

Impact Assessment of VAT and Import Duty Exemptions for Stand-Alone Solar in Nigeria

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Africa Clean Energy
Catalysing Africa's Solar Markets



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INTRODUCTION

This policy brief summarises the socioeconomic impact of VAT and import duty exemptions for standalone solar products in Nigeria to support public-private sector dialogue. Drawing on growing international literature, local data, and building on ACE TAF's Multi-Country Responsible Taxation report and quantitative tool,¹ this note summarises a qualitative and quantitative assessment of the impact of VAT and import duty regimes on the Nigerian standalone solar (SAS) sector, and the results delivered across a range of fiscal, socio-economic, and environmental outcomes. The purpose of this assignment is to provide robust evidence based on the importance of achieving the Federal Government of Nigeria's (FGN) energy access targets, and to analyse how the VAT and import duty regime can help create a supportive enabling environment towards achieving these targets and enabling the SAS industry reach its full potential, while also delivering multiple economic and social benefits for the country. This policy brief aims to reinforce the importance of the existing VAT and import duty exemptions, and to provide evidence on how to expand and ensure effective implementation of these exemptions in support of the FGN's energy access targets for 2023 and 2040.

Accelerating progress on electricity access is a major priority in Nigeria, where 77 million out of a total population of 201 million still lack access to electricity. Nationwide, this represents 40% of households, and 60% in rural areas. Even among those who do have connections, the majority are connected to an unreliable main grid with frequent – and costly – outages. Households often spend more on generator fuel and kerosene for lighting than on consumption from the grid, resulting in an inefficient, costly, and environmentally damaging energy sector. The opportunity for clean and reliable SAS energy technologies in this context is vast.

In order to achieve its energy access targets, Nigeria will need to provide new electricity connections to more than 1 million households per year over the next two decades. Nigeria's off-grid market is unique due to the enormous deficit of centrally generated power vis-a-vis actual demand. The increase in installed capacity and generation in recent years falls well short of the growth in the population's demand for power. Off-grid energy solutions will play a key part in delivering on the FGN's universal access target by 2040, as they represent the most cost-effective mode of electrification for a significant share of the rural population. This growth will consolidate what is already one of the largest SAS markets worldwide in terms of global unit sales with an estimated investment opportunity of around US\$ 9.2 billion per year.²

Methodology

This assignment combined engagement with local public and private sector stakeholders, and quantitative analysis of relevant factors. Targeted engagements were carried out with 12 public and private sector stakeholders including government institutions, development organisations, and solar companies. These interviews were used to both ensure the latest and most appropriate data and information is used, and to inform and test modelling assumptions for the quantitative tool. The quantitative tool builds on the previously developed ACE TAF responsible taxation tool, with two main modifications: (1) customisation of data sources appropriate to the Nigerian context, and (2) deepening analysis of specific factors highly relevant to Nigeria, such as the potential for SAS solutions to displace small gasoline gensets, to impact on fuel expenditure by households and government, an analysis of affordability of different SAS systems for Nigerian households, and consideration of the local assembly/manufacturing sector for solar products.

1. ACE TAF (2021) "Impact of Tax Incentives on Access to Stand-Alone Solar Policy recommendations from analysis in Malawi, Rwanda, and Sierra Leone".

2. ACE TAF (2021) "Stand-alone Solar Investment Map – Nigeria".

FINDINGS

Overview of outcomes



₦ 1.7 billion per year
forgone net VAT and import duty receipts at today's market size

₦ 6.4 billion by 2025
forgone net VAT and import duty receipts if market reaches potential

₦ 5.4 billion per year
worth of economic livelihood benefits

₦ 4.6 billion per year
corporation tax

₦ 2.6 billion per year
income tax from worker's in the SAS value chain



Further direct and indirect benefits of tax exemptions



730,000 households (3.6 million people) in addition reached by 2025 particularly the most vulnerable



3,200 jobs created in the SAS value chain providing **₦ 8 billion per year** in local salaries



₦ 5.4 billion per year reduced federal gasoline subsidies in gensets each year



₦ 48 billion per year reduced household expenditure on other energy access products



33,000 tonnes of CO₂ emissions avoided each year



3 million study hours per day gained for children in rural households



Providing critical services to vulnerable communities which will reduce strain on public sector services, including social safety nets, health care provision, unemployment programs etc

Figure 1: Summary of VAT and import duty exemptions, and the benefits

Source: ACE TAF analysis

Energy access outcomes

The first and most important impact of VAT and import duty exemptions is to accelerate access to energy for Nigerian households. Under a reasonable but ambitious growth scenario, 2.75 million households could be using an SAS product by 2025. However, this is based on VAT and import duty exemptions being in place which both serve to reduce the end user price and make SAS more affordable, and contribute to a stable and favourable enabling environment for SAS companies and investors. Without these exemptions, around 700,000 fewer households are expected to gain access to SAS in the next five years which would undermine the government's ambition to electrify 5 million households through solar home systems and mini-grids by 2023, and the government's 2030 and 2040 national electrification targets.

Fiscal outcomes

There is a clear economic case for implementing VAT and import duty exemptions - although there is a trade-off between maximising fiscal revenue today versus improved fiscal and other outcomes in future. Currently VAT and import duties on solar technologies could generate up to ₦1.8 billion in annual tax receipts at today's sales volumes. However, if the right enabling environment is in place to support the SAS industry growing in line with its potential in the next five years – to which tax exemptions today if implemented today will make a significant contribution – the future potential to collect VAT and import duties could rise rapidly, worth up to ₦6.8 billion annually by 2025. Furthermore, the SAS industry could contribute ₦4.5 billion and ₦2.3 billion each year in corporation tax and employee income taxes respectively by 2025.

Even in the short-term, VAT and import duty exemptions could make a significant contribution to reducing federal fuel subsidies. By 2025, access to SAS technologies could displace usage of small household gensets, reducing government expenditure on fuel subsidies by around ₦20 billion each year. The contribution of VAT and import duty exemptions in accelerating the growth of the SAS industry could account for around ₦5 billion of the ₦

20 billion reduction in government expenditure each year, which alone offsets most of the foregone VAT and import duty revenue that could be collected.

Economic benefits delivered

The tax revenue foregone is vastly inferior to the value of the socioeconomic benefits delivered – making tax exemptions for the SAS industry a very effective use of public funds. The SAS industry is positioned to support up to 10,000 to full-time equivalent (FTE) jobs by 2025, providing salaries estimated at ₦20 billion, including in communities that need jobs the most. Without tax exemptions fully implemented, over 3,000 of these jobs would not be created, which also represents up to ₦8 billion less in salaries, and lower potential income tax contributions.

Access to SAS could also deliver income gains and cash savings to households. By using SAS, households could reduce expenditure on polluting and lower quality forms of energy access by over ₦100 billion,³ and drive rural productivity and income-generating activities worth ₦54 billion each year.

The role of local assembly and manufacturing

Local assembly and manufacturing of solar is a key priority for Nigeria and represents a substantial opportunity. The domestic SAS market alone represents a 1,000,000 annual unit sales opportunity within the next five years, or around ₦80 billion in revenue, and there could also be an export opportunity to other countries in the ECOWAS region where the energy access deficit remains high.

It is important that the fiscal incentive regime balances the needs to accelerate energy access, and supporting the local industry develop. The local assembly and manufacturing industry for solar products is still nascent and unable to meet local demand, requiring tailored support beyond import tariff application to develop. The main opportunities – especially in the next few years – lies in assembly of component parts, with a significant proportion of the hardware imported.⁴ In this context, import duty and VAT exemptions will be essential not only for supporting fully imported SAS kits, but also to the development of the local assembly industry which will need access to imported component parts. **Given the benefits of accelerating access to quality SAS products, we recommend tailored additional support to local assembly and manufacturing rather than introducing “disincentives” for imported products.**

Wider social and environmental outcomes

Access to quality lighting remains one of the most basic benefits of access to SAS products. Solar lighting allows rural families to extend their workday into the evening, extends availability of light for students, and improves quality of life. By 2025, over 10 million study hours each day could be gained through SAS, helping create a skilled workforce of the future to take advantage of job opportunities. Without tax exemptions, an extra two study hours each day for up to 1.4 million children would be lost.

Given the high prevalence of small gasoline (or diesel) gensets and kerosene lamps, accelerated access to SAS products would deliver significant environmental benefits. The SAS sector could significantly reduce household gasoline and kerosene consumption, mitigating up to 126,000 tonnes of CO₂ emissions each year by 2025, worth ₦2.4 billion.⁵ Without tax exemptions, up to 33,000 tonnes of this benefit would not be achieved, at a cost ₦630 million.

3. *Although it should be noted overall expenditure may increase as households move up to higher tier solar energy access*



4. *SEfoAall and AIIOn (2021) “Achieving Economies of Scale in the Nigerian Solar Value Chain - Opportunities and Benefits of Upstream Localization”.*


5. *at a social cost of carbon of USD 50 per tonne*

RECOMMENDATIONS AND NEXT STEPS

The potential to raise national revenue from the standalone solar sector remains relatively limited at the moment, while the sector remains relatively small and far away from its potential size. While import duties and VAT could raise some revenue already, the potential will increase markedly as the sector grows in future – not only from VAT and duties, but through corporation and income taxes from workers in the SAS value chain.

To make the best use of tax policy to support the achievement of the Federal Government of Nigeria's ambitious energy access targets of reaching five million households through solar connections by 2021, there are three main recommendations that should be implemented:

	<p>Recommendation 1: Apply import duty and VAT exemptions for quality-verified technologies</p> <p>Expand the current VAT Modification Order 2020, and Ministerial Directive on exemption of renewable energy equipment to include:</p> <ol style="list-style-type: none"> 1. Pico solar lamps as defined under the Common External Tariff (CET) Code 8513 specifically CET Code 8513.10.0000; 2. SHS kits which are integrated solar products used specifically for electrification but imported in individual components. These include items with CET Codes 8539.3190.00, 8528.7190.00, 8529.1000.00, 8513.10.0000, 8527.1920.00 and 8414.5900.00 used for solar electrification purposes; 3. Batteries that fall under the CET Code 8506 specifically CET Codes 8506.30.0000, 8506.40.0000, 8506.50.0000, 8506.60.0000, 8506.80.0000 and 8507.80.0000 used for solar electrification purposes; 4. Productive use equipment such as solar water pumps as defined under CET Codes 8419.19.1000, 8502.391.1000, 8419.31.0000 used for solar powered applications; and 5. Solar panels possessing diodes and other elements used for electricity generation under Heading 8501 (specific to the Ministerial Directive on exemption of renewable energy equipment as already covered by the VAT Modification Order 2020). <p>The expanded VAT Modification Order 2020 and Ministerial Directive on exemption of renewable energy equipment 2019 should accurately classify the exempted products under the exemption list, with relevant descriptions under the explanatory notes (such as applying a prefix 'solar powered'). It should also apply exemptions to technologies that meet the quality standards set out by SON.</p>
	<p>Recommendation 2: Set-up a Technical Working Group to support the implementation of the exemptions</p> <p>The Federal Ministry of Finance should set-up a Technical Working Group (TWG) comprised of key government institutions - including the Federal Ministry of Finance, Budget, and National Planning; Nigeria Customs Service; Federal Inland Revenue Service; Standards Organisation of Nigeria; Nigerian Investment Promotion Commission; Federal Ministry of Power; and Federal Ministry of Industry, Trade, and Investment - the private sector such as through the industry association, and international development partners to support the implementation of the exemptions. Its roles will include but not limited to:</p> <ol style="list-style-type: none"> 1. Review findings from this study and develop an effective process for implementing the exemptions in the short to long term. 2. Review all solar electrification technologies and develop appropriate CET Code classification and definitions for products to be exempted.

	<ol style="list-style-type: none"> 3. Monitor the effectiveness of the exemptions to ensure the desired impact is achieved. 4. Apply exemptions only to products that meet SON quality standards. 5. Review and update the exemption list for solar technologies over time. 6. Provide government – private sector coordination, and advisory on matters related to the implementation of fiscal incentives and relevant policy provisions.
	<p>Recommendation 3: Improve the importation process for solar products to reduce delays and resultant costs with are passed on the end user</p> <p>The NCS should identify the bottlenecks that make the importation process for solar products complex and which cause delays that lead to demurrage and other associated costs which are passed to the end user. As identified through stakeholder engagement, these include:</p> <ol style="list-style-type: none"> 1. The inconsistent interpretation of HS codes for solar technologies particularly SHS kits leading to varying taxes and levies, and delays; 2. Proper implementation of the Import Duty Ministerial Directive and VAT Modification Order with the applicable taxes and exemptions for solar products; and 3. Length of time it takes to clear solar products and technologies, and other bureaucratic bottlenecks that come up at the ports. <p>These can also form part of the responsibilities of the TWG. Capacity building and other required technical assistance can be provided by stakeholders such as development partners to NCS and other relevant government officials at the ports.</p>

USEFUL FURTHER RESOURCES

ACE TAF (2020) “Importation Guide for Solar PV Products and Technologies in Nigeria”.

ACE TAF (2021) “Stand-alone Solar Investment Map – Nigeria”.

ACE TAF (2021) “Impact of Tax Incentives on Access to Stand-Alone Solar Policy recommendations from analysis in Malawi, Rwanda, and Sierra Leone”.

ACE TAF (2021) “Stand Alone Solar (SAS) – Market Update Nigeria”.

ACE TAF (2021) “Assessment of Local Manufacturing of Off-Grid Solar in sub-Saharan Africa – Report”.

A2EI (2019) “Putting an End to Nigeria’s Generator Crisis: The Path Forward”.

FIRS (2020) “TAXES/LEVIES COLLECTED BY FIRS”.

GOGLA (2019) “Powering Opportunity in West Africa”.

Nigeria Bureau of Statistics (2020), “Consumption Expenditure Pattern in Nigeria – 2019”.

Seforall and AllOn (2021) “Achieving Economies of Scale in the Nigerian Solar Value Chain - Opportunities and Benefits of Upstream Localization”.



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