

Stand Alone Solar (SAS)

MARKET UPDATE

Zimbabwe

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Africa Clean Energy
Catalysing Africa's Solar Markets



TETRA TECH
International Development





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West Africa: Ghana, Nigeria, Senegal, Sierra Leone

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ABBREVIATIONS AND ACRONYMS

Acronym	Definition
ACE TAF	Africa Clean Energy Technical Assistance Facility
AECF	Africa Enterprise Challenge Fund
CBCA	Consignment Based Conformity Assessment Programme
COVID-19	Coronavirus disease
DPA	Distributed Power Africa
E-waste	Electronic waste
FCDO	Foreign, Commonwealth and Development Office
GENEZ	Gender and Energy Network in Zimbabwe
GOGLA	Global Off- Grid Lighting Association
IDBZ	Infrastructure Bank of Zimbabwe
IEC	International Electrotechnical Commission
ILO	International Labour Organization
JPV	Jekesa Pfungwa Vulingqondo
LED	Light Emitting Diode
MoEPD	Ministry of Energy and Power Development
NAMACO	National Manpower Advisory Council
NDS	National Development Strategy
OYE	Opportunities for Youth Employment
PAYG	Pay-As-You-Go
REACT	Renewable Energy and Adaptation and Climate Technologies Programme for Sub-Saharan Africa
REF	Rural Electrification Fund
REAZ	Renewable Energy Association of Zimbabwe
REMP	Rural Electrification Master Plan
SAZ	Standards Association of Zimbabwe
NREP	National Renewable Energy Policy
SEFA	Sustainable Energy Fund for Africa
SHS	Solar Home Systems
SIDA	Swedish International Development Agency
SMEs	Small to Medium Enterprises





ABBREVIATIONS AND ACRONYMS

Acronym	Definition
SNV	Netherlands Development Organisation
TVET	Technical and Vocational Education and Training
USAID	United States Agency for International Development
ZERA	Zimbabwe Energy Regulatory Authority
ZIMRA	Zimbabwe Revenue Authority
ZWL	Zimbabwe Dollar
ZETDC	Zimbabwe Electricity Distribution Company
PFAN	Private Financing Advisory Network
REA	Rural Electrification Agency
SAS	Stand-alone solar



EXECUTIVE SUMMARY

The stand-alone solar (SAS) market in Zimbabwe remains small, shaped by ongoing economic isolation and the COVID-19 pandemic. Targeted sanctions, currency volatility, rampant inflation and, more recently, movement and border restrictions to stem the spread of the virus have strained both consumer ability to pay and solar supply.

The size of the SAS market is not known, though the World Bank is currently undertaking the Household Survey: The Global Multi-Tier Measurement of Access to Energy Survey Zimbabwe, which will provide timely data on off-grid markets, including consumer willingness and ability to pay for energy. The supply of solar in Zimbabwe is dominated by retailers who carry both Lighting Global certified and non-certified products; three pay-as-you-go (PAYG) companies; and local and international non-governmental organisations that seed and support distribution networks. There has been **little commercial financing of the supply chain**, but some grants. Consumer credit, either informal or via PAYG operators, is widely offered, though 2020 regulations limiting the amount per transaction have rendered use of this mechanism prohibitively expensive.

While the pandemic has presented difficulties for solar companies and consumers, it has also presented **opportunities for investments in SAS systems** for health clinics, schools and productive use. Donors typically focus on humanitarian, water and health sectors and these projects often include solar-powered elements.

The Renewable Energy Association of Zimbabwe (REAZ) has a low membership but has recently taken on a communications officer with the hope of expanding advocacy activities. To reassure foreign investors and boost the SAS sector, **the government, through the new Renewable Energy Policy (2019) has proposed establishment of a Renewable Energy Fund**, developed pico and solar home system (SHS) quality standards and a net metering regulation, and has amended the tax code to exempt batteries in addition to solar panels.

Other positive changes have been recorded in the sector. After annual inflation reached 837 per cent in July 2020,¹ the introduction of a Foreign Exchange Auction System in the third quarter of 2020 appears to have stabilised the exchange rate. The Cybersecurity and Data Protection Bill currently in development is expected to protect consumer data. And in December 2020, the Africa Clean Energy Technical Assistance Facility (ACE TAF) set up the Distributed Renewable Energy Task Force (DRETF) and Technical Working Groups that will promote improved coordination of the renewable energy sector.

¹ Government of Zimbabwe (2020). National Development Strategy 1 (2021–2025).



1 NATIONAL OVERVIEW

1.1 Current Context

In response to the COVID-19 pandemic, the Government of Zimbabwe restricted movement except for essential services, which included electricity supply and distribution.² Hardware stores and shops that sell solar products were closed during the complete lockdown that lasted almost 50 days. When partial lockdowns were introduced, solar businesses were opened but could not replenish their stocks as a result of closed borders and lack of access to the seaports, where imported products had trickled in after the Chinese lockdown was lifted.

In Zimbabwe, the pandemic is unfolding against a backdrop of a difficult macro-economic environment and extreme weather events. The country continues to struggle with opening up the

democratic and political space; weak governance; antiquated infrastructure; brain drain and loss of institutional memory; self-imposed political isolation; and targeted economic sanctions led by the United States of America (US), United Kingdom (UK) and European Union (EU). The sanctions have limited access to funds from key donors, including the United States Agency for International Development (USAID), EU Energy Facility and Foreign, Commonwealth and Development Office (FCDO), and resulted in slow economic recovery, low investor confidence and absence of credit.

In the past two years, the government has taken a series of positive steps that signal the country's readiness for foreign investments, although economic and political reforms have yet to be fully implemented. These steps include:



Finalisation of the land reform process and guaranteed property rights through the signing of a compensation agreement with former farm owners whose land had been compulsorily acquired,³ thereby reducing risks for energy projects that require land.



Amendment of the Indigenization and Economic Empowerment Act to remove the requirement that all businesses have 51 per cent local ownership – except for designated diamond and platinum extraction businesses – to build foreign investor confidence.



Adoption of a series of anti-corruption measures such as asset freeze and forfeiture to address systemic corruption and instil confidence in international financiers and investors.

1.2 Energy Access

There is wide recognition that the national grid will not reach many rural households. Since 2002, the Rural Electrification Fund (REF) has focused on electrifying primary and secondary schools, rural

health centres, government extension offices, chiefs' homesteads, business centres, small-scale farms and a few villages. Of these institutions and entities, just 424 were electrified through SAS systems while the rest were connected to the national grid.⁴

²Statutory Instrument 83 of 2020. Public Health (COVID-19 Prevention, Containment and Treatment) (National Lockdown) Order, 2020, (Chapter 15:17). Section 2(c).

³Communique on the agreement between the Government of Zimbabwe and former farm owners as detailed in the Global Compensation Deed for improvements on farms compulsorily acquired for resettlement during the Land Reform Programme.

⁴Support to SEforAll Country Actions processes in Zimbabwe Action Agenda 2016.

Table 1: Energy access information

Grid connections (%)	42%. ⁵ Solar home systems (SHS) are not considered within “access” figures.
Population without electricity access	7 million ⁶
Grid tariff per kWh	ZWL1.73-3.47 (USD0.02-0.06) for the lowest usage consumers. ⁷
Average customer kWh usage	Average per capita electricity consumption is 519kWh per annum ⁸

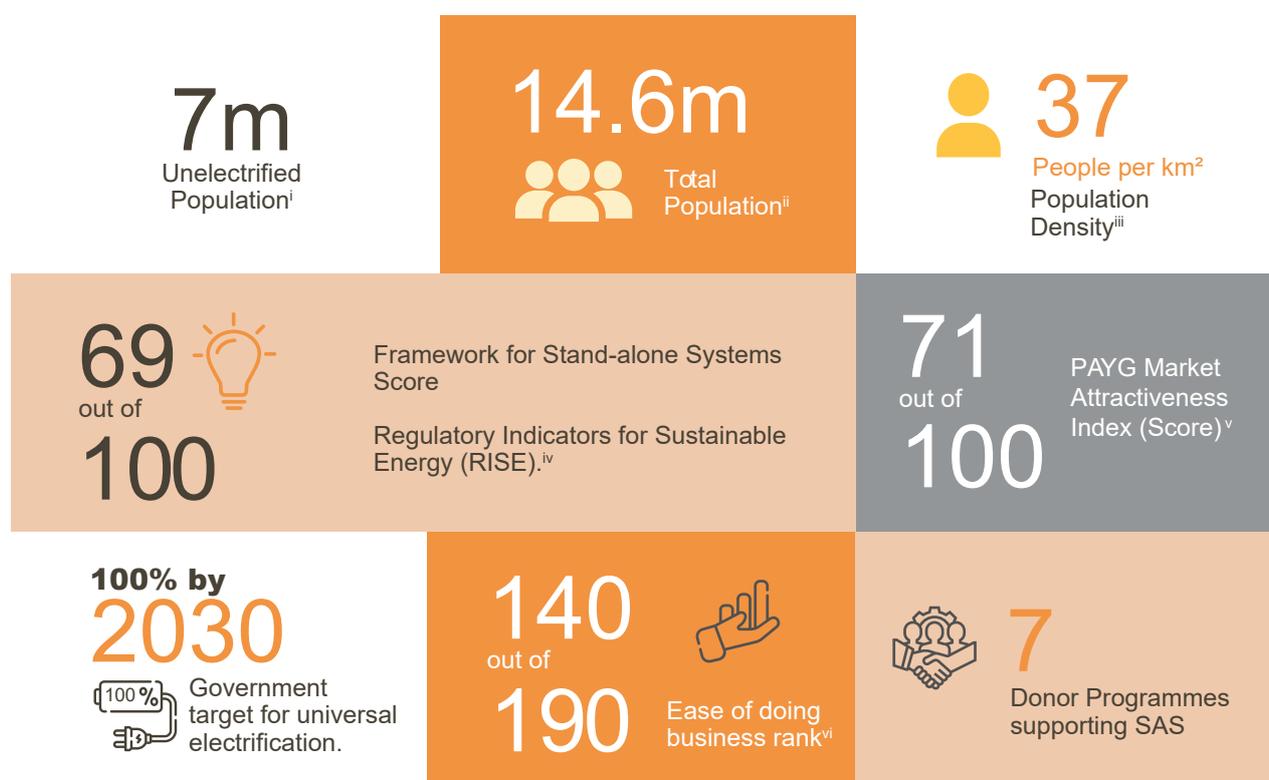


Figure 1: Zimbabwe at a Glance

i. International Energy Agency (2019)
 ii. World Bank (2018)
 iii. World Bank (2019)
 iv. ESMAP (2019)
 v. Lighting Global (2019)
 vi. World Bank (2020)

⁵The National Renewable Energy Policy (2019).

⁶International Energy Agency (2020). World Energy Outlook 2020.

⁷The latest ZERA approved tariffs, including 6% to Rural Electrification Agency (REA) for the Zimbabwe Electricity Transmission and Distribution Company (ZETDC), the division of ZESA that provides electricity to final consumers. The figures were converted into USD using the official exchange rate of ZWL81.8572 to USD1.

⁸SNV (2018). Mini-grid market opportunity assessment: Zimbabwe green mini-grid market development programme. SNV noted that there was no World Bank data to corroborate this.

2 DEMAND-SIDE: CONSUMER INSIGHTS

There is no recent data on the potential size of the SAS market, nor on consumer willingness or ability to pay for energy. This could be attributed to the many years of political and economic isolation of Zimbabwe by donors and Western countries, leaving it out of multi-country studies on solar and other renewables.

A 2017 renewable energy market study identified 5,300 institutions (including schools and clinics) and 10,000 other facilities such as water pumps as unelectrified, and therefore potentially served by SAS.⁹ A 2018 mini-grid market assessment conducted by the Netherlands Development Organisation (SNV) identified potential geographic areas for off-grid solutions.¹⁰ But there is little in the way of consumer insights. Data on household expenditures in general is available from the Consumer Council of Zimbabwe, but it is not disaggregated for energy consumption.

The World Bank is funding the “Household Survey: The Global Multi-Tier Measurement of Access to Energy Survey Zimbabwe,” which will provide timely data on off-grid markets, including consumer willingness and ability to pay for energy. The survey was interrupted by the pandemic but resumed in late 2020.

Lengthy pandemic-related lockdowns disrupted economic activities and livelihoods. Many people working in the informal sector, making up 85 per cent of the labour force, have experienced an erosion of savings that leaves them unable to service their loans or buy SHS units supplied by pay-as-you-go (PAYG) companies.¹¹

COVID-19 restrictions also affected movement of Zimbabwe Electricity Transmission and Distribution Company (ZETDC) technicians who repair damaged power lines, exacerbating countrywide power outages – a situation that, anecdotally, has ignited consumer interest in SAS solutions in urban and peri-urban areas.

The past couple of years have seen **growing consumer awareness** of SAS thanks to international non-governmental organisations (NGOs) such as Humanist Institute for Development Cooperation (HIVOs), SNV and Practical Action, and local ones such as Zimbabwe Women Resources Centre and Network (ZWRCN) and Regional Environment Organization (ZERO). They have been raising awareness through solar fairs and distribution of solar portable lights to off-grid communities, among other activities.



5300
schools and clinics
could potentially be served by stand-alone solar.

Another
10,000 facilities
such as community water points remain unelectrified.



Consumer awareness of solar has been growing due to activities of non-governmental organisations.

⁹C.T. Mzezewa & Eng. C.S. Murove (2017). Renewable energy market study Zimbabwe. Commissioned by the ministry of Foreign Affairs.

¹⁰SEforAll (2018). Mini-grid market opportunity assessment: Zimbabwe.

¹¹Shoshana Kedem (2020). Zimbabwe's informal economy demands recognition amid devastating Covid-19 response.

2 SUPPLY-SIDE: STAND-ALONE SOLAR COMPANIES

3.1 Pico-solar and Solar Home Systems (SHS)

The most recent available information on pico-solar and SHS sales volumes in Zimbabwe from the Global Off-Grid Lighting Association (GOGLA) is from 2017, when 12,147 products were sold.¹² **SAS sales are not well tracked**, and GOGLA has not been able to publish more recent data. There is no national data repository either, and data that is available is sporadic and not rigorously sourced. The Ministry of Power and Energy Development (MoPED) and other stakeholders have little public information to reference in developing the market.

In lieu of hard data, there is anecdotal reporting of general market trends. **In response to incessant grid power outages in 2019 and the first quarter of 2020, there was an upsurge in solar supply** targeting both affluent and low-income markets, and increased uptake of SAS systems.

The continued influx of poor-quality solar products has resulted in negative perceptions and reduced consumer confidence. The majority of small and medium enterprises (SMEs) that sell solar products do not comply with standards, nor do certified installers.

Gender and age barriers still exist, but they are slowly fading. Elaine Solar Africa, for example, is a woman-led and youthful organisation that employs mainly women. The age range of the employees, including the CEO, is 24–32 years. It has raised awareness of opportunities for young people in the sector.

Impact of COVID-19 on the supply chain

The pandemic has severely curtailed SAS companies' activities. The closure of factories in China disrupted stock shipments and affected inventory management in the country. Even after the

lockdown was lifted in China, the South African port supplying landlocked Zimbabwe remained closed, making it impossible to import solar products. The Beit Bridge Border Post with South Africa remained open to ensure supply of medical supplies and foodstuffs into the country.

Door-to-door sales representatives were not able to move around freely during the complete lockdown. Exceptions on restrictions were specific to solar operations and maintenance, and required that the police be furnished with the names of the technicians and project sites. Some companies, such as Goodbooks, cut down on their activities. NGOs such as Oxfam and SNV, which create SAS demand by showcasing pilot projects, were affected by donors redirecting funds towards COVID-19 response.

There are reports of increased customer defaults for PAYG, scaled back customer support services and limited stocks and sales. Companies are facing cash flow challenges due to customer defaults and ballooning overheads in terms of unpaid bills and salaries, but none has reported layoffs. Solar agents and last mile distributors, who are mostly youths and women, have been hardest hit by the effects of the pandemic.

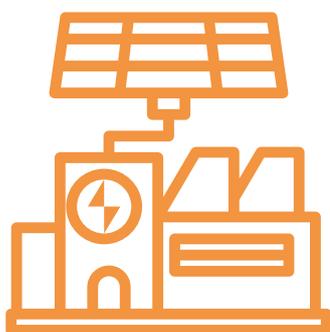


Though recent sales figures are not available, frequent power outages in 2019 and early 2020 seem to have sparked demand for SAS.

¹²GOGLA (2017). Global off-grid solar market report semi-annual sales and impact data: January – June and July - December 2017

Table 2: Major suppliers of pico-solar and SHS

Company	Business model	Product focus
Goodbooks (trading as Kumusha Power)	PAYG	d.light SHS and solar lanterns. Distributes through agents and energy kiosks set up by NGOs in rural areas.
Azuri	PAYG	Solar TV, LED lights, rechargeable radio and torch, and mobile phone charging.
Celfre Energy	Retail, offers credit	Solar water pumps.
Ekhaya Brands	Retail	Regional warehouse for Greenlight Planet.
Impipower	Retail, offers credit	Sun King products.
Zonful Energy	PAYG	Sells Sun King products. Pioneered PAYG in the country and has a rural market focus. Trains technicians in design, installation and after-sales services. Successfully applied for Africa Enterprise Challenge Fund (AECF) Renewable Energy and Adaptation to Climate Technology (REACT) household solar funding.
Total Zimbabwe	Retail	Sells d.light products at filling stations.
Electrosales	Retail	Sun King products and solar pumps.
Solar Shack	Retail	Sun King products.
Thapsy Solar	Retail/distributor	Distributor, sells in low-income communities. DGLite Plus 8017 and Rainbow Solar products.
Satewave Technologies	Distributor	Satewave products, smart meters, solar borehole pumps and streetlights. Main supplier to Horizon Ivato shops.
Mukonitronics	Local manufacturer	Mukonitronics lantern with phone charging facilities. Supplies major retail shops like OK Mart, also on order for corporates who buy in bulk.
SolarPro Zimbabwe	Retail/distributor	Irrigation systems, solar-powered borehole pumps and off-grid systems
Natfort Energy	Retail, offers credit	Local assembly. Customised solar design and installation for the commercial and residential sector, SHS and solar street / flood lighting.



Natfort Energy
is involved in local assembly of solar systems.

3.2 Productive Use Systems

Energy for productive use is mentioned in the Renewable Energy Policy (2019), but is not explicitly considered in other policy documents such as those on irrigation or climate change response. **Productive use SAS are being employed by NGOs** such as Oxfam, which provides solar-powered community gardens and irrigation schemes in rural areas. The major commercial suppliers of productive use solar equipment are Zonful Energy, One Stop Solar, Solar Shack, Drip Tech, Satewave, Samansco and Electrosales. In the last 18 months, new companies that have come into the market include Celfre Energy, Felicity Solar, Pristine Technologies Solar Zimbabwe, among others. Celfre Energy has been supported by the Energy and Environment Programme (EEP) Africa to install 500 solar water pumps to increase economic opportunities for women and youth in agriculture.

Distributed Power Africa (DPA), part of the Econet group, is targeting solar installations at schools, hospitals, chicken abattoirs, dairy farms, a cheese factory and a beverages company. Some of its bigger projects include a 450kW solar rooftop and carport, 3-5kW for houses and 100-200kW for other buildings. DPA is in the process of rolling out another 5MW of stand-alone solar.

3.3 Renewable Energy Association of Zimbabwe (REAZ)

The number of solar companies in the country is unknown. There are 92 registered with the Zimbabwe Energy Regulatory Authority (ZERA), where registration is free and voluntary. Membership to REAZ, which currently has 23 members, is fee-based. This may deter some businesses from joining it. The association, which is a member of GOGLA, previously had no paid staff and a relatively low advocacy presence. But there is motivation to change this. It has recently employed a communications

officer to increase its visibility. The Business Council for Sustainable Development (BCSD), which has 100 members, many of whom are end-users of solar products, is another important entity in the country's renewable energy sector.¹³

At the start of the pandemic, the energy sector was designated an "essential service," but SAS was excluded. REAZ petitioned the government twice to reconsider this position. In theory, conditional approval was granted for specific operations and maintenance to allow SAS companies to resume work.

3.4 Distribution Channels

The most popular distribution channel for SAS is the use of last mile distributors promoted by NGOs that provide free start-up capital. Thereafter, they can be engaged as agents by solar companies, or become shop owners in rural areas. SNV has championed this model with funding from the Directorate-General for European Cooperation and the International Labour Organization (ILO). Jekesa Pfungwa Vulingqondo (JPV), a local NGO, is also using this model.

Some distributors work with NGOs that train youths to be energy entrepreneurs, for example, the Opportunities for Youth Employment (OYE) project supported by SNV and ILO.

Alight Little Sun Zimbabwe (ALSZ) is a community-based trust, sponsored by Plan International, that includes solar lanterns as part of its food aid packages. ALSZ is a Little Sun distributor in Zimbabwe and employs over 45 Little Sun sales agents in 10 districts.¹⁴ Mobility for Africa, a local NGO, donated 30 solar-charged electric tricycles known as "hamba" to local women to promote sustainable transport solutions for small-scale farmers and rural communities.¹⁵ This initiative is a partnership between China's Tsinghua University, Midlands State University, Mobility for Africa and Solar Shack.¹⁶ Village savings and lending schemes are also used as vehicles for women and youth to buy SHS.



The Energy and Environment Programme (EEP) Africa is supporting the installation of 500 solar water pumps.

¹³AECF-REACT Country specific context analysis of renewable energy business environment and development of a country implementation framework for Zimbabwe.

¹⁴<https://littlesun.com/zimbabwe/>

¹⁵Pindual News (2019). NGO launches electric cycle project for rural women.

¹⁶ibid.

4 POLITICAL FRAMEWORK

4.1 Government Institutions

Though the 2019 National Renewable Energy Policy mandates creation of a Green Energy Fund, it is not yet clear how this will be financially resourced. The off-grid sector remains under the oversight of MoPED and REF.

Table 3: Major government institutions involved in the SAS sector

Institution	Description and recent activity
MoPED	Officially launched the National Renewable Energy Policy (2019). Cabinet reshuffles (November 2017, August 2018, May 2019 and August 2020) continue to affect the implementation and oversight of policies governing SAS.
ZERA	Together with the Standards Association of Zimbabwe (SAZ) Renewable Energy Technical Committee, ZERA is being supported by ACE TAF to develop standards for pico-solar and SHS. The Customs Codes and a Customs (Tariff) Handbook are under review, which will help enforcement of amended tax exemptions.
Zimbabwe Revenue Authority (ZIMRA)	It enforces Customs Codes that are not yet aligned with the new SI 47 of 2020 covering exemption of solar products. It is helping to review the Customs (Tariff) Handbook. Collects 15% VAT on solar products.
Ministry of Industry and Commerce (MoIC)	It has the mandate to enforce quality standards on imports. ¹⁷
REF	It was initially focused on grid extension, but now also funds SAS projects, such as the 425 solar systems for rural clinics and hospitals. It will run the planned Green Energy Fund in its initial phase.
Department of Climate Change	Promotes climate smart agriculture, which is linked to productive use of solar in nutrition gardens and solar-powered irrigation schemes. Its parent ministry, the Ministry of Environment, Climate, Tourism and Hospitality Industry, has set up a climate fund to support renewable energy projects.
Infrastructure Development Bank of Zimbabwe (IDBZ)	It is accredited to receive green climate funds. It has started getting funding for renewable energy projects that include SAS. It will administer and mobilise funds for a national Green Energy Fund through pension funds, insurance schemes and bond markets as stipulated by the National Renewable Energy Policy (2019). ¹⁸

¹⁷International Federation of Inspection Agencies (2002). Code of Practice: Consignment based conformity assessment (CBCA) Services.

¹⁸ Government of Zimbabwe (2019). National Renewable Energy Policy.

4.2 Policy and Regulatory Environment

Several recent reforms affect the SAS sector. These include:



Adoption of International Electrotechnical Commission (IEC) standards for pico-solar and SHS, as well as for rural electrification and integration of hybrid systems up to 350kW.



Establishment of a laboratory to test pico-solar, SHS and solar appliances for quality (ACE TAF supported).



Proposed amendment of import duty exemption to include lithium-ion batteries.

The National Development Strategy 1 launched in December 2020 explicitly addresses access to modern energy.

Table 4: Current status of the SAS policy and regulatory framework

Policy/regulation	Description and relevance
Energy	
National Renewable Energy Policy (NREP), 2019	Approved by Cabinet in 2019 and launched in 2020. It provides for SAS technologies, standards and financing, though it does not give specific targets. Also mandates establishment of a Green Energy Fund to be administered by REF and the Ministry of Finance at inception, and later by the IDBZ. ¹⁹ There are plans to develop a Renewable Energy Strategy to outline implementation of the policy.
National Energy Policy, 2012	Due for revision in 2022. Governs energy access. The upcoming revision will present an opportunity to include SAS strategies and targets.
Draft Rural Energy Master Plan (REMP), 2016	Not yet officially launched, unclear when this will happen. Provides for use of SAS in electrification and promotes productive use of solar. ²⁰
Amendment of SI 147 of 2010 Customs and Excise (Suspension) (Amendment) Regulations	<p>The initial regulations (2010) provided for exemption of 40% import duty on solar lanterns, lamps, inverters and PV panels. A draft SI exempting lithium-ion batteries, which were previously excluded, awaits approval by the Ministry of Finance.</p> <p>In practice, the Customs Codes are not yet aligned to the regulations and the ensuing confusion at the point of import results in SHS kits, solar appliances and other balance of system parts attracting duty. ACE TAF is supporting the finalisation of the proposed amendment of the SI and a Customs (Tariff) Handbook with codes for description of goods.²¹</p> <p>All solar products and components attract 15% VAT.</p>

¹⁹Government of Zimbabwe (2019). The National Renewable Energy Policy.

²⁰AECF (2018). Zimbabwe country context.

²¹Statutory Instrument 53 of 2017 [Chapter 23:02]: Customs and Excise (Tariff) Notice, 2017 (see 85.41)

Policy/regulation	Description and relevance
SI 124 of 2020 Control of Goods (Open General Import License) Standards (CBCA) Notice, 2020 (No. 1).	Adoption in 2020 of IEC standards for pico-solar and SHS. ZERA will work with MoIC and Bureau Veritas to carry out verification and assessment of conformity of solar goods in exporting countries under the CBCA programme.
SI 86 of 2018 Electricity (Net Metering) Regulations 2018	The regulations came into effect in 2020. ZETDC has 15 commercial, agricultural and domestic customers that sell excess solar power to the grid. May contribute to overall awareness on solar.
E-waste	
Environmental Management Act (20:27) National Development Strategy 1 (NDS1), 2021–2025	There is no specific legislation on e-waste. The EMA prohibits the discharge of hazardous substances into the environment. The NDS1 promotes recycling of plastic materials including those used in light emitting diode (LED) bulbs, often used with SAS.
Financial and consumer protection	
Cybersecurity and Data Protection Bill, 2019	Gazetted in March 2020, seeks to protect personal data.
August 2020 Mid-term Monetary Policy Statement	Regulated the use of mobile money and banned mobile money agents. The policy imposed new limits on the number of transactions allowed per day, and a maximum of ZWL5,000 (USD61.10) per transaction or ZWL35,000 (USD427.5) per week. This has hampered the use of PAYG for SAS (see Section 5).

4.3 Gender and Social Inclusion Mainstreaming

The National Renewable Energy Policy promotes gender-neutral participation in renewable energy

projects and encourages involving women entrepreneurs in energy planning, policy formulation and technical training. The Gender Desk at MoPED partners with the Gender and Energy Network in Zimbabwe (GENEZ), which plays an active role in promoting SAS and lobbying for policies in favour of women.



Members of the Gomba Agro-Business Centre showing off their solar lanterns.
Photograph: John McGrath/Oxfam GB.

5 FINANCING

5.1 Supply Chain Financing

Macro-economic challenges, changing monetary and currency policies,²² volatile exchange rates and hyper-inflation in Zimbabwe have hampered commercial investment in the SAS sector. Annual inflation reached 837 per cent in July 2020 and declined to 471 per cent by October 2020.²³ Hyperinflation and volatility of the Zimbabwe dollar were addressed by the introduction of the Foreign Exchange Auction System in the third quarter of 2020, which has stabilised the exchange rate.

Firms using the PAYG model, such as Money Mart

and Zonful Energy, were highly exposed to currency risks by importing products paid in USD and collecting payments in local currency. Further difficulty has arisen with a lack of foreign exchange (primarily USD) and untenable differences in the official and informal market rates, leaving SAS companies and consumers with diminished buying power. In order to cope with currency fluctuations on the ZWL, solar companies have repeatedly repriced their goods.

Pandemic-related isolation has worsened markets that were already in bad shape. There appears to be very little commercial financing of the sector, though there is also little information available.

Table 5: Commercial banks financing SAS companies

Type	Financier	Investments/available funding
Commercial bank	African Banking Corporation (BancABC)	Lends to SMEs and institutions interested in solar products, including Elaine Solar Africa.
	Steward Bank (a subsidiary of Econet and sister company to DPA)	Agro-Future, part of Cassava Smartech, offers sustainable energy solutions including SAS.
	Steward Bank's Purple Sun solar finance loan and BancABC's loan facility – both offered by DPA	Solar loan financing to the banks' customers so that they can power their homes with solar.
	ZimBank	Investment Banking Department supports renewable energy projects including SAS. ²⁴



Annual inflation decreased from 837% in July 2020 to 471% in October 2020 due to the introduction of the Foreign Exchange Auction System.

²²SI 142 of 2019, Reserve Bank of Zimbabwe (Legal Tender) Regulations, 2019.

²³Government of Zimbabwe (2020). National Development Strategy 1 (2021–2025).

²⁴DPA (2020). DPA offers home solar solutions through partner banks.

5.2 Consumer Financing

Rampant inflation and newly imposed limits on mobile money transfers has made it uneconomical for SAS companies and their customers to use mobile money for PAYG transactions. Payments have to be split into smaller amounts, and each attracts a 2 per cent transaction tax. These challenges, along with general COVID-19 related economic difficulties for

PAYG customers, **have seen customer repayment plans renegotiated, with a general increase in the repayment period.**²⁵

Microfinance institutions (MFIs)

Several MFIs provide end-user financing for SAS, some of these are listed in Table 6.

Table 6: Major MFI lenders and their products

MFI	Description
Money Mart	Supported by the AECF REACT Challenge Fund to provide flexible SHS loans for low-income informal traders in urban, peri-urban and rural communities.
Micro-Plan (a subsidiary of FBC Zimbabwe)	Provides loans for SHS.
Micro-Loan Foundation	Plans to grow relatively slowly to support some 7,000 women by 2021 ²⁶ through giving them loans and building their capacity in business skills.
Get Bucks Extender Microfinance	Provide loans for SHS mainly for civil servants as they have steady salaries. Both also partner with Elaine Solar Africa.

Mobile money

There are three mobile telecommunications networks in Zimbabwe: Econet, Net One and Telecel. Each has a mobile money platform that has been fully integrated with traditional finance institutions, making it easy to transfer money from bank to wallet and vice versa. Econet provides a mobile money platform for PAYG companies Zonful Energy and Goodbooks; Solar Access, a division of Telecel, provides the platform for Azuri.²⁷

Zimbabwe has been cashless for some time now as a way of coping with local cash shortages. This relative familiarity with phone-based transactions may have mitigated PAYG payment disruptions to some extent.

Remittances

Formal and informal remittances are a major source of income, especially for rural households in Zimbabwe. According to the Reserve Bank of Zimbabwe, diaspora remittances by July 31, 2020 were at USD466 million, a 33 per cent increase over the prior year.²⁸ It is thought that COVID-19 related border closures reduced informal (physical) remittances, so use of formal channels increased. WorldRemit, a global money transfer service, reported that remittances through their platform to Zimbabwe doubled in six months mid-2020.²⁹

²⁵Interviews with REAZ, Elaine Solar Africa and Swedish International Development Agency (SIDA).

²⁶MicroLoan Foundation launches in Zimbabwe. May 25, 2017.

²⁷Mazzoni Davide (2019). Digitalization for energy access in sub-Saharan Africa: Challenges, opportunities and potential.

²⁸Prosper Ndlovu (2020). Diaspora remittances clock US\$466m in seven months.

²⁹Genevieve Dowokpor (2020). WorldRemit sees remittances to Zimbabwe double in six months and introduces new retail partnership with OK Zimbabwe.

6 MARKET SUPPORT

6.1 Development Partners

In Zimbabwe, the SAS sector has mainly been donor-driven. These donors typically focus on social interventions such as on water and health, and rarely have dedicated allocations for SAS.

At the December 2020 Virtual Climate Ambition Summit held to coincide with the fifth anniversary of the Paris Agreement, President Mnangagwa announced a USD250.8 million SAS electrification programme.³⁰ Further details have not yet been made available on the timing, funding and nature of this support but it would certainly lend a major boost to the sector.

There have been no direct COVID-19 relief schemes for SAS companies in the country. Some COVID-19 response assistance has been provided to the

health sector, including a reported USD19 million from USAID.³¹ The pandemic has created some opportunities for SAS companies as development partners add a water, sanitation and hygiene (WASH) component to their projects, which includes solar pumping. In addition to the programmes noted in Table 7, the German government, USAID, Practical Action and others have funded a number of small-scale programmes or one-off SAS installations in the last couple of years.

The off-grid sector has been characterised by a general lack of coordination between government, private sector, civil society and development partners. In December 2020, ACE TAF supported establishment of a Distributed Renewable Energy Task Force that will include Technical Working Groups on enabling environment, energy finance, and SHS and mini-grids.

Table 7: Main donors active in the SAS space and their support

Development partner: programme	Type of assistance	Description
African Development Bank (AfDB): Sustainable Energy Fund for Africa (SEFA)	Grant	Awarded USD965,000 to grant to Zimbabwean investment company Oxygen Energy Private Limited fund 20MW of stand-alone solar systems for businesses that are mostly owned by Old Mutual, an investment and insurance company. ³²
Energy and Environment Partnership (EEP)	Grants Concessional loans	Supporting Celfre Energy (USD 255,000), Zonful Enterprises (USD 600,000) and Powerlive Zimbabwe (a woman-led company, USD425,000) ³³
Foreign, Commonwealth and Development Office (FCDO): ACE TAF	Technical assistance	ACE TAF is supporting the creation of an enabling environment for the growth of the SAS sector.
Isle of Man	Grant	Supporting innovative green SMEs to access business development services and expand their activities. MoneyMart won third prize for best growth-oriented business. ³⁴

³⁰Sunday Mail (2020). *Economy to go green by 2030*.

³¹The EU, UK, USA and other European development partners have imposed targeted sanctions on Zimbabwe but still support specific social protection, health, humanitarian and governance interventions as well as directly funding SAS companies.

³²Emiliano Bellini (2017). *African Development Bank supports 20MW off-grid solar project in Zimbabwe*.

³³Energy and Environment Partnership.

³⁴Green Enterprize (2019). *Small loans close big gaps in Zimbabwe*.

Development partner: programme	Type of assistance	Description
SIDA/AECF REACT	Patient loans, technical assistance	The REACT SSA window offers USD6.5 million in patient loans to green businesses, including those selling SAS products. Zonful received a loan of USD1.8 million and has reached 45,000 customers to date. REACT SSA also provides technical assistance to their loan recipients.
SIDA	Guarantee	Provided a portfolio guarantee to encourage the then Barclays Bank (now rebranded to First Capital Bank) to lend to women-led businesses in agriculture and renewable energy technologies, but the bank did not do so because it was risk averse. SIDA is exploring other funding mechanisms and partners that promote gender and social inclusion in their business models.
United Nations Development Programme (UNDP)/UN Women/United Nations International Children's Emergency Fund (UNICEF): Solar4Health	Grant	Solarising boreholes, clinics, and cold chain vaccine storage. 450 healthcare centres have been solar-powered. ³⁵ Plans to install solar in 1,000 clinics by 2021
UNDP: Green Climate Fund	Grant	Supporting feasibility studies for 21 irrigation sites in 2021, for new systems and rehabilitation of existing ones with solar.
World Bank	Technical assistance	Multi-tier framework for measuring energy access study.

6.2 Training Institutions

The Energy Technology Institute (ETI) provides technical training on solar, and has also partnered with Practical Action to develop prototype SAS systems. Practical Action, SNV and ILO are among other NGOs that offer training as well as consumer awareness demonstrations.

To support the licensing framework, the ILO developed a curriculum for technical and vocational education and training (TVET) for solar installers

and sales and marketing agents. The curriculum was approved in 2019 and launched in 2020 by the Ministry of Education. It was certified by the National Manpower Advisory Council (NAMACO), which has designated solar installation as a trade that can be assessed and tested.

Under the ILO-supported Rural Youth Solar Training Project, a local university has been contracted to design training materials and train youth to equip them with practical skills. About 10 solar companies are involved.

³⁵Moyo Jeffrey (2018). *Solar cures energy ills at Zimbabwe's power-short clinics.*



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