this way. But with a maximum repayment period of 36 months, it is difficult to finance major business expansions. In addition, banks require borrowers to provide two-level security for the loan – a personal guarantor and collateral such as a land title deed worth more than what is being borrowed.³³

There is no government funding or incentive of any kind aimed at assisting the SAS market. But enshrined in every government development document such as the national development plans and energy policies, is the need for government to create an enabling environment to attract and retain foreign investment.

5.2 Consumer Financing

In Somalia, most financial transactions are done in USD since the Somali shillings in circulation are estimated to be 95 per cent counterfeit.³⁴ Transacting is further facilitated by a developed mobile money market, which more than 80 per cent of the population in urban areas and 55 per cent in rural areas, are estimated to use regularly.³⁵ Mobile money network operations in the country are dominated by Hormuud Telecom and Somtel

and their subsidiaries. The mobile money services are connected to respective banks owned by the telecoms (Somtel to Dahabshil Bank and all others to Salaam Bank).³⁶

With only 15.5 per cent of the population having active bank accounts, the mobile money systems are highly effective banking mechanisms. Transactions are made easy with no fees when sending or receiving within the country's three main regions of Somaliland, South Central Somalia and Puntland (transfers outside of these areas attract a 0.5 per cent fee). Mobile money services also use USSD codes, which does not require an internet connection – meaning even a customer in the remotest place can use it on a feature phone.

The high mobile money penetration, fee-free transactions and offline use options create a ripe environment for PAYG finance models.

Microfinance Institutions (MFIs)

Kaah International Microfinance Services (KIMS) is the only dedicated MFI in the country, which offers MSME loans and savings accounts. Other MFIs are units within commercial banks that offer *murabaha* financing for MSMEs and *qardah hasanah* loans.

Remittances

Remittances are the main source of disposable income for more than 50 per cent of the population in Somalia, comprising nearly 40 per cent of household income.³⁷ It can be assumed that remittances therefore play a role in financing SAS. A direct financing scheme is outlined in Box 1.

Box 1: Financing solar through remittances

One SAS company has trialled a micro-financing method by which a three-way agreement is made between the company, a remittances shop and a customer. The customer agrees to buy an SAS system from the supplier and authorises the remittances shop owner (who knows both) to withhold a portion of monthly remittances to be sent to the supplier. Each month the shop owner withholds an agreed amount, takes a small fee and pays the SAS supplier the remainder. This is a rare and innovative form of PAYG that could, with the right support, be enhanced and applied across larger markets.

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36. *ibid.*

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6. MARKET SUPPORT

6.1 Development Partners

Development funding in the energy sector is limited but growing. The World Bank led multi-partner SEAP programme is financing the Somalia Off-Grid Solar Grant Facility, a USD700,000 fund aiming to reduce market barriers for the private sector to sell SHS. The project was launched in August 2020 and is expected to be completed in the third quarter of 2021.

The Africa Enterprise Challenge Fund (AECF) Renewable Energy, Adaptation and Climate Change Technology Sub-Saharan Africa (REACT SSA) window was officially launched in December 2020, providing USD 8.5 million in concessional MSME loans to support and scale businesses providing clean energy solutions. Other development partner support is noted in the Table 3.

Table 2: Development partners in the SAS sector

Development partner: programme	Type of assistance	Description
World Bank: Gargara	Loan	Total of USD18 million. To provide financial access to MSMEs, with a special focus on women-owned businesses. Available for four key areas: energy, agriculture, livestock and fisheries.
USAID: GEEL	Grant	Solar power integrated to their overall livelihoods support.
Foreign, Commonwealth and Development Office (FCDO): Energy Security and Resource Efficiency in Somaliland ESRES2 – Somaliland Renewable Energy Fund	Grant, technical assistance	Currently in phase two, a multi-year programme promoting renewable energy in Somaliland. ³⁸ Phase one supported the Ministry of Energy and Minerals to develop the policy and regulatory framework and implemented a pilot to establish six hybrid mini-grids that are now fully operational. Phase two will build on the success of phase one in expanding investment in renewable energy through the Somaliland Renewable Energy Fund (SREF).
European Union (EU)	Loan	EURO 1 million (USD1.21 million) microfinance for agriculture, livestock, fisheries and energy sectors through IBS Bank and Dahabshiiil. SAS suppliers and consumers can apply for normal Islamic <i>murabaha</i> loans. No limit on how much one can borrow.
EU/United Nations Industrial Development Organization (UNIDO)	Loan	EUR1 million (USD1.21 million) fund. Access to finance for agriculture, livestock, fisheries and energy sectors through IBS Bank only. SAS suppliers and consumers

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6.2 Training Institutions

Hayle Barise Technical Development Centre is the largest and only properly functioning technical training institute offering solar training in South Central Somalia. It has advanced and well-equipped solar systems training curriculum and laboratories. Many of the courses they offer are fully or partially funded by NGOs.

6.3 Market Data

Very little market data is available in Somalia. Research has been carried out by international organisations such as the World Bank, United Nations Development Programme (UNDP), Food and Agriculture Organization (FAO) and World Health Organization (WHO). There are also homegrown research institutes such as Heritage Institute for Policy Studies (HIPS) and Somali Institute for Development Research and Analysis (SIDRA), which mainly partner with international NGOs to conduct research.

The majority of this research focuses on migration patterns, poverty, food security, politics and terrorism – there is not much on the country’s productive or services sectors. As such there is a gap in the information available on energy consumption, demand and supply, areas that are essential for attracting foreign investment.



Hayle Barise Technical Development Centre is the largest and only properly functioning technical training institute offering solar training in South Central Somalia.



Norwegian Refugee Council in Somalia | NRC



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