

Stand Alone Solar (SAS)

MARKET UPDATE

Senegal

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Africa Clean Energy
Catalysing Africa's Solar Markets



TETRA TECH
International Development





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

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The Senegal 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:

East Africa: Ethiopia, Kenya, Rwanda, Somalia, Tanzania, Uganda

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Southern Africa: Malawi, Mozambique, Zambia, Zimbabwe

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ABBREVIATIONS AND ACRONYMS

Acronym	Definition
ACE TAF	Africa Clean Energy Technical Assistance Facility
ANSD	National Agency of Statistics and Demography
ASER	Agence Sénégalaise d'Électrification Rurale (National Rural Electrification Agency)
COPERES	Business Council of Renewable Energies of Senegal
EUR	Euro
GDP	Gross Domestic Product
LBA	La Banque Agricole
MFIs	Microfinance Institutions
MPE	Ministry of Petroleum and Energy
PAYG	Pay-As-You-Go
PRES	Plan de Resilience Economique et Social (Economic and Social Resilience Plan)
PSE	Plan Sénégal Émergent (Emerging Senegal Plan)
PUE	Productive Use of Energy
SAS	Stand-Alone Solar
SENELEC	Société Nationale d'électricité du Sénégal
SHS	Solar Home Systems
SMEs	Small and Medium Enterprises
USAID	United States Agency for International Development
USD	United States Dollar
XOF	West African CFA franc



EXECUTIVE SUMMARY

Out of a population of about 17.2 million,¹ there are three million Senegalese who do not have access to electricity.² In December 2018, the second phase of the Plan Sénégal Émergent (PSE) (Emerging Senegal Plan) covering the years 2019 to 2023 was launched with a target of 100 per cent electricity access in urban areas and 90 percent in rural areas by 2025.³

After several decades of being classified as a low-income country, Senegal rebased its Gross Domestic product (GDP) in 2018 to become a lower-middle income country, reaching 5.3 per cent growth in 2019.⁴ Following the outbreak of the COVID-19 pandemic in March 2020, the government instituted a number of containment measures, including border closures, restricting internal movement and a curfew. These measures, alongside global economic woes, have negatively impacted many sectors of the economy⁵, **and growth slowed to an estimated 0.7 per cent percent in 2020⁶**. To cushion the people, the government put in place a comprehensive economic stimulus plan – Plan de Resilience Economique et Social (PRES).

The off-grid solar sector has been affected as well. On the supply side, GOGLA sales data shows there was a 32 per cent decline in sales in the first half of 2020, with cash sales being the most affected. On the positive side, there is increasing interest in the productive use sector, especially solar irrigation pumps, and demand is expected to rise.

The government has begun to show more interest in the role that solar energy can play in increasing energy access in the country. **The recent exemption of some solar products and components from the 18 per cent VAT is a testament to this.⁷**

A number of solar companies have partnered with microfinance institutions to offer consumer financing. Access to finance for these companies to scale up their business is however limited with local commercial banks asking for often unaffordable collateral for loans. Several development partners are actively supporting the sector, including the Foreign and Commonwealth Office's (FCDO) Africa Clean Energy (ACE) Technical Assistance Facility (TAF), Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ), the United States Agency for International Development's (USAID) Power Africa and the World Bank's Regional Off Grid Energy Programme (ROGEP).



On the supply side, GOGLA sales data showed a **32% decline in sales** during the first half of 2020, with cash sales most affected. On a positive note, there is growing interest in the productive use sector, especially solar irrigation, and demand is expected to rise.

1. ANSD Projections.

2. MPE & SE4ALL (2020) Operational Plan

3. Plan Sénégal Emergent.

4. World Bank (2020). Senegal Overview.

5. UNDP (2020). Impact économique, social et environnemental de la pandémie la COVID-19 au Sénégal.

6. Senegal Ministry of Finance (2021)

7. Order No. 010 158 VAT exemption

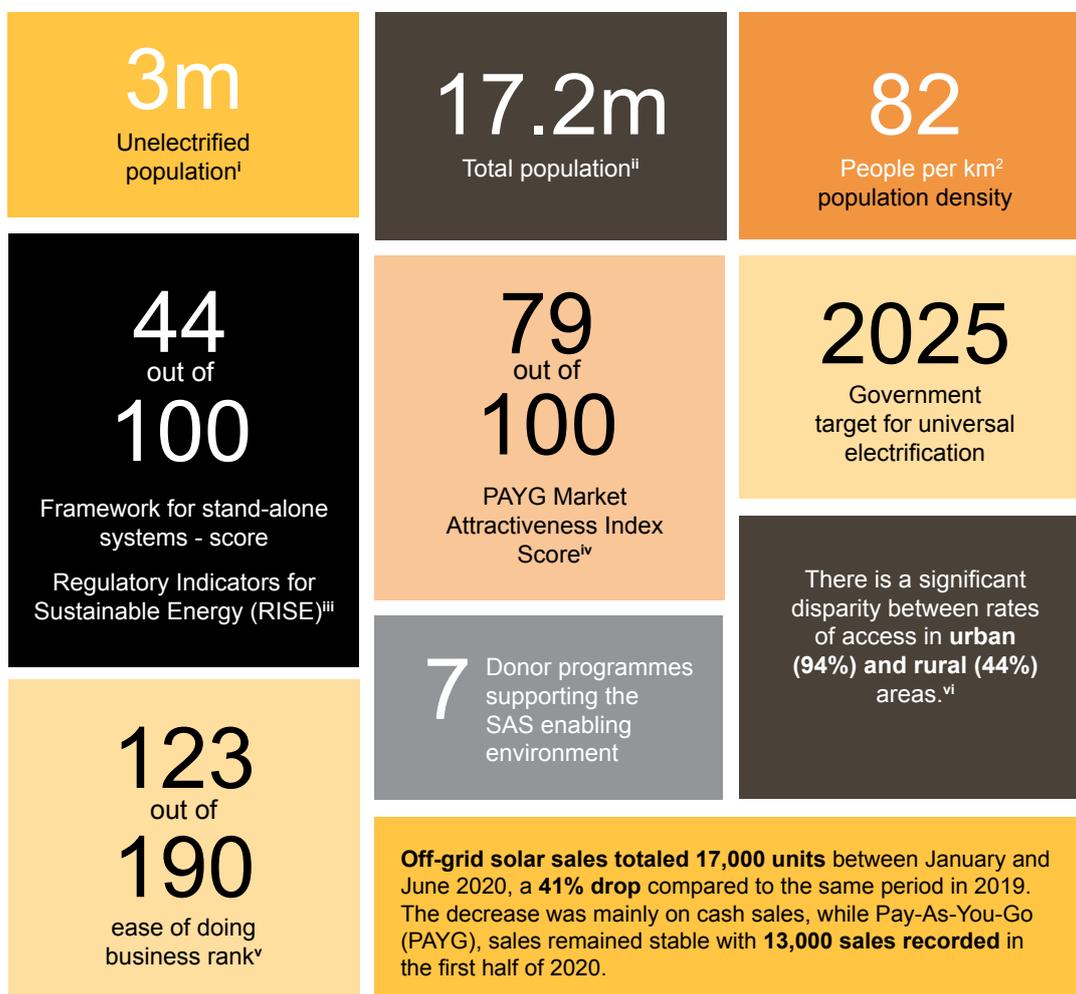


Figure 1: Senegal at a glance

i. IEA (2019) Africa Energy Outlook
ii. World Bank (2019)
iii. ESMAP (2020) Regulatory Indicators for Sustainable Energy (RISE)
iv. Lighting Global (2019) PAYG Market Attractiveness Index
v. World Bank (2020) Doing Business
vi. World Bank (2020) World Development Indicators

1. NATIONAL OVERVIEW

1.1 Current Context

Senegal is one of West Africa's economic hubs. According to the last projections of the National Agency of Statistics and Demography (ANSD), the country's estimated population in 2020 was 17.2 million (of which 45.5 per cent is urban, including more than 3.8 million people in the capital Dakar).⁸

The country's Gross Domestic Product (GDP) growth was 5.3 per cent in 2019, down from 6.3 per cent in 2017.⁹ With limited natural resources (not counting recent offshore oil and gas discoveries, which are yet to translate to revenue), the country currently earns most of its foreign exchange from fisheries, phosphates, groundnuts, tourism, and services. It is also a hub for regional banking, shipping, and transportation.¹⁰

Senegal became a lower-middle income country in 2018 following GDP rebasing, with its real GDP per capita estimated to be USD1,410.¹¹ The country ranks 123 out of 190 with a score of 59.3 per cent in the World Bank Ease of Doing Business ranking.¹² In the Getting

Electricity index Senegal ranks 11 out of 48 in sub-Saharan Africa.¹³

With the outbreak of the COVID-19 pandemic in early 2020, the country put in place several control measures that affected the economy. Economic growth slowed to an estimated 0.7 per cent in 2020¹⁴. A comprehensive economic stimulus plan, the Economic and Social Resilience Plan (PRES), was put in place to protect lives and livelihoods. Reforms envisioned under the Priority Action Plan – Adjusted and Accelerated (PAP 2A) of the Senegal Emerging Plan (PSE) will need to be deepened for growth to resume its pre-pandemic trajectory. Donors have pointed out that the indicated actions are not adequately green-oriented from a sustainable development point of view.

1.2 Energy Access

The International Energy Agency estimates that 71 per cent of households have access to electricity.¹⁵ The government of Senegal has set a target of universal electricity access by 2025.

Table 1: Energy access

Unelectrified population	3 million people ¹⁶
Grid tariff per kWh	XOF110/kWh (\$0.20/kWh) for households, including subsidies
Average customer kWh usage	214.59 kWh/per capita

The decentralisation of electricity provision has meant differing tariffs between urban and rural areas, and within rural areas. 'Concessionaires' operating in rural areas have charged more than the national utility Société Nationale d'électricité du Sénégal (SENELEC) does in urban areas. The issue prompted harmonisation of tariffs

by the Electricity Authority (CRSE) starting in 2019. There are also substantial differences in connectivity across regions – see Figure 1. Government has acknowledged that off-grid electrification technologies – mini-grids and stand-alone solar (SAS) systems – are a viable way to accelerate access in rural areas.¹⁷

8. Agence Nationale de la Statistique et de la Démographie (ANSD)

9. World Bank (2020). *Senegal Overview*.

10. World Bank (2020). *Senegal Country Partnership Framework FY20-FY24*.

11. UNDP (2020). *National Human Development Report for Senegal*.

12. World Bank (2020). *Economic Profile*

13. World Bank (2020). *Ease of Doing Business in Senegal – Doing Business: Measuring Business Regulations*.

14. Senegal Ministry of Finance (2021)

15. International Energy Agency (2020) *World Energy Outlook*

16. MPE & SE4ALL Senegal (2020)

17. MPE & SE4ALL Senegal (2020). *Rural electrification*.

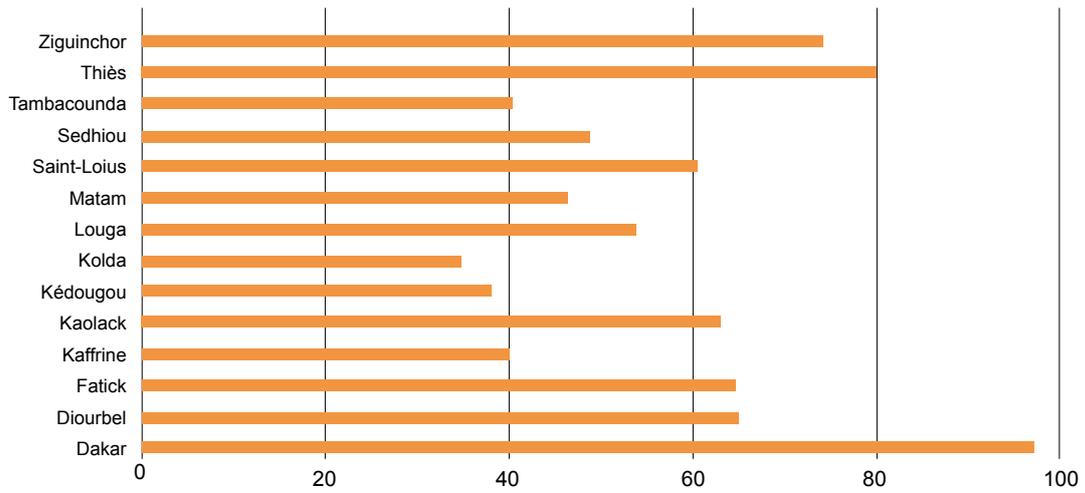


Figure 2: Proportion of households with electricity access by regions



Photo courtesy: www.greenlightplanet.com

2 DEMAND-SIDE: CONSUMER INSIGHTS

The government's Operational Plan for Universal Access, which was released in January 2020 and updated in July 2020,¹⁸ included a needs assessment covering 13,819 localities with about three million inhabitants that were unelectrified.¹⁹ The needs assessment estimated that completion of this plan could create a demand of up to 275MW including 87MW generated through off-grid technologies.

A survey commissioned by the Millennium Challenge Compact (MCC 2–Senegal),²⁰ indicates that the average household spends USD12.86 per month (5 per cent of total expenditure) to access energy sources other than

the electricity grid, and that USD7 per month on average is spent on candles and wood. It further estimates that maximum willingness to pay (WTP) stands at USD0.26 per kWh, greater than the average tariff of USD0.20.

Since March 2020, the health crisis resulting from the COVID-19 has negatively impacted many sectors of the economy, including the off-grid energy sector, leading to a decline in demand for products and services.²¹ Some of the key barriers to building SAS demand include high costs, low consumer awareness and negative perceptions, and limited financing.



Photo courtesy: www.lightingAfrica.org

18. Ministry of Petroleum and Energy (n.d). *Rural Electrification Vision 2025*.

19. Ministry of Petroleum and Energy (n.d). *Needs assessment of the Universal Access Plan*.

20. Almanzar, M. & Ulimwengu, J. (2019). *Willingness to pay for improved electricity services in Senegal*.

21. UNDP (2020). *Impact économique, social et environnemental de la pandémie la COVID-19 au Sénégal*.

3 SUPPLY-SIDE: SAS COMPANIES

3.1 Pico-solar and Solar Home Systems (SHS)

Certified sales have been on a downward trend from the second half of 2019. It is likely that this trend will continue due to the effects of the

COVID-19 containment measures, though electricity provision, including off-grid solar, has been designated an essential service and allowed to continue operating.

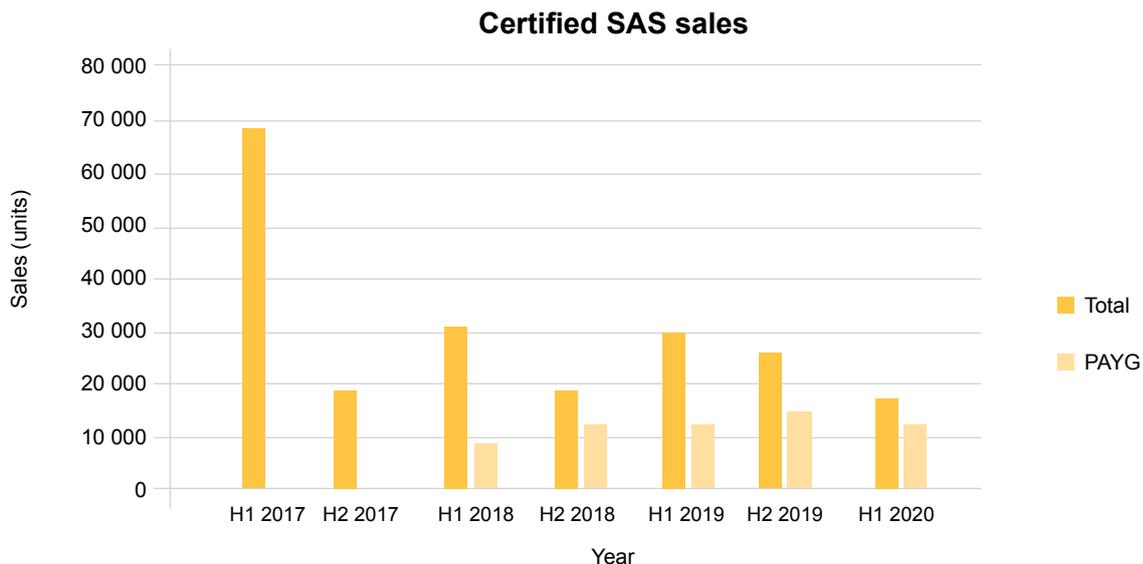


Figure 3: Certified SAS sales (Source: GOGLA)²²

For many years, Senegal’s solar market was dominated by informal traders selling lighting products imported from East Asia through electronics shops, hardware stores, kiosks and street vendors. Most of the products were of poor quality, and their short lifespans began to put off customers.²³ In recent years higher quality product is gaining traction and more formal sales and distribution channels are being established.

Earlier challenges to selling SAS in some rural concessions, whereby private electricity operators mandated to provide power resisted SAS companies selling in their spheres of influence, have largely been resolved by government intervention.

Major SAS companies have been promoting the pay-as-you-go (PAYG) business model, which has become popular. Some companies, such as Elle Solaire, have

adopted a franchising model in which they offer financing, training and marketing support to microentrepreneurs, predominantly women. Others such as Oolu, Ilemel and Baobab+ partner with non-governmental institutions (NGOs), microfinance institutions (MFIs) and rural banks that have links to a large potential customer base to market their products. Ilemel uses the network of the Cooperative Society of Energy Citizens of Senegal (Cooperative la Société des Coopératives d’Energies Citoyennes du Sénégal [SCEC]) to distribute its solar products. Table 2 notes some of the SAS companies active in the country.

In the 2019 Pay-As-You-Go Market Attractiveness Index²⁴ Senegal was ranked nine out of 24 countries with a score of 79 out of 100. It was the highest ranking West African country.

22. GOGLA.2020. Global off-grid solar market report: Semi-annual sales and impact data.

23. ECREEE (2019). Regional off-grid electrification project: Off-grid solar market assessment & private sector support facility design – Senegal report.

24. Pay-As-You-Go Market Attractiveness Index.

Table 2: Selection of active SAS companies

Company	Business model	Brand	Comments
Ilemel Energy Solutions	PAYG	Rural Park	Also develop rooftop solar for urban areas.
Little Sun	Cash	Little Sun, Sunking	Also sells solar water pumps and is involved in mini-grids.
Bonergie	Cash	Grundfos, Niwa	Also sells solar water pumps and large systems. Partners with Caurie Microfinance.
Baobab+	PAYG	Greenlight Planet, Bright	Partners with Microcred to finance consumers.
Oolu Solar	PAYG	Greenlight Planet, Amped Innovation	Partnering with mobile network operator Orange to enable mobile payments for SAS. Oolu has a female co-owner. ²⁵
Nadji Bi Group	Credit and Cash	Own brand	Local manufacturer that assembles components into pico-solar, SHS and productive systems.
Vitalite Senegal	PAYG	Fosera, Mobisol, Lorentz	Looking to expand in peri-urban areas with bigger systems.
Peg Africa	Credit and Cash	Peg Life, D-Light, Lorentz	Also operating in 3 other markets in the region.
Suntaeg Energy	Cash	Suno	Develops PAYG for remote areas.
Touba Solar Rama	PAYG	Fosera	Exploring smart energy to develop solutions for rooftop solar.
Elle Solaire	Cash	Omnivoltaic	Partnering with UK and French embassies to develop projects in rural areas

3.2 Productive Use Systems

There has been no comprehensive study on solar for productive use of energy (PUE) in the country, but even without a working framework, private companies and donors in the sub-sector have recorded successes, and the government considers PUE as part of its universal access goal.²⁶

Assuming a market penetration of 25-50 per cent, it is estimated that total market potential for solar photovoltaic (PV) products for irrigation in Senegal is EUR55-111 million (USD64.9–131 million) with additional growth opportunities as the area under irrigation expands.²⁷ Bonergie offers solar pumps, solar cold storage and solar fruit dryers. It has done more than 200 solar pump installations. Most of its sales are on credit.²⁸ E3C developed a pilot project to solar-hybridize 7,000 pumps and are seeking to expand it throughout the country. The project has received a guarantee from Priority Investment Guarantee Fund (FONGIP) and is funded by La Banque Agricole (LBA) for more than XOF400 million (USD800,000).²⁹

According to Get.Invest, there is also significant market

potential in the milk value chain, with over 450,000 households in Senegal involved in livestock keeping. It is estimated that an installed capacity of close to 20MW would be required to serve all livestock farmers. Consequently, the market value for solar PV products for cooling could reach EUR7.7 million (USD9.1 million) assuming a PV product price of EUR2 (USD2.36) per watt and 20 per cent market penetration.³⁰

3.3 Business Council of Renewable Energies of Senegal (COPERES)

Created in 2015, COPERES is local private body in the SAS sector that defends the economic interests of its member companies and renewable energy professionals.³¹ Although it had a slow start during the first years of existence, it has become more active following a renewal in its governance in 2019. It has a Permanent Secretary who coordinates activities and is in charge of administration matters. It has recently advocated for COVID-related relief to the renewable energy sector to the Ministry of Petroleum and Energy (MPE) but has not yet been successful.

25. USAID (2019). *Off-Grid Solar Market Assessment – Senegal*.

26. USAID (2019). *Off-grid solar Market Assessment – Senegal*.

27. Get.Invest (2019). *Senegal – Renewable energy applications in agricultural value-chains: Developer guide*.

28. USAID (2019). *Off-grid solar market assessment – Senegal*.

29. *ibid*

30. Get.Invest (2019). *Senegal – Renewable energy applications in agricultural value-chains: Developer guide*.

31. COPERES membership.

4. POLITICAL FRAMEWORK

4.1 Government Institutions

As evidence grows that SAS products are contributing to energy access, the Government of Senegal is increasingly interested in the sector. Although it does not officially recognise SAS as electrification, there is increasing acknowledgement that they are a complementary and competitive solution. The recent exemption of 18 per cent VAT on some solar products is an example of this recognition. This said, Senegal discovered gas and oil recently, and its imminent exploration of these resources is of major

focus to reduce domestic energy costs for local industry.

Despite the enduring dominance of SENELEC, institutional reforms over the last 25 years have expanded the number and roles of agencies acting within the electricity sector. Recently the government had sought to reduce duplication between agencies and cut costs by merging them, but this review has been paused.

Table 3: Government institutions in the SAS sector

Institution	Description and recent activity
Ministry of Petroleum and Energy (MPE)	Governs the energy sector. There have been four changes of minister between 2017 and 2020, the most recent in November 2020. The Directorate of Electricity is its technical arm.
Electricity Regulatory Board (Commission de Régulation du Secteur de l'Électricité) – CRSE	Regulates the sector. Recently resumed discussions on harmonisation of tariffs following COVID-19 delays.
National Electricity Utility of Senegal (Société National d'Électricité) – SENELEC	Sole buyer, wholesale distributor and seller of grid electricity nationally for the period defined in its concession contract.
National Rural Electrification Agency (Agence Sénégalaise d'Électrification Rurale) – ASER	Oversees off-grid rural electrification. Secured funding from the Green Climate Fund (GCF) in August 2020, which includes a EUR1.8 million (USD2.14 million) grant and EUR73.6 million (USD87.6 million) concessional loan, to finance renewably powered mini-grids. ³²
National Agency for Renewable Energy (Agence Nationale pour les Énergies Renouvelables) – ANER	Promotes renewable energy through legislation, policy and research. Includes distributed solar solutions for health centres, schools, and drinking water systems.
National Off-Grid Consultation Framework	A consultative group of government, private companies and development partners that meets quarterly. Facilitates improvement and implementation of off-grid policies and offers capacity building support. A sub-Framework Working Group is currently facilitating the implementation of the VAT exemption decree, clarifying procedures and training more than 120 customs and tax agents to recognise eligible products.

4.2 Policy and Regulatory Framework

Published every five years since 1997, the Energy Sector Development Policy Letter (LPDSE) has been the principal document guiding Senegal's energy policy. The current LPDSE 2019–2023 covers:

- Electricity tariff harmonisation at national level;
- Electrification of community services and productive uses;

- Support for renewable energy development through fiscal incentives; and
- Establishment of a quality control system for renewable energy equipment.

The table below summarises recent changes in the SAS policy and regulatory environment.

³². Green Climate Fund (2020). ASER Solar Rural Electrification Project.

Table 4: Recent policy and regulatory activity in the SAS sector

Policy / regulation	Description and recent activity
Order No. 010 158 VAT exemption	Utility-scale renewable energy equipment has already been exempted from import duty and VAT. In May 2020 the Ministry of Economy and MPE signed an inter-ministerial binding agreement targeting 22 components including equipment for solar power generation (e.g., panels, inverters, batteries, solar lanterns, solar kits, solar irrigation kits) to be exempted from VAT. A Working Group has been established under the National Off-Grid Consultation Framework to support the speedy implementation of this agreement. There is also some discussion on advocating the expansion of exemption to solar appliances.
Code of Electricity, 2020	Currently at validation stage. Touches on SAS, with chapter on decentralised energy and a regulatory framework of the sector.
Quality standards	ACE TAF and CLASP have engaged the Senegal Bureau of Standards (ASM) regarding a roadmap for the adoption of IEC 9-8 standards (<350Wp solar).

E-waste

There is little solar e-waste management (collection, processing, or recycling) by SAS distributors in Senegal.³³ Distribution agents serving last mile customers are often the point people for warranty servicing and end-of-life product collection and disposal.

The Global Green Growth Institute (GGGI), as part of the South Korean Technical Assistance to the government of Senegal, has recently launched a waste management project with a component of waste from electrical and electronic equipment (WEEE).³⁴

Gender and Social Inclusion

The National Action Plan for Gender Integration in Energy Access (PANGE), validated in October 2020 by the Ministry of Energy and other stakeholders, is meant to address the gender gap in the main energy sector documents. The National Strategy for Equity and Gender Equality (SNEEG) (2015-2025), which integrates gender issues into development priorities³⁵, is currently under review.

33. USAID (2019). *Sustainable solar e-waste and battery technology management: A qualitative study of off-grid solar markets across Uganda and Senegal.*

34. GGGI (2019). *Project reference profiles – Senegal (SN2) green secondary cities wastewater, plastic waste and WEEE management: Innovative business model.*

35. *Empower Women (2015). Senegal national strategy for women's empowerment.*

5. FINANCING

5.1 Supply Chain Financing

Senegal is a member of the West African Economic and Monetary Union (WAEMU), or Union Économique et Monétaire Ouest Africaine (UEMOA). The union, which includes seven other countries, uses the West African CFA Franc that is pegged to the euro. The macroeconomic environment of WAEMU provides its members the benefit of relatively low rates of inflation and low interest rates compared to non-WAEMU countries within the larger Economic Community of West African States (ECOWAS). According to a 2019 report of the WAEMU Banking Commission,³⁶ average inflation rate for Senegal was approximately 1 per cent, while the average inter-bank interest rate during the same period was about 4.3 per cent.

While debt financing is critical for the development of the SAS sector, local financial institutions have been reluctant to provide loans, requiring collateral that many companies cannot provide. Perceptions are slowly changing as local banks, especially those experienced in the agricultural sector, like LBA and Locafrique (which has lent to Ilamel), take a closer look at the off-grid productive use sector. But their ability to offer favourable terms to the sector, even with an 80 per cent guarantee instrument such as the FONGIP and others (see Table 5), remains unclear.

Table 5: Institutions supporting lending to the SAS sector

Institutions	Mandate
Sovereign Funds Strategic Investment (FONSIS)	A government fund that invests equity and quasi-equity in projects with high potential for economic growth and job creation, mainly in renewable energy and agriculture. No SAS company has been funded so far.
Priority Investment Guarantee Fund (FONGIP)	Seeks to improve access to credit for small enterprises. It has a guarantee programme for projects that replace diesel with solar and has expressed interest in supporting SHS companies, but no SAS company has been engaged so far.
Special Fund for the Energy Sector (FSE)	In the electricity sector, FSE is used to subsidise the government's tariff harmonisation scheme, providing funds to both SENELEC and concession operators to ensure that they can charge the same tariffs. It offers similar subsidies for mini-grids under the Local Rural Electrification Initiative (ERIL), though this development has yet to take place.

The West African Development Bank (BOAD) through the Green Climate Fund (GCF) has funded the ASER Solar Rural Electrification Project³⁷, a EUR1.8 million (USD2.14 million) grant and EUR73.6 million (USD87.6 million) concessional loan to support the government with concessional co-funding to mobilise private sector participation in the domestic renewable energy market.

In 2020, the USAID Climate Economic Analysis for Development, Investment, and Resilience (CEADIR)

provided technical assistance to La Banque Agricole (LBA) and Banque Internationale pour le Commerce et l'Industrie du Senegal (BICIS) to help them accelerate lending to the renewable energy sector, particularly off-grid solar PV. LBA has now become the second Green Climate Funds (GCF) accredited institution in Senegal and the only such private financial institution in West Africa. With the guidance of CEADIR, LBA has also developed a strategic plan for renewable energy lending (2020–2022) for end-users of solar water pumps.

36. WAEMU Banking Commission (2019). Annual report.

37. Green Climate Fund (2020). ASER Solar Rural Electrification Project.

5.2 Consumer Financing

Banks are generally reluctant to lend to consumers for purchase of SAS products, with the exception of productive use systems. It is common to find high interest rates, high security requirements and short repayment terms. Typically, consumer financing is possible only through microfinance institutions (see below) or informal financial services such as local money lenders, cooperative societies, and rotating savings and credit associations.

Recent Get.Invest and ECREEE/ROGEP reports emphasise that financial instruments for SMEs as end-users of renewable energy represent an important category because they tend to be commercially viable and are thus important for the long-term sustainability of the SAS systems.³⁸

MFIs have been a significant feature of the Senegal SAS market for several years and continue to grow in importance. Most major SAS players have some level of MFI partnership, ranging from wholly owned subsidiaries to loose affiliations. Baobab+ is a subsidiary of Microcred, while other MFIs provide loans on their own balance sheet while the SAS company handles installation and after-services. Bonergie has a relationship with Caurie Microfinance focused on selling solar refrigerators, and intend to expand to TVs. Suntaeg has a programme in collaboration with Senegal Mutual Credit (Credit Mutuel de Senegal – CMS) to provide credit for a wider range of systems, including customised systems, than it would be able to finance on its own capacity as a PAYG provider.

Orange Energie was launched by the mobile money operator to take advantage of its wide network to offer energy services in remote areas.



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38. Get.Invest (2019). *Senegal – Renewable energy applications in agricultural value-chains: Developer guide*; ECREEE (2019). *Regional off-grid electrification project: Off-grid solar market assessment & private sector support facility design – Senegal report*.

6. MARKET SUPPORT

There are a number of initiatives involving Senegal's financing partners focused on providing financial and technical support in order to improve or support off-grid/rural electrification efforts.³⁹ Some are listed in the following table.

Table 6: Development partners in the SAS sector

Development partner: Programme	Type of assistance	Description
Foreign and Commonwealth Development Office (FCDO): Africa Clean Energy (ACE) Technical Assistance Facility (TAF)	Technical assistance	Support to the off-grid solar enabling environment to catalyse private sector delivery of solar solutions to vulnerable populations.
Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ): Energising Development (EnDev)	Financing	HH electrification with SAS. Results based financing is under discussion.
GIZ: Programme Energie Durable (PED)	Technical assistance	Rural electrification with a focus on mini-grid development for PUE and employment in off-grid areas.
United States Agency for International Development (USAID): Power Africa Off-grid Project (PAOP)	Technical assistance	Support to SAS companies including information on accessing funding opportunities
Tony Blair Institute (TBI)	Technical assistance	Coordinating donors on energy access.
Millennium Challenge Account (MCA)	Financing	Grid focus but interested now in SAS. Took part in a recent donor roundtable.
World Bank: Regional Off-Grid Electrification Project	Technical assistance, financing	Overall objective is to increase electricity access for households, businesses and public institutions using modern, SAS systems through a harmonised regional (West Africa) approach. Primarily provides technical assistance to companies and is now financing some projects.

To support the sales and installation of quality solar products, the Solar Systems Test Center (CT2S) offers testing and installation services for SAS customers. It also offers research services and training for installation professionals.

The World Bank and ECREEE 2019 Regional Off-Grid Electrification Project: Off-Grid Solar Market Assessment & Private Sector Support Facility Design – Senegal Report is a key source of recent market data in the country.

39. ECREEE (2019). *Regional off-grid electrification project: Off-grid solar market assessment & private sector support facility design – Senegal report.*



ACE TAF PARTNERS INCLUDE:



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