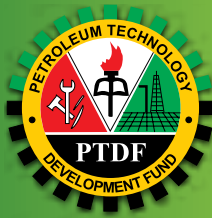


PTDF Digest

A Publication of the **Petroleum Technology Development Fund**

**THE SEARCH
FOR OIL IN THE
FRONTIER BASINS
- THE ROLE OF PTDF**



PTDF, A ONE STOP CENTRE FOR OIL AND GAS EVENTS

PTDF OIL AND GAS CONFERENCE REPORT

With the consistent hosting of major oil and gas events by the Petroleum Technology Development Fund, the agency is not only taking the lead in developing human and institutional capacity for the oil and gas industry but is also providing enlightenment on contemporary issues and concerns about the industry. The PTDF conference centre is now the platform of choice for oil and gas stakeholders to discuss, deliberate and find solutions and new path ways for managing the peculiar demands and challenges of the industry.



“When I walked in this morning and saw this facility, I was amazed and I thought how come we have this here and we had to go to ICC for our summit. But this is a very modern and very nice facility and I don't think we should allow it to waste so from now on we would make the best use of what you have here in PTDF”

Dr. Folashade Yemi Esan
Permanent Secretary,
Ministry of Petroleum Resources

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From the Editor



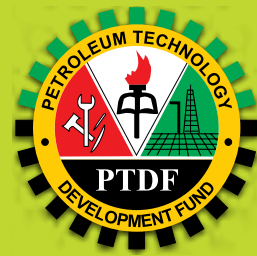
The decision of PTDF Management led by Dr. Bello Aliyu Gusau to deploy the agency's vast Conference and meeting facilities in hosting "Pro bono" oil and gas workshops, seminars, exhibitions and related events has enlarged the appreciation and relevance of PTDF in the oil and gas industry beyond developing human capital for the sector.

PTDF is now recognised as the one stop centre for hosting oil and gas events where ideas are ventilated, and cerebral discussions are held on the present and future dynamics of the oil and gas industry. PTDF is thus building consensus on the imperatives of the sector and evolving as the intellectual backbone of the industry for solving critical problems of the industry. Some of the notable hostings by PTDF are OPEC Workshop on Data Management, the OLOIBIRI Lecture Series by the Society of Petroleum Engineers, Annual Conference of the National and International Association of Energy Economics, General Meeting and Business Forum of the Oil and Gas Trainers Association of Nigeria, the Nigeria Mining and Geosciences Society Training Workshop and many others. We have articulated the highlights of some of these oil and gas meetings in this edition of PTDF Digest under the banner "PTDF Oil and Gas Conference Report".

For Nigeria's oil and gas industry, there is an on-going campaign for hydrocarbon prospectivity in the frontier basins as the search for fossil fuels intensifies. Indeed a key initiative of the National oil and gas policy is the harnessing of hydrocarbon reserves in Nigeria's frontier basins. At the same time industry experts are confronted with the reality of an on-going transition in global energy dynamics and the commencement of the journey for a post oil economy. Is Nigeria ready for this journey?

PTDF and NCDMB, both agencies of government with distinct responsibilities for local content development and application in the oil and gas industry are finding common grounds for resolving areas of functional overlap. We have the details in this bumper edition of PTDF Digest.

Kalu Otisi esq.



PTDF Digest

PTDF Digest is a publication of the Press and External Relations Unit, Petroleum Technology Development Fund (PTDF). ©2018
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FROM THE EXECUTIVE SECRETARY

POST OIL ECONOMY — HUMAN RESOURCE AS A FUNDAMENTAL REQUIREMENT



Dr. Bello Aliyu Gusau
Executive Secretary, PTDF

There is an on-going transition in global energy dynamics. The world has commenced the journey for a post oil economy. The increasing efficiency and cost competitiveness of renewables are all indications that this journey has commenced. The question may then be asked; Is Nigeria ready? The fact is whether the country is prepared or not, the journey will eventually catch up with her. The oil and gas industry is still very crucial for this journey. It is one of the few sectors in the country with the organisation, the resources and the expertise to provide the necessary framework for putting in place a post oil economy. Infact the whole discussion about diversification is hinged on the capacity of the oil and gas industry to be able to do this.

But for that to happen, there has to be a fundamental shift in the business model that currently obtains in the Nigerian oil and gas industry. We need to move away from digging oil from the ground, putting the crude oil in ships and exporting to other countries. The

shift therefore involves a business model that prioritizes the mid and downstream sectors where the value in oil and gas is created.

Human resource is the most critical factor in realising this objective. We cannot even over emphasize its importance knowing that oil has been lying dormant underground for millions of years, until humans were imbued with the capacity and competence to harness it. We can say the same thing for many other things. So the question is are we ready to develop the necessary human resource to enable us proceed with this journey? There are quite a few challenges in this regard, partly because at the moment, the production of manpower not just for the current needs of the oil and gas industry but for the future is so haphazard. It's as if all of us in the industry are operating in isolated silos, everybody doing his own thing without any linkage to a coordinated national framework. There is hardly a company or an agency in this country that does not have one kind of manpower development or the other. How can this relate to the larger needs

of the nation and how does it relate to the fact that we want to commence this journey to a post oil economy.

A few things have happened to indicate that we are becoming aware of this challenge. The recent Executive Order by the President that, companies and operators in all sectors must patronize Nigerian manpower is a step in the right direction. I am sure the oil and gas industry is paying a lot of attention to this fact. Equally important is the fact that one of the pillars of the 7 Big wins is proper and coordinated manpower development. More recently I am gladdened by the fact that, the Nigerian Content Development and Monitoring Board (NCDMB) has come up with guidelines and regulations for all players in the oil and gas industry to go through the joint qualification system before resorting to other sources for their manpower needs. All these are indications that, we are heading in the right direction. Developing human capacity more than anything else is a must in this journey ■



PTDF BEGINS QUARTERLY LECTURE SERIES

ON

INDUSTRY DEVELOPMENTS

The Petroleum Technology Development Fund (PTDF) has commenced a quarterly lecture series to increase its engagement with the oil and gas industry and keep staff of the Fund abreast on issues and new developments in the industry. The lecture for the first quarter of the year 2018 was delivered by foremost Nigerian oil and gas industry expert, Mr. Egbert Imomoh, former Deputy Managing Director of Shell Petroleum Development Company (SPDC), with the theme “**Nigerian Oil and Gas Industry: Quo Vadis**”.



A cross section of PTDF staff at the Lecture

The lecture series is organized by the Nigerian content and industry collaboration department of the Fund, to foster closer working relationship

with operators of the oil and gas industry across the entire value chain. It is also a corporate learning and growth initiative to equip staff of the

Fund with commensurate knowledge of the industry to effectively develop and provide the required capacity needed by the industry.



Manager, Nigerian Content and Industry Collaboration Department PTDF, **Mr. Usman Pindar** puts it succinctly. *“PTDF has been in existence since the year 2000 and we are a capacity building agency for the Nigerian oil and gas industry. Its common sense that you can’t give what you don’t have. You cannot build capacity if you are not yourself capacitated. PTDF has undertaken a review of its internal institutional interventions. One of the findings is that we need to build the capacity of our own staff and colleagues within the institution. We need to bring PTDF to the industry, improve and increase its relevance to the operation of the oil and gas industry, and at the same time bring the industry to the PTDF. In which case, the PTDF itself benefits from the operation and the knowledge base of the industry. Part of the activities we’ve undertaken to do under this learning and growth perspective, is to bring people from the industry, retired or still in active service; and policy makers to tell us what the industry thinking is and also share with us their experiences and what PTDF should be doing to improve its value adding to the Nigerian oil and gas industry. What we are doing is to start with ourselves as the vehicle and as the agency of government mandated to build capacity”.*

It is not possible to engage the industry if you are not familiar with its fundamental processes. Today’s event is designed specifically for that purpose. I’m happy to announce that in the last one year, the visibility of PTDF in its engagement with the industry and in creating networks with the other players of the industry has really taken a dramatic turn around.

- Dr. Bello Aliyu Gusau
Executive Secretary, PTDF



Executive Secretary, PTDF, **Dr. Bello Aliyu Gusau** said in his opening remark that the quarterly lecture series is a fall out of one of the six major objectives which the Fund set for itself a year ago, which is to create organic linkages with the oil and gas industry.

“It is not possible to engage the industry if you are not familiar with its fundamental processes. Today’s event is designed specifically for that purpose. I’m happy to announce that in the last one year, the visibility of PTDF in its engagement with the industry and in creating networks with the other players of the industry has really taken a dramatic turn around”.

He said that the Nigerian oil and gas industry has over the past decades of active operations been personified by three people, one of whom is the guest lecturer, Engr. Egbert Imomoh, who has extensive and varied experiences in the Nigerian oil and gas industry. *“As we all know, Engr. Imomoh reached the very pinnacle of the operations of an international oil company in this country; i.e. Shell and indeed he set the stage for other Nigerians to follow suit. After retiring from Shell, he went on to establish one of the leading indigenous companies in this country – AFRI-ENERGY, with operations beyond the shores of Nigeria. The company was one of the very first indigenous oil and gas companies to be listed on the London stock exchange. So what you are going to hear today is like hearing from the horse’s mouth”.*

In the lecture, **Mr. Imomoh** reviewed the history of oil exploration and production in Nigeria, the evolving energy dynamics and technological advancements, future growth and challenges. Quo Vadis as the key

element of the lecture, he explained, points to where Nigeria is headed or should be heading with regard to the oil and gas industry.



The lecture examined the pioneering activities in Nigeria’s oil and gas industry, the significant developments of the early 1970’s, deep off shore development and activities resulting in a series of world class discoveries and the factors responsible for the slow growth in local content. These he said include the fact that there was no structure to increase local capability and create a competitive local supplier base, governments’ undue focus on economic prosperity by rent collection while indigenous participation was of least focus.

Mr. Egbert Imomoh summarized current developments in Nigeria’s oil and gas industry to include rapid growth of reserves and production over the years; emergence of Nigeria as a major player in the world scene, the development of competent Nigerians working in local and international oil and gas fields; the emergence of local exploration and production companies initially in marginal fields but more recently into larger ones through acquisition of fields divested by majors; An LNG development that is of world class and the development of deep off shore production. He said however that although there is a need to continue to grow the oil and gas industry, Nigeria should be less reliant on crude oil income, and develop a gas based industrial economy leveraged on gas reserves. The future of the industry he said depends on an unrelenting and vigorous pace of exploration to avoid a decline in reserves. To achieve this he advocated a system where a bid round is carried out every two years to



From L-R: Mgr Press & External Relations Kalu Otisi, Mgr Admin & HR Mohammed Haruna, Mgr Finance & Accounts Armiyau Baba and Mgr Projects Ahmed Nasir

ensure that Nigeria’s resource base is sustained.

Speaking on the progress made on local content, the guest lecturer said that the one percent fund mandated by the Nigerian Oil and Gas Industry Content Development Act to be deducted from all contract values has accumulated to six hundred million US Dollars while the implementation of the local content Act is said to have attracted investments worth two billion US dollars with about forty thousand job opportunities created.

On capacity building for the oil and gas industry which is primarily the responsibility of PTDF, Mr. Imomoh observed that there is an acute shortage of academic staff in universities teaching Petroleum Engineering. According to him, the infrastructure for meaningful and focused research is paltry with no critical mass of trained faculty. In addition he said there is no effective mechanism to replace ageing facilities with lack of modern research facilities creating low research productivity.

The lecture attracted questions by

PTDF staff. The first set of questions focused on why there are no regular bid rounds, why production level has remained stagnant over the years and partnership by oil companies to carry out research in universities.



Q: Why is it that we don’t have regular bid-rounds; it has been problematic from government to government? Secondly all the local content vehicles established a few years ago by government and indigenous companies to enhance local content development have practically died.

Jide Adebulehin,
GM (SP&D)



Q: Why has oil production remained at almost the same level between 1979 till date, that is at around 2.4 million barrels despite the rapid growth in our reserves?

Ahmadu Nasiru Dannupawa,
GM (A & HR)

Q: What can PTDF do to support universities to attract the patronage of the oil and gas industry in terms of research and partnerships?

Rabi’ah Waziri-Adamu,
Manager (E&T)

RESPONSE BY GUEST LECTURER



Bid rounds are purely technical things but I think we mix politics with technical things and there lies the problem with bid rounds.

Government should just say every two years is a bid round, period. Whether it is a new government or an old government, it should be a directive to DPR and they have to do it, period. But if you have a system where you are mixing it with political patronage, then you will run into all kinds of problems with bid rounds.

- Somebody asked a question about why local companies die. Not all of them have died, there are lots of strong companies out there, but one of the problems I mentioned is that if you have this fluctuation in oil price and oil production and I as a local company invests in a drilling rig on the basis that activities in the industry will be on appreciable level, and one year after I bought my rig, the contract is torn up and they said take your rig and go. You can't blame the oil companies because oil production has gone down and revenues are not coming in, so I cannot then continue with my activity. That's why now I really pity some of the entrepreneurs who invested in equipment service companies and the industry doesn't have money to pay. However, over 20 companies that invested in production are doing well. They are producing about 203 thousand

barrels a day which is good and I think they can do more. I believe that if you give Nigerian companies more opportunities, they will grow.

- Stagnation over the years: It is simple, we have not been investing enough. Part of it has to do with the cash call situation where between the IOCs and NNPC they haven't been able to have a meeting of minds to agree on what needs to be invested because in a joint venture, it is the weakest partner that determines the level of activities. So if you don't invest you will get the situation where we are producing 2.4million barrels a day in the mid 70s and we are still producing that amount of oil today.

- Support of research: I think it is a good point, but I tell you that there are two sides to the story. When I was in Shell most of my friends in the university used to accuse us in the oil industry of not helping and I used to be blunt to them. You have to make a case, you have to articulate what research you want to do, you have to then come forward with a proposal where I can derive benefits. Now that's for me a little selfish, but it has two sides whereby universities themselves decide they are going to do certain types of research, they put their minds to it, define it, bring it forward and then get support. The industry can also sit down and do what I call joint collaborative activities whereby you can identify what needs to be done and then look for universities that can help. I believe that PTDF may be the glue that can bring the two parties together.

Other questions directed at the lecturer focused on OPEC production quota and production growth, government investment in private refineries and domestic gas utilisation.



Dr. Bello Aliyu Gusau, ES (PTDF) for instance asked:

Q: You mentioned the need to explore more and produce more. Now policy makers have to grapple with the imperatives of membership of OPEC and the usual quota that is associated with that. We have been aspiring for the last couple of years to reach the three million barrels per day mark. Now how do we balance the imperative of producing more at the same time with our membership of the International organization?

A: We as a country have to look for ways where we can add value to our production in-country. Dangote is now building this humongous refinery in Lagos, 600 thousand barrels a day. Nobody says that should be the last refinery we build, why can't Nigeria be an export centered country for exporting refined products and I don't think there is any limitation on exportation of refined products. So we have to see how we can add value more and more in our country. By adding value you are creating job opportunities, by adding value means that the capacity which you grow can be utilized. But the point I am making is, if we don't invest then in 10 years time even the current OPEC quota will no longer be valid because then your production will be down to about 1.5m barrels by which time the population will have grown to over 200 million. So it's a dilemma, it's a balance but I think you can solve that problem by getting our refineries to run. Build more export oriented refineries that can actually process our production and what you are exporting is refined products rather than crude products which is competing with OPEC quota.



Armiyau Baba
Head, Finance and Accounts Dept.
PTDF

Q: With the way our refineries are, shouldn't government be thinking of investing in the Dangote refinery instead of spending money trying to revive the refineries year after year. Government can take maybe a stake in Dangote refinery for a number of years and then divest at a later stage just to save on money that we keep utilizing in importing refined fuel.

A: Tell me, why does government have to be in those things, why? The ones they have been trying to run for years have problems so why can't you allow people who source private sector money, they have the skills; they know that if they don't perform they are dead. Now having said that, there is a model that has worked, the LNG model has worked because government has minority stake in LNG and therefore they don't call the shots. That's a model that could work. Government can take a stake for all kinds of good political reasons but not majority stake, because unfortunately most governments all over the world run businesses differently from the private sector.



Dr. Neeka
Strategic Planning and
Documentation Department

Q: My question is on domestic gas utilization. You actually mentioned issues that have to do with the utilization of natural gas. Is there any way PTDF can key into a gas masterplan and begin to develop resources that will help us to utilize our natural gas.

A: One of the things we know is that the use of gas in the domestic front is very low and one of the problems they have is the production of bottles. There are very few companies in Nigeria that actually produce those bottles. They have to be imported. So that will probably be an area whereby instead of people chopping down firewood and using coal for cooking, if there is any way you can partner with somebody who produces LPG bottles then that becomes a way people can use gas for cooking. That will go a long way in helping.

Some staff of the Fund expressed their views on the quarterly lecture series and the impact it will have on the implementation of the Fund's mandate.



Mr. Balarabe Ahmed
GM (Legal and Secretarial
Services Department)

The lecture series is a very important innovation which will really enhance and improve the knowledge of members of staff about the operations and workings of the industry. We can never go above our level of education, PTDF is an educational institution. Therefore, it is very important for members of staff to up skill their knowledge about the industry; so that we can know the skills gap that we need to fill in. Out of this we will even be coming up with the policies and programmes that will be very apt to the needs of the industry and the Nigeria people. So I believe it is a very, very important initiative.



Rabi'ah Waziri-Adamu
Manager (Education and Training
Department)

It is an excellent initiative. We cannot engage the industry without being grounded in the industry; we must have the right knowledge to engage people in the industry. And if PTDF as an organization is to make an impact, we really need people that have been in the industry that have made an impact, that are still in the industry to come from time to time to engage us. That way, more ideas on how PTDF can make an impact in Nigeria and the oil and gas industry will be unlocked.



Jide Adebulehin
GM (SP&D)

If you listened to Engr. Imomoh very well, he spoke particularly about a very useful research that is going on in the industry. He particularly mentioned the research that is going on in drilling by Prof. Dosumu at the University of Port Harcourt and if you recall, Prof. Dosumu is a beneficiary of our research grant. He is doing a great job in drilling. That shows that some of the programmes we are doing here to promote research in the industry are being appreciated.



“You need to have that healthy and regular injection of new people and new technology by having a bid round at least once every two years. Once every two years allows you to prepare, allows you to review and allows people to prepare themselves for investments”

- Egbert Imomoh



allows you to review and allows people to prepare themselves for investments.

rather than proffering solution which the other side will not agree ■

Q: Can you shed a little more light on these bid rounds?

A: If you look at the Niger Delta, its full of opportunities, there are fields that have not been worked up for a long time, I believe that if you are to make them available, new players will come in and new investments will come in and new technologies will be applied and that's what I suggest that we do at least every two years. Let's do it every two years!

Q: Sir, what are the main planks of your presentation?

A: The presentation is in two parts. I painted a journey where the industry has been coming from, how the industry has grown over the years, in production capacity, in reserves, in people, in local content and in gas. And I tried to paint the picture of the future going forward against the backdrop of the recent position of crude oil prices where it has not been very stable. But I think also even in that instability, the country needs to continue to invest in the sector by having continuous bid rounds. And I was saying that you need to have that healthy and regular injection of new people and new technology by having a bid round at least once every two years. Once every two years allows you to prepare,

Q: There is a feeling that the industry is not really disposed to utilizing the capacities and competencies PTDF is developing. PTDF investment in research to solve specific industry problems seem not to have the support of the industry.

A: Usually, there are two sides to the thing. When you are solving a problem, let's just say whether you define that problem with the person you are trying to solve the problem for, so I suggest that there is a meeting of minds, there is a definition of the problem, there is an agreement on what the solution is before you begin to proffer solutions. And I think that is probably something that you need to work together in defining what the problem is and agreeing on what the solution is,

If you look at the Niger Delta, its full of opportunities, there are fields that have not been worked up for a long time, I believe that if you are to make them available, new players will come in and new investments will come in and new technologies will be applied and that's what I suggest that we do at least every two years. Let's do it every two years!

- Engr. Egbert Imomoh



PTDF HOSTS OPEC DATA MANAGEMENT TRAINING WORKSHOP - THE FIRST TO HOLD IN NIGERIA

The Organisation of Petroleum Exporting Countries, OPEC, is a permanent inter-governmental organisation made up of 14 member countries whose economies rely mostly on revenues from oil export. OPEC members work together to influence oil price in the world petroleum market. In achieving this objective, the OPEC Secretariat carries out oil and gas based research; and it relies on her member countries for accurate, reliable and timely data. Nigeria is an influential member of OPEC. It is the most populous country within OPEC and among the ten (10) highest producers of oil globally. Data on Nigeria's crude oil production, internal consumption, refinery production, electricity generation, population, GDP- per capita and other economic indicators are critical to the decision making process in OPEC and Nigeria has not been lagging behind in data collection and submission to OPEC.

Nigeria's record at data collection and submission to the Organisation of Petroleum Exporting Countries (OPEC) has over the last three years witnessed considerable improvement in terms of consistency, timeliness and accuracy. Nigeria is currently ranked 3rd amongst the 14 OPEC member countries on Data submission to OPEC.

To sustain the momentum, the Ministry of Petroleum Resources in collaboration with the OPEC Secretariat brought together representatives of data generating agencies within and outside the Ministry, to update their skills and



competencies on data collection and management taking into cognisance, the dynamic realities of the global oil and gas industry. The agencies include, the Nigerian National Petroleum Corporation (NNPC), Petroleum Product Pricing Regulatory Agency (PPPRA) Department of Petroleum Resources (DPR), Central Bank of Nigeria (CBN), National Bureau of Statistics (NBS), Energy Commission of Nigeria (ECN), Nigeria Electricity Regulatory Commission (NERC), Debt Management Office (DMO), National Population Commission (NPC), Nigeria Liquefied Natural Gas (NLNG) and Indorama-Elleme Petrochemical Company Limited. These agencies work together with the Ministry of Petroleum Resources to develop credible national data that is presented to OPEC. The OPEC data management training workshop hosted by the Petroleum

Technology Development Fund is the first of its kind in Nigeria.



Head, Data Services Department of OPEC Dr. Adedapo Odulaja emphasized the importance of data to the work of the organisation's Secretariat. "At OPEC, our raw material is data, not crude oil, although some people mistakenly think that we produce crude oil at the OPEC



Members of the OPEC Team- Dr Adedapo Odulaja (standing), Head Data Services Dept (OPEC), Dr Hossein Hassani, Statistical Systems Co-ordinator, Dr Pantelis Christodoulides, Senior Statistician and Mr. Ryszard Pospiech, OPEC Data Services Dept.

Secretariat. The only thing we have is data, and data forms the basis of everything we do at the OPEC Secretariat, all our studies both short and long term, our publications such as the annual statistical bulletin, monthly oil market report, the world oil outlook are all based on data that we collect from our member countries. That emphasizes the importance of having a complete and accurate data with us on a timely basis, and this is what we aim at when we go out to our member countries”.

Nigeria submits monthly and yearly reports to OPEC based on data derived from OPEC designed questionnaires. However the template and structure of the OPEC annual questionnaires have over the years undergone several modifications necessitating the need for an entirely new annual questionnaire.

Dr. Adedapo said that the questionnaire designed by OPEC for the collection of data by member countries has been in use for over 30 years with slight modifications to bring it up to date with current realities of the oil and gas market. It is therefore imperative to produce an entirely new template for designing the questionnaire.

“About a year ago, we decided to have a new annual questionnaire entirely which would follow the existing standards in the industry and is compatible with those used by other energy agencies all over the world. With the help of technical co-ordinators of member countries we (OPEC) were able to launch that and for the first time we

are going to use that this year. So OPEC Secretariat is going round to ensure that we understand the connection between the new one and the old one so that we can have better data sent by member countries to OPEC Secretariat. This is why we are having this workshop”.

Giving further insight on this, Nigeria’s governor to OPEC, Dr. Umar Faruk Ibrahim said that OPEC in recognition of the changing dynamics of the oil market introduced some areas which in the last 30 years have not been part of what it is doing. “OPEC Secretariat now goes round member countries and bring together agencies that generate data to give them training on the new methodology of data collection, assessment and evaluation before it is eventually sent to OPEC”.



The Executive Secretary, Petroleum Technology Development Fund PTDF, Dr. Bello Aliyu Gusau, expressed his appreciation to the Ministry of Petroleum Resources for the confidence reposed on PTDF to host

the OPEC data management training workshop, the first to be held in Nigeria. He said the new vision of PTDF is to re-assert its relevance as an effective capacity building provider in the oil and gas industry by creating linkages and platforms for more engagement and collaboration with key players in the industry. “For PTDF, this workshop offers an opportunity for the expression of our strategic objectives of engaging more effectively with key players of the oil and gas industry by making valuable contributions that will further enhance capacity building of personnel and operators in the industry”.



The Training workshop was declared open by the Permanent Secretary, Ministry of Petroleum Resources Dr. Folashade Yemi Esan. She said that while Nigeria has recorded positive milestones on the compilation and submission of Data to OPEC Secretariat on an annual basis, the same cannot be said of relevant data for in-country research and planning. She therefore made a strong case for a credible national data bank that can be utilized for local planning and research in the country.

“It is a pity that students and researchers will have to go to OPEC to get data about Nigeria. We don’t have a repository here in Nigeria. So I am actually tasking you with that arrangement. You have to work to ensure that we have a repository of credible data that will help us in planning; Data that will help us in research here in the country”.

Nigeria’s oil and gas sector accounts for about 35 percent of its Gross Domestic Product (GDP) and petroleum export revenue represents over 90% of total export revenue.

Participants at the two day OPEC data management training workshop from some of the data generating agencies in Nigeria spoke to PTDF Digest on the nature of data required from their respective agencies for the purpose of producing the national data that is submitted to OPEC.



Mr Ezekiel Adesina

Nigerian Liquefied Natural Gas (NLNG)

From our perspective, we generate information about the volume of gas that is exported, the intricacies of distribution and conversion and to account for the total gas utilization and production in the Nigerian gas sector. So it's big information for us in the gas sector which allows us to plan and to know the status of Nigeria in the global gas sector.



Mr Ogechi Iheukwumere

Department of Petroleum Resources (DPR)

The OPEC data needs or expectations from the member countries cut across all hydrocarbon value chain from the reservoir to the drilling, production to the downstream sector, the refineries and even all the micro economics. Ours is from the upstream down to the downstream. We give them information on national crude oil and gas reserves for each year. We provide oil field activity reports which include drilling activity reports, the rig movement reports, the crude oil production report, gas production reports, which we call the gas balance and crude balance reports. We give them export volume and destination reports. We also supply information with respect to the conversion factors we use in developing those data. Part of the need is also to go ahead and look at the outlook on what the crude and gas production would be like in the years ahead.



Ahmed Ardo Muhammed

Nigerian National Petroleum Corporation, (NNPC)

We provide information covering exploration, production to marketing, upstream and downstream activities, petroleum products both crude and refined petroleum products.



Ibrahim Mudasir

National Bureau of Statistics (NBS)

We mainly deal with micro economic data namely nominal GDP, real GDP, consumer price index, house hold consumption, export and import, unemployment, the micro economic variables, like national accounting, micro nominal gross domestic product, consumer price index, external and internal debt. This is very important for economic forecasting.



NIGERIA RANKS 3RD IN THE HIERARCHY OF BEST DATA SUBMITTERS



Dr Umar Faruk Ibrahim
Nigeria's Governor to OPEC

Q: What is the status of Nigeria in OPEC Data submission?

A: For sometime really our record at data submission and also the accuracy of data hasn't been good in OPEC. We have always lagged behind most OPEC member countries in data submission as well as the accuracy of the data that we have been submitting. But in the last 3 years really things have changed, OPEC is very happy with us, the accuracy of our data has improved tremendously and the timeliness of our submission of data has also improved tremendously. I believe we

are today about the third in the hierarchy of the best data submitters.

Q: In Nigeria we have a situation where there is variance in data by different organizations. DPR may have different data from NNPC on the same object. Now at OPEC, which of these agencies data do you rely on?

A: There is only one national data from each member country as far as we know. Various agencies in the country come together and harmonize this data before they are sent to OPEC. They are NNPC, DPR,

Central Bank of Nigeria, National Bureau of Statistics, INDORAMA, NNMRA, all of them. As OPEC we don't want to go into the details of which state or which agency. There is only one national source and it is up to the country to reconcile this data and give to OPEC.

Q: This data you are collating now, is it anywhere related to OPEC quota for Nigeria?

A: No, there is no relationship whatsoever. In OPEC we collect data from member countries, there is an annual questionnaire which is sent annually and then there are monthly submissions. The annual questionnaire covers everything, from crude oil production, to refinery production, to oil consumption, to your GDP per capita income, electricity generation, everything about the economy, to your population. Now the monthly data that we send is just limited to crude oil production, gas production, export and refinery run.

Q: Even the gasoline

import?

A: We don't really do gasoline import, what we do in OPEC is we know the total consumption of a member country and then we know your refinery run and we just subtract, we don't ask you how much do you import. We assume that if this is your consumption and this is what you produce, the rest must have been imported.

Q: Let us have your thoughts about PTDF as the capacity building agency for the oil and gas industry hosting this all important engagement?

A: I believe really this is part of the mandate of PTDF to the extent that you are set up to develop manpower, technology in the oil and gas industry. Then what you are doing is exactly in line with what you are set up to do, hosting a workshop not just for the Ministry staff but also the agencies of government handling petroleum matters. I think this is perfectly in order and we really appreciate the support that PTDF has given us for this workshop ■



Members of OPEC Data Mgt Team in a group photograph with Perm Sec Ministry of Petroleum Resources, Dr Folashade Yemi Esan, ES PTDF Dr Bello Aliyu Gusau and GM SP&D, PTDF Mr Olajide Adebulehin

THE NIGERIAN OIL INDUSTRY IN A WORLD OF CHALLENGING ENERGY SUPPLY; **ARE WE PREPARED?**

PTDF HOSTS 18TH OLOIBIRI LECTURE SERIES AND ENERGY FORUM



From R-L: Mrs Habiba Ali, CEO SOSAI Renewable Energy Company, Dr. Bello Aliyu Gusau, ES PTDF, Prof Barth Nnaji and another participant at the 2018 edition of Annual Oloibiri Lecture Series and Energy Forum

The Oloibiri Lecture Series and Energy Forum organised yearly by the Society of Petroleum Engineers (SPE) has since 1991 when it was instituted become a national calendar for oil and gas stakeholders to come together and discuss on topical issues in the energy sector with a view to influencing the on-going policy direction for the growth of the industry and Nigeria's economy. PTDF since last year 2018 began

hosting the annual event as a way of strengthening its collaboration with key players in the industry and to acknowledge the historical significance of Oloibiri Well to the oil and gas industry. It also conforms with the desire of the Fund to support initiatives that will contribute in improving the operations of the oil and gas industry in Nigeria. The 2018 Oloibiri Lecture Series and Energy Forum (the 18th in the series) as with previous editions brought together key industry

players from Policy; Legislature; Regulatory; Federal Executive; Investors; Operators and Service Companies to deliberate on current and future issues impacting the industry. Expansion into deep water, marginal fields policy, local content policy, the Gas Master Plan, Fiscal Policy, cost effectiveness challenges in the Nigerian business environment, energising the full gas value chain from producers to end users are some of the critical topical issues that have been discussed under the

forum which according to the Society of Petroleum Engineers “*have helped to shape current and emerging policy directions in Nigeria*”.

The 2018 Oloibiri Lecture Series and Energy Forum has as its theme “**The Nigerian oil industry in a world of challenging energy supply; Are we prepared?**”



Chairman SPE Nigeria Council, **Mr. Chikezie Nwosu** set the tone and direction for the discussion of the theme. According to him, “*It has become clear that with anticipated growth in energy demand, the world is rapidly moving towards an age of cleaner sources of energy. For fossil fuels, this will mean a greater reliance on gas and less reliance on oil. In addition, hydro electric and gas powered cars will replace diesel engines and with time, gasoline engines. Add to this is the growing investments in renewable sources of energy such as solar and wind, and it becomes evident that Nigeria must rethink (or rejig) its energy policy to prepare for an energy mix that will become less reliant on the more polluting fossil fuels*”.

He said opinions differ on how long reliance on fossil fuels will last giving the fact that there is huge remaining resources of oil and gas. “*However one must note the often quoted statement that the Stone age did not end because mankind ran out of stones, and the oil age will end long before we run out of oil. The pressure from the next generation of leaders will drive technological advances that will result in less reliance on environmentally damaging energy and we (Nigeria) must be ready now*”.

Having stirred the hornet’s nest the reactions were immediate and compelling. They came from the programme designated contributors

to the theme, one of whom is the Executive Secretary, Petroleum Technology Development Fund, PTDF, **Dr. Bello Aliyu Gusau**.



Speaking on Manpower development, he said human resource is fundamental to the realisation of the on-going transition in global energy dynamics and the journey to a post oil economy. “*The point I want to make is that human resources is the most critical factor in this journey. We cannot even over-emphasise its importance. We should never forget the fact that this oil has been under the ground for millions of years, and became useful only when humanity developed the capacity and the competence to harness it. We can say the same thing for many other things. So the question is, are we ready to develop the necessary human resource to enable us to prosecute this journey? Well I have my doubts*”.

PTDF Executive Secretary said his doubt hinged on the absence of a co-ordinated national framework linking the production of the required manpower for the oil and gas industry. “*At the moment, the production of the required manpower not just for the current processes in the oil and gas industry but for the future is so haphazard. It’s as if all of us in the industry are operating in isolated silos, everybody doing his own thing without any linkage to a co-ordinated national framework. There is hardly a company or an agency in this country that is not having one kind of manpower development programme or the other. How does this relate to the larger needs of the nation and how does it relate to the fact that we have to commence this journey to a post oil economy*”.

Dr. Bello Aliyu Gusau said however that recent activities of government indicate that there is an awareness

of the challenges and initiatives are being put in place to address them. These include the executive order by the president directing companies and operators in all sectors to patronise Nigeria manpower, the adoption of a co-ordinated manpower development as one of the pillars of the 7 Big wins in the Nigerian oil and gas sector, and

At the moment, the production of the required manpower not just for the current processes in the oil and gas industry but for the future is so haphazard. It’s as if all of us in the industry are operating in isolated silos, everybody doing his own thing without any linkage to a co-ordinated national framework. There is hardly a company or an agency in this country that is not having one kind of manpower development programme or the other.

- Executive Secretary, PTDF



The ES PEF Mr Ahmed Bobboi and the immediate past SPE Chairman Engr. George Kalu at the event

the recent guidelines and regulations by the Nigerian Content Development and Monitoring Board (NCDMB) compelling all players in the oil and gas industry to patronise the joint qualification system (JQS) before resorting to other sources for their manpower needs.

Other suggestions by the Executive Secretary of PTDF to ensure the readiness of Nigeria for the transition to post oil economy include a fundamental shift in the business model that currently obtains in the industry. *“We need to move away from digging oil from the ground, putting it in ships and exporting to other countries. We need to shift towards the mid and downstream where all the values can be realised”*.

This according to him is because the oil and gas industry is one of the few sectors that if properly organised will provide the resources and the expertise for putting in place a post oil economy. *“In fact the whole discussion about diversification in this country is*

all hinged on the capacity of the oil and gas industry to be able to this”.



Mrs. Habiba Ali, is the Chief Executive Officer of SOSAI Renewable Energy Company based in Kaduna. As one of the discussants and contributor to the theme of this year’s OLEF Lecture Series, she spoke from the perspective of a renewable energy service provider. According to her, preparing Nigeria’s oil and gas industry for a world of changing energy supply requires

extensive consultation with various stakeholders particularly those who have made heavy investments on fossil fuel. *“We should explain to these people the benefits in renewable energy or convince them on the need to change from fossil fuel. People who are benefiting from fossil fuel will offer serious resistance. It’s going to take a serious mindset change to make these people realise that there are other benefits besides fossil fuel. Only then would they realise the need to change and be prepared”*.

She suggested the need for more vibrant conversation with key stakeholders who have invested their money in fossil fuel to convince them on the benefits of shifting to renewables and other clean energy sources. *“We need to understand that people have invested money on fossil fuel, they had actually looked at it from a long term perspective and had seen that this was the way to go for them and all of a sudden you are coming to tell them to prepare to be pushed out of the*

market. So they need to understand that they are not going to be pushed out of the market. With that assurance, they will help champion it and ensure the preparedness of every other person”.



On the perspective of Gas Producers, Dr. Yakie Ogon, Corporate Strategy and Planning Manager, Nigerian Liquefied Natural Gas Ltd (NLNG) identified gas as the future of the country's economy. The use of gas in-country he said is facing acute infrastructural deficiency and other challenges such as incentives to

gas producers in terms of setting up plants all over the country and receiving facilities. “Right now only Lagos has a receiving facility. So we have to bring gas from Rivers to Lagos and then truck it back to Rivers by road. That is not optimal. So I feel that we need more of gas infrastructure to make sure we transit from biomass for cooking to LPG”.



Speaking on the choice of the theme for this year's lecture, the conference Chair, Saheed Olosio said it is a clarion call for the diversification of

the Nigerian economy away from oil and gas alone. This is in view of the fact that the West has served a notice on evolving energy supply. “The European countries for example are saying that they will actually ban fossil fuel cars by 2040, and we felt that Nigeria should not be left behind in positioning itself for what is coming in the future. That's why we decided to look at all those evolving energy supply systems for the oil and gas industry”. The Petroleum Technology Development Fund, he said, has the onerous responsibility of positioning the coming generation of manpower to take on the challenge of operating in an environment of different energy sources, such as renewables rather than only oil and gas. “PTDF should in addition to the oil and gas capacity development that it has been focusing on, also focus some of its educational development programmes on renewable energy systems as alternative sources of energy. Capacity building is very core and should be one of the major areas we should focus on as a nation” ■



From L-R: Mr. Emeka Ene, CEO, Oildata Services, Dr. Saka Matemilola, First Exploration and Production Ltd, ES PTDF, Dr Bello Aliyu Gusau, CEO, Geometric Power Ltd, Prof Barth Nnaji and a participant at the event



PTDF EXTENDS CAPACITY BUILDING TO THE JUDICIARY

For the first time since it became a fully functional agency of government 17 years ago, the Management of the Petroleum Technology Development Fund, PTDF, found it expedient to extend its capacity building mandate to members of the judiciary.

So why the judiciary? What has the judge for instance got to do with the operations of the oil and gas industry?



General Manager, Legal and Secretarial Services, PTDF, Balarabe Ahmed gives a succinct response “We believe

the convergence between PTDF and the judiciary is the fact that constitutionally it is the judiciary that decides on disputes between individuals or between states, between the Federal government and state, or between a limited liability company and individuals or between a limited liability company and another. It is the only institution with the right under the constitution to adjudicate and we believe that the quality of adjudication by judges on oil and gas related cases depends on the quality of knowledge they have about the operations of the oil and gas sector. This is why we are extending our services to the judiciary. It is clear to see because if at the end of the day we go to court and the court gives unfavourable judgement due to lack of proper understanding and appreciation of the issues, it will have monumental impact on the industry and that’s what we are trying to avoid by bringing members of the judiciary, particularly judges together to keep them abreast on the workings and

happenings in the oil and gas sector so that they can adjudicate from the point of knowledge and wisdom.”

Beyond the narrow compass of building the capacity of operators and managers of the oil and gas industry, is a need to also update the knowledge and understanding of those whose functions and responsibilities have direct and indirect impact on the oil and gas industry. One of such institutions is the judiciary, an arm of government that interprets the law through judicial pronouncements on a variety of cases including oil and gas related cases. Cases bordering on oil and gas agreements such as joint venture agreements, oil prospecting licenses, oil mining leases, etc, the legal framework governing the impact of oil spillage and environmental degradation; legal issues arising from tax regulations in the oil and gas sector all come within the purview of litigation and judicial adjudication. Some of these issues formed

the discussion points at the workshop on oil and gas matters for judges organised by the Petroleum Technology Development Fund in collaboration with the National Judicial Institute (NJI).

The auditorium of the Petroleum Technology Development Fund, venue of the event was transformed into perhaps a court of law as their Lordships from the various jurisdictions of the superior courts of record walked in to take their seats. There were also a few lawyers mostly in chambers of notable oil and gas companies and agencies who came to make submissions on the selected topics for the workshop with the theme “*Enhancing the quality of judicial services in the Petroleum sector*”

With the arrival of the Chief Justice of Nigeria, and other Justices of the Supreme Court, Justices of the Court of Appeal, and Judges of the High Courts, the session was set to commence. There were welcome addresses



The Administrator National Judicial Institute, Hon Justice Rosaline Bozimo welcoming the Chief Justice of Nigeria Hon Justice Walter Samuel Nkanu Onnoghen to the Workshop. At the centre is the ES PTDF

from the organisers of the workshop, the Petroleum Technology Development Fund and the National Judicial Institute.



The Executive Secretary, PTDF, Dr. Bello Aliyu Gusau gave further reasons why PTDF is collaborating with the National Judicial Institute in developing the capacity of judicial officers in oil and gas related matters. The oil and gas industry, according to him is made up of a network of legal relationships which end up before Judges and Justices for adjudication. These,

he said, include matters between the Nigerian State and International oil companies, disputes between different companies in a joint venture, matters between host communities and producing companies or between suppliers and consumers of the products of the oil and gas industry. He said it is therefore imperative to ensure that judicial officers are kept abreast of the emerging challenges regarding these relationships.

Another reason for the workshop, according to the PTDF Executive Secretary, is the fact that new legislations giving rise to major fundamental changes in the oil and gas industry are being processed in the legislative chambers which ultimately will end up with Judges and Justices for interpretation and adjudication. *“Already the Petroleum Industry*

Governance Bill has been passed by the National Assembly. In addition, the fiscal framework legislation and host community participation bills are getting accelerated treatment in the National Assembly. All these coming legislations will eventually come before your Lordships for possible interpretation and adjudication.”



The welcome address by the Administrator, National Judicial Institute, Hon. Justice Rosaline Bozimo laid further foundation for the hosting of the workshop.

According to her despite government move to diversify the economy, the oil and gas sector remains the major source of revenue for the country. *“I dare say that the rapid and exponential growth of the Nigerian oil and gas sector in recent years has led to increasingly complex and dynamic transactions, inevitably resulting in disputes. It goes without saying therefore that judges are now required to possess adequate knowledge and skills to efficiently adjudicate on the cases that may come before them. This has ultimately informed the need for this workshop to expose judicial officers to changes within legal and technical aspects of the oil and gas sector.”*

Some of the legal issues identified by the Administrator, National Judicial Institute include the impact of oil spillage and environmental degradation in the oil producing



regions of Nigeria, legal issues over remittances of royalties and tax regulation in the oil and gas sector which over the years are shrouded in controversy. She urged the judges to be proactive and not to allow technicalities to stand in the way of substantial justice especially regarding oil and gas disputes. *“It is my firm belief that this workshop will bring to the front burner some salient issues in the oil and gas sector and the means of resolving them without loss of precious time; thereby assisting judicial officers in the adjudication and resolution of lingering disputes in the sector”*.

laws in the industry. Indeed, the adjudicatory duty of a judge can only be performed optimally when he remains up to date with the emerging developments and trends in jurisprudence pertaining to the oil and gas sector”.

The Chief Justice of Nigeria acknowledged that the ongoing reforms in Nigeria’s oil and gas sector by the Federal Government will throw up innovations in the management of the sector and introduce new legal regimes that will impact on the quality of justice delivery by judicial officers. He said the passage of the Petroleum Industry Governance Bill, reflects the willingness of government

to promote transparency on issues dealing with oil and gas and an indication of the positive direction that the government is steering the oil and gas sector. Papers were presented by resource persons at the plenary of the workshop.



Justice Walter Onnoghen CJN

Emphasizing on the relevance of the collaboration between the Petroleum Technology Development Fund, and the National Judicial Institute, the Chief Justice of Nigeria, Honourable Justice Walter Samuel Nkanu Onnoghen said the synergy will lead to the expansion of the knowledge base of judicial officers in the areas of oil and gas law.

“I make bold to say without fear of contradiction that the Nigerian Judiciary is a key partner in ensuring stability in the oil and gas sector by interpretation of the relevant



Silas Damson Garba, *Head Legal Services, South Atlantic Petroleum* spoke on the **“Fundamentals of Oil and Gas agreements, the guiding rules and principles”**.

Q: What are the key messages of your presentation?

A: Essentially the idea is to come up as an industry person to share knowledge about the various agreements applicable in the industry, applicable to the various stages of developing oil and gas assets, and looking at the key principles from the litigation perspectives, areas of key disputes, key areas of risks and also sharing experience of how these issues are treated first in the negotiations, in the drafting and sometimes in the dispute management process. The key message I understand from the organizers of this event is to ensure clear understanding of the industry by the judges which is to improve the quality of their judgments.

Q: What are the specific areas of dispute in the operations of the oil and gas industry?

A: Going through oil and gas agreements, we must look at it from four different perspectives. First, we look at the contract between the government and the contractors. Usually this is the concession agreement or the Production Sharing Concession (PSC) and then mostly you have to look at the obligations of the contractor as against the state and again what are the benefits the contractor derives after developing the oil and selling the oil, which is actually the profit oil. In between you have dispute, you have stabilization provision to give contractors protection, and you also have the different dispute mechanism in the contract. The other part we look at is the contract between investors essentially joint operating agreements. Again,

we look at the key principles applicable to the joint operating agreement, areas of disputes and disagreement and how that should be minimized in the negotiation and drafting phase and in settling disputes.

The paper presented by Mr. Silas Damson Garba, elicited questions and comments by their lordships.

Q: There is this term Signature Bonus, I don’t really understand what that represents and its scope?

Q: In view of the complexities of oil and gas agreements, is it not advisable to have arbitration clauses for oil and gas matters?

ON SIGNATURE BONUS

When a company gets a contract with the government, the company is awarded a licence, either a production sharing contract or concession licence. The company starts by giving money to government to acknowledge the award. It is one of the first conditions to make an award valid. Sometimes it is not embedded in the concession agreement. It is a condition. Sometimes you have a signature bonus arrangement especially for bid rounds. It is a way for the country to raise capital, because the opportunity to earn money from oil under that arrangement is down the road 16 years. When you sign a contract, you have 5 years to go and wander in the bush looking for where to drill and then another 5 years extension to start drilling. When a company finds oil, it declares commercial, the government then gives licence to develop and produce. So, the government through the signature bonus at the early stage of the

agreement wants to get a little bit of the money while waiting for 13 to 16 years to get the real money.

ON ARBITRATION

In the industry, the standard is to go through the route of arbitration, that's the culture and we believe it is confidential and cost effective. But in certain cases, arbitral awards are challenged. So, we look at it practically before deciding on using arbitration as a dispute resolution mechanism. But there is need to carve out exceptions within the same contract to deal with disputes that necessarily require you to litigate through the court processes. In essence you cannot totally exclude litigation and rely only on arbitration as a form of resolving disputes. So, where arbitration fails, litigation as a matter of necessity will be resorted to.



Mr. Olawale Akoni, A Senior Advocate of Nigeria and Managing partner, Babalakin & Co, Lagos presented a paper on the **"Impact of oil spillage and environmental degradation: understanding the legal framework"**.

Mr. Akoni drew the attention of the Lordships to various areas of the existing legal framework for oil spills and environmental degradation. Some of these issues he said have never been raised or considered by Nigerian courts despite the increasing



The ES PTDF, Dr Bello Aliyu Gusau and Hon Justice Rosaline Bozimo at the workshop

number of compensation claims in various courts across the country. The environment he said remains the primary victim of oil spills as huge compensation awards in favour of individual claimants do not necessary lead to effective rehabilitation of the environment.

"The environment remains the primary victim of oil spills and huge compensation awards in favour of individual claimants do not lead to effective rehabilitation of the environment. It is therefore necessary to pay close attention to the statutory regime for compensation to ensure that funds that ought to be invested in the rehabilitation of devastated communities are not being awarded to private claimants without any judicially approved administration mechanism".

The submission of the learned Senior Advocate of Nigeria Olawale Akoni generated a lot of interest and illuminated the

jurisprudence on oil spillage. Their Lordships one after the other took on some of the issues of law and procedure that were brought to their attention by the presenter.



The Chairman of the session, Hon. Justice Balkisu Aliyu of the Federal High Court gave an insight on the enormous challenges of oil spillage cases to the judiciary when she stated that there are over twenty thousand cases relating to oil spillages and over 200 cases of pipeline vandalism presently before the Port-Harcourt Judicial division of the Federal High Court with five judges.

The high volume of cases on oil spills awaiting determination by the courts is an indication that the legal framework for oil spills compensation and damages has not fully addressed a lot of the problems arising from oil spillages. This was played up at the interactive session following the presentation of the paper. A way out suggested one of the judges is for government to lighten the burden of Federal High Courts judges by creating special courts for oil spill cases. *"If the Government is bordered about oil spillages especially under the constitution and has the duty to protect and improve the environment, it should also be interested on the predominant cause of oil spillages which is as a result of negligence of the companies or actions of saboteurs. So why shouldn't the Federal Government establish a Federal Magistracy in which so many of these cases could be dealt with so that the Federal High Court can concentrate on more serious cases"*.



Another contributor, **Justice Faji of the Federal High Court Lagos**, said most of the cases on oil spillage hardly proceed to trial and rots in the court registry. Some of the cases he said are filed to coerce the other party into settlement of claims. *“What happens is that the cases are just filed to force a settlement. So by the time you look at these 20,000 oil spills cases filed at the Federal High Court, Port-Harcourt, 19,999 of them will rot in the registry. In fact, you discover that many of the writs have expired, they are virtually dead cases. When I was in Bayelsa, I had 19,000 of such cases and all I did was just to call them up every Friday for striking out. This problem is related to issue of poverty. Fishermen whose fishing nets and activities are destroyed due to oil spillage cannot afford to brief counsel and even if they do, they brief those who are not experts in this area. So there is a problem of expert opinion”*. He therefore suggested

that the Attorney-General of the State should take up such cases in view of the nature of oil spillage as public nuisance. *“Since oil spillage is of a nature of a public nuisance, then it is for the Attorney General to take it up. In the history of Rivers State there is only one case where the Attorney-General of the State filed this kind of action and of course he made a substantial recovery”*.



Another judge made a case for a practice direction on the Oil Pipelines Act (OPA) which governs the regime of oil spillage compensation and damages. This according to **Justice Ekwo of the Federal High Court Calabar** is to compel parties to diligently prosecute and defend such cases in court. *“Looking at the entire framework of the Oil Pipelines Act, the proceedings seem to me to be summary proceedings. But what has happened so far is that the oil companies with their enormous resources are able*

to get very good practitioners and they always push these communities to establish negligence and the lawyer on the other side unwittingly also fall into this trap. You find out that 10 years the matter is still going on against the intention of the legislature, and at the end there is no judgement. What I would advise or suggest is that there should be practice direction concerning the Oil Pipelines Act.”

Another concern raised by a Judge is that the constitutional provision on the environment makes it non-justiciable and cannot be successfully litigated upon. The section provides that the state shall protect and improve the environment and safeguard the water, air and land, forest and wild life of Nigeria. The same constitution he said also made it possible for the Federal Government to the exclusion of others exercise ownership and control of petroleum resources. *“The environment is exposed to degradation, to raping, we rape the environment and rape the people dwelling within that environment and the constitution has made it possible for the Federal Government to have access and be the owner of whatever is inside the land, underneath the land. Whereas the state governor is in possession of the land as it were to*

distribute as the custodian of the land the governor does not have access to the riches of the land. It appears that the two strong powers, State and Federal are struggling to get something out of the land, exploit it at the expense of the people who are dwelling there. And when we talk about those people going to court, you discover that one lawyer has been able to organise them together speculating on how to get access to some money, and when the money is gotten by the grace of the court, the lawyer and a few people that stood up will share the money and nobody is interested in the environment. I think we need a friendlier, a more responsible legislative regime that will not wait for indigenes to rise up to challenge the oil companies or whoever is causing damage to the environment. There should be inbuilt mechanism within the law that protects the people, environment. As it is we don't seem to have it”



Justice Daniel Emeka Osiagor of the Federal High Court, Umuahia said in his intervention that the presentation was silent on gas flaring as part of spillage. He said judges can exercise discretion in remedying a wrong even where there is misapplication of process and procedure. *“Where there is a wrong, there must be a remedy. Though they may not have called the best expert witnesses, but the judge has established a wrong, is it wrong for the judge to award damages? On one hand you*



A cross section of participants at the workshop for Judicial Officers

said they should come by way of the Oil Spillage Act, on the other hand you said the act is restrictive on compensation, but when you come under the common law it is wider in damages. You have also suggested to us that if we don't come under the oil spillage Act it should be non-suited or struck out, where then lies the discretion of the court, particularly if there is evidence establishing a wrong."

Citing the presenter's conclusions on decided cases and statutory provisions relating to claims for compensation whereby a claimant does not become entitled to compensation on the mere basis of indigenship or other ethnic, communal or sentimental affinity to the area impacted by the spill, Justice Daniel Osiagor held the view that the reservation expressed in the paper against judges giving judgements based on sentiments is unfounded in law.

"There are villages that have fishing festivals. If an oil spillage had eroded their right to conduct fishing festivals and the community comes to the court to express, to vent their grievance, do you call that vague claim? But consider that these communities are predominantly illiterate. So if they get even a greenhorn to go to court and the court sees some elements of truth, fact supported by law, please it's not a vague claim".



Another area of interest to the judges based on the paper presented by **Olawale**

Akoni, SAN is the assertion that most compensation claims for oil spillage are constituted under the common law principles of tort and negligence without consideration of relevant statutes.

One of the judges in his intervention believes that the nature of the claim determines the decision that should be reached on the matter. "I believe that it is an extreme measure to strike out a claim that does not conform with the statutory provisions. It defeats the essence of substantial justice because if somebody who has brought his claim under the principles of common law is able to establish substance in his claim, I think it is fair for the court to give him whatever he is able to prove rather than saying he has not conformed with the statutory provision and should be struck out". On the duty imposed on the court by the Oil Pipeline Act to approve a scheme of distribution or superintend the application of the compensation fund for the general social, or educational benefit and advancement of a community, the judge said "...but considering the general disposition of our society where there is so much distrust, I hope that will not be leading the court into troubled waters, so that the judge will not be accused of trying to reap benefit out of what he awarded".

Still on the issue of why the courts have continued to apply common law principles in determining issues of compensation and damages arising from oil spillage, the consensus of the contributors at the interactive session is that where a conflict arises between the common law and statute law, statute law prevails, but where a suit is couched in common law principles, is

the judge precluded from applying statute law, in the determination of the case?



In this regard, **Justice A.B Mohammed of the FCT High Court** wonders whether a court of law is restricted to the legal arguments put forward by the parties or to what he termed "mistaken application of the law applicable to the cause of action brought forward by the parties". He argues that while the court is precluded from changing the facts or putting forward new facts not brought by the parties "I was wondering if a court of law is not obliged to apply the state of the law to the cause of action. If for instance parties decided to bring their cause of action under negligence, by the state of the law applicable to that cause of action, basically it is contained under the Oil Pipelines Act, my question then is whether a court of law is obliged to be restricted only to the legal arguments applicable to that cause of action or it is under obligation to apply the statute of the law as it is and as provided under the statute".



In his contribution, **Justice**

C.E.A Obiozor of the Federal High Court citing a hypothetical one billion Naira claim for oil spill based on negligence caused by a company, said it is not clear how a court could give judgement on that claim for compensation under the Oil Pipeline Act where the man's claim is for negligence caused by the other party. "If the court is going to abandon that and say, I could see you are entitled to compensation under the OPA, the man didn't claim it. So that again, is an area that needs to be looked at and see the best way to deal with it. My suggestion is not that the court does not have the power to apply the statute. In fact, my concern is that the courts have not been applying the statutes and that is what has led us to this situation where there is a dearth of principles on how the OPA should be applied".

Responding to some of the issues raised by their Lordships, the presenter of the paper Olawale Akoni SAN said he did not in any way suggest that the courts have no power to apply a statute where the common law has been codified. Rather his submission is that rather than apply the statutes the courts have continued to apply the common law. "The Statute is there, that's what ought to have been applied but they continue to apply the common law. I am saying that the common law has no further applicability once there is statute covering the field. When I said the court could strike out or non-suit a case I was actually looking for a solution that will not disenfranchise people who come to court under the common law".

JUSTICES, JUDGES SPEAK ON THE ADJUDICATION OF OIL AND GAS CASES

The judiciary is the arm of government that interprets the law through judicial pronouncements on a variety of cases including oil and gas related matters. PTDF in collaboration with the National Judicial Institute organised a workshop on **'enhancing the capacity of Judicial Officers in adjudicating oil and gas related disputes particularly oil spillages'**. Some of the judges and justices who participated in the workshop spoke on its relevance and the role of PTDF in facilitating the engagement.



Hon. Justice Jummai Sankey

Presiding Justice, Court of Appeal, Makurdi Division

I think it's a very timely and important workshop. The papers brought out a lot of deficiencies in the laws governing maritime, taxation and carbotage. Much as we are aware of these deficiencies there's a limit to what the court can do. So it is our recommendation that the legislature be also involved in a forum like this, so that as stakeholders in the process, we can together address these problems in a more holistic fashion. It's a good initiative by PTDF. Since it is a capacity building programme, more of the officers of the judiciary should be involved and sensitized on issues arising from the oil and gas sector. The consensus among the justices and judges is that other stakeholders should come in to resolve a lot of these problems. The mainstay of the economy is oil, if we are having problems with the governing of the sector, it will have a negative impact on the economy.

Hon. Justice Muddashiru Oniyangi
Court of Appeal, Benin Division

I think it's well organised, the papers were well compiled and well delivered. We all learnt from them, and if you see the assessment card of each of us, it's like asking for more of this type of seminar. You can see the outcry these days in respect of oil spillage. At the end of the day, these situations end up in court for decisions on damages and compensation. So the court adjudicates on these demands and this seminar will enhance our productivity on the job. I score PTDF highly for this, they have organised it very well. My only advice is that they should expand it to include more stakeholders such as the National Assembly.





Hon. Justice Binta Nyako

Judge, Federal High Court, Abuja Division

First of all I will like to commend PTDF I think they have done a very good work. What has happened here is an eye opener. The workshop captured a lot of areas that are germane to the issues of spillages and oil and gas matters. I think it is a very welcome development. This is the first time I know that PTDF is arranging things like this and I wish they sustain it. The workshop is relevant particularly to the Federal High Court because it is the primary court that deals with oil spillages and the rest. Sometimes you don't know all the law, you don't know all the procedures but when you interact like this, you meet people from other areas that might have handled such situations, you can exchange ideas and then it opens up your horizon

Hon. Justice Rosaline Bozimo

Administrator National Judicial Institute

The main function of the NJI is to train and retrain judges and their support staff, Judges ranging from Justices of the Supreme Court to the Court of Appeal and Judges of the various jurisdictions. Capacity building is very important to advance knowledge. PTDF is the engine room for oil and gas training as far as we are concerned. Laws come up every day and there are new procedures so its good for our judges to be sensitized in line with global best practices. That was why we came to PTDF to collaborate with them for this capacity building workshop for our judges and justices. PTDF has a very good reputation and honestly collaborating with PTDF is a thing of pride to us because we know they are capable and they have the materials, they are the key in the industry for this kind of capacity building.

I was amazed when I came here, when they were showing those that were trained by PTDF-fantastic!! I think they are doing a marvellous job, they should keep it up because they are getting a lot of people off the street teaching them handiwork. I want to congratulate PTDF for all they have done for our citizens; that cuts across not just from a particular section but all through the country.





Group photograph of participants at the capacity building workshop for Judicial Officers organised by PTDF. At the front (seated) are the Chief Justice of Nigeria and other Justices of the Supreme Court, presiding Justices of the Court of Appeal, Administrator, National Judicial Institute, and the Executive Secretary



THE SEARCH FOR OIL IN THE FRONTIER BASINS

- THE ROLE OF PTDF



RT Hon Aminu Waziri Tambuwal, Governor, Sokoto State and the ES PTDF, Dr Bello Aliyu Gusau at the Regional Technology Knowledge Sharing Programme in Sokoto

The sponsorship of research in universities through the Endowment of Professorial Chairs and award of Research Grants to local researchers are part of the strategies deployed by the Petroleum Technology Development Fund to find solutions to current and future problems of the oil and gas industry.

The research interventions not only serve as enablers in investigating areas of contemporary significance to the oil and gas industry by local

researchers but also strives to provide workable solutions to specific industry problems. For example, under PTDF endowment programme, the Chair instituted in Chemical Engineering at the Ahmadu Bello University, Zaria on the development of Zeolite Catalyst was aimed at solving the perennial shortage of refining catalysts at the Kaduna refinery due to the high cost of importation.

Similarly, the Chair instituted by PTDF at the University of Port-Harcourt on Gas Engineering was to provide solutions to the problem

of gas flaring in the Niger-Delta region. PTDF Chair in Petroleum Geology at the University of Nigeria Nsukka focused on contributing to the efforts at determining the hydrocarbon prospectivity of the Anambra Basin, one of the inland basins in Nigeria. Others include the university of Jos where a Professorial Chair was endowed in Geology and Mineral Science, with focus on the hydrocarbon prospectivity of the Benue Trough; The University of Maiduguri where PTDF endowed a Chair in Basinal Studies, focusing

on the hydrocarbon prospectivity of the Chad Basin and the Usman Dan Fodio University where the Chair on Petroleum Chemistry was targeted at identifying the hydrocarbon potentials of the Sokoto Basin. To give relevance to these research programmes, PTDF organises a Technology Knowledge Sharing Programme to bring experts together to network and share experiences on live industry problems that are being addressed through PTDF research interventions.

The programme brings together retired and serving industry practitioners and the academia to share knowledge and experience on subject matter researches with a view to applying the outcome to live industry challenges. The Fund recently refocused the Technology Knowledge Sharing Programme to give it a regional outlook by paying greater attention to the economic potentials of Nigeria's Inland Basins. These are the Anambra Basin, Chad Basin, Bida Basin, the Benue Trough and the Sokoto Basin.

The Regional Technology Knowledge Sharing Programme kick started in Sokoto with a focus on the hydrocarbon potentials of the Sokoto Basin. PTDF has an ongoing research on **'Geochemical evaluation and**

mapping of the potential source rocks in the Sokoto Basin' at the Usman Dan Fodio University under its Professorial Chair Endowment Programme to carry out preliminary prospectivity studies on the Sokoto Basin.

The Regional Technology Knowledge Sharing Programme in Sokoto pooled experts in petroleum geosciences with experience in Inland Basin analysis. They include Petroleum Geologists, Petroleum Geo-physicists, Geo-chemists, Engineers as well as veteran petroleum explorers from both the industry and the academia. The Nigerian National Petroleum Corporation (NNPC), Department of Petroleum Resources, the Raw Materials Research and Development Council were among the government agencies that attended the event. Beyond that was the heavy presence of political administrators such as the Governor of Sokoto State, Rt Hon. Aminu Waziri Tambuwal, the Governor of Kebbi State, Senator Abubakar Atiku Bagudu and representatives of Governors of other contiguous States of Katsina and Zamfara States who attended the occasion to assert their political will in realizing the much sought

hydrocarbon prospectivity of the Sokoto Basin.



Vice-Chancellor Usman Dan Fodio University Sokoto, **Professor Abdullahi Abdu Zuru**, said in his welcome address that it is gratifying that the programme is being held to draw the attention of the Federal Government, relevant stakeholders and the general public to the Sokoto Basin and its potentials in the area of hydrocarbon exploration. *"It is indeed gratifying and rewarding that PTDF is bringing together a team of indigenous PTDF inspired and funded researchers and scholars to share their knowledge of the Nigerian Inland Basins in particular and the Nigeria oil and*



From L-R: GM L&SS PTDF Mr Balarabe Ahmed, GM E&T, PTDF Mr. Aminu Galadima, GM SP&D, PTDF Mr. Olajide Adebulehin and other guests at the event



gas sector in general. It is particularly reassuring that the Nigerian National Petroleum Corporation (NNPC) has taken the lead in preliminary exploration of the Basin. This is in line with the Federal Government avowed determination to domesticate the technical, managerial, and commercial activities in the oil and gas sector. We do hope that the Department of Petroleum Resources (DPR) will incentivise National and International companies to invest in the exploration and exploitation of the Basin”.



Executive Secretary, Petroleum Technology Development Fund (PTDF) **Dr. Bello Aliyu Gusau**, said the presence at the forum of the leadership of the North-West region to ensure the success of the programme sends a clear message to managers of hydrocarbon resources in Nigeria and to investors interested in acquiring acreages that it is long overdue for serious activities to commence on the exploration of the vast potentials of hydrocarbon in the region. *“If you come here, the people and leadership of this region are ready to give you their utmost support”*.

One of the key initiatives of the recently approved National Oil and Gas Policy is the harnessing of hydrocarbon reserves in Nigeria’s Frontier Basins. The Ministry of Petroleum Resources is in this regard working with the Department of Petroleum Resources to ensure the full utilization of such Basins.

The Minister of State, Petroleum Resources, Dr. Emmanuel Ibe Kachikwu hinted at the possibility of an Inland bid round by the Ministry in conjunction with DPR this year. He was represented at the occasion



by the Executive Secretary, PTDF, Dr. Bello Aliyu Gusau. *“I am therefore commending this brilliant initiative because it provides an important avenue for learning and knowledge sharing on the great potentials this Basin is likely to offer. The Sokoto Basin is an important Basin with great potentials. Eventual commercialization of this Basin along with other Inland Basins will not only impact on our energy needs as a nation but will also provide an energy pathway beyond Nigeria for other countries who need resources. As you are aware, efforts to realize the potentials of these Basins were initiated a long time ago, before independence. This administration is committed to realising this potential”*.



Although the possible occurrence of oil and gas in commercial quantity in the Sokoto Basin has over the years been shrouded in controversy, the Sokoto State Governor, **Rt Hon. Aminu Waziri Tambuwal** is of the view that the hydrocarbon potentials are high. This according to him is

because the Sokoto Basin is not a stand-alone entity but is part of a larger Lullemeden Basin covering North-West Nigeria, most parts of Niger Republic, Benin Republic, Mali, Algeria and Libya. *“However, commercial deposits of oil and Gas have been discovered and are being produced from contiguous structurally and stratigraphically related rifted Basins of Niger Republic, Chad Republic, Sudan, Uganda, Tanzania and Kenya. Furthermore, almost all the available data on the basin suggest possible presence of some exploitable hydrocarbon resources reservoided deeply underground. Therefore there is the need to engage experts to come up with in-depth credible and convincing data capable of attracting international investment into the Basin”*.

The Governor restated the commitment of the Sokoto State Government to support the Federal Government towards the hydrocarbon exploration in the basin in view of the urgent need for more oil and gas reserves to help in developing other economic sectors. *“The more oil and gas Nigeria can have as recoverable reserves, the better it will be for its national economy and development especially in the light of its multiple developmental challenges. Unfortunately, its proven oil reserves are being depleted at a very fast rate and are likely to become extinct in a couple of decades. Since the Niger-Delta and the offshore regions of the country are largely exploited, further discoveries of oil reserves can only be achieved by exploring the Inland Basins”*.

While the necessity for the



continued search for hydrocarbon fuel attract contrary views considering the global shift from fossil fuel to clean energy fuel, the British Petroleum World Energy Statistical review however point to the fact that fossil fuel as sources of energy are expected to continue to dominate other primary energy sources and will account for up to 60% of the World energy demand up to the year 2050.



Illuminating further on the crude oil and natural gas potentials of Sokoto Basin, the Keynote Speaker, **Professor Mohammed Bello Abubakar**, Director, National Centre for Petroleum Research and Development, Energy Commission of Nigeria, Abubakar Tafawa Balewa University, Bauchi said the feasibility studies so far carried out point to the fact that the Sokoto basin is prosperous and requires government commitment to providing the necessary infrastructure that can attract private sector investment in the project. He identified the challenges to the realisation of these

objectives to include paucity of data due to gross under-exploration of the basin, lack of relevant infrastructure, over dependence on the prolificity of the Niger-Delta and lack of adequate political will.

The way forward, he advised is to carry out a robust and co-ordinated evaluation of the basin, stimulate interest of local and international oil companies on the basin through adequate fiscal incentives and provision of project finance at concessionary rates for developing discoveries made. The Federal and State Governments he said should also provide the necessary political support as well as partner with the private sector and research institutes and universities in Petroleum prospecting, investments and related research and development programmes. He concluded by emphasizing that the Sokoto Basin has potential for both oil and gas especially towards the North-West around the Nigeria/Niger border. The Basin he asserts is grossly unexplored with many unknowns that need to be unravelled through active exploration, while oil and gas exploration efforts should be stepped up in the Sokoto Basin and other Inland Basins in the country.

The Department of Petroleum Resources DPR on its part wants the integration of data on different research works on the Basin in order to develop a framework to characterize the Basin. Mr. Joshua Giwa of the Exploration Service, DPR, revealed the plan to include the Inland Basins in subsequent bid rounds for oil acreages. *“If we must progress our exploration*

and to add reserves in this nation, then, we must give out acreages to investors, and that has to be done through bid rounds and surely the Inland Basins must be included in the bid round. We have been working to ensure that we have reasonable data that can attract investors because that is the only barrier to entry of investors. So DPR is making efforts to gather all available data and present to investors”.

The Department of Petroleum Resources believes that in spite of global initiatives and technological innovations on clean energy and renewables, fossil fuel will continue to be a relevant source of energy in the foreseeable future. DPR therefore welcomes PTDF initiative at organising the Technology Knowledge Sharing Programme to provide insight on the potentials of unexplored sedimentary Basins such as the Sokoto Basin.

“I will also like PTDF to put DPR on their core relationship list. What I mean is that when you get this research result for oil and gas, please ensure that DPR gets copies or volumes because DPR is the final custodian of all this knowledge, so that we can use it to better the industry. DPR can easily advance that knowledge to the industry, than the universities. Universities can use it to further research, but DPR can take it to the industry and that is why it is needed”.

The Department of Petroleum Resources therefore commended the collaborations of government, the academia and the industry towards providing a tripod on which the oil and gas industry can leverage upon to attract the necessary investments required to evaluate and find out the hydrocarbon potentials of the Inland Basins as a prelude to their exploration.

Investigations into the hydrocarbon prospectivity of the Sokoto Basin is not a recent development as oil exploration activities in the Basin began way back in the 1950's. According to the Nigerian National Petroleum Corporation (NNPC), seismic activities in the Basin started in 1957. Speaking on the topic *“building sequence stratigraphic model for the prospecting of hydrocarbons in the Sokoto Basin, insight from Anambra Basin”*



Dr. Noble Nnakenyi, Chief Geologist, Nigerian National Petroleum Corporation said the use of insight from the Anambra Basin, is due to the huge data already existing in the sedimentary basin and the geological connection between the two in terms of structure and stratigraphy. *“We know that a lot of work has been done in the Sokoto Basin, the geological mapping, geochemical study, but there has never been an attempt to do sequence stratigraphic study that will create a model so that when we have every other information and we start drilling, we look at the sub-surface, we will be able to compare the model we have in the surface with what we are seeing in the sub-surface”.*

Other academic and industry experts who presented papers at the occasion gave various perspectives on the hydrocarbon potentials of the Sokoto Basin.



PROFESSOR UMAR ZAKI – PTDF CHAIR OCCUPANT, USMAN DAN FODIO UNIVERSITY

The exercise has excited the tempo to look for oil in the Sokoto basin because the Politicians heard directly from the



experts and the information the experts gave is that hydro carbon is most likely there. The hydro carbon being exploited in the Niger Delta is dwindling, and the country needs more, and the only place to get it is the inland basins. PTDF is facilitating this by bringing together experts from the industry and the academia, to look at the whole system holistically and proffer solutions to it. So it's the PTDF that must take all the credit because they are the initiators and sponsors.



PROFESSOR IBRAHIM BABA GONI – PTDF CHAIR ON BASINAL STUDIES, UNIVERSITY OF MAIDUGURI

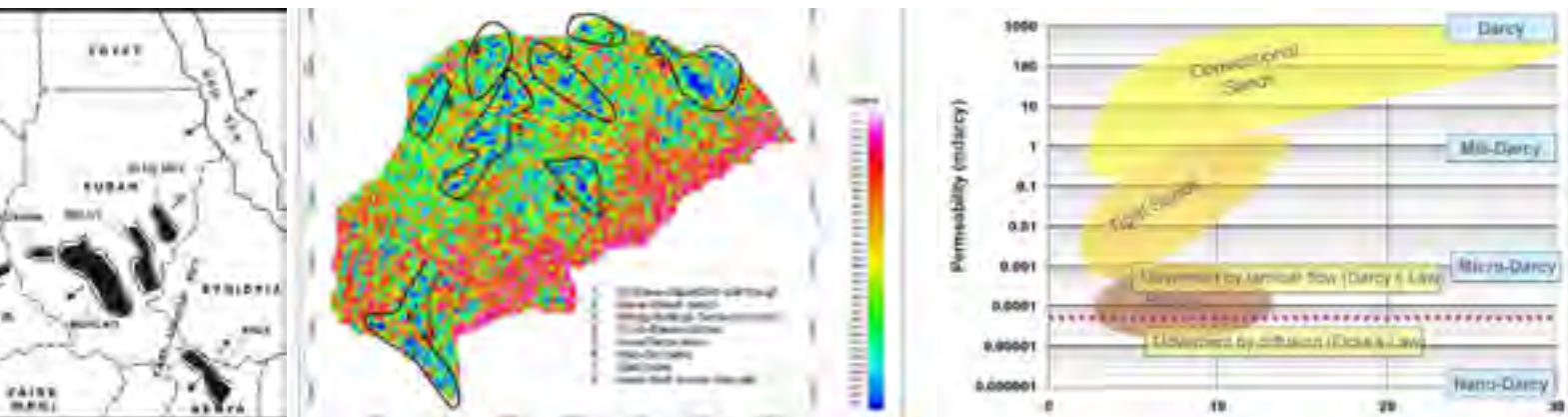
We are largely looking at the works we did or we are doing under the PTDF basinal study at the University of Maiduguri and trying to see how the knowledge can be useful in the exploration of this Sokoto basin, because the Chad basin and the Sokoto basin have a lot of similarities. The Chad basin in terms of exploration is much more ahead of the Sokoto basin. The Sokoto basin is quite an interesting

basin and holds a lot of interest to the governments of the region, and I think some of the presentations are trying to provide a better understanding of the basin and will be very useful if policy makers can pick it up and see how that can be used in furthering exploration activity in this basin.



PROFESSOR MOSTO ONUOHA PRESIDENT, NIGERIA ACADEMY OF SCIENCE

The oil and gas business is capital intensive. The companies are interested in their returns. So it is up to the government, State or Federal, Nigerian companies especially NNPC through its frontier section to prove what is in the basins. Before issuing blocks, they have to spend money shooting what we call *“speculative seismic study”* and analyzing the data. So part of the value of this PTDF Technology Knowledge Sharing Programme is the creation of more knowledge about the basin. There's further need to do a few pilot wells, get them analyzed and the indications will prove prospectivity or otherwise.



DR. BETRAM OZUMBA – OIL AND GAS INDUSTRY EXPERT

Niger Delta has been very well studied and modelled, but the Sokoto basin holds a promise because the major thing in Sokoto, is that it is at the edge of the illumedin basin which is the larger part of the sector that is actually a producing basin in Niger Republic. So what we are trying to do is to match all the characteristics we have seen in Sokoto basin, acquire some more samples and the imaging in Sokoto basin, so that we can be able to compare and drill a few wells in Sokoto basin. The major challenge is, one, Sokoto basin is on the edge of the illumedin basin, so we don't have the whole basin, and the center of the basin is in Niger not Nigeria. Two, The Niger Delta is very prolific, you drill a well, and it gives millions of barrels of oil. So people especially business men and operating companies want to go where it is known. So our challenge in the basin is to study the Sokoto basin and then prove that it is equally as good as the Niger Delta and that we can utilize the

product we would have. We don't have to transport the oil and gas to Niger Delta before being exported. That we will be able to utilize the product of hydrocarbon when we find them in the Sokoto basin, because if the major companies will come, they will want to do a pipeline going thousands of kilometers in order to go to their flow station, to their terminal to be able to export the hydrocarbon.



PROFESSOR SAMUEL AKANDE – PTDF CHAIR OCCUPANT, UNIVERSITY OF ILORIN

This knowledge sharing programme of the PTDF is an eye opener especially with respect to comparing petroleum producing basins and those we consider as frontier basins, particularly the Sokoto basin. You will recall that within the Sokoto basin, some seepages of oil had been reported particularly in the Kebbi area and the question is, where is the oil coming from? Even if it is a bio-degraded oil, we need some analysis that can essentially provide some signals as to the source of such oil

seepages. Since we have producing basins that are of the same age within the West African sub region, migration of hydrocarbons is likely to occur particularly if there is a migration path and structures that are developed during the cretaceous period. There are old structures that are essentially fractures that cut through some of these rock systems because migration will only take place if there is a permeable and porous type of structure through which the liquid can migrate.



ABDULRAHMAN UMAR – PTDF RESEARCH STUDENT (PhD)

Well, the first thing you do when you go into search for oil is to look for the source rock. If you see an oil spill, or oil seepage you have to look for the source rock that expelled that oil. So what we did was to look for that source rock. Sokoto Basin has a source rock, it has the necessary concentration of organic matter of above 4% which is excellent and of worldwide standard. It is excellent source rock, it is gas prone organic



Governor of Sokoto State Aminu Waziri Tambuwal, ES PTDF, Dr Bello Aliyu Gusau and the GM SP&D, PTDF Mr Olajide Adebulehin at the PTDF Exhibition stand during the TKS Conference

matter because it reveals hydrogen index value of above 150. In summary you can say that there is a source rock in Sokoto Basin that can possibly generate hydrocarbon but there are other parameters that need to be considered before a conclusion is reached. PTDF Intervention in Research and Development is excellent, because like me here I can proudly say that without this PTDF grant, I will not be able to complete my PhD research. So with this grant I will be able to obtain my PhD under this programme and for the first time under the sponsored programme by PTDF we are able to generate more data as far as hydrocarbon potential of Sokoto Basin is concerned which was not available before. So, we can say that PTDF has done well with the research grant and it is a very good initiative.

At the end of the programme, participants noted that;

➔ Despite the recent surge towards renewable technologies,

hydrocarbon will remain an important component of the global energy mix in the foreseeable future. Consequently, there is need to increase the nation's proven reserves of oil and gas for local needs and to maintain Nigeria's competitiveness in the global energy market.

- ➔ The Federal Government effort in exploring the hydrocarbon potentials of Nigeria's inland basins is commendable and will surely help consolidate peace and economic prosperity in the country.
- ➔ Compared to other inland basins in Nigeria, Sokoto basin is grossly unexplored and the least studied. Consequently, a detailed understanding of the basin is lacking.
- ➔ Nevertheless, from the preliminary studies so far conducted, the presence of some key elements of the petroleum system in the basin is indicative that the Sokoto basin has potential

for both oil and gas especially towards the North and North West parts close to the Nigeria/Niger border.

- ➔ Massive investments are necessary for effective exploration activities in all the inland basins in Nigeria as indicated by experiences from the discovery of commercial hydrocarbon quantities in various basins in the west African Rift System.
- ➔ The governments of Sokoto, Kebbi, Zamfara and Katsina States have pledged their respective and concerted efforts to ensure that the hydrocarbon potentials of the basin is fully explored and exploited.
- ➔ The PTDF since inception has successfully invested enormous resources in manpower development as well as research grants in addition to sponsoring professorial chairs in relevant areas with a view to enhancing local capacity in petroleum related matters and particularly in

- exploration of inland basins.
- ➔ The ongoing research work on geochemical mapping of the potential source rock of the Sokoto basin headed by Professor U. Z. Faruq and under the sponsorship of the PTDF is a laudable initiative that brings funds and expertise towards achieving common objectives in the interest of the nation.
 - ➔ It is noteworthy that while hydrocarbon potentials of the basin is being explored, attention is also being accorded to the exploitation and development of bioenergy, and other renewable energy sources. This will indeed ensure that the region is a relevant player in the future energy market.

The Conference then recommends that;

1. Federal and State Governments should continue to provide the necessary political support as well as partner with the private sector and research institutes/universities in petroleum prospecting investments and related Research and Development activities.
2. The Federal Government should gear efforts towards stimulating interest of local and international oil companies in the Sokoto basin through adequate local incentives and provision of project finance at concessionary rates for developing any discoveries that may be made.
3. PTDF should extend the funding and timeline of the current petroleum geochemical investigations for a comprehensive spatial and temporal mapping of the potential source rocks in the basin.
4. PTDF should form a consortium of researchers and experts consisting of geochemists, geophysicists, sedimentologists, stratigraphers, structural geologists and other relevant exploration experts to strategize for a robust concerted effort in exploring for hydrocarbon in the basin.
5. As the PTDF has expended a lot of resources in capacity building, the Fund should also look into provision and upgrading of equipment for oil and gas research in order to improve the performance capacity of the highly trained manpower, while ensuring that they are not under utilized for the much needed national development.
6. To significantly improve efficiency in research output, PTDF should partner other funding agencies such as NNPC to form a collaborative network for concerted funding of research and exploration of the inland basins.
7. NNPC should spearhead formation of a joint research network to consist of relevant researchers and institutions from Nigeria and Niger for a synergistic approach in unraveling the mystery of the illumedden basin.
8. DPR is encouraged to acquire all the available data on the Sokoto basin especially from NNPC and PTDF sponsored researches as well as relevant bodies for easy access by investors ■



Governor of Sokoto State RT Hon Aminu Waziri Tambuwal, ES PTDF, Dr Bello Aliyu Gusau and Prof Mohammed Bello Abubakar, Keynote speaker at the event

RESEARCH AND DEVELOPMENT INTERVENTIONS

Promoting Research to solve Oil and Gas Industry problems

PTDF supports Research in various universities by endowing Professorial Chairs in oil and gas related departments as well as award Research Grants to academics for research in identified areas of contemporary significance to the oil and gas industry. Breakthroughs from these are directed at solving oil and gas industry problems and contribute to the oil and gas value chain in Nigeria.



RESEARCH BREAKTHROUGHS FROM PTDF ENDOWMENT PROGRAMME

- **Development of Zeolite Y Catalyst from locally sourced Kaolin**
Benefit: Improved Production of Petrochemicals, Improved refining capacity of heavy crudes in-country; reduction in cost of importing catalysts for petroleum refining.
 - **Design and production of bio-diesel from non-edible seed oil**
Benefit: Increased investment potential in the non-oil sector, Improved Agro based activities in the production of non-edible seed.
 - **Design, Fabrication & Installation of Flow Assurance meter using locally sourced materials; Development of gas domestication Model for Industrialization.**
Benefit: Reduction in man hour loss and community agitation from gas flare and environmental degradation
 - **Development of indigenous oil well cement using local materials for oil production, refining and environmental management in-country.**
Benefit: Effective utilization of affordable local materials for oil production, refining and environmental management in-country
- MOST OF THESE RESEARCH BREAKTHROUGHS HAVE RECEIVED INTELLECTUAL PROPERTY RIGHTS

RESEARCH BREAKTHROUGHS FROM PTDF ANNUAL OIL AND GAS RESEARCH GRANT COMPETITION

- **Database for wellbore stability management in the Niger Delta**
Benefit: Software developed for use in wellbore stability study, Optimization study of well spacing and management in the Niger Delta; Job creation and high revenue windows
 - **Control of fines migration in reservoirs using Nano-Particles**
Benefit: Practical reservoir optimization study, useful for Nano-material selection and development in-country, Job creation and risk reduction in upstream operation
 - **Production of fuel briquettes and bio-gas from water Hyacinth-cow dung mixture for domestic and agro industrial application in Nigeria**
Benefit: High potential for marine waste management and wealth creation, job creation, and investment in agro-allied industries.
 - **Immobilized oil Degrading Micro- organisms in local cellulosic materials for rapid deployment in Bioremediation of Petroleum contaminated soils**
Benefit: Production of reactor for rapid deployment of Bio-enzymes for bioremediation of polluted sites
- MOST OF THESE RESEARCH BREAKTHROUGHS HAVE BEEN PATENTED

ONGOING RESEARCH:

- **Engineering Design and production of oil and gas facilities using plastic reinforced with plantain fibers.**
Benefit: production of HP, PVC pipes from local fiber materials necessary for Nigerian Content Development.
- **Development of Zeolite catalyst from light Alkanes Aromatization.**
Benefit: Increased refining of heavy crude, reduction in the cost of importation of zeolite.
- **Modelling well-bore stability by chemical method using the Niger Delta as case study**
Benefit: Use of locally formulated drilling fluids and well head cement in operation, Reduction in cost of importation.
- **Evaluation and Control of Wax Deposition during Production of Crude Oil in an identified Niger – Delta Waxy Oilfield**
Benefit: Determine wax deposition factor and increase accuracy on wax envelope



PETROLEUM TECHNOLOGY DEVELOPMENT FUND

PTDF ...committed to increasing local capacity in the oil and gas industry.



PTDF SHOWCASES ITS RESEARCH BREAKTHROUGHS AT FIRST NIGERIA OIL AND GAS INDUSTRY RESEARCH AND DEVELOPMENT FAIR

The Nigeria Oil and Gas Industry Research and Development Fair and Conference which held in Lagos presented the opportunity for PTDF to showcase the innovative products and solutions that resulted from its Research and Development interventions in the oil and gas sector. This is with the expectation that end users, financiers, and other industry players will invest in the

commercialization of these research outcomes, five (5) of which have already received intellectual property rights and patents.

Five (5) others are at different stages of securing the patent certificates, a crucial step to the development of product-to-market, and the commercialization process involving investors and entrepreneurs.

PTDF therefore took to the Research and Development Fair - samples of products and information kits on its new inventions based on the following research outcomes:

- Development of a viable technology for the production of bio-diesel from oils of non- edible seeds
- Development of Zeolite Y Catalyst from Kankara Kaolin



Dignitaries at PTDF Exhibition Stand during the research Fair. They include Senator Omotayo Alasoadura, Senate Committee (Petroleum Upstream), Rep. of Ministry of Petroleum, the ES NCDMB Engr. Simbi Wabote amongst others

using novel processing techniques

- Production of Fuel Briquettes and Bio-Gas from water Hyacinth Cow Dung Mixture for domestic and industrial application
- Control of Fines Migration in

- Reservoirs using Nano- particles
- Development of stress detection software on database for well bore stability management in the Niger Delta.

To leave no one in doubt as to the viability of the research findings,

the Fund's lead researchers were in attendance at the Research and Development Fair to speak directly to interested investors and stakeholders on the relevance of the research products, and their impact on the oil and gas industry.

DEVELOPMENT OF A VIABLE TECHNOLOGY FOR THE PRODUCTION OF BIO-DIESEL FROM OILS OF NON-EDIBLE SEEDS

Thomas Okpo Kimble Audu is a Professor of Chemical Engineering and Professor Emeritu, University of Benin. He was the PTDF Chair Occupant on Renewable Energy and lead researcher on the development of a viable technology for the production of bio-diesel from oils of non-edible seeds. The research achieved the following milestones:

- The production of bio-diesel fuel that meets international testing and measurement standards and properties in terms of density and calimatic viscosity. The bio-diesel fuel can be applied to stand alone generators, and compression ignition engines that originally used fossil fuel diesel.
- The design of a solar photo voltaic assisted bio-diesel plant to



- produce the bio-diesel
- The design, construction and testing of a solar energy powered

- seed extractor that extracts oil from the seed
- The production of a polymer



A cross section of participants at the Lagos Research Fair

heterogenous catalyst.

- On human capacity development, the research work produced three (3) PhD scholars who are now imparting knowledge in the University of Benin and Auchi Polytechnic as senior lecturers; 14 Masters of Engineering graduates, and 14 publications.
- The Production of Glycerol a by-product of biodiesel that is applied in the pharmaceutical industry.

In this interview Professor Audu speaks on the research work and his relationship with PTDF;

Q: Give us a brief background of your professional relationship with PTDF?

A: My association with PTDF started in December 2009, when I was appointed to the chair of the PTDF at the University of Benin. In the process I worked on the development of a viable technology for the production of bio-diesel from oils of non- edible seeds. I have been able to design a plant that can be replicated for teaching of bio-diesel production. Also in the course of the research work, I supervised 14 Masters and 3 PhD holders. The 3 PhD holders are now senior lecturers in the university of Benin and Auchi polytechnic. I

have also in the course of the study developed a polymer heterogeneous catalyst to reduce the activation energy for the reaction of the oil with primary alcohol. I have also designed a solar powered oil extractor from seeds. So honestly my association with PTDF has been very fruitful, it has granted me the opportunity to develop in my area.

Q: How exactly is this research significant to the oil and gas industry?

A: The derivable benefits include the introduction of renewable bio fuel, renewable in the sense that when we talk about climate change, we are talking about pollution, we are talking about Co2 emission, we are talking about a lot of things that affect human life, and the introduction of bio- diesel means that we can gradually replace fossil diesel with bio diesel which is a renewable fuel derived from seeds.

We have been able to produce the finished product which is bio diesel that meets the ASTM, Dc751 and EN142- 14 requirements which specify the various properties that such fuels should have. These properties include density, the calimatic viscosity and the flash point,

and we have also designed a solar photo voltaic-assisted pilot bio- diesel plant to produce the bio- diesel. Also in the upstream process, we have designed, constructed and tested a solar energy powered seed extractor that extracts the oil from the seed. Also we have produced a polymer heterogeneous catalyst, because we require catalyst to hasten the reaction by reducing the activation energy.

Q: How is this fuel applied? Is it for vehicles or engines or what?

A: The fuel can be applied for stand-alone generators, and engines that use diesel or that originally use fossil fuel diesel.

The bio-diesel, which is produced from jatropha curcas seed oil can be used to power compression ignition engines. The advantage is that, it is an oxygenated fuel, so it does not have problem with the production of sulphur dioxide and I believe that with more effort we should be able to commercialize the plant. It has been tested and has received the American Standard for Testing of Materials certification.

DEVELOPMENT OF ZEOLITE Y CATALYST FROM KANKARA KAOLIN USING NOVEL PROCESSING TECHNIQUES

Another unique invention resulting from PTDF intervention in research through its Professorial Chair endowments in universities is the development of Zeolite Y catalyst from Kankara Kaolin.

This is an important chemical substance used in petroleum refining and for a variety of applications in the petrochemical industry. The major raw material used in the development of the product is the Kankara Clay, obtained from Kankara Local Government Area of Katsina State. Professor Abdulkarim Ahmed, the immediate past PTDF Chair in Chemical Engineering, Ahmadu Bello University, Zaria led the team of researchers that successfully produced the Zeolite Catalyst which has gained intellectual property right and patent certification.

“The uniqueness of this breakthrough is that we were able to produce Zeolite Catalyst from local raw materials, in particular Kankara Kaolin which after testing was found to have outperformed the ones that are available commercially”.

Already a pilot plant for the production of the catalyst is up and running in the university and what is required is the commercialization of the product.

“The Zeolite Catalyst is presently used in fluid catalytic cracking units of refineries. Naturally, crude oil is a physical mixture of hydrocarbons, so it has been found that the range of hydrocarbon that is suitable for gasoline is in very small quantity, and you have the heavy fraction. So the heavy fraction can be broken down into the gasoline component when we utilize the zeolite catalyst, so it is very important in increasing the yield of gasoline from petroleum crude”.

When finally commercialized, the Zeolite Y catalyst will create many advantages to the operations of the oil and gas industry. One is cost reduction in crude oil refining, and more Nigerians will become resourceful in the theory and applications of Zeolite catalyst.

Professor Abdulkarim Ahmed gave further insight on the catalyst in this interview;



Q: Has the product received any form of international certification or recognition outside Nigeria?

A: No. We are still in the process and if we are able to get international patent for this research it will go a long way in giving us international recognition and promote the timely development.

Q: Has the product been sent abroad for testing and characterization?

A: As for testing yes. We have done it, we have sent the material to South-Africa, we have also sent it to Oman, and we also tested some of the materials in other parts of the world. In South-Africa for instance, it was found to be a good material as well as in Oman, but we have not yet been able to get all the materials that will lead to international patenting.

Q: Do you have any other information to share with us, regarding the Zeolite Catalyst?

A: Apart from Zeolite Y Catalyst which was produced in the pilot Plant, we can also produce Zeolite M5. For instance this Zeolite when combined together outperforms the present zeolite that is used in the industry especially the one used by the Kaduna refining and petrochemical company of Nigeria. There are some intermediate products that are very important, for instance,

you have meta-kaolin, amorphous silica, sodium silicate, silica salt and alumina. Some of them are of very high demand in local industries. For instance, from the amorphous silica, we can produce many materials such as silica salt and sodium silicate. It is cheaper and of great demand by the industry. Then we have the alumina hydroxide from which we can produce many things. Presently it is sourced from bauxite but we don't have bauxite deposit in Nigeria in commercial quantity. But if we produce it from kaolin, it will become very cheap. It will be an alternative source of alumina which is needed greatly in the country. We also have Meta kaolin. It is used as a catalyst support not only for zeolite but also for some other types of catalysts. So these are the intermediate products which will also have commercial value and will contribute in making the zeolite catalyst production to be cost-effective.

Q: What are your views about PTDF sponsorship of research?

A: I think at the moment, PTDF is one of the best sponsors for research in Nigeria but it can do more because abroad a lot of money is given for research. PTDF should not relent, it should continue to sponsor research in this way.

PRODUCTION OF FUEL BRIQUETTES AND BIO-GAS FROM WATER HYACINTH COW DUNG MIXTURE FOR DOMESTIC AND INDUSTRIAL APPLICATIONS

The water hyacinth is an aquatic plant whose invasive nature and proliferation has caused serious environmental problems particularly on water bodies because of its uncontrolled spread across the water surface. The cow dung is the waste product of domestic cattle that is often used as manure.

PTDF sponsored research has led to the production of fuel briquettes and bio-gas from water hyacinth cow dung mixture for domestic and industrial applications.



Dr. Frank Oroka of the Department of Agronomy, Delta State University, is a PTDF research fellow on the project; “*Water hyacinth as alternative renewable energy*”. He gave an insight on the subject matter of his research and the breakthrough recorded.

Q: What is the relevance of the research to the oil and gas industry?

A: Yes, the oil and gas industry is a source of energy and we also have to go beyond that source of energy, we have to look for alternative energy, and that is where the renewable energy comes in, so we have bio resources around us that are largely under-utilized. For example, water hyacinth is abundant in our various rivers, it is not used and is even

an environmental threat, and so how do we turn environmental threat to solve another environmental problem of deforestation, that is why we now pick up on this material that is all over our rivers, to use it as an alternative energy. That is why it is relevant.

Q: What is the status of the research?

A: Yes, the research has been able to come out with a product that we call fuel bricket, and the product itself has already been patented, and it's purely funded by PTDF?

Q: What impact will this have to the industry?

A: From the oil industry you have kerosene that is used by the common man to do several things, you even have gas too, also used. Fuel bricket can also do the job of providing energy because it is combustibile, you can use it to cook and you can use it to heat your house, you can use it in the bakeries for various activities. So you can see that, it's a major product.

If commercialized, it can be another source of income. Fuel bricket is not only used in Nigeria, it is used in many parts of the world, so if it's well commercialized, it can be another product that can be exported in addition to the crude oil product.

Q: What advantage does this product have over existing energy sources?

A: The advantage of this is that, it is not exhaustible in any way because the materials are available. The other part is that, it's cheap. While some of the current oil sources can be expensive or not even available in rural areas, fuel bricket can be produced and can be sent to anywhere no matter the location and it can be used by any person.

Q: What is your opinion about PTDF research interventions?

A: I want to say that PTDF is a well-organized organization in Nigeria, and in the context of my experience I observed that, there are other organizations that you can say you will get funding but at the end you don't really get the fund, but PTDF does what it says, the moment your fund is approved, they ensure that they fund the project to the end and see to the success of the project.



There is no doubt that the product of this research which is fuel briquette as an energy source is very relevant to contemporary living. It has the advantage of being highly combustible and will be very much in demand. But the issue of commercializing the product is germane to the realization of the main objective of the research which is to stop deforestation through the felling of trees for cooking by locals in communities in the sahelian

region in particular that are prone to desertification and in some areas of the eastern region prone to erosion problems.

According to the researcher, to fully commercialize the product, a number of things need to be done.

“Number one, a bricket machine, and within Nigeria so many individuals in various institutes have already developed simple bricket machines. The raw materials are also available. You

simply get the water hyacinth plant, you get it dried and when you are through with drying, you mill it with a common milling machine into minute particles, then you can now get your cow dung, cow dung is a binder, the moment you mix cow dung with water hyacinth and compress with any simple bricket machine, it will give you a good product that when properly dried, it can easily burn and you use it to cook anything you want”.

CONTROL OF FINES MIGRATION IN RESERVOIRS USING NANO PARTICLES

Migrating fines create peculiar problems to reservoirs apart from its impact on the environment. The extent of the problems identified by this phenomenon in the operations of the oil and gas industry include environmental degradation, permeability impairment, erosion of screens, reduction of storage capacity, damage to production equipment, loss of production time, increase in cost of production, hindrance to flow assurance, well bore installation and reduction of well productivity.

PTDF funding of the research work on *“control of fines migrations in reservoirs using nano-particles”* is part of the desire to find solutions to specific industry problems using research. The project has progressed to the point of acquiring intellectual property rights.

Professor Mike Onyekonwu from the University of Port-Harcourt is the lead researcher of the project which commenced 4 years ago. He speaks on the research project.

The oil and gas industry uses a lot of equipments, and sand is not a friend to any equipment because it causes wear and corrosion. So if there is a way we can stop fines from coming out, it will be done, and what we actually experimented with is novel. Nobody has ever done that before. Though nano technology is also



something new, you may not believe how reducing the size of an element or particle to small size can transform the properties of that particular thing. So what we did was to boost the nano particle in a solvent and inject it into a reservoir. This will cause the fines not to move the way they were moving before. So it is something that is new. But one issue we have to understand is that, the nano particles we use are imported. So there's a new research on how to produce nano particles in Nigeria. The solid mineral materials are there; we just crush them and get nano particles so that's what we want to do. If we just start using nano particles by importing them, it means we have not done anything, so we have to produce the nano particles here, so that we can have enough

to use in solving the fines migration problem in the oil and gas industry.

Q: PTDF through its research interventions wants to contribute in solving specific industry problem. How would the research achieve this objective?

A: If you allow your system to continue to produce sand, the sand will cause wear and tear and the sand will also create corrosion. So what we are trying to do is to stop the sand from coming out. The sand comes out as a result of flow from the reservoir. We are also talking about clay and all kinds of formations. So if we can stop the sand in-situ, I think we will go ahead to solve the problem.

Q: What is the status of the research, is it patented?

A: Yes. We have a patent for that. The laboratory work has been completed and that is why we have a patent, but now we need to go to field trials. If it works, are we going to start importing the nano particles again? That is like trying to solve A and you created a bigger problem. So the best thing is to have funding to help us produce nano particles in Nigeria.



DEVELOPMENT OF STRESS DETECTION SOFTWARE ON DATABASE FOR WELL BORE STABILITY MANAGEMENT IN THE NIGER DELTA

A major concern of Petroleum Engineers involved in oil well drilling activities offshore and onshore is the issue of well failures through cave-ins after much work had been done on the drilling. In this case, apart from the loss of man hours, huge resources in terms of capital and equipment are lost.

A PTDF sponsored research is providing innovative solutions to the problems through the development of stress detection software on database for well bore stability management using the Niger Delta region as case study. The research undertaken by a team of researchers led by Professor Adewale Dosumu of the Department of Petroleum and Gas Engineering, University of Port-Harcourt, addresses the high cost of wells constructed in the Niger-Delta as a result of hole instability, the uncertainties in the determination of sub surface stress for well planning, cost over runs due to hole problems, inadequate subsurface data for complex well trajectories and the absence of the Niger-Delta data on the world stress map.



Engr. Chimaroke Anyanwu is a PhD student and lecturer in the department of Petroleum and Gas Engineering, University of Port-Harcourt. He is a research assistant on the project under the supervision of Professor Dosumu. He gives further insight on the research project.

“The issue here is that, when we drill we see a lot of uncertainties. Based on our encounters with some companies, we realized that when we are drilling wells, we experience issues of caving in, we lose some of our tools, sometimes we have done more than seven thousand feet of hole and you lose the entire section, your well caves in and it is because we don’t have enough information. You are almost drilling blind. There is a link between the stresses of the formation and the behavior of the formation in being able to hold these stresses. So we now looked at the fact that, most companies don’t have this information on the stresses at play such as the vertical stresses, the horizontal stresses, and what inclination do you channel your well to prevent this collapse. So we came up with a data base that allows you to know which ever zone you are drilling within the Niger Delta region, you know the stresses at play, so you can plan your co-ordinates to prevent this collapse. It updates itself as you get more information. Whichever location you are drilling, which ever block, whatever dimension you are drilling, whichever oil well, all you need to do is to log on to the database and get the information that you need and with that you can plan your well better and save a lot of cost”.

The patented research work has the objective of reducing drilling cost, enhance mud weight production, mitigate hole instability and address environmental concerns related to the issue of loss of radioactive materials in the hole.

Q: Let’s bring home the relevance of this research, what kind of losses had occurred before this research?

A: Yes. We are talking of millions because when you look at your rig stress, you can be doing may be, 120,000 dollars a day, and when you look at this cave-ins, sometimes you

are spending 1 week, 2 weeks and you are not out of hole, that is one, and again when it caves in, you are abandoning some radioactive tools also, you look at the environmental concerns, you look at the cost in terms of downtime, and again look at the equipment cost. And for us in Nigeria, as a major contributor in terms of our Joint Ventures and all that, we are paying a lot on this cost, and that’s when you don’t have enough information. We are not able to achieve our target, sometimes we have about three wells on the first one you have already lost and you look at your economics and you are so down. So we now came up with ideas on how we can do this.

Some of our operators are able to launch into this and get information and are able to save cost. So we are looking at cost and reduced time because for us in drilling, time is money. So you reduce the time, you reduce the loss of tools and you reduce the cost in terms of millions of dollars, and again it gives you better predictions.

Q: Is it online or something?

A: Yes. We have actually moved online, but we have not opened it because we still have to work with PTDF to make sure the regulatory bodies and everyone concerned are involved. We even have it now on google map. So it will update itself once your well data is there. It also gives you the number of wells that we have.

The Exhibition of products of PTDF Research breakthroughs and outcomes was under the auspices of the Nigeria oil and gas Industry Research and Development Fair organised by the Nigerian Content Development and Monitoring Board (NCDMB) in Lagos. The objectives include to identify and promote the activities and efforts of indigenous researchers, inventors, innovators, start-offs, and technology developers, and to showcase the success of indigenous companies and agencies such as PTDF that are



engaged in research and development activities to facilitate patenting and commercialization.

In justifying the hosting of the Fair, the Executive Secretary Nigeria Content Development and Monitoring Board (NCDMB), Engr. Simbi Wabote, said that research is the driving force of a credible and sustainable local content practice. He identified other parameters to include regulatory framework backed by appropriate legislation, structured capacity building interventions to spur domiciliation of capabilities in-country, periodic gap analysis to determine gaps that needed to be closed in the areas of skills, facilities and infrastructure and regular reviews of manpower targets to guide decisions on training and education investment.

Executive Secretary, Petroleum Technology Development Fund (PTDF) Dr. Bello Aliyu Gusau made a presentation on “*growing research and development through institutional support*”, at the forum. According to him, the approach of PTDF to supporting research and

development draws from its new strategic direction of repositioning the Fund to be a major source of cutting edge research for the Nigerian and the global oil industry.

The five PTDF research enablers as listed in his presentation include PTDF Endowment Programme, PTDF Annual Oil and Gas research grant, Petroleum Technology Development Journal (PTDJ), the PTDF Technology Knowledge Sharing Programme and the PTDF Local and Overseas Scholarship Scheme.

PTDF endowed eight (8) Professorial Chairs in selected universities to advance indigenous research in petroleum and related disciplines. These are Petroleum Geology at the University of Nigeria Nsukka; Chemical Engineering at the Ahmadu Bello University, Zaria; Renewable Energy University of Benin; Petroleum Engineering, University of Ibadan; Gas Engineering at the University of Port-Harcourt; Petroleum Chemistry at the University of Sokoto; Geology and

Mining at the University of Jos; and Basinal Studies at the University of Maiduguri.

PTDF Executive Secretary whose paper was presented at the Forum by the General Manager, Strategic Planning, Research and Documentation Department (PTDF) Mr Jide Adebulehin, said that Research and Development is pivotal to birthing the technologies required for the development and smooth operations of the oil and gas industry while institutional support is fundamental to sustaining Research and Development for the growth of the oil and gas industry and the nation’s economy.

“PTDF pioneered Research and Development in the oil and gas sector as a public institution 17 years ago. We did not only do that, we also provided the enabling environment for researchers by engaging in upgrade of physical facilities in universities where the lecturers work. By so doing, we have married research and facility development together” ■



PTDF Staff and Researchers in a group photograph at PTDF stand during the research fair



HUMAN RESOURCE:

AN IMPERATIVE FOR THE GROWTH AND DEVELOPMENT OF THE OIL AND GAS SECTOR

PTDF Executive Secretary addresses OGTAN Education Summit

In what seems like a departure from the general notion of oil reserves, acreages, pipelines, refineries, filling stations as the sign posts of the oil and gas industry, the Executive Secretary, Petroleum Technology Development Fund (PTDF) Dr. Bello Aliyu Gusau instead believes that developing the human resource required by the industry is the single most important driver of the growth and development of the sector.

Speaking on “*Developing Capacity for the oil and gas industry-going forward*” at the first National Education Summit organised by the oil and gas Trainers Association of Nigeria (OGTAN) in Lagos, Dr. Bello said that advances in artificial intelligence, automation and human-machine interaction has not reduced the status and primacy of people in the running of oil and gas business. Human beings he said are central to the development, performance and sustainability of resource and tools deployed in the industry. Efforts must therefore be stepped up to recruit talented oil and gas graduates to the industry and increase interest among current employees to sustain existing human resource pool.

“The question then becomes what can we do to ensure the development of the critical mass of human resources to satisfy the needs of the oil and

gas industry and to then ensure the sustainability of Nigeria’s local content aspirations”.

The PTDF Executive Secretary identified the major obstacles to the development of the critical mass of human resources required to satisfy the needs of the oil and gas industry to include absence of acceptable platforms for the development of skills and capacities for the industry, lack of effective co-ordination and silo approach to the development of quality education and training. “*The major challenge in sustaining local content through quality education and training would lie in the available prospects for co-ordinating the various and varied approaches to the identification and determination of the acceptable platforms for the development of skills and capacities for the industry*”. Interventions in research, development of human capital which run into billions of dollars annually are according to him undertaken by different players based on their determination and needs. He condemned the absence of a co-ordinated human capacity development agenda which manifests in the silo approach to the development of quality education and training

He cited as example the fact that most Exploration & Production players in Nigeria offer different scholarship programmes just as PTDF, which is

statutorily mandated to build human and institutional capacity in the oil and gas industry. So do State governments and other government agencies at all levels.

“There is hardly any acceptable data base of the skills or a hand book of the educational development requirements to fill identified human capacity gaps. While government agencies in the oil and gas, education and national planning sectors are all engaged in different aspects of determining education and skills requirements, private players in the industry are also doing the same to the extent of their needs and operational requirements”.

According to PTDF Executive Secretary, the solution to this lack of parity between national education and training interventions and the skills and competency requirements of the local oil and gas industry, which creates impetus for human capital importation lies in the determination and creation of a single national platform for the co-ordination of all collaborative activities geared towards the development of education, and human capital by relevant players in the industry. This he said will ultimately lead to the provision of the skilled human capital resource requirement of the Nigeria oil and gas industry and to the sustenance of local content through quality education and training ■



UNLOCKING THE POTENTIALS OF GAS FOR NIGERIA THROUGH CAPACITY DEVELOPMENT

The creation of a Gas Technology Development Division by the current leadership of PTDF is indicative of its renewed determination to provide the relevant local capacity required to achieve governments renewed focus on gas. PTDF is in this regard developing and implementing strategies towards building human and institutional capacity to support government vision of moving Nigeria from a crude oil export-based economy to a gas-based industrial economy.



According to **Dr. David Ige**, Chief Executive officer of Gas Investment

Limited, it is clearly an opportune time for PTDF to begin to re-align specific capacity development for gas both at individual and institutional levels. Such capabilities include gas exploration, production and commercialization as well as gas processing and conversion technologies “Gas is an evolving sector in Nigeria and in the world generally, we have seen significant growth over the last ten years, we expect that gas will take centre stage in the next years to come. Unfortunately, we have been an oil country and so a lot of our capacities

are essentially built around the oil industry as opposed to gas industry”.



In justifying the increased attention to gas training, PTDF Executive Secretary, **Dr. Bello Aliyu Gusau** argues that Nigeria’s inability to harness and optimally utilize its gas resources is due to lack of adequate manpower needed to drive the exploration, production and utilization of the gas value chain.

Addressing a gathering of gas stakeholders at a Forum in PTDF, Dr. Gusau said that as a capacity building agency of government, PTDF is making conscious efforts to address these challenges. This the Fund is doing by identifying the manpower gaps in the gas value chain and work towards addressing them.

“The way I see it is that, we did not address the great question of the critical manpower that is required to bring all this together. You can have reserves but you may not be able to work on these reserves. You can put in the best and most perfect regulatory framework but somebody has to manage it. You can import the most cutting edge processing facilities and put them in place but there has to be somebody to manage that. A simple truth is that we have not really adequately addressed the need to develop the critical mass of manpower that is required to animate this industry. We in PTDF are just coming to terms with that reality; we looked at the scale of what is required in the gas value chain, from upstream reservoir analysis to specific gas exploration, the downstream processing network, the transportation facilities and even the utilization end. So, as we are thinking of the commercial framework, the regulatory framework and all the other initiatives, we should

advert our minds to the kind of people that we need to run all these things”.

The direction of the Executive Secretary PTDF finds support among the Gas experts who participated in the stakeholders forum on Gas.



According to the *Chairman Gas Association of Nigeria, Engr. Dada Thomas*, the gas industry requires skilled manpower, technical capability and managerial skills to be able to develop the estimated 187 Cubic feet of gas. *“So I think PTDF has a natural role in helping Nigeria and the Nigeria Gas industry to train those hundreds and thousands of individuals who will man the companies, engineering companies, operating companies, even the chemical companies working together to unlock the potentials of gas in Nigeria. If you have all the money, if you have all the processes and you don’t have the right human being, you will get nothing done, but if you have the right human being manning and managing the process, you can achieve anything. So your role in PTDF is extremely critical and essential to the success of unlocking gas for Nigeria”.*

PTDF is already working towards realizing these objectives by designing a roadmap for domestication of gas training to achieve the human capital requirements to implement the National Gas Policy. The Fund is also going into partnership and collaboration with relevant gas associations, government agencies, private organizations and the academia to position PTDF gas training facilities as Premier Centers of Excellence for in-country training in gas technology and skills development.

The Gas Association of Nigeria with 80 companies and over 2,000 highly skilled professionals is one

If you have all the money, if you have all the processes and you don’t have the right human being, you will get nothing done, but if you have the right human being manning and managing the process, you can achieve anything. So your role in PTDF is extremely critical and essential to the success of unlocking gas for Nigeria.

- Engr. Dada Thomas
Chairman, Gas Association of Nigeria

of such collaborating entities. Its chairman contends that capacity is needed for each segment of the gas value chain *“Every sector of the gas value chain, from the upstream to the midstream, to the downstream is important; you must build up human capacity for every sector because if you don’t, if one of the parts of the chain is weak, everything else will go down the drain. So you have to concentrate on developing human capacity for the upstream to make sure that they can go and exploit, produce and develop the gas, you have to focus on the same thing in the midstream so that people can build*



pipelines and operate those pipelines properly and of course you have to also focus on the downstream where you look at many industries that use gas as raw material, whether a fertilizer plant, a petrochemical plant or a compressed mini natural gas plant”.

PTDF has equally engaged the gas production company of Nigeria to build capacity for targeted projects in the gas value chain. Such projects include the Ajaokuta-Kaduna-Kano Pipeline Project (AKK), the Zaba-Zaba-Etan Development project, the Egina project and the gas master plan.

“We are trying to partner with people who are at the Centre of the gas industry like the Gas production company”, says Usman Pindar, Manager Nigeria content and industry collaboration department. “We try to work with the project owners and the project drivers to see how much of it we can drive. In the gas area, the AKK which is government owned and driven is to provide the gas pipelines for Lokoja, Ajaokuta, Abuja, Kaduna, Kano. Hopefully, that will signpost the commencement of the gas revolution for Nigeria because gas is the way of the future. PTDF is looking at the skills and competences that it can provide in partnership with the drivers of these projects”.

Some of the resource persons and participants at the stakeholders forum on gas hosted by PTDF gave various perspective on how Nigeria can take advantage of its vast gas resources which are largely untapped.



An area of concern to **Engr. Obi Okoroafor**, the Group Managing Director of Huba Group is that government has not shown sufficient

interest in addressing the issue of gas as something that can grow Nigeria’s Gross Domestic Product through a clear fiscal policy.

PTDF according to him has a significant role to play in domesticating the manpower and technology requirement for effective gas utilization. *“PTDF can help by insisting that for every project out there that we don’t have the capacity in-country. Nigerians should be trained to take care of it in future. There have to be clear timelines, we still have to import a lot of technologies and skills because people insist that Nigeria does not have the capacity”.*



Nigeria as a gas country can do a lot with its vast gas resources. The opportunities according to **Sadiq Mai Bornu**, Deputy Managing Director, Nigeria Liquefied Natural Gas, include LPG, gas to power and the promotion of gas based industries like fertilizer, cement and others. All these value chain for gas require adequate local capacity to manage. *“I give an example; if you take Abuja where you have housing estates, you are going to put pipes/piping of houses to supply LPG to them, that means you are creating jobs for people. So you need to have people that have basic plumbing skills for water piping and a specialist who will do piping for cooking gas that is pressurized and dangerous, so there are certain standards that come with it which are much higher. I think PTDF can train people to fit into these jobs. For example, LPG can be used in vehicles as energy instead of fuel; you have to put the kit in the car through conversion process. PTDF can also*

train people on that. We have a lot of people who are not employed and when such skills are developed, people can use it to find employment in the industry. PTDF can start by training the teaming unemployed youths to have basic skills in doing conversion kits and piping, fixtures, servicing, inspection and so on”.



The Principal, Petroleum Training Institute, Effurun, Delta State, **Professor Sunny Iyuke** is concerned that Nigeria is importing expatriates to do the work which Nigerians can do. *“We pay a lot to bring these people. There are qualified Nigerian who can do the work, but expatriates are doing it”.* A way out he said, is for government to invest more on capacity building Institutions while international oil companies should be compelled to develop the skills and competences of their local Nigerian workers in order to take over some of the jobs being handled by non-Nigerians.

“The skills are required everywhere, I look at it as a cycle, upstream without downstream is nothing or vise versa, so I think it should be everywhere, upstream, midstream and downstream. PTDF, NCDMB and PTI including universities should work together to ensure that we have the skills here, we need to develop it, we need to harness the values that we can pick from even the graduates we produce here. So to me, PTDF is doing the right thing” ■

OVERVIEW OF THE NIGERIAN GAS SECTOR

BY DR DAVID IGE, CEO GASInvest LIMITED
PRESENTED AT THE 2ND PTFD QUARTERLY LECTURE SERIES

Natural gas is perhaps the fastest growing fossil fuel in the world today. Fossil fuels basically comprise natural gas, crude oil and coal. Over the years, there's been a gradual evolution actually from the bottom upwards. Coal was dominant in the past, gradually crude oil came in and took over. But natural gas from 1980 started to gain a massive access and today constitutes almost 30 per cent of the global energy mix in terms of use, and its growth has been the most aggressive over the last few years both globally, but also in a country like Nigeria. The narrative is beginning to shift from talk about crude oil more to talk about natural gas because that is indeed the fuel of the future.

So, what exactly is natural gas? Different people give it different interpretations. People think is it the gas in my house that I use in the LPG bottle, what really is gas? Gas is basically a combustible mixture of several compounds or molecules. So, it's not just one thing inside gas; there are a couple of things. For example, when you look at crude oil; crude oil is actually a combination of diverse sub-crudes so to say. That is why when you take crude oil to the refinery, you are able to get kerosene, petrol, diesel and so on out of it. The same thing applies to gas. It's a complex mixture of different kinds of hydrocarbon molecules and just like crude oil and coal; it is derived from decomposing organic matter. The most dominant component in gas naturally is methane and methane varies in proportion usually between 70 to 90 per cent. Methane actually is the natural gas, but it's used carelessly to describe gas generally. Methane is the dominant bit, but there are other components.

When you talk about the efficiency of combustion, natural gas has the best efficiency

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compared with crude oil or coal and that is why it has become very popular lately. It is environmentally friendly and that's because when you burn natural gas, it produces very little sulfur dioxide or nitrous oxide which are basically the main pollutants of the environment and contribute to the ozone layer depletion. So gas has become very, very popular because it is an efficient and cost effective fossil fuel.

When you take gas from the ground and into a process plant and break it down into its components, propane and butane are probably the most familiar components as they make up the cooking gas that you have in the house. Methane which is the most dominant component of gas is the one that is used in the pipeline. If you are in the UK, Methane gas comes into your house through the pipeline and not in a cylinder. Methane exists in gaseous form whereas the ones in the bottle exist in liquid form. So that's why to convert natural gas to liquefied natural gas, you basically have to bring the temperature all the way down to minus 160 degrees centigrade.

The gas in Nigeria is usually very lean in ethane; we don't have a lot of ethane in our gas although gas varies from place to place. Gas in Saudi Arabia for example is extremely rich in ethane. Ethane is the primary feed stock in petrochemicals, so

ethane is what you convert into ethylene and then polyethylene and so on. So when you have huge ethane content, it's a very good place for you to site petrochemicals, that's why Saudi Arabia is one of the world's biggest petrochemical hub because of the high ethane content in their gas.

So, when you talk about gas as a whole, when it comes out of the ground, it has diverse percentages of all of these compounds and depending on the extent of processing that you use, you will be able to extract different things out of it in the process plant.

Uses of Gas:

What exactly are the uses of gas? Now compared with crude oil, gas is a product that can transform the economy of any country and that is because of the diverse uses gas can be put into. Methane on its own is the most dominant. About 80 per cent of the components of gas from the ground is methane. Methane is used primarily as fuel, so that is what we use in the power plants in the furnaces, in the industries for the boilers and so on. So methane comes in as fuel in cooking in the house passing through a gas pipeline. But then you can also use methane as primary feed stock for ammonia urea which is for fertilizer, it is a primary feedstock for methanol and of course in gas and in liquids.



Dr. David Ige

If you look at the industrialization agenda for fertilizer and methanol, basically methane is the primary feedstock. So gas is not just a fuel, it is also a feed stock for industries, that's why when we're trying to do the gas industrial park in Ogidigbe in Delta State, the idea was to create in one location an industrial park that takes gas as feedstock and produces fertilizer in commercial quantities and methanol as well. These are all the things you see in industrial production. So gas is very crucial to industrialization based on methane, but ethane is part of gas as well and a key input into petrochemicals. Also Propane, Butane which is LPG apart from being used as cooking fuel is also an input into petrochemical. As you know almost everything around us is a petrochemical product; the chairs, the leathers, everything can be linked to petrochemicals and that's why part of our industrial strategy when we were doing the gas master plan was to see how do we begin to use the Nigerian gas to drive the economy by applying our gas to things like, petrochemicals and so on. Things are the way they are at the moment because we never paid attention to using gas in the fullness of its potential. We just took the gas from the ground and did not break it down into all the components; we just put it in the pipeline like that and we just

burn it in the power plant as it is or flare it if we don't have use for it. Whereas if we are able to break it down into different components, we would have been able to channel it into the petrochemical plants and so on.

When you look at any strategic document for gas industrialization, all it's talking about is, how do you take the gas, break it down into the components so that you can maximize the impact on industrialization for your state. There is no country which has gas and has leveraged it for industrialization that has not seen a big impact on its GDP. Examples are Russia; Russia's economy is driven by natural gas essentially. Trinidad and Tobago saw almost a five folds increase in its GDP over



a 10-year period after they discovered gas and they applied the gas for industrial use. And so many other countries like that, Qatar and a couple of others. So gas has the single potential to change Nigeria if we use it appropriately.

CONCLUSION

As for PTDF that is involved in capacity development, what does this mean. We have seen that there is a whole lot in gas. What we are doing in gas right now is a tip of the iceberg, we are just starting and our skills set are geared towards crude oil rather than towards gas. If we are to be sending people for postgraduate programmes or training, there are areas where we need to focus on now; gas engineering is one. There are very, very few people in our system today who actually have a bespoke gas engineering degree, to understand gas in its totality and how to engineer and manage it basically. Those kinds of people are going to play critical roles in our pipeline engineering.

What are the practical issues that we are facing in our environment that can become possible research topics for our PhD students who are going to do gas? They can be sponsored to conduct research on

specific issues that challenge our environment in Nigeria. I think that PTDF has the capacity to begin to structure this even in a very informal way.

There are also the issues on gas in cryogenics. How do you handle liquids at -180C. What kind of safety measures are required if we are going to have LNG moving around. You don't want to touch -180C pipe or hose or anything. How do you handle sub-temperatures like that? There is an entire engineering discipline around cryogenics, I doubt if there's any Nigerian today who is an expert in that area but as we start tomorrow to take advantage of this space, we need to develop capacity so that we are able to manipulate these liquids more effectively for our own use.

Petrochemical technology; these are areas where we have

to determine how to use gas for the specific requirements of our country. Right now, our LPG is 70% Butane, 30% Propane in Nigeria, that's regulatory requirement, but does it have to be that. In America it's mostly propane and here we found a lot of fuels. Our gas has a lot of propane so when people produce LPG they have excess propane that its not big enough to export and it is

too much to put into the LPG bottles. So are we able to start thinking of different utilization strategies in Nigeria. These are the things that some of our PhD students can work on and come out with solutions.

Safety:

What are the new safety standards that would apply for example when you are moving a 150 bar equipment of gas on the road, and the roads are bad. What are the minimum standards? We

need to start training people who understand how to deal with high pressure and low temperature regimes so we have a new crop of people who are not only designers but can also play in the regulatory agencies of the country.

On the commercial side, I know PTDF has always focused on technology but gas is quite commercial. So we need to also have people who go into legal commercial type programmes. So we also begin to develop a body of expertise, where we are able to negotiate agreements that are favourable to us as stakeholders or to us as a country broadly as well. So as I thought about the ways PTDF could interface in this emerging space, those are some of the things that came to my mind in terms of the areas that we can start to look at going forward ■

Part of our industrial strategy when we were doing the gas master plan was to see how do we begin to use the Nigerian gas to drive the economy by applying our gas to things like, petrochemicals and so on. Things are the way they are at the moment because we never paid attention to using gas in the fullness of its potential. We just took the gas from the ground and did not break it down into all the components; we just put it in the pipeline like that and we just burn it in the power plant as it is or flare it if we don't have use for it. Whereas if we are able to break it down into different components, we would have been able to channel it into the petrochemical plants and so on..

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- Dr. David Ige



PTDF STRATEGIC DIRECTION

A Strategic Review of all PTDF interventions Programmes and Projects to align with Current National, Political, Economic and Global industry realities. The initiative provides new pathways to realizing the corporate objectives of the Fund taking into consideration the long term sustainability plan of the Fund.

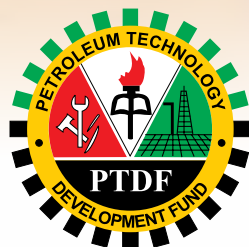
PRIORITIES

- I. Domestication of the Funds Interventions especially the Overseas Scholarship Scheme, with a view to stemming the escalating costs & relocating the benefits of these programmes from foreign training institutions & bodies to indigenous institutions.
- II. Creating linkages with the Nigerian oil and gas industry with a view to ensuring that the benefits of PTDF capacity building interventions are seamlessly realised through increased participation of Nigerians in all aspects of the country's oil and gas value chain;
- III. Utilization of oil and gas centres of excellence developed in strategic locations to drive the actualization of the Fund's mandate.
- IV. Cost cutting and waste reduction through institutionalization of efficient and effective internal processes, full regulatory compliance and due process.
- V. Ensuring sufficient & sustainable funding through timely release of funds and effective investments.
- VI. Reposition PTDF to be a major source of cutting edge research for the Nigerian and global oil industry



PETROLEUM TECHNOLOGY DEVELOPMENT FUND

PTDF ...committed to increasing local capacity in the oil and gas industry.



*Staff of Education and Training Dept.
with members of the Interview Panel for
the selection of the 2018/2019 PTDF
Scholarship beneficiaries.*

NEW SELECTION PROCESS FOR THE AWARD OF PTDF OVERSEAS SCHOLARSHIP

The process for the award of the 2018/2019 Petroleum Technology Development Fund (PTDF) Overseas Postgraduate Scholarship began in January 2018 with the public invitation of interested qualified candidates to apply for the overseas MSc and PhD Scholarship for studies in Germany, France, China and the United Kingdom under a strategic partnership agreement with universities in those countries. The strategic partnership initiative was developed

by PTDF to improve its Overseas Scholarship Scheme by offering candidates the opportunity to benefit from a diversified pool of knowledge and the facilities offered by world-class institutions across the globe.

The Fund also adopted the strategic partnership approach in recognition of the fact that the best education can be found on numerous shores where candidates can study in English taught classes and conduct research in world-class facilities as well as

experience new cultures and work environments. The application window for the Germany, France and China Postgraduate Scholarship award opened on the 5th of January, 2018 and closed on the 9th of February, 2018. The Fund in April 2018 also called on interested candidates to apply for the UK Strategic Partnership Postgraduate scholarship. The application window also lasted one month. Initial screenings were conducted immediately after the close of the application windows for both scholarship offers and final selection

interviews were conducted for qualifying applicants from 9th- 13th April 2018 for the Germany, France and China Strategic Partnership scholarship and between 14th and 18th May 2018 for the UK Strategic Partnership scholarship.

A total of 18,678 candidates applied for the Germany, France and China Strategic Partnership Postgraduate Scholarship made up of 15,538 in the MSc category, and 3,140 in the PhD category. Out of the number, a total of 2,935 candidates were interviewed for the

scholarship award made up of 1,939 MSc candidates and 997 PhD candidates. For the UK Strategic Partnership Postgraduate Scholarship awards, a total of 22,775 candidates submitted applications made up of 18,582 for MSc and 4,193 for PhD. 3,458 were shortlisted for interview made up of 2,212 (MSc) and 1,238 (PhD).

The interview of shortlisted candidates took place simultaneously in Six (6) centers across the country in the Six Geopolitical Zones as follows:

- The Abuja centre- PTDF Corporate Office, for the North -Central Zone.
- University of Ibadan Centre, for South- West Zone
- Ahmadu Bello University Zaria Centre, for North -West Zone
- University of Port Harcourt Centre, for South-South Zone
- Abubakar Tafawa Balewa University Centre, for North-East Zone
- University of Nigeria, Nsukka Centre, for South-East Zone

The interview is a quality driven process to bring out the candidate's skills in research, provides an insight on their publication experience and ability to do detailed literature review.



Dr. Akilu Yunusa Kaltungo one of the panelists for the Abuja centre gave a general assessment of the candidates that appeared before the panel. *"We have seen students that have very high potential to do research, we have seen students that have published or have submitted publications to high impact journals, on the other side of the spectrum, we have seen students that have good proposals, but have not been able to defend their proposals and we have seen students that have not written very good proposals but have very*

good potentials to do good research. So it's a mixed bag and we have tried to balance proposal with capabilities as well. For candidates appearing for the MSc interview, it is expected that they will exhibit a strong understanding of the course they intend to study at that level, while for PhD candidates, they must manifest a clear understanding of the research proposal, the problem they intend to solve through the research, an understanding of the knowledge gap between what has been done and the new area of focus".

A major innovation in this years' Scholarship process by PTDF is the elimination of the requirement for aptitude test for MSc candidates who in previous processes were subjected to computer based test. This is usually associated with large turnout of candidates creating an ambience of chaos and anxiety. With the batching of candidates and specific time allocation to each batch there was no crowd observed at all the designated centres for the interview.



Manager, Education and Training department, **Rabi'ah Waziri-Adamu** throws more light on this development. *"In the past, we used to administer aptitude test to our MSc candidates and then oral interview for our PhD candidates. However this year we have decided to interview all the candidates. Why have we done that? For the MSc candidates we have asked them to write a statement of purpose as to why they wish to study the subject area that they have chosen in addition of course to their credentials. We have done that to ensure that we select the most outstanding students amongst our applicants. We are looking for that X-factor in the candidates. So that is why we have changed the system to interview both MSc and PhD candidates".*





Former PTDF Scholarship candidates participating in the computer based aptitude test, which has now been scrapped

The scrapping of the aptitude test for the MSc scholarship award process has the majority support of the interview Panel members although a few of them would prefer a combination of both the aptitude test and oral interview. Here are excerpts of their views.



Prof. Abdulrahman Audu

I think this interview is quite adequate. It can give us the best because we have good interaction with the prospective candidates, but the aptitude test is basically what they have in their minds or in their brain.



Dr. Akilu Yunusa Kaltungo

I personally think the aptitude test element has its own strength because it has the ability to test the basic science knowledge of the candidates which might be a little bit difficult to ascertain with just a discussion of personal statements especially with the time constraint. However this is not to undermine the interview process because again it also gives us the opportunity to interact with students one on one. So I think they both have their advantages. I personally will prefer the strategy whereby they do a little bit of written test, to test their basic knowledge of science and also do a bit of interaction.



Interview sessions of candidates for the Overseas Scholarship



Dr. Abubakar Abbas

The quality of graduates we are sending out matters a lot to the nation and we are very pleased with the new approach, in which PTDF now goes deeper. Instead of only a surface exam, it engages the candidate in a physical interview to assess their potentials, their emotions and their connections with the outside world. Based on the interviews we've had with the candidates we have found out so much information about the candidate which I'm sure we couldn't have known if they went through an aptitude examination process. Now you are able to see someone's physical capability, hear his story, because every scholar has a story line. What is that story line, why do you think that their course requires a foreign degree compared to a local degree? Why do you think that there is something missing which you think you can go somewhere, get it and bring it back home? Why do you think that there is a gap which you think sponsoring you will be able to fill and expand the scope? So, it's really a very good exercise and I really commend PTDF for changing the strategy of assessing the scholars.



Dr. Suleiman Adamu Abdullahi

I think it's an excellent development because I can tell you this is giving us more insight into the potentials of the candidate, some are good when it comes to writing, they will write things but they don't actually have that passion, they don't actually know what they are going for, they just write it because maybe this is a simpler course for me to go into and pass, not just because we need that kind of field but through this interview we are able to see guys with second class lower but they have this impressive kind of experience, one guy has developed an app that is being used in a Medical Centre in Nasarawa State, he got some awards, so if you have a strict criteria maybe based on having a 2.1 before he comes for this interview, before he may write the aptitude test, you may skip out this guy who actually has the potential to do well as well. So this interview is important, if there is anything for aptitude test, it will be a first screening process but this interview is important and I think it should be sustained.

While the MSc candidates were required to speak on their statement of purpose or intent, the PhD candidates had to defend their written research proposals. At the end of it 198 candidates (122 MSc) and (76 PhD) were awarded the 2018 PTDF Postgraduate Scholarship under the Germany, France and China partnership, while 203 candidates (MSc -127) and (PhD- 76) were awarded the 2018 PTDF Postgraduate Scholarship for the UK partnership ■



Deputy Mgr (LSS) PTDF Violet Ogbomo Addressing beneficiaries of the PTDF Local scholarship at the PTDF Corporate Office in Abuja

CANDIDATES SHOW INCREASED INTEREST IN PTDF LOCAL SCHOLARSHIP SCHEME

Successful candidates of the 2017 PTDF Local Scholarship Scheme were issued with their award letters, computer lap tops and other entitlements under the scholarship award which is for Post Graduate studies in Nigerian Universities. They include three hundred and twenty one (321) MSc candidates, and two

hundred and one (201) PhD candidates spread across the 36 states and FCT. Manager, Education and Training Department of PTDF Rabiah Waziri Adamu who co-ordinated the exercise expressed appreciation with the turn out of the beneficiaries in spite of the initial delays experienced before the final award exercise. She said the delay in the

documentation and issuance of the scholarship award letters to the successful LSS candidates was to fine tune and make the Local Scholarship attractive and more rewarding such that prospective candidates of PTDF scholarship scheme will have more incentives to study in Nigerian Universities. Although the list of successful candidates for the

2017/2018 Local Scholarship Scheme was released late 2017, it was not possible to immediately invite the selected candidates for documentation and issuance of award letters due to additional processes and measures by PTDF to make the Local Scholarship Scheme more attractive. *“The Local Scholarship Scheme for 2017 experienced some delays. The list of*



Documentation of beneficiaries of PTDF Local Scholarship Scheme

successful candidates was released late 2017, but the candidates were not invited for documentation and issuance of award letters until early May 2018. This is deliberate as we were trying to put some measures in place to ensure the success of the Local Scholarship Scheme. For example the PhD students under the LSS are entitled to a six month bench work and this is carried out in the UK or sometimes in the United States. We try to engage our partner universities to ensure that when the students commence their research and are due to go for their bench work, there will be no hitch. Secondly, we are working with the Nigerian Content and Industry Collaboration Department of the Fund to explore the possibility of placing these LSS students on Internship so that even before they graduate, they would have gained industry experience and make them more attractive to the industry” says Rabiah Waziri Adamu.



PTDF Local Scholarship beneficiaries with their laptops ready for the study programme

From 2016 when the policy of domestication of PTDF training programmes was introduced as a new strategic objective, more candidates are showing preference for the local scholarship award. From the inception of the Local Scholarship 10 years ago, PTDF was able to award

only 41 PhD scholarships due to the low level of interest by candidates about the scheme. But in 2016 when the domestication policy took effect, a total of 64 PhD scholarships were awarded under the Scheme for that year alone. In 2017, over 100 PhD awards were

made. Similarly, only 121 MSc scholarship awards were granted in the last 10 years of the Local Scholarship Scheme ending in 2015. But in 2016 alone there were two hundred and fifteen (215) MSc Scholarship awards and this increased to 305 in 2017 ■

Excellence In Scholarship

TESTIMONIES OF EX-PTDF SCHOLARS



DR JESSY ANDRAUS
Lecturer, Robert Gordon University,
Aberdeen, UK

I started my career in 2001, after I completed my NYSC. I was a graduate assistant in ABU Zaria. The second set of PTDF scholarship was advertised and I applied and I was invited to write the assessment. So because I'm from Adamawa state, I wrote the assessment in Bauchi and then afterward I was phoned actually that I got the scholarship. So that's how I got the PTDF scholarship. 2003/2004, I was in Aberdeen doing Masters in Asset Management at the Robert Gordon University.

When I finished there was an advert for a sponsored PhD between RGU and Scottish Power. Scottish Power had an engineering problem and they needed somebody to solve it. They coined it as a PhD topic in the area of Reliability and Maintenance Optimization. So I applied for it, about 20 others applied for it. At the end of the process I was successful. So I had to do the PhD sponsored by the RGU and Scottish Power. That's for 3years from 2007. So I was offered a position to lecture in RGU School of Engineering and was given the responsibility to develop the Msc in Asset Integrity Management in RGU. So I developed that and I was the head of the department for 4years. At some point I decided to go into the industry to implement some of the things I was working on, some

of the tools and techniques I was developing, some of the solutions I think I can work on if I have access to the right information which actually resides within the industry.

I went into oil and gas in Aberdeen. So I have my own company which is called the Asset Integrity Management Reliability Engineering (AIMRE). So I'm the MD and the sole owner. I created that and it's my company and we consult now in Asset Integrity Management and Reliability Engineering. The company is about 5years old and I have got a number of people working for me. I'm grateful that PTDF invested in me; gave me the opportunity to go and study masters in Asset Management and every other thing that I achieved after that, I thank God and I thank PTDF for giving me the opportunity.



DR ABDULMALIK BADAMASI
Deputy Director, Bureau of Public
Enterprises (BPE)

PTDF is synonymous with SSS which is “Sowing Seeds of Success”. That is the way I view PTDF. You are sowing seeds of success through a rigorous and transparent process of selecting the best and brightest and taking them offshore to challenge the world, to be exposed to the world, and to make impact in the world and come back as better citizens. PTDF in 2010 offered me a prestigious scholarship which expanded my horizon to Harvard University and Nottingham Law School. Without PTDF serving as a bridge for me to this American, and United Kingdom world, I would have continued in depression. So I have a story to tell about PTDF. I am grateful, I am happy and very thankful, and I am really short of words to thank the government of Nigeria and the PTDF for sowing the seed of success in me.



DR FATIHU ABBA
Principal, Legal Academy

My association with PTDF is very historic. I happened to be among the first beneficiaries of the PTDF Scholarship when it became an independent agency. My award letter was brought to my house. Tears were falling from my eyes because as an ordinary Nigerian, I found it very, very strange that I can be offered a foreign scholarship to do an LLM in Petroleum Law and Policy at the University of Dundee. After completing my masters, I proceeded to do PhD in a very rare area of Energy Law which is the Extended Continental Shelf. PTDF sponsored me up to the last day of my PhD. When I came back I worked with the National Assembly but with the capacity I got from the PTDF training, I had to voluntarily transfer my service to the University of Abuja where I presently teach Shipping Law, Corporate Law and Criminal Litigation. I felt that's the way I can pay back to Nigeria for sponsoring my studies.



DR SILAS DAMSEN GARBA
Head, Legal Services,
South Atlantic Petroleum

My background in law is from ABU Zaria but I am in the oil industry courtesy of the training I got in LLM Petroleum law sponsored by PTDF. PTDF has done a great job personally impacting not just my life but the lives of a lot of young men. I can testify that PTDF is not just doing a good job but is doing it fairly. I got the scholarship without knowing anybody in PTDF without influencing anything, I was called and informed by a friend. I actually missed my name twice because I didn't believe that it's possible to get something on merit without influencing anything in this country, so they've restored my faith in this country and they've continued to do so others.

HOW IT ALL BEGAN IN NORWAY

Victor Orok, a PTDF Scholar shares his experience on the study programme



A group photograph after the presentation of Bachelor thesis. From left, Larry Boms (UNITAR), Precious Ogeizi, Duke Azibodosi, Runald Meyer, Best Lokpobiri, Fatima Yusuf, Aminu Ahmed, Sarah Gbeke...

The journey began in January 2014 with 59 students who had qualified to study Mechanical engineering in Norway. Norway is one of the most expensive countries in the world, they are nice and accommodating people, they speak Norsk or bokmal as the major language. Every May 17th the country celebrates her independence

day. It is expensive to leave in Norway, thanks to the support from the Petroleum Technology Development Fund (PTDF) which helped us in terms of feeding, accommodation and so on. As the students arrived, accommodation was provided for all as they landed in Stavanger city, they were also taken on a trip to visit some of the places in Stavanger like the petroleum

museum and the fish canning industry. The students went through a one year pre-engineering course as criteria in order to proceed to the university. It wasn't that easy for some of the students since all 59 of them were from different backgrounds and ages. At the end of the one year course, 39 students successfully passed all 4 subjects (Mathematics, English, Physics and Chemistry) and

were eligible to proceed to the university. In January 2015, the students landed in the city of Haugesund a week to the resumption date which was 30th January 2015. This gave them opportunity to settle in, visit some places in the city and also see the university they were to attend for the next 3 years. The school was formerly known as Stord/Haugesund College until it was changed to the

Western Norway University of Applied Science in January 2017.

39 students resumed at the university for the 1st semester to study mechanical engineering, but 38 completed the semester as one of the students was dropped for failing a single course. It was heartbreaking to the other students as they were shocked to find out that failing a single course could result in leaving the school. At the end of the year, 32 students were left as 6 (six) more students were also dropped.

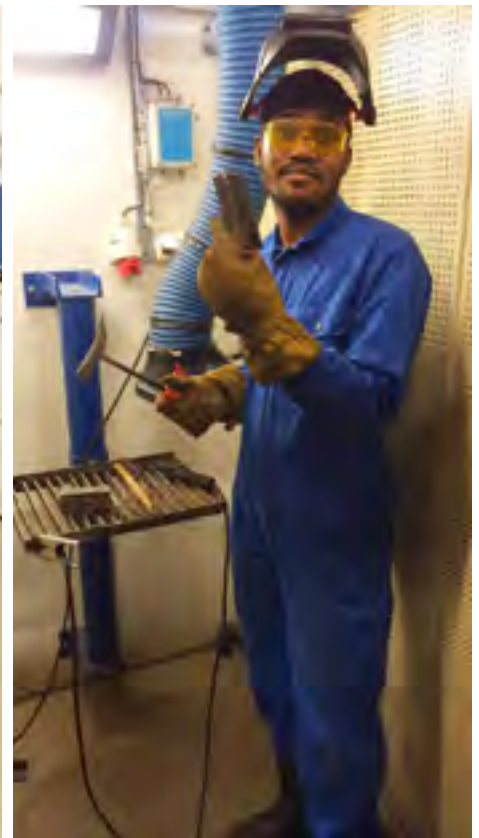


In the second year, some of the students were able to understand and even speak Norsk, some others were involved in sporting activities like soccer and basketball and did quite well in it. The students had the opportunity to visit Simsea to learn the remotely operated vehicle (ROV) simulation as part of the underwater technology

course and they also went for training on how to weld in Vardafjell Videregaende Skole. By the end of the 2nd year, 4 students were dropped due to course failure and some other issues. A lot of challenges were faced but the students were able to overcome it by working together. It was so

sad and unfortunate when the students discovered that there was not going to be any industrial training for them. Still they encouraged themselves and pushed on further. In their final year, they visited Statoil at Kørsto near Haugesund and Killingøy Subsea and Offshore Base Haugesund.

On the 15th January 2018, the students performed well as they presented their Bachelor Thesis. The 28 students shook hands and gave hugs, congratulating each other for being among the 2018 class of mechanical engineering graduating students. They all graduated with good results.



Students in Vardafjell Videregaende Skole, learning how to weld as part of the underwater technology training course



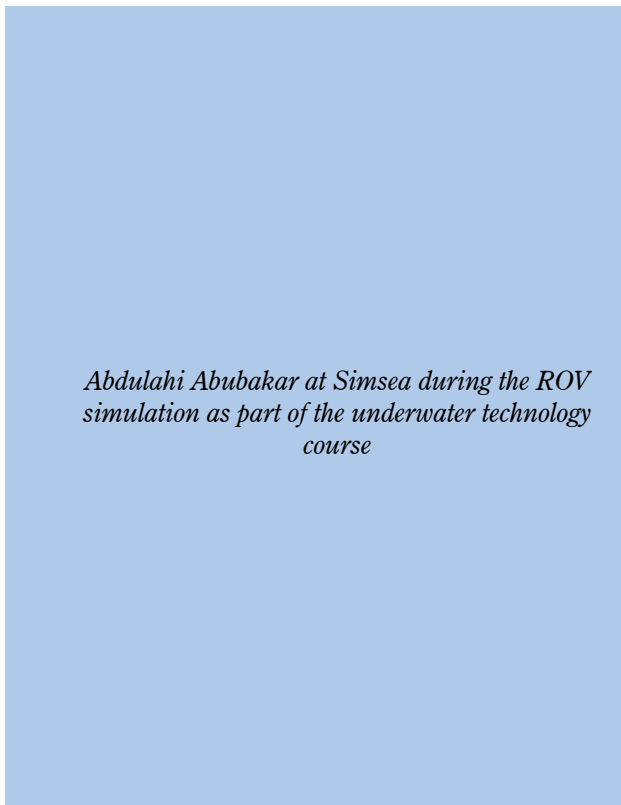
Students working on how to assemble and disassemble gate valve during the introduction to engineering technology course



Mr. Frode teaching the students how to check the physical structure of material using magnifying lens (Material science course)



PTDF students constructing a prototype bridge as a course requirement for mechanical design 2



Abdulahi Abubakar at Simsea during the ROV simulation as part of the underwater technology course





A group photograph of graduates of PTDF Post Training Attachment programme at the Kaduna Refining and Petrochemical Company Ltd with Executive Secretary and other Mgt Staff of PTDF and the MD and other Mgt Staff of the Refinery

PTDF POST TRAINING ATTACHMENT PROGRAMME

THE SIGNPOST OF A NEW STRATEGIC DIRECTION IN PTDF

The successful posting of fifty (50) of its trained welders to the three flagship Nigerian refineries in Kaduna, Port-Harcourt and Warri under a post training attachment programme is an indication that the new strategic objective by the management of the Petroleum Technology Development Fund to interface more vigorously with key players of the oil and gas industry in the implementation of its capacity building programme is paying off.

PTDF Executive Secretary had on assumption of duty in September 2016

announced a new strategic direction for the Fund, a key priority being the creation of linkages with the Nigerian oil and gas industry with a view to ensuring that the benefits of PTDF capacity building interventions are seamlessly realised through increased participation of Nigerians in all aspects of Nigeria's oil and gas value chain.

The PTDF Post Training Attachment scheme for graduates of PTDF Welders Training and Certification Programme (WTCP) is being implemented in collaboration with the three refineries, as a stop gap intervention to expose the beneficiaries to practical on-the-job experience. Nineteen (19)

were attached to the Warri Refining and Petrochemical Company Ltd, six (6) in Port-Harcourt Refinery while twenty (25) were attached to the Kaduna Refining and Petrochemical Company. Apart from building up the technical and vocational skills and proficiencies of the participants, the Post training attachment programme ensures that the skills acquired by the participants at the Welders Training and Certification Programme are not lost due to redundancies. It will at the same time open up opportunities for the direct engagement of the trainees by the industry.

According to Mr. Usman

Pindar, Manager Nigerian, Content and Industry Collaboration Department, PTDF, skills such as fabrication and welding require regular practice "So the essence of putting them in post training attachment is for them not to lose those skills. It will also open up a window for them to get into the industry. We conducted similar exercise with big players in fabrication such as DormanLong Engineering Limited and Nigerdock and quite a lot of them were retained after the post training attachment".

At the graduation of the 25 PTDF trained welders who participated in the Post Training Attachment Programme at the Kaduna



Mr Tsavnande Thaddeus Mgr Production, KRPC, explaining the operations of the control centre to the PTDF delegation

Refining and Petrochemical Company Limited (KRPC) Kaduna, the Executive Director, Services of the Company, Dr. Abdullahi Idris said the participation of 25 PTDF trained welders in a Post Training Attachment Programme in the facility is a consummation of a strong partnership and collaboration between PTDF and KRPC.

“When they came here, we deployed them to our maintenance department because that is where the welding activities take place and we kept monitoring their progress. PTDF Officials also came to supervise and enquire about their well being and welfare. We were very happy with the progress they were making until 6 months on today. We are here to graduate and give them certificates and to also wish them well as they go in to practice this noble profession of welding.” Dr. Abdullahi Idris said the Post Training Attachment is

the first major collaboration between PTDF and KRPC with the expectation that the relationship will grow stronger.

The Kaduna Refining and Petrochemical Company Limited which occupies an area of nearly three (3) square kilometres is a network of pipelines and storage tanks and chambers whose maintenance requires welding and fabrication. The Manager, Production KRPC, Mr. Tsavnande Thaddeus said at the passing out ceremony and close out of the first batch of beneficiaries of PTDF Post Training Attachment Programme, that there is a high demand for welding and fabrication skills in the refinery. As a result the attachees were kept very busy during the six month period of the attachment.

“Because of the array of metals and network of piping that pervades the facility, no day passes without some form

of welding taking place in the refinery complex. They have come, we have enjoyed working with them, they have put their hands on practice and practice makes perfection. We have groomed them to be experts in their chosen field, we are already looking forward to having them in our employment because we need them. I want to encourage this kind of training attachment in KRPC because even today we don't have the required staff and they have bridged the gap.”

The Post Training Attachment Programme according to the Executive Secretary, Petroleum Technology Development Fund, Dr. Bello Aliyu Gusau is part of the implementation of a reviewed strategic direction of the Fund which places greater emphasis on value based collaboration with stakeholders in the oil, gas and allied industries. *“PTDF has revised its*

method of operation and has adopted a reviewed strategic direction anchored on needs based intervention, effective implementation and value based collaboration with all stakeholders in the oil, gas and allied industries for the benefit of the nation. Our engagement with the refineries and some key private sector fabrication companies in the Post Training Attachment programme is a reflection of our commitment to ensuring the seamless progression and engagement of Nigerians by the industry through up skilling, certification and on the job exposure of our trainees.”

The PTDF Executive Secretary thanked the Management of KRPC for supporting PTDF Post Training Attachment by taking on the 25 graduating participants and solicited for their full engagement as direct employees of the refinery. He informed



the trainees that PTDF is working closely with other key industry partners to ensure that they are considered for full time engagement through the industry Joint Qualification System (JQS) being hosted and managed by the Nigerian Content Development and Monitoring Board (NCDMB). *“Your full data and qualification will be listed in the JQS for consideration by industry stakeholders for employment. It is our belief that with the training you received, the experience of the PTA and the listing on the JQS, employers will soon be seeking to employ you.”*

It is evident that the model adopted by PTDF in the implementation of its welders training and other capacity building programmes will lead to the production of skilled and competent workers that will ensure the complete domiciliation of welding activities in the oil and gas sector in-country.

By creating linkages and engaging practically with the Nigerian oil and gas industry in its manpower development initiatives,

PTDF would be re-asserting its relevance in the industry and moving toward the centre stage of the oil and gas sector.

“The PTA is a programme whose idea is to strengthen the linkages with other players in the oil and gas industry. our mandate is to develop skills and capacities for this industry and therefore we need to interface continuously with all those who are directly managing the various facilities and plants in the industry so that we know what their needs and requirements are, not just for the moment but going forward, so that consistently, we can keep building on that” adds the Executive Secretary PTDF.

A guided tour of the Kaduna Refining and Petrochemical plant revealed a massive outlay of equipment, machinery, kilometres of interconnected pipelines, huge tanks and the control room which is the heart of operations of the refinery.

The Managing Director, Kaduna Refining and Petrochemical Company, Ladenegun Adewale, an

engineer, expressed his appreciation to PTDF for choosing the Kaduna Refining and Petrochemical Company for the post training Attachment programme of the Fund, and promised that the Company will be willing to accept more of the trained welders on similar attachment programme. *“We need to train our youths to catch up with the rest of the world otherwise we will remain a buying nation which is not good for our future. We are ready to continue this partnership with PTDF to ensure that we achieved the goals set for us by government.”*

Executive Secretary PTDF, Dr. Bello Aliyu Gusau thanked the Management of the Refinery for granting PTDF trained welders access to the facility for a post training attachment programme. This he said is a manifestation of the new strategic objectives of the Fund to vigorously partner with key industry stakeholders in the implementation of PTDF programmes and projects. *“We want to put you on notice that we are focussing our*

attention mainly on those we consider the key stakeholders of the industry in terms of the activities of PTDF. Hitherto, there has been limited interaction between PTDF and other players in the industry, and our resolve now is to change that situation.”

In furtherance to this objective, the PTDF Executive Secretary said the Fund now focuses on the training needs of institutions like the KRPC, not just for the current staff, but also for future manpower needs of a Petroleum Refinery like KRPC. *“Going forward to the next 10 years, what will be the manpower requirement of facilities like this? because we have to start preparing people who will come and take over. So our job really as mandated by the law is to take care of such things.”*

Not less than 2000 Nigerians have passed through the different levels of training in welding and fabrication processes since 2009 when PTDF Welders Training and Certification Programme was instituted. The roll call include 20 Nigerians trained as international welding



practitioners and specialists in South Africa; 11 trained as International Welding Technologists and Engineers in Germany; 1,200 trained to International Institute of Welding standards in Fillet, Plate and Pipe Welds and 19 who received training in

Advanced and Specialised Welding processes of Flux Core, Tungsten Inert Gas (TIG), Metal Inert Gas (MIG), Metal Active Gas (MAG), and Oxy-Acetylene Welding in Turkey. A Further 130 Nigerians received in-country training in

Advanced and Specialised Welding Processes. All these trainings are targeted at achieving the Federal Government Local Content Objective of complete domiciliation of fabrication activities in the Nigerian oil, gas and allied industries in-

country.

This is because welding and fabrication constitute 80% of the activities in the oil and gas industry and therefore the most effective driver for Nigerian content development ■



A group photograph of members of PTDF delegation with the Mgt of KRPC



Graduates of PTDF Post Training Attachment Programme at the Warri Refinery with PTDF and WRPC Officials

MORE PTDF TRAINED WELDERS GRADUATE FROM POST TRAINING ATTACHMENT PROGRAMME

PTDF renewed interface with key players of the oil and gas industry in the implementation of its capacity building programmes is yielding positive results as more PTDF trained welders find engagement with the major refineries through a post training attachment programme initiated by the Fund.

In February 2018, the first batch of PTDF welders on post training attachment at the Kaduna Refining and Petrochemical Company received their certificates of proficiency after undergoing a six month intensive hands on training in fabrication and welding in an industry environment. Another batch of 19 PTDF trained welders on post training attachment at the Warri Refining and Petrochemical Company also graduated from the Scheme. The post training attachment programme was conceived as a stop gap intervention by PTDF to ensure that beneficiaries of PTDF interventions are introduced to practical on-the-job exposure to

ensure that the skills which they acquired during such trainings are not lost due to redundancies. It also affords players in the industry, such as the refineries, the opportunity to engage and utilize the skills and services of the trainees in the maintenance and development of their plants.



Manager Maintenance Department, Warri Refinery and coordinator of the post training attachment scheme, **Engr. Markollos Joel** commended the proficiency displayed by the PTDF

trained welders who participated in the attachment programme at the refinery. He raised the expectations of the graduating trainees on the possibility of being engaged by the refinery in the nearest future. *“They really worked hard because of their passion and skills; within a short time they had mastered almost everything. We have structural welding, we have pipe welding and they did it all. Though we are training them, they were able to challenge most of our welders. They really helped us when we were struggling to start the plants, they participated actively in starting the plants, so they have a stake on that. We have your data! Anytime we need you it is very easy because we have tested you, I believe that other companies will still look for you. I was told, that other companies are even struggling to employ you people, so don’t be surprised that they will start calling you one by one when they have a major job. That is the essence of the exposure”*



In his remark at the close out ceremony, the Executive Director, Operations, Warri Refinery, **Mr. Azubike Ariaga** congratulated the graduating trainees for contributing in ensuring that all the three production areas of the refinery were kept functional. *“WRPC is the only refinery in Nigeria today that has got area 1,2,3 running and you were here at the time that this feat that has not been achieved in this refinery in the past 10years was achieved. We will work with you one way or the other; that is for certain. I am saying that you couldn’t have been here at a better time and you couldn’t have been in a better place”*



General Manager, Legal and Secretariat Services, PTDF, **Mr. Balarabe Ahmed** spoke on plans by the Fund to ensure that the welders who have completed the six month post training attachment at the refinery are gainfully employed. *“I will like to assure you on behalf of PTDF in conjunction with NCDMB, that we are not resting on our oars, we will ensure that each and every one of you got a job because we are not unmindful of the fact that, the mandate of PTDF is clear and*

unambiguous that our own is to train and train but at the same, the essence of training is for you to be meaningfully employed and I can assure you based on what is happening all over the country, like the AKK and so many other infrastructural projects that are going on now, you will be employed by the grace of God. So I want you to maintain your calm and continue to do whatever you can to sharpen your skills, I believe the future is for you all”



Executive Secretary, PTDF, Dr. Bello Aliyu Gusau who was represented at the occasion by the General Manger, Nigeria Content and Industry Collaboration Department PTDF, **Jacqueline Guyil** also enjoined the refineries and their partners to consider full time engagement of the trainees as direct employees considering their record of technical performance at the refinery during the post training attachment. *“Over time, challenges associated with the Nigerian Economy have hampered the capacity of the oil and gas industry to absorb all trained personnel. Thus the post training attachment programme of the Fund was conceived as a stop-gap intervention to ensure that beneficiaries of PTDF interventions are introduced to practical on-the-job exposure to ensure skills acquired during such training are not lost due to time inefficiencies or redundancies. The PTA programme also affords players in the industry like the WRPC the opportunity to engage and utilize the skills and services of these trainees in the maintenance and development of their plants. Please be informed that the PTDF is working closely with other key industry partners to ensure you are considered for full time engagement through the*

industry Joint Qualification System (JQS) being hosted and managed by the NCDMB wherein your full data and qualification will be listed for consideration by industry stakeholders for employment”.



Managing Director, Warri Refining and Petrochemical Company, **Muhammed Abali** commended the post training attachment initiative of PTDF and gave an assurance that the refinery will continue to partner with PTDF in manpower development for the oil and gas industry. *“We take this training attachment seriously here because we take it as a responsibility, we are all in the oil and gas industry and to train our younger ones is to sustain the industry, so we are glad for this collaboration and hope that, we will see more of this kind of things in future”.*

The Petroleum Technology Development Fund is currently engaged with the three refineries in Kaduna, Port Harcourt and Warri and some key private sector companies in implementing its post training attachment programme particularly for its trained welders. The first batch of 25 graduated from the Kaduna Refinery, while a second batch of 25 is currently enrolled in the programme there. Six trainees are also undergoing the programme at the Part Harcourt Refinery. Another twenty were also inaugurated for the post training attachment programme at the Warri Refinery. Some of the trainees thanked the Fund for the opportunity to participate in the post training attachment expressing confidence that the industry will find them competent for employment ■

Some of the beneficiaries of PTDF Post Training Attachment Programme speak on their experience in welding.



AGAMBI JONATHAN
DELTA STATE

The programme has really helped us a lot, I won't deny that fact because today I can boast and say I am a welder, I can weld in all processes. I trained in various welding processes such as Manual Metal, Tig welding, I did the Fluxscore, Mig-Mac. With the skills I have acquired and the experience I have, I believe if given the opportunity to showcase myself I will deliver, so I am looking forward to the day that they will call us to work on any project, whether a maintenance job or anything, so that at the end they will always give kudos to PTDF for teaching us how to do this, so that they will believe more on us and create more opportunity for indigenes.



OGAMUNE ESHORANMEH LOIUS
EDO STATE

I participated in the PTDF welders training and certification programme that took place sometime in 2012 and it ended in 2015 and later on they had to move us forward by doing an upgrade which is the advanced welding programme, during which we had the opportunity of doing some other welding courses like Mig-Mac and other types of welding. These are the welding processes we have been trained so far, of which we are now called to do an industrial attachment here in the Warri Refinery. I actually look forward to such an opportunity to be able to practice that which I have learnt.

Welding is a programme which you cannot give what you don't have, it is what you have that you give, so when somebody tells you he is a welder, you have to first of all put that welder to a test to really see if that welder is truly a welder or not, because if I tell you I am a welder and you look at me like what makes you a welder, let's go to the workshop.



AKUDO LUCKY

I was trained by PTDF in fillet welding, that is module A, Plate welding which is module B and Pipe welding which is module C. We started all this program right from 2012 and also did advanced welding processes. By the time I finish this programme at least I will gain a little more experience. I am a certified welder, I can weld very well at any time of the day. At the end of this program I know I will have more competency because I will be exposed to field work. Coming to this place, there are some other skills that I will still acquire, like the hazard that concerns the job. At least I can know how to work with safety, which is one of the most important things you need to know working in an industrial environment.



LAMIDI AMINAT LAMIBIR

I see this industrial attachment as part of the training because it will encourage us to prove what we have learnt in welding, it will give us an experience with the industry to know better what we do and how to impart our knowledge too. We want to let them know that we are capable of doing things in welding industry, not sitting at home because if we sit at home there is nothing we will gain, but as we come here for PTA, we will be able to prove ourselves, that we can do this, we can do that.

**EDIRIN JAMAHO**

I took part in the PTDF welders training in 2012 with the fillet weld, module A down to module B and C and later did advanced welding. This attachment is for me to learn more and improve on other aspects we did during my training and this attachment being in the field it is for me to showcase my skills in the welding programme I did under PTDF training.

**MUSTAPHA YUSUF**
EDO STATE

We started training under PTDF, with module A, then module B up to module c and we rounded up with the specialized welding and we have certificates. I believe whoever comes to Warri refinery to gain industry experience will have more skills and improved credentials. I have never been in the field before so this is an opportunity. There is a difference when you are working in a workshop and in the field. My expectation at least is to be employed because I believe the Federal government is trying to replace expatriates in the industry with Nigerians, if they can make it 50:50 or 70:30 with us occupying the oil and gas industry because we Nigerians are capable welders that PTDF trained.



PTDF trained welders before commencing the Post Training Attachment at WRPC with them are staff of PTDF



DANGOTE GROUP IMPRESSED BY QUALITY OF PTDF TRAINED GRADUATES

The Petroleum Technology Development Fund is in discussion with the Dangote industries Ltd to provide the required local manpower for the upcoming Dangote refinery and other industrial projects of the group. This was confirmed by the Group Executive Director, Mr Devakumar V.G Edwin in a letter to the Executive Secretary of PTDF, Dr Bello Aliyu Gusau.

In it, the Dangote Group acknowledged receiving 67 curriculum Vitae (CV's) of Nigerians trained by PTDF in various oil and gas related disciplines. He commended the high academic profile of the PTDF trained graduates. According to the group Executive Director, Dangote Group, *"I called for all the 67 CV's and started going through them. In my 26 years in Nigeria, I have never seen a group of impressive CV's more than this collection. Of course, I have handled several equally impressive CVs but 1 or 2 or maximum 3 at a time - not 67 very highly qualified personnel"*.

He said Dangote Group will carry out further evaluation on them, to assess the areas they will be most useful for the purpose of engagement.

Here is the full text of the letter from Dangote group...



NOGIC (JQS)

PTDF PERSPECTIVE

“...PTDF is working closely with other key industry partners to ensure you are considered for full time engagement through the industry qualification System (JQS) being hosted and managed by the Nigerian Content Development and Monitoring Board (NCDMB) wherein your full data and qualification will be listed for consideration by industry stakeholders for employment.”

– Dr Bello Aliyu Gusau, E.S PTDF

at the close out ceremony of the first batch of Welders on PTDF post training attachment at the Kaduna Refining and Petrochemical Company Limited.



Mrs Timilayefa Nwajueboe of the Press and External Relations Unit, PTDF interviewing the ES NCDMB Engr. Simbi Wabote

The mandate of the Fund as encapsulated in the enabling law (Section 2 of the PTDF Act CAP P15 Laws of the Federation of Nigeria 1990) confers on the Fund the power “to train Nigerians to qualify as graduates, professionals, technicians and craftsmen in the fields

of engineering, geology, science and management in the Petroleum Industry in Nigeria or abroad” It is obvious that the mandate establishing the Fund does not confer it with the power to compel the engagement of Nigerians that have been trained by the Fund. The Federal Government desire to have more Nigerians

participate in the operations and management of the oil and gas industry in Nigeria led to the establishment of the Nigerian Content Development and Monitoring Board (NCDMB) as a regulator of Nigerian content in the industry. The Nigerian Oil and Gas Industry Content Development Act, 2010

therefore targets the promotion of Nigerian participation in the Oil and Gas Industry. Section 106 of the Act defines Nigerian Content “NC” as “the quantum of composite value added to or created in the Nigerian economy by a systematic development of capacity and capabilities through the deliberate



utilization of Nigerian human, material resources and services in the Nigerian Oil and Gas industry”

While PTDF produces skilled manpower for the industry, the NCDMB works in synergy to facilitate their absorption into the industry. The Joint Qualification System is one of the platforms under the management of NCDMB to ensure that Nigerians with the relevant skills and competencies are absorbed into the oil and gas industry. PTDF DIGEST spoke with the Executive Secretary NCDMB, Engr. Simbi Wabote, on how the system works and the opportunities it offers to PTDF trained graduates and scholars.

Q: What are the interventions of the NCDMB as a regulatory body within the realm of capacity building in the oil and gas industry?

A: Our mandate could be summarized in two (2) broad terms; one is to thrive for the participation of Nigerians in the oil and gas value chain as well as build the capacity of Nigerians to also participate actively in the oil and gas value chain. In terms of capacity building, narrowing it down to what I think the PTDF also does, is to build the human capacity in the technical skilled areas. What we do is that in the entire oil and gas value chain, you have the highly skilled professionals, you have semi-skilled professional and then you have the skilled professionals. And the highly skilled professionals I think falls within the remit of PTDF. So that’s why perhaps PTDF gives scholarships, trains people on master’s degree and to PhD as the case maybe, but we don’t give scholarships.



We also don’t send people to institutions but what we do is that within the semi-skilled and the skilled professionals, we participate in those areas by helping to build human capacity through various interventions. Some of the interventions are through on the job training, others we do through direct interventions where having analyzed projects as they develop, and then we see potentially the skilled areas that are required, so we take people and then train them in those skill sets. The other bit is also the one we do with the oil and gas companies where we ask them to do what we call capacity development initiative in terms of training to enhance the capacity of Nigerians where we see gaps. So that’s the way we intervene in terms of capacity building. But the higher skills we leave out for PTDF which of course is set up to manage that.

Q: We heard that for the skilled Nigerians to be engaged in the oil and gas sector, they will have to enlist in the Joint Qualification System (JQS). Can you address

this by telling us how it promotes the quest for local manpower in the oil and gas industry?

A: We’ve developed what

we called the “NOGIC JQS”, which is our IT platform where we register all skilled Nigerians in the oil and gas industry, both those that are

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employed and those that are not employed. That database does exist and as at today, we have about 54,000 Nigerians that are registered on that platform. Once you register you get a particular identity number with which when we have job opportunities, we usually go and download the data and then look at those Nigerians with the requisite qualifications and then send their data by way of communication to those companies that are looking for those kinds of skills. This database comprises of the highly-skilled, skilled and semi-skilled workforce in the oil and gas sector. And just recently, last year, we enhanced that platform. So, its interactive, anybody can get into it anywhere and see that database. And I think that's what this country needs in terms of oil and gas database, but of course, there are varied skills that are not in the oil and gas sector. I don't know where the data for those people reside but within the oil and gas sector we've done a very good job by capturing that database. And we intend to expand that because most people who are currently comfortable working in the oil and gas sector have not seen the need to be part of that database because they are working already. It's only those who don't have permanent jobs, who tried to get registered. So, the opportunity for that database to increase is there and we are trying to fine-tune it to accommodate all those.

Q: How do you get the companies to seek for this skilled workforce? Is it that companies come and register, is there a system of having these oil companies signed up in the database?

A: Usually, all the oil

companies are signed up to it. They see the data and most at times when they apply for expatriate quota; we make the data available to them. Most often, we point them to the data to say first go and scale through that data to be sure that the skills you are asking for, don't exist in the country. If it doesn't exist, and if it is not in our data base we also mandate them to go and advertise in the papers as required by the Act, such that Nigerians will apply. But most instances, we download the database and send to them such that they could look through and come back to us to say, "yes, we've seen, or we didn't see the skills that we desire", then we can begin to talk about approving expatriate quota for them or not.

Q: How many companies are currently signed up to the JQS and how does one get enlisted into the system?

A: In terms of operating companies, you have about 46. That number we can confirm 46 operating companies. In terms of service companies, we have about 7, 184. And then the figure in terms of the individuals who are registered on the JQS is 114,

743.

The processing of JQS database is very easy; it's on your desk. You can log on to JQS and then get yourself registered and all the documents that you want to submit can be submitted online. You don't need to come to Yenegoa, you can

We've developed what we called the "NOGIC JQS", which is our IT platform where we register all skilled Nigerians in the oil and gas industry, both those that are employed and those that are not employed. That database does exist and as at today, we have about 54,000 Nigerians that are registered on that platform.





register yourself within the Joint qualification system even if you are in London.

Q: How would you assess PTDF's activities in terms of its relevance in the Oil and Gas Industry?

A: I think the objective of setting up PTDF is very novel. The founding fathers thought of using it as an intervention agency in terms of building capacity of highly skilled manpower in the country and that's what I thought the mandate is when I read through the documentations, but I think they also then saw some bit of gap beyond the original mandate of the highly skilled manpower. They saw some bit of gap in the Semi-Skilled and Skilled workforce; probably the PTDF existed before NCDMB came and they saw some bit of gap. So, they veered into that space in order to train skilled and semi-skill workforce in the past. When I go around, I see some skill centres that they built for the semi-skilled and skilled workforce because once you focus on the highly skilled workforce the demand will come. I assume that as at then the pressure came to say, "yes you are training the highly skilled workforce, but what of the artisans, the semi-skilled and the rest". I think out of that pressure, PTDF got into that and tried to see what they can do as an intervention agency. So, the PTDF built a couple of skill centres here and they around the country and they did some bit of those trainings. But with the advent of NCDMB, to a large extent I begin to see that they try to step back a bit to focus on the key remit which is the high-level manpower. And most recently, the Minister of State Petroleum Resources, Dr. Emmanuel Ibe Kachikwu



mandated NCDMB and PTDF to try and harmonize in terms of capacity building effort in the oil and gas industry. So, we did set up a small committee and then got some consultants to look at the mandate of the PTDF, NCDMB and that of PTI, which is also within the Ministry of Petroleum Resources. We have done a lot of work on that, we've seen each other's mandate, each other's space that we went into because of its early existence to fill the gap. That report is ready, we are just waiting for final sign off by the Executives of these three (3) Agencies to present to the minister as a way forward. So, I think in a nutshell, PTDF was delivering its mandate but I think recently they have become a lot nimble in the approach because most of the trainings that they have given in the past, some of them are challenged in terms of relevance in the oil and gas industry because that gap analysis that was done was not translated into the kind

of skills that are required in the industry. That's why some of those people already

trained are still struggling on getting employment. But most recently, with the

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current Executive Secretary that I met, and I know, they have become a lot more adept to say, “we must tailor our trainings to the needs of the industry”. So in a nutshell that’s what I can say on that and I think that has to continue, we need to fine-tune it, because one challenge you face in terms of capacity building is, if you build it for building sake and there is no line of sight to job opportunity, it has its own social back lash. I think the current Executive Secretary, PTDF is trying to look at all these to be a lot more apt as to what existed in the past.

Q: You mentioned that a committee was set up to look into the mandate of PTDF, NCDMB and PTI and harmonize, I equally know that you visited the skill centre in Port Harcourt alongside the ES PTDF and PTI. Was it part of implementing or harmonizing the

functions? How are PTDF and NCDMB relating to harmonize this capacity building in the industry? A: Like I said, the work of that committee is to do that, to streamline various functions and activities in terms of capacity building, that report is ready and the visitation to the facility in Port Harcourt is also part of it. It’s an effort for collaboration. How do we collaborate to tackle the issue of human capacity development at the highly skilled level, semi-skilled level and skilled level? So, it’s part of that collaboration and we are still working on it, we are waiting for that facility to be completed such that we will get things rolling but I guess some of the challenges have also got to do with the procurement process to get that facility completed by PTDF. We are all waiting on it and as soon as it’s completed, we will know what to do.

Q: A layman will think probably there is a conflict of responsibility between PTDF and NCDMB. What are the functional departures of both agencies? A: I think a layman needs to understand the difference between a Regulatory Agency and an Intervention Agency. PTDF is an intervention agency, so there is no conflict anywhere. NCDMB is a Regulatory Agency and as part of a regulatory agency, the Act also bestowed on us the capacity building bit. That’s where the collaboration between the PTDF and NCDMB comes in. So there’s no conflict whatsoever. If you are not a regulator, there is no way you can conflict with a regulator. So, PTDF is an intervention agency, and NCDMB is a regulator and part of its job is to build capacity. In trying to break down that in terms

of PTDF focus area, if you read the Act itself, it’s not for Skilled or Semi-skilled; it is for highly skilled capacity building and as I said prior to the establishment of NCDMB, PTDF was in existence and in the process of trying to build the highly skilled manpower, the industry also required the semi-skilled or the skilled workforce and needed to build capacity for it. So PTDF of course as an agency that existed then, jumped into it and looked at how they can help, and they have done a good job in that respect. So now the focus is how do we collaborate and synergize to ensure that there is no conflict of responsibility in that area, but they are two (2) different agencies. PTDF is not a regulator, NCDMB is a regulator. So that’s a broad difference ■



ES NCDMB Engr. Simbi Wabote with the PTDF Digest crew members



GM LEGAL PTDF, EXPLAINS SCOPE OF PTDF MANDATE

The NCDMB Executive Secretary in the interview alluded to the fact that PTDF mandate limits its interventions only to building highly skilled manpower. The Fund he said, veered into low-level and semi skilled manpower development as an adhoc measure to fill identified skills gaps and not based on its mandate. PTDF Digest sought clarification from the General Manager, Legal, PTDF, **Mr. Balarabe Ahmed** on the scope of PTDF mandate based on the law that set up the Fund.

Q: Sir, we want to have an understanding about the PTDF mandate and the assertion that the Fund is supposed to train highly skilled manpower only.

A: In the first place NCDMB and PTDF are twin sisters of the same father. To my understanding, NCDMB is supposed to provide policies, guidelines and framework for the development of Nigerian Content and NCDMB was actually created because there is a lacuna, there is a gap in the PTDF Act and that lacuna is as follows; while the law of PTDF says you use all the monies provided under section one (1) of the PTDF Act for the purposes of training Nigerians to qualify as engineers, craftsmen, geologists and professionals in the area of management, etc there is no corresponding obligation on the PTDF to ensure the utilization of



the competences that are created by virtue of that section particularly the section two (2) of the PTDF Act. So you can see that there is a gap in the sense that you are just mandated to create competences, create manpower or develop technology but for what purpose? The purpose is to ensure that we have increased participation of Nigerians in the operations of the oil and gas industry. But PTDF had no teeth to bite, so there is a gap, we don't have any instrument to coerce oil operators to say for example, utilize all the engineers we have produced or all the welders we have trained. So NCDMB

was created to ensure the effective utilization of all the competences that are created by the PTDF. If I'm to answer your question directly, I will say that the PTDF law is not restrictive as to the category of people it should train. The operative word is to train Nigerians to qualify as graduates, engineers, technicians, craftsmen and professionals, etc. So it is not restricted to either high level manpower or low level manpower. As long as the training involves creating skills and competences in the oil and gas industry, it is within the purview of the PTDF law. So, I can categorically say that, it is not true. The

PTDF law particularly section two (2) which talks about the mandate of PTDF is very, very general in nature because it says train Nigerians to qualify. It further specified other areas PTDF can now engage in as part of its own activities. For example to provide scholarships for Nigerians to be trained in Nigeria or abroad, to provide supplementation to scholarship for Nigerians to be trained in the universities or colleges both in Nigeria and abroad, and also PTDF may establish endowments in universities for the purpose of conducting research that are of practical value to the oil and gas

industry. PTDF may also provide equipments and teaching aids to universities and polytechnics, sponsor conferences and seminars that have to do with oil and gas, and sponsor visits to oil rigs and other installations for the purpose of learning, training and education. These are all without prejudice to the operating word that the main thing that PTDF should do is to train Nigerians so that they can become qualified people to be able to work in the oil and gas industry. It can be training that satisfies the low and middle level manpower in oil and gas, or high level manpower. All are within the purview of the PTDF law. That is in my considered opinion.

Q: The Executive Secretary NCDMB also said and I quote, 'most of the trainings that PTDF had given in the past, some of them are challenged in terms of relevance in the oil and gas industry, because the gap analysis that was done was not translated into the kind of skills that are required in the industry. That is why some of those people already trained are still struggling in getting employment'. What is your response to this?

A: Like I said, from the beginning, PTDF has mandate to train, it doesn't have the mandate to ensure the employment of the people that it has trained. However, every programme of PTDF was as a result of a thorough need analysis. Let's take the overseas scholarship scheme for example, was started in 2002. Prior to that, we tried to engage the International Oil Companies (IOC's) to find out why they don't

employ Nigerian graduates and even where they employed them, they have to subject them to intensive training for over one year in Warri or somewhere in the country. And the answer was that the curriculum of the universities does not take into consideration the current realities of the operations of the oil and gas industry. For example, the university curriculums lacked engineering design programmes, which is fundamental to working in the oil and gas industry. So for that, they don't employ them. Because of that interaction with the IOC's, PTDF decided to start the OSS programme as a pilot scheme in 2002, in order to bridge the gap. And PTDF has conducted many skills gap analysis before it started the training of welders for example and it was as a result of the skills gap, that we decided to do what we called train the trainer programme because we discovered in 2006 that we don't have many qualified welders in the sense that they don't have certification of the International Institute of Welding. We did not even have our own national body that is the Nigeria institute of welding. So it was the skills gap that brought those out. It was as a result of that skills gap analysis we now decided to encourage our own Nigeria Institute of Welding to become a national body so as to now create and approve training centers which hitherto we didn't have them, but now we have them. The problem we have and that is probably why most of the people we trained under the programme are not employed is because most of the analysis of the skills gap is based on upcoming and ongoing projects and

because of the problem of the economy, and the down turn in the prices of oil and also the lack of passage of the PIB, there was no investment in the sector in the last five or six years. So many of the programmes that were envisaged did not take off and even those ones that were ongoing were abruptly stopped, so that was why most of them did not get any employment in the area because of the economic down turn in terms of investment in the oil and gas sector. It's not that the training we do is not apt or based on need analysis, we did our best and currently another skills gap audit is going on.

Q: Let me just get this clear, does PTDF train to fill capacity gaps or base its training on expected jobs in the industry?

A: We do both. We train to fill capacity based on the need analysis, if we identify the vacancy, then we now go ahead. For example, now that we are talking

with those contractors that have won the AKK project and we have realized the skills they require, we are in the process of identifying qualified Nigerians to train for skills to work on this gas pipeline that is coming from Ajaokuta to Kano. We are also talking with Dangote Refinery on the skills and competences they will require when the refinery finally comes on stream because that is our mandate and it is the duty of NCDMB to ensure the utilization of those that we have trained. That is why I call for closer ties and collaboration between PTDF and NCDMB so that we can work together. They are the regulators, as far as the development of Nigerian Contents is concerned in the industry. They should tell us; where are the gaps and as long as we create competence to fill those gaps it is their own responsibility to ensure the utilization of those competences ■

PTDF law is not restrictive as to the category of people it should train. The operative word is to train Nigerians to qualify as graduates, engineers, technicians, craftsmen and professionals, etc. So it is not restricted to either high level manpower or low level manpower.

Mr. Balarabe Ahmed
General Manager, Legal, PTDF

INSIDE PTDF



The Petroleum Technology Development Fund implements its mandate of capacity building in the oil and gas industry based on three (3)

focal areas: Human Capital Development, Institutional Capacity Building and Research for the development of petroleum locally. Internally, the various departments, divisions

and units' operations contribute to the realization of these focal areas. The Executive Secretary as the head of the Fund drives the implementation of the programmes and projects of the Fund. He is assisted

by General Managers in policy formulation and other initiatives on the operations of the Fund. PTDF DIGEST spoke with the General Managers on the operations of their departments towards the implementation of the Fund's mandate.



JACQUELINE GUYIL
GM Nigerian Content and Industry Collaboration Dept.

Jacklyn Guyil is the General Manager, Nigerian Content and Industry Collaboration department. The department functions through three divisions, namely: Industry Collaboration (Up Stream), Industry Collaboration (Mid and Downstream) and Gas Technology Development. The department serves as the major interface between the upstream, mid and downstream oil and gas sector and the Fund for effective development of the human capital requirements. The department is also responsible for the development of sustainable partnerships and collaboration with relevant stakeholders in the industry

and the academia on human capital development for the sector. They promote local content development through the effective engagement of the Funds' graduates and trainees in the upstream, mid and downstream oil and gas sector. Through the Gas Technology Development Division, the department develops and implements strategies towards building human and institutional capacity to support Government's vision of moving Nigeria from a crude oil export – based economy to a gas – based industrial economy. Ms Guyil gave further insight on the workings of the department

in this interview with PTDF DIGEST.

Q: Bring us up to date on the activities of your department.

A: Under the strategic direction of the Fund, we engaged in a skills gap audit exercise for the industry. This is to enable us train in the areas where skills are lacking. So the skills gap audit is ongoing at the moment. As soon as we have the results, we will strive to fill the manpower gaps in the identified skills that are lacking in the industry through training. We are also continuing with the Welders Training and Certification Programme. We trained a lot of welders in the past and we are getting them on post training attachments. We have them at the moment in all the refineries. This will enable them to have some hands-on experience to be industry ready. In addition to that, we have also tried to create linkages the industry to know their manpower needs to enable us provide training to fill those skills which they require to carry out most of the activities in the oil and gas industry.

Q: How do these contribute to the broad

objectives of the Fund?

A: The Nigerian Content law was enacted to ensure that Nigerians get more involved in the operations and management of the oil and gas sector. And in order to achieve that we have to train the manpower to be used in this industry. So basically what we do in Nigerian Content Department is to work closely with the industry to see the kind of skills they require and then we train to fill up all those positions that are available to Nigerians towards achieving the Nigerian Content goal. And as far as Industry Collaboration is concerned, we have to work really closely with the industry for us to know their requirements to enable us train to fill all the gaps that exist in the industry and without these linkages and collaboration with the industry, we will not be able to provide them the required manpower that they need in the industry.

Q: You mentioned linkages, are there specific activities of the department to ensure these stakeholders are carried along?

A: Well the fact of the matter is because all the

trainings we do are for the industry, if we are not partnering with them, there is no way we will know the requirements of the industry. So apart from partnering with them to support their training programmes, there are activities that go on in the oil and gas sector including conferences and programmes. So we have to work closely with them, we have to partner with them to support these programmes because it is part of our mandate to ensure that we do these things. And we don't do it in isolation, we have to do it with the players in the industry, we have to partner with industry stakeholders in order to achieve this.

Q: Are there specific associations or institutions that are discussing with you towards building these collaborations or linkages?

A: Well you know there are various associations that we work closely with like the Society of Petroleum Engineers (SPE), Oil and Gas Trainers Association of Nigeria (OGTAN) and a host of others. So we have to work closely with them because they are closer

to the people operating in the industry. So we need to engage them. They are like some kind of link between us and the industry. But apart from these associations, we still deal directly with the various operators, so that at least they get to know what we are doing and we also get

to know what their needs are as far as the skills are concerned.

Q: You recently published advertorials calling on beneficiaries of PTDF training programmes to input their data and to respond to an online questionnaire. What was the purpose?

A: Basically what we are trying to achieve with this is to measure the impact of all the training programmes that we have been doing here at the Fund and also get to hear from them on how we can improve on some of the programmes, so we try to get some input from them going forward, to guide us on how we can improve most of the training programmes we have been doing over the years.

Q: Gas Technology Development Division is newly created in the Nigerian Content and industry collaboration. So what are we expecting from that division.

A: As we carry out the skills gap audit of the oil and gas industry, we pay particular attention to the gas sector, and upon the conclusion of this skills gap audit review, we should be able to identify all the skills that are lacking in the entire gas value chain and then we begin to train in order to fill those gaps. This is towards attaining government policy on gas and the takeoff of the gas revolution.

As you are aware government is doing a lot to develop gas in Nigeria, and this will require a lot of manpower in the entire value chain, so we have to train and make the skills available for the takeoff. Without the skills there is no way this gas revolution will take off in this country, so we have to train towards that.





AHMED GALADIMA AMINU
GM Education and Training

Mr. Ahmed Galadima Aminu is the General Manager Education and Training department of the Fund. The department is structured into three divisions: Education Overseas Scholarship Scheme (OSS), Education Local Scholarship Scheme (LSS), and Training. Education (OSS) division is responsible for the development and implementation of the Fund's policy on Overseas Scholarship Scheme (OSS) while the Education (LSS) division handles the implementation of the Local Scholarship Scheme (LSS). Training division is responsible for development and implementation of the Fund's policy on training and skills development programmes by liaising with relevant bodies to ensure proper certifications for trainees under PTDF training programmes. It also identifies the skills requirements for the Nigerian oil and gas industry and also builds capacity for employees and stakeholders in the oil and gas industry.

The General Manager spoke to PTDF DIGEST on the activities of the departments and other issues on the operations.

A: The activities of the Education and Training department emanate from the mandate of the Fund as a capacity building agency and that is building the competencies and capacity of Nigerians to participate effectively in the oil and gas industry. The department manages the scholarship

programmes of the Fund and other short-term capacity building programmes for the oil and gas industry. We have the overseas scholarship scheme and then the local scholarship scheme. Under training we also have short term capacity building programmes to enhance the skills of staff of public sector agencies in the oil and gas industry.

Q: The Fund recently introduced some changes in the processing of the Scholarship Scheme particularly the overseas segment. Can you shed more light on these changes and innovations?

A: Since inception, we have had the overseas scholarship scheme in conjunction with mostly universities in the UK and some in the United States. But we are refocusing to expand to other countries through partnerships. We have offers of scholarships from countries like France, Germany, Brazil and China. Under this strategic partnership, we send students on tuition free or near tuition free basis, meaning that in most of the schools we send students we only pay the living and accommodation allowances

without paying tuition. So, this year we are focusing on those partnerships by trying to deepen the relationships with the countries I mentioned and all the programmes in those countries are core oil and gas programmes.

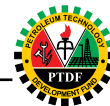
Q: What about the institutions we are involved with in UK and US. Are they still part of the scheme or have we cancelled further engagements with them?

A: We are trying to deepen the strategic partnerships. We have identified some strong universities in the UK with some specific programmes, and the process of concretizing the partnership is still ongoing. Our focus is to try to build relationships with the partners where we can have zero or no tuition as well as streamline the number of universities we are dealing with in the UK. Instead of opening up to all universities, we will have only the universities with core programs that meet our objectives.

Q: There are some changes that have been introduced in the processing of the



A cross section of beneficiaries of PTDF Overseas Scholarship Scheme



scholarship that you need to explain further; The scratch card, age etc?

A: Yes for the scratch card, in the past we used to sell the forms through scratch cards but from this year, the application is free, just go to the application website, click and then it provides you with the pin number and you use the pin number to apply. So from this year, for all our scholarships, there is no more use of scratch card to obtain application forms. In terms of age, if you noticed in the past we put a bar on PhD applicants to 40, but now you know that, the government has increased the retirement age for academicians, may be up to 70 or so, so we say ok let's remove the bar,

because even if you are 70 you can still work, if you can finish your PhD by the time you are 50 or even 55, you can still have useful time to contribute to nation building. So that is why the issue of age is relaxed.

Q: Can you explain a bit more about the Aptitude test; is it no longer going to form part of the process for the scholarship? If not, what is going to replace it?

A: Yes, from this year we are not going through the process of aptitude test, we now use the credentials of the applicants to assess them through a grading system. There are different grades; first class or second class upper. There is a provision

for applicants to state the reason why they want to study the programme which will also form part of the screening process. After the first screening, we will request applicants to submit their transcripts which will be assessed and thereafter forwarded to the school for admission based on their criteria. Even the admissions, we will get the admissions, all they need do is just to apply and submit to us and then we screen, if you meet the criteria, we will send it to the university to rescreen it, if you now meet the admission requirement, they will now give you the admission. However, the process will take care of the federal character because at the end of the day, the

selection has to reflect merit as well as federal character.

Q: What about the Local Scholarship Scheme (LSS)?

A: well, part of the strategic direction is to expand the Local Scholarship Scheme. Last year we had the highest number of applicants for the LSS and we hope to continue with the tempo by increasing the number of the awardees. We also want to use the platform of the PTDF centres of Excellence, that is the National Institute for Petroleum Studies, Kaduna and the Centre for Skills Development and Training, Port Harcourt to start some programmes in-country and thereby expanding the base of the LSS.



BALARABE AHMAD
GM legal & Secretariat Services

Balarabe Ahmad is the General Manager, Legal and Secretariat Services. This department is structured into two divisions. They are the Legal Division and the Secretariat Services Division. The functions of

the legal division include the preparation and interpretation of the Fund's policy document, offering legal advice to the Fund and its staff, Preparation of all agreement documents and providing arbitration,

mediation and reconciliation services for alternative dispute resolution. The Secretariat Services Division manages and documents deliberations of management meetings and circulates the decisions for proper implementation.

Q: How do the activities of the Legal department contribute to the Fund's capacity building mandate in the oil and gas sector?

A: Legal department being the conscience of the Fund, principally ensures that every capacity building effort is in accordance with the law establishing the Fund and also is in accordance with the extant rules of the public service. Specifically the Legal Department provides the effective legal services in terms of writing legal opinions, preparing agreements, vetting agreements and ensuring that the entire legal documents signed

are inbuilt with the legal insurance so that in case of any eventuality, we can be able to cover our own rear. It is the responsibility of the legal department to also provide the diverse range of substantive and procedural questions of law arising out of administration of the Fund. So the Legal department is an integral part of the Fund since the beginning of everything is law. We are a creation of the law and we must be guided by law, so whatever we do in any relationship that is likely to end in a legal relationship, our department is there right from the beginning to advise, to guide, to make input, so that we can protect ourselves and we cannot fall foul of the law. You know a legal department is an in-house counsel, it is totally different from an external solicitor who you only need when you have problem. But our Legal department was and still is an in-house counsel that takes part in every activity



of the Fund right from the conception to preparation and implementation. And we are also responsible for ensuring our management meetings are properly conducted, documented and any decision arising there-from is followed up to full implementation. We are also a very important representation in the tenders' board of the Fund where we guide and advice on all the issues that have to do with public procurement as enshrined by the Public Procurement Act. So in a nut shell, the Legal department is the conscience of the Fund, in the sense that we ensure that not only the right of the Fund is enforced but even the right of the staff working in the Fund are also protected.

Q: What are the major interventions that your department have carried out in the past?

A: Like I said, in every programme or intervention of the Fund, the Legal department is there but specifically I can recall that the Legal department spearheaded the hosting of an International Oil Producing Summit during which we tried to highlight the provisions of the PTDF Act which require oil producing companies to actually make donations for the purposes of training and education of Nigerians in the oil and gas. We also drew their attention to the fact that under the Petroleum Act, any licensee of oil prospecting or mining concessions has an obligation to train Nigerians. And these Nigerians include those working in the oil and gas industry and include all Nigerians. So we try to draw their attention to the fact that there is a need for PTDF and these IOCs and even the marginal field operators



to cooperate towards the capacity building efforts of the Fund. I believe that conference or summit was a huge success. Another intervention is the hosting of the Capacity Building for Judicial Officers. For the first time, we were able to extend our capacity building effort to the judiciary where some selected judicial officers of the Federal High Court, Court of Appeal, Supreme Court, were gathered in Abuja for training on the operations of the oil and gas. That meeting was also a great success, and for the first time the Chief Justice of Nigeria was able to visit the PTDF building and to also know first hand what we do and I am sure the outcome of the conference showed that we were in the right direction and that we

should continue. This year we are going to continue with our engagement of the IOCs, so as to find a kind of convergence where we can cooperate to take our capacity building effort to the next level. The Judicial Officers training is also going to continue because we did not cover everybody, actually the judges that attended our conference the last time were 60 in number and we intend to train more this year. And also this year we want to intervene in the Federal Ministry of Justice. We want to now train state counsels on the area of oil and gas and we are also going to even train them in the area of prosecution because we have realized that there are so many cases that went to court and the cases were

somehow lost probably because they were not enough trained prosecutors to prosecute those cases. So based on the invitation of the Presidential Adviser on prosecution, we are also going to intervene in that area to ensure that the state counsel are really trained not only in the area of oil and gas but in the prosecution skills, so that once they finish their own investigations and they present a case to the court, there is no way somebody can go scot free.

Q: Would you subscribe to any amendment of the PTDF act and in what areas?

A: Under a normal circumstance the review of PTDF law is long overdue because even in terms of space PTDF law is very



scanty, it is just two pages. It is not a good example in good governance because it lacks some basic organs of governance like the board of trustees and the rest of them. That is under a normal circumstance and I would have wished to see the PTDF Act amended to really expand the sources of our funding because the source of funding of PTDF is mainly the signature bonus and that is any payment made by any company to the Federal Government for the purpose of oil prospecting and mining concessions. That's where the issue of signature comes in. The licensing round is far in between and not as regular as should be, and taking a holistic and global overview of the oil and gas dynamics, don't be surprised if in no distant future the

operator will not be able to pay the signature bonus. For the sustainability of PTDF and for the continuation of its laudable capacity building activities, there is a need to expand the source of funding probably to include a provision that will say in a given year where the signature bonus is not enough to finance its budget, then a recourse has to be made to the federation account so that we can draw money to finance our projects or maybe to put another line of item to say going forward all the companies operating in the oil and gas should also contribute directly towards the funding of the PTDF budget. That will be difficult because it will be another additional fiscal responsibility which the IOCs may not like.

I will also wish to see that the PTDF Act is amended so that PTDF will have power to determine expatriate quota. We are training people all over, long term and short term, but we have no capacity to say don't bring these people because we have enough competencies on the ground. PTDF law in my view should be extended to make it easy for us to liaise with those responsible for expatriate quota, so that we can tell them the available competencies we have built before they allow people to come and work in the oil and gas industry. And there is also the need for us to have teeth to bite with regards to competencies we create. Meaning, once we create the competencies; we should be able to place them on post training or industrial attachments and be able to find jobs for them. We can ask the IOCs or other employers in the industry of the particular competencies required in the year, if we have such trained competencies; we will pass them over to the employers of labour. Where we don't have, we will ask for time to create those competencies by training and up skilling qualified Nigerians. This is the only way we can continuously increase the participation of Nigerians in the oil and gas sector. For now the law just mandates us to train and provide capacity, the law didn't say we should get employment for them. To me there is a gap somewhere, we are spending huge money to train these people; some of them remain outside the country doing some menial jobs. If the law is amended to give us the kind of teeth to ensure utilization of the competencies we are creating, we will realize the value of our money better in

that way.

Q: Is the issue of expatriate involvement in the industry not the job of Nigeria Content Development and Monetary Board (NCDMB)?

A: As far as I know, NCDMB is a regulator that should enforce the utilization of the competencies PTDF creates. There should be a provision in the law which mandates NCDMB to liaise with PTDF to find out available competencies. There should be a greater and closer collaboration with the NCDMB, so that together we can take the local content issue to a greater height. Now as it is, NCDMB is a regulator, they supervise the utilization of the competencies available but they don't even know how many engineers we have trained to international standard, because the law does not require them to do so. We need to be liaising more with the NCDMB to the extent that we should ask okay going by the current operations in the industry and upcoming projects, what competencies do you require? How do we go about producing these competencies with certification. I believe there is the need for greater cooperation between the two agencies so that we streamline our roles to the extent that were we can do things together we do them, where we can maintain our core responsibilities we maintain it. The core responsibility of PTDF is capacity building; the core responsibility of NCDMB is ensuring utilization of the competencies, Nigerian manpower and everything that is Nigerian in the oil and gas industry as long as they are available and of international standard.



MR. JIDE ADEBULEHIN
GM, Strategic Planning, Research and Documentation

Mr. Jide Adebulehin is the General Manager, Strategic Planning and Documentation department of the Fund. The department is structured into two divisions; Strategic Planning and Statistics; Research and Documentation divisions. Strategic Planning and Statistics division is responsible for developing short, medium and long term strategic plans for the Fund, formulation of strategic policy goals and benchmarking corporate policies and technology transfer initiatives of other industries, agencies/organisations towards a regular review of the Funds activities. The Research and Documentation Division, co-ordinates and manages the Professorial Research Endowment Programme, and other research and development activities of the Fund such as the PTDF Annual Oil and Gas Research Grant competition, PTDF Technology Knowledge Sharing Programme and the commercialisation of research outputs. The department also publishes

the Petroleum Technology Development Fund Compendium of Oil and Gas Research and the Petroleum Technology Development Journal.

Mr. Jide Adebulehin spoke to PTDF Digest on the operations of the department.

Q: What are the various interventions of the department and how do they contribute to the mandate of the Fund?

A: The fundamental mandate of PTDF is capacity building in the oil and gas industry and how do you build capacity for the oil and gas industry? You can develop human resources, you can develop technology, you can engineer research for the purpose of future advancement, and that is exactly what we are doing at PTDF. Strategic Planning is the major responsibility of the department. If you don't plan, you don't grow; when you plan you grow effortlessly. To envisage and plan for the short term,

medium and long-term programme of the Fund is a fundamental responsibility of SP&D department. So, in this department, we are responsible for projection, forecasting, and coordinating the activities of all departments towards achieving the primary goal of capacity building in the oil and gas industry. So, you can say that the department is the brain box of the Fund. Research has been a major responsibility of PTDF since inception, and this is carried out by the research and documentation division. One of the cardinal programmes of PTDF is the Professorial Endowment Programme in Universities. At inception, the Management of PTDF decided to choose one university in each geo political zone to institute a Research Professorial Endowment Program. At Ahmadu Bello University, Zaria, a professorial chair was instituted in chemical engineering that has to do with Zeolite catalyst with the Kaduna refinery in focus, such that the output of that programme will benefit the oil and gas institution in the immediate vicinity. In the Niger Delta, gas flaring was prominent. So, a professorial chair in gas engineering was instituted in the University of Port Harcourt such that the product of that professorial chair activity will benefit or ameliorate the topical issue of gas flaring within the Niger Delta. The University of Ibadan has the foremost Petroleum Engineering department in the whole nation. A professorial chair was instituted in Petroleum Engineering that has to do with flow assurance, productivity and oil recovery. At the University of Nigeria Nsukka (UNN), PTDF

endowed a professorial chair in geology, with specific attention to Anambra basin. Anambra basin is one of the inland basins in Nigeria that has been under explored. If you recall, in the history of mineral deposits in Nigeria we talk about Anambra coal. If you do a little bit of study about the occurrence of hydrocarbon; you will find out that hydrocarbon, petroleum, gas and coal, are always based in similar region. But the focus was not on coal but on hydrocarbon prospectivity of the Anambra basin. It was about the review of literatures and all the work that has been done in Anambra basin. We did not stop at that, we went to Usman Dan Fodio University Sokoto, where we instituted another professorial chair in Petroleum Chemistry, with the purpose of developing different catalysts that could improve the Petroleum products we have such as PMS and ordinary domestic gas. We left that area and then went to the University of Jos. You will remember Jos used to be the centre of mining in Nigeria, so we instituted a professorial chair in Geology and Mining, with the prospectivity of the Benue Trough in focus. So the Professorial chair was instituted particularly to combine the prospectivity of Benue Trough and beneficiation of the coal activity in that area. At the University of Maiduguri, PTDF instituted a Professorial chair in Geology specifically basinal studies to study and review all the activities that have to do with the Chad basin. The Chad aspect of the basin was already producing, a lot of international oil companies were working on it but the Nigerian aspect of it was not well explored. The purpose of the chair



Kaolin purification pilot plant, ABU Zaria for the production of Zeolite Catalyst

that PTDF instituted at the University of Maiduguri was to coordinate the literature, so that we can harness all the scientific exploratory activities that have happened there, and the data can be given to agencies like NNPC and DPR. At the University of Benin, we instituted a Professorial Chair in Chemical Engineering because the issue of Petrochemical is very germane in the Nigerian Oil and Gas industry. I can tell you with every sense of responsibility that, the output of the work of these Professors in all those early universities that I mentioned that started 17 years ago, is very tremendous and we are seeing the benefits in the oil and gas industry, because some of it has led to some form of commercialization.

Q: All together how many chairs have been endowed?

A: As it is now, we have actively about 8 professorial chairs ongoing and in the last one year because of the review we are doing in terms of our new strategic

focus, there has been one delay or the other in terms of activities on those professorial chairs. But with the renewed vigour and the encouragement the Executive Secretary has given us, activities will improve in all those chairs. And at the end of the day, it is our intention that we will institute more in other universities across the length and breadth of Nigeria.

Q: The tangible sign of achievement of any research perhaps is the outcome. Looking at the professorial chair endowment, have we had any substantial breakthrough; leading to the issuance of patent rights?

A: As I said earlier, the professorial endowment chairs were instituted 17 years ago and some of them have closed out, others are ongoing. As the principal researcher gets retired or transferred, the younger ones take over. We have also designed the research grant which complements

the professorial endowment chair. The professorial endowments are based in universities and we allow the universities to have influence over the programme because they are the ones who have control in terms of hosting the chair and the professors. The research grant is open to brilliant practitioners in the industry that are not necessarily university lecturers, particularly retired practitioners in the industry that are young, that are vibrant and independent . The research grant is open

to anybody that has any topical issue about the oil and gas industry in Nigeria. We have constituted a steering committee which comprises of experienced people from the industry and academic to assess the applications. The professorial endowment chair programme and the research grant programme have produced output that have been patented and ready for commercialization such as the development of Zeolite Y catalyst from kaolin using

novel processing method, development of sustainable technology for bio-energy production from non edible oil seeds, we have data base for well bore stability in the Niger Delta, we have control of fines migration in reservoirs using nano particles, and we have production of fuel briquette and bio gas from water hyacinth and cow dung, mixture for domestic and agro industry application in Nigeria. These five have completed, and are ready for commercialization, we have

If you don't plan, you don't grow; when you plan you grow effortlessly. To envisage and plan for the short term, medium and long-term programme of the Fund is a fundamental responsibility of SP&D department.

- MR. JIDE ADEBULEHIN



received patent certificate for them. Our own research is industry tailored to produce identifiable and quantifiable results.

Q: What impact will such research outcomes have on the industry? Are investors showing interest in making products out of the research outcomes?

A: You see the process of commercializing research output, is not yet properly developed around us here but we are getting there. We are in the process and we have gotten the patents. Getting people that are interested in the industry has to be in collaboration with other agencies and practitioners particularly the international oil companies and our sister agencies like NCDMB and co. We are in the process of forming that partnership. The moment that partnership is well formed, we could say that some of these outputs will be sold to people that are ready to do it in large scale commercialization.

Q: Let's talk about the Technology Knowledge Sharing Programs which is one of the platforms that the Fund set up to bring both the academia and the industry together with a view to maximizing the potential of some of the research output. There appears to be a refocus or rebranding of the programme to look at the hydro carbon potential of inland basins, taking the Sokoto event as example. Is there a shift in the original concept?

A: There is no shift in the original concept. We are just following the original concept. What happened in Sokoto is one of the

planned Regional Technology Knowledge Sharing Programmes. We just started from Sokoto. And what is Technology Knowledge Sharing?, it is to provide a forum where people in the academic community and the people in the industry can come together in a particular live project in the oil and gas industry and share their experiences and knowledge, such that investors will have a pool of very genuine and accurate data. Now the last one we did in Sokoto which is going to be first of the series happened to concentrate on the Sokoto basin. Sokoto basin is part of the illumedin geological basin which expands from Nigeria to Niger. And we know that in the Niger aspect of it a lot of exploration activities are happening and you know geological boundary are not like political boundaries, they are not definite. So if it is happening in that area, we should look at our own section properly. So, we tailored the technology knowledge sharing programme in Sokoto towards bringing enlightenment and interest on the Sokoto basin. And it was very successful because the government of Sokoto, Zamfara and Kebbi really cooperated with us, You could see and hear from people who have done extensive work on that basin, you could see that we are already projecting that if not more of petroleum, gas, phosphate, all these things are potential minerals that are there and the moment we are able to conclude and put all the output of the research together, DPR, NNPC can go into the market. That is a very clear and a glaring output of PTDF programme, we are not doing programmes for the purpose

of theory, or for the purpose of writing PhD thesis or developing professorial papers. Our research is being translated into activities, live programmes that will benefit the industry. You heard what the DPR people said that they are going to list the Sokoto Basin for bidding; investors are going to be invited. The Sokoto Government itself has gone to bring in some Chinese people, and you could see the exposition of knowledge that was coming out at that Technology Knowledge Sharing Programme. That is the purpose of the PTDF, to engender knowledge, to rekindle technology and to develop human technology. We are not the enforcer, the DPR, the NNPC are the enforcers.

Q: You said Sokoto is the starting point for the regional Technology Knowledge Sharing Programme; which of the other basins are you likely to look into?

A: We are going to do other Technology Knowledge Sharing Programme that will focus on different topical issues in the industry. We have been working for the past 17 years with the University of Nigeria on the Anambra basin. Anambra basin has a lot of potentials because of offshore prospectivity. It is likely that the next technology knowledge sharing programme will be towards that area. In Chad, we have several uncompleted studies there. In Dahomey Basin there are indications of production. So there are so many areas we have to create awareness. We hope to extend the Technology Knowledge Sharing Programme to deep offshore activities to bring out all the issues about technology for

hydrocarbon prospectively in these areas.

Q: Finally, part of the constraints, very fundamental to researchers is data collection and testing and particularly where they have to go outside the country in order to test the samples. I know that PTDF is exploring the possibility of having central laboratories located in strategic areas. What is happening to that?

A: If you know the amount of foreign currency that is being spent in the industry on investigation and research in the oil and gas industry; it is in millions of US dollars and the excuse is that there are no available laboratories around to do all the researches we are dealing with in the university or outside the university. Our researchers get to a particular point when they need to do some tests they just have to look at Egypt, South Africa, Texas and other places. And capital keeps on flying out of Nigeria and this is a country where we need to do things that will improve employment, that will improve using our local materials and resources. So if we cannot have the big and comprehensive laboratory at work, we can start from somewhere. That is why PTDF came up with the idea of at least establishing one or two standard analytical laboratories on oil and gas in the country, commercialize it, give it to people who can run it commercially so that it doesn't depend on government funding. I believe the moment our funding improves and we get all the necessary approvals we can start the programme.



IFEOMA NWOKIKE
GM Projects

Ifeoma Nwokike is the General Manager, Project Department. The department is responsible for the implementation and supervision of the Fund's infrastructural development projects. The projects department is structured into three (3) divisions; Projects Management Division, Operations Management Division and Facility Management Division. The Project Management Division is responsible for planning, designing and supervision of PTDF projects. This division also works closely with beneficiaries to ensure the project meets business needs and has maximum beneficiary buy-in. The Operations Management Division assists management with project initiation and conceptualization by ensuring that they are in line with the Fund's strategic goals and mandate. The Facility Management Division is responsible for managing the Fund's properties and ensures proper utilization. It also

develops business plans for the utilization of the corporate office facilities for training development.

The General Manager, Project Department spoke to PTDF Digest on the operations and projections of the department.

Q: How does your department help in realising the mandate of the Fund?

A: Well as you know, the mandate of PTDF is to build capacity in the oil and gas industry, and PTDF has a three prong approach to this capacity building. We do human capacity building, institutional capacity building and we also do research. So projects department

is the one charged with the responsibility to build capacity in our institutions, to ensure that these institutions are able and capable of training and developing world class skills in oil and gas disciplines. That's the role of PTDF Projects Department. We go to institutions and provide buildings, equipments and all the tools that they necessarily need to be able to turn out world class skills and competencies, i.e people who are skilled and competent to work in the various disciplines that you find in the entire value chain of the oil and gas industry.

Q: What are the major projects of the department?

A: PTDF has done a whole lot in terms of institutional capacity building. We have been engaged in upgrading several oil and gas related departments in our universities. We are also engaged in providing ICT centres in both secondary and tertiary institutions.

We also established some oil and gas polytechnics one in Ekowe the other one in Bonny. We also upgraded the premier Petroleum Training Institute in Effurun, Warri. We are also establishing some Centres of Excellence in Nigeria where a lot of oil and gas training will be held. We are establishing one in Port-Harcourt and another in Kaduna.

Q: What is the development status of these special projects otherwise called Centres of Excellence?

A: With the coming of the current Executive Secretary, he thought we should re-evaluate the way we do things in the Fund and all our programs and projects were reviewed and we came up with some cardinal points as to how we will approach our capacity building mandate. One of the things that came up was the fact that we need to domesticate our training to help us to train more and save the country a whole lot of foreign exchange. And



PTDF Premier Centres of Excellence in Kaduna and Port-Harcourt



based on that the Fund's management decided that it will be good to set up these centres of excellence to cater for all the trainings in the whole oil and gas value chain. We started to re-engineer the way we go about the development of the National Institute of Petroleum Studies, Kaduna and the Centre for Skills Development and Training in Port-Harcourt, which

were tagged our centres of excellence. The National Institute in Kaduna will cater for the high level/mid-level, man power development in the oil and gas industry while that of Port-Harcourt will be looking at the low level/ mid- level trainings in the oil and gas industry. That's the way we have structured it and we have been making all the contacts necessary to make sure that these

Centres of excellence are up and running.

We actually believe that these Centres of Excellence will be made functional very soon and it will go a long way to reduce the foreign exchange that we spend on the trainings that we carry out. This will also give more Nigerians the opportunity to be trained and acquire skills and competencies in the oil and gas industry.

Q: Are there likely to be more upgrades in the universities by the Fund?

A: Yes! In addition to our Centres of excellence, our focus will also be to upgrade more universities across the country to give more people the opportunity to benefit from the upgrade of infrastructure in our universities to equip them to have better graduates.



DANUPAWA AHMED
GM Admin & Human Resources

Ahmad Nasiru Danupawa, is the General Manager Admin and Human Resource

Department of PTDF. The department performs its functions through

two divisions, namely; Administration Division and Human Resource Division. There is also a Transport Unit. The core responsibilities of the department include staffing, training and development, recruitment, promotion and disciplinary matters, industrial relations and labour matters, providing safe and conducive work environment for staff of the Fund, and career development, counselling and succession planning.

Q: What is the role of your department as a functional arm of PTDF?

A: The role of Admin and HR Department is to create an enabling environment for work to be carried out in the most effective and efficient

manner, to achieve the mandate of the Fund.

Q: What are the training opportunities taking into cognizance the capacity of the staff?

A: Training in 2018 for staff of PTDF will be characterized by PTDF's new strategy of domestication and cost cutting. The admin and HR Department will ensure training for junior staff is done as at when due by government approved providers in-country. In securing providers for foreign training, the key watch word is negotiation and discount from providers, to reduce cost.

Q: What updates do you have regarding the PTDF building in terms of maintenance, Canteen, hosting of oil and gas conferences, etc?

A: The PTDF building is presently being maintained by the facility management unit under project department. The PTDF staff canteen which is being managed by Tree House Restaurant is fully operational. The Fund is open to assisting the Ministry of Petroleum Resources and other stakeholders with its facilities in terms of hosting events that are oil and gas related, for free ■



LIFE ON A DRILLING RIG OFFSHORE



My name is **Bio Moko**, I am a field Engineer with a background in Electrical / Electronics Engineering and 10 years experience working on a drilling rig. There are different types of offshore drilling rigs. We have the jack-up rig, semi-submersible rig, SWAN rig also known as drilling barge and drillship. The various offshore rigs have different water depths of operation. Life offshore on a drilling rig can be very interesting. Firstly, there are basic safety training requirements you

need for you to be able to work offshore. These are Basic Offshore Safety Induction and Emergency Training (BOSIET) and Helicopter Underwater Escape Training (HUET). Before you go offshore you need a flight booking and you are required to be at the airport one hour before flight departure. Also, you are required to swipe your DPR offshore safety permit card. On arrival at the rig, you are required to undergo a compulsory safety induction to remind you of the dangers

associated with working in such an installation as the drilling rig. Proper job safety analysis is done before you commence work. You will be assigned to a life boat and an alternate life raft in case of emergencies. You will be allocated to a 2-man or 4-man cabin. Major hazards that occur in the rig include trip and fall, fall from height, fire, poisonous gas during drilling. We also have meal times onboard and coffee breaks as well. Work time is usually 12hrs shift for the drill and

marine crews, but for others it is 10hrs. Life after work is usually interesting. You don't have a place to go from your cabin, but there are recreational activities onboard ranging from TV room, games room and the gym to keep you fit. But others might come out of their cabin to the Helideck to walk around the deck or have a view of the surrounding ocean or creeks. After completing your job on the rig, there is nothing as exciting as going back to your family and loved ones

after weeks of not seeing them. But to achieve this you must work safely and also think about the safety of others.

I have seen exciting views like the Cameroun mountains, whales, dolphins, fishes, even flying fish, fishermen, fishing trawlers,

tanker oil production platform boats and other rigs. Well, in the area of emergencies it could be really critical with the associated risk of drilling, fire outbreak, emission of deadly gases, and security risk such as pirate attack ■



After completing your job on the rig, there is nothing as exciting as going back to your family and loved ones after weeks of not seeing them, but to achieve this you must work safely and also think about the safety of others as well.



HEALTH, SAFETY AND ENVIRONMENT (HSE) IN PTFD

“We all share the benefits of a healthy and safe workplace”
World Day for Safety and Health at Work Place

For practical purposes, Health, Safety and Environment in simple terms are what organizations must do to make sure that their activities do not cause harm to anyone. It involves identifying workplace hazards and reducing exposure to such harmful situations and substances. It also includes training of personnel in accident prevention, accident response, emergency preparedness, and use of protective clothing and equipment.

Promoting standards of health, safety and environment within an organisation is justified for the following reasons:

Moral:
An organisation owes a duty



PTDF HSE Team and resource persons during the HSE Awareness

to take reasonable care of its actions, its potential effects or consequences. Basically one should not hurt or put others in danger with one’s own actions, especially at the workplace.

Legal:
The Legal implications of not applying Health and Safety measures are probably the reasons why most employers put in place an effective Health

and Safety environment. All these are to avoid litigation and prosecution in an organisation.

Economics:
Good health and safety



environment can improve productivity, reduce risks and improve team spirit and morale in the workplace. Providing regular and frequent breaks or job rotations can also help. In other words HSE helps to mitigate the costs of ill health and environmental accidents in an organisation. Other reasons are reduction in losses from injury and damages, decrease in absenteeism, increased staff retention, decrease in insurance premiums, enhanced workers morale, improved reputation and enhanced business opportunities etc. The protection of workers against work-related sickness, disease and injury is the duty of every employer. Decent work is safe work. Safe work is also a positive factor for productivity, economic growth, and sustainability. Safety and health management is a vital constituent of oil and gas industry activities as the operational activities associated with oil and gas production are prone to serious safety and health threats to the workers.

Benefits of Safety system in the oil and gas work environment.

- Enables the oil and gas industry in performing hazard identification, risk assessment and implementing various control methods
- Ensures the well-being of all the employees and thus contributes to a more inspired, and performance driven workforce
- Reduces costs associated with accidents and incidents
- Improved regulatory compliance
- Implementation of

Health management system gives competitive edge and improves relationships between stakeholders.

As a major player in the oil and gas industry, the Petroleum Technology Development Fund (PTDF) in 2005 instituted its health, Safety and Environment Unit in compliance with industry policy of maintaining good work and safe environment for employees.



The Fund's HSE Officer and Emergency Coordinator, **Engr. Munir Sirajo** spoke with PTDF Digest on the application of HSE in PTDF

Q: Please give us a brief history and overview of HSE in PTDF?

A: The HSE activities have come a long way in PTDF. It started more than 10 years ago. Various attempts were made to have a vibrant HSE unit in PTDF and with various staff heading that unit. The first person that headed the HSE Unit in PTDF Unit was Mr. Garba Bako. He is the pioneer Head of the Unit, which commenced in 2005. Along the line various heads were appointed to Head the Unit. I

headed the Unit around 2010 and then in 2013/2014 I was made to head the Unit again and since then I have been the one heading the unit with the help of other HSE wardens.

Q: why is HSE a fundamental aspect of the oil and gas industry?

A: HSE is not only fundamental to oil and gas industry, it is fundamental to all work related activities. But as we all know we

are part of the oil and gas industry, secondly, it is one of the most high risk prone industry and HSE is a major concern in oil and gas and all work related activities. The essence of HSE is to ensure that workers come to work and leave safely, work in safe and healthy environment. That is the basic principle of HSE.

Q: Is it applicable to only oil platforms or is it in the drilling aspect of the oil and gas?

A: It is applied in the whole gamut of the oil and gas operations, right from exploration, production, distribution, marketing and all that. Then of course the office environment too

comes into play. So it is not peculiar or limited to a certain area. Anywhere you have oil and gas activities right from the administration up to the exploration and production. In fact, it is more so with exploration and production.

Q: Does HSE apply also to conference, seminars and workshop settings?

A: Yes. It is for everybody. For instance in this office, you could say that there are no risks, but there are certain rules and regulations as simple as how you carry loads, the amount of loads you carry, the height to which you carry it or you bring it down. There are certain Health and Safety Regulations that govern that; there are certain heights that you don't lift objects without the assistance or without the use of either a ladder or a platform and there is a limit to the kind of loads you should carry on your head. There are regulations to the temperature of your office environment, it shouldn't be below a certain level and it shouldn't be above a certain level. Anywhere you find yourself; there are some elements of risks associated with it. In any case we leave in a world that technology is around us everywhere; we have electricity everywhere, so that too is a source of risk or hazard. Wherever you find yourself working, there are always some elements of risk or hazard that is associated with it, which HSE attempts to address or to stem so that such things don't happen.

Q: Has there been any breach of HSE in PTDF?

A: I think so far we have been able to have near incident free status in PTDF; we have not had any incident

where someone's health or life is threatened. Similarly we've not had incidences where the office environment too is faced with either fire or some kind of disaster. There were however some near incidences that we experienced, Microwaves being mishandled, fire alarm, bottles mistakenly broken and all that. But those are part of the risks that we are faced with. We've never had any serious health

or safety threat. My only concern and the concern of the HSE Unit as a whole is the attitude of the staff to health and safety issues. We are trying to make sure that everybody is fully aware of the risks involved and what he/she needs to do in the event of any emergency. The response has been okay but we still need to do more. We still need to take the HSE issue serious. You have a situation where you have an

evacuation and somebody is trying to take his/her bag, which shouldn't be the case. That second you waste trying to look for your shoe or trying to pick your bag, anything can happen. If there is a fire outside here and God forbid, and you say you are looking for your phone or you are looking for your bag, before you could leave the place; that could generate into something that nobody is praying for. So that is the

only issue that we need to really be more serious about.

Q: Are there administrative challenges within the HSE Unit in the Fund?

A: Not really, I think we are getting the necessary support from the Management and even the staff, our colleagues, the HSE wardens ■

GLOSSARY OF OIL AND GAS INDUSTRY TERMS

Acreage: An area, measured in acres that is subject to ownership or control by those holding total or fractional shares of working interests. Acreage is considered developed when development has been completed. A distinction may be made between "gross" acreage and "net" acreage:

- Gross – All acreage covered by any working interest, regardless of the percentage of ownership in the interest.
- Net – Gross acreage adjusted to ref

Associated Petroleum Gas: Mixture of various gaseous hydrocarbons, dissolved in crude oil, which separate out in the production and refining processes (mainly consist of propane and butane). Associated petroleum gas can be used as a fuel and for production of various chemicals.

Barrel: Liquid measure containing 42 gallons.

Blowout: An uncontrolled flow of gas, oil or other well fluids from the well.

Bonny Light: Is a high grade of Nigerian crude oil with high API gravity (low specific gravity), produced in the Niger Delta basin and named after the prolific region around the city of Bonny.

Cash Call: Cash advance required to be paid by each joint venture company to meet the net cash requirement of the joint venture.

Compressed Natural Gas (CNG): Natural gas that has been compressed under high pressures, typically between 2000 and 3600 psi, held in container. The gas expands when released for use as a fuel.

Concession: A grant of access for a defined area and time period that transfers certain rights to hydrocarbons that may be discovered from the host country to a venture.

Crude Oil: Unrefined liquid petroleum. It ranges in gravity from 90API to 550API and in colour from yellow to black.

Downstream: This term is used in describing operations performed after those at a point of reference. The activities in the Oil and Gas industry taking place after production including transportation, refining and marketing.

Hydrocarbons: organic compounds of hydrogen and carbon whose densities, boiling points, and freezing points increase as their molecular weights increase. Although composed of only two elements, hydrocarbons exist in a variety of compounds, because of the strong affinity of the carbon atom for other atoms and for itself. The smallest molecules of hydrocarbons are gaseous; the largest are solids. Petroleum is a mixture of many different hydrocarbons.

Joint Venture: a group of companies which can include a state company, that have joined together to conduct explorations and prospectively exploit minerals or hydrocarbons under a specified area under the terms of an agreed contract.

Marginal Fields: A field that may not produce enough net income to make it worth developing at a given time; should technical or economic conditions change, such a field may become commercial.

Mineral Lease: A permit which gives a company permission to mine for minerals and to build a mine and all the equipment necessary for mining. The area of the lease must be surveyed (measured and mapped).

Oilfield: The surface area overlying an oil reservoir or reservoirs. The term usually includes not only the surface area, but also the reservoir, the wells, and the production equipment.

OML: Oil Mining Lease: a legal right to develop and produce hydrocarbons discovered in a specified area for a specified period of time.

OPL: Oil Prospecting Lease: a legal right to explore for hydrocarbons over a particular area for a specified time period.

PMS: Premium Motor Spirit: this is known as petrol in stock.

PPT: Petroleum Profit Tax: is a taxation of petroleum profit in Nigeria.

Production Sharing Contract (PSC): a petroleum production arrangement in which the contractor bears all costs of exploration and production without such costs being reimbursement if no find is made in the contract area (OPL or OML) and in which the government and contractor are both paid in the resource produced production well: in fields in which improved recovery techniques are being applied, the well through which oil is produced.

Refinery: any plant where a crude substance, especially petroleum, is purified.

Reserves: those quantities of hydrocarbons which are anticipated to be commercially recovered from known accumulations.

Reservoir: a porous, permeable sedimentary rock containing commercial quantities of Oil and Gas.

Royalty: royalty refers to payments that may be due to the host government, mineral owner, or land owner, in return for the producer having access to the petroleum.

Source: NEITI



PTDF ENHANCES THE CAPACITY OF FEDERAL TREASURY ACADEMY TO UNDERTAKE OIL AND GAS ACCOUNTING TRAINING PROGRAMMES

The Petroleum Technology Development Fund (PTDF) is assisting the Federal Treasury Academy, Orozo to build capacity in oil and gas accounting and other related disciplines.

In furtherance to this objective, the Fund presented One hundred Computer units with accessories and One thousand three hundred and thirty four books on Accounting and Finance to the management of the institution.

Executive Secretary, PTDF, Dr Bello Aliyu Gusau who handed over the items to the Accountant -General of the Federation, Mr. Ahmed Idris at the institutions' premises, said that an effective financial and accounting knowledge is key to proper management of oil and gas resources in Nigeria.

The Fund has over the years been investing in the training of PTDF scholars in oil and gas accounting in foreign universities. *“infact oil and gas accounting is a key element of the capacity building that the PTDF is doing year in, year out, at all levels including PhD and Masters degrees, so we are looking forward to getting*



Accountant-General of the Federation, Mr Ahmed Idris, receiving Computer equipment and accessories from the ES PTDF, Dr. Bello Aliyu Gusau for use by the Federal Treasury Academy, Orozo

involved in the in-country training of personnel that work in the industry through an effective collaboration with the academy”.

Dr Gusau said that beyond upgrading the ICT and library facilities of the academy, the Fund will in future explore the possibility of locating the training of manpower in oil and gas accounting in the institution.

“In PTDF we believe that, effective financial and accounting knowledge is key to the proper management of oil and gas resources in Nigeria. To that extent we believe that this kind of collaboration is something we should be doing. We need to extend this beyond the provision of certain facilities to getting involved with the training of personnel that are working in the industry. so we are looking forward to continuing with

this cooperation”

He said, the Fund’s institutional capacity building programme is to enhance the capabilities of tertiary institutions to conduct teaching and research and the Fund carries out such interventions in various institutions across the country. *“What we have done here is one of the many kind of interventions that the PTDF normally does, we have done this in a number of institutions including the universities, polytechnics, other tertiary institutions and even secondary schools and other places”.*

Receiving the facilities, the Accountant-General of the Federation (AGF), Mr Ahmed Idris thanked the management of the Fund for extending the training facilities to the institute, which he said confirms the partnership and synergy that exists between the two organizations.

“This is our training ground not just for treasury officers but its open generally to the public service including the military, paramilitary and other industries. This gesture goes further to confirm that PTDF is really delivering on its mandate, it’s not just a matter of corporate social responsibility, it is part of the mandate of PTDF to extend that gesture to tertiary institutions, universities and we have seen a lot done by PTDF, it’s just an extension of that and we are very grateful”.

The AGF urged the management



ES PTDF Dr Bello Aliyu Gusau presenting books to the AGF for use by the Treasury Academy

and staff of the institute to use the facilities and equipment to transform the academy to a world class centre of excellence for the training of public finance managers across the country.

The equipment extended to the institute included one hundred (100) computer units, hundred (100) units of uninterrupted power supply(UPS) systems, fifty (50) printers, five (5) units of steel shelves and 1334 books for the institute’s library.

The Director of the Federal

Treasury Academy, Mr. Kadiri Egbokale Charity said, the facilities are highly needed by the institute to enhance the quality of learning and teaching particularly on ICT knowledge drive. He disclosed that the systems will be installed at the institute’s computer centre while the remaining will be used for e-learning purposes at the library along with the books donated by PTDF that are already being used by students of the academy ■



NATURAL GAS

THE ALTERNATIVE FOSSIL ENERGY AND PROSPECTS FOR A ROBUST NIGERIAN ECONOMY



AKPAN UKO BEN
NYSC 2017/2018 Batch



Nigeria sits atop abundant natural gas reserves. It is for this reason that some experts argue that Nigeria is more of a gas province than an oil rich nation. This is owing to the greater quantum of proven gas reserves which stands at 192 trillion cubic feet against the estimated proven oil reserve of about 31 billion barrels. (DPR Source) It is also interesting to add that Nigeria has an estimated unproven gas reserve of about 600 trillion cubic feet. In addition, Nigeria has the largest proven gas reserves in Africa and 9th in the world. Natural gas, chiefly methane is found more often dissolved in oil deposits and sometimes

in deposits where they are trapped in a reservoir several feet beneath the surface of earth. The former is usually referred to as associated gas (AG) and the latter is referred to as unassociated gas. Over the years, natural gas had been neglected in the course of Oil production and exportation. Oil which has been a boom, also became the mainstay of the economy of Nigeria, making up for over 80% of the nation's foreign revenue. The Government is working on transforming Nigeria from an Oil-centric nation into a diversified economic nation. The Global energy market is evolving and the gas market is emerging with so many opportunities. Nigeria still

trails behind several “gas-giant” countries with regards to gas utilization. This is owing to the lack of gas infrastructures and a poorly structured market for gas as well as the ongoing trends of gas flaring across oil and gas operations.

It was not until recently that the Nigerian Government imposed aggressive measures to stop the incessant flaring of gas which had reached an alarming peak. There was also the growing demand for gas from the three consumer domains namely the domestic, industrial and commercial. The domestic domain needs gas for cooking and heating. The Industrial domain needs gas as feedstock to make petrochemical products. The Commercial domain needs gas to sell to end users. Natural gas which can be liquefied for ease of transportation to gas stations can serve as a means of domestic fuel for cooking and also as vehicular fuel. It can serve as a source for power generation. Nigeria's gas reserves if maximally utilized can help to step-up the current energy matrix of the country. The demand for gas is on the rise as industries are realizing the benefits of the use of gas. Also there is

growing domestic demand for gas for cooking and heating. This will facilitate a readily expanding market that will be in high demand for gas. Consequently, it will incentivise the Oil companies to reduce and possibly stop the flaring of gas. Oil companies will find commercial value in gas and this will facilitate the need to make available gas storage facilities, thereby leading to an expected steady decline in gas flaring. Gas flaring is one out of a few major concerns and a hindrance to the utilization of natural gas for economic benefits. It was reported that Nigeria has lost well over N200b since 2016 from gas flaring. For the three quarters of 2017, about 20 billion standard cubic feet of gas was flared averagely. These unmitigated monumental financial losses and waste of gas from flaring is adverse to the nation's economy. Therefore there is need for the Government to come up with a framework that discourages the flaring of gas while encouraging the production and storage of gas for delivery and utilization. This will curtail financial losses, boost the electricity generation in the country and significantly contribute to the economy of Nigeria ■

PTDF Corps members visit Orphanage Home

By Ogbodo Emmanuel Tochukwu, Lawan Maina Mahmud & Abdulrahman Aminu Raji
NYSC Corps Members, Press & External Relations Unit



In a bid to galvanize the great potentials of youths and generate community interest towards national development in Nigeria, the National Youth Service Corps (NYSC) Community Development Service (CDS)

was formed. This programme enables members of the Service Corps to work with their respective local communities to promote self-reliance by systematically prospecting and implementing development

projects that will impact positively on the socio-economic development of their host communities. The Serving Corps Members of the Petroleum Technology Development Fund (PTDF) in implementing this noble

programme visited Destiny Children's Orphanage Home Abuja and presented food stuffs, clothings and other gift items. Leader of the NYSC delegation, Fatimah Dahiru Dodo of the Monitoring

and Evaluations & Special Programs Department of PTDF said the gesture is an opportunity to give back to the community.

According to Ms Dahiru, *“the visit to Destiny Orphanage Home is to touch the lives of the vulnerable and the motherless from the little we earn. This is a Community Development Service organized by corps members of the Fund. In procuring the gift items and other materials, we contributed money among ourselves with the Fund supporting us with transportation”*.

She encouraged other corps members to make it a culture to help the needy and the motherless.

Ishola Hussein who is also a serving corps member of the Fund from the Finance and Accounts Department said that the visit is in furtherance of the Corpers Community Development Programme, and also encouraged other

corps members to think towards giving back to the society to promote national development.



Destiny Children’s Orphanage Home is owned and managed by Mrs Gladys Chukwuemeka. According to her, she conceived the vision to set up the orphanage out of the ill treatment she and her siblings received in the hands of their stepmother following the death of their mother. *“Why I started this orphanage is because I grew up under my step mother and she treated me as if I am a stranger in my own father’s*

house. I worked day and night and I said if God sustains me and my younger ones that I will open an orphanage Home that will take care of the vulnerable and the motherless because I lost my mom at an early age. This orphanage was opened on February 14, 2017. This is a 3 bedroom bungalow. I started here thinking I will take care of few children. When the Social Welfare inspection team visited, they said the place is neat and conducive for children; that it’s where they can easily give out children to stay and they started bringing children. Currently we have 33 children. The ones at home are 23 and 10 are in boarding school. I thank God because He has been sustaining us up till now. For the feeding, it’s from individual contributions just like you the Corps members from PTDF. Others are coming too and my husband has been very supportive. He has been my helping hand here like in

terms of the house rent and some school fees”. Mrs Chukwuemeka also revealed the case of a 17 year old pregnant girl in her custody. According to her, *“someone who adopted her impregnated her. As we speak; the man is in jail. So her case is still in court. We have been careful about her, I went to Life Camp General Hospital, they said we should pay N39,000 for her registration until she delivers. The money is not the issue but I need an approval from Social Welfare first but they asked me to hold on that they will get back to me because they are looking for her parents now; they have already published her on AIT and NTA. So they are on it”*.

She used the opportunity to appeal to the government and the general public to assist the home with School Bus, double deck bed frames and mattresses for use by the children ■



Children of the Destiny Children orphanage home with PTDF Corps

EVENTS

COURTESY CALL BY AMERICAN UNIVERSITY OF RAS AL KHAIMAH (UAE)

A delegation of the American University of Ras Al Khaimah (AURAK), a private University based in the UAE paid a courtesy call on PTDF. The visit is to enhance cooperation with PTDF as a training and capacity building Agency in the Oil and Gas Industry.



A group photograph of some PTDF Management staff and the delegates from the American University of Al Khaimah UAE during the courtesy visit



A cross section of the delegates during the courtesy visit on the Fund



The GM L&SS, PTDF Mr. Balarabe Ahmed receiving a plaque from the President of American University of Ras Al Khaimah professor Hassan Hmada Al Alkim on behalf of the Executive Secretary PTDF Dr. Bello Aliyu Gusau.

COURTESY CALL BY NIGERIAN SOCIETY OF CHEMICAL ENGINEERS ON PTDF

The attainment of local manpower for the oil and gas industry requires the co-operation and support of professional bodies such as the Nigerian Society of Chemical Engineers. PTDF will spare no effort at strengthening collaborative activities with them says Dr. Bello Aliyu Gusau when he received the National President, Nigerian Society of Chemical Engineers Professor Sam Adefila who visited the Fund.



Presentation of gifts at the end of the courtesy visit



PTDF Management Staff and delegation from the Nigerian Society of Chemical Engineers in a group photograph.



Executive Secretary, PTDF, Dr Bello Aliyu Gusau, Fmr NNPC, GMD, Funsho Kopulokun and other dignitaries during the NAEE conference hosted by PTDF



Participants at the NAEE Conference



ACTU, PTDF Unit in a group photo with some management staff during the Anti Corruption and Transparency day celebration in PTDF

COURTESY VISIT BY INTERNATIONAL UNIVERSITY ALLIANCE ON PTDF

The International University Alliance (IUA), made up of 16 elite universities in the United States paid a courtesy visit on the Petroleum Technology Development Fund (PTDF) to appreciate and commend the Fund for its consistent investment in capacity building through scholarship and research sponsorships.

Partnership Manager of the IUA in West Africa, Selma Toohey said **"We are here to appreciate PTDF, we just want to say Thank you so much. We have a number of your scholars in our various institutions in the United States and we are still expecting some more this year. IUA is a group of elite US universities, similar to the Russell Group in UK, we are research focused and we are very strong in subjects like engineering which all of your students do study with us"**.

The Executive Secretary, PTDF, Dr Bello Aliyu Gusau who was represented by the General Manager, Legal and Secretariat Services, Mr Balarabe Zahradeen Ahmed thanked the team for their visit to the Fund. He expressed delight over the record of brilliant academic performance of PTDF scholars studying in universities under the IUA alliance and urged them to continue to support the students to excel in their academic endeavors.



The delegation from the International University Alliance



Representative of the E.S PTDF, GM Legal & Secretarial Services, Mr. Balarabe Ahmed receiving a certificate of recognition for PTDF as a certified premier partner of IUA from Selma Toohey



A group photograph of IUA members with some management Staff of PTDF

PERFORMANCE MANAGEMENT PROCESS

PTDF Executive Secretary, Dr Bello Aliyu Gusau, flagged off a One week Performance Management System awareness workshop for all staff of the Petroleum Technology Development Fund towards instituting a performance based reporting system for staff evaluation. The performance Management Process replaces the annual performance evaluation report.

"Each and every staff will be conscious of daily, weekly, monthly and annual targets for evaluation. I want to see a situation where all staff have clear sense of work schedule and how that fits into the attainment of larger corporate objectives".



The D-G Kaduna Business School, Dr. Dahiru Sani addressing staff of the Fund at the Performance Management Process Workshop. Also seated in the front row is the Executive Secretary PTDF, Dr. Bello Aliyu Gusau and other Management Staff



Group photo of PTDF Staff with the workshop facilitator



Congratulations!



Miftahu Olowo Salman
MSc. Oil and Gas Management.
Coventry University, UK
Year of Graduation: 2018
SP&D Department, PTDF



Mr. and Mrs David Igoniwari

August 5, 2017
Mr. David is of the Training and
Education Department of PTDF



Mission

To train Nigerians to qualify as graduates, professionals, technicians and craftsmen in the field of engineering, geology, science and management in the oil and gas industry in Nigeria or abroad.

Vision

To serve as a vessel for the development of indigenous manpower and technology transfer/acquisition in the petroleum industry as well as to make Nigeria a human resource center for the West African sub-region.

The Mandate

- To provide scholarship and bursaries, wholly or partially in universities, colleges, institutions and in petroleum undertakings in Nigeria or abroad.
- To maintain, supplement, or subsidize such training or education as specified in paragraph (a) of this section.
- To make suitable endowments to faculties in Nigerian universities, colleges or institutions and conduct research in oil and gas and other related fields.
- To sponsor regular or as necessary, visits to oilfields, refineries, petrochemical plants, and arrange necessary attachments of its trained graduates to establishments connected with the development of the petroleum industry.
- To finance the participation of relevant industry stakeholders in seminars and conferences which are connected with the petroleum industry in Nigeria or abroad.



Developing Regional Know-How

The Petroleum Technology Development Fund (PTDF) is Nigeria's agency for developing and enhancing the skills, capacities, competencies and capabilities of Nigerians to operate and manage the various segments of the oil and gas industry.

- PTDF offers local and overseas scholarships to deserving Nigerian students for undergraduate and graduate studies in specialized oil and gas related courses in PTDF upgraded Nigerian Universities and top ranked universities abroad.
- PTDF trains and enhances the skills of Nigerian welders including under water welders for international certification to practice and carry out complex fabrication and welding requirements of the oil and gas industry.
- PTDF upgrades oil and gas related departments with world class teaching and research facilities in universities across the country.
- PTDF is also enhancing the teaching, learning and research skills of university lecturers including trainings in Engineering Design Software Interpretation.
- PTDF sponsors research activities in critical areas of the oil and gas industry through its Endowment and Research Grant Competition and provides the platform for sharing research outcomes with the industry through the Technology Knowledge Sharing Programme.
- PTDF is building relevant institutions for in-country development of the human capital requirements of the oil and gas industry. These include the Federal Polytechnic of oil and gas, Ekowe, Bayelsa State; The Federal Polytechnic Bonny, Rivers State, specializing in Environmental Management and Gas Technology; The comprehensive infrastructural and faculty upgrade of the Petroleum Training Institute, Effurun, Warri, Delta State; The National Skills Training and Development Centre, Port Harcourt, Rivers State; The National Institute of Petroleum Studies, Kaduna and the development of Information Communication Technology (ICT) Centres in secondary and tertiary institutions across Nigeria.
- Through its sponsorship of science and technology based competitions, PTDF creates awareness and sustains interest among secondary school students in core science subject necessary for the study oil and gas courses and future career in the petroleum industry.
- PTDF conducts and regularly updates skills gap surveys and audit of the oil and gas industry to determine the skills requirements of the industry that Nigerians lacked and with a view to providing specialized training to fill the gaps.

ALL THESE AND MANY MORE PROGRAMMES MAKE PTDF THE LEAD AGENCY FOR HUMAN CAPACITY DEVELOPMENT IN THE OIL AND GAS INDUSTRY.

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