SUSTAINABLE ENERGY: *AN ANTIDOTE FOR REDUCTION IN GREENHOUSE GAS EMMISSIONS*

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ABSTRACT
Nigeria, with a current population of about 225 million, according to World meter, is not able to cater for the energy needs of individual households and industries. Low and medium scale industries and manufacturers continue to shut down as a result of energy crisis that is typified by power outages and high cost of alternative power generation using diesel and fuel generators. Apart from very high cost, fossil fuel draws on finite resources that deplete and are not environmentally friendly while in use or being retrieved. These alternatives have damaging effects on the environment as it increases greenhouse gases that deplete the ozone layer, which in turn affects the climate and weather conditions. The Sustainable Development Goals enlisted Sustainable Energy For All under goal 7 of the SDGs to ensure universal access to affordable, reliable and modern energy that is not finite, cannot deplete but rather is renewable. This paper aims to elucidate on the provisions of the Sustainable Energy for All; create awareness on the sustainable energy principles which must form the background towards any development of legal regimes guarding the process of a sustainable energy law and policy. It concluded that if sustainable energy principles are adopted and put in place in legal frameworks, it will reduce greenhouse gas emissions arising from a failed electricity supply system and an increased use of unsustainable power generation alternatives. It recommends the use of renewable and clean energy as better alternatives for a sustainable energy for all.

INTRODUCTION
Sustainable Energy for All[1] is conceived because fossil fuel draws on finite resources that deplete and are not environmentally friendly while in use or being retrieved.[2]Fossil fuel is not renewable while renewable energy is renewable naturally without running out completely. To achieve the SE4ALL by the year 2030, some targets were set with indicators for measuring success. The lack of assessment and measurement indicators were some of the criticisms against the Millennium Development Goals. Achieving sustainability in energy production and use creates opportunity for boosting economies, transforming lives and preserving the planet. However, transition to clean and sustainable sources of energy for the global economy is a huge challenge.[3]

Energy access is essential for increased food production; job creation; poverty eradication; security and dismantling of inequities. Sustainable energy is at the epicentre of nearly all world opportunities and challenges, and a veritable strategy for reducing the intensity of carbon from energy that will reduce the impact of climate change. Energy is estimated to account for about 60 per cent of total global green house emissions that are dominant contributors to climate change.[4] For SE4ALL to succeed, policies on green economy must be harnessed and mainstreamed to change energy consumption patterns that will improve the ecosystem.

The goal of achieving sustainable energy is adorned with five targets and some indicators for measurement. The indicators are like matrixes to track the level of achievement of the targets.[5] The sustainable energy targets and their indicators will be elucidated while discussing the sustainable energy principles, with a view to create linkages between unsustainable energy and greenhouse gas emissions that cause climate change. For energy to be sustainable there must be legal regimes guarding the process and such legal regime must be developed from the background of energy law principles. Some of the principles are as follows:[6] access to affordable, reliable and modern energy; energy justice; energy efficiency; energy security; prudent rational and sustainable use of natural resources;

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[1] Goal 7 of the SDGs; Sustainable Energy for All shall hereinafter be referred to as SE4ALL.
[2] Kyte, R. 'Climate Change is a Challenge for Sustainable Development.' *op. cit.*
[3] United Nations SDG Tracker: 'Affordable and Clean Energy' <https://www.un.org> accessed 20/4/2023.
[4] UNDP: 'Goal 7 Targets' [2019]<https://www.undp.org> accessed 20/4/2023.
[5] *Ibid;* Some of the targets include; enhancing international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil- fuel technology, and promoting investment in energy infrastructure and clean energy technology by 2030
[6] Heffron, R. J and Talus, K., 'The Evolution of Energy Law and Energy Jurisprudence: Insights for Energy Analysts and Researchers' [2016] 19, *Energy Research and Social Science*, 1-10

infrastructure and technology for sustainable energy; research and development of clean energy technology; and renewable energy and energy mix. Some of these principles were adopted under sustainable energy goals and will be discussed alongside sustainable energy principle.

Access to affordable, reliable and modern energy: Access to modern energy services forms part of the energy law principles. Access to modern energy services has become very important as energy is the fuel for almost all human activities. This principle is suggestive of a move away from traditional energy that depended on dung for cooking and heating; burning of wood for heating, biomass and use of animals for transportation. All these forms are modernised by hydro electricity, nuclear, wind and solar energy that is used for powering electric cars, gas for cooking, electricity for heating and lighting. These are recognised by the SDG and targets are set to achieve SE4ALL by the year 2030. The indicator for universal access to modern energy is the proportion of population with access to electricity,[7] which is measured by access within households and comprise of on-grid and off-grid electricity. On the trending issue of access to energy, it is not surprising that there is no provision relating to the right to energy access services in the CFRN 1999. There is need to develop the principles of energy access in line with the sustainable development goals and broad human rights principles. This is because achieving Goal 7 of the SDG is imperative to achieving all the other goals.

According to Bradbrook, there is a strong link between access to energy and poverty eradication. Provision of modern energy will reduce poverty, improve health through reduction of impact of traditional fuels and cooking devices especially on women and children who are most affected.[8] Human rights are universal, indivisible and interconnected; sustainable energy services are indispensable and are instrumental to survival and achieving right to life and economic, social and cultural rights.

In Nigeria, millions of households are without electricity both on-grid and off-grid. Power generation and distribution has been fluctuating leaving people with energy poverty, which affects livelihoods. Lack of an established energy supply chain aggravates energy poverty. Access to sustainable energy is an omnibus clause that connotes 'affordable, reliable and sustainable' energy. Accessible energy means it is affordable to the poor, it is reliable and its generation or use will not impede on the needs of future generations. Access to energy services is critical towards helping the developing countries to escape the poverty trap and emerge into a boisterous economy.

Cosgrove-Davies in 2019, said that 80 million Nigerians living in 8,000(eight thousand) villages across the country lack access to electricity while millions more suffer from poor access.[9] A 2022 Energy Progress Report has it that 92 million Nigerians lack access to power.[10] This shows that between 2019 and 2022, about 12 million people more lived without access to electricity. This is disheartening considering the amount of funds 'pumped' into the power sector over the years. The bulk of the problem remains inconsistent regulatory and policy barriers, inconsistent standards and compliance requirements for net metering guidelines, policy summersault and misconceptions about level of participation by local, state and federal governments. In all of these, good governance is a prerequisite and strategic dogma in the promotion and provision of energy access for sustainable development.

Energy is seen as a catalyst and enabler for productivity for all sectors and the African Commission lays emphasis on its provision for productive uses, industrialization and promotion of trade in goods and services among the African Union members.[11] It has positive impact on the health of citizens; reduction of poverty; creation of employment and reduction of global warming. National cohesion in management of energy access is required for accountability and progress.

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[7] Indicator 7.1.1 of the SDG

[8] Bradbrook, A. J. 'Achieving Access to Modern Energy Services: A Study of Legal Strategies' in Omorogbe, Y. and Ordor, A. O. *Ending Africa's Energy Deficit and the Law: Achieving Sustainable Energy for All in Africa*, (Oxford, Oxford University Press, 2018) 26 – 44.

[9] Punch Newspaper: '80 million Nigerians Lack Access to Electricity-World Bank,' June 26, 2019 < https://www.punchng.com/80-million-nigerians-lack-access-to-electricity-world-bank> accessed 29/6/2022; Cosgrove-Davies of the World Bank, at the Fourth Mini Grid Action Learning event titled 'Up scaling Mini Grids for Low-cost and timely Access to Electricity' which held in Abuja, gave this statistics.

[10] Tunde Ajala, '92 million Nigerians lack access to electricity, worst globally – Report' Punch Newspaper, 5th June, 2022.

[11] Abou-Zeid, A., in her speech as the Commissioner for Infrastructure and Energy at the signing ceremony of a Memorandum of Understanding between African Union Commission and International Energy Agency at Paris France on the 25th of May 2018. <*https://www.iea.org*> accessed 11/12/2022.

ENERGY JUSTICE

The principles of energy law are relatively new and greatly influenced by energy justice theory. They are guiding principles towards achieving energy justice and a sustainable energy development. For Sovacool *et al.,* energy justice is a global energy system that fairly disseminates both the benefits and costs of energy services, and one that contributes to more representative and impartial energy decision-making.[12] The salient points from this definition are that cost and benefits of energy services are fairly disseminated; decision making incorporates the participation of all stakeholders. This is closely related to environmental justice where public participation, access to justice and information dissemination is key. The justice of the energy demands that benefits and disadvantages arising from an energy service decision within an environment must be distributed to all parties concerned. Government must ensure that the poor and vulnerable do not bear the brunt of inconveniences arising from locating a project in a particular locality.

The principle of equal participation in decisions that affect people also applies here. Before such a decision is competent, the parties must be availed with all relevant information that will enable them make an informed decision without keeping any issue as secret. The diversities as to gender, disability, tribe, culture, in a community must be recognised in other to provide a level playing field for all parties. This is to rule out marginalisation of any particular group of people. Energy justice will surely improve access to energy, its efficiency and promote security of energy services.

ENERGY EFFICIENCY

Another target of the SE4ALL is to double the global rate of improvement in energy efficiency. The indicator for energy efficiency is measured by the intensity of energy in terms of primary energy and Gross Domestic Product. Energy is applied in heating, cooling, cooking and other combustive activities. This could be reduced and made more efficient by energy efficiency technologies like building construction in a way that heating and cooling conserves energy, use of electric cars and buses. In other words technological development of energy saving bulbs and energy conserving items will reduce energy wastes. If energy is made more efficient, then less energy will be required for activities and the impact on the environment and climate will be less. Efficiency means that wastages will be reduced while the excess is conserved for use at other times. Energy efficiency is widely proposed as one strategy to reduce green house gases.

ENERGY SECURITY

Energy security is synonymous with accessibility, affordability and sustainability of energy resources. Part of the Energy law principle is the energy security and reliability which signifies the importance of energy for the nation.[13] Energy security is defined as uninterrupted availability of energy services at an affordable price.[14] For Mitchell, energy security encompasses affordable, reliable and environmentally sustainable policy that has no constraints on foreign policy.[15] For Cherp and Jewell energy security is low vulnerability of vital energy systems.[16]Omorogbe succinctly put it as the provision of adequate, affordable, efficient and reliable energy services with minimal impact on the environment.[17] For energy to be readily available without interruptions assures of some level of security,[18] but if it is not affordable, it is not accessible. The security refers to the assurance that energy services will be available and within the reach of the poor. It is a guarantee that energy provision is in abundance and not scarce. The energy insecurity or deficit is contributed by incessant power outages, scarcity and high cost of kerosene beyond the reach of the average Nigerian who uses it for the purpose of cooking and lighting; scarcity and high cost of Premium Motor Spirit known as petrol and diesel, which are used for transportation and provision of alternative sources of

[12]Savacool, B. K. et. al. 'Energy Decisions Reframed as Justice and Ethical Concerns' [2016] 1 Nature Energy Journal, 5.

[13]Heffron, R. J., Ronne , A., Tomain, J. P., Bradbrook, A. and Talus, k., 'A Treatise for energy Law' [2018] *Journal of World Energy Law and Business, vol. 11, 34 – 48.*

[14]International Energy Agency, 'Energy Security' [2014] <https://www.iea.org/topics/energysecurity/> accessed 8/8/2022.

[15] Mitchell, J. V. 'Analysing Energy Insecurity,' [2007] OGEL vol. 5(4).

[16]Cherp, A. and Jewell, J., 'Energy Security Assessment Framework and Three Case Studies' in Dyer, H. *et. al International Handbook of Energy Security (*Cheltenham, Edward Elgar, 2013) 146 -173; Cherp, A. and Jewell, J., 'The Concept of Energy Security: Beyond the Four A's' [2014] Energy Policy 75, 415 -421; Vital energy systems are energy resources and infrastructures that are linked together by flows that support critical social functions.

[17]Omorogbe, Y., 'Regional and National Frameworks for Energy Security in Africa,' in Barry Barton (ed) Energy Security: Managing Risk in a Dynamic Legal and Regulatory Environment [2004] (Oxford University Press) 124.

[18] International Energy Agency, 'Energy Security' [2014]<https://www.iea.org/topics/energysecurity/ > accessed 19/4/2023.

energy. This is further worsened by the 'subsidy removal saga' that embraced Nigerians on the 29th of May, 2023 during the acceptance speech of President Bola Ahmed Tinubu.

Renewable energy that is more sustainable is also out of the reach of citizens as the rise in foreign exchange for importation of such components has made them exorbitant. All these unavailable, costly and unsustainable energy contribute to insecurity in energy services in Nigeria. The power sector has become 'legendary' and defied almost all solutions,[19] even with a mix of coal, fossil fuel, hydro, gas plants and renewable energy. The energy mix in proportional quantities has the capacity to improve on energy security and gives option to choose affordable and convenient source of energy services. Dike and Gininwa argues that part of the reason for the failure is lack of synergy and cooperation among the institutional frameworks of the energy industry in Nigeria, which has led to poor energy delivery system.[20] According to the Council for Renewable Energy of Nigeria, power outages in Nigeria contributed to a loss of about N126 Billion Naira.[21] In 2023, the losses are tripled with the subsidy saga which has led to the increase in fuel and diesel prices. More money is spent on self generated power from generators which in turn causes more pollution. This shows that energy insecurity and poverty is contributory to the poverty level in the country.

Okeke *et al*[22]demonstrated that energy security and sustainable national development are interrelated. Energy is a crucial tool for economic development, job creation and the distribution and transportation of goods and services. It is therefore necessary to have an effective energy planning management and coordination that enhances optimal utilization and regular supply.[23] For energy deficit and insecurity to be a thing of the past, energy policies and plans must be implemented.[24] Electricity being a major source of energy supply remains an important factor in the energy security. The signing into law of the Electricity Act of 2023 which creates opportunities for state electricity markets and investment opportunities for private and public investors; is a renewed hope for an improved energy security. Energy insecurity has environmental, social and economic implications of environmental degradation, unequal stratification and economic decline in the form of poverty. A boisterous renewable energy production and distribution with local incentives for manufacturing renewable energy components locally must be set in motion to improve on energy security.

PRUDENT, NATIONAL AND SUSTAINABLE USE OF NATURAL RESOURCE

This principle anchors on sustainable use of natural resources of energy in a way to avoid depletion. The prudent use is part of the provisions of the UNFCCC which encourages the protection of the climate through sustainable management and conservation of reservoirs in the forest and Marine Ocean. How that is reflected in Nigerian laws is yet to be seen. This principle is still related to energy efficiency which avoids wastes. It also creates the background and lends support to natural adaptation of the climate and renewable resources that regenerate themselves. Gas flaring is contrary to this principle as it amounts to waste of natural resources. Also unsustainable exploitation and production of oil is against this principle.

Goal 12 of the SDG is on responsible consumption and production of energy resources which aligns with the sustainable use of natural resources. The question is when is consumption irresponsible? It is submitted that consumption is irresponsible when a particular source of energy is utilized aggressively without appropriate energy mix that utilizes more renewable. There is also a benchmark on quantity of oil production by oil companies but whether there are effective checks and balances is something with an obvious answer. Ministry of Petroleum ought to regulate the volume of petroleum products that are available in the system appropriately and punish offenders who violate any of the regulations made to control the volume of products available for use in other not to exceed the approved level. The bottom line is that there can be no sustainable energy resources and use without prudent and

[19] Orazuluike, C., 'Energy Crisis: The Bane of Nigeria's Development,'[2012] < *https://www.nigeriaoilgas.com/ energy-crisis-the-bane-of-nigerias-development/*> accessed 3/6/2022.

[20] Dike, S. C. and Gininwa, P., 'Energy, National Development, Public and Private Sectors' Investment: A Narrative of the Petroleum Sector,' in Okene O. V. C. , *Excellence in Governance and Creativity* [2019] *op. cit.*

[21] Okeke, R. C., Izueke, E. M. and Nzekwe, F. I., 'Energy Security and Sustainable Development in Nigeria,' [2014] *Arabian Journal of Business and Management Review (OMAN)* vol. 4(3)., 63.

[22] *Ibid.*

[23] Onolemhemben, R. U. and Isehunwa, S. O., 'The Role of Natural Gas in Energy Security,' [2017] *Journal of Economics, Management and Trade*, vol. 20 (1) 1-10.

[24] Mareu, I. B., Azonta, J. A., and Mangai, M. M., 'Energy Security in Nigeria: Challenges and Way Forward,'[2013] *International Journal of Engineering Science Inventions, vol.2(11)*

rational use of natural resources.

INFRASTRUCTURE AND TECHNOLOGY FOR SUSTAINABLE ENERGY

The target towards achieving the goal is to expand infrastructure and upgrade technology for supply of modern and sustainable energy services for all in developing countries. In particular, least developed countries, small islands developing states, and land-locked developing countries, with their respective programmes of support are targeted – all before 2030.[25] The indicator for measurement is the expansion and upgrade of energy services for developing countries; the amount of foreign direct investment in infrastructure; and technology for energy efficiency as a proportion of gross domestic product. This indicator is not objective rather it is foisting discriminatory practices on developing countries as it did not consider that there could be local technologies that could upgrade and expand energy services. It does not give room for development of domestic technological devices and local investors which is as a matter of fact stifling local content.

Nigeria, just like other developing countries, do not possess high technology like the developed world; but have made provisions for advanced technology for the development of the energy sector. The Associated Gas Re-Injection Act, the Electric Power Sector Reform Act and others, were laws made for the improvement of efficiency and use of modern technology to develop sustainable energy. If these laws are fully implemented and enforced, appropriate technology would be available to track the volumes of metric tonnes of gas that are flared in the Niger Delta region which amounts to waste of natural resources.

For a more sustainable energy development, renewable energy technologies need to be developed and deployed. These technologies are still very expensive and some of the imported products like the solar panels and storage batteries are substandard and has created apathy in general response to use of solar energy. Millions of Naira is spent without getting value for the expenses. There is need for appropriate multilateral agreement, contractual agreement and/or after sales service agreement between the developers of the technologies, importers, sales companies and users, to ensure that defaulters pay compensation to users for product failure or low quality. Government must regulate imported materials through the Standards Organisation of Nigeria, to ensure that all renewable energy and energy technologies imported into the country satisfy high standards. Effort must be made to support local manufacturers in the fabrication of solar panels, batteries and other accessories for renewable energy development. Such products must be covered with patents and intellectual property registration. Alternative dispute resolution centres must begin to equip themselves with the appropriate skills and capacity to attend to the anticipated cases that will arise from such transactions.

RESEARCH AND DEVELOPMENT IN CLEAN ENERGY TECHNOLOGY

The goal is targeted at enhancing international cooperation to facilitate access to clean energy research and technology which includes renewable energy, energy efficiency, advanced and cleaner fossil-fuel technology, and to promote investment in energy infrastructure and clean energy technology. The indicator for measuring this is the volumes of financial flows to support research and development in clean and renewable energy production in developing countries.[26] The Energy Commission of Nigeria was established to promote research and development in federal tertiary institutions but poor funding, other bureaucratic bottlenecks and corruption has made it difficult to record success stories that are commensurate with the investment.

The issue of research and development is critical if there will be any technological advancement. Many institutions churn out millions of research work that are domiciled in libraries as there is no coordinated approach to put those research to test and further development. There is need for a framework that will facilitate documentation and advancement of research work in science and allied areas. They must be backed up by appropriate intellectual property laws that ensure security and support for talents. The case of 'illegal refineries' of petroleum products in the Niger Delta region comes to mind. Rather than the law enforcement agencies arresting and destroying the 'illegal refineries', there is need to conduct more research and regulate the operations of those in a manner that will improve on the simple mechanisms implored by those, which will give better results of cleaner petroleum products. Some of those involved in such practices are graduates of Chemical Engineering. There is need to conduct a study on such operations and come up with modalities for improvement. Modular refineries should be encouraged since Nigeria cannot boast of any functional refinery. Government cannot do it alone but requires the input of foundations

[25] UNDP: Goal 7 Targets *op. cit.*

[26] Indicator 7.A.1

and investors for it to succeed.

RENEWABLE ENERGY AND ENERGY MIX

The SE4ALL goal is targeted at increasing substantially the share of renewable energy in the global energy mix. Indicator 7. 2.1 of the sustainable energy goal states that the renewable energy target is measured by share of renewable energy in final energy consumption. It shows that use of fossil fuel without a commensurate percentage of renewable energy does not create sustainable energy access. Renewable energy has been identified as the major solution to sustainable energy demands because they are readily available, easily applicable and environmentally friendly.[27] The hydropower, biomass, wind, solar, geothermal and nuclear energy are all forms of energy utilized for human activities. Fossil fuel as a source of energy is not banned from use but as a result of its high content in green house emissions that cause climate change, energy mix is advocated. Energy mix being the proportion of different sources of energy that is employed in a given area and time is supposed to use more of renewable sources and less of fossil fuels as a way of creating balance and reducing degradation of environment while preserving natural resources for future generation.

Renewable energy sources ought to be exploited even more than use of fossil fuel. This in turn will impact favourably for job creation for skilled workers and petty traders that may use renewable technologies for storage of food items, fruits and vegetable, fish selling etcetera. Skilled workers and artisans that have gone out of business are likely to start up since there is access to energy that is affordable. Food production through agriculture will be boosted through use of renewable energy for pumping water for irrigation, agricultural machinery operations, food-chain preservation processing and packaging.

The National Renewable Energy and Efficiency Policy of 2015 and the Renewable Energy Action Plan are policies targeted at establishing a sustainable finance framework for energy efficiency and renewable energy in Nigeria. The policy stipulates a national generation profile for hydropower, biomass, solar power, and wind energy from 2020 to 2030. This contemplates the energy mix that will expand renewable energy development and sustenance.[28]However, there is need for effective implementation and a legal backing to ensure accountability. Government policies are not binding instruments neither do they create serious obligations for implementation therefore, these policies must be given legal backing to make them more effective.

REGULATIONS ON FEED-IN-TARIFF FOR RENEWABLE ENERGY SOURCED ELECTRICITY IN NIGERIA 2015.[29]

Feed-in-Tariff has proven to be a successful policy for the development of renewable energy in many countries. It tends to reduce the financial risks associated with individual projects; encourage investors in the electricity generation project; create a positive impact on share of photovoltaic solar cells in the country's energy mix.[30] In line with the NPREEEP, the Nigerian Electricity Regulation Commission approved the regulation on Feed-in-tariff for renewable energy electricity which is based on the objectives[31] summarised as follows: to boost power supply by increasing the renewable energy mix through renewable energy power generation technologies investment and market security; encourage private sector participation and investment; to promote, harness and develop renewable energy resources and provide access to the grid for renewable energy based electricity. The application and scope of the regulation is as stated in Regulation 4 of REFIT.[32] The regulation set a target of generating 2,000 megawatts of electricity from renewable by 2020 but subject to be varied by the commission as and when necessary. This did not happen. Nigeria later set a target of achieving 30 gig watts of electricity from renewable energy by 2030, which will contribute 30 per cent of its energy mix.[33]It has provided for net-metering for small capacities below 1 MW and feed-in-tariff for higher capacities. The scope of application of the regulation applies to all renewable sourced

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[27] Ajayi, O. O., Aderonmi, P. A. and Oluwatoyin, O. 'Nigeria's Energy Policy: Issues of Sustainable Energy Development in Nigeria' [2012] *op. cit.*

[28] National Renewable Energy and Energy Efficiency Policy for Nigeria 2015, < *https;//www.energy.gov.ng* > accessed 6/5/2022 see also Ojo, O. V., 'An Overview of the Legal and Regulatory Framework for Renewable Energy Projects in Nigeria: Challenges and Prospects,' [2017] Unilag Law Review 1, Vol. 1 (1), 35.

[29] This Regulation shall hereinafter be referred to as REFIT<*http://www.nercng.org*> accessed 20/1/2022

[30] Kabel, T. S. and Bassim, M., 'Literature Review of Renewable Energy Policies and Impacts' [2019] *European Journal of Marketing and Economics,* vol. 2 (2), 30.

[31] REFIT *Regulation No 3*.

[32] *Regulation No. 4ibid*

[33] President Muhammadu Buhari made this pledge at a discussion panel on Just Energy Transition at the US-Africa Leaders Summit in Washington, U.S.A, see Vanguard Newspaper, December, 14 2022.

electricity of more than 1MW capacity connected to transmission or distribution networks or to hybrid installations. This does not apply to stand alone facilities or off - grid.

The regulation specified the purchase obligations of the Off-Taker[34]who is obligated to connect to accredited renewable generating energy sources. Standardised allowance is made for interconnection costs which is included in the feed-in-tariffs.[35] The developer shall bear the cost of connection, construction, upgrade of transmission or distribution lines and/or substations. It stipulates the modalities for application for renewable licence to qualify as a renewable energy generator.[36] The tariff computation methods[37] and project capacity cap[38] are stipulated. The tariff methodology, feed-in-tariff assumptions and terms of tariff were all provided for. This is an all encompassing provision that took time to state provisions clearly to reduce conflict between the practitioners and the commission. Unfortunately, not much has been done about generation of on-grid electricity through renewable apart from the hydro energy from dams. It is expected that wind and solar farms which are abundantly available in Nigeria will be constructed at strategic sites to beef up the energy mix. For this policy to have a smooth sail, return on investment must be within a short period; market entry barriers and monopoly must be removed to encourage small investors. The system must be flexible depending on type of technology and market structure; the policy must be sustainable.

CONCLUSION:

It is obvious that the SE4ALL initiative principle, if adopted in policy formulation and law making, will deliver an energy system that is sustainable, affordable, efficient, and secure. This will in turn reduce the quantum of greenhouses gases that deplete the ozone layer arising from a failed electricity supply system and an increased use of unsustainable power generation sources. Reliance on electricity alone will not deliver the required sustainability; rather a good energy mix that includes renewable energy will add so much value to the economy and savings for the environment.

RECOMMENDATIONS:

For renewable energy to be deployed in the proper energy mix there is need for tax incentives for manufacturers and companies that deal on different segments of renewable energy. Tax is required to solve some of the energy problems, ensure productivity, and promote sustainability. The Inland Revenue department and the Ministry of finance worked out a supportive tax incentive by way of tax holidays, reduction of import duties on renewable materials, and tax bonus for local manufacturers and patent holders of renewable energy technologies and inventions.

Fiscal incentives and moratorium on import duties for renewable energy technologies still remain a challenge as the Federal Ministry of Finance and the Nigerian Customs Service imposed a five percent (5%) duty and a five percent (5%) Value Added Tax on solar panels imported into Nigeria from the second quarter of 2018.[39] This is against the promotion of renewable energy as a source of energy in Nigeria as investors will not find the sector attractive. There is need for a review.

[34]*Regulation No. 5 ibid*; the regulation defined Off-Taker as "the buyer of electrical energy for the purpose of selling the electricity to customers connected to the national grid or off-grid(mini-grid) systems.

[35]*Regulation 5 (d) ibid*.

[36]*Regulation 6, ibid.*

[37]*Regulation 7, ibid.*

[38]*Regulation 8, ibid.*

[39]Agbaegbu, C., 'Solar Import Duty and Tariffs: To Exempt or Not? [2019] Heinrich Boll Stiftung < https://www.ng.boell.org> accessed 21/8/2019; Solar panels were classified under Heading 8541 of the import duty classification for exempted items but it was later reclassified under Heading 8501 of the customs code which has import duties