

# Impact of Import Duties and VAT on the Affordability & Uptake of Off-Grid Solar Products Across ECOWAS

West African Renewable Energy Association (WAREA)



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## Foreword by the Industry Associations

**As of 2016 according to International Energy Agency, over 200 million people in West Africa and the Sahel – more than half of the region’s population – lacked access to electricity. This figure represents nearly one-third of Africa’s total un-electrified population. Rates of urban and rural electrification vary widely across the region, with the average rate of access nearly three times higher in urban areas.**

Despite these challenges, West Africa is generously endowed with renewable energy (RE) resources and policymakers are increasingly looking to utilize RE in rural electrification planning, as it offers a timely, flexible and relatively affordable complement to proposed grid extension initiatives. Solar energy is a promising technology, as it presents the most economical solution for off-grid and mini-grid electrification in remote areas. However, investments in the power sector remain high-risk due to a variety of regulatory and political risks and market instability. A major constraint to the diffusion of renewable energy technologies, and especially for solar, in the region is the effect of custom duties and VAT on the affordability of products. In the region, various governments are applying differing rates of import duties to enhance revenues, while on the other hand constraining the adoption of solar technologies.

ECOWAS adopted a common external tariff (CET) in January 2015 to attain near-complete integration by 2020. The CET is aimed at minimizing lost revenues that may arise from competition in external tariff rates between the member states. The region has yet to fully benefit from this CET policy. Due to the charges imposed on solar technologies under the ECOWAS Common External Tariffs (CET), solar technologies have become more expensive and thereby unaffordable across the region. This is a deterrent towards achieving SDG 7 of creating access to affordable, reliable, and clean energy for all by the year 2030. However, there is a massive opportunity for the scaling up of off-grid solar in the region, given the number of people without access to energy. This report was focused on exploring the macroeconomic effect of import duties and VAT on the affordability of solar home systems across ECOWAS.

As part of the Transforming Energy Access (TEA) programme, GOGLA is leading the project ‘PowerUp!’, which focuses on strengthening national renewable energy associations (NREAs) to promote the off-grid solar market. The PowerUp! Network has brought together different NREAs in Africa to network, share experiences and learn lessons from success stories and this led to the idea of the project. At one of the PowerUp! Network training programs held in Nairobi, Kenya, NREAs from West Africa came together to undertake this activity and to enhance relationships amongst themselves.

The key objective of the joint activity was the review of the ECOWAS Common Tariff Tariffs (CET), harmonization of HS (Harmonised System) Codes in West Africa, sub-Saharan Africa region and a comprehensive review and modification of tariffs on custom duties and Value-Added-Tax/GST (Goods and Services Tax) with the ultimate aim of removing custom duties and VAT on off-grid solar products across ECOWAS. This joint activity is an added value to any effort already carried out by any of the NREAs and has created room for more collaborations and partnership, one key outcome was the launch of the West Africa Renewable Energy Alliance (Federation) which included NREAs from Senegal, Sierra Leone, Togo, Benin, Cote D’Ivoire, Ghana, Liberia and Nigeria. Efforts are also on-going to formalise the association and include all the NREAs in the region.

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# Executive Summary

**The off-grid solar market in West Africa is at an early stage of development, and must overcome market barriers to accelerate affordable, reliable and clean energy for all by 2030 towards meeting the SDG 7 goals. In West Africa, solar energy equipments and accessories attract some of the highest import duties and VAT globally. This is a major factor causing significant increases in the supply cost of electricity, particularly when solar energy, are often the easiest and most cost effective a options to enhance access to electricity in rural and remote areas. However, due to the the import duties and VAT imposed on solar technologies and their components, these technologies become more expensive and therefore unaffordable for many across the region. This is a deterrent towards achieving SDG 7.**

The number of people without access to energy estimated to be over 170 million and there is a massive opportunity to scale up off-grid solar in the region, given the data around unelectrified population.<sup>1</sup> Nigeria alone accounts for over half of this figure, with most of the population living in rural areas.<sup>2</sup> Therefore, eliminating taxes on solar equipment can accelerate market growth and energy access in rural and remote areas through making off-grid solar products more affordable.

This paper examines the status of the off-grid solar sector in selected West African countries (Benin, Cote d'Ivoire, Nigeria, Senegal, Sierra Leone, and Togo) to ascertain the benefits of a regional approach for tax exemptions on solar products. It further reviews the status of off-grid electrification across the region, the current policy and regulatory frameworks, the fiscal environment for off-grid solar, as well as several sector development programmes and key stakeholders present. It then reviews the ECOWAS Common External Tariffs (CET) as well as the national tariffs, and further conducts an analysis to assess the impact of VAT and import duties on the affordability and uptake of off-grid solar products, and finally concludes by highlighting the benefits of implementing tax exemptions for solar products in the region as well as providing recommended approaches.

## **The key finding of this research rests on three pillars:**

- a. That import duties and VAT on solar products increase the prices of solar products which pushes these products out of the reach of rural communities who need them the most.
- b. That eliminating import duties and VAT on solar products would significantly reduce the final cost and lead to a greater number of people with access to off-grid electricity throughout West Africa.

- c. It further demonstrates that by stimulating the market through the reduction of cost of products for the end consumer, that opportunities for businesses through increased economic activities will emerge and will lead to improved livelihoods, especially in rural areas.

## **In view of the findings above, this research recommends the following:**

1. That there should be a regional exemption of import duties and VAT on products across the ECOWAS that meets the IEC TS 62257-9-5 (Laboratory evaluation of stand-alone renewable energy products for rural electrification) and IEC TS 62257-9-8 (Integrated systems – Quality standards for stand-alone renewable energy products with power ratings less than or equal to 350 W) quality standards. This will ensure the importation of only quality products into the region, thereby encouraging rural communities to own quality products at a low cost. This exemption should be aligned to the African Continental Free Trade Agreement, with supporting mechanisms amongst sub-regional corridors to ensure implementation.
2. That unlocking regional demand for off-grid solar products can be achieved, by supporting the development of the sector through simplified and harmonized regional tax regimes, to enhance product affordability across the region. For example, the inclusion of solar technologies in the zero percent duty for machineries and equipment for priority sectors as part of the ECOWAS Common External Tariff (CET) would go a long way in unlocking this demand.
3. That there should be a harmonised application of the HS codes across the sub-region for solar products, in line with the current variety of products in the market.

<sup>1</sup> ECREEE. ROGEP promoting stand alone solar system in West Africa. <http://www.ecreee.org/page/rogep-regional-off-grid-electrification-project#:~:text=ECOWAS%20Centre%20for%20Renewable%20Energy,Central%20Africa%20Republic%20and%20Mauritania.>

<sup>2</sup> Lighting Africa. Lighting Africa/Nigeria: Tackling Energy Poverty at its source. [2020]. <https://www.lightingafrica.org/lighting-africa-nigeria-tackling-energy-poverty-at-its-source/>

# Executive Summary

4. That there should be a regional approach through collaboration between ECOWAS governments, the ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE), the West African Renewable Energy Association (WAREA), along with other industry associations, donor/development partners, and investors in developing the regional market for off-grid solar.

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# Background

Energy is the lifeblood of the modern global economy. It is essential to economic growth, national competitiveness, and social progress. Nevertheless, its transformative benefit is yet to reach over 789 million people around the world including over 548 million sub-Saharan Africans (almost 70 percent) who live without access to electricity.<sup>3</sup> Whilst the off-grid population is forced to utilise inefficient and harmful sources of energy, the connected population on the other hand is constrained by unreliable and intermittent grid electricity supply. This problem is particularly acute in sub-Saharan Africa where as many as half a billion people live in poverty which is compounded by the lack of electricity for improved livelihood and economic development.<sup>4</sup>

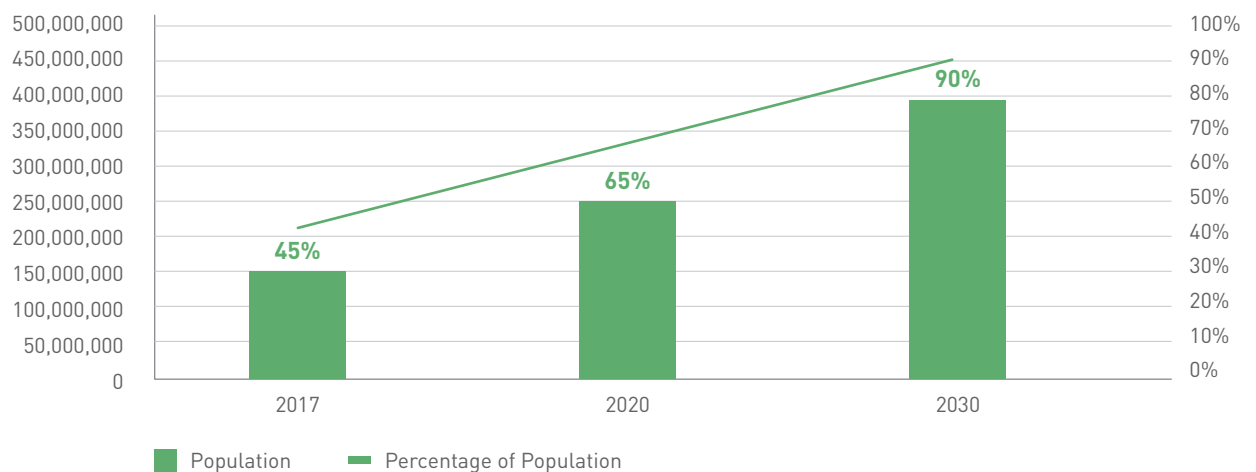
In recent years however, the off-grid energy market in sub-Saharan Africa has witnessed significant growth, in part due to concerted efforts from various actors including donors, industry associations, market development organisations, and government. On the demand side, there has been an increasing awareness around the benefits of solar systems as an alternative

to the grid power and fossil fuel alternatives. On the supply end, there is a growing supplier network activated by market structures (particularly - policies and regulations, subsidies, quality standards, access to finance, market intelligence, multi-stakeholder coordination), that have made the solar industry more attractive to new businesses and financiers.

The World Bank estimates that the West African region has one of the lowest per capita energy consumptions at 160kWh with more than 50% of its population lacking access to electricity.<sup>5</sup> According to the ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE), the grid in many of its countries serve only urban and peri-urban areas (except Cape Verde and Ghana) with most rural areas dependent on polluting fossil-fuel energy sources.<sup>6</sup>

The electricity access rate across ECOWAS is projected to reach 90% by 2030 given the current targets of its countries. Currently, only 3% of the region is served by off-grid and decentralised electricity.<sup>8</sup> However, the share of rural communities

**Figure 1. ECOWAS Electricity Access Trajectory<sup>7</sup>**



SOURCE: ECOWAS Center for Renewable Energy (ECREEE)PAYGo.

3 IEA, IRENA, UNSD, World Bank, WHO (2020). Tracking SDG 7: The Energy Progress Report. World Bank, Washington DC. Available at: <https://www.irena.org/publications/2020/May/Tracking-SDG7-The-Energy-Progress-Report-2020>

4 Rocky Mountain Institute (2018). Sharing the power: A community-engaged energy access opportunity for Sub-Saharan Africa. Available at: <https://rmi.org/wp-content/uploads/2019/11/RMI%E2%80%99s-Dream-Extra-Project-Proposal-for-the-Dutch-Postcode-Lottery-Sept-2018-3.pdf>

5 ECOWAS - Regional Electricity Access Project (Phase 1). World Bank. <http://documents.worldbank.org/curated/en/255671520767160025/pdf/Concept-Project-Information-Documents-Integrated-Safeguards-Data-Sheet.pdf>

6 ECREEE Business Plan 2011 – 2016. ECOWAS Centre for Renewable Energy and Energy Efficiency. [http://www.ecreee.org/sites/default/files/ecreee\\_business\\_plan.pdf](http://www.ecreee.org/sites/default/files/ecreee_business_plan.pdf)

7 ECREEE (2017). From Vision to Coordinated Action: Consolidation of SEforALL Action Agendas, National Renewable Energy Action Plans, and National Energy Efficiency Action Plans. Available at: [http://SEforALL.ecreee.org/sites/default/files/final\\_report\\_on\\_SEforALL\\_consolidation.pdf](http://SEforALL.ecreee.org/sites/default/files/final_report_on_SEforALL_consolidation.pdf)

8 World Bank Group (2019). ECREEE: Off-grid solar market assessment and private sector support facility design regional report. Available at: [http://www.ecreee.org/sites/default/files/ecreee\\_rogep\\_regional\\_report.pdf](http://www.ecreee.org/sites/default/files/ecreee_rogep_regional_report.pdf)

## Background

served by the off-grid is expected to reach 25% by 2030 which is approximately 60 million people.<sup>9</sup> However, the current pace of electrification is not enough to meet the 2030 targets, and the outbreak of COVID-19 has set many countries back in their energy access targets. Closing the energy access gap will require efforts on multiple fronts, especially when it comes to policy frameworks and business models. As stated in the Tracking SDG7 report: “The shortfall in meeting the target reflects the complexities involved in bringing electricity to unserved populations—complexities that extend to affordability, reliability, and the cost of deploying last-mile solutions, especially in low income, remote, or conflict-affected countries. As of 2018, 57 percent of those without access lived in low-income countries, 30 percent in fragile and conflict-affected areas.”<sup>10</sup> Hence, to ensure energy access for the most vulnerable populations, it is crucial to create an enabling environment that ensures progress towards SDG7.

Despite the progress made in the off-grid space and the potential for off-grid solar, several barriers still hinder the market in West Africa, including the existence of high import duty tariffs and taxes on solar components, and the lack of harmonisation of the ECOWAS Common External Tariff (CET). As a result, the solar products which are the most beneficial to the rural population remain unaffordable across the region.<sup>11</sup> The non-uniformity in the classification of solar products as well as the arbitrariness of duties on solar products by government Customs Agencies in the region hinder their delivery for electrification. These barriers prevent the attainment of the various electrification goals of countries in the region as well as the attainment of SDG 7 – increased access to affordable, reliable, and clean energy. It also does not show government’s commitment towards achieving its Nationally Determined Contribution (NDC) and negatively impacts the private sector, discouraging the influx of investment required to catalyse the market.

**COVID-19 has set many countries back in their energy access targets**



**ONLY 3%**  
of the region is served by off-grid and decentralised electricity currently

<sup>9</sup> ibid

<sup>10</sup> IEA, IRENA, UNSD, World Bank, WHO (2020). Tracking SDG 7: The Energy Progress, Report. World Bank, Washington DC. © World Bank-Tracking SDG 7, p.17.

<sup>11</sup> ECDPM (2017). Political Economy Dynamics of Regional Organizations in Africa,“. Available at: <http://ecdpm.org/wp-content/uploads/ECOWAS-TradePolicy-Brief-PEDRO-Political-Economy-Dynamics-Regional-Organisations-Africa-ECDPM-2017.pdf>.



# The Status of Off-Grid Electrification and Renewable Energy Policies and Targets in the ECOWAS region

To increase rural electrification, countries across sub-Saharan Africa including ECOWAS have adopted rural electrification targets. The West African focus countries (Benin, Cote d'Ivoire, Nigeria, Senegal, Sierra Leone, and Togo), through their policies and programs are adopting a mix of grid-extension and off-grid (mini-grids and solar home systems)

approaches to achieve these targets.

The increase in options for rural electrification through off-grid solar solutions has not eliminated the need for grid extension however, it has merely reduced the over-reliance on it. The table above highlights the current rural electrification rates in the selected case study countries.

**Table 1. ECOWAS Countries and Current Rural Electrification Rates and Targets<sup>12</sup>**

Country	Rural Electrification Rate (2016)	Rural Electrification Target (Year)
Benin Republic	18%	25% (2025)
Cote d'Ivoire	36.6%	100 (2030)
Nigeria	41.1%	60% (2020)
Senegal	38.3%	90% (2025)
Sierra Leone	2.5%	70% (2030)
Togo	7%	100% (2030)

As part of the ECOWAS region, these countries operate in diverse frameworks of regional and national electrification and energy policies. The table below is a summary of regional policies and plans to support off-grid energy.

The policies below were launched to promote regional energy integration. Initiatives such as the Common External Tariff among member states are expected to expedite regional progress towards a common market by eliminating barriers to free movement of goods.

SOURCE: Sustainable Energy for All (2019)<sup>13</sup>

**Table 2. Regional Energy Policies**

Policy	Objectives
Common Energy Policy (CEP)	The Union Economique et Monétaire Ouest Africaine (UEMOA) / West African Economic and Monetary Union (WAEMU) in cooperation with ECOWAS, adopted a common energy policy in 2001 for member states to secure energy access, promote renewable energy, energy efficiency and sustainable development among others.
ECOWAS-UEMOA partnership agreement	Signed in 2005 between ECOWAS and UEMOA to support the development of energy access services in rural and peri-urban zones, promotion of renewable energy sources, regional energy information systems among others.
ECOWAS Energy Protocol (EEP)	ECOWAS members adopted the EEP in 2003, which intended to establish a legal framework to promote long-term cooperation in the region's energy sector and to create a regulatory environment conducive to investment and integrate energy trade in West Africa.
ECOWAS Renewable Energy Policy (EREP)	Adopted in 2013 to assist member states with the design and implementation of the appropriate legal and regulatory framework to promoted development of renewable energy technologies aimed at achieving SDG 7.
West African Power Pool Master Plan (WAPP)	WAPP master plan was adopted by ECOWAS in 2012 to create a fully integrated regional electricity market by 2025 through harmonizing the framework conditions of national energy markets with the region, among others.

SOURCE: Sustainable Energy for All (2019)<sup>13</sup>

<sup>12</sup> Sustainable Energy for All Africa Hub (2021). Country Data. <https://www.se4all-africa.org/seforall-in-africa/country-data/>.

<sup>13</sup> Sustainable Energy for All (2019). Country Data. <https://www.se4all-africa.org/seforall-in-africa/country-data/>.

# The Status of Off-Grid Electrification and Renewable Energy Policies and Targets in the ECOWAS region

## 2.1 ECOWAS Common External Tariff and Harmonized Systems

A Common External Tariff (CET) sets the same customs duties, import quotas, preferences as well as other non-tariff barriers to trade -- applicable to all goods entering a territory, regardless of which country within the territory they are entering. In the case of ECOWAS, the member states on the 25th of October 2013 adopted the ECOWAS CET which consists of 5,899 tariffs lines with five different bands namely:<sup>14</sup>

- Zero (duty-free) on 85 of the tariff lines for essential social goods;
- 5% duty charge on 2,146 tariff lines for goods of primary necessity, raw materials, and specific inputs;
- 10% duty charge on 1,373 tariff lines for inputs and intermediate goods;
- 20% duty charge on 2,165 tariff lines for final consumption goods; and
- 35% duties on 130 tariff lines for specific goods for economic development.

Tariff is tax imposed on goods and services between countries, usually following the Harmonized Commodity Description and Coding System (HS). The HS codes were developed by the World Customs Organization to replace the previously used Standard International Trade Classification (SITC). It is an internationally standardized system of codes and product descriptions used in the classification of traded products and serve as a framework for the collection of international trade statistics.<sup>15</sup>

The ECOWAS CET is expected to integrate the region towards a common market by eliminating barriers to goods within the region and it aims to promote regional harmonization - it is the benchmark for the import taxes by member states. The CET and fiscal policy measures allow for the implementation of supplementary protection measures. These measures include an import adjustment tax and a supplementary protection tax intended to facilitate the adjustment of ECOWAS states during the first five years of the CET implementation. However, states

have the flexibility to determine their import duties according to national fiscal policies and hence the import duty rates for solar products remain different across the region.

In countries like Nigeria, the implementation of the CET and the supplementary protection measures resulted in higher prices for solar products.<sup>16</sup> With effect from 11th April 2015, imports into Nigeria became subject to the rates contained in the CET 2015-2019, without recourse to the prior applicable rates. A key feature of the CET is a reduction of import duty rates on specific items on the national lists, which are all aimed at promoting the development of sectors deemed critical to the economy. Notable amongst are zero percent duty for machineries and equipment for priority sectors – including but not limited to - Agriculture, Cement, Power (including solar), Hospitality, Iron and Steel, Solid Minerals, Textile and Aviation. However, the current HS codes and descriptions fail to reflect the wide range of solar technologies, appliances and components including different types of solar systems currently available in the market. At present, most solar technologies are included as part of a broader product group. In addition, imports of these products are not easily measured, because they can be imported under many different codes.<sup>17</sup>

Therefore, a further harmonized approach towards the CET policy and application of HS codes is needed across the region. Harmonisation and coordination approaches are among the traditional policy means used to increase the level and depth of regional cooperation. The ECOWAS legal system is based on the harmonization of existing national policies by the adoption of community acts (that is, regulations, recommendations, decisions, directives, acts/ protocols). Therefore, a harmonization of the ECOWAS CET will lead to unification and centralization of national policies to align with sub-regional and regional policies.<sup>18</sup> Harmonization process could be initiated by a member state or by the ECOWAS council of ministers in a specific sector (such as renewable

14 The Common External Tariff (2016). Deutsche Gesellschaft für Internationale Zusammenarbeit [GIZ] GmbH [https://www.ecowas.int/wp-content/uploads/2016/06/CET\\_Factsheet\\_EN.pdf](https://www.ecowas.int/wp-content/uploads/2016/06/CET_Factsheet_EN.pdf).

15 HBS (2019). Policy Research on the imposition of 10% Tarrif Duties on Solar Components: Making a way for Solar in Nigeria Available at [https://ng.boell.org/sites/default/files/uploads/2019/07/final\\_35\\_page\\_-\\_policy\\_research\\_on\\_the\\_10\\_duties\\_on\\_solar.pdf](https://ng.boell.org/sites/default/files/uploads/2019/07/final_35_page_-_policy_research_on_the_10_duties_on_solar.pdf).

16 Policy Research on the imposition of 10% tariff duties on solar component: Making a way for solar in Nigeria. Available at: [https://ng.boell.org/sites/default/files/uploads/2019/07/final\\_35\\_page\\_-\\_policy\\_research\\_on\\_the\\_10\\_duties\\_on\\_solar.pdf](https://ng.boell.org/sites/default/files/uploads/2019/07/final_35_page_-_policy_research_on_the_10_duties_on_solar.pdf).

17 ACE TAF (2019) Importation Guide for Solar PV Products and Technologies in Nigeria. Available at: <https://www.ace-taf.org/wp-content/uploads/2020/01/ACE-NIGERIAN-IMPORTATION-GUIDE-2019122001.pdf>

18 See Supplementary Protocol A/SP.1/06/06 amending the Revised ECOWAS Treaty, 2006.

# The Status of Off-Grid Electrification and Renewable Energy Policies and Targets in the ECOWAS region

energy). This process involves a long legislative process before adoption. The implementation of harmonized policies is primarily the responsibility of member states.<sup>19</sup>

In 2019, the World Customs Organization (WCO) organized a programme for HS in Africa which led to the adoption of the 2022 version of the HS

by ECOWAS. In the debriefing session, the WCO, ECOWAS and the UEMOA agreed on a roadmap of follow-up activities to streamline the process of the implementation of the HS amendments at regional and national levels.<sup>20</sup> Overall, the CET remains to be well established although it is becoming gradually more important for the region while the trade integration remains to be in progress.

## To sum up

### 5,899 tariffs with 5 different bands

**Zero (duty-free)**  
on **85 of the tariff lines** for  
essential social goods



**5% duty charge** on **2,146 tariff lines** for  
goods of primary  
necessity, raw materials,  
and specific inputs



**10% duty charge**  
on **1,373 tariff lines**  
for inputs and intermediate  
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**20% duty charge** on  
**2,165 tariff lines** for final  
consumption goods



**35% duties** on **130**  
**tariff lines** for  
specific goods for  
economic development



19 United Nations Conference on Trade and Development (2018). Regional integration and non-tariff measures in the Economic Community of West African States (ECOWAS). Available at: [https://unctad.org/en/PublicationsLibrary/ditctab2018d1\\_en.pdf](https://unctad.org/en/PublicationsLibrary/ditctab2018d1_en.pdf).

20 <http://www.wcoomd.org/en/media/newsroom/2019/july/ecowas-is-getting-ready-to-implement-hs-2022.aspx>

# The Status of Off-Grid Electrification and Renewable Energy Policies and Targets in the ECOWAS region

## 2.2 Overview of current VAT and duty rates and import tax and VAT incentives in West Africa

A few West African countries have introduced import tax incentives for solar energy equipment. Sierra Leone has no import duties or VAT on solar equipment since 2017. Cote d'Ivoire on the other hand, has a 50% reduction in VAT for solar equipment. These incentives are taken into consideration in assessing the size of revenues from import duties and VAT. On 23 July 2020, the Ministry of Energy announced the exemption of VAT on solar.

It is important to note that in May 2020 through the Federal Ministry of Finance, Nigeria exempted VAT on solar products. However, it is still unclear if the VAT exemptions are being applied as the government's Revenue Authority maintains that VAT still applies to solar products. As such, Nigeria was not included in countries with VAT exemptions in this paper. A summary of existing incentives for each country is shown in the table below.

**Table 3. VATs and Duties on solar products.**

Solar components	Benin		Nigeria		Senegal		Sierra Leone		Togo		Cote d'Ivoire	
	VAT %	ID* %	VAT %	ID %	VAT %	ID %	VAT %	ID %	VAT %	ID %	VAT %	ID %
DC generators (850131)	18	5	7.5	-	18	-	0	0	18	10	9	5
Generating sets (850239)	18	-	7.5	-	18	-	0	0	18	10	9	-
Static converters (850440)	18	-	7.5	5	18	-	0	0	18	10	9	-
Solar panels (854140)	0	-	7.5	5	18	3	0	0	18	0	9	0
Electric torches (851310)	18	-	7.5	-	18	-	0	0	18	10	9	-
Batteries (850680)	18	20	7.5	20	18	27	0	0	18	20	9	20
Lithium-ion accumulators (850760)	18	-	7.5	-	18	-	0	0	18	10	9	-
Electrical machines (854370)	18	-	7.5	-	18	-	0	0	18	10	9	-
Ceiling and wall lights (940510)	18	-	7.5	-	18	-	0	0	18	10	9	-
Non-electric lights (940550)	18	20	7.5	-	18	20	0	0	18	10	9	-
Solar lights and lanterns (940540)	0.2	20	7.5	-	0.2	20	0	0	0.2	10	0.2	-
Solar torches (851310.9)	-	-	-	-	-	-	0	0	-	-	-	-
Solar radio (852799)	0.2	-	0.2	-	0.2	-	0	0	0.2	-	0.2	-
Solar TV (852719)	0.125	-	0.125	-	0.125	-	0	0	0.125	-	0.125	-
Solar fan (841459)	-	-	-	-	-	-	0	0	-	-	-	-

\*ID = Import Dutes

SOURCE: World Trade Organization Tariff Analysis Online (TAO) (2020), GOGLA Nigeria Country Brief (2020), GOGLA Benin Country Brief (2020), ODI Sierra Leone Country Briefing (2020), GOGLA Togo Country Brief (2020), GOGLA Cote d'Ivoire Country Brief (2020), GOGLA Senegal Country Brief (2020)

NOTE: As presented in table 3, the solar components attract various import duties and VAT across the different countries. Engagement with various stakeholders shows that the rates charged on these components are oftentimes different from the published rates.

# The Impact of VAT & Duties on End-User Price & Uptake of SHS in West Africa region

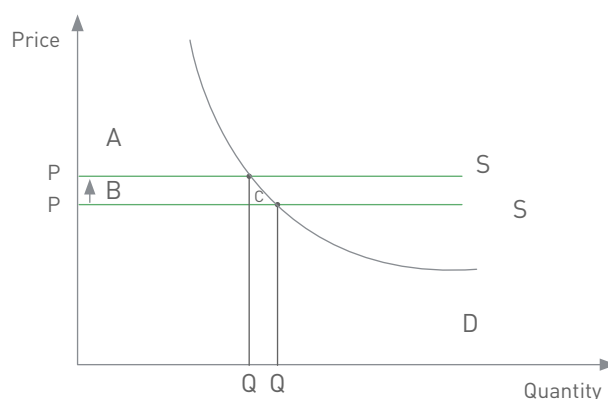
This section will further analyse the impact that import duties and VAT have on the affordability and uptake of solar products in West Africa. It will look into the key studies that have analysed the price-sensitivity of consumers while also include qualitative analysis from stakeholder interviews in the region to further validate the findings.

A study conducted by Duke Nicholas Institute on the true cost of solar tariffs in East Africa shows the price increase resulting from import tariff. Figure 2 shows that for a given quantity of sales, the price is higher because producers tend to raise their prices in response to the higher cost resulting from tariffs. This increase in cost reduces end-users up-take as shown by the downward decline of the demand curve. Consequently, the impact of tariffs on government revenue, due to the increase in cost, and reduction in uptake by end-users, affects sales, and government revenue.

Research has shown that consumers are price-sensitive, that is, their willingness to pay is determined by the price. VAT and import duties on solar products can be as high as 40% of the cost of these products, thereby, inflating prices and putting off-grid products out of reach of last-mile communities who need these products the most.<sup>24</sup> Figure 3 shows that reducing the price of a solar lamp from \$7 to \$4 increased households uptake from 37% to 69%.

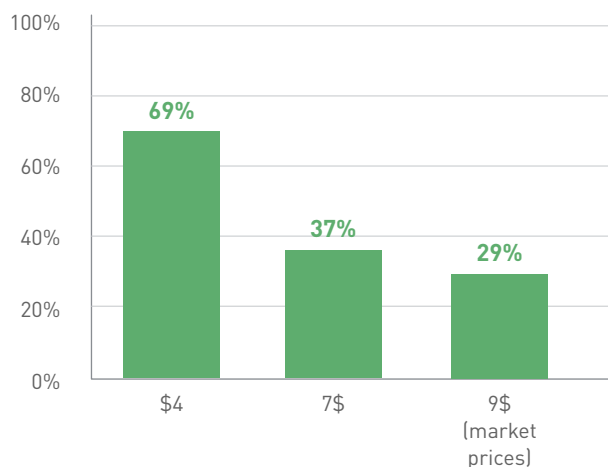
The final costs of solar products inclusive of the taxes make these products increasingly unaffordable to rural consumers. Analysis of the true cost of solar tariffs in East Africa shows that higher prices of solar products are driven by import tariffs, and VAT which has the effect of slowing the electrification process and making it more difficult to attain regional targets.<sup>25</sup> Also, when applied to off-grid solar products, the overall cost to the consumer is increased by around 40%.<sup>26</sup> The analysis in table 5 shows that, when VAT at 18% is applied together with import duties and other fees, it has a multiplying effect on the end-user cost.

**Figure 2. Impact of Import Tariff**



SOURCE: Fetter and Phillips (2019)<sup>21</sup>

**Figure 3. Take-up ratio at different prices**



SOURCE: ETH Zurich et al., (2017)<sup>22</sup> and GOGLA<sup>23</sup>

21 Fetter R. & Phillips, J. (2019). The True Cost of Solar Tariffs in East Africa. Available at: [https://energyaccess.duke.edu/wp-content/uploads/2019/10/true\\_cost\\_of\\_solar\\_tariffs\\_in\\_east\\_africa\\_web.pdf](https://energyaccess.duke.edu/wp-content/uploads/2019/10/true_cost_of_solar_tariffs_in_east_africa_web.pdf).

22 The Economic Impact of Solar Lighting, ETH Zurich & SolarAid, Feb 2017

23 GOGLA. Providing Energy Access through Off-Grid Solar: Guidance for Governments. [https://www.gogla.org/sites/default/files/resource\\_docs/energy\\_access\\_through\\_off-grid\\_solar\\_-\\_guidance\\_for\\_govts.pdf](https://www.gogla.org/sites/default/files/resource_docs/energy_access_through_off-grid_solar_-_guidance_for_govts.pdf)

24 ibid

25 Fetter R. & Phillips, J. (2019). The True Cost of Solar Tariffs in East Africa. Available at: [https://energyaccess.duke.edu/wp-content/uploads/2019/10/true\\_cost\\_of\\_solar\\_tariffs\\_in\\_east\\_africa\\_web.pdf](https://energyaccess.duke.edu/wp-content/uploads/2019/10/true_cost_of_solar_tariffs_in_east_africa_web.pdf).

26 Power Africa Off-grid Project (2019). Off-Grid solar market assessment – Senegal. Available at: [https://www.usaid.gov/sites/default/files/documents/1860/PAOP-Senegal-MarketAssessment-Final\\_508.pdf](https://www.usaid.gov/sites/default/files/documents/1860/PAOP-Senegal-MarketAssessment-Final_508.pdf).

# The Impact of VAT & Duties on End-User Price & Uptake of SHS in West Africa region

While import taxes and VAT represent a small percentage of total tax revenue and their removal would have negligible impact on national and regional tax revenue, under the current system, they increase the cost of these products and affordability constraints for rural dwellers that benefit most from the use of off-grid products. Figure 4 reflects the cost of various stages of SHS before the final cost which ranges from materials, labour, shipping, taxes, sales as well as overheads. It can be concluded that the VAT and import duties contribute the highest cost to SHS equipment which are borne by end-users. These costs imply that end-users could pay an additional \$280 or 29.4% on SHS.

As a region, the West African countries can harmonize their import duties and VAT on solar products and implement a regional exemption on them in order to drive the attainment of their electrification targets, improve the livelihood of rural and vulnerable populations, and catalyse significant private sector investment into the market. A growing body of evidence suggests that taxes act as a barrier to Off-Grid Solar (OGS) market growth, as many consumers are highly price-sensitive.<sup>29</sup> These taxes cumulatively

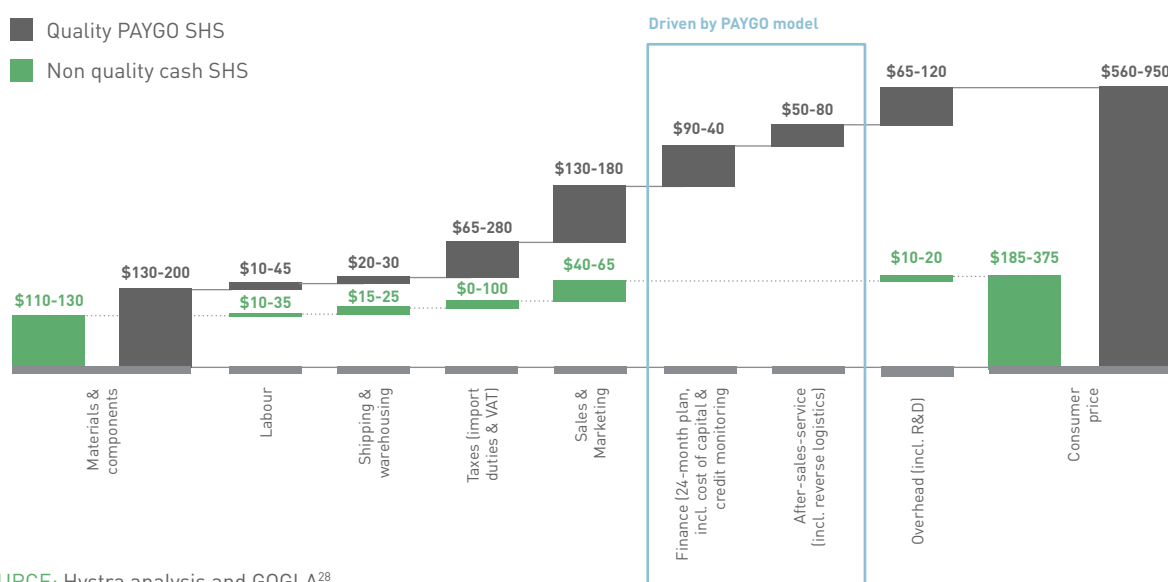
add to the costs of doing business in these countries and therefore the reduction (and eventual elimination) of these taxes will attract more investments and an increased number of off-grid solar businesses into the West African region. In East Africa, evidence shows that a 20% import tariff on solar home systems would yield an 18% reduction in sales.<sup>30</sup> The growth of SHS off-grid market in most countries using exemptions shows governments' recognition of the sector's importance and their willingness to tradeoff government revenue to catalyse the OGS sector. This tradeoff is insignificant, as the revenue generated

**Table 4. SHS Duty and VAT**

	PV	Lights, cables	Circuits	Batteries	SHS Total
Share of Kit Cost	15%	10%	35%	40%	100%
Duty	2,5%	22.5%	12.5%	22,5%	16%
VAT	18%	18%	18%	18%	18%
<b>Total</b>					<b>37%</b>

SOURCE: Power Africa Off-grid Project (2019)<sup>27</sup>

**Figure 4. SHS cost breakdown**



SOURCE: Hystra analysis and GOGLA<sup>28</sup>

<sup>27</sup> ibid

<sup>28</sup> GOGLA, HYSTRA (2020). Pricing quality: Cost drivers and value add in the off-grid solar sector. pg 7. Available at: [https://www.gogla.org/sites/default/files/resource\\_docs/pricing\\_quality.pdf](https://www.gogla.org/sites/default/files/resource_docs/pricing_quality.pdf).

<sup>29</sup> Lighting Global, GOGLA, ESMAP, Vivid Economics and Open Capital Advisors (2020). Off-grid solar market trends report. March 2020.

<sup>30</sup> Fetter, R. & Phillips, J. (2019). The true cost of solar tariffs in East Africa, Duke Nicholas Institute for Environmental Policy Solutions. <https://nicholasinstitute.duke.edu/publications/true-cost-solar-tariffs-east-africa>.



# The Impact of VAT & Duties on End-User Price & Uptake of SHS in West Africa region

from SHS appliances, represents a relatively small fraction of the overall government revenue.

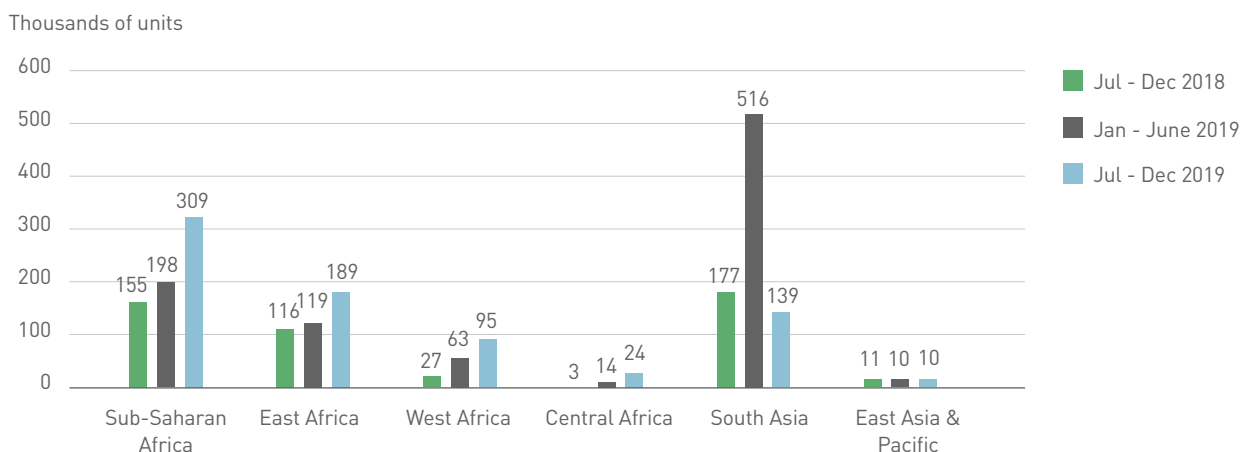
Currently, East Africa dominates most of the investment in off-grid solar and has improved its electrification rates through several fiscal measures including VAT and import duty exemptions on solar products with West Africa lagging behind. Specifically, in Kenya, a 20% tariff would provide government with only an additional US\$ 5million in estimated revenue while causing a reduction in sales of more than 40,000 units each year and leaving those households without access to electricity.<sup>31</sup> Generally, market becomes commercially viable where the cost to serve customers is lower than the ability or willingness to pay for the products. Exemption of tariffs stimulates economic activities among consumer and creates jobs in the OGS value chain, which in the long term, generates more government revenue.<sup>32</sup>

Figure 3 shows the volume of solar products sold across different regions between July 2018 to December 2019. The volume of sales in East Africa is more than that of West Africa. The implication of these figures is that East Africa region will attract more businesses and make more sales than West

Africa. A key factor is the tax exemptions on solar products across the region. A number of factors, including the implementation of a common regional policy including tax exemptions on solar products, the East African off-grid market scaled to become a main point of attraction for private sector players and helped catalyze the market with more household adopting solar products.

With over 200 million unelectrified population in West Africa (over 50% of the ECOWAS population) representing one-third of Africa's total unelectrified population, the opportunity to channel investment to the region is significant. In addition to favorable policies, fiscal incentives such as import duty and VAT exemptions are also required. As depicted in Figure 4, investments are geographically concentrated with East Africa dominating in terms of both value and number of investments, having received 60 percent of total capital to date due to the presence of a positive regulatory environment, and general ease of doing business.<sup>34</sup> These factors encourage many OGS investors to invest in East Africa, which allowed these companies to attain a certain scale and attract more funds. Investors continue to track these investment criteria when considering expansion to other regions.<sup>35</sup>

**Figure 5. Semi-annual Evolution: Volume of Products Sold Regionally**



SOURCE: GOGLA<sup>33</sup>

<sup>31</sup> ibid

<sup>32</sup> op cit. Lighting Global, GOGLA, ESMAP, Vivid Economics and Open Capital Advisors (2020).

<sup>33</sup> GOGLA (2019). Global off-grid solar market report semi-annual sales and impact data. Available at [https://www.gogla.org/sites/default/files/resource\\_docs/global\\_off\\_grid\\_solar\\_market\\_report\\_h22019.pdf](https://www.gogla.org/sites/default/files/resource_docs/global_off_grid_solar_market_report_h22019.pdf).

<sup>34</sup> op cit. Lighting Global, GOGLA, ESMAP, Vivid Economics and Open Capital Advisors (2020).

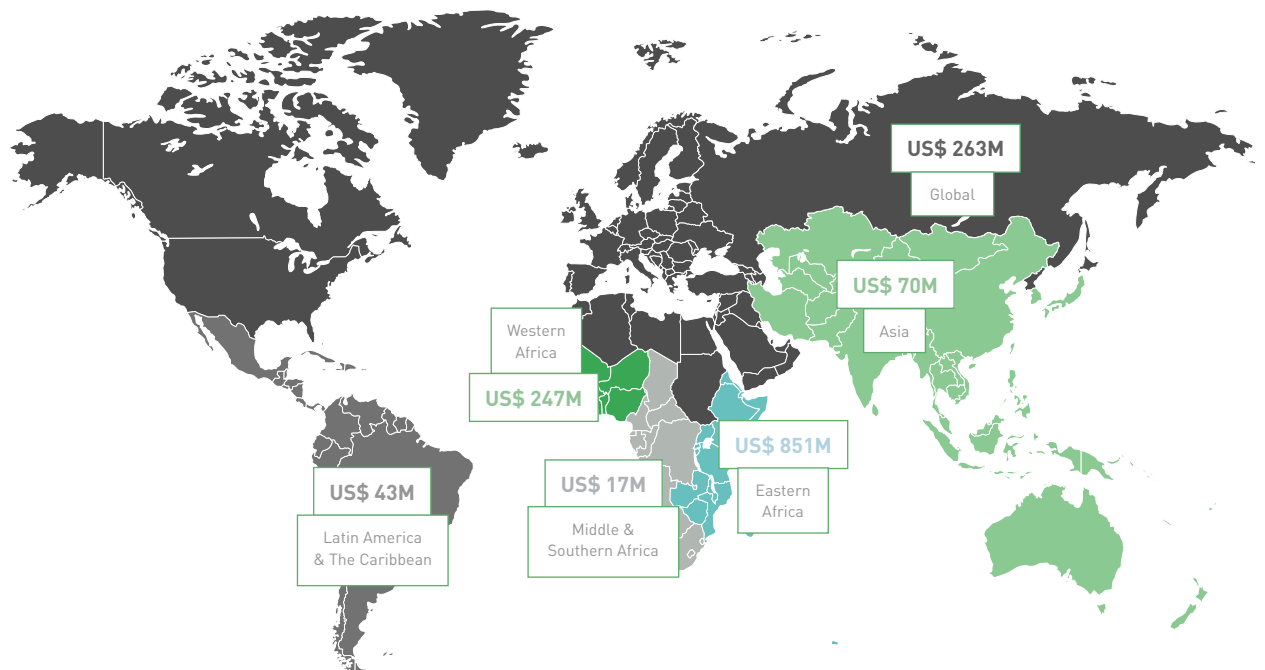
<sup>35</sup> ibid

# The Impact of VAT & Duties on End-User Price & Uptake of SHS in West Africa region

The SHS has a large market potential in West Africa. In 2018, less than 3 percent of the region was serviced by SHS, equivalent to 5 million individuals.<sup>37</sup> The market assessment shows that about 31 million households (approximately 180 million people) could be electrified using SHS in West Africa and Sahel with a potential value of US\$6.6 billion.<sup>38</sup> With these potentials, creating a favourable environment can ultimately attract investors and increase uptake by rural dwellers.

The potential for direct investment, job creation, increased electrification, and economic transformation cannot be over-emphasized. The growing opportunity of the sector can be maximized through a regional approach. The adoption of a regional exemption on import taxes for solar products could likely transform the West African off-grid solar sector and make it comparable to what is seen in East Africa.

**Figure 6. Total Cumulative Investments by Region (2012-2019)**



SOURCE: Vivid Economics and Open Capital Advisors analysis of GOGLA, Deal Database.<sup>36</sup>

<sup>36</sup> *ibid*

<sup>37</sup> Off-Grid Solar Market Trends Report 2018, January 2018.

<sup>38</sup> The World Bank (2019). Regional Off-Grid Electrification Project (P160708).

# The Impact of VAT & Duties on End-User Price & Uptake of SHS in West Africa region

To validate the findings from the research, engagements were held with government officials in Ministry of Finance and Energy in the sampled countries as well as private sector stakeholders made up of 14 solar firms and renewable energy associations in the respective countries. Summary from the set of interviews highlight the following with regards to import duty and VAT exemptions:

1. Exempting solar products from import duties and VAT can reduce the final cost up to 40% making them more affordable for rural population. This claim was supported by Alou Telou Mouzou of Mouzou Service, Lome' Agoe Seperepe in Togo. He called for a reduction of custom taxes and VAT and further suggested that the off-grid rural market is poor, and such reduction will make solar products more affordable. Similarly, the solar shop limited in Nigeria noted that everyone wants a reduction in duties and tariffs and this will result to cheaper products and lower capital barriers which would improve energy access for everyone. This view was also supported by Uka Ibe of Nexgen Energy and Allied Services Ltd. in Nigeria who called for VAT exemption to reduce the cost of acquisition and increase uptake by end-users.
2. Based on the survey conducted during this research, Banla Amah Telou of Africa Digibio Tech in Togo recommended the elimination of ECOWAS tax which will make the products more accessible and boost the business in the renewable energy sector. Similarly, Missiamenou Yawovi of Solar Electro Tech Togo SETT in Togo stated that the total exemption of taxes on all solar products will lower the prices of solar products in the country. This will increase the participation of local solar enterprises in the off-grid sector.
3. Increased adoption of quality products if the exemptions are applied only on quality-verified products. Coseeer Suarl of COPERES , Cite Aviation-Mamelles Almadies Dakar, Senegal noted that exemption of duties on solar equipment that comply with Lighting Africa, and IEC standards will allow rural communities to own quality products at low cost.
4. Fatma Sow of Ministry of Petroleum and Energies in Senegal called for the amendment of the tax code, and the exemption of equipment used for the production of energy from renewable. She further added that this will make renewable technologies more accessible to the population, increase the production of clean, quality electricity at a lower cost, and improve the rate of access to electricity across the region.

**“The off-grid rural market is poor, and the reduction of customs and taxes will make solar products more affordable”**

**Mouzou Service** Lom'es Agoe Seperepe in Togo

**“The elimination of the ECOWAS tax will make the products more accessible and boost busienns in the renewable energy sector”**

**Africa Digibo Tech** in Togo

**“The amendment of the tax code, and the exemption of equipments used for production of energy from renewables will make renewable technologies more accessible to the population, increase the production of the population of cleand and quaity electricity at a lower cost, and imporve the rate of access to electricity access region.”**

**Solar Eleectro Tech Togo SETT** in Togo

**“A VAT exemption will reduce the cost acquisition and increase uptake by the end-users. Necgen Energy, Allied Service Ltd. in Nigeria**

**“The exemption of duties on solar equipment that comply with Lighting Africa, and IEC standards will allow rural communities to own quality prodcuts at low cost”**

**COPERES, citing, Aviation-Mamelles Almadies** Dakar, Senegal

**“The total exemption of taxes on all solar products will lower the prices of solar products in the country. This will increase the participation of local solar enterprises in the off-grid sector.”**

**Solar Eleectro Tech Togo SETT** in Togo

# Benefits of Import Duty and VAT Exemptions for solar products in West Africa

The benefits of the impact from the removal of import duties and VATs on solar products in the region include:



**1. Affordability** VAT and import duties on solar products can be as high as 40% of the cost of goods, raising prices and putting these products out of the reach of the poorer customers who need them most. The increase in uptake due to reduced product prices can be significant. A study in Kenya found that reducing the price of solar lamp from \$7 to \$4 increased household uptake from 37% to 69%.<sup>39</sup>



**2. New source of government revenue** through the multiplier effect of increased economic activities from increased solar business taxes, increased income taxes from jobs created, revenue from more productive economic activities enabled by solar electricity, and other direct and indirect revenue sources for the government and economy. A study in Mozambique found that standalone solar market growth would increase business taxes by enabling businesses to stay open longer, increase time spent due to improved lighting.<sup>40</sup> The World Bank Doing Business 2020 report<sup>41</sup> notes that economies that score well in doing business benefits from higher levels of entrepreneurial activities which generates higher government taxes in the long-run.



**3. Household savings** from the use of more expensive and harmful alternatives such as kerosene and petrol for basic lighting needs which can be channeled to other critical needs. Exempting taxes on solar products increase household savings. Empirical analysis has shown that replacing kerosene lamps, candles and other poor lightning sources lead to cost savings of 4% of total household income.<sup>42</sup> Evidence shows that 25% of customers experience an immediate reduction of expenses on light and phone charging and 49% of customers will save on energy expenditure over their product lifetime.<sup>43</sup> An analysis of household weekly energy expenses by GOGLA reveals that buying the SHS, households spent an average of \$2.5 per week on lighting. Households that were reliant on solar products as a main source of lighting spent an average of \$1.3, while households that mainly used a generator were spending over \$6 each week. Also, without SHS, households spent an average of \$3.4 per week on phone charging, with urban households spending on average \$4.5 and rural households \$3.2.

<sup>39</sup> The Economic Impact of Solar Lighting (2017). ETH Zurich & SolarAid.

<sup>40</sup> Energy Africa – Mozambique (2016). Technical assistance to model and analyse the economic effects of VAT and tariffs on pico PV products, solar home systems and improved cook stoves. [http://dx.doi.org/10.12774/eod\\_cr.august2016.robinsonpetal](http://dx.doi.org/10.12774/eod_cr.august2016.robinsonpetal).

<sup>41</sup> World Bank (2020). Doing Business 2020: Comparing Business Regulation in 190 Economies. Washington, DC: World Bank. Available at: <https://openknowledge.worldbank.org/handle/10986/32436>.

<sup>42</sup> ibid

<sup>43</sup> GOGLA (2019). Global off-grid solar market report semi-annual sales and impact data- July – December 2019, Public report. Available at: [https://www.gogla.org/sites/default/files/resource\\_docs/global\\_off\\_grid\\_solar\\_market\\_report\\_h22019.pdf](https://www.gogla.org/sites/default/files/resource_docs/global_off_grid_solar_market_report_h22019.pdf).

# Benefits of Import Duty and VAT Exemptions for solar products in West Africa



**4. Job creation** both within the sector with more local companies, retailers, and actors, as well as improved economic activities due to the availability of solar electrification for productive uses. Studies have shown that for every one megawatt of solar installed, 3000 jobs can be created in the country, making the market a major employer of labour.<sup>44</sup> A survey by GOGLA shows that additional economic activity undertaken by household members adds up to 8 Full Time Equivalent (FTE) created for every 100 SHS sold.<sup>45</sup> 3 come from business usage while 5 come from additional work hours in other activities. Additionally, 70% of these FTEs are created in rural areas and 38% of these jobs are undertaken by women.<sup>46</sup> The powering job census report,<sup>47</sup> projected number of direct, formal and informal jobs in Nigeria by 2022-2023 is estimated to be 52,000 and 24,000 respectively.



**5. Economic growth** through improved business activities especially for SMEs who make up the bulk of economic activities in the country. The uptake in local manufacturing will also drive economic growth and skills development. A survey by GOGLA shows that 74% of households undertake more economic activity which result to additional income generated up to an average of \$31 per month, or \$372 per year.<sup>48</sup>



**6. Reduction in CO2 emissions** and facilitating the attainment of the INDCs. With Africa most impacted by the impact of climate change, adopting cleaner sources of electricity will improve the continent's resilience to the impact of climate change. Evidence from solar company members of GOGLA and the Lighting Global affiliates are responsible for preventing an estimated 50 million tons of CO2 emissions due to equivalent to taking 12 coal fire power plants offline in one year.<sup>49&50</sup>



**7. Reduction in kerosene use and health benefits** from using clean light. GOGLA's Powering Opportunity report shows that In East Africa, where kerosene is commonplace, and in West Africa, where many households use diesel generators, the study shows that 89% and 86% of people respectively perceive health benefits and 91% and 98% report feeling safer. At the same time, In East Africa, use of kerosene as a main source of light among customers shrunk from 39% to almost zero, reducing polluting emissions.<sup>51</sup>

44 Policy Research on the imposition of 10% tariff duties on solar component: Making a way for solar in Nigeria. Available at: [https://ng.boell.org/sites/default/files/uploads/2019/07/final\\_35\\_page\\_-\\_policy\\_research\\_on\\_the\\_10\\_duties\\_on\\_solar.pdf](https://ng.boell.org/sites/default/files/uploads/2019/07/final_35_page_-_policy_research_on_the_10_duties_on_solar.pdf).

45 GOGLA (2019). Powering opportunities in West Africa. Available at: [https://www.gogla.org/sites/default/files/resource\\_docs/powering\\_opportunity\\_west\\_africa\\_eng\\_0.pdf](https://www.gogla.org/sites/default/files/resource_docs/powering_opportunity_west_africa_eng_0.pdf).

46 ibid

47 Powering Jobs Census 2019: The Energy Access Workforce. Available at: <https://www.powerforall.org/resources/reports/powering-jobs-census-2019-energy-access-workforce>.

48 Op Cit. GOGLA (2019).

49 Op Cit. GOGLA (2018).

50 <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>.

51 GOGLA (2020) Powering Opportunity: Energising Work, Enterprise and Quality of Life with Off-Grid Solar,P.8. Available at: [https://www.gogla.org/sites/default/files/resource\\_docs/powering\\_opportunity\\_global\\_report.pdf](https://www.gogla.org/sites/default/files/resource_docs/powering_opportunity_global_report.pdf).

# Conclusion

**Off-grid solar plays a vital role in achieving electrification access in West Africa and meeting the SDG 7 goal – affordable and renewable energy by 2030. This research provides a strong case for the ECOWAS region to adopt a regional approach in eliminating import duties and VAT on solar products to drive electrification, attract investment, and improve the livelihood of the population. This research report, therefore, highlights the following:**

- i. Based on the GOGLA/HYSTRA report,<sup>52</sup> it can be concluded that the VAT and import duties contribute the highest cost to SHS equipment, which are borne by end-users. The implication of these costs is that end-users could pay an additional \$280 or 29.4% on SHS equipment, thereby affecting uptake by users.
- ii. Adoption of ECOWAS CET and efforts to strengthen enforcement mechanisms around importation taxes and tariffs will greatly reduce the inefficiencies and ambiguities associated with solar importation across the region.
- iii. There are data and evidence contained in several reports that shows that eliminating taxes and CET will lead to an increase in direct and indirect jobs. For example, SE4All report states that for every 1000 customers connected to decentralized energy solutions 25 jobs are created.<sup>53</sup> Similarly, GOGLA report on powering opportunities in West Africa shows that an additional economic activity undertaken by household members adds up to 8 FTE for every 100 SHS sold.<sup>54</sup> The Powering Jobs census reports further estimated the number of direct formal and informal jobs in Nigeria by 2022-2023 to be 52,000 and 24,000 respectively.<sup>55</sup>
- iv. Although exempting VAT and import duties on off-grid SHS may affect government tax revenue, this effect is insignificant. World Bank doing business report 2020,<sup>56</sup> shows that exemption is a signal for ease of doing business, which can accelerate the sector by driving entrepreneurial activities, generate better employment opportunities, improve personal incomes and higher government tax revenue.

**The study concludes that the range of benefits associated with the removal of import duties and VAT far outweigh the benefits of these taxes. This study, therefore, concludes on the need for a regional approach to removing the barriers to energy access across West Africa through collaboration between ECOWAS governments, industry associations, donor/development partners, and investors. The adoption and enforcement of the ECOWAS CET for SHS system is a critical step towards attaining 100% electrification in the region, and further scaling the market for off-grid solar.**

52 Op cit. GOGLA, HYSTRA (2020).

53 SE4ALL (2020). The recover better with sustainable energy guide for African countries. Available at: <https://www.seforall.org/system/files/2020-06/RB-Africa-SEforALL.pdf>.

54 Op cit. GOGLA (2019).

55 Op cit. powering jobs census 2019.

56 Op cit World bank (2020)



# Appendix A

**Table A. Import Duty and VAT rates**

<b>BENIN</b>			
<b>HS Code</b>	<b>Commodity Description</b>	<b>Import Duty</b>	<b>VAT</b>
8419191000	Solar water heaters	5%	18%
8502391000	Solarpowered generator	5%	18%
8541401000	Solar cells whether or not in modules or made up into panels	0%	18%
8539100000	Lamps	20%	18%
8506600000	Batteries	20%	18%
<b>COTE D'VOIRE</b>			
<b>HS Code</b>	<b>Commodity Description</b>	<b>Import Duty</b>	<b>VAT</b>
8419191000	Solar water heaters	5%	9%
8502391000	Solarpowered generator	5%	9%
8541401000	Solar cells whether or not in modules or made up into panels	0%	9%
8539100000	Lamps	20%	9%
8506600000	Batteries	20%	9%
<b>NIGERIA</b>			
<b>HS Code</b>	<b>Commodity Description</b>	<b>Import Duty</b>	<b>VAT</b>
8506600000	Batteries	20%	5%
8419191000	Solar water heaters	5%	5%
8502391000	Solarpowered generator	5%	5%
8541401000	Solar cells whether or not in modules or made up into panels	0%	5%
8539100000	Lamps	20%	5%
<b>SENEGAL</b>			
<b>HS Code</b>	<b>Commodity Description</b>	<b>DD</b>	<b>VAT</b>
8419191000	Solar water heaters	5%	18%
8502391000	Solarpowered generator	5%	18%
8541401000	Solar cells whether or not in modules or made up into panels	0%	18%
8539100000	Lamps	20%	18%
8506600000	Batteries	20%	18%
<b>SIERRA LEONE</b>			
<b>HS Code</b>	<b>Commodity Description</b>	<b>DD</b>	<b>VAT</b>
8419191000	Solar water heaters	5%	15%
8502391000	Solarpowered generator	5%	15%
8541401000	Solar cells whether or not in modules or made up into panels	0%	15%
8539100000	Lamps	20%	15%
8506600000	Batteries	20%	15%
8506600000	Batteries	20%	9%
<b>TOGO</b>			
<b>HS Code</b>	<b>Commodity Description</b>	<b>DD</b>	<b>VAT</b>
8419191000	Solar water heaters	5%	18%
8502391000	Solarpowered generator	5%	18%
8541401000	Solar cells whether or not in modules or made up into panels	0%	18%
8539100000	Lamps	20%	18%
8506600000	Batteries	20%	18%
8506600000	Batteries	20%	9%

# Appendix B

## Benin

Benin has an electrification rate of 40%. The urban electrification rate is 70%, while 18% of the rural population have access to electricity.<sup>57</sup> The country's main energy sources include biomass, fossil, hydropower, solar and wind energy.<sup>58</sup> The aim is to achieve urban and rural electrification rates of 95% and 65% respectively by 2025. The government aims to achieve 24.6% renewable energy in the energy mix by 2025.<sup>59</sup>

### Policy and Regulatory Framework

In order to improve energy access, the government adopted a policy reform agenda known as the Millennium Challenge Account to accelerate investment in the electricity sector from 2017 to 2022.<sup>60</sup> The government also has in place an Off-Grid Clean Energy Facility (OCEF) to increase energy access to households.<sup>61</sup> The country's Sustainable Energy for All Action Plan aims to achieve target of 65% rural electrification by 2025.<sup>62</sup>

### Fiscal Incentives and Tax Regime

The government has a law waiving import duty on photovoltaic system equipment and low energy or energy-efficient appliances for resale or use by third parties for three years.<sup>63</sup>

### Sector Support Programmes

The United States Millennium Challenge Corporation (MCC)<sup>64</sup> is supporting the government finance the implementation of a US\$375 million Power Sector Development Compact. The Compact which was signed in 2015<sup>65</sup> comprises several on- and off-grid energy projects including providing grants through an Off-Grid Clean Energy Fund for off-grid electrification.

The Energising Development Programme (EnDev) is being implemented by GIZ in partnership with five other donor and developmental agencies. The program has three components: cookstoves, solar, and rural electrification.<sup>66</sup> The programme has funded 11 enterprises to install SHS in 109 rural areas and the installation of over 840 public streetlights.<sup>67</sup>

The African Development Bank (AfDB) recently approved a €61.77 million loan to support the Rural Electrification Project (PERU).<sup>68</sup> The project will provide access to electricity for over 48,000 households in 309 rural communities in a bid to increase rural electrification rate to 13.78% by 2022.<sup>69</sup>

57 SE4ALL (2020). Benin. <https://www.se4all-africa.org/seforall-in-africa/country-data/benin/>.

58 *ibid*

59 *ibid*

60 GOGLA (2020). Benin. Available at: [https://www.gogla.org/sites/default/files/resource\\_docs/benin\\_country\\_brief.pdf](https://www.gogla.org/sites/default/files/resource_docs/benin_country_brief.pdf).

61 <https://www.niras.com/development-consulting/projects/off-grid-clean-energy-facility-ocef-in-benin/>.

62 SE4ALL (2020). Benin. Available at: <https://www.se4all-africa.org/seforall-in-africa/country-data/benin/>.

63 Overseas Development Institute (2016). Accelerating access to electricity in Africa with off-grid solar: Off-grid solar country briefing Sierra Leone.

64 USAID (2018). Power Africa Benin Fact Sheet. Available at: <https://www.usaid.gov/powerafrica/benin>.

65 World Bank, June 6, 2017, Benin- Energy Service Improvement Project pp. 13.

66 EnDev (2018), Energising Development partnership – EnDev, Country Project Benin pp. 1, Available at: [https://endev.info/images/0/0f/Factsheet\\_EnDev\\_Benin-all\\_EN.pdf](https://endev.info/images/0/0f/Factsheet_EnDev_Benin-all_EN.pdf).

67 *ibid*

68 Ecofin Agency, 1st October 2018, Benin secures €61million AfDB loan for rural electrification project. Available at: <https://www.ecofinagency.com/public-management/0110-40540-benin-secures-61-mln-afdb-loan-for-rural-electrification-project>.

69 *ibid*

# Appendix B

## Benin

Stakeholders	Responsibilities
Ministry of Energy and Mines (MEM)	Responsible for the national energy policy as well as the coordination of the activities in the sector. <sup>70</sup>
The Benin Agency for Rural Electrification and Energy Control (ABERME)	Set up in 2004 to expand electricity access in off-grid areas. <sup>71</sup>
The Communauté Electrique du Bénin (CEB)	A bipartite utility that handles production, distribution and importation of electricity in both Togo and Benin. <sup>72</sup>
The Société Béninoise d'Énergie Electrique (SBEE)	Responsible for electricity distribution and local generation in the country. <sup>73</sup>
L'Agence Nationale de Développement des Énergies Renouvelables (ANDER)	Established to promote, develop and oversee the implementation of programs to scale-up renewable energy in the country.
L'Autorité de Régulation de l'Énergie (ARE)	Created in 2014 by a decree to serve as the regulatory body of the energy sector in the country. <sup>74</sup>
The Off-Grid Clean Energy Facility (OCEF)	A public entity responsible for increasing access to electricity for unserved populations in rural and peri-urban areas in the country by reducing barriers (such as legal and regulatory) to investment in the off-grid electric power sector.
L'Association Intprofessionnel des Spécialistes des Énergies Renouvelables du Bénin	The Interprofessional Association for Renewable Energy Specialists, the main objective is to contribute to the development of renewable energy across Benin.

## Cote d'Ivoire

Cote d'Ivoire has an electrification rate of 65.6%. The urban electricity access is 94.3%, while the rural population is 36.6%.<sup>75</sup> The country's primary source of energy is biomass which makes up 70% of its energy mix. The government has set a target of 100% electricity access by 2030 with 16% contribution from renewable energy to the energy mix.<sup>76</sup>

### Policy and Regulatory Framework

The government has a target of 16% renewable energy by 2030. While the country currently has no mandatory standards for off-grid solar products,<sup>77</sup> there is the political will to create policies to develop the off-grid sector, underlined by the off-grid sector reform.<sup>78</sup> The state-owned CI-ENERGIES developed a Rural Electrification Master Plan known as the Directeur d'Électrification Rurale, PDER, which has set a universal access target by 2025 through a combination of grid extension and off-grid solar.

### Fiscal Incentives and Tax Regime

Solar products are subject to sales tax and import duties, which is approximately 25% of the cost of goods.<sup>79</sup> The current tax regime is a major barrier in scaling up the off-grid sector. These high taxes are disincentives to the affordability of solar products and barriers to potential solar companies.

### Sector Support Programmes

The government received support from the Millennium Challenge Corporation and signed a grant agreement valued at USD 524.7 million to accelerate investment in the sector between 2017 and 2022.<sup>80</sup> The government is also working on the adoption of energy efficiency measures, creation of a regulatory framework, supporting private sector investment, and developing governance capacity.<sup>81</sup> Cote d'Ivoire is part of the World Bank's Regional Off-Grid Electrification Project (ROGEP) aimed at supporting the acceleration of regional off-grid markets and improving access to finance.

<sup>70</sup> *ibid*

<sup>71</sup> World Bank, June 6, 2017, Benin- Energy Service Improvement Project pp. 12, Available at: <https://www.gtai.de/GTAI/Content/DE/Trade/Fachdaten/PRO/2017/07/Anlagen/PRO201707035003.pdf?v=1>.

<sup>72</sup> Energypedia, Benin Energy Situation.

<sup>73</sup> *ibid*

<sup>74</sup> World Bank, June 6, 2017, Benin- Energy Service Improvement Project pp. 12.

<sup>75</sup> <https://www.usaid.gov/powerafrica>.

<sup>76</sup> SE4ALL (2020). Cote d'Ivoire <https://www.se4all-africa.org/seforall-in-africa/country-data/cote-d%e2%80%99ivoire/>

<sup>77</sup> GOGLA (2020). Cote d'Ivoire. Available at: [https://www.gogla.org/sites/default/files/resource\\_docs/cote\\_divoire\\_country\\_brief.pdf](https://www.gogla.org/sites/default/files/resource_docs/cote_divoire_country_brief.pdf).

<sup>78</sup> *ibid*

<sup>79</sup> *ibid*

<sup>80</sup> *ibid*

<sup>81</sup> Atelier de présentation et de pré-validation des documents de stratégie pour le développement des énergies renouvelables et de l'électrification hors réseau Cote d'Ivoire.

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### Cote d'Ivoire

The AfDB in 2018 supported Zola EDF Cote d'Ivoire (ZECI), an off-grid energy company with a CFAF 15.75 billion loan arranged by Société Générale de Banque in Côte d'Ivoire (SGBCI) and Crédit Agricole Corporate and Investment Bank (Crédit Agricole CIB). This loan will facilitate the implementation of a project that will pilot a local currency receivables-backed financing structure to provide access to approximately 100,000 rural households with PAYG solar home systems by 2020. This is the first large-scale local currency financing structure using this financing

model for off-grid energy in Africa. ZECI's business model which consists of selling quality verified solar kits under lease-purchase agreements for a three-year period, makes it easier for poor households to access solar electricity.<sup>82</sup> The Association of Professionals of Renewable Energies (Association des Professionnels des Energies Renouvelables de Côte d'Ivoire (APERCI)) is promoting renewable energy and energy efficiency throughout Côte d'Ivoire through the creation and mobilization of private and public sector collaboration.

Government Agencies	Responsibility
The Société des Energies de Côte d'Ivoire (CI-ENERGIES)	A state-owned asset holding company responsible for managing public assets in the electricity sector as well as planning and contracting investments. CI-ENERGIES is the contracting party with the gas suppliers and independent power producers.
The Autorité Nationale de Régulation du Secteur d'Electricité (ANARE-CI)	Responsible for overseeing compliance with laws, regulations and obligations under the authorizations and conventions in force in the electricity industry. ANARE has purely advisory functions.
The Ministry of Oil, Energy, and Development of Renewable Energy (MPEDER)	Sets policy and plays an overarching surveillance role of the sector.
Direction Générale de l'Energie	Implements and manages sector policy.
Direction de l'Électrification Rurale au sein de la Direction Générale de l'Energie auprès de Ministère du Pétrole, de l'Energie et du Développement des Energies Renouvelables	In charge of rural electrification with CI-Energie.
Direction de la Maîtrise de l'Energie et des Energies Renouvelables au sein de la Direction Générale de l'Energie auprès de Ministère du Pétrole, de l'Energie et du Développement des Energies Renouvelables	In charge of renewable energy and energy efficiency.

<sup>82</sup> World bank group (2019). ECREEE: Off-grid solar market assessment and private sector support facility design regional report. Available at [http://www.ecreee.org/sites/default/files/ecreee\\_rogep\\_regional\\_report.pdf](http://www.ecreee.org/sites/default/files/ecreee_rogep_regional_report.pdf).

# Appendix B

## Nigeria

Nigeria has an electrification rate. The urban electrification access is 60%, while the rural electrification access is 41%. The country's primary source of energy comes from gas and hydro power. Nigeria aims to achieve 90% electricity access 2030 with 30% contribution from renewable energy sources.<sup>83</sup>

### Policy and Regulatory Framework

The Electric Power Sector Reform Act (EPSRA) of 2005 is the overarching electricity document in the country. Since its passage, there have been several policies, regulations and plans to accelerate electricity through on- and off-grid energy. The government is targeting an additional 30GW of electricity generation capacity by 2030 with 30% to be derived from renewable energy as part of its electricity vision 30:30:30.<sup>84</sup>

Renewable energy policies and plans in the country include the 2015 National Renewable Energy and Energy Efficiency Policy (NREEEP), the 2016 Sustainable Energy for All Action Agenda (SE4ALL-AA), the 2016 National Renewable Energy Action Plan (NREAP), the 2016 National Energy Efficiency Action Plans, the 2017 Rural Electrification Strategy and Implementation Plan (RESIP), and the 2017 Mini-Grid Regulation.

The EPSR Act also set up the Rural Electrification Agency and the Rural Electrification Fund to promote and oversee rural electrification programmes.

### Fiscal Incentives and Tax Regime

The Value Added Tax (modification order), 2020 issued by the Federal Republic of Nigeria official gazette, recommended a number of renewable energy equipments (solar powered generator, solar cells, other photosensitive semiconductor devices, solar

DC generators of an output not exceeding 750W, solar DC generators of an output exceeding 750W but not exceeding 75kW, solar DC generators of an output exceeding 75kW but not exceeding 375kW and solar DC generators of an output exceeding 375kW) from VAT.

### Sector Support Programmes

The Nigerian Electrification Project (NEP) aims to achieve the government's off-grid electrification target under RESIP.<sup>85</sup> The NEP is co-funded by the World Bank, the AfDB and the Nigerian Government and implemented by the Rural Electrification Agency.<sup>86</sup>

The government has supported the provision of 20,000 solar home systems to off-grid dwellers in the country through a partnership between the Niger Delta Power Holding Company and Azuri Technologies. The Rural Electrification Fund also provides grants to solar home system and mini-grid companies for rural electrification.<sup>87</sup>

The Lighting Africa/ Nigeria Programme, an initiative of the International Finance Corporation (IFC) and the World Bank has supported 15 microfinance banks provide consumers loans for solar lighting products. This initiative resulted in over 80,000 micro-loans for solar lighting products across the country with over 80% given to women.<sup>88</sup>

Several other donor and developmental agencies are also supporting off-grid electrification in the country. These include the GIZ Nigeria Energy Support Program (NESP), the USAID Nigeria Power Sector Programme, and the DFID Africa Clean Energy Technical Assistance Facility (ACE TAF). The Japanese International Corporation Agency (JICA) is also supporting an ongoing 10MW Wind farm project.

83 [https://www.seforall.org/sites/default/files/NIGERIA\\_SE4ALL\\_ACTION\\_AGENDA\\_FINAL.pdf](https://www.seforall.org/sites/default/files/NIGERIA_SE4ALL_ACTION_AGENDA_FINAL.pdf)

84 Dalberg, May 2017, Improving Access to Electricity through Decentralised Renewable Energy, Policy Analysis from India, Nigeria, Senegal and Uganda. Available at: <https://sun-connect-news.org/fileadmin/DATEIEN/Dateien/New/Dalberg-offgrid-policy.pdf>.

85 REA, August 2018, the Nigerian Electrification Project. Available at:

<http://rea.gov.ng/inc/uploads/2018/08/OVERVIEW-OF-THE-NIGERIA-ELECTRIFICATION-PROJECT-NEP.pdf>.

86 *ibid*

87 Thisday [2019] Lighting Africa, Deepening Energy Access across Nigeria. Available at:

<https://www.thisdaylive.com/index.php/2019/01/09/lighting-up-africa-deepening-energy-access-across-nigeria>.

88 *ibid*

# Appendix B

## Nigeria

Stakeholders	Responsibilities
Ministry of Power	The Federal Ministry is the supervising ministry of the entire power and electricity value chain and is responsible for policies related to electricity and power sector policies and regulations in Nigeria.
Nigerian Electricity Regulatory Commission (NERC)	Independent regulatory body for the regulation of the electric power industry in Nigeria.
Rural Electrification Agency (REA)	Federal government agency tasked with the electrification of rural and unserved communities in Nigeria.
Rural Electrification Fund (REF)	Responsibility is to ensure equitable access to electricity across the country, maximize the economic, environmental, and social benefits of subsidies of rural electrification, facilitate the expansion of the grid as well as the development of off-grid electrification and finally, drive innovative rural electrification.
Nigerian Electricity Management Services Authority (NEMSA)	Federal government agency charged with ensuring standardization, specification, quality, safety and competence for the competitive Nigerian Electricity Supply Industry (NESI) and other allied industries.
Nigerian Electricity Management Company (NELMCO)	Company charged with ensuring that investments in distribution companies (DISCOs) are free of encumbrances from possible future litigations from huge legacy debts, staff pensions, supplies and third party liabilities.
Energy Commission of Nigeria (ECN)	Agency with the statutory mandate for the strategic planning and coordination of national policies in the energy field in Nigeria.
Transmission Company of Nigeria (TCN)	Carries out the functions of transmission service provider (TSP), system operations (SO) and market operations (MO).
Nigerian Bulk Electricity Trading Company (NBET)	The company that engages in the purchase and resale of electrical power and ancillary services from independent power producers and from the successor generation companies.
Renewable Energy Association of Nigeria (REAN)	The association provides a strong private sector voice to call for policies and regulations to catalyse growth and increase finance to the renewable energy market.



# Appendix B

## Senegal

Senegal's electricity access covers 88% of the urban population and 38% of the rural population.<sup>89</sup> In line with the SEforALL Country Action Plan, the government aims for at least 90% electrification of rural households by 2025.<sup>90</sup> The primary sources of energy is biomass, and petroleum products. The country aims to achieve 40% renewable energy contribution to the energy mix in 2020.<sup>91</sup>

### Policy and Regulatory Framework

The Senegalese Rural Electrification Action Plan is a 20-year program (2002-2022) for rural electrification which is structured around three complementary programs: the Rural Electrification Priority Program (PPER), the Local Initiative Rural Electrification (ERIL), and the Multi Sectorial Energy Program (PREM).<sup>92</sup> The government aims to achieve 100% energy access by 2025 and it has prioritized the energy sector in its Senegal Emergent plan. The government, together with ECREEE/ROGEP and GIZ created a committee tasked with integrating off-grid solar into its official electrification framework.<sup>93</sup>

The governing policy for the energy sector is the Letter of Policy Development of the Energy Sector, which was first released in 1997 and subsequently updated in 2002, 2008, and 2012. In 2008, the letter explicitly acknowledged the importance of renewable energy and laid the groundwork for the passage of the Renewable Energy Law (2010) which regulates the renewable energy sector. The law covers tax relief, grid access, and certificate of origin to help renewable energy producers access incentives and favourable feed-in tariffs.<sup>94</sup>

### Fiscal Incentives and Tax Regime

The Senegalese government in 2000 adopted a new tariff scheme that conforms to the Common External Tariff (CET) scheme designed for member nations of the West African Economic and Monetary Union (WAEMU). Under the CET, Senegal has 0% import duty on cultural and scientific goods, for capital goods, and computer equipment not available through local production.

Duties were set at the component level, with special exemption in place for solar panels and DC appliances. On 23 July 2020, the Ministry of Energy announced the final signature of the adapted bill exempting VAT for the production of renewable energies related to solar, wind and biogas energy. Industry stakeholders have viewed this move by the Government of Senegal as welcome development in scaling the off-grid solar industry in the country.<sup>95</sup>

### Sector Support Programmes

The Solar Village Project, a non-profit off-grid solar project in 7 villages provides access to vital solar electrical appliances, such as lighting, mobile phone chargers, and radios. The USAID funded Power Africa project aims to increase electrification in Senegalese communities. The World Bank Energy Sector Management Assistance Program (ESMAP) in Lake Volta regions was initiated to provide access to energy as well.

The Electrification Rurale d'Initiative Locale (ERIL) is a locally initiated Rural Electrification Program. A key success factor of the ERIL program in Senegal has been the ability for operators to set their own tariffs under the authority of the national regulator Commission de Régulation du Secteur de l'Electricité (CRSE) and a clearly defined tariff calculation model. As a result, the tariffs for isolated mini-grids are significantly higher than the tariffs charged by the national utility.

Over the years, various programmes by donor agencies have been implemented across the country - Project Daye Owens/Government of Netherlands, PUDC/UN Development Programme, and Gauff/Kreditanstalt für Wiederaufbau (KfW). The DFID funded Africa Clean Energy Technical Assistance Facility (ACE TAF) currently supports the government to scale the market for stand-alone solar in the country.

89 SE4ALL (2020). Senegal. <https://www.se4all-africa.org/seforall-in-africa/country-data/senegal/>.

90 *ibid*

91 *ibid*

92 Power Africa (2019). Off-Grid solar market assessment in Senegal. Available [https://www.usaid.gov/sites/default/files/documents/1860/PAOP-Senegal-MarketAssessment-Final\\_508.pdf](https://www.usaid.gov/sites/default/files/documents/1860/PAOP-Senegal-MarketAssessment-Final_508.pdf).

93 GOGLA. Senegal. Available at [https://www.gogla.org/sites/default/files/resource\\_docs/senegal\\_country\\_brief.pdf](https://www.gogla.org/sites/default/files/resource_docs/senegal_country_brief.pdf).

94 Said, A. (2015) "The energy policy of republic of Senegal": HAL 2018. [http://www.ecreee.org/sites/default/files/documents/ecowas\\_renewable\\_energy\\_policy.pdf](http://www.ecreee.org/sites/default/files/documents/ecowas_renewable_energy_policy.pdf).

95 GOGLA (2020). Policy Alert: Senegal introduces VAT exemption for off-grid solar products. Available at <https://www.gogla.org/news/policy-alert-senegal-introduces-vat-exemption-for-off-grid-solar-products>.

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## Senegal

Stakeholders	Responsibilities
The Ministry of Energy	The lead agency in responsible for formulating, coordinating, and setting overall objectives, policies, strategies, and general directives for the whole energy sector in Senegal.
Senelec	The national utility.
Agence Sénégalaise d'Electrification Rurale, ASER	The Agency for Rural Electrification is responsible for driving energy access to rural communities.
Commission de Régulation au Secteur de l'Electricité, CRSE	The Electricity Regulatory Board.
Conseil Patronat Des Energies Reneouveables Du Senegal (COPERES)	A council of professionals of renewable energies in Senegal.

## Sierra Leone

Sierra Leone urban electricity access is 46%. The country targets 92% electricity access by 2030. The country aims to increase renewable energy output to the energy mix by 86.8% by 2030.<sup>96</sup>

### Policy and Regulatory Framework

The SE4ALL Action Agenda for Sierra Leone was adopted in 2015 coordinates the country's approach for off-grid electrification and resulted in the development of the National Renewable Energy Action Plan in 2016. Under the ECREEE ROGEP project, Sierra Leone is developing an Investment Prospectus for Renewable Energy containing a list of implementable programs and projects for achieving its SE4All target.<sup>97</sup>

### Fiscal Incentives and Tax Regime

Sierra Leone aims to provide electricity to all its 6 million citizens by 2025.<sup>98</sup> To achieve this target, in 2017, the Sierra Leonean government exempted all internationally certified renewable energy products from import duties and VAT.

Despite this progressive law, clearance procedures and duration remain lengthy in Sierra Leone with delays in clearance creating operational and financial issues including official and unofficial taxes and charges which have been reported to be almost 50% of the product price.<sup>99</sup>

### Sector Support Programmes

In February 2016, Sierra Leone signed the Energy Africa Policy Compact with the UK Government. The Energy Africa Compact is a UK Aid initiative, and REASL is an active member of the leading multi-stakeholder energy revolution taskforce launched to reach 250,000 households with modern solar solutions. Also, a DFID funded Power for All Campaign was launched targeting complete energy access by 2025 and under this framework there was a 100% presidential commitment to advancing this energy access target in Sierra Leone.<sup>100</sup>

In 2017, the Electricity Sector Reform Roadmap (2017-2030) was launched by the Millennium Coordinating Unit (MCCU) and the Ministry of Energy which contains significant content on renewable energy including targets, plans for rural electrification, the establishment of a Rural Electrification Agency, and development of off-grid licenses.<sup>101</sup>

Promoting Renewable Energy Services for Social Development (PRESSD) was established through partnerships with the European Union, Welthungerhilfe, GIZ Energizing Development (EnDev), Cooperazione Internazionale, Energy for Opportunity, and Oxfam for the installation of SHS, the establishment of energy hubs, financial service associations, and provision of equipment and training for 3 Energy laboratories in Sierra Leone.<sup>102</sup>

96 Sustainable Energy for All Africa Hub. (2019). Sierra Leone at a glance. <https://www.se4all-africa.org/seforall-in-africa/country-data/sierra-leone/>

97 ibid

98 Thomson Reuters Foundation (2016). Sierra Leone solar push aims to bring electricity to all by 2025. Available at <https://www.reuters.com/article/us-leone-electricity/sierra-leone-solar-push-aims-to-bring-electricity-to-all-by-2025-idUSKCN0Y21Q3>.

99 ODI briefing (2016). Accelerating access to electricity in Africa with off-grid solar. Off-grid solar country briefing: Sierra Leone. Available at <https://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/10254.pdf>.

100 Energypedia (2020). Sierra Leone energy situation. Available at: [https://energypedia.info/wiki/Sierra\\_Leone\\_Energy\\_Situation#Policy\\_Framework.2C\\_Laws\\_and\\_Regulations](https://energypedia.info/wiki/Sierra_Leone_Energy_Situation#Policy_Framework.2C_Laws_and_Regulations).

101 Electricity Sector Reform Roadmap (2017). Millennium Coordinating Unit (MCCU) and the Ministry of Energy, Sierra Leone. Available at: [http://www.energy.gov.sl/wp-content/uploads/2018/04/Draft\\_Final\\_Roadmap\\_12092017\\_Master\\_Copy.pdf](http://www.energy.gov.sl/wp-content/uploads/2018/04/Draft_Final_Roadmap_12092017_Master_Copy.pdf).

102 UNOPS. 2019. Access to Energy: Giving Sierra Leone the Power to change lives. <https://www.unops.org/news-and-stories/stories/access-to-energy-giving-sierra-leone-the-power-to-change>.

# Appendix B

## Sierra Leone

Sierra Leone's Energy Revolution Taskforce has led several advances in the country's off-grid solar sector. The Taskforce achieved the implementation of Africa's first quality-linked VAT/tariff exemption for solar products in 2016 which attracted several companies

to the market.<sup>103</sup> The DFID funded Africa Clean Energy Technical Assistance Facility (ACE TAF) currently supports the government to scale the market for stand-alone solar in the country.

Stakeholders	Responsibilities
Ministry of Energy	Mandate to oversee, plan and coordinate the implementation of the electricity sector.
Electricity Generation and Transmission Company (EGTC)	The primary responsibility is the generation of electricity.
Electricity Distribution and Supply Authority (EDSA)	Responsible for the supply of electricity distribution.
GIZ EnDev	Promote access to sustainable, modern reliable, affordable, socially responsible and environmentally friendly energy supply. Including training, data collection and environmental management.
Renewable Energy Association of Sierra Leone (REASL)	A trade association that is focused on the development of an efficient and thriving renewable energy market in Sierra Leone.

## Togo

The Togolese national electrification rate is 48% with 89% urban electrification rate and 19.5% rural electrification rate.<sup>104</sup> Togo aims to achieve 82% national electrification access by 2030 with renewable energy contributing 45.5% to the energy mix.<sup>105</sup>

### Fiscal Incentives and Tax Regime

The government of Togo developed an approach to boost the off-grid solar market with support from the International Finance Corporation (IFC). The off-grid solar sector is supported through the "Light Up" program known as CIZO. Under this program, companies are licensed to sell solar systems delivering a minimum level of service. These licensed firms benefit from import duty waivers as well as other incentives provided by the government.

Another incentive promoted by the government is to develop a bankable regulatory framework (PAYGO) to attract private sector investment. This business model allows for consumer financing via mobile money or other means. A third incentive lies with the importation of solar and other renewable energy products in the country whereby a registry of certified importers is established by the Togolese government to benefit from special exemptions (such as import

duties for importing solar and other renewable energy products) and accelerated processing of importing solar products into the country.<sup>106</sup> The government aims to ensure that the potential market available to a licensee is big enough to justify market entry. The benefit of being a licensee is that they are identical and are not restricted geographically.<sup>107</sup>

### Sector Support Programmes

In August 2017, the government launched a presidential initiative called "CIZO," which means "Light up" in the local Guin language with a USD975,000 grant from the AfDB Sustainable Energy Fund (SEFA). The initiative aims to increase rural electrification rates by 50% through solar 2030. Consequently, the European Union (EU) added €20million to €25 million in capital through the AfDB in mid-October, with a goal to install off-grid SHS in 550,000 Togolese households by 2030.

The government is partnering with off-grid companies to offer SHS to rural customers. Development programmes such as the Power Africa Programme and United Nations Development Programme (UNDP) are also funding SHS off-grid electrification in the country.

103 Off-grid solar market trends report 2020. Available at: [https://www.lightingglobal.org/wp-content/uploads/2020/05/VIVID\\_OCA\\_2020\\_Off\\_Grid\\_Solar\\_Market\\_Trends\\_Report\\_Full\\_High-compressed.pdf](https://www.lightingglobal.org/wp-content/uploads/2020/05/VIVID_OCA_2020_Off_Grid_Solar_Market_Trends_Report_Full_High-compressed.pdf).

104 GOGLA. Togo. Available at [https://www.gogla.org/sites/default/files/resource\\_docs/togo\\_country\\_brief\\_0.pdf](https://www.gogla.org/sites/default/files/resource_docs/togo_country_brief_0.pdf).

105 SE4ALL (2020). Togo <https://www.se4all-africa.org/seforall-in-africa/country-data/togo/>

106 Clean Energy solution center (ND). helping Togo develop a framework to support off-grid electrification. Available at <https://cleanenergysolutions.org/expert/impacts/helping-togo-develop-framework-support-grid-electrification>

107 GOGLA. Togo. Available at [https://www.gogla.org/sites/default/files/resource\\_docs/togo\\_country\\_brief\\_0.pdf](https://www.gogla.org/sites/default/files/resource_docs/togo_country_brief_0.pdf)

# Appendix B

## Togo

<b>Stakeholders</b>	<b>Responsibilities</b>
The Togolese Regulatory Authority for the Electricity Sector (ARSE)	Regulate the sub-sector electricity, define and enforce the sub-sector, review and oversee procurement mechanisms and provides advice on the development of energy infrastructure among others.
The Compagnie d'Énergie Electrique du Togo (CEET)	Responsible for the distribution of electricity in the country.
The Benin Electricity Company	Is a Benin-Togolese joint venture responsible for electricity generation, imports, and transmission in both countries.
Togolese Agency for Rural Electrification and Renewable Energies (AT2ER)	The agency is in charge of implementing the country's rural electrification policy, promoting and developing renewable energies.
Réseau des Professionnels des Energies Renouvelables (RePER)	A network of renewable energy professionals in Togo. Support the government in developing an efficient renewable energy market in the country.
Direction General de l'Énergie (DGE)	The Directorate General of Energy is responsible for the coordination and planning of the national energy policy, the development and monitoring of legislation and regulations on electricity and renewable energies and the management of energy. use of energy resource.

# Appendix C

## Regional Virtual Round Table on VAT and Import Duties in the West African Region report

**Date:** 15th December 2020, **Platform:** Zoom

**Details:** The event is the first round table on the exemption of VAT and import duties on solar products across West African region commissioned by West African Renewable Energy Association (WAREA) with support from GOGLA. The round table was attended by key stakeholders drawn from government, developmental agencies, private sector, civil society organizations, National Renewable Energy Associations across the region amongst others.

### Highlights of the round table session

- The meeting began with a welcome address delivered by Mr. Segun Adaju, the president of the Renewable Energy Association of Nigerian (REAN). He recognized stakeholders present and noted that the objective of the meeting is to address the impact of VAT and Import duties exemptions on solar products across the West Africa region and also to formally Launch WAREA.
- Mr. Namory Doumbia (Head of Membership Services, West & Central Africa Representative GOGLA). In his presentation, highlighted the following:
  - GOGLA has done some work in advocacy to improve the customs duties and VATs around the importation of solar products for its members.
  - In Senegal, a white paper proposal was sent out to the government which was accepted and has yielded a roll-out of the process for VAT exemption and the next focus in Senegal will be on custom duties.
  - In Nigeria, during the pandemic, GOGLA worked on enabling members to have access to continuous distribution around Lagos. There is ongoing work with REAN, and another ongoing project for SHS in Nigeria.
  - In Ivory Coast, GOGLA partners with the NREA to influence and advocate for an enabling environment in the country.
  - In Mali and Burkina Faso, GOGLA has also worked on advocating for VAT exemption, and customs duties.
- Mr. Hyacinth Elayo introduced ECREEE and emphasized his work on developing silos and mini-grids, deploying solar technologies to make the agricultural sector more competitive, working on incentivizing the importation of solar equipment through VAT exemptions. He also said ECREEE is a partner in the endeavor of WAREA and that the organization (ECREEE) looks forward to partnering with all the associations and stakeholders.
- Mr. Kolawole Ebire made a presentation on behalf of Clean Tech Hub on the “Impact of import duties and VAT on the affordability and uptake of off-grid solar products across ECOWAS. The following are the highlights from his presentation:
  - The study was commissioned by WAREA and supported by GOGLA. The study was carried out in six (6) ECOWAS countries namely Nigeria, Benin Republic, Cote d’Ivoire, Senegal, Sierra-Leone, and Togo.
  - The study showed that as a result of the tax exemption on solar products in the East Africa region, there is an increase in sales and uptake of solar products. On the other hand, the volume of sales and uptake in West Africa is relatively poor.
  - Also, the findings show that exemption from VAT and import duties will lower the cost of products by 40% and eliminating CET will make products more accessible, there will also be increased adoption of quality products and this will make renewable technologies more accessible, hence increasing energy access across the region.
  - VAT and import duties contribute the highest cost to SHS equipment and are borne by end-users.
  - CET adoption will reduce inefficiencies and ambiguities associated with solar importation.
  - The study highlights the benefits of the exemptions which include, affordability of the solar products, new sources of revenue for the government, increasing job creation, economic growth, increased household savings, and reduction in carbon emissions.

### The research recommended the following:

- A regional elimination of import duties and VAT on quality standards for stand-alone renewable energy products.
- A regional exemption on import duties and VAT for solar products across West Africa that meet the IEC quality standards in order to prevent the influx of sub-standard products and encourage the adoption of quality products and aligning this exemption to the African Continental Free Trade Agreement and

## Appendix C

advocating for supporting mechanisms amongst sub-regional corridors with the support of ECREEE and WAREA to ensure implementation.

- An update of HS codes and strict -application of the HS codes across the sub-region for solar products in line with the current variety of products in the market.
- A regional approach through collaboration between ECOWAS governments, ECREEE, WAREA, associations, partners investors in developing the regional market for off-grid solar.

### Highlights from the Panel Session moderated by Ify Malo

**Question: What is the Impact of ACE work on custom duties?**

**Response by Mr. Chibuikem Agbaegbu (African Clean Energy)**

ACE developed an importation guide that provides stakeholders with the A-Z on the importation process on solar components. These include custom process, duty waivers, energy access policies, and incentives. ACE's study on Import duty waivers analyzed the cost-benefit analysis to assess the socioeconomic impact of VAT exemptions in Nigeria. The study aims to model past, current and future projections of import tariff while addressing the prevailing tax regime, tax scenarios, government fiscal policy, factors affecting demand and price, the elasticity of solar products (population growth, changes in income, consumers' willingness to pay, and maturity of local manufacturing sector).

**Question: What are your thoughts on how to harmonize action on all the initiatives and proving proof point data to make it accessible to government and businesses driving RE in different regions?**

**Response by Mr. Chibuikem Agbaegbu (African Clean Energy)**

- Provide relevant and hardcore data and open evidence to the government showing how much the government will lose from import duty waivers and where the government will gain back. Also on and how it will key into the government goals, identify the impact of incentive. Justify with numbers on end-users, countries that are involved.
- Role of WAREA to advocate for the sector using the data and evidence (a case study of metering) to support the aim. Also, reveal the steps to be taken.
- Consider other studies of relevance to see what other countries are doing. Responsible taxation study analyzing the data and this should be utilized

when advocating. eg. Case study of Rwanda and Sierra Leone.

**Question: Issues faced during importation and tax regime - identify top 3 bottlenecks and what GOGLA has been doing to address it.**

**Response by Namory Doumbia**

The benefits of VAT and customs duties are not only beneficial to the end-users. Economic evidence shows that as costs go higher it reduces government revenue from the sale as well. The revenue takes advantage of the exemption in terms of larger sales volume. On the operational side, the revenue offices are interested in knowing how the end-users benefit from exemptions. In Senegal, the private sector is required to provide data. More evidence are however needed to support this claim.

**Questions: Are there best case scenarios that other countries can model?**

In Mali, Burkina Faso, and Senegal (landlocked countries), the governments have been able to create a favorable environment towards VAT and customs duties. In 2019, ECREEE moved to extend the validation period in Mali. Also, in Burkina Faso, solar components have been exempted from VAT and import duty. Land-locked countries are great examples and now Senegal VAT exemption is in place. However, the biggest challenge is government regulation and process and we look forward to seeing how the sector will thrive. ECREEE has been getting the conversation going at a national level and the fruit of that is, the Senegal government is opened to discussion on custom duties exemption.

**Questions: What have been your unique experiences on VAT and customs duties and how as an entrepreneur have you been able to navigate it?**

**Response by Gabriele Schwarz (COPERES)**

There is need to lower the prices. In Senegal, there is now a law that allows for tax exemption and there was intensive training with all players', customs, importation agency, private sector, and government to understand what needs to be done. However, there are hurdles that need to be crossed. The coming months will reveal more on what to consider in forthcoming discussions for Senegal.



## Appendix C

**Question: Specifically, what have you been able to do as an entrepreneur and how can this be adopted at an industry association level to make a structured policy. How did Senegal get the government to be at the table? Was there a justification for analysis to convey the proposal to the government?**

The secret is to understand each other, the government has a goal to increase energy access by 2025 which can be done with everyone on board and the private sectors affirmed the possibility of getting it done. However, the private sector tendered their request on the need for the exemption of VAT. There is an agreement for exemption but on the other hand, the government needs the private sector to show that it can be done and provide aggregated data to show and track the records and progress.

**Will the private sector be transparent and what kind of tool will be used and will it be online?** This data will be available online for verifications.

**Question: In 2019, the WCO (World Customs Organization) organized a program for a harmonized system in Africa which led to the adoption of the HS code and out of it came a road map of follow-up activities to streamline the importation process at the regional and national level. What should the harmonized HS code be?**

**Response by Hyacinth Elayo (ECREEE)**

It is a work in progress. Parties have come together to continue the framework from the CETs and this is to be done in a tallied manner. It is important to continue engagement with stakeholders.

**Question: From an advocacy level what would you advise NREAs and WAREA when advocating with the government?**

In the long term, while we transit to tax exemption, incentivizing local manufacturers can be considered to facilitate energy access objectives. The study provides a basis for the discussion and gives a road map for the government and the industry. It also shows the numbers in comparison within East and West Africa.

**Question: What modification would you like to see on tariffs, customs and duties for off grid solar across the region? What other common or unique challenges do you face when driving business in the region?**

**Response by Vera Nwenzé (Azuri West Africa)**

Identify what has been done and what needs to be done. The charges add up cumulatively to 30% the total product cost which is borne by the end-users. There is need for eliminating VAT and import duty waiver because the market is still immature and this could be done for at least 5 years until the market becomes mature and put up for review afterward till the sector becomes sustainable.

**Question: What are the other common challenges faced in driving business in the region?**

Challenges include an unequal playground, inconsistent HS code, and import duty is a challenge that needs to be addressed, corruption is a challenge, enabling environment and government policies that are dependable and sustainable eg. Having a single window for customs for uniformity in the market, poor infrastructures affecting logistics thereby increasing costs.

**General Q&A**

**Q:** What is the timeline for the review and revision of CET and who are the actors to review?

**A:** (Elayo): No timeline yet. Discussions are still ongoing which is led by the ECOWAS Commission. Input from industries in terms of standards and requirements are welcomed.

**Q:** Are the data going to be publicly available to help member countries within ECREEE, WAREA, and GOGLA improve advocacy?

**A:** (Namory): Data is very sensitive and at the moment there is no available data. In the case of Senegal, the stand-alone unit brought in an average of 5% - 7% and the government decided to take the figures into account which led to further discussion that put the exemption in place. Stakeholders still lookout for data for advocacy.

**Q:** What is the call to action to help practitioners in the industry?

**A:** (Gabriele): Understand all stakeholders standpoint (understand the government will need something in return if they give up the VAT. What then is the energy exchange? The political objective which was to have energy access to all by 2025 was the motive for the Senegal government). There is need to identify a position where all stakeholders can benefit from.

**A:** (Vera): Encourage the government to enable players to enjoy an exemption for at the early stage at least 3 - 5 years and ensure that within the years there should be local manufacturing.

# Appendix C

## Official Launch of WAREA

Segun Adaju reiterated the importance of having a regional association or alliance to speak as a voice for ECOWAS and strong supporters from stakeholders such as ECREEE. He also mentioned the importance of having a regional Renewable energy association for the growth across the sector. He requested that all renewable energy associations across West Africa should come up to speak about the need and importance of the association and if there is a need for the organization and how to incubate the association.

## Speaker 1: Enoch Ghana

Stated the idea of having a collective body is very good. Considering knowledge sharing, pooling resources and ideas together to get the sector moving. There is need to come together as a team for collective interests. This should be independent as possible to prevent influence by global politics

or funding agencies. There is also a need to ensure technical capabilities come together to manage actions and efforts together which should be beneficial to all countries.

## Speaker 2: Koffi (Sierra Leone)

The regional association is important because the value can be gained with duty-free access for all countries eg. Sierra Leone, Liberia, Guinea can import in larger quantity of stock across countries and this will help to keep a uniform price across the West African countries.

The quality of products also affects price. There are so many substandard products that have penetrated the markets and are lots cheaper. The duty-free will allow quality products to be sold at reasonable costs such that it can compete with the bad products and preference will be made to purchasing good equipment.

## Conclusion

**The Launch of WAREA was officially announced by Segun Adaju. He stressed the need for a West African voice responsible for all the member countries. He mentioned the three countries that have been nominated to make this happen (Nigeria, Senegal, and Sierra Leone) and to work with partners ECREEE, GOGLA, and Clean Tech Hub in making this a success. Namory thanked and applauded everyone at the meeting. He encouraged WAREA to keep the conversation on VAT going and should be mindful of the end-user benefit which is the objective of the association. He emphasized that for the association to be successful, there is a need for cooperation from the member companies and the national renewable association to work with the other partners, like GOGLA.**



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