

## Energy Access for All: The role of clean energy in alleviating energy poverty

by Huzi I. Mshelia

### introduction

Despite Nigeria's abundance of fossil *and* renewable energy resources, Nigerians still experience acute energy poverty: they either lack access to modern energy sources or have to cope with inadequate supply and poor quality. Close to 95 million people are fully reliant on traditional wood stoves for cooking, with the attendant health implications,<sup>i</sup> and a large but unknown number of especially urban households rely on generators for their electricity needs. The lack of access to energy is directly affecting livelihoods, lowering quality of life and hurting the economy. Presently, oil and gas contribute over 90% of the nation's foreign earnings and 70% of federal revenue. The energy sector is also the single largest source of green gas house emissions, especially from gas flaring in the Niger Delta region.<sup>ii</sup> Life is paradoxical: we witness both high demand and limited availability of energy, in a country over-dependent on the oil and gas sector. At the same time, a massive amount of energy is wasted by flaring gas.

### vision for 2020

Through the deployment of clean energy, the goal of energy access for all can be met. Advanced and locally appropriate technologies can make Nigeria energy secure by 2020 through the provision of reliable, modern energy services that are affordable and efficient. The national grid will not necessarily provide all these services. We envision the utilisation of renewable technologies for households, small-scale businesses and primary health centers on a large scale, along with a modernised, efficient transportation sector using compressed natural gas and renewable electricity instead of diesel. This vision can be realised with the right amount of political will, a conducive investment environment and the involvement of the people. The people who share the vision of a prosperous green Nigeria.



5.5 kWp Solar PV plant at Laje in Ondo State  
(picture: Prof. Sambo, Energy Commission of Nigeria)

### problem statement

Statistics optimistically state that 40% of Nigerians have access to electricity from the national grid.<sup>iii</sup> But while electricity demand from the grid is estimated at 95 GW,<sup>iv</sup> it instead delivers a paltry 3 GW. The government's Vision 2020 expected electricity demand in 2020 to reach 35 GW. Other government sources state that by 2030 electricity demand might reach 192 GW.<sup>v</sup> For the country to attain the Vision 20:2020 development targets, energy poverty has to be addressed urgently in a carbon-constrained manner. But by focusing on meeting grid demand by 2020, the power sector reforms neglect off-grid, decentralised solutions for the tens of millions of Nigerians not currently connected to the grid, most of whom do not live in any proximity to it. Any meaningful development vision for Nigeria needs to provide them with better energy supply to improve their livelihoods.

## background

The Nigerian middle class is developing consumerist behaviour with high electricity demand. The current reforms of the electricity sector, whilst increasing the amount of power generated and expanding the national grid will not meet this demand or the needs of industry. Added to this is the problem of the dilapidation of the current grid. Despite ambitious targets, the reforms have paid little attention to off-grid, decentralised energy solutions that could serve the tens of millions of Nigerians not connected to the grid or those that do not live in direct proximity to it. Any meaningful development vision for Nigeria needs to provide them with energy to improve their livelihoods.

*"I feel bad because the Government is the one to provide all these things but even the people importing generators are bribing Government officials but if Government can make the electricity standard, there won't be any need for generator. ... This generator affects us negatively and you know it's the one that is causing this acidic rain that is damaging things."*

*C2DE, 16 – 19, Male, Lagos Semi Urban<sup>vi</sup>*

It is possible to address energy poverty by deploying clean, renewable energy resources. A shift might facilitate the transformation of the rural economy, improve human livelihoods, and alleviate poverty. But despite a plethora of policies and actions the government lacks a practical strategy for low carbon development through clean energy generation. Some energy policies do, however, aim to improve efficiency in the management of resources. While renewable energy holds great promise, the investment environment is not conducive enough to attract the required investments. As a result the intended expansion of energy services will stall.

*"We will prefer our community to provide electricity ... because it will guarantee us more constant light but if it's from the Government, the reverse will be the case."*

*C2DE, 16 – 19, Male, Abuja Semi Urban<sup>vii</sup>*

## Nigeria's renewable energy resources

Nigeria's renewable resources are as enormous as they are diverse. The table below gives a summary of the potentials identified.

ENERGY SOURCE	CAPACITY
Large Hydropower	11,250 MW
Small Hydropower	3,500 MW
Fuel wood	13,071,464 ha
Animal waste	61 million tons / yr
Crop residue	83million tons / yr
Solar radiation	3.5-7.0kmh / m <sub>2</sub> / day
Wind average at 10m height	2 – 4 m <sub>2</sub> annually

Source: Energy Commission of Nigeria: 1st Energy Lecture Series, 2005

## hydro-power

Despite the abundance of hydro resources, Nigeria has yet to harness its potential. Despite having identified over 276 potential sites with a combined capacity of about 3,500 MW for small hydro-power development, only a few pilot projects have been initiated. This can be explained by a lack of domestic technology capacity, a weak hydrological database, limited access to appropriate technology to undertake hydropower projects, existing patents on small hydro technology and other barriers to the transfer of technology. It must be noted that while mini and small-scale run-of-the-

river systems can be operated with little environmental impact, large-scale hydro-power dams are increasingly being resisted. They have become associated with environmental and social problems and carry high up-front investment costs.

### solar

Nigeria has an annual average of daily solar radiation of as high 7 kWh/m<sup>2</sup>/day in the northern border region and about 3.5kWh/m<sup>2</sup>/day in the coastal regions. This means that the annual average



**Adesede Oghadomwangbe**, Amangba in Edo State: "I'm one of the beneficiaries of the solar borehole in our community. The panels are something like a table, being placed somewhere, and it will now be a source of power. And I looked at the platform (table) from where the energy is being created, I mean I was amazed, it was like... a film trick, but all the same, it is real. The solar borehole has never failed one day, rain or sun. And nobody has gotten any [gastro] enteritis or cholera disease because the water is pure... For me, this is one of the projects I've seen being executed by a Nigerian, and it works well. Thank you."

of daily hours of sunshine varies from 9 hours in the north to 4 hours in the south. The Draft Revised Edition of Nigeria's Renewable Energy Master Plan acknowledges the abundant solar resources and targets to deliver solar electricity of up to 30,000 MW in the next 15 years<sup>viii</sup>.

Solar energy displaces fossil-fuel generated electricity and thus reduces CO<sub>2</sub> emissions. It can be harnessed in many ways: in solar cooking, countering the menace of deforestation; through solar-powered irrigation pumps, creating jobs in agriculture; by manufacturing solar-powered appliances, creating local jobs. At present, despite this massive potential, solar energy is primarily used in small-scale and pilot projects. The main constraint to its deployment is limited

funding and high upfront cost, resulting in a long recovery of investment period. The unclear renewable electricity tariff structure and high cost of importation further hinders investment, as are a lack of knowledge of the new technologies and unwillingness to try them out.

As other countries pursue large-scale initiatives, like Desertec in North Africa, maybe Nigeria can be inspired to turn the energy-poor north into a domestic or even regional power producer?

### wind

Broadly speaking, wind energy potential varies with wind speed. In 2002, the Federal Ministry of Science and Technology conducted a Wind Energy Mapping Project to identify potential sites for exploitation. Clearly, wind energy could be harnessed in the northern border regions and some coastal states. In Sokoto and Katsina states, some wind-powered water pumps are already in use. Given the available data and the low investment cost of wind when compared to solar energy, the current lack of investment may be surprising. The reason for this may be a lack of awareness, and the absence of support by government through subsidies or the facilitation of the importation of technology.

### biomass

Wood fuel is the main energy source for both the rural and urban population. This has resulted in large-scale illegal logging that hastens desertification. Wood stoves are a major hazard. As many as 79,000 Nigerians die each year as a result of smoke inhalation from traditional three-stone cooking fires.<sup>ix</sup> This should be enough of an incentive for the massive deployment of clean cook stoves that require less wood and improve indoor air quality. They can present a win-win opportunity to users as they save money. The Nigerian Alliance for Clean Cook Stoves is championing their use in households, schools and hospitals. Funding is required to make the stoves accessible to the poor and

to promote their production in Nigeria. They must be an inherent part of Nigeria's national climate change strategy. A defined government directive or policy for their use in schools can support their expansion. However, the government by promoting fuel switching from wood to Liquefied Petroleum Gas (LPG) and kerosene undermines this fresh approach. Fact is all technologies have sizable carbon footprints and are stop-gap measures until carbon-neutral cooking technologies can be fully deployed.



Cook stove pictures by Yahaya Ahmed, Development Association for Renewable Energy (DARE), Kaduna

There is at present no debate in Nigeria on the inherent conflict between large-scale biomass production and the need for more food security. We challenge the notion that Nigeria can significantly increase its production of food crops, such as cassava, sugarcane, soya beans and palm oil, and at the same time utilise these crops for bio-energy. Nigeria's bio-fuel program,<sup>x</sup> for example, currently focuses on the production of ethanol from cassava and sugar cane. While bio-fuel can enable the transition from oil to renewables, this should be carefully considered and steered. The use of bio-diesel for power generation is sponsored by the Energy Commission of Nigeria (ECN) through its jatropha-to-power project.<sup>xi</sup> The Jigawa State government is using jatropha produced under a mixed-cropping model for bio-energy and some telecommunications companies are using bio-diesel to power repeater stations.



*Jatropha plantation in Jigawa State  
(photo: Huzi Mshelia)*

#### **Food or diesel?**

Imagine, Nigeria growing enough jatropha to substitute the diesel its truck fleet uses. How much land would be needed to grow this jatropha? Who owns that land and why would the owners choose to cultivate jatropha? How to prevent conflicts over land tenure? What are the potential environmental impacts of such large-scale production? Mozambique has mixed experiences growing jatropha on a large scale. Some projects were simply uneconomical. It takes many years before plants can be harvested for biofuel production and yields can be low. Like any crop, the plants are susceptible to disease and pests and need careful cultivation including water supply. What started as a boom has ended in a bust. It is clear that biomass-energy projects must be carefully assessed, in consultation with affected communities, on their potential environmental and social impacts - specifically their impact on food production.

## energy policy overview

Access to energy is crucial in reducing poverty. Given Nigeria's enormous renewable energy resources, pertinent questions that require further deliberation are:

- How would Nigeria unleash its enormous clean energy potential to transform its economy to a socially inclusive and gender-sensitive low carbon economy that will assist the attainment of the Vision 2020?
- What is required to scale up the development and deployment of renewable energy technologies?
- What role can the private sector play, including in mobilizing the financial resources required for the transformation?

Before answering these questions, a brief overview of existing energy policies and plans is required as this enables us to map the required reforms.

The **National Energy Policy (NEP)** of 2006 sets out government policy on the production, supply and consumption of energy. Its main goal is to create energy security through a robust energy supply mix by diversifying energy supply and energy carriers based on the principle of “an energy economy in which modern renewable energy increases its share of energy consumed and provides affordable access to energy throughout Nigeria, thus contributing to sustainable development and environmental conservation.”<sup>xii</sup> Importantly, the national policy already outlines the key elements for development and application of renewable energy as:

- To develop, promote and harness Renewable Energy (RE) resources and incorporate all viable ones into the national energy mix;
- To promote decentralised energy supply, especially in rural areas, based on RE resources;
- To de-emphasize and discourage the use of wood as fuel;
- To promote efficient methods in the use of biomass energy resources;
- To keep abreast of international developments in RE technologies and applications.

In an effort to translate the RE component of the NEP into an actionable plan, the Energy Commission of Nigeria (ECN) in 2005 developed the **Renewable Energy Master Plan (REMP)**. It reiterated the pledge to support the development, demonstration and implementation of RE sources for both small and large applications. To create the appropriate enabling environment for the promotion of RE, the REMP identified the need for appropriate financial and legal instruments, technology development, awareness raising, capacity building and education as strategic areas and sets specific goals for each. The REMP aims for a 10% RE contribution to the national energy mix by 2020 through the adoption of a renewable portfolio standard (RPS). A RPS is a requirement for electric utilities to supply a specific amount of electricity to customers. This can be achieved through increased production or the purchase of certificates from other utilities with a greater share of renewables in their energy mix. Other measures considered are the creation of innovative fiscal and market incentives to grow renewable energy industries, as well as preferential customs duty exemptions for imported renewable energy technology components. The master plan was, however, not implemented and is presently subject to review. It is essential that any new targets, should they be set, are backed up by legislation that ensures compliance.

Similarly, the 2006 **National Policy and Guidelines on Renewable Electricity** aimed to generate 5% of the total electricity from renewable sources by 2016. The strategy to achieve this included: encouraging local manufacture and assembly of renewable energy components, subsidies, setting of technical standards for RE components and the introduction of a feed-in-tariff. The strategy is,

however, yet to be fully adopted and decisions on tariffs, subsidies and other incentives have not been taken.

Another policy to promote renewable energy is the draft **National Bio-Fuel Policy** of 2007, initiated by the Nigerian National Petroleum Corporation (NNPC). It seeks to optimally utilise agricultural products to improve the quality of automotive fossil-based fuels in Nigeria. The 2020 target is to mix 10% of fuel ethanol into gasoline, a blend known as E10. The poor implementation of this policy can be explained by a lack of consultation and policy incoherence, in particular scepticism about the consequences for food security. As observed elsewhere, the absence of political will to address the constraints identified explains its weakness.

In 2006, the Energy Commission also developed a draft **National Energy Master Plan (NEMP)**. The NEMP acknowledged the imminent dangers of the fossil fuel-driven economy, including the environmental concerns. It shows the expediency of adopting a less carbon intensive development pathway and urgently recommends diversifying the economy and creating a sustainable energy supply mix.

The **National Gas Master Plan** of 2008 envisages a wholesale transition to decentralised privately-held electricity generation gas plants. The plan aims to stem gas flaring and make productive use of the nation's large gas reserves. The Gas Master Plan fails to clearly mention that Compressed Natural Gas (CNG) can play a major role by transforming the transport sector, if adopted on a large scale. Clear benefits are evident, for example in the Lagos State Bus Rapid System (BRT), which recorded a 13% reduction in CO<sup>2</sup> and 20% in other green house gas emissions.<sup>xiii</sup>

Finally, the **Nigerian Atomic Energy Commission** was established to explore Nigeria's nuclear energy potential for peaceful purposes. Quoting the anticipated electricity demands of a growing population, the ECN called for a Nigerian nuclear programme and the Nigerian Atomic Energy Commission is taking the first steps. This is curious when one considers that Vision 2020 does not include nuclear energy in the proposed energy mix. Especially after the accident in Fukushima, Japan, pursuing the nuclear path seems like an outdated strategy. Nuclear is said to contribute 16% to global electricity production, but given the high long-term costs, large liabilities, major safety and waste management issues, exacerbated by the weak regulatory environment, nuclear energy cannot be relied upon to provide energy access to the poor. Unsurprisingly, countries like Germany are gradually abandoning nuclear energy.

## addressing energy poverty

The energy scarcity in the midst of abundant energy resources in Nigeria is a complex irony. Energy production and consumption are intrinsically linked to the attainment of economic and human development. The country at present depends on imported fuels and petrol-powered electricity. It further depends on large hydro power plants that are susceptible to a changing climate that affects water availability and thus electricity generation. Whoever can afford an imported electric generator relies on carbon-intensive electricity, which costs the country millions of dollars and substantially emits greenhouse gases. Though the government policies listed above provide for increased use of renewables, nothing much has happened. This section examines some of the reasons behind the present low level of the exploitation and utilisation of renewable resources and what it will take to increase energy access especially at the local level. The section further examines the gaps in policies that make the transition to a renewable energy future impossible. Finally, the question has to be asked: what do Nigerians want most, and how can the policy framework meet peoples' needs?

### **lack of an appropriate legal framework**

Most energy policies do not have the force of law, which limits the options for sanction for non-compliance. Frequent policy changes by successive governments and a general unwillingness to challenge vested interests or corruption add to this challenge. Specifically, the reforms mandated by the Electric Power Sector Reform Act (EPSRA) of 2005 will not bring electricity to the tens of millions of poor Nigerians not already connected to the grid. The EPSRA Act created the Rural Electrification Agency to address rural energy challenges and the Nigerian Electricity Regulatory Commission (NERC). The latter was mandated to reform the electricity market and establish a competitive electricity generation and distribution industry, with the necessary regulatory supervision by NERC to ensure standards and a level playing field. The reforms and the economics of electricity supply are not, however, in themselves supportive of renewables. Subsidies for initial capital investment can reconcile commercial and social objectives.<sup>xiv</sup> As noted above, Nigeria lacks climate change legislation to guide its low-carbon development.

### **financing**

Nigeria's decaying infrastructure requires a massive injection of funds. A 2011 report by the International Centre for Energy, Environment and Development (ICEED) estimates some US\$ 200 billion is required to improve the power, transport and water infrastructure; US\$ 32 billion of which over the next ten years for hydro-power and gas alone.<sup>xv</sup> In comparison, in 2010 the government appropriated only US\$ 1.05 billion, intended for small hydropower development and the rehabilitation of three gas plants.<sup>xvi</sup> Private sector investment needs to complement this to meet the goal of greatly improved energy access. However, in a high risk environment and in the absence of a strong legal framework, Nigerian financial institutions are reluctant to invest. Investment in renewables in particular is inhibited by the existing tariff structure and lack of competition. NERC has recently concluded its technical preparations for implementing a Feed-In Tariff (FiT), but recouping costs still takes 10 to 15 years. The Central Bank of Nigeria has finally provided the Bank of Industry US\$ 3.3 billion (N 500 billion) in additional funding through a Power Intervention Fund at a maximum 7% interest with a 10-15 years tenure. The Bank of Industry / UNDP Energy Access Programme also seeks to support renewable energy.

*"If the community contributes money it will enable the community to go and meet the manufacturer of light to help build the light fast for them"*

*C2DE, 16- 19, Female, Enugu Rural<sup>xvii</sup>*

With the establishment of the Strategic Sustainable Group by the Nigerian Bankers' Committee, we witness the introduction of sustainability in banking operations and integration of social and environmental concerns in financial dealings. Access Bank's solar energy pilot project - providing small financing 'hubs' for communities to meet their energy needs - is one example of this new thinking. This model might also promote other clean technologies, like clean cook stoves.

### **information, research and development**

Key actors in the sector lack information on the clean energy potential upon which to base business decisions. The generation and management of reliable public information are paramount for planning.

### **institutional arrangements**

A lack of coordination among government agencies has created distortions and further complicates the implementation of clean energy mandates. Rivalries and overlapping mandates send the wrong signal to potential investors. The proposed Climate Change Commission under the Presidency could create synergies across ministries and agencies at the federal, state and local levels. The law establishing the Commission remains, however, unsigned by the President. The absence of a clear

political vision and leadership, weak regulatory institutions, inadequate human capacity and limited funding make Nigeria's renewable energy market small when compared to much smaller countries, like Kenya.

### creating green jobs in Nigeria

The true cost of energy scarcity is borne by people and businesses. The state bears the indirect costs of a growing population living in a crippled economy without a safety net. To break the vicious cycle of energy poverty, unemployment and social exclusion, the government needs to provide financial and technical support for energy access. Nigeria can create many jobs by improving the enabling environment to develop its renewable energy potential. A 2010 report by the International Centre for Energy, Environment and Development (ICEED) estimates that a low carbon strategy can create at least 600,000 new jobs in hydro-power and gas.<sup>xviii</sup> Efficient gas utilisation combined with a cessation of gas flaring can support industrial production, thus catalysing export earnings and improving Nigeria's balance of trade. Indeed, tensions in the Niger Delta might decrease if an end to gas flaring were underpinned with restoration of the environment.

A range of high-tech renewable energy technologies exist, but these are not manufactured locally. Locally appropriate technologies will need to be identified, improved and scaled up. Technology choice depends on local circumstances, the availability of financing and the people's acceptance of the technologies. While it seems futile to attempt to break the dominant position of China and South Korea in the solar panel market, there will be a large market for appliances powered by solar panels that match what Nigerians need in their households and small businesses, like grinding machines, lamps, and irrigation pumps.

To ensure sustainability the power to choose must reside with the people. The government can support them by setting standards and taking quality control measures like energy labeling and energy certification schemes. Pilot projects that demonstrate energy savings and reduced energy costs will inspire trust and help people make informed choices.



**Tinyan Ogiehor**, owner of Rubycom solar technologies company, Abuja: "I got into the business of alternative energy mainly because of unemployment. I studied computers, and I realised from the set-up of server rooms that back-up power was a major issue. I realised that I had identified a need, and I wanted to fill that gap. When I started, I was my marketer, my installer, my everything... it's been a very interesting roller coaster of a journey. Today, I employ 21 across Nigeria. Capital came firstly from family; till date the banks are still a No-No to me because of huge interest rates. What has been sustaining us mainly was money from our projects turned over into the next business. It is still an uphill struggle because we are competing with companies who are dealing in sub-standard goods, and with their low quality products they are spoiling the public reputation of solar technologies. This also gives us a market advantage, but we do need much tighter regulation and enforcement to protect the right kind of renewable energy industry."

### Green jobs in South Korea

Hit by the financial meltdown of 2008, South Korea was one of only a few countries that decided to make government bail-out packages dependent on transforming business to serve a more sustainable, greener market. Eighty percent of government support went to greening the economy with a focus on creating export value. In four years, South Korea invested US\$ 38 billion aimed at creating 960,000 new jobs. Among 36 projects were the creation of green transport networks, the provision of two million energy-saving green homes and the cleanup of the country's four main rivers.



## Recommendations

- Reforms must go beyond rhetoric and provide concrete energy solutions for the poor. Legislative and institutional support for the renewable energy targets already contained in numerous policies is needed. Compliance with the energy mix written into the REMP should be made mandatory.
- Energy policy should be developed using a bottom-up approach that prioritises the people's most pressing needs: for solar lamps, efficient cook stoves, solar chargers for their radio sets and phones, panels for televisions, and to energise small enterprises like hairdressing or barbing saloons, grinding machines, etc. Social inclusiveness and gender equity are not currently being addressed. There is, for example, no program to equip rural women with small-scale renewable energy education and knowledge.
- The government must adopt a clear-cut strategy to improve livelihoods through the delivery of clean and affordable energy. This requires well-incentivised investment packages for renewables and sustainable funding arrangements from the private sector and government. Energy policies are needed that create an enabling environment and provide incentives to the private sector to drive change. Policies must ensure international quality control standards for technologies.
- Nigeria needs a high-quality research and development system to localise technology that is people-driven through robust public participation. Energy efficiency regulations such as energy labelling laws for electric appliances, mandatory RE requirements in national building codes and transport sector will underpin increased RE utilisation.

### **Growing a renewable industry in Kenya**

When the Kenyan government started an incentives package to scale up private sector investment in solar and wind energy, Chinese solar companies had a field day. Unfortunately, a substantial proportion of imported panels were of low quality. A backlash resulted and the perception of people was that renewable energy was 'low quality power.' When the Kenyan standards organisation started to regulate the market in 2006, low-quality imports came to an end. Since then, the domestic solar industry has boomed as demand rose.

- The capacity of regulatory and energy training centers needs to be strengthened to enable the shift to renewables. Training centers like the science & technology universities, the National Power Training Institute and the Petroleum Training Institute should integrate renewable energy programs in the curriculum<sup>xix</sup>. Training covering assembly, installation and maintenance of renewable technologies must be provided.
- Local communities can partner with private sector and government agencies to undertake the development of off-grid and stand-alone renewable energy projects to increase access for millions of Nigerians who do not access the national grid nor live in proximity to it. More detailed planning for the development of each sub-sector of the renewable industry is needed. The large-scale wind sector, for example, will require more government involvement, whereas the small-scale solar industry can benefit from private sector investments with minimal government incentives.
- The 2012 protests over the removal of fuel subsidies can be taken as an indicator of the

public's desire to participate in decision making. The growing middle class cares about energy poverty and are capable of swaying public opinion and politics. A similar, less vocal, constituency of retired civil servants, school teachers and local chapters of trade unions exist that can engage with local government. Constructive engagement with such constituencies and increased public participation in decision-making puts power back in the hands of people. This can reduce perceptions of injustice and lack of transparency in governance allowing people to once again identify with the government's vision.

- It is the role of government to provide funding for renewable technology R&D and to generate reliable data to facilitate effective planning.
- To the private sector, the existing energy poverty provides a business opportunity. Private investors can compliment and support government in the provision of infrastructure and RE products to the majority of the population living off the electricity grid. Increased participation by the private sector should focus on the possible, by creating innovative Nigerian solutions.
- The formulation and adoption of a clear-cut national mitigation strategy for the reduction of green house gas emissions is needed to facilitate a transition to a green economy. At no incremental cost, Nigeria can resolve its energy crisis and transition onto a green development pathway in a manner that addresses its climate change challenge.

### **Conclusion**

Nigeria's ambition to meet the goals of Vision 20:2020 is in danger if the country fails to address energy poverty and poor infrastructure in a participatory manner. A green Nigerian economy is well within reach. As it moves to generate new energy, Nigeria will have to embrace renewable efficient technologies. Under the current circumstances, a business-as-usual approach cannot work and change is imperative. By involving people it can make this change happen. The 2012 protests showed as much. People welcome political leadership that inspires and shares this vision. While Vision 2020 envisages achieving just that, the challenge remains winning people's trust.

Vision 2020 needs a participatory review to turn it into a vision for sustainable growth within the limits of a climate constrained world, and a translation into some national movement, sustained by the belief in a shared present vision, and common bright future. A shared identity can be achieved through robust public participation in decision-making. This, however, requires emphasis on social dialogue and inclusiveness in policy-making. Government must, therefore, inspire and support the people to realise this vision: a fresh green deal vision that delivers good governance, respectable standards of living, and access to efficient clean energy services, good health care and sustainable socio-economic growth.



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## Footnotes

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