Societal marketing concept and energy poverty eradication: An evidence from Nigeria

Authors:
Henry N. Ozuru¹
Joy E. Akahome²

Affiliations:
¹Department of Marketing, University of Port-Harcourt, Port-Harcourt
²Department of Marketing, Federal University Otuoke, Bayelsa State, Nigeria

Correspondence to:
Henry Ozuru, oscap2003@yahoo.co.uk

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Introduction

Nigeria’s crude oil reserves are currently estimated at 35 billion barrels; its natural gas reserves an estimated 185 trillion cubic feet. However, export levels have since dropped dramatically and, in March 2007, the United States imported 41 767 barrels of Nigerian crude oil and petroleum products. According to the International Energy Agency (IEA 2012), over 1.6 billion people – almost one third of humanity – have no electricity, the majority of which are in Africa. This means they have no light in the evening, limited access to radio and modern communications, inadequate education and health facilities and not enough power for their work, activities and businesses. Despite Nigeria’s rich oil reserves, 44% of Nigerian households have no access to electricity (Michaels 2015). Indeed, even in Nigerian homes with electricity the quality of service provided is often intermittent whilst growing increasingly unaffordable.

In the New York Times of 08 August 2014, Adewale Maja-Pearce explained that in February 2014 his monthly bill jumped from $30 per month to nearly $185 per month, despite the fact that he was receiving roughly 33 hours per day of power. This price increase occurred at a time when 92.4% of Nigerians live on less than $2 per day, and 70.8% live on less than a dollar per day. The problem of energy poverty is not exclusive to Nigeria. According to the International Energy Agency (2015):

> over 1.3 billion people are without access to electricity and 2.6 billion are without clean cooking facilities.
> More than 95% of these people are in sub-Saharan Africa or developing Asia and 84% are in rural areas.

Although the problem is not unique to Nigeria, it brings to light the global inequality behind the phenomenon of energy poverty despite Nigeria’s status as a major energy exporter.

It is seemingly paradoxical for a nation which began exporting large amounts of liquid petroleum gas through Chevron in 1997 to have a per capita liquid petroleum gas usage rate of 0.4 kilograms per second, one of the lowest in the region. Michael (2015) avers that addressing energy poverty requires a mission to bring together leaders from government, business and civil society ‘to achieve a broad-based transformation of the world’s energy systems and build a more prosperous, healthier, cleaner and safer world for this and future generations’. The societal marketing concept calls upon marketers to build social and ethical considerations into their marketing practices.

This article examines the societal marketing concept as a remedial measure for energy poverty in Nigeria. Energy poverty is a situation where individuals or households are not able to adequately heat or provide other energy services in their homes at affordable cost. Basic energy services are critical to ensure that communities do not suffer negative health impacts, do not become further entrenched in poverty and can maintain a good quality of life as well as ensuring financial outlay to assist households that require support. Whilst allowing for full competition in energy markets, government and regulators have a role to protect communities and prevent groups in the society from falling into energy poverty. Improving access to energy provides the holistic service to host communities for which governments are looking and supports broader economic and social development. This, in turn, secures the industry’s sustainable access to reserves and social license to operate, increasing revenue potential from existing and new revenue streams, facilitating risk management and supporting increased brand enhancement – increasing shareholder value in both the short and long terms. To effectively build on these leading examples and drive stepped change, a societal marketing approach championed by strong leadership is required. The societal marketing approach requires a mission to bring together leaders from government, business and civil society ‘to achieve a broad-based transformation of the world’s energy systems and build a more prosperous, healthier, cleaner and safer world for this and future generations’. The societal marketing concept calls upon marketers to build social and ethical considerations into their marketing practices.
is a key point in the fight against global poverty. Greater access to alternative energy sources will reduce unnecessary deaths, such as the 95 300 Nigerian deaths which occur annually from smoke created by the use of solid biomass fuels. It will enhance the financial capabilities of those nations currently struggling to provide power to businesses. This, in turn, will expand the global community of consumers.

According to World Data Bank statistics (2015), 62% of Nigerians live on less than $1.25 per day. Extreme poverty remains high in rural parts of Nigeria, where political instability, low access to education and inadequate healthcare have become contributing factors to the nation’s high rate of poverty. Poverty largely cohabits with energy poverty. Whilst there are several definitions for energy poverty, a pragmatic view is that energy poverty is the lack of access to modern energy services. Razdan (2015) states that poverty is not only reflected in the disposable income of a household but also in the level of energy available for a household to meet its need for cooking, lighting and gainful employment. There is an increasing recognition of the importance of access to clean and reliable energy for poverty alleviation.

Whilst inadequate and unreliable power supply continues to negatively affect economic growth of Africa’s biggest economy, almost all businesses run diesel generators, which have high operating costs. In achieving the electricity generation target outlined in the draft national energy master plan, significant private sector investment is required (UNDP 2015).

Availability of energy is a crucial element for socio-economic development to take place, but in Nigeria many households have limited access to energy which affects the education, health, manufacturing and production of goods and services and small scale businesses. Over 1.3 billion people around the planet who lack access to the grid are desperately poor because lack of electricity helps ensure that they stay that way (Walsh 2011).

Energy services for meeting basic human needs, such as food and shelter, are at the heart of any strategy to eradicate poverty. It is evident that access to energy is a prerequisite for human development. It contributes to social development by improving health, education and economic development by enhancing the productivity of labour and capital. Like improved health, use of energy is both a contributor to and a consequence of higher income (Bloom & Canning 2000).

The 48-inch diameter export line operated by shell, NNPC and other JV partners was vandalised in February 2016, crippling export of crude oil from the terminal. According to the NNPC (2016), Nigeria has lost over 1 500 megawatts of power supply as a result of the damage to the Forcados 48-inch diameter export pipeline, which is the country’s major artery that accounts for 40%–50% of gas production. Ofikhuena (2016) states that power supply to 11 electricity distribution companies (DisCos) on 29 July dropped to 2796 megawatts (Mw) because of the lack of gas supply to thermal power plants due to the vandalism of gas pipelines.

Business owners find electricity connection and the quality of electricity supply as one of the main hindrances to their activities (Audinet and Rodriguez Pardina 2010). Studies have shown that poor electricity supply adversely affects the productivity of the firms and the investment they make in their productive capacity. In an effort to curtail these challenges, the federal government has placed additional emphasis on the National Electric Power Policy (2002) and the Electric Power Sector Reform (ESPR) Act of 2005. The reason for power reform is the irregular supply of electricity in Nigeria which has led to high revenue losses. Moreover, power sector reform is expected to lead to reduction in costs, including short-term power and operation costs through efficiency gains arising from economies of scale as large-scale plants are enabled by larger markets (Eberhard et al. 2008). This will lead to improved supply conditions, including better reliability and security of supply due to access to imports during emergency situations (Eberhard et al. 2008).

According to Adoghe, Odigwe and Ighinovia (2009), the irregular power supply and other poor infrastructure has affected the growth of industries and individual development, and this has led to a perpetuating electric power scarcity. Despite the enormous finance government has committed to this sector and with continuous assuring of customers of better service through the rebranding policy targeted at the concerns, values, image and feelings of both the employees and customers, consumers are still not satisfied with the quality of service rendered by the sector. The power crisis has led many manufacturing industries to flee the country to places where they have to spend little or nothing on diesel engines; it is a major challenge to Nigeria’s industrialisation efforts. This is why it is important for Nigerians to seek a permanent solution to the issue of an unsatisfactory power supply to improve the well-being of people and grow the economy.

**Problem of the study**

The causes for the extreme electricity deficiency in Nigeria are related to financial, socio-political and structural issues. The Nigerian government has not been able to find permanent solutions that will resolve the problems. According to NNPC (2016), a recent upsurge in vandalism has not only negatively impacted oil production but reduced Nigeria’s domestic gas production by 50%, which in turn has constrained gas supply to power plants in the country. Power supply has consequently dropped since the third month of 2016, plunging lower in the fifth month of the same year.

Consequently, Nigerians do not have much influence that will compel the government to formulate decisive policies and initiatives that will enhance and promote the application of a societal marketing concept as an eradicative measure against energy poverty.
This is a challenging matter as the managers should balance and juggle the often competing interests of society and companies and go beyond corporate image to effectively sustain a clean and healthy solution. This article addresses these concerns, presenting the view of several authors and concepts to support them.

Objectives of the study

The energy sector is of strategic importance to the Nigerian economy and a major driver of growth and advancement. It also has a major role to play in reducing energy poverty, improving productivity and enhancing the quality of lives in Nigeria. Hence, the objective of the study is to promote an integrated approach of the marketing paradigm that can bring about solutions to energy poverty challenges.

Literature review

Theoretical foundations

Social cognitive theory

Social development is a lifelong process, and many theories have been proposed over the years to describe the developmental changes that people undergo, including the different conceptions of human nature they adopt and in what they regard to be the basic causes and mechanisms of human motivation and behaviour (Bandura 1989). In 1963, Bandura and Walters developed the concept of social learning and personality development, which widened the ideologies of social learning theory that viewed people as self-regulating, self-organising and proactive rather than reactive organisms shaped by environmental forces (Pajares 2002).

From the social cognitive theory’s (SCT) perspective, human functioning is seen as the outcome of a dynamic interplay of personal, behavioural and environmental influences which form the foundation of Bandura’s conception of reciprocal determinism, that is, the view that (1) personal factors (i.e. cognition, affect, and biological events), (2) behaviour and (3) environmental influences create interactions that result in a triadic reciprocity.

SCT is adopted in numerous fields of study including psychology, education and communication. The theory postulates that large parts of an individual’s knowledge is directly associated with observing other people via social interactions, experiences and the media (Bandra 2002). This implies that the survival of humans solely depends on imitation of the actions of others, that is, if a person is rewarded for an act others imitate it to be rewarded. They act differently, however, if the person’s action leads to punishment.

Further, Pajares (2002) stated that the theory is rooted in a view of human agency which posits that individuals are agents proactively engaged in their own development and can make things happen by their actions. Moreover, the theory affirms that amongst the three major factors affecting societal growth, the environmental factors such as social amenities, educational structures, economic and political factors and others should also be taken into account even though they do not have direct influence on human behaviour; they still directly affect people’s aspirations, self-efficacy beliefs, personal standards, emotional states and other self-regulatory influences. This is depicted in Figure 1.

Recent years have witnessed an enthusiastic debate about the role of business organisations within society. Academic scholars and practicing managers have questioned ‘whether the proper or legitimate role of a business organization is merely economic or also social’ (Lantos 2001). They have wondered what the corporate purpose should be and to what extent the company should be held responsible for social issues. This is not simply a speculative debate over how to accommodate different opinions, but a relevant discussion over how the business world actually works and how it could do better. The bridge between firms and society is created and maintained by marketing tasks involving the establishment of relationships through the exchanges of values. The concept of exchange is also present in the definition of ‘societal marketing’ – a term coined by Kotler (1972) in the early 1970s.

The societal marketing approach considers not only the commercial exchanges carried out to satisfy the needs of customers, but also the effects on all members of the public involved in some way in these exchanges. The members of the public who are directly or indirectly involved in the organisational process are called stakeholders. Business’s major stakeholders include consumers, employees, owners, shareholders, suppliers, competitors, government, the community and the natural environment (Carroll 2004; Ferrel 2004; Henriques & Sadorsky 1999; Laszlo & Nash 2001). The notion of future is embedded in the societal marketing thought because the consequences of current decisions will be felt in the long-term. In the edition of their textbook, Kotler and Keller (2006) define societal marketing as follows:

The societal marketing concept holds that the organization’s task is to determine the needs, wants, and interests of target markets and to deliver the desired satisfactions more effectively and efficiently than competitors in a way that preserves or enhances the consumer’s and the society’s well-being.

FIGURE 1: The triadic reciprocity.
In the beginning of the 1970s, Bell and Emory (1971) had already suggested the ‘consumer comes first’ assumption as a more equitable basis for the buyer-seller relationship.

The concept of energy and Nigerian society

Energy is at the heart of most critical economic, environmental and developmental issues facing the world today. Clean, efficient, affordable and reliable energy services are indispensable for global prosperity. Current energy systems are inadequate to meet the needs of the world’s poor and are jeopardising the achievement of the Millennium Development Goals (MDGs). For instance, in the absence of reliable energy services, neither health clinics nor schools can function properly, access to clean water and sanitation is constrained without effective pumping capacity and food security in Nigeria is adversely affected, often with a devastating impact on vulnerable populations. Worldwide, approximately 3 billion people rely on traditional biomass for cooking and heating (UNDP & WHO 2009), and about 1.5 billion have no access to electricity. Up to a billion more people have only access to unreliable electricity networks.

The ‘energy-poor’ suffer the health consequences of inefficient combustion of solid fuels in inadequately ventilated buildings as well as the economic consequences of insufficient power for productive income-generating activities and other basic services, such as health and education. In particular, women and girls in the developing world, especially in Nigeria, are disproportionately affected in this regard. A well-performing energy system that improves efficient access to modern forms of energy would strengthen the opportunities for the poorest few billion people on the planet to escape the worst impacts of poverty. Such a system is also essential for meeting wider development objectives.

Economic growth goes hand in hand with increased access to modern energy services, especially in low- and middle-income countries transitioning through the phase of accelerated industrial development. A World Bank study (2009) indicates that countries with underperforming energy systems may lose up to 1%-2% of growth potential annually as a result of electric power outages, overinvestment in backup electricity generators, energy subsidies and losses and inefficient use of scarce energy resources.

At the global level, the energy system– supply, transformation, delivery and use – is the dominant contributor to climate change, representing about 60% of total current greenhouse gas (GHG) emissions. Current patterns of energy production and consumption are unsustainable and threaten the environment on both local and global scales. Emissions from the combustion of fossil fuels are major contributors to the unpredictable effects of climate change, urban air pollution and the acidification of land and water. Reducing the carbon intensity of energy – that is, the amount of carbon (Heegte & Sonder 2007) emitted per unit of energy consumed – is a key objective in reaching long-term climate goals. As long as the primary energy mix is biased towards fossil fuels, this would be difficult to achieve with currently available fossil fuel-based energy technologies. Given that the world economy is expected to double in size over the next 20 years, the world’s consumption of energy will also increase significantly if energy supply, conversion and use continue to be inefficient. Energy system design, providing stronger incentives for reduced GHG emissions in supply and increased end-use efficiency will, therefore, be critical for reducing the risk of irreversible, catastrophic climate change. Energy Community (2015) avers that energy poverty most commonly refers to the situation where individuals are not able to adequately heat (or provide necessary energy services) in their homes at affordable cost.

The issue is characterised by three key drivers in combination or isolation – low incomes, poor thermal efficiency of buildings and high energy costs. The risk to households of energy poverty will be a function of five factors (Preston et al. 2014): the rate of energy price rise versus income growth, access to cheaper energy prices, household energy needs, efficiency of energy case and policy interventions. Access to energy is a prerequisite of human development. Energy is needed for individual survival, it is important for the provision of social services such as education and health and a critical input into all economic sectors from household production or farming to industry. Fundamentally, Nigeria is blessed with alternative sources of energy that is sustainable in alleviating energy poverty but has completely failed her citizens in realising the potential of their endowed gift from nature.

Energy poverty takes many forms and has a devastating effect on the poor, especially in Nigeria. For example, this article observed that children doing homework by the light of a smoky kerosene lamp and candlelight do as much damage to their lungs as a two-pack-a-day cigarette smoker (World Health Organisation, Lighting Africa Report). Household air pollution kills more than 4 million people every year and exposes millions to various forms of sicknesses.

Energy poverty definitions took only the minimum energy quantity required into consideration when defining energy poverty, but a different school of thought is that not only energy quantity but the quality and cleanliness of the energy used should be taken into consideration when defining energy poverty (Kumar 2011). Such a definition could read: a person is in energy poverty if they do not have access to at least (Kumar 2011):

1. The equivalent of 35 kg liquefied petroleum gas (LPG) per capita per year from liquid and glass fuels or an improved supply of solid fuel sources and improved (efficient and clean) cooking stoves.
2. One hundred and twenty kWh electricity per capita per year for lighting and access to most basic services (drinking water, communication, improved health
services, improved education services, etc.) as well as some added value to local production.

In tackling or eradicating energy poverty, it would be wise to create the right environment for marketing through the exchange of ideas and practices. These have been key factors in inspiring citizens, igniting processes, generating new ideas and sealing up successful solutions.

This article promotes the idea that marketing managers should accept the challenge of balancing the interests of society with those of organisations by trying to cultivate good relationships. It is worth noting that behind the impersonal walls of an organisation are people. A company is built by people for people. Employees, managers and directors of a specific company may play the role of consumers of another company, or feel collectively injured by an unethical decision of a particular organisation. In this sense, one receives back all that one gives to one’s society. Moreover, individuals do not develop in isolation. Their development occurs through relationships with others. In order to promote ethical behaviour in managers, a firm should nurture them in an ethical environment (Sargent 1999). Bearing in mind what is discussed in this article with regard to societal marketing and strategic marketing, the authors invite academic scholars, practicing managers and ordinary citizens to think seriously about what kind of world they are constructing and the consequences of their current actions for the future.

Strategies of eradicating energy poverty in Nigeria

The oil and gas industry has a long history of operating in sub-Saharan Africa and developing Asia where the energy access challenge is most pronounced. For example, international exploration and production activities have been ongoing in Nigeria since the 1930s (NNPC 2016). In order to secure licenses to operate in these regions, operations have been required to invest in local economies through both local content development and community investment programmes. An assessment of social spend alone revealed that, whilst the level of spend varies in line with the size of the company’s broader country investment, some companies reported investments as high as $500 million in 2012 alone (Accenture Analysis 2015). This activity and required investment is not likely to diminish anytime soon. The share of global oil and gas reserves held in sub-Saharan Africa alone increased by 33% between 2000 and 2012 (IES 2015). Added to this is an evolving operating landscape with the evolution of shale gas resulting in larger operational footprints. Within this new context, needs-based philanthropy to maintain the social license to operate is no longer sufficient and oil and gas companies will need to rethink their relationships with host communities. The energy poverty challenge provides the industry with the opportunity to do so. The industry’s interest in tackling energy poverty can be summarised in three key value drivers: revenue growth, risk management and brand enhancement (Accenture Analysis 2015).

Risk management

Tackling energy poverty can help to manage operational risk and create shareholder value in both the short and long terms. In the short term, an emphasis on tackling energy poverty will have a direct impact on the quality of life across communities, helping to minimise potential unrest. A reliable source of energy supply will also support business operations and improve conditions for company employees – particularly during the development stage of the value chain. Together, these impacts will support greater operational savings from both time and financial perspectives, helping to manage shareholder expectations quarter to quarter. In the long term, broader economic and social development will enable provision of services such as health and education, thereby reducing work stoppages through access to a stronger, more educated workforce and lowering procurement costs through the development of a more robust supply chain. In the context of increased cost pressures and ever more stringent local content sourcing requirements, this has become a business imperative, with a small upfront investment paying substantial dividends over the longer term.

Brand enhancement

A related value driver is the need to establish a strong brand in order to secure licenses and access to reserves in the short term. By committing to tackling the energy poverty challenge as an enabler to broader economic and social development, the industry has the opportunity to strengthen its current local content offerings, better positioning itself vis-à-vis local governments. In the long term, these efforts will further help companies protect their brands, which is instrumental to retaining their social licenses to operate.

Revenue growth

In the long term, local communities present new markets for oil and gas operators. By building new energy solutions and innovative business models, oil and gas companies can provide access to energy to the balance of payments (BoP) – those considered to be in the lowest income bracket, creating new revenue streams. The International Finance Corporation’s (IFCs) market size estimate of $37 billion tells a compelling story, with the potential for new markets in poorer communities growing over time as purchasing power increases. It enables consumers to ascend the ‘energy ladder’ and move away from dirtier energy sources such as biomass to cleaner, more efficient energy sources. The sale of products such as liquefied petroleum gas for use as household and transportation fuels provides particularly interesting opportunities for oil and gas companies.

The Global Alliance for Clean Cookstoves (2015) has been instrumental in developing this opportunity, helping to establish LPG as a clean, efficient and safe cooking stove.
fuel, thereby creating a new market base for the oil and gas industry. The relative strength of each business driver will be highly context dependent. In many cases, the case for investment may prove more compelling for national oil companies (NOCs), as supporting broader economic development is at the heart of these organisations’ missions. Saudi Aramco’s ‘golden quadrant’ strategy is an example of this commitment to broader economic and societal development as the NOC assesses the value of projects based on the extent to which they meet three priority areas: responding to the global energy market, commerciality and national development. However, whilst national development interests are generally more aligned with the strategy of NOCs, investment in energy access can also provide greater competitive advantage for international oil companies (IOCs).

**Local approaches to energy poverty challenges**

At the local level, industries are meant to take a more proactive approach to addressing energy poverty. These are:

- **Strategically invest in an integrated manner**
  Oil and gas investment in local economies is driven through multiple channels, namely, core operations, local content development and social community investment. Whilst investment can be extensive, it is often rolled out in a disorganised manner. More strategic alignment of these investments would generate greater impact for both the industry and the local communities. Development of more comprehensive country-facing strategies – defined as a portfolio of integrated country-facing initiatives which enable the company to achieve its objectives whilst creating value for the country – is one way in which companies can begin to align company objectives to the needs of the local community and the country’s broader economic development goals to maximise impact.

- **More systematically leverage capabilities to support access to energy**
  Taking a more proactive role, the industry should consider broader application of its capabilities to support community needs, ranging from stakeholder management to technical and commercial expertise to access to capital. In so doing, it should align investment to core business operations and identify a clear exit strategy by ensuring solutions are underpinned by sustainable business models. Several companies, including Total and Eni, are emerging as industry leaders in leveraging core business capabilities to support access to energy. Total, for example, is currently leveraging its distribution infrastructure. Awango by Total was set up by the French IOC in collaboration with the German development agency Deutsche to deliver solar lighting and phone-charging solutions for the BoP by leveraging local financing and distribution networks. They also supplied training to ensure correct use and maintenance of the technology (Total 2012).

- **Establish and lead ecosystem development**
  In order to really drive transformative change, the oil and gas industry is well positioned to establish and lead an integrated approach to tackling energy poverty. This includes leading development of innovative solutions and business models as well as playing a key role in catalysing action, convening key stakeholders and coordinating a more comprehensive solution driven by shared value and supported by shared investment. Solutions should be considered at both the broad industry and cross-industry levels. For example, oil and gas companies operating in the same market could coordinate community investments at the industry level to more cohesively and holistically tackle community needs – from access to power for the end user to powering health clinics and schools.

**Benefits of capturing the energy efficiency opportunity**

Much of the recent attention to energy efficiency has its origin in the need to reduce carbon emissions; energy efficiency opportunities make up about a third of the total low-cost opportunities to reduce GHG emissions globally (McKinsey & Company 2009). A large number of currently available energy efficiency opportunities are characterised as having ‘negative cost’: in other words, the savings from reduced energy consumption over the lifetime of the investment exceeds the initial cost. It is estimated that the total financial savings, or avoided energy cost, of this efficiency opportunity will be $250 – $325 billion a year in 2030 (McKinsey & Company 2009).

Additional benefits include the environmental benefit – a reduction of 12% – 17% of total global GHG emissions in 2030 versus a baseline scenario, which is around a third of the low-cost GHG abatement opportunity (McKinsey & Company 2009), and the economic benefit of reducing the risk of price volatility as a result of demand outstripping supply. When coupled with other low-cost abatement actions such as renewable power and reduced deforestation, this path is compatible with a 450 ppm stabilisation scenario (IEA 2009).

In addition to the benefits shared by the global community, countries that succeed in increasing energy efficiency can also reap a number of direct benefits at different levels:

- **Governments.** Energy efficiency can ease infrastructure bottlenecks by avoiding or delaying capital-intensive investments in new power supply without affecting economic growth. This is especially important in developing countries where there are energy supply shortages and significant capital constraints. The IEA estimates savings of $1 trillion in avoided energy infrastructure investment to 2030 if the available energy efficiency potential is captured (IEA 2009). Reducing peak load through load management can reduce generation costs. Reducing overall generation through
energy efficiency reduces fuel imports (primarily oil and gas), which lowers import dependence, reduces import bills and overall energy costs and improves the competitiveness of the economy (McKinsey & Company 2009). In sectors with energy subsidies, energy efficiency helps mitigate the burden on the government budget. With regard to project economics, energy efficiency options almost always have positive financial returns and are almost always cheaper than installing new supply.

• Consumers. Energy efficiency allows lower energy consumption for the same end-user energy services, which lowers energy costs for consumers – industrial, commercial and residential. This leads to higher affordability, which is particularly important for low-income groups and creates a more attractive environment for tariff reform. Efficient lighting alone could save more than $1 a month per household. This would be even more for households that currently rely on kerosene and candles for lighting (the average non-electrified household in South Africa, for example, spends $5 – $6 per month on lighting) (Madubansi & Shackleton 2006). At the same time, reducing energy demand leads to higher system reliability, which in turn lowers out ageing infrastructure costs and raises productivity and income.

Conclusion
Nigeria is one of Africa’s largest oil-producing countries that has one of the lowest net rates of electricity generation per capita in the world, with 50% of its population (80 million people) living without access to electricity. Moreover, despite producing an average of 2 billion barrels of oil per day, only 11% of Nigeria’s energy consumption is attributed to oil, with biomass and waste accounting for 83.9%. The international community recognises a number of basic rights: the right to water, the right to food, the right to health, the right to adequate housing, the right to gain a living by work and the right to take part in cultural life. Missing from this list is the right to energy. Yet, everyone needs energy to cook food, to heat the home, to earn a living, to benefit from good health and education services. Energy poverty denies people in Africa a basic standard of living which should be available for all. Only 15% of the population in Africa has electricity, and one quarter of the 2.5 billion people cooking with biomass live in Africa (IEA 2012). Achievement of all of the Millennium Development Goals (MDGs) has been limited by energy poverty in Africa and across the developing world. This lack of access to efficient modern energy has a significant impact on economic development and small-scale enterprise, educational opportunities, infant mortality, drudgery for women and quality of life. By 2030, there is an opportunity for the world to be well on its way to a fundamental transformation of its energy system, allowing developing countries to leapfrog current systems in order to achieve access to cleaner, sustainable, affordable and reliable energy services. This change will require major shifts in regulatory regimes in almost every economy; vast incremental infrastructure investments (likely to be more than $1 trillion annually (IEA 2008)). It will require accelerated development and deployment of multiple new energy technologies and a fundamental behavioural shift in energy consumption. Major shifts in human and institutional capacity and governance will be required to make this happen. The transformation of energy systems will be uneven and, if poorly handled, has the potential to lead to a widening ‘energy gap’ between advanced and least developed nations, and even to periodic energy security crises. But handled well – through a balanced framework of cooperation and competition – energy system transformation has the potential to be a source of sustainable wealth creation for the world’s growing population, whilst reducing the strain on its resources and climate. Developing countries like Nigeria in particular need to expand access to reliable and modern energy services if they are to reduce poverty and improve the health of their citizens, whilst at the same time increasing productivity, enhancing competitiveness and promoting economic growth.

A new mechanism should be developed which can transfer increasing amounts of the growing carbon market funds towards projects which directly reduce energy poverty both globally and regionally.

Recommendations

• The Nigerian government should enact policies that will encourage more private investors in the electric power supply to enhance its supply.

• Cordial relationships with host communities should be enhanced and peaceful states of affairs should be ensured to avoid more oil wells from being vandalised.

• More investments should be made in the area of environmental health to reduce illness and premature deaths amongst residents of Nigeria.

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