Policy Research on the imposition of 10% Tariff Duties on Solar Components: Making a way for Solar in Nigeria
Executive Summary

This policy paper was developed following a collaborative process involving active practitioners in the Renewable Energy Sub-sector - in reaction to the newly imposed 10% import duty on solar components. It seeks to present a case for the protection of investments in this nascent sector and achieving sustainable and reliable access to electricity for the growth of the Nigerian economy and her people.

The 10% duties on solar components not only sabotage all the benefits of solar energy in Nigeria, but also reflect the continuous norm of policy inconsistency and a lack of commitment by successive Nigerian government to drive both monetary and fiscal policies in a coherent manner to deliver her desired economic development in the medium and long term. The imposition of 10% duties on solar components sends a very wrong signal to the global community on Nigeria's commitment to achieving universal electricity access as well as achieve its National Determined Contribution (NDC) under the United Nations Framework Convention on Climate Change (UNFCCC) and Sustainable Development Goals (SDGs).

With the international price of solar technologies dropping by over 50% in the last decade, Nigeria continues to deny her population the gains of solar technology, unlike other West African countries signed unto the ECOWAS Common Excise Tariff (CET). The current HS coding that determines tariff charge (CET) have induced the Federal Ministry of Finance through the Nigerian Customs to impose and enforce from a zero percent (0%) duty to 5% import duties and 5% VAT on imported solar components. This shocking increase, have crippled local renewable energy developers, escalated solar prices for existing underserved communities and diminished the progress of hundreds of solar energy projects – including those developed by the government through the Rural Electrification Agency (REA) and Private Sector Developers across Nigeria. This imposition also does not conform to the Policy Incentives contained in the Nigerian Renewable Energy Action Plan (NREAP) of 2017 and the Companies Income Tax Act (CITA) of 2017, as approved by the Federal Executive Council that recommends zero duties for renewable energy components in the short and medium term.

This policy paper therefore calls all decision makers:

1. To halt the newly imposed import duties;

2. Call the Tariff Technical Committee in the Federal Ministry of Finance to immediately consider a downward review of import duties on solar component;

3. Pass a legislative act to operationalise a Special Task Force on Renewable Energy and Energy Efficiency to be established in the Nigerian Customs Service to fast-track port clearance, implementation of zero duties for RE technologies within a targeted period of time, and ensuring quality standards of products to avoid waiver abuses.

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With the international price of solar technologies dropping by over 50% over the last decade, Nigeria continues to deny her population the gains of solar technology, and unlike other West African countries
1.0 INTRODUCTION: Nigeria's Energy Poverty Predicament

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The (ERGP) of the Federal Government of Nigeria recognizes that access to affordable and reliable electricity is a central building block of any meaningful socio-economic development.

The national grid, breaks-down after a load capacity between 4500MW to 5500MW. Committed efforts need to be channelled towards enabling a business environment, for the expansion of off-grid electricity across the country. This is sacrosanct if the national is serious about meeting its energy demand, needed to drive sectorial and broader economic growth and development.
solar solutions for instance can eventually be absorbed into the main grid or could operate autonomously at time goes on.

Even though solar products are far more economical in the long run than the current alternatives - (i.e kerosene, petrol and diesel generators), the exchange rate burden, Value Added Tax (VAT) and Import Duty (tariffs) significantly inflate end-user costs, thereby undermining the ability of the solar to compete with traditional means of electrification.

In recent years, Nigeria's tariff structure has undergone significant changes. Since 11 April 2015, the country began to implement the new ECOWAS Common External Tariff (CET) for a five-year period (2015-2019) and Fiscal Policy Measures which allow the implementation of Supplementary Protection Measures. These measures include an Import Adjustment Tax (IAT) and a Supplementary Protection Tax (SPT) intended to facilitate the adjustment of ECOWAS States during the first five years of CET implementation. A key feature of this implementation plan is a reduction of import duty rates on specific items on the national list, aimed at promoting the development of sectors deemed critical to the economy. Notable is the zero percent duty on machineries and equipment for priority sectors - Agriculture, Cement, Power, Hospitality, Iron and Steel, Solid minerals, Textile and Aviation.

The ECOWAS CET consists of 5,899 tariff lines with five 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 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.

Only recently in the second quarter of 2018, the Federal Ministry of Finance, through the Nigerian Customs Service imposed a five percent (5%) duty and a five percent (5%) Value Added Tax (VAT) on solar panels coming into Nigeria summing up to 10 percent tariff on solar panels which is against the policy incentives contained in the Federal Government approved Nigerian Energy Efficiency Action Plans (2015 – 2030) and CITA (2017).

The current 5% import duty and 5% VAT levied on solar components puts these products beyond the purchasing capability of many rural dwellers that stand to gain the most from their use. Since the imposition of the combined 10% import charges, investors in the off-grid solar market have recorded a fall in sales and market penetration (currently at <5%). The tax increase have disrupted already built business models of solar entrepreneurs; and
inducing a 50% revenue loss due to high prices and slow growth of the sector. Such unconsulted tax imposition, will slow down the penetration rate of renewable energy technology into Nigeria, and slow down if not impede the country’s effort to diversify her economy.

The cost of the country’s electricity deficit is huge, with businesses and households suffering the most. Around 60 million Nigerians use petrol or diesel generators, they jointly spend an estimated average of $22 billion annually on fuel expense. On a monthly basis, most rural households spend as much as N6,660/month on kerosene expenses. In total, an estimated N143.3 billion is spent monthly on kerosene by households in the entire country.

Industrial and commercial sectors suffer from the huge costs of self-generation and its negative impact is evidence in the massive retrenchment of workers, rising youth unemployment at 33.8%, inflating production cost and cost push inflation on the prices of market commodities.

The government is not left out. In its 2017 budget, N8.4billion was allocated for the maintenance, fuelling and purchase of new generators for government ministries, agencies and departments alone. This figure rose by almost 100% to N17billion in 2018. The government also bears a heavy cost in subsidizing these fossil products. The government is estimated to spend $1.5 billion annually on kerosene subsidy alone.

The poor state of electricity in Nigeria also affects the ease of doing business in the county; according to World Bank’s 2017 Ease of Doing Business ranking, Nigeria ranks a discouraging 180th out of 190 countries in terms of electricity access for businesses.

### ECOWAS Common External Tariff

<table>
<thead>
<tr>
<th>Duty Charge</th>
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<tr>
<td>5%</td>
<td>2,146</td>
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<tr>
<td>10%</td>
<td>1,373</td>
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<td>20%</td>
<td>1,165</td>
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<tr>
<td>Zero (duty free)</td>
<td>85</td>
</tr>
<tr>
<td>35%</td>
<td>130</td>
</tr>
</tbody>
</table>

## Impact of New Tariffs on Off-grid Solar Market

Since the imposition of the combined 10% import charges, investors in the off-grid solar market have recorded a fall in sales growth and market penetration (currently at <5%).

The new development disrupted already built business models of solar entrepreneurs, and inducing a 50% revenue loss due to high prices and slow growth of the sector.

Around 60 million Nigerians use petrol or diesel generators, despite having over 80% of households and businesses connected to the national grid.

In total, an estimated N143.3 billion is spent monthly on kerosene by households in the entire country.
To turn around the tide, this policy research seeks to address the gap in the FGN’s policy and regulatory frameworks, by advocating for the implementation of the zero-percent import duty incentive on renewable energy technologies as contained in the NREEEP of 2015 and the Companies and Income Tax Act (CITA of 2017). Aligned with the widespread consensus among experts and policymakers, this document holds the view that long-term VAT and import duty exemptions on solar components should be considered as it will benefit market-building efforts, as well as increase the range of quality, and affordable energy options available to consumers.

**Objective of the Policy Research**

This Policy research seeks to provide a case to

- Suspend the 5% import duty and 5% VAT currently levied on solar components.
- Review the current classification of solar products, solar cells, solar panels and other components (originally under the Heading 8541 of the harmonized system (HS) code) which was re-classified in 2018 under the ECOWAS Common External Tariff (CET) to 8501.
- Provide Tax Credits for Local Manufacturing of Solar Components, Parts and Materials, equivalent to 100% Customs Duty and VAT and other non-fiscal incentives to private sector investors and equipment manufacturers/suppliers.
- Show evidence of other country tariff structures around solar technology, despite their signing to the ECOWAS Common External Tariff (CET); to drive their national development.

Solar PV has a proven track record of delivering cost-competitive electricity services in rural areas. Traditional deployment models led by governmental and humanitarian interventions are being replaced with private sector, and business-led approaches. Examples like Kenya, Tanzania and Ghana show that VAT and import duty exemption are very effective in accelerating market development and solar penetration (which is currently >50% in these countries).

Investors in Nigeria’s solar market hold the view that by exempting solar components (including spare parts) and other manufacturing inputs from VAT and import duty, the FGN can accelerate the market demand for solar technologies, which will eventually make local manufacturing economical in the long-term. Policymakers in turn agree that this exemption will increase Nigeria’s chances of achieving our climate protection goals of 20% emission mitigation (unconditionally) as contained in our Nationally Determined
Contribution (NDC) and our electricity-access goals of achieving 90% electrification rate by 2030 with 30 GW installed generation capacity and at least 30% renewable energy mix by year 2030.

There are strong potentials of creating 200,000 jobs and achieving greenhouse gas reduction of 31 million tonnes per year by 2030 from the renewable energy industry alone.

In addition, the FGN will also benefit from reduced spending on kerosene (currently at US$1.5 billion annually) and petrol subsidies as well as creation of new jobs. The avoided negative externalities, overall socio-economic development, and reduced spending on subsidies will have a strong positive impact on government revenues. The United Nations Environment Program estimates that VAT and Import Duty for 250,000 solar products could be off-set for every one million dollars spent by governments on kerosene subsidies. Nigeria’s off-grid electricity market is estimated at US$10 billion in revenue annually, and potential cost-savings of $6 billion for households and businesses if the off-grid population transition to solar lighting from inefficient fuel sources such as kerosene, candles and petrol generators.
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Justification of the Policy Research

Solar PV have a proven track record of delivering cost-competitive electricity services in rural areas. Traditional deployment models led by governmental and humanitarian interventions, are being replaced with private sector, and business-led approaches. Examples like Kenya, Tanzania and Ghana show that VAT and import duty exemption are very effective in accelerating market development and solar penetration (which is currently >50% in these countries).

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There are strong potentials of creating 200,000 jobs and achieving greenhouse gas reduction of 31 million tonnes per year by 2030 from the renewable energy industry alone.

Members of the Renewable Energy Association of Nigeria (REAN) acknowledge the FGN’s desire to protect the interests of local manufacturers and anti-dumping laws through trade policies. However, by exempting solar components from VAT and import duty, the FGN can accelerate the market demand that makes local manufacturing economically-viable while simultaneously supporting market development that expands choice and affordability for end-consumers. Exemptions will be passed on to the end-customer, thus significantly reducing the retail prices of solar products, while providing reliable electricity to power agricultural and industrial processing activities.

In addition, the FGN will also benefit from reduced spending on kerosene (currently at US$1.5 billion annually) and petrol subsidies as well as creation of new jobs. The avoided negative externalities, overall socio-economic development, and reduced spending on subsidies will have a strong positive impact on government revenues. The United Nations Environment Program estimates that VAT and Import Duty for 250,000 solar products could be off-set for every one million dollars spent by governments on kerosene subsidies. Nigeria’s off-grid electricity market is estimated at US$10 billion in revenue annually, and potential cost-savings of $6 billion for households and businesses if the off-grid population transition to solar lighting from inefficient fuel sources such as kerosene, candles and petrol generators.
MARKET POTENTIAL: The Decentralized Renewable Energy in Nigeria
Decentralized renewable energy (DRE) solutions are clean energy technologies that provide energy access to off-grid communities and underserved areas faster and at a much more affordable rate than conventional grid systems. The technologies include pico-solar lamps (less than 10W), DC solar home systems (usually between 20W – 300W), AC roof-top solar solutions (usually between 300W to 5kW) and mini-grids (which can be solar, biomass, mini-hydro, and wind solutions; or hybrid systems). Business models which have evolved over time to make these systems increasingly affordable and meet the purchasing pattern of the end user include; pay-as-you-go (PAYG), rental, pre-payment, lease-to-own, energy as a service (perpetual lease), upfront sales with a financing partner such as microfinance institutions, and direct upfront sale business models.

Nigeria has the largest economy in Sub-Saharan Africa (GDP of $405 billion), has 190 million people, and flourishing growth (CAGR of 15% since 2000). A significant amount of the economy is powered largely by small-scale generators (10–15 GW) and almost 50% of the population have limited or no access to the grid. Nigeria’s DRE market, the largest in Africa and second largest globally, has witnessed progressive growth in recent years with 1.7 million off-grid solar products sold between 2015 and 2017, and annual growth of 36% between 2014 and 2016. In 2016 alone, 820,000 solar products were sold in the country. Adoption can be very fast. Within the first three months of the Solar Nigeria programme, 49,000 households and businesses gained access to clean modern electricity. These pico-solar solutions provide rural households savings which average $79 per year for the three-year lifespan of the solar product, the equivalent of school expenses for four children in primary school or one child in secondary school in a rural household, or average rural household’s daily expenditure on food for 6.5 weeks.

The country’s off-grid market for mini-grids and solar home systems is estimated to yield $10 billion annually in revenue and savings of $6 billion for Nigerian homes and businesses. The government’s Rural Electrification Agency (REA) has shifted its rural electrification strategy from grid expansion to deployment of solar mini-grids, with a plan to have 10,000 mini-grids operational in communities across the country by 2023. The market also promises enormous savings potential for the government. According to the United Nations Environment Programme (UNEP), over $1.4 billion and the equivalent of 17.3 million barrels of oil annually can be saved by the country if the off-grid population transition to clean, modern lighting from inefficient fuel sources such as kerosene, candles and batteries.

The growth of the DRE market has before now, been facilitated by favourable government policies such as the NERC Mini-Grid Regulation (2017), Sustainable Energy For All Action Agenda (2016), The Nigerian Renewable Energy and Energy Efficiency Policy (2015); The Nigerian Renewable Energy Action Plan (2016), Rural Electrification Strategy and...

The NREEEP and the NREAP approved in 2015, propose a set of fiscal and market incentives to support renewable energy deployment in the country especially in off-grid locations including a moratorium on import duties for renewable energy technologies; the formation of a Special Task Force within the Nigerian Custom Services for renewable energy to mitigate potential difficulties in the short term; and in the long term, these policy documents propose the development of further tax credits, capital incentives and preferential loan opportunities for renewable energy projects. This is stated in sub-section 2.6.2.2, 2.7.2, 3.2 and 5.4 of the NREEEP.

The country's National Renewable Energy and Energy Efficiency Policy (NREEEP) approved in 2015 by the Federal Executive Council, makes provision for incentives including import duty exemptions for Off-Grid Renewable Electricity Supply. These include;

- Sub-section 2.6.2.2 (viii): The provision appropriate incentives to entrepreneurs to ensure adequate returns on investment in power generation from renewable energy sources
- Sub-section 2.7.2 (iv): provision of fiscal incentives, subsidies to alleviate up-front costs, tax and duty exemptions for prospective investors in the renewable energy sub-sector
- Sub-section 3.2 (vii): Provision of a duty free incentive to importers of energy saving equipment for a period of 5 years starting from the approval and operation of this policy
- Sub-section 5.4 (e): Incentives for importers to offer energy efficient appliances and lighting through exemption from excise duty and sales tax; free custom duty for two (2) years on the importation of equipment and materials used in renewable energy and energy efficiency projects; and provision of soft loans and special low interest loans from power sector development fund for renewable energy supply and energy efficiency projects.

The National Renewable Energy Action Plan includes provision for exemption in renewable energy and energy efficiency equipment. The Rural Electrification Strategy and Implementation Plan (RESIP) under sub-section 3.5.7 provide for the import of renewable energy solutions for rural electrification without the payment of exorbitant import taxes.

The NREEEP and the NREAP in summary propose a set of fiscal and market incentives to support renewable energy deployment in the country especially in off-grid locations.
especially in off-grid locations including a moratorium on import duties for renewable energy technologies; the formation of Special Task Force within the Nigerian Custom Services for renewable energy to mitigate potential difficulties in the short term; and in the long term the design of further tax credits, capital incentives and preferential loan opportunities for renewable energy projects.

Import duty had previously favoured only solar panels which had zero percent duty until 2018 when they were reclassified, and a 5% import duty and 5% VAT was applied to them. The Nigerian Government in 2015, adopted the ECOWAS Common External Tariff (CET) 2015-2019 and Fiscal Policy Measures which allows the implementation of the Supplementary Protection Measures. With the ECOWAS CET Coming into effect in Nigeria from 11th April 2015, imports into the country became subjected to the rates contained in the ECOWAS CET 2015 – 2019 rendering the prior rates un-applicable.

But all these policies now count for nothing....
THE COMPLICATION:
Current Tariff Structure around Solar Components in Nigeria
International trade is critical to the development of a country's economy as it leads to the growth of markets, employment opportunities, socio-economic development, and discourages market monopoly. Customs duties are taxes imposed on imports and exports of goods in international trade which could either be import duties (levied on imported goods) or export duties (levied on exported goods). These duties can either be specific or on ad valorem basis, that is, based on the assessable value of goods.

Tariff refers to a list of commodities and their leviable rate of customs duty, usually following the Harmonized Commodity Description and Coding System (HS). The HS, developed by the World Customs Organization replaced the previously used Standard International Trade Classification (SITC), and is an internationally standardized system of codes and product descriptions used in the classification of traded products and serves as a framework for the collection of international trade statistics.

Tariffs serve a number of key purposes with several benefits for a country which include;

- Generation of revenue from international trade
- Solving issues of trade deficit and balance of payments
- Local industry protection (especially in developing countries)
- Attracting investors to protected sectors
- Improve income distribution
- Employment and job creation
- Import substitution and economic growth.
Tariff and Customs Duties in Nigeria are primarily determined by the Federal Ministry of Finance and executed by the Nigerian Customs Service (NCS). The Customs and Excise Management Act (CEMA) Cap 45 Law of 2004 vests legal authority on the NCS to act on behalf of Nigeria in all customs matters with its key objectives including trade facilitation, security and revenue generation. Customs valuation in the country is based on the transaction value of the imported good. In developing national tariff, the revenue department which in the case of Nigeria is the Federal Ministry of Finance, refers to the HS code of the good/product/commodity. However, in setting these tariffs, it is important that set tariffs are in tandem with the national agenda and development strategies of the economy.

The Nigerian Customs Service tariff classification is interpreted based on International Standard General Interpretative Rules (GIRs). According to GIR 1 - The titles of Sections, Chapters and sub-Chapters are provided for ease of reference only; for legal purposes, classification shall be determined according to the terms of the headings and any relative Section or Chapter Notes and Sub-heading Notes. The Notes mentioned above Explains the following:
1. Inclusions
2. Exclusion
3. Explaining

The GIRs is in WCO Harmonised Systems Nomenclature for Harmonising classification in all 190 contracting parties of the WCO. In 2018, the Nigerian Custom Service (NCS) re-classified solar panels from its previous classification under Heading 8541 (8541.40000) to Heading 8501.
According to the NCS tariff classification:

The relevant EXCLUSION NOTES from the provisions of the Explanatory Note, Vol.5, P – XVI-8541-3 on Heading 8541 which clarifies that, “the Heading DOES NOT COVER panels or modules equipped with elements, however simple (for example, diodes to control the direction of the current) (HEADING 8501)”. This implies that such panels are classifiable under Heading 8501.

EXPLANATORY NOTES for solar panel:

Heading 8501 (XVI-8501-3), covers inter alia:

- Photovoltaic generators consisting of panels of photocells combined with other apparatus, like storage batteries and electronic controls, (voltage regulator, inverter, etc.).
- It also covers Panels or modules equipped with elements, however simple (for example diodes to control the direction of the current), which supply the power directly to, for example, a motor, an electrolyser, etc.

According to the NC, While solar photovoltaic cells of 8541 covers Arrays, Module and Panels, once this arrangement starts to generate stand-alone usable energy that could be connected to external load, the scope of 8541 is exceeded, at this stage, it enters the scope of 8501.

Solar cells and Panels for function other than generation of useful power = 8541

Solar cells and Panels for generation of power = 8501

Consequently according to the NCS, Solar Panels as presented consisting of modules and elements (however simple, e.g diode and junction boxes) should henceforth be classified in their appropriate heading of 8501. The NCS maintains that Heading 8501 covers DC generators which it says solar panels fall under, with the distinguishing factor between Headings 8501 and 8541 as related to solar panels being that solar panels have bypass diodes permitting for use in power generation purposes and Heading 8541 applying to solar modules used for functions other than generation of useful power. This is also despite the description under Heading 8501 which applies to DC motor generators with movable parts under which solar panels do not fit.
Beyond solar panels, other associated solar components have various import duties applicable to them. For instance, batteries, a critical component of off-grid solar solutions for power backup is liable to a 20% import duties and 5% VAT applicable to them. Solar water heaters; solar powered generators; battery chargers and inverters have 5% import duties on each. Other products such as solar home systems have import duties inconsistently applied based on the associated components/devices in the system. The sum of all these duties and VATs add to the final cost for end-consumers making them expensive and increasingly unaffordable especially for rural dwellers, and uneconomical for businesses to adopt, thereby stifling the profitability for domestic solar enterprises.

<table>
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<th>CET code</th>
<th>Description</th>
<th>System Unit</th>
<th>Import Duty</th>
<th>Value Added Tax</th>
<th>Levy</th>
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<td>8419191000</td>
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<td>Solar cells whether or not in modules or made up into panels</td>
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<td>Other semiconductor devices</td>
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Source: The Nigerian Customs Service (NCS) – Accessed 2 November 2018
The newly imposed duties on solar component, was identified as a major barrier to the execution of not only private sector lead off-grid energy, but also government solar mini-grid projects. During the ERGP Focus Laboratory exercise in March, which was designed to enable pre-screened private sector investors have access to senior government officials, regulators, and cabinet ministers; to efficiently and effectively resolve the most pressing bottlenecks delaying their proposed investments, the Director of the Rural Electrification Agency (REA), bitterly complained about the adverse impact of the imposed duties on solar components on the government-donor supported solar mini-grid projects in the country.

Following the public complaint of the REA Director, resolving actions taken by the government have only been waiver exceptions on the solar components for these selected government projects. Whereas projects that emanate from private sector lead arrangements (market forces), are stalled by high import duties and levies, as effort to operationalise approved policy incentives are now at the discretion of government officials in the Ministries of Power, Finance, and the Nigeria Customs Service, rather than a systematic market driven framework/mechanism which are not left to the feelings and discretions of government officers; prone to abuse and neither market driven or development oriented.

In response to the newly imposed 5% import duty and 5% VAT levied on solar components. On the 18th of April, 2018, industry stakeholders attended a Scaling Off-Grid Energy (SOGE) event in Lagos, where the Nigerian Customs Service and the Federal Ministry of Finance made presentations about the newly imposed tariff on imported solar components. The consensus that came out of that meeting was that stakeholders in the sector should approach either the Federal Ministry of Finance to directly give
authorisation for either a re-classification of the solar components (HS code) or for the legislative arm of government to pass an ACT mandating a zero percent duty to the implemented as contained in our national policy documents.

The International Renewable Energy Agency (IRENA) has also proposed changes to the HS codes used for solar products from the World Customs Organization (WCO). With international trade in solar products valued at over US$25 billion per year, the HS codes for solar products have not kept up developments and growth of the sector.35. IRENA recognizes that most solar technologies are included as part of broader product groups within the HS and as such do not reflect the variety of different solar products that are now available. Recognizing the need to clarify classification and trade in solar products to enable them get the required incentives, IRENA has proposed three changes to the HS codes and their product descriptions – separation of solar cells and solar water heaters from their current wider product group; the establishment of two specific codes for solar lights and lighting sets to reduce uncertainty, confusion and ambiguity with their classification; and creation of three codes for photovoltaic generators for a distinction from trade in other generators and creation of a place in the classification for solar home systems.

The Power and Gas Workstream of the ERGP Implementation Unit is also supporting this process to resolve the issue of high tariffs on solar components. During the ERGP lab in March 2018, the issue of the new tariff charge on solar components resulting from the new HS-code classification as a barrier to energy projects and investment, was a front burner. The ERGP Implementation Unit, which is domiciled in the Ministry of Budget and National Planning but reports to the Central Steering Committee made up of key Ministers and Chaired by His Excellency, the Vice President of Nigeria is also making great effort to resolve this problem with similar recommendations for tariff reviews and the evolution of a framework to ensure speed in port clearance and realistic tariff charges that will foster rather than erode Nigeria's development.
OTHER COUNTRY EXPERIENCE:
Tariff for Successful Off-Grid Markets in Africa

Chapter 04
Unlike Nigeria, East African nations generally have adopted incentives to drive the adoption of solar and renewable technologies through several tax exemption programs. The most progressive off-grid markets are located predominantly in East Africa. The East African Community (EAC) has an import duty exemption on solar products, reducing import duties to zero percent for certain technologies, including photovoltaic cells and modules. Countries such as Tanzania and Kenya have gone further with additional tax exemptions, such as the removal of value-added tax on solar product.

Rwanda, Burundi, Kenya, Tanzania and Uganda have a common agreement on import duty waivers. In clean energy, this applies to equipments for the generation of solar and wind energy, including accessories and deep cycle batteries. The agreement reduces import duties to 0% for the following technologies: “Specialized equipment for development and generation of Solar and Wind Energy, including accessories and deep cycle batteries which use and/or store solar power” (Part B-General Exemptions, paragraph 26).

Kenya: Kenya is arguably the most progressive off-grid market in the continent resulting from its favourable tax incentive which has led to significant reductions in its off-grid population. In Kenya the Government has zero-rated the import duty and removed Value Added Tax (VAT) on renewable energy equipment and accessories. And to provide the policy framework, The Energy Regulatory Commission has prepared and gazetted the Energy (Solar Water Heating) Regulations 2012 and The Energy (Solar Photovoltaic) Regulations 2012.

In 2014, the Kenyan Government in addition to its zero import duty on solar products lifted the 16% Value Added Tax (VAT) charge offering exemption on imported solar products. This led to an almost two-fold increase in pico-solar adoption and almost 50% reduction in the price of basic pico-solar products from $7 to $4 making basic lighting products increasingly affordable.
affordable especially for rural consumers. This in addition to favourable consumer payment models such as Pay-As-You-Go (PAYG) has made Kenya's off-grid energy market arguably the fastest growing in Africa with over 500,000 households having electricity access through PAYG solar solutions in remote communities.

With an average of 40,000 new PAYG systems installed monthly in East Africa due to its favourable market and incentives, its off-grid market has attracted huge amount of private sector funding – over $360 million between 2013 and 2016 in the PAYG market alone. The largest debt finance in the PAYG sector globally by a solar company was raised in Kenya by M-Kopa Solar, $80 million in commercial finance. Four East Africa countries - Kenya, Tanzania, Rwanda and Uganda - currently account for over 25% of worldwide pico-solar market share alone.

The provision of various solar solutions to meet various energy needs has led to socio-economic and development benefits in the region as well. In two years, Kenya has progressed 40 places in the global “Ease of Doing Business” ranking to 92nd position with a further increase of just five more places potentially leading to an increase in foreign direct investment between $250 million and $500 million.

Tanzania: From 144th position in 2016, Tanzania rose to 132nd position in 2017. These progressions have been enabled by favourable strategies by these governments in addressing critical areas of their economies such as access to electricity. Increased solar adoption also frees up significant grid capacity availing power supply to power intensive sectors such as manufacturing and saving government huge sums of money in grid expansion and grid stabilization projects. In addition, with increasingly available grid power supply and as such lesser expenditure on self-generation, the cost of manufactured products are
significantly lowered with economic benefits to the economy.

Ghana: The Government of Ghana provides:

- Total exemption from import duty on renewable energy generators, including solar generators, wind turbines and technologies for generating energy from municipal waste;
- VAT exemption on imports of renewable energy products if the components are brought in as a single piece (i.e. not taken apart beforehand); and
- Customs import duty exemption on plant, machinery, equipment and accessories imported specifically and exclusively to set up an enterprise

This is shown in the ECOWAS tariff plan.

OTHER COUNTRY EXPERIENCE

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Chapter 05

COST - BENEFIT ANALYSIS:
To Exempt or Not To Exempt
COST - BENEFIT ANALYSIS:

Government Revenue and Cost Savings:

With import duty and VAT exemptions on solar products in the country, the government will be forfeiting comparatively insignificant short term revenue. However, huge revenue and significant positive multiplier effects will be accrued to the government from the following sources;

For the Government

1. Increased job creation and employment opportunities in the country, and an increase in productive uses of electricity beneficial to the country's economy. According to UNEP enlighten, off-grid solar employs around 30 people per 10,000 people living in rural areas, compared to just one person per 10,000 people in the case of kerosene. For every one megawatt of solar installed, 3,000 jobs can be created in the country. In general, over 10,000 people can be employed in the country's off-grid market.

2. Increased household income from savings on kerosene, petrol and diesel expenses which can be channelled towards other pressing household needs and economic activities. With grid connected households and businesses spending an estimated $14 billion annually on fuel expense alone, the potential in making massive savings which can be channelled into other economic sectors of the country is huge.

3. Government savings of $1.5 billion annually from kerosene subsidy alone. A transition to clean modern DRE solutions and elimination of the use of inefficient lighting sources such as kerosene with its negative health, safety and environmental consequences will save the government about $1.5 billion annually on savings from kerosene subsidy which can be channelled to other critical sectors of the economy that require government funds. UNEP estimates that for every one million dollars spent by governments on kerosene subsidies, tariffs for 250,000 solar lanterns could be off-set.

4. Besides savings from kerosene subsidies, over $1.4 billion and the equivalent of 17.3 million barrels of oil annually can be saved by the country if the off-grid population transitions to clean modern lighting from inefficient fuel sources such as kerosene, petrol, diesel, candles and batteries facilitated by incentives such as import exemptions.

5. Reduced government expenditure on alternative power generation from diesel/petrol generators amounting to N17bn in 2018 alone for all government institutions in the country. This savings alone can fund all proposed health projects in the government's 2018 Budget, or settle debts and liabilities to local contractors by the government, or fund over 50% of the proposed power projects in the 2018 Budget. This is despite huge cost savings for government following the adoption of DRE solutions in the
country such as savings from powering street lights and other public infrastructure that require constant power.

6. $10 billion annual revenue from the country's off-grid market for mini-grids and solar home systems alone for the country's economy.

7. Boost economic activities and cost benefits across the country that come with access to affordable and reliable power.

It is also important to note that the continued application of the import duty and VAT on solar products will lead to reduced demand as these products will become increasingly unaffordable for the market, leading to reduced imports and as such reduced revenues for the government.

For Businesses in the RE Space:

The removal of import duties and VATs on solar solutions and products will maximize the sector's contribution to job creation and overall economic growth as well. With the growth of the market, in-country assembly and manufacture will emerge organically at the scale required. With increased adoption and understanding of the technology, the business case for local manufacturing will be greatly improved to serve the anticipated tens of millions of customers in the country. Currently there is no local manufacturing and only two local assembly centres – Blue Camel Renewable Energy Assembly and Training Centre, and Auxano Solar Assembly – which currently cannot meet up to 10% of the market. As the market matures, and the local market for assembly and manufacturing develops, the government can then take necessary steps in promoting the local industry and its competitiveness which could be through subtle import duty increases as long as international standards are met in local manufacturing and affordability for the target market. By exempting solar solutions from VAT and tariffs, governments can accelerate the market demand that makes local manufacturing economical while simultaneously supporting market development that expands choice for end-users.

End User Income and Cost Savings:

Nigerian households stand to gain significantly from the affordability of DRE solutions;

I. Reduced expense on inefficient energy sources. Low income households spend between 10-25% of their income on inefficient energy sources for basic lighting alone. Households generally spend as much as N6,660 on just kerosene expenses according to the Nigerian Bureau of Statistics (NBS). With the country's minimum wage of N18,000, this translates to 37% of monthly income on just energy provision. A transition to solar solutions will lead to significant savings for these households which
can be used for other important needs such as food and education. Pico-solar solutions alone provide rural households savings which average $79 per year for the three-year lifespan of the solar product. This is the equivalent of school expenses for four children in primary school or one child in secondary school in a rural household, or average rural household’s daily expenditure on food for 6.5 weeks. In total, an estimated N143.3 billion can be saved monthly on kerosene alone by households using DRE solutions.

2. Savings of $6 billion annually from Nigerian homes and businesses using DRE solutions which can be channelled towards other key economic areas of the country
CONCLUSION & RECOMMENDATION:
Tariff Structure and Strategy
CONCLUSION & RECOMMENDATION:

In conclusion, it is important to note that the continued application of the 10% import charges on solar components will lead to reduced market demand as these solar products will become increasingly unaffordable for the majority of Nigerians living on less that US$1.5 per day.

By exempting solar products and their associated components from VAT and Import Duty, the Nigerian government can contribute to a more level playing field for the sector and support the sustainable growth of the local solar market while meeting its electricity access target, climate change and sustainable development goals.

As a recommendation, it must be noted that the off-grid market in Nigeria is still at its infancy and requires government support in driving electricity access to the over 75 million Nigerians lacking access to electricity. Incentives such as import duty and VAT exemptions will immensely facilitate the provision of clean energy solutions in the country and grow its off-grid market.

The following recommendations will facilitate the growth of the sector;

1. Implementing import duty and VAT exemptions on solar panels, solar home systems, and solar products.

a. This can be done through a reclassification of solar panels under the previous HS code 85414000, as the description under Heading 8501 applies to DC generators or electric motors with movable parts which solar panels do not fall under. Solar products such as pico-solar lamps and solar home systems should also be exempted from import duties and VAT. While IRENA works with the World Customs Organization (WCO) in the general reclassification of solar products, the government through the Federal Ministry of Power, Works and Housing which has a very active Renewable Energy Department and the Federal Ministry of Finance should develop sectorial waivers for solar panel, products and systems for consecutive fiscal years.

b. The National House of Assembly especially its Committees on power should aid in facilitating this process not only by bringing these key government ministries together, including the Nigerian Customs to ensure the development and full implementation of the sectorial waivers on solar
products, but also passing an act to set-up mechanisms to enforce implementation like the Renewable Energy and Energy Efficiency Special Task Force within the Nigerian Customs Service (NCS)

c. The National Assembly should consider passing the renewable energy Bill. Feedback from the Nigerian customs indicates that unlike other West African countries, Nigeria does not have a renewable energy law that compels them (Nigerian Customs) to operationalise the zero duty on solar components even if the Federal Executive council have approved the policy. Hence they (the Customs) rely on the ECOWAS Common External Tariff (CET) to determine tariffs. So by implication while other African countries who signed the CET enjoy the fall in solar prices via zero duties because they have a renewable energy law that overrides the CET, Nigeria does not and refuse to avail its citizens this benefit.

d. The Ministry of Budget and National Planning, Ministry of Finance, specifically the Department of Revenue, and the member of the Committee on Tariff and Trade, as a matter of needs to realise the central role of renewable energy and also call for the immediate downward review of the newly imposed 10% (5% VAT and 5% duty) tariff levied on solar components, as this is already frustrating both the renewable energy market growth and energy projects of the Ministry of Power through the Rural Electrification Agency (REA).

2. Renewable Energy and Energy Efficiency Special Task Force within the Nigerian Customs Service (NCS) as specified under Section 5.7 of the country's NREEEP. This section calls for the establishment of a Special Task Force within the NCS for the renewable energy and energy efficiency sector given a special mandate to fast track the screening of renewable energy and energy efficiency products and component imports into the country, streamlining the cumbersome import process and most importantly developing a special HS-Code for the sector.

3. Supporting Local Assembling and Manufacturing. With market demand for off-grid solutions growing progressively in the country, the government should put in place favourable instruments that support local assembly and manufacturing with the aim of facilitating cheaper production at required economies of scale, increased affordability from local production, and reduction in future dependence on imported solar solutions. This can be done through tax incentives such as duty exemptions for raw materials which are unavailable locally and need to be imported for the production of solar panels and products, company tax waivers for local manufacturing and assembly industries, provision of favourable loans to the local industry, and other similar incentives.

There is also provision for this in the country's National Renewable Energy and Energy Efficiency Policy (NREEEP) under Section 2.3.3 (iv) and sub-section 5.4. Kenya for example has granted duty exemption on raw material
import used in solar equipment manufacturing which was previously at 25% import duty, to boost local production. This will enable the current solar assemblies to scale with more assemblies springing up in the country, attract significant investments into the industry, and lead to the production of solar solutions not just for the country but markets in other African countries. By gradually creating the required enabling environment for the growth of local industries and driving market demand required to make them viable through current exemptions on solar products and solutions, the government will not only empower the sector to be one of the most thriving renewable energy market globally especially with the global transition towards clean energy solutions, but also lead to massive job creation and overall economic growth in the country.

4. The Ministry of Finance needs to work in harmony and constantly interface with other key ministries before making any fiscal decisions that on one side seems to translate to quick revenue, but on the other hand creates a setback in the form of market crises; unemployment, cost push inflations, scares investors, and cripple economic growth in the short, medium and long term. It is important that the Ministry of Finance wears a coordinating and over viewing lens of the entire sector and understand the multiplier effect of its decision overtime on the economy.

$6bn

it must be noted that the off-grid market in Nigeria is still at its infancy and requires government support in driving electricity access to the over 75 million Nigerians lacking access to electricity.

The Ministry of Finance needs to work in harmony and constantly interface with other key ministries before making any fiscal decisions that on one side seems to translate to quick revenue
OUR ASK:

- The National Assembly especially its Committees on Power should bring together key government ministries, department and agencies including the Nigerian Customs Service, Ministry of Finance, Energy Commission of Nigeria, Ministry of Power, works and Housing and Ministry of Science and Technology, Standards Organisation of Nigeria etc. to ensure the development and full implementation of the sectorial waivers on solar components.

- Pass an ACT to operationalise Section 5.7 of NREEEP which calls for the establishment of a Special Task Force within the Nigerian Customs Service to further facilitate the implementation of the FGN’s incentives relating to import and exports as well as ensure the fast-track clearance of solar components and enforce product quality, anti-dumping laws and abuse.

- The Federal Ministry of Finance, through the Nigeria Customs Service should reverse the 5% Import Tariff Duty and 5% VAT on Renewable/Solar components.

- The Federal Government through the relevant ministries should implement a 5-year Duty Free Importation on Solar Energy Components, Parts and Materials. This, however, should be tied to a national bond or MOU with companies that agree and show verifiable on-the-ground commitment to begin local production of some of the solar components locally (in Nigeria) after 3 years of zero duty benefits/waivers.