

# Stand Alone Solar (SAS)

## MARKET UPDATE

### Tanzania

March 2021



**Africa Clean Energy**  
Catalysing Africa's Solar Markets



**TETRA TECH**  
International Development





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## Foreign, Commonwealth and Development Office (FCDO) Africa Clean Energy Technical Assistance Facility

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The Tanzania 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.

The Africa Clean Energy (ACE) Technical Assistance Facility (TAF) is a 4-year programme aiming to catalyse a market-based approach for private sector delivery of renewable energy electrification technologies, with a focus on high-quality stand-alone solar (SAS) systems. Funded by the UK Government through the Foreign, Commonwealth and Development Office (FCDO), and implemented by Tetra Tech International Development, ACE TAF is working in 14 African countries:

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**West Africa:** Ghana, Nigeria, Senegal, Sierra Leone

**Southern Africa:** Malawi, Mozambique, Zambia, Zimbabwe

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## ABBREVIATIONS AND ACRONYMS

Acronym	Definition
ACE TAF	Africa Clean Energy Technical Assistance Facility
BoT	Bank of Tanzania
COVID-19	Coronavirus disease of 2019
EWURA	Energy and Water Utilities Regulatory Authority
FI	Financial Institution
MFI	Microfinance Institution
MoE	Ministry of Energy
PAYG	Pay-As-You-Go
PUE	Productive Use of Energy
PV	Photovoltaic
RBF	Results-Based Financing
REA	Rural Energy Agency
RUs	Refrigeration Units
SAS	Stand-alone Solar
SWPs	Solar Water Pumps
TBS	Tanzania Bureau of Standards
TIB	Tanzania Investment Bank
TAREA	Tanzania Renewable Energy Association
TANESCO	Tanzania Electric Supply Company
TREEP	Tanzania Rural Energy Expansion Programme
TZS	Tanzania Shilling
USD	United States Dollar
VETA	Vocational Education Training Authority
VTC	Vocational Training Centre





## EXECUTIVE SUMMARY

**From 2014 to 2019, Tanzania's Gross Domestic Product (GDP) grew at an average of 6.7 per cent annually, and the exchange rates have remained stable over the past three years as inflation has been kept in check.** In 2018, Tanzania became one of the world's middle-income countries by attaining a per capita Gross National Income (GNI/GDP) of USD1,061,<sup>1</sup> thus bringing the achievement of the Tanzania Development Vision 2025 closer to reality. This new status has the potential of attracting more investments in general and in the stand-alone solar (SAS) sector.

The country reported its first case of COVID-19 on March 17, 2020. Restrictions were imposed to control the spread of the disease but unlike in many other countries these did not include internal travel constraints or closure of businesses.

According to the World Bank's economic update on Tanzania addressing the impact of COVID-19,<sup>2</sup> **tourism, which had been one of the fastest growing sectors in the economy is expected to be negatively impacted by the pandemic.**

In the General Election of October 28, 2020, the President and other top national leaders were re-elected, resulting in very few changes in government.

Being a leading market for SAS, Tanzanian (like many others) has been heavily impacted by COVID-related sales declines, layoffs, furloughed workforces and increased operational costs.<sup>3</sup> Other challenges facing the sector have recently included:

- Government bias toward large grid-focused energy access projects,

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- Limited data on SAS potential market segmentation, both off-grid and on-grid, and consumer willingness to pay,

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- Uncertainty surrounding the regulation of pay as you go (PAYG) companies as financial institutions by the Bank of Tanzania (BoT) under the Microfinance Act of 2018, clarified during a BoT-PAYG company roundtable discussion in November 2020,

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- Limited financing for both consumers and SAS companies, or difficulty accessing available financing opportunities, both grant and commercial, due to high eligibility requirements,

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- Limited capacity by the Tanzania Renewable Energy Association (TAREA) to deal with issues of concern between the government and private sector, including growing mistrust by government of perceived lack of transparency in the private sector,

In 2019, more than 60 per cent of the Tanzanian population was still not connected to the grid even after ambitious grid extension initiatives, indicating a potentially large market for SAS solutions. A well-developed

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<sup>1</sup>World Bank (2020). GDP per capita: Tanzania.

<sup>2</sup>World Bank (2020). Tanzania economic update, June 2020: Addressing the impact of COVID-19.

<sup>3</sup>Tanzania Off-Grid Coordination Platform (2020). COVID-19 Tanzania business survey: Key findings.



mobile money sector remains a strategic tool for easing business transactions between SAS companies and their customers. **There are SAS companies, development partners and other stakeholders willing, interested and committed to delivering SAS solutions in Tanzania.** These would fully meet market needs if conducive market parameters and support from the government would be improved.



Image Credit: Maintenance Package / Solar water pumping system. [powerproviders.co.tz](http://powerproviders.co.tz)



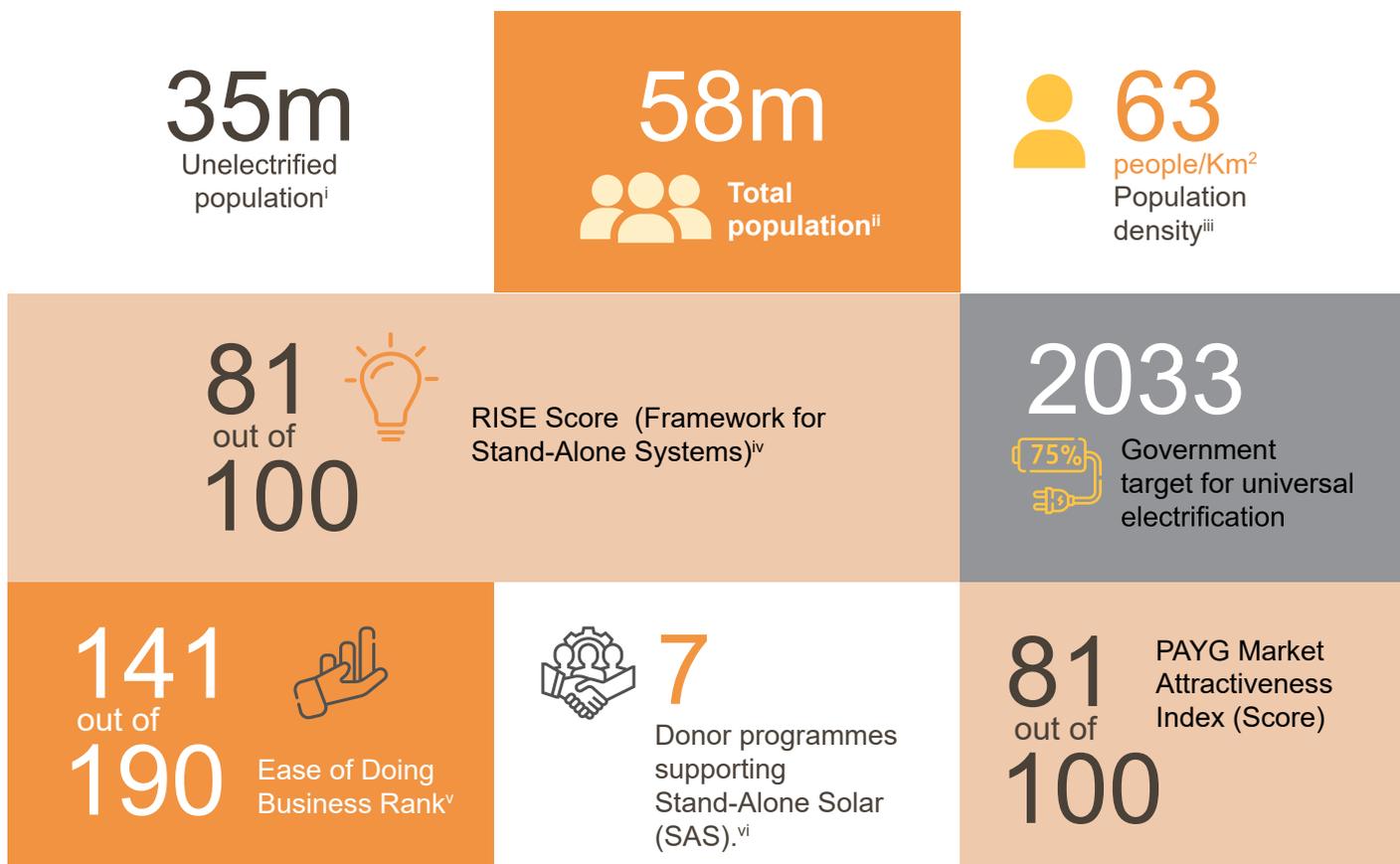


Figure 1: Tanzania at a glance

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

# 1 NATIONAL OVERVIEW

## 1.1 Current Context

The public health response measures adopted by the Tanzanian government in response to the COVID-19 pandemic have been different from those of other countries in the region. The authorities banned large gatherings except for worship, suspended school attendance and cancelled international flights. But there were no constraints on intra-country movement or running of businesses, and most restrictions were lifted by July 2020.

In 2019, Tanzania mainland's economic growth was solid, with average Gross Domestic Product (GDP) growth between 2014 and 2019 at 6.7 per cent, but the pandemic is expected to cut GDP growth in 2020 by at least half, and increase poverty.<sup>4</sup> Growth slowdown among Tanzania's main trade partners has reduced demand and consequently prices for its agricultural commodities and manufactured goods. International travel bans and fear of contracting the virus are expected to inhibit the recovery of tourism, which had been one of the fastest growing sectors in the economy, contributing an estimated 1 per cent to GDP growth in 2019 and constituting more than 26 per cent of total exports, but is expected to contract by 80 per cent or more in 2020, and have a mild recovery in 2021.<sup>5</sup> Domestic business conditions are also expected to deteriorate. Despite this, exchange rates have remained stable over the past three years as inflation was kept in check.

The informal sector, a large employer in many low-income countries such as Tanzania, was highly vulnerable to the lockdowns and social distancing rules. Although no lockdown was instituted in the country, several Tanzanian stand-alone solar (SAS) companies and employees had business affiliations with those in locked down countries and hence indirectly suffered. Normally, workers in the informal sector are paid daily wages, but the pandemic caused millions of workers to lose jobs abruptly and potentially also lose their entire incomes.

On October 28, 2020, Tanzania had a General Election in which top national leaders were re-elected, including President, Vice President, Members of Parliament, and councillors of the local government authorities. The Minister for Energy retained the office.

In 2018, Tanzania became one of the world's middle-income countries by attaining a per capita Gross National Income (GNI/GDP) of USD1,061,<sup>6</sup> thus making the achievement of the Tanzania Development Vision 2025 more of a reality. This new status has the potential of attracting more investments in general and in the SAS sector.

Exchange rates have remained stable over the past three years as inflation was kept in check. Between 2018 and 2019, annual inflation averaged 3.5 per cent,<sup>7</sup> the lowest rate since 2000. The country's inflation rate has been the least volatile and one of the lowest in the East African Community. In February 2020, inflation reached 3.7 per cent, up from 3 per cent in the prior year, but still below the 5 per cent medium-term target. Rising prices pushed food inflation up from 2019's 2.3 per cent to 6.6 per cent in February 2020. However, in the same period, the inflation rate, excluding food, fell from 5.1 to 2.4 per cent. This is partly because in February 2020, energy inflation plunged from 15.4 per cent to just 3.2 per cent on the back of a slowdown in economic production activities following lockdowns in energy intensive countries.

## 1.2 Energy Access

Even with the current ambitious grid electrification programmes, only 37.7 per cent of Tanzanians were connected to electricity as of 2019, and 24.5 per cent in rural areas, which means off-grid electrification efforts are inevitable if the country is to increase energy access.<sup>8</sup>

<sup>4</sup>World Bank Group (2020). *Tanzania economic update, June 2020: Addressing the impact of COVID-19*.

<sup>5</sup>*ibid.*

<sup>6</sup>World Bank (2020). *GDP per capita: Tanzania*.

<sup>7</sup>World Bank Group (2020). *Tanzania economic update, June 2020: Addressing the impact of COVID-19*.

<sup>8</sup>United Republic of Tanzania (2020). *Energy access and use situation survey II in Tanzania mainland 2019/2020*.

The Tanzanian government defines “access” as being within 600 metres from a distribution transformer – hence the disparity between access and connectivity figures in Table 1. Current costs for connections to the Tanzania Electric Supply Company’s (TANESCO) network are comparatively in favour of SAS solutions. These are exclusive of “wiring” or “ready board” costs. As an illustration, TANESCO connection charges<sup>9</sup>, inclusive of value added tax (VAT), range from TZS177,000 to TZS1,639,156 (USD76 to USD705), while most quality SAS products can be procured at a cost starting from TZS100,000 (USD43).

Stand-alone solar are also considered connections, although without systematic data collection these estimates likely undercount actual penetration. The 2019/2020 Energy Access and Use Situation Survey did break out access figures by lighting source.

Of the 37.7 per cent of households connected to electricity in 2019, 30.4 per cent were using off-grid solar, up from 24.7 per cent in 2016. 23 per cent used rechargeable batteries / torches, and just 6.4 per cent of households were using kerosene lighting, down dramatically from 22.3 per cent in just three years.<sup>10</sup>

Social institutions such as education and health facilities, village offices, religious amenities, water pumping and other services are connected at a rate of 90.7 per cent, with 84 per cent being on-grid, 9 per cent solar, local private supplier 4 per cent, 2 per cent gen-sets, and 1 per cent other sources such as wind and biogas.<sup>11</sup>

Table 1: Energy access in Tanzania<sup>12</sup>

Indicator	Breakdown	2019	2016	Increase
<b>Access – Population with access to electricity (within 600m from distribution transformer)</b>	Total	78.4%	67.5%	10.9%
	Urban	99.6%	97.3%	2.3%
	Rural	69.8%	49.3%	20.5%
<b>Connectivity – Households connected to electricity</b>	Total	37.7%	32.8%	4.9%
	Urban	73.2%	65.3%	7.9% <sub>1</sub>
	Rural	24.5%	16.9%	7.6%
<b>Grid tariff per KWh</b>	Below 75kWh per month	USD0.04		
	Above 75kWh per month	USD0.13		
<b>Average customer kWh usage per capita</b>	104kWh			

<sup>9</sup>United Republic of Tanzania (2020), 2019 Joint Energy Sector Review.

<sup>10</sup>ibid.

<sup>11</sup>ibid.

<sup>12</sup>Ibid.; United Republic of Tanzania (2020). Energy access and use situation survey II in Tanzania mainland 2019/2020.

## 2 DEMAND-SIDE: CONSUMER INSIGHTS

There is no recent research on the affordability and preferences of electricity options for the 62.3 per cent not connected to electricity. According to a small-scale survey conducted in 2020, there was a notable drop in demand for SAS products following the outbreak of the COVID-19 pandemic, with the two main reasons for this being fear of contracting the virus from sales people and deprioritisation of energy.<sup>13</sup>

Companies in tourism and hospitality, agriculture exports and manufacturing reported a considerable

decline in revenue and production. Some operations, such as the sales of fruits to Europe and accommodation services in Zanzibar, ground to a complete halt.<sup>14</sup> According to the United Nations Development Programme (UNDP),<sup>15</sup> key sectors that employ the majority of the poor and women have and will continue to be negatively impacted by the pandemic due to reduced demand for their products. The pandemic is also expected to cause job losses and therefore increase poverty in the country. This is likely to further depress demand for SAS products.



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<sup>13</sup>Tanzania Off-Grid Coordination Platform (2020). COVID-19 Tanzania business survey: Key findings.

<sup>14</sup>World Bank Group (2020). Tanzania economic update, June 2020: Addressing the impact of COVID-19.

<sup>15</sup>UNDP (2020). Rapid socio-economic impact assessment of COVID-19 in Tanzania.

### 3 SUPPLY-SIDE: STAND-ALONE SOLAR COMPANIES

#### 3.1 Pico-solar and Solar Home Systems (SHS)

Sales of SAS products in Tanzania between January and June 2020<sup>16</sup> decreased by 27 per cent compared to the latter half of 2019, and by 48 per cent from the first half of 2019. Both cash and pay-as-you-go (PAYG) sales were down (see Figure 1). In the same timeframe, solar appliance sales declined by 30 per cent compared to the latter half of 2019, and 17 per cent compared to the first half of 2019. Televisions accounted for nearly all the appliances sold in the country. The sales dip may be attributed to import difficulties due to flight restrictions and closures in supply countries due to COVID-19, as well as policy uncertainty.

A survey of 26 SAS actors regarding COVID-19 business impacts conducted by the Tanzania Off-Grid Coordination Platform in May 2020<sup>17</sup> signaled a sharp decline in revenue for SAS companies. A

majority of solar distributors and PAYG companies reported that their sales decreased by more than 75 per cent during the early months of the pandemic.

To encourage customers to continue with their repayments, some SAS companies offered incentives. One PAYG company, for example, gave customers an extra three days free for one-week payment contracts, five days free for 14-day contracts and 14 days free for monthly contracts. JUMEME decided to waive all payments due for power supplied from their solar mini-grids to health facilities as part of their contribution to alleviating the crisis, thus adversely impacting their revenues.

Other companies reported lack of stock because of delayed importation between April and June 2020 resulting from the lockdowns in China, and loss of staff due to diminished financial ability to pay salaries. The pandemic forced many SAS companies to take staff rationalisation actions in order to survive (see Table 2).<sup>18</sup>

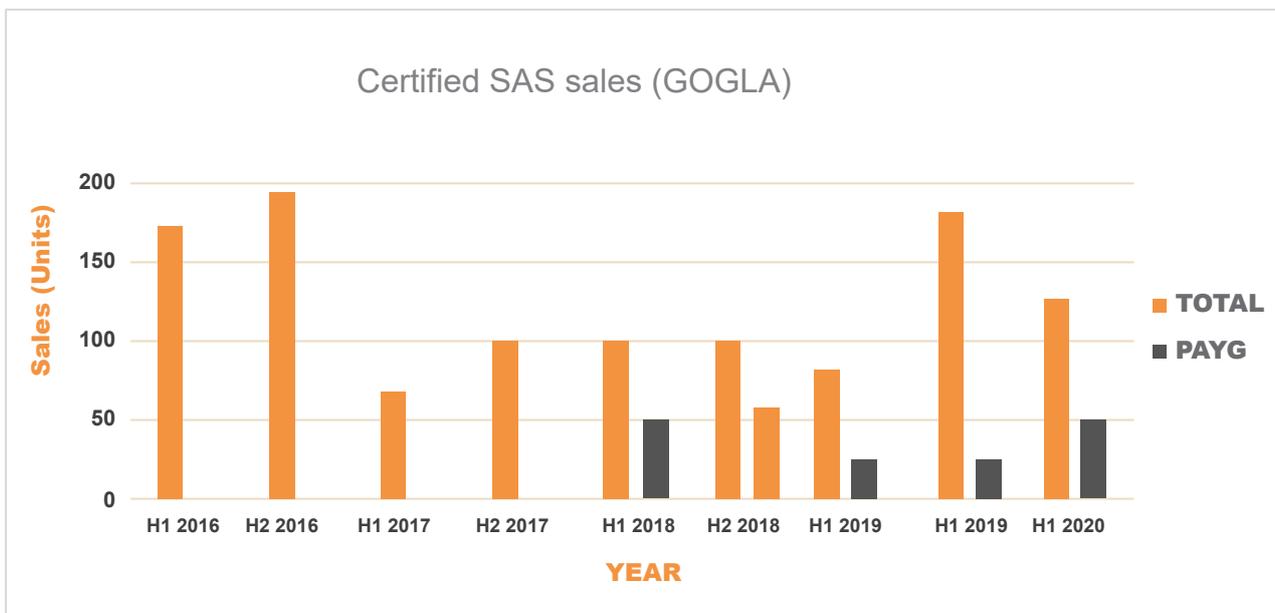


Figure 2: Certified SAS sales from 2016 to first half of 2020 (Source: GOGLA, 2020)

<sup>16</sup>GOGLA (2020). Global off-grid solar market report semi-annual sales and impact data.

<sup>17</sup>Tanzania Off-Grid Coordination Platform (2020). COVID-19 Tanzania business survey: Key findings

<sup>18</sup>ibid.

Table 2: Human resource actions taken by SAS companies due to effects of the COVID-19 pandemic

Company	Laid off workers	Furloughed workers	Product focus
AG Energies	No	Yes	Staff protection measures.
Arti Energy	Yes	Yes	Staff protection measures.
Azuri	No	Yes	Alternating teams working from home; staff protection measures; repayment incentives to customers.
d.light	No	Yes	Staff protection measures.
Greenlight Planet	No	Yes	Dwindling stock; staff protection measures.
Mobisol	Yes	Yes	Staff protection measures; customer repayment incentives.
OGE/Zola Tanzania	-	Yes	Staff protection measures; repayment incentives for customers.
Ongeza	No	Yes	Staff protection measures.
Simusolar	No	Yes	Staff protection measures.
Solar Sister	Yes	Yes	Staff protection measures.
Solaris Offgrid	No	Yes	Staff protection measures.
WASSHA	No	Yes	Staff protection measures.

A second major factor impacting SAS sales is the lack of clarity on how the 2018 Microfinance Act and the 2019 Tier Regulations will affect the sector. PAYG firms were concerned that their services might fall under these regulations, and a limited number of them were reported to have scaled down their planned expansion targets as they awaited more clarity. Africa Clean Energy Technical Assistance Facility (ACE TAF) supported a successful request in November 2020 for the government to provide clarity. The move initiated productive dialogue between the government and PAYG firms, and has evolved into

ongoing participation in the regulatory development process through the Tanzania Renewable Energy Association (TAREA) and the Tanzania Association of Microfinance Institutions (TAMFI).

Table 3 shows some of the major solar suppliers in Tanzania. Some of these companies have evolved from selling smaller 'consumptive use' SAS solutions to large systems capable of powering PUE. Equally important, some of the companies have ventured into the PAYG business model in addition to their traditional cash sale business model.

Table 3: Major companies in the SAS sector

Company	Business model	Brand / product focus	Comments
Greenlight Planet	Retail and PAYG	Pico-solar and SHS.	PAYG company growing rapidly in Tanzania.
Azuri	Retail and PAYG	Pico-solar and SHS.	TV product under development.
Off-Grid Electric/Zola Tanzania	Retail and PAYG	SHS including some appliances.(TVs, shavers).	Alternating teams working from home; staff protection measures; repayment incentives to customers.

Company	Business model	Brand / product focus	Comments
AEG	Retail cash and credit	SHS including some appliances. (TVs, shavers, water purification).	
Davis & Shirliff	Retail	SHS, SWPs, and solar appliances.	
Solar Sister	Retail	Pico-solar	Cash sale to last mile customers through women's groups.
Pro Solar Tanzania	Retail	Pico-solar, SWPs, solar water heaters and appliances.	Cash sale to end-users and traders.
Ongeza	Retail	Pico-solar	Cash sale to last mile customers through agents and traders.
d.light	Retail and PAYG	Pico-solar	
Mobisol	Retail and PAYG	Larger SHS and solar appliances	
Givewatts	Retail	Pico-solar for lighting and phone charging.	Last-mile distributor of SHS, cooking gas, cook stoves and other base of pyramid focused products.
Simusolar	Retail cash and credit	SHS, SWPs, and solar kits for fishing.	
AG Energies	Retail cash and credit	SHS and SWPs for domestic and irrigation purposes.	
WASSHA	Retail credit	Pico-solar	Leasing / rental product for lighting trade centres and fishing.
ZARA Solar	Retail	SHS, batteries and balance of system (BoS).	Cash sale to end-users and traders.
Solar Plus	Retail	SHS, batteries and BoS	Cash sale to end-users and traders.

Redavia left the country because of a perceived difficult business environment. It has sold its two solar mini-grids located in Songwe, each with a capacity of 89KWp, to Power Corner. TANSUNIA, a member of Tanzania Renewable Energy Association (TAREA), has also indicated it plans to close business, attributing the move to a difficult business environment. In the absence of a comprehensive study, it is not possible to verify the difficult business environment claims.

Over the past few years, the private sector in rural electrification, including SAS companies, has

experienced dwindling trust from the government attributed to perceived lack of transparency over pricing models and profits.

### 3.2 Productive Use Systems

In 2020, sales of fans, refrigeration units (RUs), SWPs and other PUE appliances were marginal and did not pass the three-data point control. This was despite support to PAYG solar refrigerator and water pump suppliers since October 2019 through the 2019-2020 Global LEAP results-based financing (RBF) incentives.<sup>19</sup>

<sup>19</sup> Global Leap Awards Results-based Financing (2020). 2019–2020 – Refrigerators & solar water pumps. 2019.

An assessment report for sub-Saharan Africa (SSA) on PUE puts the potential market of SWPs in excess of 43 million smallholder farmers who are not connected to the main grid.<sup>20</sup> Other market assessment reports include one on solar-powered cold storage solutions, with a large potential market of 6.5 million smallholder farmers in SSA in the dairy and horticulture sub-sectors with no access to the grid<sup>21</sup> and requiring cooling technologies ranging from small cooling units for low volumes of produce to large walk-in storage facilities serving multiple smallholders.<sup>22</sup> There is also potential demand for solar mills and threshers<sup>23</sup> and dual-use productive use leveraging solar energy (PULSE) appliances such as fans, televisions and refrigerators, representing a market of 38 million users.

Studies by Energy 4 Impact on behalf of Simusolar, a Tanzanian-based company that finances and distributes off-grid, small-scale, energy efficient appliances and PUE technologies in rural Tanzania, revealed the existence of several PUE opportunities, including the entire dairy value chain.

TAREA is working with the Netherlands Embassy in Tanzania to influence the Ministry of Agriculture to register SWPs as farm implements, an act which if successful, would grant such pumps of up to 3HP capacity exemption from duties and VAT.

Televisions provide a potential income stream, with 12 per cent of off-grid television owners in East Africa letting others watch for a fee.<sup>24</sup> Refrigerators are primarily used by small businesses to sell cold goods and avoid food spoilage.<sup>25</sup> Solar electric cook stoves and hand tools such as drills, saws and hair clippers also show promise. It would be helpful to explicitly quantify the Tanzania solar PUE sub-sector opportunity.

New and existing suppliers who have expanded into PUE equipment include AG Energies (SWPs and water heaters) and Simusolar (SWPs and solar lamps used for fishing).

### 3.3 Tanzania Renewable Energy Association (TAREA)

TAREA is currently advocating the conclusion of the development of assessment tools by which the Vocational Education Training Authority (VETA) will certify solar and renewable energy installers who do not have formal education (see Section 4). It is also advocating use of solar mini-grids to power PUE in rural communities. Furthermore, TAREA is participating in the training of microfinance institutions (MFIs) through the Tanzania Association of Microfinance Institutions (TAMFI) to see to it that MFIs are motivated to engage in supply-side and/or end user financing.

The association has grown from less than 100 members in its early stages to 877 members in December 2020, of which about 100 are corporate members. More than 50 per cent of the members are engaged in solar technologies and services. About 60 per cent of active companies in the solar and renewable energy fields, totalling to about 40 in October 2020, are members of TAREA. One reason why the remaining 40 per cent are not members could be that they are not willing to comply with TAREA's code of conduct, which requires every member to trade in solar products that comply with standards established by the Tanzania Bureau of Standards (TBS) and/or Lighting Africa certified products. It may also be that these potential members have not been convinced of the benefits to be accrued against membership fees, or there is limited awareness of the potential of the association positively impacting their businesses.

Some members and potential members do not feel that TAREA adequately addresses their challenges. This perceived weakness may be attributed to limited capacity to cope with the rapid growth of the market and the wide mixture of technologies and services, as well as issues of concern between the government and the private sector.

Advocacy technical working groups or task forces for various technologies and services from interested stakeholders and members are important to bridge the gap, but do not yet exist. TAREA had five paid staff members and four volunteers as of November 2020.

<sup>20</sup>This assumes that all smallholder farmers without electricity access are potential SWP customers. The demand for irrigation to improve productivity varies by crop type, access to market, quality of seed and other non-energy-related aspects. In addition, demand is influenced by farmers' ability to pay and SWPs' affordability.

<sup>21</sup>Lighting Global (2019). Market opportunity for PULSE in sub-Saharan Africa.

<sup>22</sup>ibid.

<sup>23</sup>ibid.

De Dinechin, E., de Chorivit, G. & Reynolds, O. (2018). Powering opportunity: The economic impact of off-grid solar.

<sup>25</sup>Dalberg (n.d.). State of the off-grid appliance market.

## 4 POLITICAL FRAMEWORK

The General Election in October 2020 saw the incumbent party retain power and hence no major changes in key government positions, including in the energy sector. The government's focus for energy development is currently on large and grid-based projects. The 1,100MW from renewable energy promised by the President is therefore likely to be produced through large projects.

The government continues to demonstrate political will through development, restructuring and modification of policies/regulations and guidelines to cope with the energy sector dynamics, including SAS. However, policies and frameworks are not necessarily translated into real action due to capacity and financial constraints, as well as political interests. Relevant activities within main government agencies relevant to the SAS sector are presented in Table 4 and the sub-sections that follow.

Table 4: Institutional and regulatory framework for the SAS sector

Institution	Description and recent activity
<b>Ministry of Energy (MoE)</b>	<p><b>Energy Efficiency Action Plan 2020</b> covering the next 20 years will benefit SAS appliances.</p> <p><b>Tanzania 2019 Joint Energy Sector Review</b> informs planning and budgeting for MoE and development partners. Despite SAS being mentioned as an option for rural electrification, government bias remains toward large electrification projects.</p>
<b>Rural Energy Agency (REA)</b>	<p>The <b>Rural Energy Master Plan 2020</b> is under review to include current status and achievements.</p> <p>The <b>National Rural Electrification Program (NREP) for 2013–2022</b> projects have now overtaken the originally targeted numbers and scope. There is need for timely review; revised target outputs could include SAS solutions in areas not conducive for grid extension and connection.</p> <p><b>Operating Guidelines for the Tanzania Rural Electrification Expansion Program (TREEP) Renewable Energy Companies Credit Lines (July and November 2020)</b> – Renewable energy companies are allowed to borrow from the fund manager – Tanzania Investment Bank (TIB). Fund manager is allowed to lend money directly to beneficiaries without going through commercial banks, interest rate reduced to 1% (for USD lending) and 1% plus foreign exchange risk if borrowing is done in local currency. The amount also increased from USD2 million to USD3 million. Refinancing has been increased to 90%. Renewable energy equipment is eligible. To date no SAS company has utilised this credit line.</p>

Institution	Description and recent activity
	<p>Less refinancing portion needed from participating financial institution or beneficiaries for the loan; TIB is comfortable with long-term credit tenure; direct borrowing of money by beneficiaries reduces impact of intermediaries on cost of money and bureaucracy; more stock can be realised by suppliers and dealers of pico-solar and SHS through the increased refinancing amount; reduced interest rates could translate into reduced cost of money.</p> <p><b>Operating Guidelines for the TREEP Small Power Producer Credit Line: Revision 2 (July 2020)</b> – TIB (fund manager) allowed to lend directly to small power producers, refinancing increased from 80% to 90% and interest rate reduced to 2%.</p>
<b>Energy and Water Utilities Regulatory Authority (EWURA)</b>	<p><b>The Electricity Act Rules: The Electricity (Electrical Installation Services) Rules, 2019</b> – EWURA has now made it mandatory for electrical installers to have formal education qualifications to be licensed. A large number of electrical installers who have no certificates because they did not attend formal education and learned the trade on the job will no longer be allowed to carry out installations. Though not effectively enforced by EWURA in 2020, it will significantly reduce the workforce in the sector once it is enforced.</p>
<b>VETA</b>	<p><b>Completion of Prior Learning Certification Procedure</b> – Electrical installers who acquired their skills through informal on the job training and have no formal education qualifications will undergo assessments and further on the job training before being certified formally by VETA.</p> <p><b>Commissioning of the VETA renewable energy training curriculum</b> – Inclusion of renewable energy, such as SHS, in the VETA training portfolio, which means more trained electrical artisans for the SAS sector.</p>
<b>TANESCO</b>	<p><b>Power System Master Plan, 2020 (Draft)</b> – Biased toward larger energy projects, including larger renewable energy projects (SAS actors need to be aware of the situation and plan appropriate interventions in advance).</p>
<b>TBS</b>	<p><b>Endorsing and adopting pico-solar and solar kit quality standards for use in Tanzania</b> – Increased confidence from end-users resulting from reduced importation and trade in poor and non-verified SAS products. The already endorsed standards need effective enforcement to help the sector.</p>
<b>National Bureau of Statistics (NBS)</b>	<p><b>Energy Access and Use Situation Survey in Tanzania Mainland 2019/20</b>, with support from REA – Revealed that there is still a large market for SAS even with the ambitious universal village electrification targets of 2021.</p>

Institution	Description and recent activity
<b>BoT/Ministry of Finance</b>	<p><b>Responsible for Tier 1 and 2 MFIs in the Microfinance Act of 2018 and regulation supervision authority</b> – This involves microfinance banks, microfinance companies, individual money lenders and organisations. Tier 1 regulations are currently being implemented by BoT while Tier 2 licensing processes are ongoing until April 30, 2021. The Microfinance (Non-deposit Taking Microfinance Service Providers) Regulations, 2019 will cover Tier 2 MFIs.</p> <p>Tiers are defined by size of institution, deposit taking or non-deposit taking, level of capital investment, loan portfolio and whether the organisation is a savings and credit one.</p>
<b>Tanzania Cooperative Development Commission (TCDC)</b>	<p><b>Delegated to by BoT to oversee the Microfinance Act (CAP 407) Tier 3 regulations:</b> The Microfinance (Savings and Credit Cooperative Societies) Regulations, 2019 cover SACCOs. Implementation of the regulations has not started and might start after BoT builds the capacity and necessary TCDC interfaces for supervision. This is likely to be after April 30, 2021 following the conclusion of Tier 2 licensing processes.</p>
<b>President’s Office, regional administration and local governments</b>	<p><b>Mandated by BoT to oversee supervision and implementation of Microfinance Act (CAP 407)</b> – The Microfinance (Community Microfinance Groups) Regulations, 2019 covers Tier 4 institutions such as micro-leasing, community-based microfinance groups (village community banks, etc.) and commodity microfinancing – where PAYG SAS is like to fall. This is yet to be implemented and might start after BoT builds the capacity and necessary President’s Office, regional administration and local government’s interfaces for supervision. This will most likely be after April 30, 2021 following the conclusion of higher tier institutional licensing processes.</p> <p>Players are assured of some lapse of time before regulations, after which appetite for business can be activated. Room for consultation during regulation development is assured</p>

## Taxation

Taxation on SAS products is clearly regulated but has not improved much in terms of implementation consistency. Import duties and VAT are inconsistently being charged although solar products are exempted. It is said that SAS products or components not labelled as “solar” are taxed; or that it depends on the understanding of the Tanzania Revenue Authority (TRA) personnel on duty.

## Quality standards

Not much has improved regarding market spoilage by low quality product. Quality enforcement by TBS and SAS market surveillance implemented in collaboration with TAREA are ongoing, but enforcement of the endorsed pico-solar and SHS standards by TBS is still too challenging to make a

real difference in the market – a situation attributed to TBS’s limited capacity. A requirement for registration of all SAS products importers and their respective brands has been discussed by stakeholders.

## E-waste

To date the National Environment Management Council (NEMC) has no specific policy or regulation related to e-waste management. However, NEMC had about five staff in 2018 whose duty was to execute e-waste related tasks all over the country, including those from the SAS sector. The existing environment policy and regulations of 1997 are very old and need review. The Tanzania Communication Regulatory Authority was in 2020 reported to have an e-waste management draft policy in the works.

## Mobile money and PAYG

There have been no recent changes to the National Payment Systems Act, 2015, which set conditions for operators to be registered to undertake electronic money transfer services.

The way the Microfinance Act of 2018 and Tier Regulations are drafted, especially the Microfinance (Non-deposit Taking Microfinance Service Providers) Regulations, 2019, created confusion among SAS companies offering PAYG services. These companies were not clear on whether they fell under these regulations. ACE TAF organised a workshop with key SAS players in November 2020 at which BoT clarified where PAYG would fall under the Act (CAP 407) – most likely under micro-leasing and commodity leasing. Some PAYG actors had already visited BoT and been issued letters indicating no special license is required at this time and that they should continue operating under their current licences and permits. TAREA is working on getting a letter from BoT that

will address all its members. There is also ongoing dialogue between the government and PAYG firms, in the regulatory development process through TAREA and TAMFI as a result of this intervention.

## Gender and Social Inclusion Mainstreaming

In the Africa Gender Index (AGI) report of 2019, Tanzania scored 0.618 (1.00 is gender parity), which is higher than the 0.484 average for African countries.<sup>26</sup> Various gender equality policies as well as the Tanzania Constitution of 1977 and its amendments of 2019, provide specific targets for women to have representation, including making up 30 per cent of Parliament and 50 per cent of presidential appointees. In the energy sector, the Tanzania SE4ALL Gender Action Plan has streamlined gender parameters such as promotion of women employment and economic empowerment and mainstreaming of gender perspectives.



*A Tanzanian woman shows the instalment of solar lighting and electricity in her home, thanks to a scheme backed by UK Aid. Investments in solar cells and other types of photovoltaics in Tanzania can positively affect progress in achieving several of the Sustainable Development Goals (SDGs). Photo: DFID UK/Flickr*

<sup>26</sup> The data used in the construction of the Africa Gender Index (AGI) is largely supplied by national statistical offices. While indicators have been defined in a standard manner, the reference periods for a number of indicators vary across countries.

## 5 FINANCING

### 5.1 Supply Chain Financing

As noted earlier, the newly restructured USD10 million TREEP concessional credit line with TIB is accepting applications from renewable energy companies, though no SAS company has used this funding to date. Mobisol has received funding from CRDB (about USD4 million, commercial) and Africa Enterprise Challenge Fund (AECF) (USD1.1 million, concessional). Off Grid Electric has also gotten USD1.1 million from AECF. The SUNREF facility through Bank of Africa, unfortunately, has not yet disbursed its USD11 million in on-lending because of perceived unfriendly terms.

To help during the pandemic, BoT instructed financial institutions to halt or relax repayment terms for debtors who were adversely impacted, and also reduced rate at which it lends commercial banks from 7% to 5% with expectation that they pass this lower rate on to customers.

Anecdotally, it is thought that some SAS investors and companies have delayed investment or slowed expansion plans awaiting clarity on the Microfinance Act (CAP 407) regulations.

### 5.2 Consumer Financing

Since October 2019, the PAYG segment for RUs and SWPs has grown largely due to the 2019–2020 Global LEAP RBF incentives that aim to catalyse uptake of high quality super-efficient appliances.

About 88 MFIs and community savings groups (SACCOs and village savings and loan associations) are active TAMFI registered members. Less than 5 per cent of MFIs registered with TAMFI have an active window/portfolio financing SAS. The few include BRAC, Tujijenge Tanzania and YETU Microfinance Bank. TAMFI, with the support of the C.S. Mott Foundation, is currently providing training to MFIs on SAS solutions and market segments.<sup>27</sup>

Mobile telecommunication use is widespread in Tanzania. As of September 2020,<sup>28</sup> about 85 per cent of Tanzanians owned mobile phones and 53 per cent had mobile money accounts – and the numbers are growing. In just under two years, the number of people using mobile services rose by 13 per cent to 49 million as of September 2020. In the same time period, the number of mobile money accounts grew by 31 per cent to 30.5 million. It is important to note that mobile phone subscribers have the freedom to choose whether or not to register for mobile money services.

<sup>27</sup> TAMFI current membership; nd conversation with TAMFI Executive Director.

<sup>28</sup> Tanzania Communication Regulatory Authority.

## 6 MARKET SUPPORT

### 6.1 Development Partners

Development funding for the off-grid sector has declined in the last two years. The World Bank/TREEP Renewable Energy Companies and Small Power Producer credit lines at TIB have reportedly been restructured – loan portfolio reduced from USD42 million to USD10 million for both; interest rates reduced to 1 per cent and 2 per cent respectively; and the refinancing amount increased to 90 per cent from 80 per cent.

Aside from the World Bank, the main support to the SAS sector is from SNV Energising Development (EnDev) and the Foreign, Commonwealth and Development Office (FCDO) funded Africa Clean Energy Technical Assistance Facility (ACE TAF). In the last quarter of 2020, the SNV EnDev Results-Based Financing (RBF) programme launched the six-month Green Economy Recovery Fund (GERF) with funding from the Federal Ministry for Economic Cooperation and Development (BMZ) to provide COVID-19 relief worth EUR1.3 million (USD1.5 million) to SAS companies in Tanzania. Participating companies are eligible to receive subsidy up to a maximum of EUR400,000 (USD488,000) in verified sales. ACE TAF is providing strategic support to the SAS enabling environment. At the time of this Update, SIDA was still reviewing its upcoming support plans.

The Energy Development Partners Group,<sup>29</sup> which meets once a month, coordinates funding in the sector through its secretariat. ACE TAF, GOGLA and Power Africa launched the Tanzania Off Grid Coordination Platform in May 2020, with the objective of monitoring the pandemic's impacts on the sector and planning a response.

### 6.2 Training Institutions and Incubators

VETA has developed a renewable energy training

curriculum, including solar, for accreditation of artisans through vocational training centres such as Don Bosco. Non-governmental organisations like Tanzania Traditional Energy Development and Environment Organisation (TaTEDO) have for many years been offering short courses of two to three weeks for solar PV installers, operators and maintainers.

The IMED Foundation, after its Tanzania Renewable Energy Incubation Programme ran from 2014 to 2016, is now implementing a second solar energy entrepreneurs' incubation programme from 2019 to 2021. As noted above, TAMFI is also creating awareness of solar among MFIs with the aim of increasing lending for SAS.

The Dar es Salaam Institute of Technology (DIT) offers a diploma course in renewable energy, while Arusha Technical College (ATC), through the support of the World Bank, is offering a renewable energy course for technicians. The College of Engineering and Technology (CoET) of the University of Dar es Salaam has been running a master's course on renewable energy for years now. The University of Dodoma and Mbeya University of Science and Technology are now offering undergraduate courses in renewable energy. Last but not least, REA is funding and supporting implementation of short regular courses for solar PV technicians as part of a capacity building programme for the sector.

### 6.3 Market Data

The main new market intelligence and research reports on the SAS sector in Tanzania are the Energy Access and Use Situation Survey II in Tanzania Mainland 2019/20 and the Survey Report on the Impacts of COVID-19 (May 2020), initiated by the Off-Grid Solar Platform.

<sup>29</sup> EDPG includes SIDA, Norwegian Embassy, European Union, United Nations Industries Development Organization, United Nations Development Programme, Japanese International Cooperation Agency, Department for International Development, German Corporation for International Cooperation, Korean Development Agency.



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