ENERGY SUSTAINABILITY CONFERENCE

Hosted by energy institute Nigeria

ENERGY LANDSCAPE; Minimizing Risks, Maximizing Opportunities.

Leading Strategic Event for the Energy Sector

CONFERENCE REPORT

Executive Summary

The Energy Institute Nigeria is an offshoot of the international chartered professional body (Energy Institute) harnessing global energy expertise. The Energy Institute's purpose is to develop and exchange information, skills and acceptable practice towards attaining a safe, secure and sustainable energy system. The Energy Sustainability Conference (ESC) is pioneered by the institute as a hub for industry stakeholders to network, leverage on diverse expertise in the energy space and debate to ensure that energy is better understood, managed and valued for the benefit of all. The second edition of the energy sustainability conference was hosted by the Energy institute Nigeria in continual realization of its ambition to promote energy sustainability by leveraging on innovative and energy efficient technologies.

The theme of the 2019 edition of the Energy Sustainability Conference was "Energy Landscape: Minimising Risks, Maximising Opportunities." The main objective of the conference was to dissect the knotty issues around global energy and facilitate discussions among energy players to chart a pathway for co-creation of sustainable energy solutions. The conference began with a breakfast session exclusive for women in energy. The main conference started at noon and was declared open by the Managing Director of Energy Institute Nigeria - Mrs. Yewande Abiose. Also, the conference was graced by notable personalities such as Louise Kingham Obe FEI – Chief Executive, Energy Institute and Harriet Thompson - British Deputy High Commissioner and other delegates from across the country and beyond.

The conference which held at Oriental Hotel, Lekki Lagos converged over 250 delegates from different works of life. The main conference comprised eleven (11) sessions disaggregated into four (4) panel sessions six (6) specialist sessions and a business session. Each session featured homegrown and international experts drawn from businesses, corporate organizations and regulators in the energy space as moderators and discussants. The illustrious panel of speakers were from different regions within and outside Africa. The distinguished panels of speakers deliberated issues relating to energy outlook and sustainability, energy finance, energy law, health, safety and environment; energy future, energy infrastructure investment, gas commercialization, industrializing the petroleum sector, power options and the energy mix for sustaining the future

The high points of the conference were recommendations/ suggestions made by delegates at each Plenary and specialist hubs. An important recommendation was for government to enable the environment and partner with the private sector to harness fossil fuel for sustainable development as they begin to shift focus to renewable energy sources.

The conference also had side attractions such as cocktail reception and dinner where awards of honorary Fellows of the Energy Institute (FEI) were conferred on Mrs. Audrey Joe Ezigbo, Prof. Wunmi Iledare, Dr Layi Fatona and Chief. Tunde J. Afolabi. The rest of this report contains the highpoints of activities that ensued in the course of the two-day conference.

List of Acronyms

ADB	African Development bank
ATP	Ability to Pay
Bpd	Barrels per day
CAC	Corporate Affairs Commission
CBN	Central Bank of Nigeria
CEO	Chief Executive Officer
CSR	Corporate Social Responsibility
DISCO	Distribution Company
DIT	Department for International Trade
EFCC	Economic and Financial Crimes Commission
EI	Energy Institute
ESC	Energy Sustainability Conference
FDI	Foreign Direct Investments
FEI	Fellows of the Energy Institute
FIRS	Federal Inland Revenue Service
FPI	Foreign portfolio Investments
FTSA	Financial Time Series Analysis
GDP	Gross Domestic Product
GENCO	Power Generation Company
HSE	Health, Security and Education
IFC	International Finance Corporation
IPP	Independent power producer
IT	Information Technology
LPG	Liquefied Petroleum Gas
MMSD	Ministry of Mine and Steel Development
MSMEs	Micro, Small and Medium Enterprises
NBET	Nigerian Bulk Electricity Trading Plc
NDEP	Niger Delta Exploration and Production
NESI	Nigerian Electricity supply industry
NGFCP	National Gas Flare Commercialization Programme
NLNG	National Liquefied Natural Gas
NPDC Ltd	Nigerian Petroleum Development Company
OMLs	Oil Mining Licenses
PHICB Bill	Petroleum Host and Impacted Communities
PIAB	Petroleum Industry Administration Bill (PIAB),
PIFB	Petroleum Industry Fiscal Bill
PIB	Petroleum Industry Bill
REAN	Renewable Energy Agency of Nigeria
ROI	Return on Investment
SMEs	Small and Medium Enterprises
TSA	Transitional Service Agreement
UK	United Kingdom
VAT	Value Added Tax
WAP	West African Power Pool

Background

The Energy Sustainability Conference initiated by the Energy Institute Nigeria mirrors an axle for energy players, industry experts, policy formulators, corporate bodies, regulators, business persons, investors and individuals across the energy spectrum to deliberate on matters germane to improving energy sustainability in Nigeria and globally. Essentially, this presents an avenue for stakeholders in the energy space to network and leverage on learnings and experiences of other experts from the African region and across the world.

The theme of the second edition of the Energy Sustainability conference was labelled "Energy Landscape: Minimising Risks, Maximising Opportunities." The theme was hinged on the purview that the world is moving away from the fossils to more renewable sources of energy. Thus, the conference objective was to dismember the knotty issues around energy and facilitate discussions among energy players to chart a pathway for co-creation of sustainable energy solutions in Nigeria, Africa and the rest of the world.

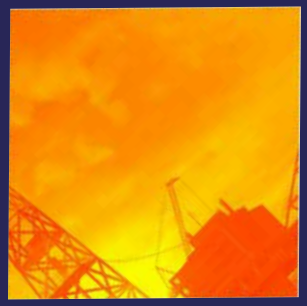
The conference which held at Oriental Hotel, Lekki Lagos covered ten sessions disaggregated into three (3) panel sessions six (6) specialist hubs and a business session. Each session featured homegrown and international experts drawn from businesses, corporate organizations and regulators in the energy space as moderators and discussants. The illustrious panel of speakers were from different regions within and outside Africa. The conference also had side attractions such as cocktail reception and dinner where awards of honorary Fellows of the Energy Institute (FEI) was conferred on four renowned personalities. The rest of this report contains the highpoints of activities that ensued in the course of the conference.

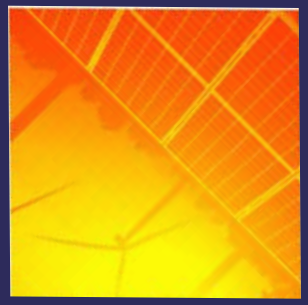
Conference Objectives

- To increase understanding and stimulate discussions about the state of energy in Nigeria versus the world
- To identify critical sustainability challenges and provide pragmatic solutions to achieving a more inclusive and sustainable energy future
- To create platform for energy experts and young aspirants to network and exchange ideas pertinent to energy sustainability and career advancement
- To confer the honorary award of FEI upon selected experts

Day One

16th October 2019





Women in Renewable Energy round table

The conference started with a special session hosted by EI and REAN (Renewable Energy Association of Nigeria) for women in the energy space to lend their voices to the issue of sustainability in Nigeria. Seasoned speakers were
engaged to discuss pertinent issues.

Ola Sorunke

stated that the Department for International Trade invest in Small to Medium Enterprises (SME's) through grants because they are enablers of low carbon. She mentioned also that the Department for International Trade is in partnership with the African Development bank (ADB) and the International Finance Corporation (IFC) to support SME's with novel ideas. For instance, a company with a plant in Ekpe, Nigeria seeking to develop waste energy for power and Africa hydrogen partners deploying hydrogen across Africa. There is finance, as far as it is environmentally friendly, she added.

Climate financing, she stated has been given by the United Kingdom up to the tune of 85 Million pounds. Besides, the upcoming show case in January 2020 called the UK-Africa Investment summit for investors in the energy industry is aimed at working with partners that can give grants for your projects. Speaking further, she mentioned that the summit will be hosted by the Prime Minister and will bring together businesses, governments and international institutions to showcase and promote the breadth and quality of investment opportunities across Africa.

To end with, she highlighted a current pressing issue: that Africa especially Nigeria, is aid-focused and must transition from Aid to trade. Ghana, for instance, is pursuing this transition.

Lande Abudu

works with the Renewable Energy Agency of Nigeria (REAN), an organization of women in partnership with non-governmental organization such as Power for All. REAN's mission is to educate the populace that a girl does not have to be a nurse but can also be an engineer. As part of their objectives, they focus on jobs for women, mentoring services, conferences, publications and giving visibility to women for economic empowerment. In addition, they promote local, native organizations and diversification.

REAN, strives for gender balance in all energy organization. One of their beneficiaries are the Soul Sister (who have also received funds from the British High Commission, Department for International Trade). They are creating entrepreneurs and also building capacity in Renewable energy. So far REAN has supported One thousand Five hundred women, they have also advocated for the harmonization of the Renewable Energy Bill in Nigeria and are in talks with the Ministry of Women affairs and other regulators. There is mention of women in the local content law on oil and gas, which also needs to reflect in the renewable energy legislation.

WOMEN IN TOP MANAGEMENT

Mrs. Rolake Akinkugbe-Filani informed that discussion has ensued among small scale projects in the energy sector, but on the large-scale projects, women should be part of board meetings making key strategic decisions. She emphasized the need for an upgrade in technical skills and capabilities in order to create well rounded professional women. She stated also that women entrepreneurs or service providers need to be financially savvy and be able to review investment appraisals and build persuasive financial models. Furthermore, missing technical capabilities she projected may be the reason why ladies find it frightening to lend and suggested that Energy Institute should create financial courses to build these skills.

CHANGE

Louise Kingham iterated the need to support more energy companies to change, prioritizing female engineers, leadership from the top and the diversification of teams. She then explained that Rensol is a corporate champion in this space. She added that the Energy Institute provides a data base for potential profile which are made available to headhunters looking for employees and partnership. The headhunters are then able to tap into the Energy Institute database which provides a wealth of contacts of top women in their field. Finally, she suggested that beyond women, the leadership should also address issues of social justice in the Niger Delta region of Nigeria

Conclusion

The women in energy highlighted the need for inclusion from the purview that women in leadership impacts the bottom line and profitability of any company. There was a concession to also adopt the model currently in place at Total Nigeria, which is a caucus of 'Total Women in Communication and exchange' and include the boy child as part of the engagement.

MAIN CONFERENCE

Sequel to participants registration, main conference started at 12:30 with an opening remark by Mrs. Yewande Abiose (Managing Director, Energy Institute Nigeria). She welcomed participants to the conference and raised their expectations about the learnings and interactions the conference would offer them. She ran through the agenda, explaining that there are panel sessions and specialist hubs where delegates would gather in smaller groups of interest to share in-depth their learnings and experiences within the energy sector.

Welcome Address by

Mr. Yemi Osinubi - Honorary Secretary, Energy Institute Nigeria

Mr. Osinubi welcomed everyone to the second edition of the conference. He identified that the oil has seen about 77% reduction since the advent of renewable energy. Despite this, there's much proliferation of oil and gas in Nigeria. He highlighted that in comparison with what is happening in the world today and with a ten-year projection it is easy to see where the energy landscape in Nigeria would be. Hence, the need to identify ways to maximise the fossil resources for the future. He highlighted that China is bursting forth in growth and like the rest of the world beginning to embrace renewable energy sources. He added that for those in the fossil industry, discussions are ongoing on how the fossil fuel can be maximized sustainably. Furthermore, he mentioned that the Nigerian energy space has potential to bloom in terms of gas, oil and power after which he talked about the Energy Institute and what it has to offer.

He iterated that the Energy Institute invests in the energy sector by providing networking opportunities, capacity building, training on mode of operation and best practices, mentorship to students and young professionals and support for universities through affiliate membership. He added that energy institute is there for anyone who wants to better understand and get introduced to the energy system. He further stated that ESC allows the EI to lend a voice alongside other Nigerians in the energy space in order to chart a course for sustainable development. He mentioned that the second edition of the ESC has improved on the previous by adding half a day to enable delegates discuss issues peculiar to their area of expertise and businesses at the specialist hubs. He enjoined participants to leverage on the specialist's sessions to lament and proffer solution. He finally thanked the participants and wished them a great conference.

Overview of the Sessions

The conference comprised of eleven (11) sessions disaggregated into 4 panel discussions, 6 specialist session and one business session as follows:

- **Panel Discussion 1: Energy Outlook & Sustainability**
- **Specialist hub 1a: Energy finance – financing the energy sector**
- **Specialist hub 1b: Energy law- insolvency, revocation assignment and security: providing solutions to contemporary regulatory challenges in Nigeria's oil and gas industry**
- **Specialist hub 1c: Transition to cost effective electricity tariffs, benefits and challenges/Health safety and environment – achieving goal zero accidents: myth or reality**
- **Business Session: Navigating disruption of business and people**
- **Panel Discussion 2: Energy Future – minimizing risks, maximizing opportunities for growth**
- **Panel Discussion 3: Energy infrastructure investment**
- **Specialist session 2a: Gas commercialization: infrastructure and investment challenges**
- **Specialist session 2b: Liquid petroleum – industrializing the sector, stretching the value chain**
- **Specialist session 2c: Power options for getting the mix right**
- **Panel Discussion 4: The energy mix for sustaining our future**

Panel Discussion 1-
Energy Outlook & Sustainability Forum

Panel Chair: Yemi Osinubi – Honorary Secretary, EI Nigeria
Panelists:
Dr Adeoye Adefulu – Partner, Odujinrin & Adefulu
Mr. Vincent Oldenbroek – Co-founder, African Hydrogen Partnership
Mr. Kelechi Ike – Asset Manager, Egbin Power Plant
Dapo Oguntoyinbo – CEO, Hiltop Engineering

This session was designed to stimulate interaction about the energy outlook in Nigeria. Thus, the panel chair started by asking the panelists about their thoughts on the energy landscape in Nigeria and the things that excites them. Panelists responded to the question in turns as described thence:

Mr. Vincent mentioned that hydrogen is most exciting for him and that it is beginning to boom worldwide and that a lot of people are embracing it. He added that it is largely under exploited, especially in Nigeria despite the fact that it has a lot of benefits in terms of energy storage and is a good way to use the natural gas infrastructure.
Dr. Adefulu stated that Nigeria has a large natural resource and is full of potentials, but with the new drive towards renewable energy, the primary risk in Nigeria is that oil will not last long enough. Thus, he emphasized the need to think about what to do with the natural resource to derive maximum benefit. Finally, he highlighted that the nation should begin to move from oil and gas while using the resources to drive development
Mr. Gbolahan expressed that he hopes to see more bankers doing more in the oil and gas. He further noted that there's gradual shift from fossil to gas and other renewable energy sources. Over the next 30 years, he mentioned that renewable energy would increase and Nigeria should begin to explore that space while increasing funding for non- fossil fuel development. He added that if there are pools of capital people can tap into, non-fossil fuel opportunity would increase. He further highlighted that Africa would play a big role in funding oil and gas/energy in Nigeria and Africa.

Mr. Kelechi-Ike emphasized on pricing. He lamented that current power generation in Nigeria is limited and inversely proportional to the growing population. He stated that access to energy is 151KW per annum in Nigeria while South Africa's is 30 times more. He added that only 60% of the population have access to electricity despite abundance of energy resource at Nigeria's disposal. This he linked to the question of tariff - making electricity tariff to be cost-effective. In order to ensure this, he mentioned that it is important to determine the ability of the citizens to despite low minimum wage. Speaking further, he stated that there lots of issues around power; for the remote areas, accessibility and affordability are key issues.

Dapo Oguntoyinbo affirmed that there are a lot of challenges in the energy space but something has to be done to alleviate them. In an oil-producing country like Nigeria, he mentioned that fears are evident as some generating plant are not being powered and there's a need to minimize risk. He added that Nigeria should be in a hurry to solve its energy challenges – gas flaring, petrol importation and no refineries and begin to talk about energy sustainability. He concluded that Nigeria needs to think about making the industry sustainable as it grows out of energy challenge.

Highlights of the rest of the discussion are as follows:

Challenges/opportunities in energy gas space

- Regulation challenge exists; for instance, the PIB has not been passed
- In terms of commodity pricing; the outlook for oil pricing affects how much capital is available to finance oil and gas in addition to tariffs and security
- Lack of funding for private sector hinders investment growth which in turn has ripple effect on citizens
- Government often delays to fulfil their part of agreement which results to project delays.
- Investing in Oil and gas infrastructure storage can increase energy supply leading to cheaper energy than natural gas, increased supply for electricity, chemicals, transport and so on
- Opportunities in oil and gas are better maximised with an enabling environment and controls put in place to minimise risks (e.g. disaster prevention) and encourage investors

Private Sector – Evaluation of investment and financial capacities plus the willingness to do the right thing

- If a private sector entity wins an asset and there's no enabling environment it would be difficult to thrive.
- The private sector can do a lot provided that enabling environment is created. Abide by your contract. there would be equity funding, band quasi funding available
- Every private sector entity would be interested in evaluation of risk and the environment in which they operate. The Nigerian energy environment is too uncertain and difficult to predict. Government needs to put the necessary things in place to ensure that the environment is more predictable
- Government cannot work in isolation. There has to be public-private partnership to achieve success

Conclusion:

It was further established that with increased investment, opportunities still abound in the Nigerian energy space. However, attention should be paid to minimising risks that could be detrimental to investment growth. The session on the note that the Nigerian government should begin to shift its focus from doing everything to allowing participation from various segments of the country – particularly the private sector.

Specialist Session 1a:
Energy Finance – Financing the Energy Sector

Host: Gbolahan Fasade - Director, CITI Bank group
Panel Chair: Funso Akere – Chief Executive Stanbic IBTC
Panelists:
Rolake Akinkugbe-Filani -
Mariah Lucciano-Gabriel: Head, commercial and business development, Asharami Energy
Uzoma Nwankwo: Chief Finance Offficer, AMNI

One of the key problems in the energy space is funding/finance; thence, this session dealt with the challenges and current opportunities there are in the energy space in terms of financing. The panel chair opened the session with a presentation.

Presentation by Funso Akere

He introduced Stanbic bank as on one of the standard bank groups set out to meet the financing needs of industry players in the energy sector. He set the tone for the discussion by pointing out that the gas, power and renewables are important for the future prospect and growth of Nigeria. Thereafter, he added that the financing options cut across the oil and gas value chain cuts across the upstream, midstream and downstream

Energy finance liquidity profile He mentioned that many people tap into three buckets of financing instead of four:

- Nigerian banks (fund in naira and dollars, price sensitive),
- Regional banks (focused on Africa and they bank both local and international expertise and have access to cheaper funding sources),
- International banks with cheaper funding sources than the first two

Furthermore, he iterated that funders often look at project bankability, history of the organization/company, assets, price, political environment and other fundamentals before making a decision to fund or not. Thereafter, he handed over to the panelists to give their initial thoughts.

MARIAH LUCCIANO touched on issues faced when operators try to raise finance. She iterated that exploration is capital intensive and has long gestation time and nobody wants to tie their money down for ten years. She emphasized that exploration risk is the biggest problem often faced by industry players in the energy space. In addition, she identified unconducive environment with community looking to sabotage company efforts, pricing and other bottlenecks that might increase the cost of production. Nevertheless, the banks would not take that excuse for any laxity. Thus, bringing to the fore the cost of production as a key consideration for operators in addendum to host community demands, security and other issues. Operators try to drive down the cost

ROLAKE AKINKUGBE-FILANI in turn majored on both financing and energy. She highlighted that in terms of access to market, there's increasing need for government and private sector to collaborate efficiently to see that things work having identified the big challenge to be liquidity i.e. money available and at what price. She added that the biggest driver of viability is around the oil price while putting in consideration where the market is heading. In most cases, she stated that the purchaser has to pay a premium to prepare for future cashflow. Besides, she stated that projects that have succeeded in attracting funding thrived on two principles – access to feedstock and offtake.
Moreover, in terms of financing and raising capital, she identified securitisation to be germane as people need to see the long-term upside and value the project would bring to fund. Hence, entrepreneurs need to be strategic in considering a structure to support conventional energy by investing in alternative energy sources such as solar energy which is cheaper. Given the global market trajectory, she informed that the European investment bank has begun contemplating continued funding of natural gas projects and advised that if operators are looking to international sources for funding, their projects should be tied to the sustainable development goals to increase viability. Entrepreneurs should look into climate mitigation

UZOMA NWANKWO dealt concisely with the challenges of financing in the energy sector. He highlighted that expectation of management from operators/entrepreneurs have to be met and there is no second chance to make a first impression. He advised that private companies should come prepared in terms of documentation and proper planning when seeking finance. International banks take note of important details before they release funds. Subsequently, he mentioned that there are various funding structures that could be leveraged – e.g. private equity which could be good, expensive or disruptive. However, he advised private companies to be resilient and professional in their engagement processes while putting their best foot forward to manage financiers' expectations and be willing to give up some things and develop a risk mitigation plan ahead of the risk. Regarding gas, he stated that gas commercialisation is the most difficult part of energy which requires infrastructural development. He however pointed out that if the whole gas is given to NLNG, there won't be any cash coming from midstream and downstream. Moving on to gas flaring, he mentioned that it's difficult to aggregate gas and use it for something as the capital cost is quite heavy. In terms of funding energy- conventional or non-conventional is difficult. He explained that the starting point for renewables is quite expensive. He also noted that Nigerians spend 15billion dollars on generators every year.

With respect to power, he mentioned that when privatisation of power was introduced, people who lost out of communication were happy. However, the banks are running in debts because people took loans that cannot be repaid. Hence, the banks withdrew from funding the alternative power.
China – he highlighted that negotiating with them is the most difficult in financing while the pain from the process of getting finance from the US and the western world is usually excruciating. Conclusively, he advised private companies to be persistent, prepared, and work diligently to get their financing right.
Subsequently, the panel chair engaged the panelists in further discussion, the highlights of which are:

Overcoming challenges and TSA

- Private companies should build their financial and technical capacities, scrutinize their economic model to ascertain if it can pay for the loan being requested. Also, before approaching the banks, private companies should know what their asset is capable to bear and have a strategy to minimize the risks.
- Bearing in mind the competition for funds, private companies should keep their costs down and ensure that their project is good enough to attract the fund.
- TSA is the easiest way to minimise exploration risk-sharing a part of your equity with other operators.
- Cash call issues – It is easier for NPDC and FTSA partners to get funding and they arrange the funding scope (when the cash would be brought by funding parties). The state government is also working to lessen traffic congestion in partnership with private sector

Types of Instrument and Structure to Unlock Deals

- There are existing instrument and structures but, the point is harnessing the instruments. It is often about the person transparency and accountability rather than the project. Financiers often consider the histories of entrepreneurs as well as project bankability and future relevance
- It is important to establish a partnership structure for accessing fund for instance, partnership with a global trader in the consortium or someone with access to investors
- There should be a way to aggregate available pools of capital such as pension funds and individuals who wants to invest at arm's length especially in the solar energy. Support is needed from the government in that regard
- Government should take the view of an investor and put less stringent requirement
- Private investors should introduce a structure in their finance where they can bring in equity and have an element in place also to be able to clog back the equity when the business is blooming
- With combination of investment and commercial banks and private sectors, project can go into innovation
- Some banks still fund development financing but, there are only a few surviving upstream players with well thought strat egies grounded on multiple asset base and finding innovative ways to leverage on different aspects of their businesses and raise funds. This form of financing could still be accessed but with the right strategies in place

Future of the Energy Sector and Unlocking Available Potentials

- It is important to start from the known to the unknown. Fossil fuels would still be here for a while and petrol cars would probably migrate to Nigeria/Africa.
- Fossil fuels would begin to lose the attraction they once had and there would be a reduction in their availability as they unlike renewables are exhaustible
- The existing infrastructure in Nigeria is built around fossil fuels and should be harnessed and made affordable
- Gas is a way out in terms of exploiting to the point that it can deliver power. Power delivery to Nigeria should be around 18000MW currently while 25000 is the proposed. Bridging the gap with renewable energy would be a stretch.
- Fossil fuel is here to stay for the next 50 years perhaps.
- There's need for more pressure groups to get government to enable the environment and make policies that would take care of the issue of environment

QUESTIONS, ANSWERS AND COMMENTS

1. For a lay man who wants to invest, will you really advise people from upstream to come for funds having at the back of your mind the Nigerian way of doing things?

- For a bank to give 2 billion naira, they have to raise 4 billion, 2 billion of which is deposited to CBN. The effective cost of giving an entrepreneur half of that is 26% without paying any cost yet. Cash reserving is less than 1% and it is possible to raise long term funding easily. However, it is difficult
- The banks need to find a way to help themselves. - CBN says have only 1/4 of it. In trying to be safety conscious, banks are punishing operators. It's the dislocation of the financial structure. The banks need to find a way to help on the economy
- Any bank lending to an entrepreneur at 26% wants to go out of business fast. The competition is fast as banks are competing to meet up with the 60% of deposit loan target set by CBN

2. In the next 10years the competition would make demand of crude oil to go below cost of production which would facilitate the production of electric vehicles. If manufacturers are no longer producing automobiles who use fossil fuel, then what is going to be a future prospect of the oil sector in the country?

- At the rate at which things are going, it won't be. there has been some advancement in terms of commercialization of electric cars to some extent. If it is feasible, by now they should be producing like 5million cars. However, the progress is too slow to take over fossil fuel quickly

3. Federal government is taking gas into consideration and from your comment it seems as though it would result in wastage. What would you advise an investor who is looking to put money into gas commercialisation?

- For the past 10yrs, it's been difficult to commercialize gas flares due to the technology risks. Once gas-liquid is commercially viable, it becomes easier. It is not viable yet as Nigeria has no technological capacity to do so. Once the technology is developed, it can work
  Fossil fuel still has some 20years of dominance, it is important to take advantage of the times, grow production and be able to adapt at a time of non-dominance of fossil fuel

- Only 3million electric cars have been sold. The issue in Nigeria is technological adaptation which would come in time. The question now becomes where would the power come from? Is it from gas, or renewables? Hence, there's need for Nigeria as a country to begin to look at a balanced energy mix and technological adaptation. It is important also to find what policy should be put in place while taking cues from South Africa and Kenya who have made some progress in power generation.

5. For example, an energy company with contract from a commercial bank to supply energy. What would be the case when you get the contract from the bank and the asset would be in the custody of the you are bank yet the bank is skeptical to lend out the money? How do you expect such companies to thrive and where do such companies go to get funding from?

- The profile of the borrower is critical to the bank's decision to lend. However, lending in Nigeria is still traditional while the world has moved to lending risks and opportunity. It's a big disappointment that most bank has not moved away from the way they lend. There's need for more proactivity and flexibility in the banking sector else, a lot of opportunities would leave the country

Conclusion:

To end with banks were enjoined to find innovative ways to support companies and promote businesses without losing out as well.

Specialist Session 1b
Energy Law- Insolvency, Revocation, Assignment & Security

Speakers:
Host: Dr. Adeoye Adefulu – Partner, Odunjirin & Adefulu
Ms. Stella Duru – Partner, Banwo & Ighodalo
Mr. Hakeem Adedeji – Executive Director, Hydrocarbon Advisors

This session focused on providing solutions to contemporary regulatory challenges in Nigeria's oil and gas industry. Speakers responded to questions around the current state of Nigeria's oil and gas industry and security.

Highlights of the Discussion:

Current state of Nigeria's oil and gas industry

- **The issue of Ministers consent was discussed in depth. It was advised that ministers' consent should not be required for OMLs with an interest of 80% and below, instead consent should be handled at the regulatory level. The minister in question being the president. The Act and consent guidelines provide for an authorization to proceed even for simple transfers such as FDI's.**
- **Another issue pointed out was lack of clarity of Regulatory framework, which inevitably affects what legal opinion a lawyer gives to client. The regulatory bills are in four parts - Petroleum Industry Bill (PIB), Petroleum Industry Administration Bill (PIAB), Petroleum Industry Fiscal Bill (PIFB) and Petroleum Host and Impacted Communities Bill (PHICB).**

Back to the issue of minister's consent, a question was asked on whether an interest which is not over 10% should even need consent, because of the challenges in getting consent. In addition, clarity was sought regarding the stage for consent request.

- **It was established that the underlying issue with Oil Mining Leases is that everyone is interested, including the EFCC. In retrospect, historical antecedents showed that the regulations were first enacted in August 1914.**
- **Regarding assets changing hands, change in ownership was not as vibrant 40 years ago as it is today as the market has totally transformed**
- **Regarding asset building, the government seem to be hindering the flow of capital and they don't really appreciate the continuous change of hands. Production as at 1994 was 4million bpd, which is greater than current production volume is more than what we produce today. In the United Kingdom there is automation of consent at the regulatory level. However, the government of Nigeria is unwilling to relinquish the power of assignment.**

Need for security

- Security is needed for return of profit in case something goes wrong. The first transaction could be unreliable while the second transaction is the security. There is the offtake contract and a pledge over physical assets as well as accounts. Security may take the form of insurance over assignments, hedging contracts, pledge over company's shares, mortgage and all assets debenture. With the aim of minimizing risks, such as ministers' consent, banks need to advocate to ensure there are securities over OMLs.
- Operators don't like giving mortgages while the government has the opinion that if a sponsor needs to borrow money, he/she does not belong in the industry. In effect, civil servants need to be educated about the different ways to raise capital.

State of collateral contracts at risks of revocation

- Due Diligence need to be done to identify defaulting companies who are non-compliant to the terms of their licenses and laws. Some licenses are revoked for basic reasons such as lack of paying royalty.
- Responsibility lies on the side of companies and the governments. Where the governments do acts that are unlawful, such acts can be challenged legally in court, because there are rules for revocation which must be adhered to. There are instances where companies have complained that government are owing them money under the terms of their Joint venture.

Conclusion:

: It was emphasized that lawyers and regulators must work closely to achieve a more predictable regulatory framework, because they are the government.

Specialist Session 1C

Transition to Cost Effective Electricity Tariffs, Benefits and Challenges/ Health Safety and Environment: Achieving Goal Zero Accidents - Myths or Reality

Panel Moderator:
Mr. Yemi Osinubi, Honorary Secretary, Energy Institute
Panelists:
Mr. Dapo Oguntoyinbo, CEO, Hilltop Engineering
Mr. Kelechi Ekeh, Asset Manager Egbin Power Plant
Mr. Habeeb Alabiosu, Managing Director Viathan Engineering

This session dealt with the transition challenges to cost effective electricity tariffs and what is obtainable with respect to health safety and environment. Discussion began with speakers airing their opinions on the session theme and opportunity was accorded participants to join the discussion to ask questions and offer suggestions.

Highlights of the Discussion:

The following were highlighted during the session:

- **Need for Discussion on Cost Reflective Tariffs - Non-reflectiveness of cost in electricity tariffs is a major disincentive to investment and growth in Nigerian Electricity supply industry (NESI). Investors are interested in a reasonable return on investment (ROI).**
- **Cost-reflective tariff is critical to accessibility and per capita electricity consumption. If the price is too high, some people can't afford it and may reduce consumption. On the flip end, when people pay for electricity, it reduces wastage, they are more responsible with utilization and businesses can make profit too.**
- **Electricity markets available include grid -NBET, bilateral agreements, stand-alone power sources (petrol and diesel generators), emerging markets and West African Power Pool (WAP)**
- **Benefits: cost-reflective electricity tariff provides universal access to electricity for all Nigerians and stimulates growth as well as development of Nigeria's economy**
- **Infrastructure, micro-economic and macro-economic are three main challenges with respect to tariffs**
- **Micro-economic challenges center around the ability to pay (ATP) – national minimum wage (72% of household expenditure would be spent on electricity based on 900KWh/month at 24/KWh), willingness to pay and energy theft**

- Introducing cost-reflective tariff may impact on inflation, labour union, improve cash flow for GENCOs/IPPs, TCN &DISCOs, increase manufacturing cost and influence diversification into coal and renewable energy sources
- Gas is 3.5 dollars' kilowatts per hour. Most SMEs need 2000 watts/hrs. of electricity while transmission capacity in the country is about 5000-8000megawatts.
- The grid and grid extensive programs, decentralized solutions are needed.
- The entire value chain should be reevaluated and should all be put in perspective.

Achieving goal Zero accidents: myth or reality

- Regarding injuries, illness, death, discharge from plants and releases from the organization, goal zero accident was said to be a mindset
- The principles that support the goal zero accidents were identified to include safety leadership, safety culture, safety systems, safety exposures
- Also, four key pillars identified as germane to achieving goal zero are leadership and commitment, development and implementation of HSE management system, workforce engagement (wining minds and hearts) and accountability for HSE (reward and consequence management)

Questions, Answers and Comments

Participants were allowed the ample opportunity to ask questions and lend a voice to the issues discussed. The following questions were thus asked:

- What is the major problem with cost reflective tariffs?
- Who should bear the responsibility for the hazards on electricity management?
- If Kenya can solve its electricity crisis within 2 years, why has Nigeria not been able to solve its own power issues for a time as long as this?

Answers and Recommendations

- Solutions are in the market but it is not being pushed to the fore.
- Market should be segmented and people should be given what they are able to pay for.
- Everyone should be responsible for hazards, the leadership, culture, systems should be taught on achieving goal zero accidents.
- The problem of Nigeria's electricity and power is multifaceted; therefore, the issue of power cannot be solved as fast as Kenya did. Regarding HSE, data is underreported, much work needs be done but there's little conversation around it

Conclusion:

This session ended on a note that power issue in Nigeria is an endemic and multi-faceted; thus, it requires innovative approach to solving it. Moreover, it was emphasized that the discussion around HSEs should be heightened while ensuring cost-reflective tariff is backed up by enhancing the ability of people to pay for it.

Business Session
Navigating disruption of business and people

Host: OANDO PLC
Speakers
Alero Balogun – Head, corporate communications and CSR, OANDO PLC
Mr. Ademola Ogunbanjo – General Manager, Business Support Group, OANDO PLC

Alero Balogun began by introducing OANDO as a Nigerian, audacious, resilient company that has been in oil and gas for over a decade. She explained that the company was doing well operating in the midstream until a period where the company ran into some issues around oil price falling from $114 to $69 and down to $35 between 2014 and 2016. Subsequently, the company partially divested from the downstream business for $210 and focused a bit more on the upstream. Currently, she stated that OANDO holds the perception for it to produce oil alone but be creative in solving its own problems while working in a social ecosystem. She pointed out that if the social ecosystem doesn't work, there is no business. Bearing in mind that not every child in Nigeria would be able to go abroad, the company began to invest in training through its CSR those Nigerians left behind as its disruption strategy disruption. She explained that disruption is about creating value beyond employment creation. She ended by saying "if we don't disrupt things, things would disrupt us."

Ademola Ogunbanjo picked up from where Alero stopped explaining that OANDO puts Nigerians all over the world first and put them to work except on occasions where there are no expert Nigerians; then, they employ other nationals. Having a belief that expertise respects no colour, OANDO provides young people opportunity to put their knowledge to work at entry level by retraining them on practical applications. Significantly, he mentioned that OANDO is the largest indigenous oarganisation that has brought back to Nigeria the largest number of Nigerians in diaspora and its vision is to become the most desirable oil company. To achieve this vision, the company assessed its asset portfolio and at every level, they identify points of anxiety to be taken care of. For instance, with good salary, cars, housing and health insurance the wellbeing of workers is taken care of they can focus on the work. Similarly, focus is directed at building a corporate organization that builds the orgnaisation while working in tandem with the individual. Thus, the passion of people is weaved into work and they are more fulfilled working since life has been weaved into work.

OANDO Graduate Trainee Program – Mr. Ademola introduced OGAP as the training offshoot of OANDO which builds the capacity of young people to increase their employability. However, all of them may not be kept by the organization. He mentioned that the training is initiated right from the university after which they are released into the industry with the main objective of developing young talents in the industry that understand the culture - intrapreneurship. Conclusively, he stated that when job is strictly worked as job, it is difficult to put discretionary energy to use. Thus, people's skills are being sharpened to take ownership and the company is building strategies to ensure it remains in business after the oil regime.

Questions/Comments

The following questions were asked:

- Given current global markets state, now, where is OANDO repositioning in ten years' time?
- What is the relevance of the skills these people are being trained on in the next ten years?
- What is OANDO looking at in terms of refinery?
- What are the problems?

Answers

- OANDO is repositioning itself to not to be the largest oil and gas but to be the most desirable in the country and is at the edge of chaos as alternatives are gradually penetrating the market. Thus, the company is looking into sustainability in terms of investment - gas to power. OANDO is looking at sustainable growth into the future- 8-man team looking into it to ensure that when oil goes, we are still in business. The company's business is energy not oil and wherever energy moves, OANDO goes there
- OANDO is looking into refinery however, it is not for children where the price regime is regulated. It is not a question of free marketing and that's the reason for the deregulation cry. OANDO has engaged the federal government to upgrade existing refineries and get them to work to about 70% efficiency instead of building new one. OANDO is still working on upgrading the ones in partnership with the government and increase productivity.
- Major problems are poor regulations, lack of funding, lack of enabling environment, and too much dependence on oil

Conclusion:

The session finished with an assertion that the Nigerian government begin to shift its focus from doing everything to allowing participation from various segments in the country – particularly the private sector. Government should also shift from fossil fuel to renewable energy sources

What is your finance experience in energy?

- Energy financing is difficult without the international mix with what can be gotten locally
- It is about understanding what the bankers are looking for and grandparenting of institutions to make energy projects bankable
- Energy projects are characterised by non-existing long-term funding. Operators have obligation to provide gas but nobody is taking responsibility to ensure they are paid

The Nigerian Regulatory Space

- There's too much duplication of regulation
- NLNG- claims there's no problem. However, investors often prefer to operate the British law for lack of trust in the Nigeri an law. Hence, extant laws inhibit sustainable energy generation in Nigeria
- Bringing in solar panel to Nigeria for example, was supposed to be duty free but Nigerian custom demanded for 10%. If disco is properly priced it would have a ripple effect on other sectors
- The challenge in many West African countries is that the regulator is not humble enough. There is a need for more environment-friendly spaces for businesses to thrive
- The regulation works on law - there's conflict of interest within the regulatory body and it impedes sustainable energy

The growth currently seen in the energy sector, what can enhance it? What should Nigeria do to increase growth?

- The environment has to be made conducive. The conflict must be eliminated and the contract signed should be kept. Nigeria needs to break the bureaucracy in the energy space
- The government has to prioritise where it needs power the most

Where is this growth going to happen since there's not been any competitive bidding?

- Nigeria has no energy independent charter. It thus, needs something that leads it on a journey to energy independence
- The discussion should be universal - a general awareness of what has been said is required for the discussion to take place
- States should be able to determine their energy demand and device means to meet the demands without unnecessary interference from the central

Questions, Answers and Comments

- Optimization question - what has the EI done in terms of full optimisation?
- How have you been able to mitigate finance risk on your part?
- Do we have enough energy to serve the growing? What are the risks you've identified and the mitigation strategies you have put in place internally?
- How do you minimize exogenous risks?
- How willing are you to get close to the regulators to have a deliberation on opportunities for change?
- What are we going to do after here?

Role of oil & gas in transition

Nigeria occupies a very particular and crucial place in the global energy economy, as both a major producer and exporter of oil and gas. But while the move to low carbon needs to be ever faster, in our enthusiasm we need to guard against unintended consequences. Oil and gas still account for some 60% of the energy on which the world depends, so it's vital that the companies involved continue to attract the talent they need to sustain that. Remember this is the sector that built the global economy as it exists today. The Industrial revolution onwards. Every electron, every molecule. It's an incredible story of achievement. Plus, there are millions of people yet to even have access to the most elementary energy – including the 40% of Nigerian households that do not have access to electricity. So, the taps cannot be turned off overnight. But there's a second point – climate change.

Oil and gas companies should among those helping to avert the worst impacts of climate change. They have the research and development capabilities, the incredible engineers on the payroll, and the financial heft. We owe our present standard of living to them; if they did it then, they can do it again – minus the carbon. And the most far-sighted are already doing so. It's hard to find an oil and gas company that isn't at least considering the changes that lie ahead. In light of the science, the international accord, investor and public pressure, and the falling costs of alternative energy technologies. Many are already acting to improve the methane and carbon footprints in production and transportation of hydrocarbons. That's absolutely critical. Whereas, some are going further faster, gradually transforming from 'oil and gas' into 'energy' companies, diversifying in renewables, cleaner transport fuels and other energy services for our homes and businesses. Thus, companies more commonly associated with oil and gas should be given a second look. They may yet become tomorrow's disruptors. And young people joining the industry today that anticipate this could find themselves in a really exciting place.

Workforce diversity

Climate change is not the only overarching challenge facing the global energy sector - the need to improve workforce diversity is equally pressing. And both are intrinsically linked - we will not succeed in the fight against climate change without using all of the best brains our societies have to offer. A modern, diverse energy mix requires a modern, diverse workforce. Ingenuity is what's going to save us from the worst impacts of climate change. Companies that invest in people and skills will reap dividends in financial terms too, and that can't mean continually replicating the workforce of today. It means opening the industry fully and without prejudice to the very best thinkers, and their diverse perspectives. After all, so much of what needs doing will involve behavioural and societal change. How can we hope to achieve that if we don't reflect and understand that society? While there are terrific areas of good practice, progress on gender diversity in energy as a whole continues to be glacial.

The persistently low numbers of girls and young women studying STEM at school and university is one factor, but so too is the dearth of women at the top in our industry. The board at the Energy institute is one of the most diverse of any professional engineering institution in the UK, in terms of both gender and ethnicity. This benefits the organisation profoundly. It was a delight to be at the women in energy breakfast; the session highlighted the hugely talented pool of women working in the industry in Nigeria, as well as the opportunities that increased diversity can bring to the energy community in Nigeria. Diversity makes business sense. Not only will society reject this industry if it fails to diversify, this industry will also fail to rise to the climate challenge.

The Energy Institute

It's the institute's job to put in place the dynamic skills needed in established and new technologies alike. These are as essential to the pipeline of new talent embarking on their careers as they are to the experienced leaders who need to continually learn to keep at the top of their professional game. Thence, the Energy Institute has extended its work into new areas using the expertise in health and safety developed by it, applied and honed over the past century in oil and gas. Likewise, the benefits are being extended to more of the workforce, in more parts of the industry and in more dynamic ways. As an independent, not-for-profit organisation, the Energy Institute gathers and shares essential knowledge about energy, but also helps to equip professionals with the skills to use it more wisely and safely. The institute 'brings global expertise together' through its extended network of ingenious people. Its membership stretches across the energy system, from conventional oil and gas through to innovative renewable and energy efficient technologies. It is also an inter-disciplinary network – from engineers and scientists to energy managers, economists and lawyers: energy is the one connecting factor. The institute is also a global network spanning 120 countries, with concentrations in Europe, the Middle East, Asia Pacific and here in West Africa. Of its 20,000 members, almost 1,000 are based in West Africa – mostly here in Nigeria.

My role, and that of the EI staff team, is to facilitate and foster collaboration within this unique network.

And the EI's work promoting knowledge, skills and good practice for public good is diverse, far flung and impactful.

For individuals - membership of the EI opens the door to networking opportunities, knowledge resources and professional recognition. The industry-leading programme of conferences, training and technical seminars are seen as essential by individuals pursuing careers across the sector.

For companies - The energy industry looks to the EI to develop the guidance needed to ensure the highest standards of health, safety and environmental responsibility, helping to protect people, assets and the environment.

And for society – it creates an ambition for energy due to its criticality, to be better understood, managed and valued.

In the world of energy, technologies and investments involved are complex, long term and the public debate is often highly polarised. Through events such as the ESC, we aim to generate the discussions needed within the expert community that support the role of sound science in our energy future.

Close

Louis reiterated that the EI is here for anyone who wants to better understand or contribute to the extraordinary energy system on which we all depend. Finally, she thanked participants for their time and expressed her hope for an interesting and thought-provoking day.

Goodwill Message by Harriet Thompson - British Deputy High Commissioner

The British deputy high commissioner, Harriet Thompson expressed her delight to be at the conference. Thereafter she mentioned that the UK government has been involved with Nigeria as a development partner across different sectors. In the area of job creation; she highlighted that he entire private sector is at the forefront supported by policies and innovative connection. Speaking further she mentioned that the UK government mobilizes policies and put materials in place to improve performance and to reduce cost and mobilize energy project financing, particularly international project finance. She went on to emphasize that her sharing would be on core short messages about the UK empowerment and involvement in the energy sector. The UK's roles as investor and financier, she said, are efficient to help build strategies on bilateral energy relationship for mutual benefit and our obligation to recognize challenges, potential plan continue to grow innovations.

The rest of her speech are delineated below:
Starting with the partnership in the energy sector, we are all here today because we recognize the important role the energy industry has to play in Nigeria's economic development. Nigeria is the most populous country in Africa has the second largest operating energy barn in the world secondary to India. According to the International Energy Agency, around 77 million Nigerians are underserved and lack of access to stable electricity - energy reflective of poor power and inadequate electric transmission. For instance, SMEs spend about 20billion dollars a year on fossil fuel generators indicative of a huge power deficit in the country. Given expertise research, manufacturing and new energy technology, we are able to partner with stakeholders in the energy sector and share our experience in developing a clean economic development growth. Since 1990, the UK has cut her relations by over 43% but at the same time by 71%. UK company has invested in the Nigeria's energy sector and the Nigerian companies have a working relationship with the UK companies. If anyone is interested in joining the relations, Department for International trade DIT is here to provide guidance on that.

Moving on to renewable energy, there's need for researchers, technology experts, innovation, expertise in the power sector and capitalist involvement to develop a robust energy sector. Prime Minister May during her speech in August 2018 set out UK's ambition to be the number one energy investor into Africa. UK is a long and significant investor in Nigeria as at the competition for support increases across Africa, Nigeria needs to be tenacious in her drive to attract investment. In terms of energy, UK has a structural financial practice to enable bankability and support renewable energy projects locally and internationally viable. We are great at financing renewable energy projects, great at legal services, strong in accounting and insurance services. The UK provides 200billion pounds to drive energy storage and technology in developing countries. In Nigeria, we invest 66million pounds to drive the Nigeria's energy market. In Lagos state, we provide incentives for some energy disco and provide some practical expertise on green, clean and reliable energy entrepreneurship programme. We also build capacity in Nigeria's green concept, sponsoring some industries to attract million dollars of international climate finance to Nigeria. We found the African clean energy programme which just launched its technological facility in Nigeria to facilitate consumer access among others

UK's ambition in trade and investment:

In January 2020, we are inviting 20 companies, heads of states from across the continent into Africa to participate in the summit – bringing together businesses, international institutions to showcase and to provide a breadth of opportunities for investment there is across the continent. Our ambition for Nigeria at the event is to work with the Federal government, state governments to identify opportunities to showcase at that event. You can't talk about investment in Nigeria without talking about energy and is our strong ambition for energy projects to be brought up there for action. We will facilitate a session to whet the appetite of investors and for people to sign when they come to the summit in January. In addition to investment summit, Prime Minister May and President Buhari established the UK-Nigeria economic development forum to boost trade and investment. The economic forum establishes a platform for export and import to promote, to create an investor friendly environment that would attract the investment that we need for sustainable energy and economic growth in Nigeria. We stand with you to help identify challenges that you face in attracting investment to your country, Nigeria.

Under the state of energy conference, we recognize the challenges presented by continued growth in renewable partnerships. The UK government waited to maintain installments checkmated by the price agreement in 2015 which laid onus on her to provide 5billion pounds of international project finance from 2016-2020 to mitigate and adapt to climate change. Nigeria has received up to 83million pounds. What has been done – we helped up to 74 million people to cope with climate change, provided 17 million people access to clean energy, released 10.4million tons of machines and installed 500MW of clean energy. At the climate summit last month in New York, we committed to develop international products – make climate finance bigger to at least 11.6 billion pounds. This will set a tone for the international climate negotiation summit that would take place in Glasgow at the end of 2020. We aim to pick a 100 billion pounds in energy project finance between 2020-2025.
In closing, Harriet emphasized that renewable energy is a priority for the UK. However, energy finance is lacking. Then, she threw a challenge to everybody – operators, investors to take whatever steps they can to make their businesses environmentally sustainable and the time to make that change is right now. She however highlighted that getting renewable power has its challenges, but it is possible to work out solution to the challenges. Finally, she wished everyone a fruitful deliberation.

Keynote Address – Mr. Tony Attah represented by Dr Okon

Dr. Okon appreciated everyone present at the conference and thereafter succinctly described the energy landscape in Nigeria. The rest of his presentation was as follows:
Energy Landscape - the world population is projected to increase to 9bn with Africa accounting for up to 50% of this increase. With increased population growth, energy consumption rate is growing even faster
with abounding risks from the use of fossil fuel. The LNG seeks to get to a point where gas would be sufficient for the energy requirement.
The future of energy lies in renewables. However, in Sub-Saharan Africa, 50% of power is from fossil and it is expensive and unclean. However, global initiatives are tending towards renewable energy- about seven countries are already at almost 100% renewable power. It is projected that by 2035, 41% of energy would be made of gas and 30% renewables while oil, nuclear coal and others would make up 15%, 6%, 4% and 4% respectively. The renewable cost is going down, hence there's tendency for adoption rate to increase. The oil in Nigeria may become stranded assets later on. Gas is, nevertheless, a more suitable partner for renewable energy source.

There's increasing gas appetite - looking at the Nigerian gas sector dash board, gas production is estimated to be 8bscfd and less than 40% is used domestically. There's therefore need for incentives to encourage use of gas instead of petrol/diesel. Nigeria needs to do more with the resources that it has. Nigeria has 199TCF (possible >600 TCF, but produces only 22mtpa (0.5%). The export angle is taking more of our gas resources. Electricity demand on the other hand is projected to triple by 2030.

In conclusion, Dr Okon emphasized that the country needs more power and should improve its off taking. Thereafter, he wished everyone a fruitful discussion.

Panel Discussion 2:
Energy Future - Minimizing Risks, Maximising Opportunities for Growth

Panel Chair - Soji Awogbade - FEI
Panelists:
Leke Adedipe - COO, Lekoil
Mr. Jim Howlett – COO, Pan Africa Scholar
Paul O'Callaghan – CEO, West African ENRG
Layi Fatona – Managing Director, ND Western
Dr Ogon Yaki

This session began with an introduction from the panel chair who highlighted that energy seems to be an impossible mix in Nigeria. He lamented that the energy sector which seems to have enough instrument has not produced the expected result. To this effect, he asked if there is an investor who can clearly see where the government expected to be. Each panel member took turns to respond to the question and their responses were:

- **Mr. Leke - Everything is concentrated at the center and if everyone needs to get to the center before gaining access to energy, it won't work. Sectors within Nigeria differ in preference for energy consumption, however, there is no data to reflect clearly where energy is needed**
- **Mr. Soji – In Nigeria, policy does not work in tandem with implementation**
- **Mr. Jim - There were initially grants to establish business after which it became harder to access finance**
- **Mr. Paul - There's a pathway for energy**
- **Layi - Nigeria requires energy for its citizens and is not clear if it will be able to provide for its citizen**
- **Dr. Ogon - Nigeria is ready and not ready**

Subsequently, Mr. Soji asked the panelists questions related to their experiences in the energy space.

Session Highlights – The rest of the discussions that ensued are highlighted below:

- **The challenge is price. The price is cheap compared to the capital investment and taking people off diesel might be a challenge**
- **There's concern about the general awareness of energy – for instance, a survey in Lagos and Ibadan showed that water management and electricity are seen as social services that should be given free of charge. Yet, so many people have generators in their homes- people are paying for energy even when they do not realize it.**
- **There hasn't been a national discourse regarding what people are paying and what they would have to pay for getting it from the supplier as an individual. There should be a discussion around whether people would pay or not**
- **There's need for education and a lot of enlightenment to drive the energy change - energy is like an addict, once you get on it, you'd want to stay.**

What is your finance experience in energy?

- Energy financing is difficult without the international mix with what can be gotten locally
- It is about understanding what the bankers are looking for and grandparenting of institutions to make energy projects bankable
- Energy projects are characterised by non-existing long-term funding. Operators have obligation to provide gas but nobody is taking responsibility to ensure they are paid

The Nigerian Regulatory Space

- There's too much duplication of regulation
- NLNG- claims there's no problem. However, investors often prefer to operate the British law for lack of trust in the Nigeri an law. Hence, extant laws inhibit sustainable energy generation in Nigeria
- Bringing in solar panel to Nigeria for example, was supposed to be duty free but Nigerian custom demanded for 10%. If disco is properly priced it would have a ripple effect on other sectors
- The challenge in many West African countries is that the regulator is not humble enough. There is a need for more environment-friendly spaces for businesses to thrive
- The regulation works on law - there's conflict of interest within the regulatory body and it impedes sustainable energy

The growth currently seen in the energy sector, what can enhance it? What should Nigeria do to increase growth?

- The environment has to be made conducive. The conflict must be eliminated and the contract signed should be kept. Nigeria needs to break the bureaucracy in the energy space
- The government has to prioritise where it needs power the most

Where is this growth going to happen since there's not been any competitive bidding?

- Nigeria has no energy independent charter. It thus, needs something that leads it on a journey to energy independence
- The discussion should be universal - a general awareness of what has been said is required for the discussion to take place
- States should be able to determine their energy demand and device means to meet the demands without unnecessary interference from the central

Questions, Answers and Comments

- Optimization question - what has the EI done in terms of full optimisation?
- How have you been able to mitigate finance risk on your part?
- Do we have enough energy to serve the growing? What are the risks you've identified and the mitigation strategies you have put in place internally?
- How do you minimize exogenous risks?
- How willing are you to get close to the regulators to have a deliberation on opportunities for change?
- What are we going to do after here?

The following responses were given:

- The EI provides technical support for operators and investors in the field in the area of training and information on internationally acceptable standards
- Mitigating financial risk starts by taking seriously the power purchase agreement and the agreement with your off-taker.
- For instance, the PPA built up a system such that if you're not being paid, you can dispossess your defaulting client and give to another person.
- Yes, there is enough energy to serve the growing population. However, the risk faced is protection of investors. there are third party influences that control investments.
- There is extraneous exposure of investor to risk along the value chain.
- Mitigation strategies have included - participation, collaboration with the various parties involved
- Yes
- There are no offtake facilities in Nigeria for LNG to be able to distribute gas effectively

Conclusion: The session ended with the following recommendations:

- Decentralise energy provision in Nigeria
- Put enabling policy and implementation in case
- Regulators should be more engaging
- Prioritize energy
- Do more
- It's time for gas - use gas resource

Panel Discussion 3
Energy Infrastructure Investment

Panel Chair: Dr. Chukwueloka Umeh - MD/CEO, Century Power Generation Limited
Panelists:
Mr. Eluma Obibuaku - Vice-President, Power Africa Finance Corporation
Mr. Roger Yannik Endom - Investment Professional Infrastructure Africa, International Finance Corporation (IFC)
Dr. Jubril Adeojo - Co-founder/md, SME funds Capital
Mr. Oluwaseun Onayiga - Africa Director, Investment Banking, Renaissance Capital.
Mr. Victor Ndukuaba - Deputy Managing Director, AfrilInvest

Introduction

Dr. Chukwueloka mentioned that it's easy to stay abroad and complain about Nigeria, but harder to stay back and make a change. He further emphasized that it is important for us to take stock of where were? where are we now and where are we going. Having stated that Nigeria has a large resource but not using it, he advised Nigeria should develop a robust power industry as a matter of urgency for its economy to grow in any meaningful way. He added that the power industry must be driven by the private sector for it to work effectively. Moreover, he highlighted the necessity of a robust national grid that covers the entire country, with an efficient base load. Lastly, he identified that the gas value chain is broken and is detrimental to power generation. However, for things to work, he reiterated that the gas transporter must be able to commute and the distributor must be able to sell at a reasonable price.

Afterwards, he asked the panelists to share what they have done to invest in energy infrastructure development in their opening statements. They responded thus:

Mr. Seun - Renaissance Capital raised money for the largest power company in Kenya and a Ugandan facility

Dr. Jubril – SMEs fund capital is involved in climate impact investment with focus on solar as there was no capital to do gas. The company invested in go-Solar Africa, sold solar panels to households and companies. They worked hard but no much progress; so, existing solar companies began selling their solar assets to households because it was expensive compared to fossil.

Mr. Roger (IFC) – A powering plant is being built in Cameroon to produce up to 420MW with companies, government and investors work together. It took five years of technical, financial and environmental inputs to kickstart it. The potential and need for power in Nigeria are rhetoric- there's policy gap in Nigeria in addition to the issue of cost-effective tariff too. Investors are attracted to Cameroon owing to cost-effective tariff. In Nigeria on the other hand, it has been difficult to do a power project despite her youth potential.

Victor Ndukauba – AfrilInvest is working in the power sector to help develop Okija IPP. However, in carrying out privatisation the process of selling out equity was not properly done. The sector is overregulated

The Highlights of the rest of the discussions were:

Why can't we deregulate the energy industry like the telecom?

- Telecom is not like power. Complete deregulation makes power available only to people who can afford it which is not so good. The private sector should be a driving force but within a solid framework.
- Competition drives pricing however, energy discipline is lacking among the citizens

WHY can't the Azura design be replicated?

- Azura was meant to serve as a template for investing in IPP. There are constraints around gas and disco. There's a net capacity that can't be used. if there's no return guarantee, it becomes difficult for investors to make a commitment.

FROM 2011, many regulations have been created across different sectors. After a while, conversation moved to solar and projects were abandoned. Do you think solar will save us?

- In the short run, No. In the long run, Yes. The way through it would be to decentralize.
- The sector is overregulated and this is stifling the growth of the industry. SMEs that failed, ran out of cash. The impact of solving power issues is enormous.
- Over 400 solar companies have been set up. Nonetheless, if we are going to drive the economy, it must and go beyond solar drive base load: renewable energy like hydroelectricity, should be added to this mix.
- There is a place for solar, gas and petrol. Solar would make up a very small component of the energy mix at least for the next 20 or more years to come.
- Gas producers should sell gas in a way that people will recoup their investments.
- There is a place for hydro wind, solar, large generating plants, there are opportunities, but we must get creative about it.
- When you have a working, stable power, factories would be built, affordable goods would be produced, Nigerians would have jobs and can actually afford the goods we produce. As more people have money, the demands for goods increase, more factories would be built, the demand for power would increase, Nigerians and investors would make more money and the cycle continues.

Questions

- What are the parameters that would make SME projects bankable?
- Is it possible to adopt some innovative structure to fund power? The people who need power can fund it; can we Crowd fund? What are the issues?
- What key factors do you look into to lend money to a project and what risks would you allow?

Answers/Comments/Recommendations

- Parameters to help young people with ideas on capitals are that they should ensure they have a proper business plan, that speaks to what they are trying to do and the market for it and the risks involved.
- We can't use solar for base energy. It doesn't solve all problem. We can't go through the grid for distribution. Off-grid infrastructure should be invested in
- In terms of feasibility, put in place a comprehensive plan
- Sometimes in 2017, the country froze work on gas-fired generating plants ignoring development work that has been done over the past 7 years and millions of dollars respectively spent by private companies and the government on devel oping regulations and bankable projects, and focused solely on solar plants. They have signed PPAs. Today, not 1MW has been added to the grid by either renewables or new gas-fired IPPs.
- In today's world, the focus is constantly shifting to clean energy, so we are beginning to see the world's focus on oil starting to decline. Currently, the only guaranteed gas income stream comes from production and exportation of LNG. This is understandable because the energy value chain, which taps into the gas reserves in Nigeria is broken, and cannot therefore reliably pay for gas.
- Larger solar plants should be located in areas with highest possible irradiance, i.e. solar intensity to maximize efficiency of the plants. It is therefore no mistake that the largest solar plants in the world are in china, and the western part of the USA, in places that have high irradiance, and therefore high specific yield
- Power problem in Nigeria is not generation but transmission distribution. If it is decentralized, things would be better
- IPPs are not looking to invest in Nigeria in the next five years if the prevailing policies continues to subsist except if Nigeria signals to the market its readiness to allow prices determine allocation.

Conclusion

The panel chair rounded up the session by stating that there's a place for solar, grid, hydro, wind and highlighted the need for Nigerians to get creative. He mentioned also that the Nigerian factor cannot be modelled; thereby, stressing the need to factor in risk to invest in the Nigerian economy. In order for Nigeria to grow and get out of its odious title as the world, it must make a conscious decision to remove the chains on its power industry, deregulate the industry and allow private companies to do what they do best, grow the business and galvanize the economy.

Specialist Session 2a:
Gas Commercialisation, Infrastructure and Investment Challenges - Resolving challenges

Panel Chair: Mr. Victor Eromosele - Chairman/CEO, ME Consulting

Ed Ubong – MD, Shelll Nigeria Gas
Justice Derefaka – Programme Manager, Nigeria Gas Flare Commercialisation Program (NGFCP)
Maryam Bala Shewu – DGM, Gas Commercial, Total Upstream Companies in Nigeria
Okechukwu Mba

Mr. Victor introduced this session with an overview of the gas commercialization and infrastructure in Nigeria. He stated that all commercialisation is monetisation but not all monetisation is commercialisation. Commercialisation is about how you can make profit and not loss, and infrastructures are required throughout the value chain. Nigeria as a country, is a gas country (number 9 in the world) with some oil. He added that gas remains relevant as a transition fuel even in the emerging low-carbon world and would remain relevant into the future since it is a cleaner energy source. Hence, the nation should begin to improve on infrastructure for gas.
Subsequently, Justice Derefarka gave a presentation on the gas commercialisation programme.

Presentation highlights – Nigerian Gas Flare Commercialisation Programme

- **Energy is about turning the lights on and the global thermostat. With growing population, energy demand would rise, renewables alone would not suffice, a close ally is needed -gas.**
- **Global gas flaring - more than 16000 gas flare sites in about 90k countries worldwide and over 178 flare sites in Niger delta.**
- **The NGFCP was initiated on the premise that gas flares have adverse environmental impact. However, if harnessed, could generate robust power. Notably, taking the top 50 flare points was projected to reduce the gas flaring burden by 80%.**

Strategic imperative

- NGFCP aims to demonstrate a high impact program that could be replicated in other countries of the world provided it is successful in Nigeria
- The programme seeks to embrace existing innovative technologies with footprints, tested and true with expert operators experienced on the oil field
- The NGFCP is backed up by a regulatory framework which provides for gas flare penalty among others
- The focus of the program is to harness gas flares for use domestically. The program addresses gas flares as an environ mental issue in alignment with the sustainable development goals' 5Ps – people, planet, prosperity, peace and partner ship across board.
- Investors/operators with the requisite technology would be allowed to participate in the six- steps bidding process for gas flare sites.

Justice Derefarka ended his presentation with the potential impact of NGFCP

NGFCP Impact:

- It takes care of 11 of the 17 SDGs.
- Increased annual revenue – US $0.5 billion
- Over a 1.5 to 2-year period, the NGFCP could generate approximately 26,000 direct jobs (assuming an average direct labor force of 300 people per project) and approximately 300,000 direct and indirect jobs
- Once operational, projects launched under the NCFCP would reduce Nigeria's emissions by 13million tons of CO2 per year.
- NGFCP can become an important source of additional gas for Power Sector Recovery

GAS Commercialisation and Infrastructure – Maryam Bala Shewu

- When dealing with gas commercialisation, a holistic approach must be taken into consideration as well as the target market
- Infrastructural information should be specific to the market- target market largely influence the kind of infrastructure to be put in place
- There's need to ensure that the end user market exist before we can talk about gas development. If the end user market is not there, there won't be economic basis to develop assets
- Also, there are various agreements that must be put in place before taking FID in upstream

Current situation

- Several policies and regulations have been made by the government to ensure gas development.
- There's been effort to change the gas market from only export led to export and domestic led. However, there are issues in gas market. There's gas supply constraint. The market is not deep enough and the infrastructure required to take gas to the market are not adequate
- There's a need for the gas value chain to be viewed from an integrated perspective. All the segments of the value chain must be built together - cannot afford to operate in silos.
- Opportunity of gas
- There's a need to create opportunity to connect the large-scale gas reserves into demand service depots
- Multi-versatile approach to deepen the market with the right enablers and conducive environment from the government
- It is believed that a crisis is always an opportunity to make a difference – the current situation in Nigeria is a crisis - the power sector is in crisis and this creates an opportunity for us to make a difference and have a transformation that would be worth the while in retrospect.
- There's need for a plan whose implementation would depend on the growth trajectory of the economy
- It is not about what we have but what we do with it

Nigeria is now number 7, no longer 2nd gas flaring nation. What is driving it?

- Reduction in gas flaring in Nigeria is due to the anti-gas flaring project being run by NNPC and other IOCs. Also, government came up with NGFCP to fast-track the gas flare reduction goal for Nigeria
- There's the point around increased gas flare penalty to discourage indiscriminate flaring.
- Outside regulation is also increase in investment - gathering the gas is not enough you need infrastructure to process.
- Investment in gas processing facilities has helped to reduce gas flares
- Gas commercialisation began in 1989 in Nigeria with the passing of the energy act. Before then all gas was flared. The international market was moving but domestic market was stunted.
- Every single big guy has moved to gas – running their industrial basis on gas. There is a industrial cluster who has identified the advantage of gas over diesel.

IOCs have resisted in investing in infrastructure to mitigate gas flaring for over 11 years. What guarantees that the new approach of the NGFCP would succeed?

- The IOCs have done some work in Gas flare reduction. There is a law that 0.034cent as at July 2018. When they make this payment, it is tax deductible and government still lose and the people suffer. Why would this program succeed? Government came with a new regime that if you produce more than 2 million bpd, you pay $2 but if you produce less than that you'd pay 50 cents. All the operators are required to provide accurate data otherwise, they would pay fine or go to jail.
- There is aslo a push based on international standards to stop gas flaring. Hence, the IOCs are mandated to comply.

Question, Answers and Recommendations

- What strategies do you think can be deployed with respective to integrated approach suggested to address positive or negative social impact?
- How can we come up with a deliberate integrated plan to locate a place various spots where the gas would be needed – the commercial areas and residential areas? How can those areas be identified?
- What is government doing as per having a robust plan for maximising the gas flare utilisation beyond the domestic use?

Responses

- NGFCP all is positive - we are changing waste to wealth. We are addressing the issue of pollution
- there's emergence of free zone areas. there's an effort towards having
- there are clearly demarcated industrial zones. There's an effort to demarcating industrial areas. There's usually a call before you deal law. It is not yet perfect but something is on ground
- the NGFCP is strictly market- driven and the operators decide their technology and their end product. We also try to match them to some off-takers which would happen at the bidders' conference.

WRAP UP - The session ended with the following assertions:

- It is important that the industry and government reestablish trust and work out collaborative approach to help the industry
- Infrastructure is needed for gas. power sector needs to be successful.
- We cannot legislate our problems away, a commercial framework needed
- Willing buyers and willing seller are the right framework which Nigeria has not embraced

Specialist Session 2b:
G: Liquid Petroleum - Industrializing the Sector, Stretching the Value Chain.

Panel Chair: Mr. Osinubi – Honorary Secretary, EI
Panelists:
Mr. Abayomi Awoyokun – Managing Director, Enyo Retail
Dr Oyet Gogomary – Group Head, External Relations and Communications, OVH
Mr. Felix Adeyemo – CEO, Asiko Energy
Mr. Emmanuel Ogagarue – Director, Asset Development and Engineering, Aiteo

This session focused on the issues around industrializing the petroleum sector, considering its criticality to the economic growth of the country. The panel chair opened the session by iterating that petroleum is majorly distributed by roads, rails and pipelines (the only means currently available) however, these channels have been posing dangers. Despite other game changers such as new a nucleus in town planning, he mentioned that refineries would be a game changer in the Nigerian Petroleum industry. Thus, he emphasized the need to start talking about this industry from a different light. Henceforth, the panel chair guided the discussants to deliberate on issues surrounding the petroleum industrialization and stretching the value chain.

Session Highlights – Points from the panelist's discussion are outlined below:

Challenges faced by the liquid petroleum sector

- **Infrastructure: Compared to Nigeria, Kenya has a better story to tell regarding pipeline infrastructure; there are no news about pipeline vandalization, compared to Nigeria which it is a usual phenomenon.**
- **Government should deregulate subsidy and allow private investors to operate with ease**
  Policy makers and regulations are detached from reality
- **There are no capitals and businesses are not positioning their organizations for opportunities and capital**
- **Discussion is still centered around primary services, while other countries are already exhibiting the secondary and tertiary services, having new skill sets md improving the quality of their lives.**

QUESTIONSt

- **Is there anything that investors or investors groups should be doing? Communicating the opportunities, the risk and mitigating it?**
- **Why would Nigeria spend 450billion on petroleum, when alternative gas can be used, why is that?**
- **How do we mobilize investors?**
- **Why are private sectors not taking advantage of petrochemicals?**

RESPONSES/RECOMMENDATIONS

- The present policy in the downstream is not a liberalized market, the government should let the market forces take place.
- There is an investment in processing, and there are opportunities for more investors and they should think long term, thinking about clean energy. Processing will be a very big thing in a few years, an opportunity that is yet to be untapped which will grow our GDP, the use of carbon for furniture, firefighting which is a derivative of crude oil.
- Investors need to be patient and committed, investors are not about CSR, there are there for a return on investment, Government need to enable investors so that there is returns on investment.
- The private sector needs to do more, they are more, they should take risks and responsibilities.
- The number of things that the government prevents us from doing are less them what they do not allow us to do.
- For petrochemicals scale is needed, primary investment in it is there now, but secondary and tertiary investments are still on going.

Conclusion: :

The panel chair summarized key recommendations from the discussion into the following points:

- **Regulators** – there should be collaborations and synergy among regulatory agencies.
- **More collaboration**- Some rules restrict regulators' imaginations, they should see themselves not just as a person, but as an entity/organization.
- **Co-operation**- Together we can do more and break limitation, the challenges are not easy, if we look away from them, we can achieve more, such as improved service delivery, corporate governance.
- **Investors**- must take risks, dig deeper for more opportunities.

Specialist Session 2c:
Power - Options for Getting the Mix Right

Panelists
Mr. Habeeb Alebiosu- MD Viathan Engineering
Mr. Vincent Oldenbroek – Co-Founder African Hydrogen Partnership
Prof. Adeola Adenikinju- Director, CPEEL
Dr Joy Ogaji- Executive Secretary, Association of Power Generating Companies (APGC)
Mr. Adeyemo- CEO, Arnergy Solar Limited

Mr. Rumundaka Wonodi led the session. He emphasized decentralization as a way of improving rural electrification as it's not wise to use cables over land instead he advised mini-grids and solar technology. He went further to explain that distribution generation is citing power generation as close as possible to consumers bypassing transmission and all of its negative effects. We need to decentralize to complement the grid.

Subsequently, the discussants were allowed to air their opinions as outlined below:

Mr. Habeeb Alebiosu- MD Viathan Engineering

He operates an Integrated energy outfit for underserved consumers, predominantly gas. Phasing out diesel to 10% during gas shortage. They are at the conceptual stage of floating PV. And propose the use of virtual pipelines for Ikoyi and Lekki that do not have physical pipelines.

Mr. Vincent Oldenbroek – Co-Founder African Hydrogen Partnership

The world is moving to renewables and to Hydrogen. Australia seeks Hydrogen as the new LNG. China, Japan, Korea and the U.S.A see liquid hydrogen as the new LNG imports. Ethiopia is generating electricity through hydrogen at two and a half dollars per Kilowatt hour. Today there are busses and trains using hydrogen fuel. Hydrogen can be used for ammonia production if it can be produced in cents. Banks do not want any fossil fuels on their balance sheet. There are still a lot of greenfield in Nigeria so we can start directly with green energy, then upgrade.

Prof. Adeola Adenikinju- Director, CPEEL

There is a disconnect between various sectors, and in many cases, contracts have been signed committing countries to bad contracts which is one of the reasons why Nigeria is in the situation we are in today. At the CPEEL we bring energy finance, energy economics, law, technology and engineering students together, so students come out with a well-rounded holistic degree. Of course, lawyers, can still hire expert engineers.

Prof Adeola further discussed his address at Sheba retreat in Abuja on 20-21 June 2006, with President Obasanjo where they proposed to secure 367 Mega Watts (MW) of power for Nigeria, a little bit over what South Africa has now.

Dr Joy Ogaji- Executive Secretary, Association of Power Generating Companies (APGC)

Percentage of power from various sources is very low, Nigeria is only utilizing hydro and thermal. We need to develop other sources of energy such as Wind and Biomass to optimize what we have currently. We need to merge planning, structure and working synergy for there to be results in Nigeria.

In Nigeria there is a deficiency in the availability of data concerning the energy industry. It's very difficult to find facts and figures on the level of electrification and percentages of renewable energy currently in use across the country.

Mr. Adeyemo- CEO, Arnergy Solar Limited
In the business of roof top solar. Today there has been PPA signed more than two years ago, and nothing has come out of it. Vision 2020 for Nigeria is that 30% of power would be sourced from renewable energy. There is a need for back up electricity, like in California.

Conclusion

: the panel chair ended on the note that in other to get the right mix for power five key things must be thoroughly dealt with: energy security, social perspective, entrepreneurship, incentives, and available resources.

Panel Discussion 4:
The Energy Mix for Sustaining our Future

panel chair- Wunmi Iledare – Professor Emeritus, LSU center for Energy Studies, USA
Panelists:
Victor Eromosele FEI – Chairman/CEO ME consulting
Soji Awogbade FEI – Partner, Aelex Solicitors
Paul Callaghan – CEO, West Africa ENRG
Yemi Osinubi – Honorary Secretary, Energy Institute Nigeria
Rumundaka Wondi – CEO, ZKJ Energy Partners Limited

Introduction

In this session, energy mix was defined as the use of different primary energy sources to reduce dependence on a single energy source. Thereafter, energy sources were broadly classified into renewable (solar, hydropower, biomass and geothermal) and non-renewable (coal and crude oil). With respect to renewables, emphasis was laid on the necessity for innovative technology, regulation and government policies to drive them. It was also suggested that the interaction between academia, government and the industry should be strengthened. For instance, the academia has the tools for policy formulation while the business sector needs the tools.
Subsequently, panelists were allowed ample time to

Rumundaka – To get the energy mix, it is important to start from what we have and use it optimally. For instance, hydro and human energy have not been well harnessed. With respect to energy security, the fact that gas is available is not enough there should be complementary substitutes, technology and being able to control the technology. The west has been consumed to the point where it is industrialised.

Victor Eromosele- Nigerians should commence global thinking as many things are happening worldwide. To illustrate, natural gas is projected to grow at 1.7% between now and 2040 while renewable energy would grow 7% per annum between now and 2040. The renewable energy train is leaving Nigeria; currently, it is 4% of global energy but would be 15% by 2040. Nigeria has so much water but, we are not using it. Nigeria has more sunshine than Germany but Germany's solar power is twice more than Nigeria's total power. Lastly, there should be no coal.

Soji Awogbade - About 12% of energy mix in Kenya is renewable. There was a 25-year solid period in Nigeria where no thinking was done at all followed by another 10 years of doing everything at the same time. You cannot do emergency in power and expect sustainability. Nigeria is no longer rich enough to make power a utility, it is now a commodity. We would be apologizing to one another and comparing things that are not comparable. Ghana has legislated that no

Paul - It is distressing that there is no enough battery capacity to contain renewable energy. We need to be very sensible in our approach to it. Gas should be commercialized; exporting should reduce or be stopped in order to feed the domestic demand and the base load and trees should not be chopped down for cooking. The easiest way is to achieve this would be to lift people out of poverty; to do the latter, create jobs. Nigeria doesn't have the capacity to take on renewable energy yet. There's need to get the basics right first.

Questions, Answers and Comments

The rest of the discussion was interactive, involving the panelists and the audience. Questions were asked alongside comments and recommendations.

Questions

Will the environmentalist allow us to explore shale oil?
Yemi Osinubi - The question depends on if we are begging people for money or not. It depends on the level of government engagement. When a government has no money, and is too involved in price setting the power sector would struggle.

- Why can't we move all the obstacles around the gas supplying, pricing, power and power pricing and see if we won't have power all year round?
- Is it redundant until we fix the power problem?
- Is it good to put all your power generation on gas?
- Exporting your gas without supplying domestic gas?

Answers

- It is not good to put all your eggs in a basket. Gas may not do it completely. Some people (in the rural areas) are cut out completely and the best way to get power to them is solar. There's plenty of water resources but not being utilized
- Gas was a nuisance to oil boom. So, when they found gas, they flared it. Nigeria is still planning debate here. Where is the plan to put gas into the economy?
- Nigeria flared gas in a whole year to fuel the whole of Africa but nobody was thinking of what should be done.
- Nigeria needs to be independent in her thinking about how to move forward
- If there's a fuel we can use in transition, it should be used. But, the same mistake made during NLG should not be made.

Electronic Votes

Participants were engaged in an open survey. The summary is as itemized below

- Breakout – Most of the participants agreed that the breakout sessions were from very good to excellent
- Conference objective – More than half of the participants affirmed that the conference excellently met its objectives
- Partner- Most businesses indicated that they have no partner
- UK – More than half of the participants knew little or nothing about the UK government activities in the energy space
- Networking opportunities – More than half of participants agreed that the conference provided ranging from good to excellent networking opportunities
- Likelihood of attending future events – About 75% indicated that they were more likely to attend future events.

Key Recommendations and Action Points from the Conference

The following key recommendations were made:

- Africa especially Nigeria, is aid-focused and must transition from Aid to trade.
- The renewable energy legislation should be inclusive of women as in the case of local content law on oil and gas
- There's need for an upgrade in technical skills and capabilities in order to create well rounded professional women in the energy space
- Government to provide the enabling environment for private sector to operate
- Government should put structures and policies in place to make the energy space more predictable
- There should be public-private partnership to achieve success
- Government should not attempt to do everything, rather allow various segments of the country to participate in the energy industry, particularly the private sector
- Government should invest in infrastructural development for gas
- Government should take the view of an investor and put less stringent requirement for energy finance
- Cost-effective tariffs should be implemented in the power sector
- The power industries should be deregulated and distribution should be decentralized
- Infrastructure for gas commercialization should be invested in and focus should be on satisfying the domestic market

Private Sector

- Private companies to be resilient and professional in their approach when seeking funding
- Before approaching the banks, private companies should know what their asset is capable to bear and have a strategy to minimize the risks.
- Entrepreneurs need to be strategic in considering a structure to support conventional energy by investing in alternative energy sources such as solar energy which is cheaper. Entrepreneurs should look into climate mitigation
- Private companies should establish a partnership structure for accessing fund for instance, partnership with a global trader in the consortium or someone with access to investors
- Private investors should introduce a structure in their finance where they can bring in equity and have an element in place also to be able to clog back the equity when the business is blooming
- Banks should find innovative ways to support companies and promote businesses without losing out as well

Energy Institute

- Energy Institute should create financial courses to build technical skills needed by women to thrive in the energy industry
- The leadership of the institute should address the issues of social justice in the Niger-Delta region of Nigeria

Others

- There's need for more pressure groups to get government to enable the environment and make policies that would take care of the issue of environment
- As regards health, safety and environment, everyone should be responsible for hazards, the leadership, culture, systems should be taught on achieving goal zero accidents.
- The hydro and human energy should be maximized optimally

Conference Closing

Mr. Ekundayo while giving the vote of thanks remarked that the remarked that the sessions were engaging and thanked the participants on behalf of EI. Afterward, Mrs. Yewande Abiose, Managing Director of Energy Institute Nigeria said the closing remarks. She thanked the panel chairmen and leadership for a robust and stimulating conversation throughout the conference.

Conclusion

The topics deliberated on at the second edition of the Energy Sustainability Conference were insightful and relevant for national and global application. Feedback from participants also revealed that the conference was worthwhile and more than 60% of participants mentioned that they would like to participate in future ESC conference.
The recommendations offered are to be actioned on by the EI and other relevant stakeholders in the energy space.