



PTDF Digest

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



Job Creation

How PTDF is rising to the occasion

“My conviction is that if you train 100 people and none of them is either self-employed or employed by a corporation, that is a total waste”

- President Goodluck Ebele Jonathan

The new face of PTDF

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PTDF Digest

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Enquiry: ptdfdigest@ptdf.gov.ng,
www.ptdf.gov.ng

EDITORIAL TEAM

Editor-in-Chief **Kalu Otisi Esq.**
Head, Press & External Relations PTDF

Associate Editor **Timilayefa Nwajueboe**

Contributing Editors **Mr. Olayinka Agboola**
Ag. Head, Nigerian Content Dept.

Hajia Rabi'ah Waziri-Adamu
Ag. Head, Education & Training Dept.

Mr. Tanimu Ahmed
Ag. Head, Legal & Secretariat Services Dept.

Mr. Muhammad Haruna
Ag. Head, Strategic Planning & Documentation Dept.

Barr. Timipre Wolo
SA to ES/Head, Industry Collaboration Unit

Secretariat **Imonitie Omo-Ojugo**
Ebele Ezeakunne
Lawal Ibrahim
Mahmood Armyau Hussein
Adetutu Adejube

Graphic Design **David Alich**



From the Editor



What is the rationale in developing local manpower if at the end there are no sustainable platforms for consistently absorbing the capacities that have been created?

Putting it succinctly, does it make economic sense to spend huge sums of money providing special trainings and education and upskilling the competencies and capabilities of Nigerians for effective participation in the various segments of the oil and gas industry without a firm commitment to engaging and utilizing the skills and proficiencies of the local manpower that are painstakingly developed?

This is a perplexing issue confronting capacity building agencies such as the Petroleum Technology Development Fund. This conundrum also challenges the fundamental objectives of the enabling law of PTDF which limits its interventions to the "training of Nigerians to qualify as professionals, technicians and craftsmen in the field of engineering, geology, science and management studies in the oil and gas industry"

Extrapolating from the above, PTDF as an organisation only concerns itself with building of relevant competencies and capabilities in Nigeria's oil and gas industry through the development of human and institutional capacities, as well as the promotion of research for the acquisition of relevant technologies in-country. The Fund is therefore not mandated by law to compel the engagement of the local manpower it has developed for the oil and gas industry.

However, PTDF Executive Secretary Femi Ajayi makes it clear that "there needs to be an end to the folkloric picture of institutions training and training and not caring about what happens to those that have been trained"

While this may be outside the contemplation of the law setting up PTDF, the fact that the Fund carries out skills gap survey of the oil and gas sector to find out what exactly the sector requires in terms of local skills and which forms the basis of its training and education programmes, suggests that Nigerians trained by the Fund are meant to fill identified areas of employment in the petroleum industry where locals are needed but lacked the skills to occupy them. But the sad reality according to Femi Ajayi "is that getting employment in the industry is not as easy as it used to be for reasons beyond the control and mandate of the Fund".

The Fund is however not resting on its oars as it has devised ingenious ways of ensuring that its trainees and scholars are not only engaged in the industry or related occupations, but are empowered to set up businesses of their own and become employers of labour. The "How" is the focus of this edition of PTDF Digest.

As we celebrate the successful 2015 General Elections, we also celebrate the movement of PTDF to its new office building which symbolizes the excellence the Fund has attained in the discharge of its functions over the years.

Kalu Otisi esq.

From Drug Bursting to Capacity Building

June 18, 2014 marked a watershed in the history of the Petroleum Technology Development Fund. On that day, Mr Femi Ajayi assumed duty as the 7th Executive Secretary of the Fund. Before him were Alhaji Yusuf Hamisu Abubakar (2000 to 2005), Alhaji Mohammed Hussaini Jalo (July 2005 to Nov 2005), Adamu Maina Waziri (Nov 2005 to Nov 2006), Kabir Abdulfatah Mohammed (Nov 2006 to Nov 2008), Engr. Muttaqha Rabe Darma (Nov 2008 to Nov 2012) and Dr Oluwole Oluleye (May 2013 to June 2014).

Femi Ajayi who until his appointment was the Director-General, National Drug Law Enforcement Agency (NDLEA) is coming to PTDF with a rich profile of service that spans the public, private and international sector organizations. His multidisciplinary credentials as biochemist, journalist and international law expert have been tapped in various capacities for the service of the nation and international organizations particularly the United Nations System.

As Director-General of NDLEA, Femi Ajayi adopted advocacy as a potent tool of engagement with the society on the evils and other challenges of illicit drugs. He served in that capacity from December 2010 until his appointment as Executive Secretary of PTDF in June 2014.

Between June 2007 and December 2010, Femi Ajayi was the Senior Special Assistant to Nigeria's President on Development Co-operation, responsible for among others, facilitating programmatic collaboration and resource co-ordination between the Federal Government and other levels of government, monitoring developments in global affairs and identifying opportunities for increasing the inflow of official development assistance, foreign investments and



FEMI AJAYI - Executive Secretary, PTDF

technical assistance.

His responsibility as presidential aide was informed by his vast experience on the workings of international organizations particularly the United Nations System having previously served in the following capacities:

- Communications, Monitoring and Evaluation Specialist, Department for International Development DFID – PrOpCom.
- United Nations Coordination Specialist, Resident Coordinator's Unit, United Nations Development Programme UNDP (2004 to 2005).
- Communication Consultant, HIV/AIDS, UNICEF, Nigeria (2001 to 2002).
- National Professional Officer, Communication, Information and Informatics (CII), UNESCO (1999 to 2001).
- National Information Officer, United Nations Information Centre, Lagos (1992 to 1999).
- Media Consultant, International Institute of Tropical Agriculture

(IITA), Ibadan and Coordinator, Media Forum for Agriculture (1990 -1991).

Femi Ajayi forayed into the journalism profession as Science Writer and Editor with Daily Times between 1983 and 1992. He was Member, Daily Times Editorial Board between 1987 and 1989. During the period he wrote and edited science news and feature articles and editorial opinions for all the newspapers in the Daily Times conglomerate, and in other publications: the Pan African News Agency, the New York based development magazine, African Report, and African Farmer news magazine.

Mr. Femi Ajayi is a 1981 graduate of Biochemistry and holds a post-graduate Diploma in Journalism from the Times Journalism Institute 1984; and a Masters degree in International Law and Diplomacy from the Faculty of Law, University of Lagos, Akoka Lagos.

His published works include Sustainable Development Diplomacy:



Nigeria's Diplomatic Wars for Regional Progress,(2003);Reporting the United Nations: A Handbook for Journalists(1996);and Communication for HIV/AIDS Prevention-A Guidebook for Practitioners (April 2000). Mr. Femi Ajayi hails from Ekiti State.

Pledges to build on the achievements of his predecessor

While taking over the affairs of the Petroleum Technology Development Fund (PTDF), Mr. Olufemi Ajayi pledged to build on the achievements of his predecessor and ensure that more value is added to the transformation agenda of President Goodluck Ebele Jonathan through the projects and programmes of the Fund.



Dr. Oluwale Oluleye handing over the management of the Fund to Femi Ajayi

He promised to continue with the reform processes initiated by his predecessor Dr. Oluwale Oluleye.

"There is no cause for anybody who is committed to the mandate of the agency to be worried, we are brothers and sisters and I believe that, we are all committed to the transformation agenda of Mr. president and also the overall development of our country. I will rely on those of you who have been in the agency to give me the necessary support to move the agency forward"

On the challenges of funding, the Executive Secretary said his administration will engage more advocacy at the political level to ensure that funds due to the agency are released as and when due.

The former Executive Secretary, Dr Oluwale Oluleye congratulated

his successor, Mr. Olufemi Ajayi and assured him that most of the challenges confronting the Fund were gradually being addressed with the active support of the Honourable Minister of Petroleum Resources, Mrs. Diezani Alison-Madueke.

He wished him a successful tenure in office.

... Unfolds Agenda

After taking over the management of the fund, Mr. Femi Ajayi literally hit the ground running as two days after he proceeded on a monitoring visit to South Africa where the Fund's piloting cadets were being trained. During the visit, he approved the inclusion of Instrument Flight Rating training for the cadets, a license that increases the employability of the pilots on graduation. He followed up with a tour of welding facilities in

Lagos, Port Harcourt and Benin fabrication centres. While appreciating the significance of PTDF welders programme, he said welding is key to the oil and gas industry, *"there is nothing you can do in the oil and gas industry without professional welders, that is why PTDF is spending so much to train welders and the success of this exercise will go a long way in determining how well we do in increasing local content in Nigeria's oil and gas industry."*

Further demonstrating his pledge to build on his predecessor's legacy, he went on a monitoring visit to the United Kingdom. While in the U.K he launched the MasterCard payment solution for the remittance of allowances to scholars in Naira. This policy change was necessitated by the need to forestall the challenges associated with accessing foreign exchange, a situation that was responsible for the remittance delays in the past. In this regard he said *"The card would enable you to spend the pound equivalent of your allowances as measures have been put in place to ensure you are not underpaid or shortchanged in any way."*

The Executive Secretary followed up

with a visit to students undergoing Maritime training in Norway under an MoU between the Fund and the United Nations Institute for Training and Research (UNITAR). He also went to the United States of America on a monitoring visit to students sponsored by the Fund under the NYSC Presidential Scholarship Award. While there he conducted a facility tour of prospective training centres and also participated at the Global Education and Training for Energy (GETENERGY) conference where he presented a paper. He emphasized to the global audience that *"it is imperative to shift emphasis from University Education and Certification to empowering the youths with technical skills and competences that will lead to their immediate engagement in the middle level segment of the of the oil and gas industry."*

In his first major interview as Executive Secretary, PTDF, Mr. Femi Ajayi unfolded his vision and the direction of his leadership.

Q: How did you receive the news of your appointment?

A: Because I had another assignment I was doing and also because there was somebody here, naturally I received it with mixed feelings because there was unfinished business at the other end and this is a new one. Of course I saw this one as a new challenge so naturally there is always what you call the "Fear of the Unknown". I had not been to PTDF before, I didn't know what the challenges were, so just like any other human being in NDLEA, it had become something like a comfort zone for me, so naturally there was that "Fear of the Unknown".

Q: How would you assess what you met on ground, relative to your expectations?

A: PTDF happens to be one of those organizations that have a "larger than life" kind of image out there. Incidentally I had some little bit of knowledge regarding particularly the staff strength of this place. I knew that the staff strength of this place was under 200 as against NDLEA with staff strength of 5300. I did not



know that this agency was this small. For instance I did not know that PTDF has only one office because you know NDLEA has 47 major offices apart from the local area offices. Having said that, I also was not aware of the amount of challenges that we have here with regards to maybe uncompleted projects, so many ongoing projects, I didn't know that given the smallness of the office that they could be involved in so many things out there.

Q: Now, you made mention of challenges, which one would you consider most formidable.

A: I would say the funding element, because this is a funding agency, so naturally you will expect that if we are to deliver on the mandate, then the funds should be readily available at least for the basic programs and projects that we are supposed to carry out.

Q: One of the areas of PTDF intervention is sponsorship of Research Programmes in the universities. Indeed a group in Ahmadu Bello University made a break through recently. How does PTDF convert research result into something that is tangible which the country can draw benefit from.

A: First of all, the researches that we support in PTDF are "Need Based". They are researches that are sort of compelled by the challenges in the industry. So from the outset we will not support research that is unduly esoteric. So it is the challenges in the industry that sort of drive the kind of researches that we support, it is therefore most likely that research findings will be useful to the industry if it was supported by PTDF. In a way, PTDF research grants are meant to bridge the gap between the laboratory and the market, so it is not likely we will support a research process and the result will not be useful to the industry, because essentially the goal of our own research is to build a bridge between the laboratory and the market. Having said that, it is not the duty of PTDF to go to the universities and make their research findings marketable, but any one that we put our money in will be such that it will enhance marketability of the research findings.

Q: Sir, another area of intervention



is the Overseas Scholarship Scheme where you send scholars abroad for PhD and MSc. Is PTDF looking at reviewing the programme?

A: PTDF is an evolving funding agency. We continue to review our processes, to modernize them and make them more result oriented. For instance, you are talking about curriculum content and things like that; Before now, the Fund has always been involved in knowing what the curriculum content of these universities are, in fact that is what determines which schools our scholars are sent to. Having said that, going forward, one of the things the Fund actually intends to do is to see how we can partner with some of those institutions who train our scholars to come to Nigeria and set up shop here, so that we can domesticate some of the training programs here in Nigeria.

What I am saying is, as part of our local content initiative, we intend to convince our training partners to come and set up local branches, Nigerian branches of their schools, such that in a way we will have more control as far as the content is concerned and able to train many more people. That is the goal going forward. Even now our choice of universities are based on

which ones are carrying out the kind of programs and curricular that we want, so we are quite discriminatory with regards to where we send our scholars to.

Q: What is the situation with the payment of scholars' allowances and tuition? There had been delays and protests in the past

A: When you talk about delay of allowances; we know the ways of scholars, because as a scholar you are focused on your academics, sometimes some scholars may forget

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when their accommodation is due, when some allowances are due. For your information, PTDF has the most generous scholarship package. There are so many allowances that are involved, so sometimes if a scholar wants to attend one technology fair in the USA and he is telling us about it one week to the program, it may be because he did not get to know about it in good time or rather because his attention might have been taken by some other things and we need time. Don't forget that this is a Fund, Look at our staff strength for instance vis-a-vis the number of people we are taking care of you will see that the level of efficiency is very high.

Then again considering the kind of age group we take care of, some of those things you are talking about like the protest, one can't really run away from them. We are dealing with people who are restless and who are not patient enough and who want things to happen like yesterday. You know this generation is the "Dot Com" generation; they think development is a push button affair. It is not everything you get at the touch of a button. That is the challenge. The generation we are taking care of are very impatient, they want things to happen at the touch of a button but things don't happen that way, there are some things that need a gestation period to happen.

Q: One of the steps taken by the Fund is the domestication of the allowances, where allowances will be paid in Naira. Will this not pose a problem; will the scholars not be



shortchanged?

A: No they will not be shortchanged. In fact I am one person who believes we should have more pride and confidence in our own currency. In fact, we are going to denominate our scholarships in Naira, such that those people we have given awards letters in maybe pounds sterling or dollars going forward we will be paying part of their money in naira and pound sterling, whichever one is more convenient and mutually agreeable to the parties. But from now on we are going to domesticate every scholarship or loan in naira but we will make sure that we don't shortchange our scholars in the process.

Q: Now let's come to the selection process of the scholarship scheme itself. Over the years PTDF has really been one of the top agencies that have been able to insulate the process from political interference. What are the steps you are bringing on board to sustain the integrity of the process?

A: It will be, because some of these things have already been institutionalized. For instance, in MSc program, you find out first there are some things we do on the basis of equality of states, if we are going to get one from each state, what we do is based on merit. if we take one from each state, it means the person with the highest score in his state will first qualify, one each from the 36 states and

one for Abuja and that makes 37. After that we use other criteria. Since this is PTDF and its an oil and gas thing, we might say having given one to each state, we are going to give something to the oil producing states. So one each will be given to them, after that you look and realize you don't have enough women in it because we also want to promote more scientists and engineers who are women. We then say based on gender we look at the 6 geo-political zones and say maybe one or two from each geo-political zone for the women. There are always set criteria that you can easily justify and our process is very transparent.

Q: One of the issues that the industry operators have complained about is the need to entirely domesticate the training program. Do you support this?

A: Actually that is a number one priority for us for several reasons, one of which is to have more control as far as the quality is concerned and to also make sure that there is contemporary relevance because "He who feels it knows it". We know what we need. It is not likely that someone who is in another political sphere or economic climate will know what is needed in our industry more than we do. So if for instance we have these training institutions here, some of the people from our industries can come over there from time to time to give lectures, the same thing in our

universities. That is why we are going to be very persuasive as far as this is concerned. In fact, going forward it may be one of the conditions for partnership with some training institutions, their readiness to come and domesticate their operations.

Q: Concerning institutions that PTDF is developing, when are they likely to be completed and commissioned?

A: We do have a target date, you are probably aware that Mr. President wanted to commission the Federal Polytechnic in Ekowe in Bayelsa in February 2013, but he did not commission it, rightly so I believe because the laboratory equipment and other equipment needed to make the polytechnic functional were not yet there. So he decided to wait until those things are in place which makes sense, so the challenge that we are having at the moment is that of funding. Apart from the Ekowe project, there



A: We are ready; in fact PTDF is one of the agencies of government that has started implementing the Petroleum Industry Bill even before

but we must also say that we have our dreams regarding the Petroleum Industry Bill because the current Act of the PTDF only provides for the funding of the agency mainly through signature bonuses. We are hoping that the passage of the Petroleum Industry Bill which contains other sources of revenue for the PTDF would make life easier for us. If the Petroleum Industry Bill is passed and you now have diversification of the sources of revenue to the agency then some



Aerial view of Federal Polytechnic of Oil and Gas, Ekowe

are others like Petroleum Training Institute Warri (PTI), the Nigerian Institute of Petroleum Policy and Strategy (NIPPS) in Kaduna. For the ongoing projects we need a total of about 35billion to take care of ongoing projects. That is the challenge we have now.

Q: Everybody seems to be upbeat about the eminent passage of the Petroleum Industry Bill that is still pending before the National Assembly. What is the level of readiness of PTDF? Will its operations be altered radically?

the passage. For instance this local content initiative, which is an integral part of the Petroleum Industry Bill, we have a whole department out of the 7 departments we have here which is the Nigerian Content Department and am sure if you are familiar with our programs you will know about the Welders Scheme that we do with the Nigerian Institute of Welding and even the International Institute of Welding, so that is an attempt to ensure that even before the passage of Petroleum Industry Bill we are already implementing some aspects of the bill, so we are ready, very ready,

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If the Petroleum Industry Bill is passed and you now have diversification of the sources of revenue to the agency then some of the challenges we are having with funding our critical projects like PTI, Federal Polytechnic Bonny, Federal Polytechnic Ekowe, Nigerian Institute of Petroleum Policy and Strategy will be addressed.
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Q: With the autonomy that is going to be granted largely by the passage of the PIB, Will it be of help and if rightly so, how and what will be the outlook of PTDF.

A: You are very much familiar with this agency, you know that with the PIB, we'll have a board and I believe that the autonomy of the Fund will make it more responsive in the sense that it will be able to act faster on some things and basically it should make it more effective because at this point in time there are still some things that have to wait. You are also aware that there are always pros & cons to things. At this point in time without a board maybe there are some things that we can do with more dispatch that we may not be able to when there is a board. There are always two sides to every coin. Definitely there are more advantages that will accrue to the Fund from the passage of the Petroleum Industry Bill.

Q: What kind of PTDF should Nigeria expect under your leadership, and what is your dream for PTDF as the Executive Secretary?

A: A PTDF that is more result oriented, that gives more value for the money that is invested in the organization and a PTDF that is closer



to the people because at the moment we have PTDF only in Abuja. For a big country like Nigeria I think we need zonal offices. If we cannot have them in the six (6) geo-political zones due to the financial implications, we should be able to have at least two zonal offices, one in the North and another in the South especially in the oil producing areas because for an agency that caters to all Nigerians it needs to be closer to the people.

Q: In what state was the Fund when you came in as the Executive Secretary?

A: I must say that the Fund was in good hands, because there were reform measures going on and some of the challenges that my predecessor met were gradually being addressed. For instance, the issue of payment of debts, they were being streamlined and things were going in the right direction maybe what we are going to be doing now is more of the same thing and also of course introducing some new measures to ensure that we get more value for money and of course the issue of the funding of the agency. We are going to take it more seriously because we should not have a Fund without funds and all those avenues and opportunities that are open to the Fund will be rigorously pursued. Because I found out that the year before the last and this year, there were some "appropriations" made to the agency. Meanwhile

last year not one kobo of the money reportedly appropriated to the agency was released. I will not blame it on the system; it is probably because of these signature bonuses. But now that we have all these outstanding projects which have passed through the due process office, we intend to engage with the relevant government organs and agencies to ensure that these funds are released to enable us execute the outstanding programs and projects.

Q: You're so passionate about decentralizing, having branches of the Fund. Do you have projections on when this process will begin to happen?

A: I am hoping that if it doesn't happen before the end of the year, it will happen next year in at least 2 zones, because it's not just the sentimental issue of being very close to the people, it will make the Fund more efficient, because if you want to do something in Bayelsa or Port Harcourt you will have to take off from here to go and do it, but if you have a zonal office either in Yenegoa or Port Harcourt, someone can take off from either of the two places, reach any of the projects, do the job and get back. It will make us more efficient and it will also make us more cost effective. That is why I am so passionate about it. I believe it will serve the greatest good of the greatest number of people if we decentralize a bit ■



PTDF STANDS TALL IN ABUJA AS NEW HEAD OFFICE COMPLEX COMES ON STREAM

This is the new head office building of the Petroleum Technology Development Fund (PTDF). From the different angles of the building, its prominence, magnificence and domineering splendour is inescapable from the eyes of the discerning. The centrality of its location accentuates its ambience in the landscape of Abuja, the Federal Capital City. With the completion of the building, the Petroleum Technology Development Fund (PTDF), the lead government capacity building agency for the oil and gas industry now stands tall in Abuja. Welcome to the new home of PTDF, the PTDF Tower regarded as the most

intelligent building in Abuja.

Abuja the Federal Capital City has a welcoming allure that is irresistible to many Nigerian and foreign visitors. With its ambience of beautiful structures, well paved roads and lush vegetations, many first time visitors have made Abuja their permanent place of abode.

The Petroleum Technology Development Fund has over the past 14 years of its existence as a fully functional agency of government operated from an obscure and unpretentious building tucked in a Crescent, off Gimbiya Street, Area 11 Garki Abuja, with several other

commercial and government buildings competing for space and access in the narrow Port-Harcourt Crescent and susceptible to frustrating traffic gridlocks. It is therefore a big relief



PTDF old office building in Port Harcourt Crescent, Area 11, Garki, Abuja

“...we intend to engage with the relevant government organs and agencies to ensure that these funds are released to enable us execute the outstanding programs and projects.”



to the staff and those doing business with the Fund, that the new head office building of the Fund has been completed and made ready for occupation.

The transformation from the old to the new office complex is obvious. It is not only the spacious environment, the intimidating structure, its central location and easier access that make the difference. Its corporate standing, and strategic location, promotes the building as one of the architectural landmarks adorning the skyline of Abuja.

The building contract was signed between PTDF and Messrs Julius Berger Nigeria Limited on the 6th of November, 2009 following Federal Executive Council approval and construction work commenced a year later in 2010. Although delivery of the project was estimated at 24 months, several issues mostly funding, variations and reconciliations, led to work delays and stoppages.

Within the period, the construction site hosted both the Senate Committee on Petroleum Resources (Upstream) and the House of Representatives Committee on Petroleum Resources (Upstream), on oversight visits. And on assumption of duty in June 2014, the Executive Secretary, Mr. Femi Ajayi visited the on-going construction work at the building to assess the progress of work.

During the period of construction, very few residents of Abuja took more

than a casual interest in the building in its early stages of development. To them, it was just like any other building under construction in Abuja. And then suddenly, it was like it dropped from the sky, planted overnight or perhaps sprung up from the earth like a successful oil drill. The gigantic structure and the assertive grandeur of the 12 storey PTDF head office building hit Abuja residents like a bolt from the blues.

With PTDF insignia boldly adorning the highest point of the building, this intelligent building as it is called is symbolic of the perfection PTDF has attained over the years in the implementation of its mandate of capacity building in the oil and gas industry, both in the upstream, mid



Executive Secretary, PTDF, Femi Ajayi, receiving the keys to the new Head Office building from Von Lom of Julius Berger Plc.

and downstream segments.

Thursday January 23, 2015, the magnificent PTDF head office complex was formally handed over to the Management of the Fund by Julius Berger Nigeria Limited on satisfactory completion of all the components of the buildings.

The exterior is perceived by experts to reflect the infrastructure and operational processes of the oil and gas industry. They believe that an oil platform, the refining and gas chambers are reflected in the architecture of the building. The building has 12 floors and will serve as offices for staff of PTDF. It is also, expected to generate revenue for the Fund. PTDF management intends to lease out some floors as well as the meeting rooms for use by stakeholders as offices, for conferences and workshops as well as for exhibitions.

At the signing of the handover documents, Executive Secretary, PTDF, Femi Ajayi expressed deep appreciation to the President, Dr. Goodluck Ebele Jonathan and the Minister of Petroleum Resources, Mrs Diezani Alison-Madueke for their vision and unwavering commitment towards the completion of PTDF head office building. He promised that the building will be put to good use to guarantee the greatest value to Nigerians in the delivery of the Fund's mandate.

The Project Manager Mr. Von Lom thanked PTDF Management for the opportunity to bring the expertise of Julius Berger Nigeria Limited into the construction of the building.



COMMENTS BY PTDF STAFF

The new building will definitely enhance the image of the Fund. It is one of the best edifices you can ever find in Abuja, for now, especially



Mr Munir Sirajo
Projects Department

looking at its strategic location in the center of Abuja. It's a twelve story building, and from the top you can virtually see everywhere in Abuja. It is basically one of the best pieces of architecture you can ever find within Abuja. We have space constraint in the former office. The offices are not enough, the building is old, and we have been here for over ten years. In as much as efforts are always being made to maintain the facilities in the current building it is over stretched. You find about 4-5 staff sharing the same office, so we thought we should look for a place that would comfortably accommodate the staff strength, so that was why, it was conceptualized. It is completed and with what we have there, definitely the morale of staff will become much more improved. Apart from the office space, more than 80% of the staff who presently park their vehicles outside will now park their cars in the premises of the new complex as there is ample parking space in the new building that will accommodate everybody. We are moving in to what we call an intelligent building. It is a building I will wake up every morning, looking forward to going to work. The building attempts to take care of all the basic needs of a working environment, we have the gym, a crèche for nursing mothers, so we try as much as possible to take the minds of the staff off other things that would distract them from the working environment. If you are a nursing mother, you know that you have a place

that your kids would be taken care of so you don't have to rush to go and say breast feed or look after your kid, and if you are the kind of person that likes going to the gym, sometimes you have to rush to catch up with the gym after work, but we have one there in the new office, now you can take your time and work as late as you want, when you finish you go to the gym, after that you go back home. These are some of the things that have been made better, and you don't have to think about other issues, whether there would be light, or internet, everything has been taken care of. We have two 1.5MVA generators to take care of the building and then another 250KVA for the night and security. Almost everything has been factored into the building that would make someone wish to stay there for as long he/she wishes to stay.

First of all the building is an evidence that the Federal Government is doing a lot towards developing structures that can stand the test of time.



Mr Offiong Orok
Monitoring & Evaluation Unit

For PTDF as an organization, it complements the statement of its mandate, and for the staff, waking up every morning and going to work there, you will be happy spending more hours working there, happy to spend business hours in a serene environment, and from your window, you can see a very good view of Abuja. I see the building as completing the petroleum triangle, I know that people have not looked at it from that perspective. If you look at PPRA, NNPC and the PTDF buildings the three actually make up a triangle, which today I can call the petroleum triangle of the central business district of Abuja.

The new building is a massive improvement on what we have here, even my two year old son knows good buildings. Over the weekends when we drive by the new building he is always saying "daddy's office daddy's office" but when we pass by this current

I see the building as completing the petroleum triangle, I know that people have not looked at it from that perspective. If you look at PPRA, NNPC and the PTDF buildings the three actually make up a triangle, which today I can call the petroleum triangle of the central business district of Abuja.





building, he doesn't even remember that that's my office, it just shows that even the little ones appreciate these edifices. With the gym there, the library, the auditorium, the cafeteria and the crèche, I think this puts us in a position to be counted amongst Forbes hundred best business environment to work in globally. So we are in the mould of Google, Microsoft and the rest of them.

The building is fabulous, it is nice, it is also one of the best in Abuja, am sure we will have lots of infrastructural things to work with, am sure the internet will be faster, everything will be easier for us, so of course it will add a lot of significance to staff work, in terms of efficiency, and things to work with. The present building is small, of course we have been having a lot of space challenges, we have to squeeze ourselves



Mrs Juwaretu Okaisabor
Legal Dept.

into offices and all of that, but I am sure with the new building, we will not experience those kinds of problems. I understand the new building is coming with a gym, auditorium, cafeteria, fully equipped library, good parking space, PTDF's own power generation. So in terms of space and other facilities it will be better, that is why it is our permanent site. So hopefully, we will be able to key in on the beautiful building and make PTDF a common name that is relevant in Nigeria. It is not for us to just go and stay in a beautiful building and they wouldn't know, hopefully the building will help us have greater impact, and the impact will be felt in the country.

The new building will add a lot of significance to the image of the Fund, as well as improving the staff morale. The facilities put in place will make it a very good working



Abdulkadir Ahmed
ICT Unit

environment because for staff with young kids for instance, there is a crèche, and on each floor we have a pantry, where you could keep your food, warm it in the microwave, or preserve it in the fridge. Also you know, PTDF initial location was hidden, but this building will add a lot of significance, the public will get to know what we do. Because we were in a hidden place, the public does not necessarily know the details of what we do, they probably think we do nothing, but the building will add a lot of significance, and also improve our status in the eyes of the public. You cannot compare the old building to the new building, because the new building is built for a purpose and the facilities include the gymnasium, auditorium, cafeteria, library, we have ample parking spaces, we have a water treatment plant, we will not depend on the public water supply system. We also will have our own power solutions, so you see these new facilities are not in place in the old building, so I think the staff will see a lot of changes when we move to the building. The staff will have access to a lot of facilities that are not present in the old building.

The whole essence of constructing a new building for the PTDF staff is to ensure that the Fund provides a modern and conducive working environment. This will create an atmosphere where productivity and service delivery could be achieved. It is a unique building that is hard to find something similar to it in the city of Abuja. It will definitely boost staff morale and upgrade the corporate image of the Fund. The building is strategically located in the heart of the city with a very good topographical elevation and its unique architectural design made it to be one of its kind. This is because of the modern facilities that have been provided in the building. These include wireless internet, modern workstations, serene environ-



Masud Mohammed
Strategic Planning and Documentation Dept.



ment, spacious parking lots, dedicated power supply (33kva line), central air conditioning, cafeteria, auditorium, gym, backup generators, firefighting equipment, underground water storage tanks and security gadgets. This is a building that has been created to be all encompassing; a staff working in there doesn't necessarily need to think of going out of the office premises to have lunch or get refreshment, say his or her prayer, visit the library and even to think of having a gym. It is a building that has all the modern-day facilities that a staff can think of. The provision of these facilities will personally boost staff morale, develop our competencies and capabilities and create the spirit of togetherness (team work); which will eventually culminate into increased productivity and service delivery to our dear nation.

First of all, I wish to express my sincere appreciation to the Federal Government of Nigeria, the Ministry of Petroleum Resources, the PTDF management team who have



Isa Muhammed
Education and Training Dept.

worked together to make the PTDF headquarters a reality. The PTDF headquarters has added more value to the image of the Fund and the FCT itself in terms of quality of material used to build the structure and also the prudent management of the project.

Structurally, the building is a master class on its own. The infrastructure is world class. With four CAT model generators adjudged best in the industry, three of which are 680 KVA capacity to be working on six-hourly basis while the fourth one is mainly for week-end support services, the question of power supply is adequately addressed.



Mr Olalekan Ogunwole
Admin & Human Resources Dept.

In 2007, following the expansion of the programmes and projects of the Fund, it became evident that there was the need for a new Head office for PTDF. With increasing interventions of PTDF in Oil and Gas sector capacity building, it became apparent that the old PTDF Head Office structure has become too small to cope with the increase in staff strength and PTDF activities and programmes.

In retrospect, successive Executive Secretaries of the Fund contributed in different ways in realizing the dream of a befitting head office building. The actual completion and handover of the Head Office was concluded by the present Executive Secretary, Mr Femi Ajayi. Various aspects of the final completion were supervised relentlessly from the time of his appointment up until when the project was successfully handed over to PTDF by Messrs. Julius Berger Nigeria Limited. Despite his busy schedule as the Executive Secretary and in spite of other administrative challenges, he gave the directive and time-line for the movement of staff of PTDF to the New Head Office. Today the journey is part of history, but it's a turning point in the life of PTDF and the determination of government to continue to enhance capacity building in the oil and gas sector.

We thank our colleagues in the Projects Department and the entire PTDF Management for their role in ensuring the successful completion of the Head Office building.



Muhammad Maude Abdulrahman
Branch Chairman
Pengassan, PTDF Branch





The new PTDF head office complex has attracted many encouraging comments.

“The building is a masterpiece and I think for quite some time to come in Abuja it will be the numero – uno building, it has world class facilities and PTDF itself is a world class organization, internationally known. So this is what we should actually have, this gives us the opportunity to organize more conferences in Nigeria as it relates to the oil and gas industry and this will compete favourably with what I have seen across the world”

- Dr. Oluwole Oluleye
Former Executive Secretary, PTDF



“The building is like the entire oil and gas industry in concept, both the upstream, mid-stream and down-stream. When you approach it without being told you know you are approaching an oil and gas industry or establishment”

- Engr. Muttaqha Rabe Darma
Former Executive Secretary, PTDF



“Seeing what is on ground I’m impressed with the work. I am so impressed with the job and I would want PTDF to keep up with their dreams. If all our MDGs will do things like this we will have no cause to regret”

- Senator Emmanuel Paulker
Chairman, Senate Committee on Petroleum Resources (Upstream)



“It is a very nice project. I’m impressed with the work and I would want the PTDF to keep it up.”

- Hon. Muraino Ajibola
Chairman, House Committee on Petroleum Resources (Upstream)



Job Creation

How PTDF is rising to the occasion

“My conviction is that if you train 100 people and none of them is either self-employed or employed by a corporation, that is a total waste”

- President Goodluck Ebele Jonathan



A dearth of qualified and competent indigenous manpower in the Nigerian oil and gas industry necessitated the establishment of the Petroleum Technology Development Fund (PTDF). As a statutory agency of government the Fund has the mandate to build local capacity in the Nigerian oil and gas sector. The legal framework made the agency to be the only government establishment responsible for building human capacity in the industry and for decades, PTDF has been effectively discharging this mandate. Provision of indigenous, qualified and competent manpower in the industry is considered a national priority, given the magnitude of capital flight which is ongoing in the country, a situation that has limited the oil and gas sector contribution to the Gross Domestic Product (GDP) due to shortage of qualified indigenous manpower, and low value addition to the important sector. PTDF evolved various strategies to achieve this lofty vision through various education, training and institutional capacity building initiatives.

Over the years PTDF has been identified by Nigerians as a scholarship awarding agency in view of its flagship programme known as Oversea Scholarship Scheme where thousands of qualified Nigerians have received first class training at Masters and Doctorate degree levels in highly

rated institutions abroad. Introduced in 2001, the Fund has sponsored not less than 2500 students at Master’s Degree (MSc) level and 600 at Doctorate (PhD) level. A good percentage of these trained graduates are already engaged in the Nigerian Petroleum Industry while the remaining graduates now form the bulk of intellectuals pursuing research and imparting the knowledge gained to the younger ones by teaching oil and gas related courses in Nigerian universities.

The Fund has over the years adopted various strategies in implementing its mandate resulting in beneficiaries not only acquiring university degrees but are made industry ready through internship programmes and exposure to industry best practices as part of the training. The Fund has in addition designed vocational and technical skills training programmes such as the Welders Training and Certification Programme (WTCP), which is a gateway to quick employment in the oil and gas industry and empowerment to set up vocations. According to the Executive Secretary, PTDF, Femi Ajayi “The Nigerian Content Act was enacted by the Federal Government of Nigeria to enhance the domestication of activities in the oil and gas industry. It provides that every developmental project must give priority to sourcing of quality materials in-country as well



as utilization of local institutions and qualified Nigerians to execute such projects in a seamless manner. Following the above, it is quite obvious that technical and vocational educational training is a key driver for the implementation of the Nigerian Content Act”.



PTDF WTCP Trainee

PTDF as an agency decided that, not only should it train and get Nigerians globally certified in these programs but should move a step further and devise means of getting its trainees engaged in the industry through collaboration with the Nigerian Content Development and Monitoring Board (NCDMB) which is legally empowered to ensure that trained Nigerian professionals are absorbed into the industry on graduation.

In addition, PTDF evolved a new focus on vocational and technical training and certification as well as entrepreneurial skills for all its trainees under the Fund’s various programs. The Fund is in the process of developing internship component for its Overseas Scholarship Scheme (OSS). Under this arrangement; training providers would be engaged to link PTDF scholars with some industry players in the United Kingdom and other parts of the world to acquire hands-on experience which would increase their suitability for employment in the industry.

President Goodluck Ebele Jonathan clearly had the PTDF and its new emphasis in mind during the inauguration of a Presidential Job creation board where he charged all training bodies in the country to double their capacity building responsibilities with job creation. “Let me charge departments and agencies of government that have been training people over the period, like SMEDAN, ITF, PTDF, NDE, NIMASA, Women Affairs and other agencies that do that as a part of their responsibility, to train young men and women in acquiring different skills...There is a missing link, because there is a difference between training people to acquire skills and job creation. I have observed over a period that agencies of government are more interested in training but my conviction is that if you train 100 people and none of them is either self-employed or employed by any corporation, that is a total waste, you are rather frustrating more people and probably increasing the number of criminals in the society”. President Jonathan specifically mentioned PTDF as one of the government agencies statutorily empowered to do capacity building for the overall economic development of the country, and challenged them by

saying that their task was not complete until their trainees begin to participate meaningfully in the nation’s economic space, either as self-employed entrepreneurs or gainfully employed individuals in the various sectors of the economy. In appreciating the President’s concerns encapsulated in his subsequent directive, Executive Secretary PTDF, Femi Ajayi decided that the Fund would henceforth add to its training mandate, the responsibility of facilitating employment for its trainees. The Fund has as a result taken the initiative of integrating employment and internship as a core component of its vocational and technical education programs.

To achieve the objective of combining capacity building with facilitating employment and job creation, the Fund is forging strategic partnerships with private organisations and institutions to further develop the entrepreneurial skills of beneficiaries of its capacity development programs. For example PTDF introduced the Entrepreneurship Development Training Program into the Welders Training and Certification Programme (WTCP). The objective is to enable the trainees acquire robust business skills that will empower them to stand on their own and become employers of labor in the field of welding and fabrication. This is expected to reduce unemployment and help increase the industry’s contribution to economic growth and development. PTDF’s stand in this regard is given greater impetus by graduands of the Fund’s vocational skills training programme who made a case to be assisted with loans to set up businesses of their own.



Graduates of PTDF Vocational Skills Training Programme

The over one hundred graduands of PTDF Vocational Skills Training Programme at the King Amachree Royal Academy, Cotonou, Benin Republic had expressed their apprehensions on life after the training. One of the graduate trainees **Mr. Blankson Yemson** had this to say “*The knowledge I got here is in the area of automobile technology. I am going back with the mind of setting up my own workshop where we can take up vehicle maintenance and repairs in a modern way. I appeal for post-graduation empowerments to enable us procure necessary machines and tools to set up Automobile and ICT related small scale businesses to help reduce unemployment*”. Similarly, **George Elfarida**, another graduate trainee said “*I have learnt something here, I was a computer illiterate, but here I was taught about computer and software design and right now I will be able to design a website and so on and so forth.*”



I want to appreciate PTDF for an opportunity like this; I want to thank them for all they did for all of us. Right now, if I have the money to start up something on my own, I think I will be able to impart knowledge to those who want to learn computer and other things.” In the same vein, **Mr. Ejo Martins Amechi** said “*At least now I can take down an auto engine, I can diagnose, I can service and indeed do many things about engines. I wish to appeal to the Federal Government and PTDF to help us in providing equipment so that we can put what we have studied into practice. I can now dissect an engine; I am the best automotive student.”*



Under the Pilot scheme of PTDF Youth Empowerment and Entrepreneurial Development Scheme, Heritage bank as a strategic partner will provide loans and training on specialized business skills that will enable the first batch of 20 selected youths out of the 120 graduands of PTDF Post Amnesty Vocational Skills Programme in Cotonou, Benin Republic start up their businesses. Heritage bank will grant loans of up to 10million naira per person with single digit interest based on the individual need of the trainees and the proposed enterprise. The beneficiaries were subjected to a two day intensive workshop on acquiring entrepreneurial skills and how to effectively manage the funds they will receive. “*It’s not everybody that is looking for white collar jobs, so we have to strive to make entrepreneurs out of you so that you can as well create jobs for other people*” says Femi Ajayi, Executive Secretary, PTDF.

PTDF Entrepreneurship Development Scheme (EDTP) which is now a compulsory component of the training curriculum of all PTDF vocational training programs was flagged off by the Executive Secretary, Mr. Femi Ajayi in one of the welding training centers in Federal University of Technology Minna.

According to him “*the sad reality is that getting employment in the industry is not as easy as it used to be for reasons beyond the control and mandate of the Fund, hence the decision of the Fund to integrate the entrepreneurship development training programme as a compulsory component of the welders training and certification programme. The Entrepreneurship Development Training Programme (EDTP) aims to develop the requisite skills, knowledge and competencies required by trainees to become self-employed whilst bridging the industry’s employment gap and meeting the President’s Nigerian Content policy directives and targets. The Programme is an essential part of a trainee’s ability to succeed in an ever changing*

and increasingly competitive labor market. As we all know, entrepreneurship is a way of engineering an idea to reality; from the thought process to concrete action”



Nigerian welders in training

The Petroleum Technology Development Fund (PTDF) has so far trained young Nigerians to qualify as welding instructors as well in the basic and advanced welding programs. International Welding Practitioners (IWP) and International Welding Specialists (IWS) were trained in South Africa, while International Welding Engineers and Technologists were trained in Turkey. Underwater welding specialists have been trained by PTDF in Marseille France. So far not less than 1,500 Nigerians have benefitted from PTDF Welders Training and Certification Programme.



Inspection of welding facilities by ES, PTDF



A total of 243 trainees out of the 531 that successfully completed the Manual Metal Arc (MMA) Welding program have been engaged in the Industry, while a number of them are currently working in DPR, HYRODRIVE, DICON, HYUNDAI and NIW. 31 welders trained under the, Train the Trainers Scheme are presently working as Welding Instructors in the various training centers being supported by the Petroleum Technology Development Fund.



PTDF's efforts in providing skills and vocational training to beneficiaries of its programmes is recognized by the Honourable Minister of Petroleum Resources, Mrs. Diezani Alison-Madueke, as cogent and compelling to ensuring that Nigerians get the tools needed in securing jobs in the oil and gas sector *"There are so many areas where Nigerians can come in to learn the tools of the trade and get employment. Of course, PTDF has been training people for many years in welding; we brought in the Nigeria content so strongly that at no time in Nigeria's history have you seen this number of Nigerians across the spectrum of expertise coming into the oil*

and gas sector. They did not need to be petroleum engineers or even geologists to get jobs. They only needed to have the abilities to learn at different levels to come into the entire spectrum of the downstream service sector of the oil and gas industry. As you all know, it has been a great success and it is now being repeated across other sectors of the economy"

In a similar Initiative to get trainees employed, the Petroleum Technology Development Fund entered into partnership with the United Nations, through its Agency for Training and Research (UNITAR) to provide training, enhanced education and job placement opportunities for sixty (60) young undergraduate beneficiaries of PTDF specialized skills development programmes in petroleum and other oil and gas related fields.



Under the arrangement all the PTDF scholars undergoing training in Petroleum Engineering, Subsea Engineering, Marine Engineering, Sea Fairing and petroleum related courses in Norway will be placed on internship in the facilities of International Oil Companies to gain practical



Group photograph of PTDF officials and Caverton Helicopters management



experience while undergoing their degree programmes. In the process, the trainees will enjoy some mentoring and have greater possibility of securing immediate employment after graduation.

Still under the new emphasis by PTDF to move from just training to job creation, the Fund is currently in partnership with Caverton Helicopters, to secure job opportunities for fifteen young Nigerians sponsored to South Africa for Helicopter piloting and air surveillance training programme who recently graduated and were certified with PPL and CPL in South Africa ■



IMPACT ASSESSMENT

- ➔ PTDF has trained over 2,500 Msc scholars and 627 Ph.D scholars in specialised oil and gas courses in top ranked universities abroad under the Overseas Scholarship Scheme.
- ➔ About 1,750 Nigerians have been trained in Fabrication Skills and Underwater competencies under PTDF Welders Training and Certification Programme.
- ➔ PTDF has upgraded educational facilities in 26 universities offering oil and gas courses to international standard as well as carried out infrastructural and faculty upgrade of the Petroleum Training Institute, Effurun, Delta state.
- ➔ Established 214 ICT Centres in educational institutions and across the country.
- ➔ Trained 1,649 Engineers in the use of various Engineering Design softwares under PTDF Engineering Design Training Programme, while the teaching, learning and research skills of about 100 University lecturers have been enhanced by the Fund.
- ➔ Developed relevant institutions for in-country training of the manpower requirements of the oil and gas industry, including the Federal Polytechnic of Oil and Gas in Ekowe, Bayelsa State; the Federal Polytechnic for Gas Technology in Bonny, Rivers state; The Skill Development Centre in Port Harcourt, Rivers state; and the National Institute for Petroleum Policy and Strategy, Kaduna.
- ➔ Through our sponsorship of Research Programmes in Nigerian Universities and the award of Annual oil and gas Research Grants, PTDF has succeeded in domesticating the sourcing of relevant inputs and technologies for the oil and gas industry.

PTDF is not only providing training and education to deserving Nigerians under its capacity building programmes; the Fund is also facilitating the engagement of its trainees in the industry through innovative entrepreneurial and youth empowerment schemes.

By integrating internship, apprenticeship and entrepreneurial development as a compulsory component of its training programmes, PTDF is bridging the industry's employment gap and responding to Mr President's recent directive to agencies of government involved in training and capacity development, to create employment for its trainees. In this regard, PTDF has achieved the following

- ➔ 243 out of 531 who successfully completed the Manual Metal Arc Welding Programme of the Fund have been engaged in the industry. 14 are working in DICON, 28 in South Korea, 16 in Brazil. 31 Nigerians trained under the Train-the-Trainer Scheme of PTDF WTCP have become welding instructors in Welding Training centres.
- ➔ 15 Young Nigerian Engineers trained by PTDF under its Drilling Engineers Training Programme to acquire the highly coveted International Well Control Forum Certificate in drilling have all been engaged by the industry.
- ➔ 15 young Nigerians who have been trained by PTDF as Commercial Helicopter Pilots are currently being integrated into an internship (apprenticeship) program designed to culminate into full employment in the industry.
- ➔ 60 Nigerian Youths awarded undergraduate scholarships to study Subsea, Marine and Maritime Engineering as well as Innovation and Entrepreneurship Engineering in Universities in Norway have guaranteed employment upon completion of their studies as a result of a unique partnership between PTDF and the United Nations Institute for Training and Research, UNITAR.
- ➔ 70 Nigerian Youths currently studying in Guodong University of Petroleum Technology, China have been guaranteed employment upon completion of their Bachelors degree programmes. Another 50 undergraduate scholars of the Fund at the Linton University College, Malaysia are set to graduate by April 2015.



PTDF EXECUTIVE SECRETARY TOURS WELDING FACILITIES, JUSTIFIES THE FUND'S INVOLVEMENT IN WELDING



The involvement of the Petroleum Technology Development Fund (PTDF) in welding and fabrication training is a significant step towards addressing the dearth of competent local manpower globally recognized and certified to practice in the oil and gas industry.

Mr. Femi Ajayi who inspected welding training facilities in Port-Harcourt, Lagos, Minna and Benin expressed satisfaction with the training facilities at the centers, the quality of instructors and the training manual which he described as not only theoretically grounded but practically solid. He said that the Fund is committing so much money on welding to exploit what he termed as “the low hanging fruit” because at the level of the country’s development, it is imperative to invest more in quick-win projects that have more impact in

the industry and capable of addressing Mr. President’s Agenda on youth empowerment and unemployment.

“PTDF welders training and certification Programme is theoretically grounded and practically solid. I expect

that the products will not only become skilled workers but entrepreneurs who will employ people. I foresee Nigerians taking over the welding bit of the oil and gas sector in no distant future, that is the goal of PTDF and we will spare



no effort to make sure that their dream became a reality”

He assured the trainees that the Fund shall within the available resources, ensure that, they completed all the stages that will eventually qualify them as competent welders in order to increase local capacity in welding and fabrication activities of the oil and gas industry.

In his address, the President Nigerian Institute of Welding (NIW) Dr Solomon Edebiri said that, a gap analysis conducted in the industry revealed that Nigeria requires the production of not less than 40,000 competent welders in Nigeria. This is because the profession occupies a strategic position in engineering production, construction and fabrication in the oil and gas sector. PTDF he said, has succeeded in up scaling the welding profession in the country through upgrade of institutions and manpower development in the sector.

He recalled that not only has PTDF trained competent welders but has also produced certified welding practitioners and specialists, welding engineers and underwater welders.

Dr Edebiri thanked PTDF for its various interventions which he said will go a long way to ensure complete domiciliation of all fabrication works in the industry as provided by the Nigerian content law.

Some of the trainees who spoke to PTDF expressed satisfaction with the quality of training they are receiving at the various centers and assured the Executive Secretary of their desire to complete all the welding processes in record time.

Five hundred and five welders are currently participating in the train 2 of the module B (Plate weld) of PTDF Welders Training and Certification Programme (WTCP) initiated by the Fund to bridge the gap that exists in the fabrication sector of the industry. So far PTDF has trained about 1700 welders to different levels of proficiencies ■





ENTREPRENEURSHIP DEVELOPMENT TRAINING PROGRAM FOR WELDERS

A SELF EMPLOYMENT INITIATIVE BY PTDF

The Petroleum Technology Development Fund (PTDF) has introduced the Entrepreneurship Development Training Program (EDTP) into its Welders Training and Certification Programme (WTCP). This initiative will enable graduates of the scheme to acquire robust business skills that will empower them to set up businesses of their own and become employers of labor in the field of welding and fabrication. By so doing, they will contribute in bridging the employment gap in the industry and help sustain the industry's long-standing contribution to economic growth and development of Nigeria.

Executive Secretary of PTDF, Mr. Femi Ajayi who flagged off the Entrepreneurship Development Training Program (EDTP) at the Federal University of Technology (FUT) Minna, one of the welding training centers sponsored by PTDF, stated the Fund's

resolve to create a platform for nurturing young vibrant entrepreneurs needed in the oil and gas industry.



He pointed out that, PTDF motivation in venturing into the programme is to contribute in building the future of the Nigerian youth in line with President Goodluck

Ebele Jonathan's transformation agenda on youth empowerment and entrepreneurship.

He regretted that, although over 1700 young Nigerians have been trained by PTDF to qualify as International Welding Practitioners and Specialists as well as in basic welding programmes, the sad reality is that getting employment in the industry is not as easy as it used to be for reasons beyond the control and mandate of the Fund. This he said justifies the decision of the Fund to integrate the entrepreneurship development training programme as a compulsory component of the Welders Training and Certification Programme. *"In a bid to have a good foothold on the program, the training is being facilitated by Business Development Service Providers (BDSPs) certified by the Small and Medium Enterprises Development Agency of Nigeria*

(SMEDAN), the premier government agency charged with Entrepreneurial development. As a follow-up to the training, we plan to further network with (SMEDAN) and other related stakeholders to facilitate the setting up of individual businesses where applicable."

The Executive Secretary enumerated the objectives of PTDF welders training and certification programme to include producing a critical mass of welders and fabricators with entrepreneurial knowledge required to meet the Nigerian content objective; upgrading the capacity of in-country welding and fabrication facilities to globally acceptable standard, train and develop skills of a sizeable number of Nigerians in entrepreneurship capacity, knowledge and competencies to enable them become employers of labour.

A business development provider, Mr. Biodun Adedeji in his contribution during the flag-off ceremony described the EDTP initiative as fundamental to producing technically and vocationally skilled workers.

He outlined some of the skills that would be integrated into the programme to include; business ethics, book keeping, customer relations, negotiation skills, marketing and customer care relations, record of transactions, how to recruit and retain staff as well as how to do and maintain a business plan among others.

"Now to make a business succeed is like a chair. For a chair to be balanced it must have four legs, one of the legs stands for the entrepreneur which is you; The second leg stands for the vocational skill, which is the welding skill; The third leg stands for business management skill, which is what we are teaching, and the fourth leg stands for the support that you receive from maybe the government which is what PTDF is providing, so you can see that you are balanced as a chair".

In his address, the Vice chancellor of the Federal University of Technology, Minna Professor Musbau Akaji thanked PTDF for its various interventions in the university which he said has motivated the university to begin the process of setting up a welding engineering department for the award of degrees in welding.



Prof. Musbau Akaji, VC, FUT Minna

"We are planning to break our Department of Chemical Engineering because we have the personnel trained by you, we want to go into oil and gas engineering and material engineering and immediately you leave here, we will put down activities that will culminate into our having a welding engineering department because of the support PTDF and NIW has given us which attracted other people from outside Nigeria to this University".

Bashir Mohammed Kabir, a trainee currently undergoing the Module B welding certification training at the Minna Centre commended PTDF for integrating the entrepreneurship training to their training curriculum. This he said will assist them to establish their own welding outfits after graduation, and to become self reliant.

PTDF Executive Secretary, Femi Ajayi had before flagging off

the Entrepreneurship Development Training Programme for welders paid a courtesy visit on the Vice Chancellor, Federal University of Technology Minna.

Welcoming the PTDF Boss, Professor Musbau Akaji thanked the Federal Government for the huge infrastructural upgrade of facilities in the university through PTDF interventions. He said PTDF developed the infrastructure and provided the equipment for the department of chemical engineering, built an ICT centre, and also sponsored the facilities for the training of welders by the university.

"It's on record that you built a whole department of chemical engineering for us, equipped it and trained a lot of our personnel in chemical engineering. We have the best combination of staff with about 24 people with PhD in chemical engineering. I am proud to say sir that we have one of the best engineering faculties in the whole of this country. That was what led the Federal government to appeal to us to assist a sister university when it ran into a serious problem that was causing Nigeria some embarrassment. We are planning on creating two more departments, because we have the personnel trained by you. You assisted us in training them. We want to go into oil & gas engineering. We want to go into material engineering. Immediately you leave we will put in motion activities that will culminate in our having a welding engineering department"

The Vice chancellor said that



PTDF support has impacted positively in the rating and ranking of the university and has also attracted the academia from institutions outside Nigeria “Being a university of technology, we will continue to make an impact on the technological development of Nigeria. One of the channels of doing that is the welders training programme of the university. So we want to thank PTDF for choosing the university as one of the training centers in welding”

In his response, PTDF Executive Secretary, Femi Ajayi commended the Federal University of Technology Minna for championing the technological development of Nigeria through its welders training programme and other technology based programmes run by the university as a result of PTDF intervention. “I am also delighted to hear that PTDF has been doing so much with you. You talked about the building of the chemical engineering department I am also aware that we have an ICT project here and of course we supported some of your lecturers in this area of skill enhancement that we do from university to university. Of course is the welding centre which we supported. It is a project that is very close to our heart because it is one area where you could easily impact on the Nigerian local content initiative. It is one of the low hanging fruits that we are interested in plucking; that’s why we devote so much funding and attention to this welding program. We are very much aware of the progress that has been made in your university and the other universities

in the north. 3 more universities apart from FUT Minna are involved in the welding scheme. It is also gratifying to know that your university is hosting the entrepreneurship development training program. It shows the leadership of FUT Minna in welders training and certification programme, so we are quite pleased with what you are doing and you can be sure that we will continue to provide the necessary support that you need”.

President, Nigeria Institute of Welding, **Solomon Edebiri** addresses beneficiaries of ptdf entrepreneurship development training programme for welders.



The Nigeria Institute of Welding was able to convince PTDF that it would be better to train Nigerians in welding as well as give them the skills to manage businesses of their own on graduation. “I am delighted that PTDF

has responded to our call by accepting to introduce the entrepreneurship training program in welding under its welders training and certification program.

At the end of this programme you will have the ability to be an employed welder anywhere in the world with the IIW certification that you will receive.

You will also have the ability to manage businesses of your own as well as the ability to be an employer. The entrepreneurial skill training will enhance your welding skill and at the end of your module (C) it is my expectation that you will have the opportunity of setting up your own training centre, run it as a business enterprise and employ other people.

This skill will expose you to a wide range of choices. You can make a choice and do that which you enjoy, you have passion for and will give you the resources to take care of your family and help the country”.

BENEFICIARIES SPEAK

Isah Yahaya Iliya’u
from Nasarawa state



“This Entrepreneurship program that has been introduced is something that we are very happy about because it will increase our entrepreneurial skill and abilities. if you are not employed and you have the necessary financial materials you can establish on your own and serve as a consultant to oil & gas companies which is commendable. On behalf of my fellow trainees, we really appreciate the effort of PTDF and the NIW for a job well done. We thank them for giving us the opportunity to be part of this program because it’s not easy for somebody to find himself in this type of program. Millions of people are out there trying to get the opportunity and



they couldn’t, many of us have written the exams for this program and most of them have not been opportune to get this training, so we that got the training we really appreciate it and we thank the PTDF and the Federal government for financing the program effectively”.

Bashir Mohammed Kabir,
from Minna, Niger State.



“After the training we will be gainfully employed in the oil & gas sector, but with this entrepreneurship we believe we can even stand on our own not even working

in the oil & gas sector. We can establish and start doing it and helping others too. PTDF has done wonderful for us because when we went to the aptitude test exam we were about 10,000. Luckily we are part of the 1700 being assessed and accepted to be part of the program, we have nothing to say to PTDF except Alhamdulillah because they have done everything for us”.

Engr. Adamu Garba
FUT Minna



“I am one of those that benefitted

from this PTDF welding training, we were sent to south Africa in 2009 to participate in WTCP welders training and certification Programme. So I was one of the trainees that came back with two certificates IWP and IWS. 9 of us qualified to be specialists and practitioners. I have been a staff of FCT Minna. I am now an instructor. This EDTP will go a long way to help the trainees very well. The basic thing is for one to know how to manage his business so this program is to teach them how to manage their business so if they graduate here and they have the opportunity that is if they are given the support at least they will be able to manage their business” ■



The Executive Secretary, Staff of the Fund, Staff of FUT Minna and Trainees at the Ceremony



PTDF PARTNERS HERITAGE BANK TO EMPOWER VOCATIONAL SKILLS TRAINEES WITH LOANS

PTDF in partnership with Heritage bank organized a youth empowerment workshop for 20 selected youths out of the 120 that graduated from PTDF Post Amnesty Vocational Skills Training Programme in Cotonou, Benin Republic.

The Partnership is the first of its kind in the history of the Fund and is being implemented under the newly introduced 'PTDF Entrepreneurial Development Scheme' which ensures that PTDF does not just provide training but assists its trainees to set up Small and Medium Enterprises to make income from the training they received as well as become employers of labour.

Mr. Femi Ajayi said the scheme is designed to run in batches of 20 "the first batch of twenty (20) were selected based on their practical and theoretical performances at the academy and I hope that, the excellence demonstrated during their training will carry through to the businesses that they will set up. It is

the success of the first exercise that will determine how far PTDF will go with the other batches".

He explained that, the training scheme which involved 120 youths from the Niger Delta Region and other parts of the country, provided various vocational/hands on skills, including ICT, Diagnostic/Fault detection in heavy duty equipments and auto rotary technology at city and guilds certified centre (KAR ACADEMY) in Cotonou, Benin Republic.

"The objective of this Youth Empowerment Programme" he emphasized "is not only to develop middle level manpower and competencies of Nigerians in the oil and gas industry but to assist beneficiaries with the resources required to set up and manage small scale businesses to ensure that knowledge and competencies gained are maximized. This will also guarantee self sufficiency for the trainees in accordance with the transformation agenda of Mr. President with regards to

youth empowerment and job creation"

Mr. Femi Ajayi noted that, both PTDF and the Heritage Bank will map out strategic ways of effectively monitoring and supervising the resources that will be released to the beneficiaries to ensure optimal utilization and turnover. While urging the trainees to take full advantage of the opportunity given to them to become successful entrepreneurs and employers of labour, the Executive Secretary said *"it's not everybody that is looking for white collar job, so we have to strive to make entrepreneurs out of you so that you can as well create jobs for other people. Most of the loans will be in material form and Heritage Bank will supervise and monitor the use of the loans to ensure sustainability of the businesses. The ultimate thing is for us to realize our mandate of ensuring adequate capacity and competencies for the oil and gas industry"*

In her address, the Head Industry Collaboration Unit of the Fund,



Barr. Timipre Wolo, encouraged the participants to strive and live up to the expectation of their sponsors and should not waste the opportunity that so many youth are scrambling to benefit from. "What PTDF is doing is a very unique and laudable initiative. It is the best of its kind in ensuring that, those awarded scholarship when they come back to the country are not only employed in the industry but create job opportunities for themselves and others. PTDF wants to ensure that, they are engaged so as to bridge the existing gap in the dearth of qualified manpower in the oil and gas industry".

In his remark, the Head, Business Advisory Services of Heritage Bank, Mr. Jide Dada thanked PTDF for partnering with the Bank in bridging the unemployment gap in the country as well as solve the challenge of developing the requisite manpower

with technological knowhow to drive sustainable economic development.

He said that the able bodied youths that are enlisted in the PTDF Youth empowerment programme have demonstrated a strong will to make a change and has all it takes to excel in the initiative judging from their performances in their training. He expressed confidence in their ability to become successful small and medium entrepreneurs which is the bedrock of the economy. Their success he said will also ensure economic growth and help to transfer technology in-country.

Under the pilot scheme, Heritage bank will consider granting loans of up to 10million naira per head with single digit interest rate based on the individual need of the trainees and the proposed enterprise.

The trainees were subjected to a two day intensive training on

how to acquire managerial skills, development of business concepts, business strategy, business feasibility studies, business plans and how to repay their loans by maintaining a sound and robust accounting system of recording and book keeping among others.

Blakson Yemson who spoke on behalf of the trainees thanked PTDF and the Heritage bank for the strategic partnership which he said is like a dream come true to all of the trainees who participated in the programme. He assured the Fund of the trainees' commitment to ensure optimal utilization of the resources that will be given to them in order not to jeopardize the chances of their colleagues who stand to be considered for the same loan in the next batch of the programme ■

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THE ZEOLITE DISCOVERY FROM KANKARA CLAY

*A RESEARCH BREAKTHROUGH FROM PTDF
PROFESSORIAL CHAIR ENDOWMENT IN AHMADU
BELLO UNIVERSITY (ABU) ZARIA*



In April 2014, the Vice Chancellor, Ahmadu Bello University, Zaria Professor Abdullahi Mustapha announced the successful breakthrough in the local refining of heavy crude using locally sourced raw materials. This resulted from a 4 year intensive research on the production of Zeolite Catalyst using clay by a team of Researchers led by Professor Abdulkarim Ahmed, the Chair holder of the Petroleum Technology Development Fund Endowment in Chemical Engineering at the Ahmadu Bello University Zaria.

Zeolite Catalyst is an essential additive in the conversion and refining process of heavy gas oil into usable gasoline and petrochemical products in refineries. Zeolite Catalysts are commonly used in the petroleum refining and petrochemical industry for a wide variety of applications such as catalytic cracking of heavy fuels and isomerisation and anomalization of petrochemicals.

The research outcome is

fundamental to the petroleum industry in Nigeria, particularly in the operation of petroleum refineries due essentially to the fact that the raw material inputs for the production of Zeolite Catalyst such as KAOLIN from clay can now be sourced locally. Apart from improving the production capacity of local refineries, the development has the economic implication of reducing the huge capital flight on the importation of raw materials for use in local refineries as well as in the importation of refined petroleum products.

PTDF Chair holder and lead researcher, Professor Abdulkarim Ahmed said at the 1st International Conference on Zeolite to draw international attention to the breakthrough in Nigeria, that characterization tests conducted abroad on the locally produced Zeolite Catalyst using Kaolin derived from Kankara clay in Katsina State indicated a 75% viability in out-performing the commercial catalyst currently being used by NNPC refin-

eries. The design and fabrication of a pilot plant for the production of Zeolite Catalyst in Nigeria is at an advanced stage, he said.

“The PTDF professorial Chair at ABU Zaria has been able to develop new process route through which high quality zeolites (Zeolite Y and ZSM-5) were produced from kaolin from Kankara town in Katsina State of Nigeria. The ZSM-5 prepared also had shorter crystallization time of 4 days when compared to 7 days for conventional methods. The zeolites were compounded into catalysts and tested both within and outside the country. Pilots plants have been designed and fabricated to produce the catalysts. We hope that the findings of the ongoing research and development will advance indigenous know how in the area and consequently effect improvement in the national and global economies”.

The 1st Nigeria International Conference on Zeolite brought together experts and researchers on Zeolite science and technology in Nigeria and the rest of the world to interact and exchange ideas on recent developments in Zeolite technology and to recognise and appreciate Nigeria's strides in using local raw materials in developing globally accepted Zeolites.

The Petroleum Technology Development Fund is the sponsor of the research and lead collaborator in organizing the event which took place at the Nicon Luxury Hotel, Abuja.

The Executive Secretary, Femi Ajayi said the promotion of cogent researches that are already impacting both the oil and gas industry and the academia is one of the programmes evolved by the PTDF to fulfil its mandate of building relevant



competencies and capabilities that will steadily expand the scope of local content in the oil and gas industry.

“The global technology shift in Oil and Gas and indeed Scientific World is driven by Applied Research especially when such research is able to improve the way things are done through new discoveries, inventions and innovations. Although every research will produce findings that others can build on to have a break through, lack of break through innovations like what we are witnessing today means that such research efforts remains in the realm of mere academic exercise without tangible contribution to development. PTDF research Chairs are need based, need driven, result-oriented and problem solving”.

He commended the PTDF Chair Professor in Chemical Engineering, Ahmadu Bello University Zaria, Professor Abdulkarim Ahmed for his concerted efforts and high sense of commitment in actualizing the research goals for which PTDF endowed the Chairs.

“The development of Zeolite catalyst is not only significant but has extensive economic implications in reducing the huge capital flights on the importation of this raw material by foreign partners in the oil and gas sector. This first Nigeria International Conference on Zeolite Development from locally sourced Kaolin is therefore very apt and timely at this period given the operational and production challenges in our refineries today. Prof. Ahmed has shown sufficient efforts at improving on the research milestones set by the PTDF. This is visible in the recent successes attained in the approval of the intellectual property rights and patents on two novel process techniques developed in the production of ZEOLITE Y and ZSM-5 Zeolite catalysts, products of intense indigenous researches using locally sourced kaolin at the bench scale. PTDF is therefore delighted that the objective for funding research through Professorial Chair Endowment in the Universities is being realized, as the pilot scale production process is being optimized”.

The Fund currently has five (5) functional endowment programmes in Federal Universities across the Country. These include: Ahmadu Bello University, Zaria with Chemical Engineering as its thematic area of research; University

of Maiduguri in Basinal Studies; University of Port Harcourt in Gas Engineering; University of Benin in renewable Energy and University of Nigeria; Nsukka in Petroleum Geology.

PTDF Executive Secretary, Femi Ajayi, himself a Biochemist by training, said the Fund's endowment programme is to advance indigenous research in petroleum and other related disciplines for the development of Nigeria's oil and gas industry. He assured the Zeolite experts of PTDF's commitment to continue to transform oil and gas related departments in universities to centres of excellence through its university upgrade programme and to also support them in research and development

The Vice-Chancellor, Ahmadu Bello University Professor Abdullahi Mustapha expressed his deep appreciation to PTDF for initiating the chair in Chemical Engineering at the University, and the total commitment of the university community to ensuring that the outcome of the research is beneficial to the industry, for teaching and learning.

In his remark during the conference, the Minister of Science and Technology, Dr Abdu Bulama who was represented by the Director General, National Research Institute of Chemical Technology (NARICT), Professor Idris Bugaje congratulated both the PTDF and ABU, Zaria for attaining this feat and assured them of the Federal Government's desire to support the project fully which he said is in tandem with the country's march to industrialization in its vision 2020 as contained in the transformation agenda of the President Goodluck Jonathan.

Also the chairman of the conference opening session His Eminence, King (Dr) Edmund Daukuru, Amanyano of Nembe Kingdom and chairman South-South Monarch Forum expressed appreciation to PTDF and Ahmadu Bello University for the landmark breakthrough and for other records of excellence in the fields of engineering and geosciences. He was represented by Professor Bio Eyananyo.

The event was preceded by a pre-conference workshop which featured presentations from reknowned scholars and Zeolite experts around the

world. The lead presentation on Nano Technology was by Professor Joydeep Dutta from Sultan Qaboos University, Oman. Others who presented papers include Professor Leslie Petrik from University of Western Cape Town, South Arica on Zeolite preparation, Dr A Sartbaeva from the University of Bath, United Kingdom on the nature and synthesis of Zeolite.

Others are Professor B Y Jibril, Dr Abdulsalam Kovo and several other Professors and academics who participated from various universities within and outside the country. The workshop was chaired by the vice chancellor of the Al-Hikmah University, illorin, Professor Abdulkarim Age.

A communiqué issued at the end of the conference recognised the lead role undertaken by PTDF in the funding of Zeolite research and urged more government agencies to partner with PTDF to encourage and sustain Zeolite research. The participants emphasized the need to set up state of the art regional equipment centers for characterization and testing of Zeolite and related materials at affordable cost.

Zeolite Catalyst is an essential additive in the conversion and refining process of heavy gas oil into usable gasoline and petrochemical products in refineries.



Interview with Professor Joydeep Dutta Sultan Qaboos University, Oman



Q: May we know you sir

A: My name is Professor Joy Deep Dutta and I am the chair occupant in Nano Technology at the Sultan Qaboos University. Before joining sultan Qaboos University in 2011, I was the vice president of Asian Institute of Technology, Bangkok Thailand which is primarily a postgraduate institution.

Q: Why are you attending this International Zeolite conference in Nigeria?

A: I was thinking about possibilities and opportunities for interacting with the real players around in this country and hopefully contribute in my own small way how Nano technology could be very important not only to zeolite but for your country as well.

Q: I am sure you know the research on zeolite is a product of a chair endowed by the Petroleum Technology Development Fund. How do you see the involvement of Institutions such as PTDF in research and development?

A: There are no second thoughts about it because unless there are institutional involvements in research, science and technology cannot develop in any country, so this is a very laudable step, which your organisation has taken in trying to build up a research chair, so along with that research chair you will see there will be groups that will come together and you will have other technologies that will develop if you can sustain it, but please remember

research is a very slow process. So many a time people lose their patience. So in order to succeed you need to continue building up more research chairs and make accessible to these chairs, the local tools that are necessary to have advanced scientific research and development so that your precious foreign exchange does not go out of the country.

Q: How do you think the subject matter can help the oil and gas sector?

A: Nano technology is an invasive technology which impacts on all parts of science and technology and all aspects of our lives. It is today a 1.5 trillion U.S Dollar business in the oil and gas industry. This include gases.

Q: You made a presentation, can you in a lay mans language explain briefly what your presentations is all about?

A: I focused totally on giving insights on the tools that are necessary in order to properly make a scientific study of the field of zeolite. I also spoke about how we can mitigate the pollution that is done by oil and gas industries so that at least it will get into the minds of young and old researchers how important it is to develop technologies to mitigate the problems related to pollution. Simple example you have oil in water, water is necessary to pull out oil in any well, this oil contaminates the water and we are unable to remove 100% of the oil from the water. This requires treatment of the water so that it can be neutralized so that it does not contaminate other places. Similarly your country has a lot of mining resources. Mining will also create a lot of pollution, and you better start thinking of how to stop any potential pollution in the future. So I think a Fund like yours should encourage people that are looking for environmentally friendly technologies because we are all looking for a sustainable living.

Q: Can you tell us your impression about the whole conference so far?

A: My first impression is that Nigeria is still a young nation in science, so in order that it can go forward you need to have more events similar to this one so that the youngsters as

well as the local faculties get a chance and the opportunity to interact with people who are active in research and development that will shape up their research and also hopefully will increase interaction between different countries.

Q: What are your thoughts on commercialising research findings?

A: Commercializing research is not a child's play. Many a time in developing countries we believe that just making a patent is good enough to have a product. I have made over 20 patents and only a fraction of it has gone to the industry. So in order to do that you need commercial licensing officers which probably you don't have. As professors we think that we have done our job by patenting it but the main part, of any commercial development happens only when you are able to bring people to do the job of up scaling it from the lab into a prototype and into the market and that is the learning curve you have to go through.

Q: What about the breakthrough on Zeolite catalyst using local raw materials?

A: You have already done the prototyping, which is excellent news, but the day I will think you have been successful is if you can implement this zeolite in another refinery out side the country.

... in order to succeed you need to continue building up more research chairs and make accessible to these chairs, the local tools that are necessary to have advanced scientific research and development so that your precious foreign exchange does not go out of the country.

- Prof. Joydeep Dutta



Interview with Professor Lesley Petrick University of Western Cape Town, South Africa



Q: Can we have you properly introduced?

A: I am Lesley Petrik from the University of Western Cape Town in South Africa. The university is one of the four universities in Cape Town, South Africa and I am in the department of chemistry there. I do environmental and other technology research.

Q: You are here for the International conference on zeolite, what compelled you to be here?

A: I was invited by the conference organisers because I have been working on zeolite synthesis and characterization and applications for about two decades, so I just felt I could make a contribution to the conference and one of my students was also coming to make presentation, I have come to support him.

Q: You made a presentation, please summarise this in a lay mans language?

A: I was telling people how to make zeolite, I was explaining what zeolite is. It is a mineral, you could find it naturally or you can make it with chemicals in the laboratory, and it's basically a porous mineral that contains water in its pores and its used for all kinds of processes. You can make different products from it, from hydrocarbons, you can use it to clean water, you can take toxic metals out of waters with it, but we are also looking at hydrocarbon processing so to make value added products from oil. We use zeolite to try and improve the

environmental degradation around a coal to power generation in South Africa and how we can actually apply the zeolites in different parts of the processes to see that the process is cleaner and greener and that will help for sustainable development.

Q: To what extent do you think the discovery in this research can help the Nigerian oil & gas industry?

A: Certainly it will help you to use some parts of your fractions and beneficiate your oil instead of just exporting it as a resource and I think its very important for the country no to just be a resource exporter but to become a beneficiator and also to move towards the knowledge economy where you actually are patenting your own processes and using your own processes instead of buying technology from external sources.

Q: This research is sponsored by an institution, the Petroleum Technology Development Fund. What is your impression about this sort of investment by a government agency such as PTDF?

A: It is essential that government and industry invest in developing research because of your countries future. You need to build up a skilled workforce if you're going to be able to use your resources effectively and not just export them raw. For me, the advice to the government will be that they need a sustained program to support science in Nigeria and make it possible to educate students to the level of skills that these high tech type of developments require.

Q: What is your impression about the whole conference?

A: I am absolutely overwhelmed with the hospitality I have received and the welcome I have received I found that the quality of the training workshops was good and I think that the youngsters that have attended have gained from it. I think the attendance has been excellent and am very glad to see that people are interested in this field of science and it means that they are becoming aware of the potential that you have to beneficiate your own raw materials and to make an impact in your own country positively for sustainable development.

Interview with Prof Baba L. Yakub Jibril



Q: May we know you?

A: I am professor Baba L. Yakub Jibril of chemical engineering department at A.B.U Zaria.

Q: What is your impression about the Zeolite conference?

A: This is the first Nigerian International conference on Zeolite and I am really impressed with the level of participation from Oman, from South Africa, from U.K it is a very well organised conference. The quality of papers is also very impressive. I attended presentations based on Nano technology, on Zeolite some application in the industry some local application in water treatment, there is very high quality of presentation.

Q: I am sure you know the research was sponsored by PTDF a kind of institutional involvement in research & development what do you have to say about that?

A: I am really impressed with the level of assistance and motivation given by PTDF. As you said the organisation is supposed to take care of capacity building linkages within universities, upgrade of universities and all that.

For me, the advice to the government will be that they need a sustained program to support science in Nigeria and make it possible to educate students to the level of skills that these high tech type of developments require.

- Prof. Lesley Petrick



Interview with Lead Researcher



Q: Can you explain in the layman's language what is zeolite?

A: I will simply say that normally chemical processes are very slow and they are not economically viable, but to make them economically viable you use a catalyst to increase the speed of reaction. When they are so fast we are able to make them economically viable. Zeolite can be made with one of the catalyst that are used in making petrochemical reactions very fast as to make them economically viable.

Interview with Dr. Russell Sartbaeva from University of Bath, United Kingdom



Q: Please introduce yourself?

A: My name is Dr. Russell Sartbaeva. I am a researcher at the University of Bath in UK, my field of research is prediction and design of new synthetic zeolites and synthesis of new structures and characterisation.

Q: Why are you attending this

international Zeolite conference in Nigeria?

A: I am very happy to be here at this conference, this is the first Nigerian zeolite conference, so first of all it is a big privilege to be here so I am very grateful I was invited. The zeolite industry is very important because it can help the economy of the country. For many nations zeolite development actually helped them to develop and to introduce lots of new industries and I think in many countries like Nigeria for example its vital to put money into the research for zeolite because that will feed eventually into the economy and it will help to bring economic growth for the country.

Q: Can you in a layman language, briefly summarise for us what your presentation is all about?

A: There are about 200 synthetics known as zeolites. They are all very important because they all have different forms and sizes and we do lots of different chemistries using the zeolites. The problem is that we have millions of hypothetical structures and we want to be able to predict which of those hypothetical structures we will be able to synthesize, the problem is that nobody can predict we don't know the simple answer and that's one of the things which I am trying to address. So I am trying to help using simulation methods to see which of these structures we will be able to synthesize because the more structures we have on hand the more different chemistries we can do and the more different chemistries we do the more efficient we will be and industrially it is very important to be efficient to have low cost processes so all of that will help eventually.

Q: You may be aware that this research on zeolite was sponsored by PTDF an institutional involvement in research development. What is your impression about that collaboration?

A: To be honest I don't know a lot about this organisation, so far everything that I have seen was very good I'm very proud of organizations like PTDF to be funding research, that's very good, I think it's very good that they are taking time they are taking effort and putting money into research

because the more we can research the more knowledge we can bring the better every body's life will be, so I think that's very good.

Q: To what extent do you think this particular research breakthrough can help Nigeria's oil & gas industry?

A: I think it can help directly because obviously the petrol companies are looking for more efficient processes, so the more efficient we can make the processes the better it will be because we want to make them environmentally friendly, we want to reduce the temperatures of the processes. For example, we want to reduce the waste and as long as we can achieve all of that, that will be good for everybody.

At the moment Nigeria imports zeolite from other countries, so instead of importing if you can research into making the zeolites here, it's much better. This is because it creates jobs, it uses local resources, so it is a much better way of doing it for the country, so to me it's much better.

Q: How do you think the involvement of the government in research is going to help the academia and the industry as a whole?

A: I think it is very important to talk to politicians and governments, because science itself cannot solve all the problems, science can help in solving problems but if we can engage government because they are making the policies obviously, so we need to be able to influence the policies in the right way because researchers want improvement, so I think involving politicians and government is very good and I think it will be positive in the future.

...instead of importing if you can research into making the zeolites here, it's much better. This is because it creates jobs, it uses local resources, so it is a much better way of doing it for the country...

- Dr. Russell Sartbaeva



1ST NIGERIA INTERNATIONAL CONFERENCE ON ZEOLITE (INCZ) HELD IN ABUJA.

COMMUNIQUE



The 1st Nigeria International Conference on Zeolites (1NICZ) which took place in Abuja had as its theme "NEW TRENDS IN ZEOLITE DEVELOPMENT AND APPLICATIONS". The conference was sponsored by the Petroleum Technology Development Fund (PTDF) in partnership with Ahmadu Bello University Zaria, Raw Materials Research and Development Council (RMRDC), Nigerian National Petroleum Corporation (NNPC) and National Research Institute for Chemical Technology (NARICT). The conference was preceded by a workshop attended by sixty nine (69) participants, while the conference was attended by one hundred and twenty seven (127) participants including expatriates from the United Kingdom, South Africa and Oman. Five (5) plenary and sixteen (16) technical papers were presented at the conference.

The conference was chaired by His Eminence, King (Dr) Edmund M Daukoru, MINGI XII, Amanayanabo of Nembe Kingdom, ably represented by Prof. Bio Nyananyo. Special address was delivered by Prof. Idris M. Bugaje (DG, NARICT) on behalf of the Honorable Minister of Science and Technology, Dr. Abdul Bulama. There were short remarks by representatives of ABU Zaria, NNPC, RMRDC and DPR. The Executive Secretary of PTDF, Olufemi Ajayi, declared the conference open.

Observations

The following observations were made:

1. PTDF has taken the lead role in the funding of Zeolite research in Nigeria;
2. The level of expertise being developed in Zeolite research in Nigerian universities is impressive;
3. Interaction with international experts in the area of Zeolite is very important and should be encouraged;
4. There is lack of synergy between the academia and the industry in Zeolite research in Nigeria;
5. Funding of Zeolite research in Nigeria is inadequate;
6. Participation from the industry in terms of paper presentation at the conference was low;
7. There is little geological work on natural Zeolites in Nigeria;
8. Research activity on FCC catalyst is minimal in the country;
9. Few Nigerian universities and research institutes are engaged in Zeolite research;
10. Zeolite based nanotechnology system can be used for wastewater treatment and in other areas;

Recommendations

The conference recommends that:

1. More government agencies should partner with PTDF to encourage and sustain research on Zeolite, and also in organizing local and international conferences;
2. Local and international conferences on Zeolite should be organized every two and four years, respectively.
3. There is need to set up state-of-the-art regional equipment centers for characterization and testing of Zeolites and related materials at affordable cost;
4. Researchers should explore various sources of funding from local and international organizations;
5. Geological work on natural Zeolites should be encouraged in Nigeria;
6. Zeolite science and technology should be included in the curriculum of tertiary institutions;
7. Efforts should be focused on utilizing existing body of knowledge on Zeolite science and technology rather than reinventing the wheel;
8. There should be more multidisciplinary collaboration in Zeolite research;
9. Nigerian chemists should be stimulated to get involved in Zeolite research;
10. More Nigerian universities and research institutes should venture into Zeolite research;
11. Work on FCC catalyst need to be intensified in Nigeria;
12. Emphasis should be placed on the design and scale of pilot plant for Zeolite production;
13. Zeolite Association of Nigeria should be reactivated.

INAUGURATION OF NEW EDITORIAL BOARD OF PETROLEUM TECHNOLOGY DEVELOPMENT JOURNAL



Members of PTDJ Editorial Board in a group photograph with ES, PTDF

Six (6) new members have been admitted into the editorial board of the Petroleum Technology Development Journal (PTDJ). This brings to 18, the membership of the editorial board of the journal. The new members are Dr Otive Igbuzor, Mr Alfred Akinosho, Mr Adebayo Ojo, Mrs Omolola Olakunri, Dr (Mrs) Maimuna Waziri and Prof. Abdulrahman Audu.

While inaugurating the new members of the board, Executive Secretary, PTDF, Femi Ajayi said the enlargement of the Board is not a denunciation of the success story of the journal, which he said has been one of the sign posts of PTDF's excellence and the first internationally recognized academic journal of any government parastatal or agency in the country.

Mr Femi Ajayi said the expansion of the Board of the PTDJ is in response to the ever-changing dynamics of the oil and gas sector as well as the inescapable need to bring in new ideas and fresh perspectives to cope with contemporary realities.

The Executive Secretary said his dream of PTDJ is one that is "intellectually deep and academically rigorous as well as professionally sound

without being technically pedantic and brain splitting. We need to make conscious attempt to communicate technical matters with simple but correct language to guarantee accessibility and readability to most of our target audiences".

He enjoined the new members of the editorial board of Petroleum Technology Development Journal to contribute new ideas, fresh perspectives and even unconventional innovations at all times during and outside board meetings.

It is his expectation that both old and new members would properly integrate into a formidable team and be in a position to take crucial decisions and actions that will enhance the global appeal and industry wide recognition of the journal.

The Petroleum Technology Development Journal formerly known as Petroleum Training Journal started in 2001. In an effort to sustain the vision of the founding members, PTDF took over the publication and effected a name change to Petroleum Technology Development Journal in 2010. The journal from 2010 has remained a consistent bi-annual international publication with modest

circulation in-country and overseas.

REMARK BY THE EXECUTIVE SECRETARY, PETROLEUM TECHNOLOGY DEVELOPMENT FUND (PTDF) MR FEMI AJAYI ON THE OCCASION OF THE FORMAL INAUGURATION OF THE NEW EDITORIAL BOARD OF THE PETROLEUM TECHNOLOGY DEVELOPMENT JOURNAL (PTDJ)



It is my pleasure to welcome all of you to this inaugural meeting of the enlarged board of the petroleum Technology Development Journal (PTDJ). I am very much aware that most members of staff of PTDF that I spoke to are quite proud of this journal and its achievements as well as its perceived reputation in the oil and gas industry in the country. It is already being described by well-meaning and enthusiastic PTDF staff as "our internationally-revered journal" and even tagged: "the first internationally recognized academic journal of any government parastatal or agency in the country!" Therefore, the journal is one of PTDF's flagship projects and one of its key achievements in its efforts to actualize its mandate which is mainly "building relevant competencies and capacities in the nation's oil and gas industry".

Despite the fact that the journal is already perceived by some people as the "signpost of PTDF's excellence", the current management in the spirit of continuous innovation and in the



bid to respond to the ever-changing dynamics of the Oil and Gas sector as well as the inescapable need to bring in new ideas and fresh perspectives to cope with contemporary realities, has found it necessary to enlarge the PTDJ Editorial Board.

This expansion of the Board of the PTDJ is not by any means a denunciation of the success story of the journal thus far. You have therefore not been called up to the Editorial Board to re-invent the wheel as it were.

Yet the leadership of PTDF at this time is daring enough to invite you, based on your proven track record and antecedents in the oil and gas sector, to come and contribute novel ideas to the improvement of a cherished product and a popular brand in its own right with many loyalists.

The Petroleum Technology Development Journal formally known as Petroleum Training Journal (PTJ) started in 2001. In an effort to sustain the vision of the founding members of the then PTJ, PTDF took over the publication after due consultations with relevant stakeholders, and effected a name change to Petroleum Technology Development Journal (PTDJ) in 2010. The journal from 2010 has remained a consistent biannual international publication with modest circulation in-country and overseas.

My vision of the PTDJ is a more generally acceptable journal that is more widely read, more widely patronized and more widely cited by the oil and gas global community. I dream of a PTDJ that is an intellectual meeting point and melting pot for oil and gas industrialists and petroleum faculty members.



While I salute the vision, hard work, dedication and professionalism of the pioneers and other stakeholders that have taken PTDJ to this enviable and commendable status and height, I believe there is still plenty of room for improvement.

While I am not contemptuous of humble beginnings but actually ready to start small, I am not wary of dreaming big for the PTDJ. We are therefore aiming high even if we are starting small. We should not be too timid of envisioning and striving to reach the moon even if we might never physically get there! Even if we don't eventually achieve the perfect quality journal of our dreams, we should at least get a respectable one that is free of typing errors and so-called printer's devils and one devoid of faulty tense constructions and atrocious verb conjugations!

My dream PTD journal is one that is intellectually deep and academically rigorous as well as professionally sound without being technically pedantic and brain-splitting. We need to make conscious attempt to communicate technical matter with simple but correct language to guarantee accessibility and readability to most of our target audiences.

In our choice of articles to publish, our preference should be commercializable research findings, the outcomes of need-driven and problem-solving research undertakings and of course the reports of new trends, new methods, inventions and innovations in the oil and gas sector.

In our legitimate drive to communicate our thoughts and ideas with scientific precision, we

must strive to achieve technical accuracy and professional correctness without tending towards avoidable inaccessibility and obscurantism.

Against this backdrop, may I enjoy you to be open and feel free and uninhibited to contribute new ideas, fresh perspectives and even unconventional innovations at all times during and outside PTDJ board meetings.

It is my sincere hope that at the end of this inaugural board meeting, both old and new members would properly integrate into a formidable team and be in a position to take crucial decisions and actions that will enhance the global appeal and industry-wide recognition of the journal.

Together, we can make the PTDJ one of the best and most reputable oil and gas journals in the world and in the process extend the frontiers of scientific and technical journal publishing.

PTDJ EDITORIAL BOARD MEMBERS

S/No	Names
1.	Dr. Momodu Kassim-Momodu
2.	Dr. Kevin Idehen
3.	Mr. Edoreh Agbah
4.	Mall. Musa Rabi
5.	Dr. Samuel Onwudiwe
6.	Prof. Abiola Kehinde
7.	Prof. Cornelius S. Nwajide
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10.	Prof. Dulu Appah
11.	Dr. Otive Igbuzor
12.	Mr. Alfred O. Akinosho
13.	Mr. Adedayo Ojo
14.	Mrs. Omolola Olakunri
15.	Dr. (Mrs) Maimuna K. Waziri
16.	Prof. Abdulrahman A. Audu
17.	Mall. Muhammed Haruna
18.	Dr. Neeka Jacob





PTDF SIGNS MoU WITH CAVERTON HELICOPTERS TO FACILITATE ENGAGEMENT OF ITS TRAINED CADETS



In response to the Presidential directive to agencies of government involved in training and capacity development to create employment opportunities for its trainees, the Petroleum Technology Development Fund, Mr. Femi Ajayi, said the agreement augurs well for local content development in Nigeria and will ensure that the 15 Nigerian youths who completed the initial phase of training in South Africa under PTDF sponsorship, received additional training and practice in order to be type rated in the specific helicopters they are expected to fly for offshore operations in Nigeria. *“Apart from having been given general training in helicopter piloting, they have to be type rated, that is trained on the particular type of helicopter that they will fly, acquire the required hours of flying, fine tune their expertise and skills”.*

Mr. Femi Ajayi said although PTDF is primarily a training and capacity building agency of government, the Fund is inspired by the recent Presidential directive on job creation by training bodies. *“...but what is training if like the President said, the beneficiaries are not utilized. It makes sense, just as you train, you introduce measures to ensure increased employability of the people you are training and this is in line with Mr. President’s transformation agenda*

and Caverton Helicopters in Abuja, Executive Secretary, Petroleum Technology Development Fund, Mr. Femi Ajayi, said the agreement augurs well for local content development in Nigeria and will ensure that the 15 Nigerian youths who completed the initial phase of training in South Africa under PTDF sponsorship, received additional training and practice in order to be type rated in the specific helicopters they are expected to fly for offshore operations in Nigeria. *“Apart from having been given general training in helicopter piloting, they have to be type rated, that is trained on the particular type of helicopter that they will fly, acquire the required hours of flying, fine tune their expertise and skills”.*

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on youth empowerment and youth employment”.

Representative of Caverton Helicopters, Adeniyi Makanjuola who led a team of top Management of the company to the signing ceremony in Abuja said the initiative is coming at a time when the company is de-emphasizing the engagement of expatriates in preference for Nigerians that could be trained to become active participants in Nigeria’s oil and gas sector. He said that the Presidential directive for training bodies to facilitate employment of their trainees coincided with their corporate restructuring which aims to prioritize the use of local manpower in their operations. He said apart from the heavy financial and logistical burdens of hiring expatriates, they couldn’t really get value for their money as a result of the on and off work schedules of expatriates, which only makes it possible to get just 6 months of actual work time from them on a year’s contract. *“All the Cadets shall from day 1 be given conditional employment and having reached the level of competence to be awarded Commercial Pilot Licenses in a foreign jurisdiction, we have no doubt that on completing the internship they will fly oil*



and gas offshore missions for majors in the oil and gas industry”.

Under the MoU, Caverton shall provide all selected PTDF Cadets with an employment contract and upon successful completion of the internship programme confirm the Cadets as staff of Caverton with a USD denominated starting salary in line with the company’s existing pay scale. On its part, PTDF shall be responsible for the cost of training the Cadets.

OBLIGATIONS UNDER THE MoU

Generally, the parties (PTDF and Caverton Helicopters) agreed to jointly invest human and capital resources to facilitate local capacity development in furtherance of their aspirations to see competent local Pilots and Engineers at the forefront of the Nigerian oil and gas industry. Specifically, Caverton is obligated to provide the following services under the MoU

- Full complement of operations, maintenance, safety, training and general technical competence required to deliver quality training services to the selected Cadets presented by PTDF
- Provide the Cadets with access to dedicated aircraft during the routine course of the training programmes subject to regulatory permissions
- Provide all selected PTDF Cadets with a conditional employment contract subject to their presenting the minimum credentials required to embark on the requisite course
- Caverton shall upon successful completion of the Internship Programme confirm the Cadets as staff of Caverton with a USD denominated starting salary in line with the Company’s existing pay scale

OBLIGATIONS BY PTDF

- Provide a shortlist of competent and qualified Cadets to be engaged for training and consequent employment
 - PTDF shall be responsible for the immediate and ancillary costs associated with the training of the selected trainee Cadets
- PTDF and Caverton shall co-operate

in areas of their special technical and managerial expertise including Pilot and Engineer screening, air law examinations (where required) and approval of facilities and aircraft, responsibility for operations, security, technical maintenance, personnel security, logistics including permits and approvals.

PTDF Executive Secretary speaks on MoU with Caverton Helicopters



We just signed an MoU with Caverton Helicopters which commits both parties to certain obligations. These pilots were trained at a high level training centre in Sandton, South Africa, the Hover Dynamics, where they acquired both the (PPL) and (CPL). Why the necessity for further training with Caverton?

Specifically we are giving this further training or rather we are attaching them with Caverton for two reasons; Firstly, they need to be type rated, that is they need specific training for the specific type of helicopter that they will fly, that is what is referred to as type rating. That is the technical lingo in their business. For a particular type of helicopter, you have to get a specific training and experience for that. Secondly which is as important as the first one, even when fully trained as a pilot you’ve gotten your (PPL) private pilot licence and you have your (CPL) commercial pilot licence as well as the (IFR) Instrument Flight Rating, you still need a certain number of flying hours at least 1000 hours after your training to upgrade as a commercial pilot. So there are two issues, the issue of getting the further training for the type of helicopter you want to fly

then of course clocking all the number of hours that you need in order to be considered a fully qualified pilot. You are not likely to get that 1000 hours during your training otherwise the training will be too expensive both for the trainee and the trainer. if we are wondering why all this is necessary we have to know that aviation is a business where there is need for perfection. There is nothing like 99 per cent good pilot you have to be 100 per cent because of the sensitivity and the precarious nature of assignment they handle.

What other incentive is Caverton offering?

Caverton is actually offering provisional employment on enlistment for all the 15 cadet pilots. Caverton wants to be seen as a sign post for local content development in the aviation sector because of their own antecedents and we are quite happy to associate with them because they seem to believe in the local content development as much as PTDF does. So at the end of the day, they are saying that after this 15 people have undergone their 18 months of training, if they demonstrate competence and the knack for the profession, they will be given permanent appointments and like you heard the chairman himself say, it is not just out of altruism, that it is also out of self interest, because expatriate pilots are not easy to come by or to pay, so it is also in their interest to hire Nigerians who are competent and who have the requisite experience, so at the end of the day it is a win win situation for Caverton Helicopters.

Is Caverton involved in oil & gas operations or business?

Caverton is involved in helicopter business and helicopters are more suitable for the oil & gas sector because of the oil rigs that they go into. You don’t hear about the use of fixed wing planes in the oil & gas as much as you hear of helicopters, so Caverton is a known name among the oil & gas professionals and that is precisely why you find PTDF training helicopter pilots and not the fixed



wing pilots though I understand that if you learn the art of flying helicopters it is easy to convert.

Before now, it appears PTDF was satisfied in developing capacity through training and education for the oil and gas industry, what has changed?

I would say PTDF was not doing anything wrong in that regard, PTDF is mandated to train, train and train more. There is nothing wrong with that because the more you train the more the number of human capacity available and the more the likelihood of being employed. But then it is also true that there are some categories of professionals where when you train them and you don't provide employment they may become dangerous to society like for instance welders. By the time somebody has competency and certification in fillet, plate, pipe welding and underwater welding and he doesn't have a job, you can imagine if he decides to use his skills negatively. So that is why it makes sense to try and give them further training to increase employability the way we are doing in PTDF. Now we do entrepreneurship training and internship in some cases like this one, because what we want to do with the cadet pilots in Caverton is basically internship of some sort or professional apprenticeship.

So PTDF will continue with its normal trainings and those that require facilitating employment PTDF will get involved?

It is not in all cases that we will be able to offer internships or this kind of start up funds that you have with the welders. You know with the welding thing now we are already talking to SMEDAN and partnering with Heritage Bank to see the possibility of start up funds for some welders to be able to self employ themselves and even employ others so that way if they don't want to work with any firm they can set up businesses on their own so it's a win win situation for the country and the economy.

Mr President recently directed government agencies involved in

training and capacity building to also think of how to facilitate employment of their trainees. What are your thoughts on that?

Yes, because of his personal challenge with the slow pace of generation of jobs by the private sector, I mean jobs are not growing the way Mr President expected so that is why he had to also put the burden on training institutions. His Excellency's argument which is genuine is, if you have the money to train 100 maybe you should just train 30 and use the remaining 70 per cent to create employment. I want to sound a note of warning that this does not mean Mr President condemns training. Mr President is an advocate of training, training and more training! What he is saying is that there needs to be an end to this folkloric picture of somebody training and training training, and not caring about what happens. You know in the Greek city states there were cases of people who were philosophers, their own was knowledge for knowledge sake, but here we are training people for the workplace so in this case in a society where we are even asked to carry out skills gap audit to find out what exactly does the sector require. So it means that we want to be target specific. As much as possible we want to train only those people that will be required by the industry for which we are catering. So it means that we really want to be very very efficient in what we are doing to be target specific. We are just training the workforce to make them tailor made for the industry, that is not to say that even general training does not help society. At the end of the day going to school is not just for getting employment. There are some other things you get from training other than being able to put food on the table, so we will continue with our training particularly when it comes to the Undergraduate, Masters and Doctorate scholarships and it is not likely that we will be able to offer internship to everybody that we train in that area, but then where we are able we will offer entrepreneurship, we will offer so many internship as the case demands. It is not a one side fixes all kind of things.

Head, Industry Collaboration Unit / SA to ES **Timipre Wolo** Speaks on MoU with Caverton



Q. You must feel a great sense of pride today on the signing of the MoU with Caverton helicopters.

A. What the PTDF did today is a clear indication of its commitment to youth development and capacity building. In as much as the PTDF has a mandate to train, we are taking the step forward that those trained by the Fund are not left hanging out there in the street, and this is in tandem with the recent directive of Mr President that government agencies responsible for training should also ensure that those we train are meaningfully engaged, employed directly in the industry and help create jobs. Because we all know that job creation and youth development is key to achieving the transformation agenda of this administration, so it is indeed a very exciting partnership with Caverton and the PTDF having trained pilots up to the CPL, and they also went ahead to acquire the Instrument Flight Rating which is an additional rating that is relevant to the aviation industry in Nigeria. We have taken a step further to develop a partnership with Caverton, where-in the cadets will be able to get the necessary type rating which is very key and they get employment in the industry. The internship is for a period of 18 months for which they will be type rated build requisite flight hours. At the end of the internship period having acquired the requisite proficiency, they will become permanent staff of Caverton. So at the end, PTDF has not only trained but has completed the whole cycle of getting those trained employed after

training them so it's a very beautiful partnership indeed.

Q. How difficult was it to get this whole arrangement on board?

A. It wasn't quite easy because the aviation industry is a dynamic one and it's a unique one in the sense that even after you've gotten your commercial pilot license it is just the first step to you being a pilot. Without such kind of partnership these cadets will come back to Nigeria, they probably will never be able to find employment in the aviation sector, because no company is going to actually employ you as a pilot if you're not rated on a particular aircraft. You need to get those type rating, you need to build a requisite number of hours, it's an industry that is very sensitive, it's something that has to do with lives. So it is key that these cadets are type rated on the aircrafts they would be flying and it is very important that they get those requisite number of hours otherwise we have a lot of young Nigerians training as pilots and they are out there on the street, so this is a very dynamic initiative of the PTDF to ensure that those we have trained are engaged by the industry, because there is no other way they can be retained if they don't get those necessary type ratings and the good thing is Caverton helicopter is an indigenous company whose focus is also on building local content.

Q. Under the MoU, what are the obligations of both parties, The Fund and Caverton?

A. Under the MoU that was signed, the internship has been designed in such a way that PTDF will provide the much needed support throughout the period of the internship and Caverton helicopters will carry out all the requisite trainings not forgetting that they would be flying these very heavy aircraft and helicopter which is quite different from what they trained on. Where as the cadets trained with three passenger helicopters, they will be flying very heavy machines that would be carrying up to 14 passengers offshore, so they will be getting the offshore training, how to fly and land on oil and gas platforms, because they will be conveying passengers, expatriates and supplies offshore, so they are going to be getting those

specific training on how to fly and land on oil and gas rigs and take off and all of that. In addition they will be rated on the specific aircraft that they would be flying in real life, of course they would be able to build the hours within that period. So Caverton is going to be providing all that support, they have also committed to flying them overseas during this internship period to other parts of the world where they can also get some additional training.

Q. What is the duration of this internship?

A. It is an eighteen month internship programme which will culminate into a permanent employment. The cadet from day one will be given letters of employment but it will be conditional offers of employment and would only become confirmed as permanent staff after they build the required number of hours and they get the required type of rating on the aircraft, that is when they would become permanent staff of Caverton, I don't really want to go into that, but their starting salary is quite attractive.

HPTP Strategy

In designing the Helicopter Piloting Training Program, the Petroleum Technology Development Fund (PTDF) identified the potentials of helicopter transportation in the oil and gas industry and the need to build capacity in the area due to the shortage of qualified Nigerian helicopter pilots in the sub-sector. An aerial surveillance objective was integrated into the program to develop competencies needed to check the

menace of pipeline vandalism, which had reached unprecedented levels in the country.

20 students were selected across the country to be trained at the Hover Dynamics, a turnkey aviation centre in Johannesburg South Africa with operations in helicopter maintenance services, helicopter flight training and helicopter sales.

At the outset of the program, the trainees were scheduled to receive training for the award of licenses in Private Piloting (PPL) and Commercial Piloting (CPL) which are the basic requirements for flying. In the course of their training however, approval was received to include training that would lead to a certification in Instrument Flight Rating (IFR) in order to increase the employability prospects of the cadets.

Of the 20 trainees sponsored for the program, 15 successfully completed the trainings and obtained their PPL, CPL and IFR certificates.

Graduation Ceremony

The graduation ceremony for the 15 cadets took place on the 19th of November 2014. They are the first set of certified pilots sponsored by the Fund. The training program commenced in 2012 and ran for 20 months.

Speaking at the ceremony which held at the Grand Central Airport, located in Midrand, the Executive Secretary Mr. Femi Ajayi, represented by the Head, Industry Collaboration Unit of the Fund, Barr. Timipre Wolo, said that helicopter transportation was the most common means of air





movement in the oil and gas sector due to the fact that most of the activities in the industry take place in offshore and onshore terrains that can only be accessed by helicopters. She emphasized that, the training program was specifically developed to address the foreign dominance of the subsector by building local capacity.

The graduands had their unique stories. Tosin Ajibola got his certifications at the age of 18 to become the youngest Nigerian pilot. Another cadet, Ruqayya Danbara at age 22, has become the first female

helicopter pilot from the Northern Part of the country.

Mr Ikia Kent Igbele from Bayelsa State who gave the vote of thanks on behalf of the other cadets said, *“we were apprehensive about our future, were we going to face the monster of unemployment after our training, some of us were contemplating going to other countries of the world. We commend this ingenious innovation of PTDF, whatever we do, wherever we go we would never forget what PTDF has done for us”*. He also thanked His Excellency President Goodluck Ebele

Jonathan and the Honorable Minister for Petroleum Resources Mrs. Diezani Alison-Madueke for the life changing opportunity.

While giving a last word of advice to the graduands, the Chief Executive Officer, Hover Dynamics, Mr. Tony Feldman urged them to be diligent in carrying out their duties, as 93% of flight accidents are caused by pilot error. He urged them not to be a part of the statistic but to at all times uphold the high professional standards they acquired in the course of the training ■

PTDF TRAINED PILOTS BEGIN JOB INTERNSHIP WITH CAVERTON HELICOPTERS

The Fifteen (15) young Nigerians offered automatic employment by an indigenous private aviation company after the successful completion of the Petroleum Technology Development Fund (PTDF) sponsored helicopter piloting and air surveillance training in South Africa have commenced the eighteen (18) months job internship training with Caverton helicopters. This is a prerequisite towards standardizing their license by securing the minimum flying hours that will enable them to practice as pilots in the oil and gas industry.

The Fund recently signed a partnership agreement with Caverton Helicopters, to engage the 15 PTDF trained helicopter pilots after a period of internship as cadets in the company.



Mr Femi Ajayi who flagged off the internship program at the Caverton office in Lagos said that, PTDF partnership with the company is not only to empower the cadets but also to encourage local aviation companies to fulfill the local content development drive by providing jobs to young bright Nigerians.

“Caverton Helicopters is helping to ensure that, the local content initiative that has been taken by PTDF is perfected, so this is a classical case of collaboration to move Nigeria’s local content drive to a logical conclusion. It’s not just about the lives of the young men and women that we are transforming, it is also about the process that is becoming very practical and physical to all Nigerians, so local content is not only traversing

the oil and gas sector, but permeating the various sectors and aspects of the economy. I am very happy that, we have become an agent of mainstreaming the private sector in Nigeria’s development process”

He said that, youth empowerment is one of the main areas of focus in the transformation agenda of the present administration. It emphasizes not only the training of Nigerian youths but on equally engaging them to practice what they have been trained, so that they can effectively contribute to the Nigerian economy. *“the training of young pilots resonates very well with the transformation agenda of Mr President and it shows that, its not just a bogie, it’s something real, you can touch it, you can feel it and we are all very excited. The*



Executive Secretary, Petroleum Technology Development Fund,



revolution that we are trying to carry out in the industry is not just working towards indigenization of the oil and gas sector, but also trying to ensure that we curb the capital flights that you have in the industry as a result of limited local value addition. We want to reverse that trend and I believe that, that is the connecting and common denominator between Caverton and PTDF”

The oil and gas industry, he said, cannot function effectively without helicopters because they are critical in conducting air surveillance and in conveying workers to offshore platforms and installations as fixed wing aircraft cannot go to these places due to the nature of oil and gas operations.

On why the trained pilots are undergoing additional training, the Executive Secretary said *“yes, we all thought we are done, but we were told it’s a continuous and challenging exercise. Piloting is not like any other profession, it is like medicine, precision is the name of the game. Because of the delicate nature of the profession, people have to be properly trained to have the right temperament, exposure, experience as well as right expertise to function as pilots. There is what is called type rating, to have the right exposure and experience on the kind of aircraft you need to be flying as well, but I want to assure you that all the monies and time spent in this process will be money well spent because it’s a classical case of value addition to the professionals involved, the industry and the Nigerian economy”*

In his address, the Managing Director of Caverton helicopters, Captain Josiah Choms described the partnership with PTDF as a good marriage that has the potential of producing captains that will take over

the industry.



It is also a classic example of how the public and private sectors can work together to achieve the dream of our country.

“If we are very proactive to bring our own people and put them into this kind of program that the PTDF is putting them through, using us as a platform to do that, then we will have the capacity to meet our needs and even export because we have not fully tapped all the resources of the oil and gas sector. The further offshore we go, the more sophisticated equipment we need and the more pilots we need. it’s not like we don’t have pilots in Nigeria but we don’t have those that qualify to fly in the oil and gas sector”

Josiah Choms said that, the young PTDF trained pilots will now be groomed to a much higher standard that is found in general aviation as well as in the oil and gas industry, as a result of the partnership obligations between PTDF and Caverton. *“PTDF has taken the initiative to train people, and have brought them to a basic level which has helped these individuals attain their commercial pilot license (CPL), but to work in the oil and gas sector, in fact in the aircraft type of flying, one will need a 1000 hours minimum to*

be able to work, but given our reputation we have been able to put some strategies in place to allow a little room. As they are coming to us with about 120 hours, we now have to build them up through a structured programme to 500 hours and at the same time meeting all the prerequisites for being able to work in the oil and gas sector, like some offshore experience, instrument training, some crew resource management courses (CRM), under water training in terms of emergency evacuation, first aid training and several other aspects that we are going to put them through. After we have put them through, we can bring them on board as seasoned second officers, and before long they will be line checked which will lead them to flying real aircraft, flying with real passengers to real platforms and they will pass that stage again and move from second officers to first officers and they become really productive as co-pilots in the oil and gas industry. It is our obligation to bring them up to that level”.

He explained that, the beauty of the partnership initiative between Caverton and PTDF is the ability to reverse the trend on capital flights in the aviation sector, because for a long time the only people that are able to get jobs in the industry are the expatriates, because they have the required expertise. He said that, as a result of the partnership, Caverton will disengage 17 expatriates pilots and replace them with the 15 PTDF trained ones.

“It will interest you to know that I will be doing one of the most difficult parts of my job today which is to relieve people of their jobs; I will have to release 17 expatriates today because I have taken on 15 Nigerians and that is the repatriation of foreign exchange, so it is





already having an impact”.

Captain Choms thanked PTDF for the confidence reposed in them to be part of the initiative and to contribute their quota towards driving the local content initiative forward. He urged the young beneficiaries to strive and live up to expectation as they have no reason not to succeed giving the resources invested on them.

Head, Industry Collaboration Unit PTDF, Barr. Timipre Wolo explained the Fund’s resolve to work for the realization of the transformation agenda of President Goodluck Jonathan on empowerment and job creation.



PTDF she emphasized decided

to go beyond its mandate of training to facilitate the engagement of its trainees to avoid a situation where its trainees will be left hanging on the streets without any job.

Miss Wolo revealed that, the selection process helicopter piloting training programme was very rigorous with beneficiaries coming from the Niger Delta and other parts of the country. PTDF also accorded equal opportunity to female cadets to train as pilots so that they can also prove their worth in the oil and gas industry.

Onuma Francisca Ijeoma and Ocheme Emmanuel who spoke on behalf of their colleagues thanked the Petroleum Technology Development Fund (PTDF) for offering them the opportunity to acquire both the Private and commercial pilot licenses and Caverton Helicopters for partnering with the Fund to actualize their dreams of utilizing their acquired expertise. They expressed commitment to strive and add value to the overall growth and development of the Nigerian oil and gas sector.

When asked about the ability of the female cadets to cope with the stress associated with helicopter piloting,

one of the female pilots Elizabeth Jesuleke had this to say.



“Yes! the aviation industry, is a male dominated industry, women are very few but I love the challenge it posed to me as a woman, and I have always wanted to be someone people will look up to as an inspiration. A lot of people ask why helicopters and not fixed wings, isn’t it more difficult and challenging and I say yes, that is why, I believe if you desire it there is nothing that will stand on your way, I believe if the opportunity comes for you, you should go ahead even as a woman, so I want to use this opportunity to thank the President, the PTDF and Caverton for this wonderful opportunity”



SOCIETY PROMOTES ERGONOMICS IN THE OIL AND GAS INDUSTRY



The Executive Secretary Mr Femi Ajayi (middle), to his right, The President Mr Sam Daramola and members of the Ergonomic Society of Nigeria on their courtesy call to PTDF

The Petroleum Technology Development Fund (PTDF) is to collaborate with the Ergonomics Society of Nigeria (ESN) to promote the application of ergonomics in the oil and gas industry so as to enhance productivity as well as the safety of the people working in the sector. The Executive Secretary of the

Petroleum Technology Development Fund (PTDF), Mr. Femi Ajayi made the disclosure when he received the President, Ergonomics Society of Nigeria, Professor Sam Daramola who led other members of the society on a courtesy call to the Executive Secretary’s office in Abuja. Mr. Femi Ajayi said the Fund will

support all initiatives that will ensure the greatest good of the greatest number of people in the society as well as that of all professionals working in the oil and gas industry.

He said, given the inclination of PTDF as a capacity building institution that trains professionals in the oil and gas industry, ergonomics will become a natural partner for it since its primary focus is occupational health which means working in optimal level without any danger to oneself and the environment which he operates.

Mr. Femi Ajayi however cautioned that, whatever support PTDF will offer must be tied to its mandate of ensuring the production of competent manpower that will impact positively in the oil and gas industry “given the positive objective of your society, we are quite on the same page and we are willing to partner with you to the best of our ability, given the reality of our funding profile and also the reality of our mandate because everything that we do here we must ensure mandate relevance” ■



Rukayya Suleiman Danbara, First Female Helicopter Pilot in Northern Nigeria trained by PTDF

OUR IMPACT

We are training Nigerians for gainful employment in the oil and gas sector

- 15 young Nigerians who have been trained by PTDF as Commercial Helicopter Pilots are currently being integrated into an internship (apprenticeship) program designed to culminate into full employment in the industry.



...committed to populating the oil and gas sector with well trained professionally competent Nigerian manpower



RE-FOCUSING THE OSS TOWARDS STRATEGIC ALLIANCES

BY



Rabi'Ah U. Waziri-Adamu
Head, Education and Training Department



their programs are rigorous, highly competitive and we are optimistic Nigerian graduates will benefit greatly from these institutions. From our experience in running, coordinating and awarding scholarships, we have trained a sizeable number of Nigerians that are intelligent; and given the right training they will excel in all their academic pursuits. The program under this partnership will still be available to qualified Nigerian graduates that have met all the necessary criteria for entry into the institutions. Two (2) institutions in Germany and one (1) in Brazil are on board:

ALEXANDER VON HUMBOLDT FOUNDATION (Germany)



The Alexander von Humboldt Foundation is a foundation established by the government of the Federal Republic of Germany and funded by the Federal Foreign Office, the Federal Ministry of Education and Research, the Federal Ministry for Economic Cooperation and Development as well as other national and international partners; it promotes international academic cooperation between

The PTDF Overseas Scholarship Scheme has been running in the United Kingdom (UK), United States of America (USA); with a few in Malaysia and Dubai. The scheme has been operating successfully for about 14 years, educating Nigerians in Masters Degree Programs and research through Doctoral studies. From inception to date about 2700 MSc and 700 PhD scholars have been trained. A number of them graduated with distinction and are engaged within the global oil and gas industry as well as the academia. Some inventions by the doctoral research students have been recorded; recently a PhD scholar at University of Sheffield designed and developed a medical device for non contact respiration rate monitoring using infrared imaging. Books have also been published by a number of the PTDF doctoral students.

The high standard of our selection process which is transparent and rigorous has been maintained throughout the 14 year period, with continuous improvements, successful candidates are selected based on merit reflecting the federal character.

The value of the scholarship is generous and has also been rated as one of the best being awarded by a Government organization.

Despite the major limitation in the system being funding, the scholarship award is still fully funded by PTDF.

In order to continue to meet one of the key objectives of PTDF which is the award of Scholarships and given that resources are by nature limited the Fund decided to expand its frontiers to seek partnerships/strategic alliances in Germany & Brazil by working together towards common objectives. Like the UK,



scholars from Germany and abroad. Every year the Foundation grants more than 700 competitive research fellowships and awards, primarily going to academics from natural sciences and the humanities. It allows scientists and scholars from all over the world to come to Germany to work on a research project they have chosen themselves. In particular, these fellowships and awards include a number of large prizes, such as Humboldt Professorships and Sofia Kovalevskaya Awards. Fellowships and awards from the Foundation are considered to be among the most prestigious and generous awards in Germany; Scientists and scholars of all nationalities and disciplines may apply to the Alexander von Humboldt Foundation directly at any time.

This partnership will give PTDF post-doctoral candidates the opportunities afforded by the foundation via the Fund's website. We will encourage all PTDF alumni and academics to explore this life-changing prospect.



DAAD (Deutscher Akademischer Austauschdienst) - The German Academic Exchange Service(Germany)

A private, federally funded and state-funded, self-governing national agency of the institutions of higher education in Germany, representing 365 German higher education institutions (100 universities and technical universities, 162 general universities of applied sciences, and 52 colleges of music and art).

Similar to PTDF, DAAD itself does not offer programs of study or courses, but awards competitive, merit-based grants for use toward study and/ or research in Germany at any of the accredited German institutions of higher education. It also awards grants to German students, doctoral students, and scholars for studies and research abroad. With an annual

budget of nearly 400 million Euros and supporting approximately 50,000 grantees annually, approximately 11,000 of which are on long-term scholarships, the DAAD is in fact the largest such academic grant awarding organisation worldwide. DAAD grants administered by the DAAD abroad are available to students of all academic disciplines and at each academic degree level, including undergraduates, Master's degree students, doctoral and postdoctoral scholars as well as faculty.

Given that DAAD has joint scholarship programmes in Ghana and a number of African countries, PTDF offers the ideal opportunity to tailor a similar programme for Nigeria. This collaboration would see PTDF and DAAD co-funding scholarships with the benefit of allowing the Fund to reduce the cost burden of its programme or even increase the number of scholars it sponsors.

The collaboration would raise the Funds' profile internationally and offer the opportunity for the Fund to enhance some of her procedures and infrastructure thus enhancing the Funds' ability to deliver on its mandate.



UNIVERSITY OF SAO PAULO (Brazil)

The University of São Paulo (USP) is a public university in the Brazilian state of São Paulo. It is the largest Brazilian university and the country's most prestigious educational institution, the best university in Ibero-America, and one of the most prestigious universities in the world. USP is one of the largest institutions of higher education in Latin America, with approximately 90,000 enrolled students. It has eleven campuses, four of them in São Paulo (the main campus is called Campus Armando de Salles Oliveira, with an area of 7,443,770 m²). USP is involved in teaching, research and university extension in all areas of

knowledge.

The vision is for PTDF to achieve its long term objective of domesticating most of its programs and USP is of the opinion that under this partnership, PTDF could create alliances with some local Universities in Nigeria to facilitate Technology Transfer, Domestication and Joint research on topics relevant to the Nigerian economy. This will complement our already existing PTDF Local Scholarship Scheme (LSS) in the various Universities. The PTDF LSS began in 2007 to derive direct and maximum benefit from the Universities Upgrade and Endowment Programs of the Fund. So far 475 no. of undergraduates have been trained while 45 have been trained at post graduate level. The scheme began with 6 universities, but currently it covers 21 universities across the nation

Conclusively, these partnerships would provide shared expertise, more clout, a greater range of knowledge, improved efficiency, productivity and financial stability while opening the door to new funding opportunities, Increased program visibility, credibility, and prestige which ignites a spirit of innovation to ensure that PTDF takes its rightful place in the Oil and Gas industry through sustainable collaborative efforts ■

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JU becomes first U.S. partner with Petroleum Technology Development Fund to educate Nigerian students



Jacksonville University is the first U.S. partner in a program with Nigeria's Petroleum Technology Development Fund to educate its country's top young scholars in STEM-related fields, signaling a dynamic move to intensify the University's global reach in higher education.



With 18 members of the first cohort of 25 Nigerian undergraduates looking on, JU President Tim Cost and Timipre Wolo, Deputy Manager of the Fund's Industry Collaboration Unit, signed the agreement in which the Fund will pay all tuition and expenses for students in the program through summer 2016.

The long-running PTDF Overseas Scholars program, which already has a footing in the United Kingdom, France, Norway and other countries, is designed to transfer knowledge and skills in STEM-related subjects to students who will then qualify as academicians, professionals and technicians in the petroleum and solid minerals fields in Nigeria and abroad. The end result is a sharing of not only academic but cultural awareness and intelligence between host universities and Nigerian students.



"We are here to help you become better-informed, globally prepared students," Cost said. "This is another step toward our goal of bringing a more international student body and focus not only to Jacksonville University but to the city and region."

Since 1973, the mission of the PTDF has been to train Nigerians as graduates, professionals, technicians and craftsmen in areas such as engineering, geology, science, aviation and management related to the petroleum and solid minerals industries. Its objectives are to help develop indigenous manpower, acquire and transfer technology and knowledge, and make Nigeria a human resource center for the West African sub-region in these fields. Successful applicants to the fund's overseas scholars program must pass rigorous screening and testing. *"This agreement marks what we hope is only the beginning of a new friendship and dynamic relationship," Wolo said. "We have a dire need to build capacity and to have our Nigerian citizens take on more responsibilities in our industries ... We could not have picked a finer university or city to continue our program as we expand into the United States."*



In the formal Memorandum of Understanding, the Fund noted that Jacksonville University was chosen from among a number of candidates because of its *"well-established reputation for undertaking applied research and teaching that provides graduates with tools for a life of continuous learning [and] the skills of creativity, problem-solving and leadership."*

JU has a long tradition of educating and empowering international students, and recently created partnerships with universities in China, Japan, Taiwan, Germany and Scotland, as well as new relationships with organizations in the Middle East, Europe and South America, said Provost and Chief Academic Officer Wenying Xu. Students from more than 90 countries have attended the University in its 81-year history, and this academic year alone, 13 foreign countries are represented among the study body, with JU offering Honors and Education Abroad programs, international internships, an active International Student Association, and distinguished faculty from around the world.

"All of this creates a microcosm of the global village," Xu said. "Here, we produce individuals who are world-ready and work-ready. ... We are confident you will excel academically and will represent your country with great pride and distinction."



Nigeria's growing technical and industrial industries require home-grown talent, said Nigerian Ambassador Amb Geoffrey Teneilabe. The country's nine universities are able to accommodate only about half of qualified applicants. The Petroleum Technology Development Fund's program is designed to continue Nigerian President Goodluck Jonathan's "Transformation Agenda" to ensure the country's positive direction.

"We have 5,000 Nigerians studying here in the U.S., and more are coming," he said. "We need to produce manpower to move forward. ... Countries become leaders because of knowledge and technology, and JU is a producer of doers and thinkers. I cannot think of a better institution for this cultivation."

David Abraham, a 20-year-old Nigerian student with an interest in chemistry and international business, told the audience how honored he and his classmates were to be selected for the prestigious program.

"This is giving us a capacity to build our nation," he said. "It's an opportunity to learn in a different environment.... We are adjusting to the time, the weather and the food — and especially to the accents. We will be good ambassadors for JU."



PTDF INDUCTS 217 SCHOLARS

The induction of successful applicants who sat for the PTDF Overseas Scholarship Scheme (OSS) test and PhD interview was flagged off by the Executive Secretary. As a tradition, the Fund conducts a robust induction program with beneficiaries before they are sent abroad for their studies. The program covers a wide range of issues that ensure that the scholars are properly guided and given proper orientation before proceeding for their studies abroad.

At the opening of the last induction ceremony, Executive Secretary Petroleum Technology Development Fund (PTDF) Mr. Femi Ajayi thanked President Goodluck Ebele Jonathan and the Minister of Petroleum Resources for their “timely interventions that made it possible for the Fund to process the awards for the 2013/14 and 2014/15 academic years”. He observed that the scholarship program was critical to the Petroleum industry because of the wide gap in the technological advancements at the global scene as against the capacity of Nigerians. He said the training of PTDF scholars in top universities in the United Kingdom under the Overseas Scholarship Scheme has been a huge success and there were plans to move to other countries in



Europe, as well as Australia, the United States and Canada.

The Overseas Scholarship Scheme (OSS) was initiated in 2001 to facilitate the emergence of a skilled Nigerian workforce ready to participate in the oil and gas industry through education and training. Since then, the scheme has recorded many accomplishments. The Executive Secretary who reeled out the accomplishments of the Fund under the scheme said “2,500 MSc scholars have been sponsored and trained in world class institutions overseas in the fields of Petroleum Engineering, Gas Engineering, Petroleum Geo-Science, Offshore Engineering, Geology and other related oil and gas courses, Over 600 PhD scholars have also received

training overseas in related fields since inception with a good number of them working in the oil and gas industry and the academia.”

Continuing with the record accomplishments, he said that the Fund had “trained 74 lecturers in its University Lecturers Skills Enhancement Training Program (a train-the-trainer program) in Newcastle UK, and Grenoble in France”.

The Executive Secretary commended the brilliant performance of the scholars and enjoined them to be diligent in their studies and remain mindful of the mission and vision of the Fund and government’s policy on local content in the oil and gas industry.

A total of 217 scholars made up of 174 MSc and 43 PhD students participated in the 2014 induction ceremony of the Fund’s Overseas Scholarship Scheme. The scholars commended the selection process for the scholarship award and the transparency and integrity of the exercise that led to the awards. They pledged to be good ambassadors of the Fund and Nigeria while undergoing their studies abroad. Here are excerpts of what some of the scholars said at the induction ceremony.

Victoria Mianaekere
(AkwaIbom, PhD Geo-Sciences)

I applied for the scholarship in 2012, and expected to start in 2013 but I didn’t hear from PTDF. When I was about giving up because I couldn’t find funding I got an invitation for the interview in May 2014. I can’t believe I am here right now. I am doing my PhD in geo-sciences an area I love so much and I believe it’s going to be beneficial to the Oil and Gas industry and the future of oil and gas in Nigeria.

Joseph Isimite
(Delta State, PhD Process and Environmental Engineering)

I am very grateful for this opportunity and I want to say thank you to the Executive Secretary and all the members of the PTDF board for giving us this wonderful opportunity. It’s something we are very grateful for and something we won’t take for granted, because out of a total of five hundred and something that applied for the scholarship only about 45 were taken. One of the things I observed when I did my masters in the UK is that other countries who sponsored candidates for their PhD’s abroad, require beneficiaries to submit the certificate of occupancy of their buildings as a bond to ensure that when they finish their programs they would come back to their countries, we can do the same in Nigeria.

Lillian Iheukwumere Ogechi
(Abia State, MSc Reliability Engineering & Asset Management)

I chose that course because the problem we have in Nigeria is not lack of resources or things to better our country. The problem we have really is maintaining those resources. I am really happy to be here. I am very impressed with the transparent nature of the examination and everything, I don’t know anybody in PTDF and then I got it, and then I think if I can get this PTDF thing without knowing anybody then I think Nigeria still has some hope, thank you.



Onwufuju Chukwuma Emmanuel
(Delta, MSc)

I want to on behalf of every MSc overseas scholar here appreciate PTDF for giving us this opportunity. I want to say it is a rare one because many of us have applied for many scholarships but having been selected by PTDF following the procedure just like my other colleague said, I think it is a noble process of which I am very very much happy about. I had removed my mind from the scholarship and all of a sudden somebody called me to say I saw your name online just check it out, you have the MSc scholarship of PTDF. And I went straight without knowing anybody in PTDF. I just wrote the exam and I left for it and forgot about it completely, so it is really a good process and like you said a lot of us will like to come back after our studies and keep up with this integrity in Nigeria because it’s something that many of us were already giving up on. You see a person that is very brilliant but because of corruption you see us not getting where we ought to get to. Some persons say I just want to fly out of this country to go and do something else, but when we see something like this we believe our fathers are beginning to do something we can rely on and I am very grateful for it.



Ahmed Isah Mohammed
(Gombe, MSc)

Actually when I applied for the MSc scholarship program, I took the test. Thousands of people were there, some of my colleagues finished the test around 1.00 am. So after the test I had forgotten, I applied for MSc at ABU Zaria, but I was there preparing to go for MSc then a colleague of mine called me that I saw your name just last three weeks ago. So I was so surprised, I now went to the net, the website I applied for scholarship. Checking the website I did not see anything and I called him o boy! There is nothing there, he said no check, check again. I checked several times. I said there is nothing there o, he said no check the main site that is ptdf.gov.ng, I now checked Ah! I saw my name, I was so surprised I kept quiet, up till this point I was thinking that there is possibility for my name to be removed because frankly speaking I have attended several interviews and tests, I was in Port-Harcourt for one of tests. Believe you me in that place it was not easy. Names that did not appear in the master list, but they came with texts; this persons candidate, this persons candidate. Eventually they picked two people from my state, my name was not there, I said okay, I was lucky to have PTDF. One good thing is that there is hope for this country, we the youths shouldn’t give up. In one place or another there are good people, you only need to be placed in that position. I would just say thank you all, the staff and management of PTDF.



Bubakari Mariam Musa
(Adamawa, MSc)

I am very delighted to be standing here. This is my third try. I have to say this. I have been writing PTDF exams since it was manual form filling. I travelled all the way to Maiduguri for the first exam, subsequently I kept writing them in Abuja. I would





like to congratulate my fellow scholars and also say thank you to the management starting with the president of Nigeria Dr. Goodluck Ebele Jonathan, the Minister of Petroleum for supporting the Fund because I didn't really think there is any other University that does Health Safety and Environment which is what I am going for and this is a good scheme and I hope it continues and I hope we would all do our best to make our Nation proud. Most of my friends that went on PTDF scholarship some of them don't come back, some come back, and roam the streets looking for jobs, so I think that's a waste of Funds and resources. I don't know if the management will do something about it. Thank you very much.

Bashir Mohammed

(Sokoto, PhD Cloud Computing)

It gives me great pleasure, delight and honor to be here today being a previous MSc scholar I can beat my chest and say PTDF



is very transparent. First of all I want to thank the Executive Secretary and the entire management of PTDF for taking it upon themselves to fight for us so that this thing comes to stay. I am actually working for the Federal government right now and PTDF changed my life. I had my interview via Skype. I was in the UK after my masters degree and I got a job with Central Bank. I came back to Nigeria I was interviewed via Skype. PTDF changed my life, all I want to say is to tell everybody who doesn't have a job to keep trying. A job is not an excuse for you not to come back to Nigeria, if you keep trying and remain consistent, you will get there. I started trying for PTDF since 2006 when it was manual just the same way my sister said. I have written PTDF exams 5 times, I wrote for masters, I wrote for PhD I don't know anybody there and today I am here. I want to thank the Executive Secretary and the entire management and staff of PTDF. They went through a lot to ensure that this thing comes to stay.

EXECUTIVE SECRETARY'S RESPONSE

There are so many PTDF scholars that are making a mark in so many areas of the Oil and gas industry in this country but people don't talk about that one. We don't want anybody to roam the streets, we will make sure in the fullness of time that in fact PTDF scholars would become so attractive and so much in demand that we would have to expand the scope of the scholarship. But you know this is a collective effort between the scholars and the PTDF management. We would demand of our scholars that they should strive for excellence. It is very difficult to resist hiring a very good product, very very difficult. It may take time, mind you because sometimes you apply and you are rejected, but if you apply once and you are rejected once and you give up, it means that you are not even convinced of what you want to offer, but if you are sure that you have something concrete to offer, and you apply and you are rejected then you tell yourself that this people don't know what they are missing and you try. You can be sure you would be called at the end of the day. So, you should have confidence in yourself. It is not enough to go there and pick up a certificate, that is not what we sent you there for, get all the experience, get all the expertise and exposure and come back home prepared to use it, I can assure you nobody would be able to resist you.

Now we appreciate the positive comments you have made about PTDF scholarship scheme, the transparency, the impartiality we are happy that PTDF through conscious effort, has become an oasis of integrity

as far as scholarship efforts in Nigeria are concerned. I know for many of us PTDF is too good to be true but I want to assure you that we would make effort to ensure that we do not only sustain what we have at the moment but we would improve on it.

There are many people we send to the UK on scholarship. But they are so small compared to the number of people out there who want to benefit from this scheme. Because of this need and the need to sustain this program and the need to increase the scope of the program, we would continue with what we are doing but we are also planning to encourage our training partners to come to Nigeria and set up institutions in our country. I am talking about having Institutions that would be domiciled here, but would be managed by the people who are doing the one out there, to ensure that there is no fall in the quality of what they are imparting on the students. That way if we are paying people for tuition and everything, we would not be paying for accommodation again, you know because this thing would be domiciled here that way we should be able to extend the privilege to so many other people. That is what we are planning for the years to come and I can assure you that as we are trying to build the capacity of our professionals to work in our oil and gas industries, we are also making effort to expand the scope of the job opportunities within the industry so that you don't have a situation where you train people and they are under-employed or unemployed. So the future for this scheme is certainly very bright and I believe you would be beneficiaries ■



PTDF SCHOLARS RECEIVE ALLOWANCES IN NAIRA

The Petroleum Technology Development Fund, PTDF has began implementing a new policy of remitting the allowances of its Scholars Studying in foreign Universities in NAIRA denominated VISA debit cards.

There are over 600 Nigerian youths currently undergoing different study programmes in oil and gas related disciplines at undergraduate, masters and doctoral levels in various universities abroad under PTDF Overseas Scholarship Scheme.

Apart from paying the tuition fees of its scholars directly to the universities of study, the Fund also pays allowances covering living, accommodation, utility, books, laptop and other incidentals directly to the scholars. The Fund resorted to paying the allowances of its Overseas Scholars in Naira due to the difficulties in accessing scarce foreign exchange and the high cost and delays associated with processing and remittance in foreign currency.

A test run of the new payment system was successfully implemented with the distribution of Naira VISA cards to 150 ongoing scholars in UK Universities while arrangements are on to extend the new payment system to the rest of the scholars. New scholars of the Fund will be issued the Naira VISA cards at the point of departure to their universities of study.

The Executive Secretary of the Petroleum Technology Development Fund, Mr Femi Ajayi had visited some PTDF scholars in the United Kingdom, where he intimidated them on the new payment system instituted as part of measures to address some of the challenges confronting their academic and welfare issues "You may be aware of the difficulties and continuing challenges in accessing foreign exchange due to its scarcity and high cost of processing. The Fund in its continued effort to find better ways of addressing the hardship faced by scholars as a result of delayed remittance of allowances, decided to make payments of all allowances in Naira, which before now has been in foreign exchange. It has become absolutely necessary to implement this policy shift to ensure swift payment of all allowances as at when due, because of the high cost of foreign exchange and even the time it takes to do the conversion". The Petroleum Technology Development Fund is consulting with the management of the Central Bank of Nigeria for a special dispensation that will ensure quick and predictable payment of scholar's tuitions to the universities of study, and eliminate delays associated with the rigorous system presently in place, which often results in the rejection by some universities of PTDF scholars.

"There should be pride and confidence in our own currency. In fact we are going to denominate our scholarship in Naira such that those people we have given award letters in may be pound sterling or dollars, going forward we will be paying part of their money in Naira and pound sterling, but from now we are going to domesticate every scholarship or loan in Naira but we will make sure that we don't shortchange our scholars in the process" the Executive Secretary said.

Reactions on payment of Allowances in Naira



The initiative to domicile the allowances within Nigeria, using our own currency is a much welcomed idea as it would save the Fund from unnecessary expenditures in trying to acquire foreign exchange and also service charges for transfers made to international financial institutions. This innovation also makes it easier to monitor transactions from within the Fund to the scholars as any anomalies can be quickly traced and rectified.

Squadron Leader **Godwin Eseosa Abbe**
PhD student, Aerospace Engineering,
Cranfield University, UK



The policy shift on payment in naira is welcomed as it would strengthen the naira and ensure timely payment of scholars' stipends. However, certain measures need to be put in place to ensure that scholars get their due entitlement. This includes ensuring that scholars are paid at the prevailing bank exchange rate and not the

official exchange rate for the period. Additionally, provisions should be made to account for bank charges which would be involved with multiple withdrawals taking cognizance of the maximum allowable withdrawals and potential number of times required for scholars to completely withdraw their stipends. Also, as withdrawal may be spread over a quarter, there is the need to ensure that adequate measures are taken to ensure that exchange rate fluctuations during the quarter does not reduce the pound equivalent of scholars stipends.

Squadron Leader **Paul Peter Okonkwo**
PhD student, Aerospace Engineering,
Cranfield University, UK



I think that the innovation of PTDF in remitting my upkeep allowances in Naira is a welcome development, especially as it will remove all the bottlenecks involved in converting Naira to Pound Sterling and it will also speedy up remittance, promptly. Although, my initial fear was that Scholars can be short changed in the process, but the Executive Secretary assured us that appropriate measures would be put in place to ensure that we are not short-changed in any way.

Ifeanyichukwu Edeh
PhD Student, University of Birmingham,
School of Chemical Engineering



Considering the challenges of accessing foreign exchange as explained by the executive secretary during the monitoring visit to scholars here in the UK, I think is a welcome development. In as much as the upkeep is promptly remitted as and at when due and the 'market foreign exchange rate' which most times differs from the official exchange rate is considered, then I would say 'excellent'. But in a situation where there is a delay in remittance of upkeep, scholars are under paid or short-changed; I would say 'it's better to keep to GBP payment'.

Richard Auta
PhD research student,
University of Wolverhampton



FOLLOWING UP ON PTDF SCHOLARS ABROAD



Each year, the Petroleum Technology Development Fund awards scholarships to deserving Nigerians to study Science and Engineering courses at Masters' and Doctoral levels in highly rated Universities in the United Kingdom and other parts of the world. The scholarship programme which is implemented under the Funds Overseas Scholarship Scheme is an aspect of the implementation strategy of its mandate of developing local capacity in the oil and gas industry.

Candidates for the awards go through a rigorous selection process which includes an aptitude test and interviews while those who are fortunate to receive the awards undergo an elaborate induction programme before their departure to universities of study abroad.

Even after the scholars have commenced studies in the university, the Fund follows up with visits to monitor their academic progress, welfare issues and other concerns

that may likely affect their focus and performance. This is based on the commitment of PTDF management to ensure that scholars are comfortable in their study environment and are performing up to the required standard without hindrance and distractions.

Executive Secretary PTDF, Femi Ajayi led a delegation to the United Kingdom to meet PTDF scholars studying in UK Universities. The set objectives for the visit were amongst other things:

- To reaffirm the Fund's commitment to their welfare and studies as well as to address other pressing needs that may have arisen.
- To interact with supervisors of PhD scholars to determine the feasibility of them completing their programs within the stipulated period of sponsorship.
- To address issues of scholars' academic performance and

- To sign Memorandum of Understanding with the University Administrations on providing pastoral services to PTDF scholars.

The team commenced its monitoring activities at the University of Birmingham, the University of Salford in Manchester and in the University of Cranfield.

The message of the Executive Secretary in all the Universities visited by the team was consistent. And this is to the effect that the OSS initiative was justified, "it makes me feel like we are doing the right thing and the resources being spent is money well spent because I foresee a future where you people would come and join in the task of value addition because essentially that is the mandate PTDF has. We want you to complete your research in record time, because the idea is that we want you to come home and take over the industry from the expatriates that are

running the show for now. You are aware of Mr. President's vision with regards to the local content initiative. There is no better way of increasing the local content than by getting our own people who will run the show in the Oil and Gas sector. So the future of the oil and gas industry belongs to you. That is why one feels very excited to come and rub minds with you and discuss with you with regards to your dreams and visions, with regards to the oil and gas industry in the country and how you are gearing up to facing the challenges in the oil and gas industry. I am sure you know things are not exactly the same way they were before, you know the shale gas and the implications for the oil and gas industry in the country, and you know the challenges we are having from traditional oil and gas buyers and the kind of challenges in trying to diversify our trading partners as far as oil and gas is concerned. You know about the changing dynamics of the oil and gas industry and we are beginning to adapt both our operations in terms of marketing and even in terms of the kind of value we add to our oil and gas before we sell them and even in terms of value we add to our oil and gas, so that is why the timely completion of your research program here and your early return back to Nigeria has exciting prospects for the country"

The Executive Secretary also enumerated areas of concern that informed his visit to the scholars studying in the United Kingdom "My visit is to enable us meet and interact with a view to addressing challenges in terms of your academics and welfare issues. The visit will also afford us the opportunity to also meet and discuss with your faculties and University authorities. You may be aware of the difficulties and continuing challenges in assessing foreign exchange, due to its scarcity and high cost of processing. The Fund in its continuous efforts to find better ways of addressing the issues to ease the hardship faced by scholars decided to make payments of all our allowances in Naira, which before now has been in foreign exchange. I want to state that it has become absolutely necessary to implement this policy shift. The policy shift is to ensure swift payment of all allowances as at when due, because



Signing of MoU with University of Cranfield, UK

of the high cost of foreign exchange and even the time it takes to do the conversion and we think there is a need for this policy shift. The Fund is highly committed to your success which is our main objective.

This trip will also enable us to sign a memoranda of understanding with some of our partner institutions in other to ameliorate some of the challenges being faced by our scholars. We are also in the process of renewing some of the MOUs that have lapsed. We are also opening up some form of relationships with some universities, which would ensure that scholars benefit from pastoral services by appointing a contact person in the respective universities, as well as other privileges to the scholar which the institution and the Fund can offer.

Mr. Femi Ajayi urged the scholars to concentrate fully on their programs to ensure timely completion, "I am sure you are aware of the implication of this PhD program to the Fund and the country. When we commit to this PhD, we know we are committing to something that may take up to 3years, and 3 years is a long time and we know there are so many Nigerians who are anxious to have a go at it. That you have this rare opportunity is something you should cherish. The government of Nigeria through PTDF is committing enormous resources to give you world class training in your chosen field, consequently you must strive and excel in your academic pursuit so you can come back home and ensure the necessary value addition especially in the realization of the Nigerian Content Initiative of the Federal Government as well as contributing to Mr. President's

transformation agenda in the process."

The questions from the scholars varied from personal to issues common to all. Amongst the general questions were:

- ➔ Calls for further clarification on the measures the Fund was putting in place to ensure they were not shortchanged due to currency fluctuations in the new system of paying naira value of their allowances through card. On this, the Executive Secretary said there would be a 6% marginal increase in remittances that would serve as a buffer in the event of fluctuations normally experienced in the foreign exchange market. He however added that this is only applicable to students whose letters of sponsorship are denominated in foreign currencies, since the current policy is for scholarship award to be denominated in Naira.
- ➔ Request for extensions; scholars had different reasons for making this request. Some of them attributed it to the ambiguity in their offer of admission letters which stated that the program can be completed within 3 to 4 years, others said there seemed to be a deliberate act by supervisors and management of their institutions to delay them for reasons other than academic. Some others argued that it will not be possible for engineering related programs which have a lot of practical laboratory aspects to be completed within 3 years. Another group based their appeal for extensions on the constant





resignation of their project supervisors, which necessitated their starting all over again with new supervisors. didn't have the needed background to continue supervising their research. The Executive Secretary in his response, said the policy on granting extension is that it must be merited and based on a case by case basis. Where there is good reason it would be granted and would be for an additional 3 month period. He said that henceforth the completion time for PhD programs would form part of the selection criteria for the scholarship award.

- Field trips and conference sponsorship: Scholars sought clarifications on the issue of field trips and conference sponsorships. The Executive Secretary said the Fund would sponsor scholars for one field trip and a maximum of 3 conferences each in the course of their programs. He informed the scholars that henceforth conference sponsorship would be paid as allowances. He also said that the policy on providing tickets for spouses and children has been cancelled.

The personal and specific questions were:

- The leader of the students from the University of Cranfield appealed to the Executive Secretary to put pressure on the management of the university to reverse the decision to award them a degree in technology when their admission letters were for a degree in engineering. He argued that this would dim their employability prospects upon graduation from school. He also requested that the Fund should liaise with the management to expedite the release of materials needed by them for their assignments on time. The ES noted that it was a legitimate demand and the Fund would communicate with the management on the issues raised.
- One of the scholars advised scholars research discoveries should be patented. In addition, PTDF should think of refocusing its sponsorship model by



sponsoring the research work rather than the students, so that it can have a stake in the discoveries that are made.

In all the institutions visited, there was a mix of PTDF scholars from nearby and far off universities, who warmly received the delegation. The assortment of scholar's disciplines and research areas was equally broad, and they all evinced a keen desire to conclude their programs and return to Nigeria and contribute their quota to the development of the oil and gas industry. Majority of them had good things to say about their institutions. On the other hand the institutions where the team visited were prestigious and had a good learning environment. Of particular note was the University of Salford which is reputed to have one of the best oil and gas training programs in the United Kingdom and the University of Cranfield, which is focused purely on post graduate programs, with strong research partnerships with the industry.

One of the defining moments in the monitoring visit was the interaction with university research supervisors and management to get feedback on the performance of scholars. The feedback was generally positive on the drive, dedication and research progress of the scholars.

While seeking ways of strengthening collaboration with the University of Birmingham, the ES raised the issue of domesticating all or part of their training programs in Nigeria. They were very enthusiastic about the idea and noted that they had already started taking steps in that direction. They

concluded by saying that they would work out the details with the Fund, but they expect a list of the Fund's priority areas of interest.

The visit to the University of Cranfield took a slightly different dimension as each scholar did a presentation on the progress of their research works to the Executive Secretary after which the ES and the PTDF delegation were taken on a facility tour of the state of the art laboratories where scholars perform their researches.

The monitoring trip came to a climax with the signing of an MOU with the University of Cranfield. The MOU represents the mutual desire of both parties to commit to a robust training focus for PTDF scholars and a renewed dedication to their sponsorship and support by the Fund.

“
...The government of Nigeria through PTDF is committing enormous resources to give you world class training in your chosen field, consequently you must strive and excel in your academic pursuit so you can come back home and ensure the necessary value addition especially in the realization of the Nigerian Content Initiative of the Federal Government...
”



Insight on PTDF Scholars



GODWIN ABBE

I am Squadron Leader Godwin Eseosa Abbe of the Nigerian Air Force. I am an Aerospace Engineer with the Air Force Institute of Technology (AFIT), Kaduna. I have a Bachelor's degree in Mechanical Engineering, Aeromechanical Engineering and a Master of Science degree in Aerospace Vehicle Design. I hold a corporate membership of the Nigerian Society of Engineers (MNSE), the Royal Aeronautical Society (ARAEs) and the Council for the Regulation of Engineering in Nigeria (COREN).

Enlighten us on your area of research, how far you have gone with it and its relevance to the oil and gas industry in Nigeria?

My research area covers the design methodology for alternative energy powered unmanned aerial vehicles. This has involved the design, construction and evaluation of a solar powered flight ready platform. So far, aspects of its performance, design requirements for aerodynamics, structure, propulsion and power systems to suit particular roles has been examined. Sensor and avionic capabilities have also been explored which include specific sensors for pipeline monitoring, atmospheric data acquisition, pollution damage assessment and real time surveillance for on and off-shore utilities inspections. All these have been aimed at providing solutions to oil and gas industry specific problem scenarios.

Are you aware that a PTDF scholar did some significant work in this area in the recent past? How is your effort different from his?

There have been concerted efforts by a previous scholar in the field of sensor capabilities and management; however this has not catered for sensor delivery, real time data acquisition, or test/specimen sample recovery. My work has been to develop a robust platform with the capability and flexibility of carrying specific sensors or payload to specific mission sites, performing the intended role and returning accurate results if required. It would suffice to say here that the objective has been partly achieved through the successful design and test flight of a prototype vehicle.

Are you confident that your research findings would be adopted and used in Nigeria?

I am fairly confident that the outcome of this research would be adopted and used in Nigeria because the benefits of

unmanned systems attributable to a wide range applications. These include commercial and government applications in surveillance, infrastructure monitoring and trouble-shooting in the fields of utilities, maritime rescue, customs, and agriculture to name only a few.

What are the challenges you have encountered so far in your research work?

Challenges encountered so far have included security restrictions in the area of unmanned aerial vehicle technology development and utilisation within the United Kingdom, especially outside the Ministry of Defence. This had warranted me to apply for an export licence in order to proceed with my work. That had led to some delays in the acquisition of some component items. Furthermore, a specific clearance was required from the British Civil Aviation Authority before any form of tests could be performed on the test vehicle. All of these have resulted in delays and incurred costs.

Do you think the industry is deriving the benefits from PTDF interventions through its scholarship scheme?

A substantial level of improvement in the oil and gas industry can be attributed to PTDF's intervention through the scholarship scheme. However, certain benefits are lost when findings or outcomes from PTDF sponsored scholars are not accredited to the Fund by way of patency or rights of ownership of the intellectual property. It would be most beneficial if industry specific problems are proposed right from the start, and patent ownership emphasized vigorously by PTDF before the scholar completes his program and before the educational institutions lay claims to the work.

What do you think the future holds for you after concluding your program, what are your aspirations?

As a serving military personnel, my foremost obligation is to return to the service and continue my primary assignment. This would facilitate further application of the knowledge acquired during the programme to the oil and gas industry, the military and the Nation as a whole. This opportunity has created a proper interface between the oil and gas industry, and the military as there can be integrated efforts to support each organisations requirement such as manpower development and training, facilities maintenance, and sustenance programmes supported by scholars as myself.

What opportunities do you foresee and what are the various ways you think you can contribute to the overall mandate of PTDF which is to ensure indigenous dominance of the oil and gas industry by qualified internationally certified Nigerians?

There is an enormous potential for collaboration between the oil and gas industry and the military in terms of research and development. The military has invested a lot in technology development and advancement and the outcome of these initiatives have various applications such as the unmanned marine vehicle being developed in the Navy and the atmospheric test vehicles in the Air Force. Research and development within the service is open to qualified Nigerians



with the aim of optimizing our local engineering to ensure indigenous technological growth within the country, which is in line with the PTDF mandate.



IFEANYICHUKWU EDEH

My name is Ifeanyi Chukwu Edeh. I am a Chemical Engineer and a Lecturer in the Department of Chemical Engineering, University of Port Harcourt (UNIPORT), Rivers State. I am currently on Study Leave at the University of Birmingham, School of Chemical Engineering, for my Doctor of Philosophy (PhD) programme.

I was among those that participated in the Engineering Design Training Programme (HYSYS UPSTREAM) organised by NNPC/PTDF in 2008. I was subsequently deployed to the Warri Refining and Petrochemical Company under the PTDF/NNPC Training Attachment/Pupilage Programme between 2010 and 2011 for industrial experience. I was also, one of the Principal Investigators, with Prof. A. O. Kuye, the Director of the Centre for Nuclear Studies, University of Port Harcourt that won the PTDF Annual Oil and Gas Research Grant Competition Award in 2012/2013 to research on the "Development of Biofuel Technology from locally source cellulosic materials".

Can you enlighten us on your area of research, how far you have gone with it and its relevance to the oil and gas industry in Nigeria?

My research area is focused on the renewable energy; in particular biodiesel and renewable diesel. The title of my PhD project is "Evaluation of the Utility of Critical fluid to Support the Production of Bio-energies (bio diesel and renewable diesel) and oleochemicals from activated sludge". The objective of my research is to evaluate the potential of utilising subcritical water to support the production of biodiesel, renewable diesel and platform chemicals from activated sludge derived from wastewater treatment, as an alternative to virgin palm oil and the non-food oilseed *Jatropha curcas*, which are the main feedstocks being evaluated in Nigeria at the moment with respect to biodiesel development.

With population growth, urbanisation and industrialisation,

water has become an essential commodity and as result has driven the development of wastewater treatment technology. Wastewater emanates from domestic, industrial and agriculture sources, and is brought to a central process facility through the implementation of sewage network. Once collected at the treatment plant, wastewater is subjected to the following treatments, preliminary, primary, secondary/biological and tertiary treatment processes. The sludge from these wastewater treatment processes are referred to as primary, secondary and tertiary sludge. Generally, values that can be created from these sludge include biogas, digestate, phosphorus, nitrogen, metals, organic compounds, through various processes such as anaerobic digestion, pyrolysis, gasification, combustion, hydrothermal gasification, etc. Specifically, primary and secondary sludge can be used in the production of bio diesel, but secondary sludge such as activated sludge, gives more opportunities for the production of phospholipids, as it contains numerous amount of microorganisms.

In my research work, I am investigating the potential of using activated sludge as a feedstock to produce bioenergy. Activated sludge can be used in the bioenergy production because of its lipids (oil) content. The lipids content of the activated sludge depends on the sources of the wastewater and the season in which the wastewater was obtained. For instance, activated sludge from wastewater from slaughterhouse, domestic and agricultural sources will definitely contain more lipids compared to those from schools and hospitals, as a result of the presence of oil-bearing substance in them.

As stated activated sludge is a by-product from the secondary/biological wastewater treatment plant. It is readily available globally and its production rate is increasing rapidly, due to increase in the volume of the wastewater generated from different sources and been treated at the wastewater treatment plants. The volume of wastewater generation is increasing all over the world, because of increase in population, industrialization, urbanization and legislation on the treatment of wastewater.

Furthermore, activated sludge comes from the wastewater treatment plant as a mixed liquor suspended solid. It thus, contains about 99% water and as a result, must be pre-treated to produce the activated sludge. The pre-treatment of the mixed liquor suspended solid involves basically, dewatering and drying in the oven at a temperature of about 50°C. After pre-treatment, the activated sludge is subjected to lipids extraction, either through the conventional use of organic solvents such as hexane and chloroform/methanol, sonication, hydrodistillation or critical fluid extraction. The choice and quantity of organic solvents depends on the method of extractions. The methods of extraction of lipids involving the use of organic solvents, from the activated sludge include the use of Soxhlet apparatuses, Folch et al, Bligh and Dyer methods. The methods of the lipids extraction can be combined together in order to increase lipids yield, for example, activated sludge can be pre-treated with subcritical water, before using Soxhlet apparatuses to extract lipids. Unlike, the organic solvents, subcritical water is user and environmental friendly and consumes less time and low volume of solvents.

More so, after the lipids are extracted and characterized, the next step is to produce bioenergy. Bioenergy such as biodiesel can be produced from the transesterification of lipids or esterification of fatty acids through the use of methanol/



ethanol and catalyst or enzymes. The biodiesel thus produced is then separated from glycerine and characterized. Biodiesel is being considered as a substitute for the conventional diesel, because, it is renewable, environmentally friendly, very low amount of greenhouse gases, such as CO₂ are emitted through the exhaust and as such could help to preserve the ozone layer, higher flash point, improved biodegradability and it can also be produced in our homes. However, biodiesel has some attendant shortcomings over the conventional diesel fuel which affects its preference adversely and thus, make it less attractive. These shortcomings include higher production cost, higher NO_x exhaust emission, poor cold flow (due to the presence of high amount of saturated fatty esters), low energy density, instability (due to the presence of polyunsaturated fatty esters), etc. However, some of these shortcomings have gradually being overcome by blending biodiesel with the conventional diesel fuel.

As stated, another type of diesel fuel that can be produced from the lipids extract from the activated sludge is the renewable diesel. Renewable diesel can be produced from the lipids extract, by firstly, hydrolysing the lipids with subcritical water into saturated and unsaturated free fatty acid (FFA) and glycerol. The FFA being an intermediate product is then thermo-catalytically decarboxylated into normal alkanes. These normal alkanes have similar carbon chain length distribution when compared to the conventional petroleum derived diesel fuel. Some of the problems encountered in the use of biodiesel can be solved by the use of renewable diesel (hydrotreated vegetable oil). Renewable diesel is similar to petrodiesel, although, it is produced from a biological source and hence, renewable. Renewable diesel thus, can be produced using the developed infrastructure for the petrodiesel, thereby, reducing the cost of production which is one of the demerits of the biodiesel. Also, the viscosity of renewable diesel is much desired compared to biodiesel and as such gives rise to improved atomization and lubricity when used in the engines.

ii. How far I have done

Since I commenced my research work on the "Evaluation of the Utility of Critical fluid to Support the Production of Bio-energies (bio diesel and renewable diesel) and oleochemicals from activated sludge" on the 24th September, 2012, I have worked assiduously to ensure that the work is completed at the stipulated time. I have therefore, made meaningful progress. The work done can be summarized as follows, development of a detailed literature review, pretreatment of the mixed liquor suspended solid, characterization of the activated sludge from different wastewater treatment plants, quantified the lipid content and composition, used Design of Experiment (DoE) and Response Surface Methodology (RSM) to optimise the subcritical water mediated extraction of lipids, characterization of the lipids extract, and production of biodiesel while varying operating parameters such as catalysts, time and temperature.

iii. Relevance of my research to the oil and gas industry in Nigeria

My research work as I have explained previously is on the alternative sources of energy using subcritical water technology and activated sludge from wastewater. The relevance of my research work to the oil and gas industry in Nigeria is that

being alternative and renewable energy sources, it will help to ensure energy security in Nigeria and could enhance the preservation of the Nation's energy reserve.

Are you confident that your research findings would be adopted and used in Nigeria?

Well, I think that since I am being sponsored by the Nigerian Government through PTDF, that they have interest in my research project, otherwise, they would not have ventured into sponsoring me, as huge amount of money is involved. My major concern at the moment is to work very hard and ensure that I am able to deliver the project at the stipulated time. However, I think that the Government would benefit immensely, if my research findings are given due consideration. The following benefits would be derived from my project, energy security, diversification and decentralization of energy sources, employment opportunities, income generation, and increase in the energy reserve of the country. It is worthy to mention here that the Estimated Oil Reserve in Nigeria in 2012 was 35.9 billion barrels at the daily production of 2.7 million barrels, according to the Group General Manager, Renewable Energy Division of NNPC, in 2012, the oil reserve will be depleted by 30 – 36 years period. Therefore, there is need to develop an alternative energy sources which is renewable and environmentally friendly.

Furthermore, if my work is adopted, I would have contributed my own quota towards the development targets of the Vision 20:2020 on moving the wheel of the energy of the nation towards producing clean, reliable, secure and competitive energy with minimal carbon footprint, as being pursued by the Federal Ministry of Environments under the Renewable Energy Programme.

What are the challenges you have encountered so far in terms of your research work?

Most research works are not without challenges and mine has not been an exception. Since I started the project, one of the challenges which I have encountered has been lack of experience in my research area, as I am a novice in that area. This problem was compounded due to the fact that there was nothing to lean on, as I am the first person to work in that area, from my research group, as a result of this, I had to start from the scratch. Nevertheless, I have been able to overcome this challenge through conscious efforts in reading wide and making consultation where necessary and through the excellent supervision which I enjoy from my Supervisors. Furthermore, another challenge which is currently confronting the progress of my work is the location of the laboratory where I do my work. At the moment, I work in the biological laboratory, ACDP class 2, as this lab is ideal for all the projects involving the use of biological materials, such as activated sludge. The use of the biological laboratory has become necessary, as activated sludge is known to pose health risks which include gastroenteritis, Weil's disease, hepatitis, occupational asthma, opportunistic infection of skin, infection of eyes, etc and since experimenters in that lab work on biological materials also and are expected to be immunized, just as myself, therefore, it is an ideal place to do the work. This biological lab is located in the Civil Engineering lab which lack most of the equipment which are required in my work and therefore, resources sharing are hindered. Apart from the problem of resource sharing



orchestrated by doing my project in the Civil Engineering, useful times are wasted in moving from one laboratory to the other in the course of leveraging on the equipment in those laboratories.

More so, the amount of available activated sludge biomass is quite small and the processes of processing it are tedious. The small amount of available activated sludge is due to the fact that only about 1% of solid biomass can be processed from the mixed liquor suspended solid (MLSS) and the rest of which is water, coupled with the rigorous process of recovering the solid biomass. This limited amount of available biomass therefore, limits the processes involved in the entire project, as most at times the processes have to be scaled down and it also requires a high degree of precision and accuracy, otherwise, there will be no further biomass to work with and the activated sludge obtained from the same site or different site cannot give the same results as the previous one. The activated sludge processed from the same site or different site cannot produce exactly the same results in terms of lipids yield and composition because, its composition varies from wastewater treatment plant to wastewater treatment plant, season to season, even time of sampling, etc.

Do you think the industry is deriving the benefits from PTDF interventions through its scholarship scheme?

Yes, I think that the industry is deriving the required benefits from the PTDF interventions through its scholarship scheme. If you take a recourse to the number of scholars sponsored by PTDF Overseas since inception, which is over 3500, including both Masters and PhD scholars, you will discover from their testimonies whether directly or indirectly that an appreciable number of them, if not all are gainfully employed in the Industry and academia. Some of these industries localized in Nigeria come to the United Kingdom to hunt for qualified graduate to employ. I think that industry and academia have a lot to benefit from these scholars due to the degree of their exposure in relation to their discipline and additional skills which they are given by their respective institution to enhance their employability. Most of the Scholars while studying Overseas were exposed to the state-of-the-art technology and given opportunities to develop requisite skills which are actually what the industry is yearning for, as a result make them more marketable than their contemporaries in Nigeria.

What do you think the future holds for you after concluding your program, what are your aspirations?

Well, I think that the future is very bright and promising for me considering my intellectual capacity and the level of my doggedness in actualization of set goals. By the grace of God, after concluding my program, I desire to contribute in delivery quality education to the students at the University of Port Harcourt, under my work area. The quality education will be geared towards churning qualified graduates who are intellectually empowered and character garnished, to enrich the local content in the oil and gas industry.

Furthermore, I also aspire to have a stint in the oil and gas industry and to establish an engineering consulting firm. In the same vein, it is my desire to pursue the promotion of the implementation of sustainable wastewater treatment in the country. More so, I desire to leverage on the knowledge acquired during my PhD programme via subcritical fluid

technology in the biodiesel production from activated sludge to explore other potential feedstock domicile in the country in the production of biodiesel. Lastly, I aspire to champion the production of biodiesel from activated sludge in Nigeria.

What opportunities do you foresee and what are the various ways you think you can contribute to the overall mandate of the Fund which is ensuring indigenous dominance of the oil and gas industry by qualified internationally certified Nigerian?

With my background in Chemical engineering and the avalanche of knowledge that I have acquired through PTDF sponsored programmes vis-à-vis Engineering Design Training Program (EDTP), EDTP Post Training Attachment Program EDTAP and PhD at the University of Birmingham, I foresee a lot of opportunities on the way. These opportunities include consulting to the Oil and gas industry in the areas of process engineering, research and development, getting research grants to pursue research projects on biodiesel, and working with the Ministry of Environment on the establishment and management of wastewater treatment plants in Nigeria.

Furthermore, if given the opportunity I would contribute in a non-small measure towards the actualization of the mandate of the Fund and hence, the nation building. Firstly, as an Academic, I would work to ensure that I entrench the experiences which I acquired while working with some of my counterparts at the University of Birmingham in my work at the University of Port Harcourt, as a Lecturer. These experiences are geared towards enhancing the understanding of my students and ensuring that they carry out research in areas which have the propensity of exposing them to acquiring knowledge relevant to the oil and gas industry and renewable energy.

Secondly, as stated earlier, water and energy are two essential commodities more over there is increasing understanding of the potential to mitigate climate change through the adopting renewable sustainable energy sources. Biofuels offer the opportunity to develop sustainable energy policy, however care needs to be taken to ensure that the source of biomass used does not in itself elicit negative socio-economic and environmental impact. Similarly water use and therefore availability in the face climate change induced droughts leads to the need for care and effort to recycle water where ever possible.

In the context of the above my research attempts to illustrate that wastewater treatment, something yet to be fully implemented in Nigeria, can in fact not only become energy neutral but also provide a source of biomass that enables the production of biofuels which can make significant contribution to the Nigeria's sustainable energy requirements and therefore assist the transition away from dependence on fossil fuels.

In summary, I believe a successful outcome of my project will illustrate that waste water management can be viable and justify investment which in turn can drive the development of biofuel from non-food sources of biomass.

During the course of my studies I have had the opportunity to work closely with a company developing biodiesel technology with a specific focus of providing decentralised production units to support regional/rural bioenergy production, a requirement of developing economies. Similarly I have obtained a greater understanding of the wastewater treatment systems and would like to think that upon the completion of my studies I



will be able to return to my country and assist/promote the implementation of sustainable waste water treatment along with biofuels using the model I am developing in my research.



SQUADRON LEADER PAUL OKONKWO

I am Paul Peter Chukwuemeka Okonkwo, a Squadron Leader with the Nigerian Air Force. I got my first degree from the Nigerian Defence Academy where I studied Electrical/Electronics Engineering and graduated in 2001 as the best graduating cadet in the department. In 2005, I proceeded to the Obafemi Awolowo University, Ile-Ife for a Master degree in Telecommunication and Electronics. On graduation, I was posted to the Air Force Institute of Technology. However, my passion for Aerospace Engineering influenced my sojourn to the prestigious Delft University of Technology, the Netherlands, where under the Netherlands Fellowship Programme, I studied a Master's degree in Aerospace Engineering with emphasis on Aircraft Design, Integration and Operation. This study culminated in a master on the development of a methodology for aerodynamic shape design optimisation. In 2011, I was awarded a PTDF scholarship for a PhD study in Aerospace Engineering at the Cranfield University, UK.

Can you enlighten us on your area of research, how far you have gone with it and its relevance to the oil and gas industry in Nigeria?

My research is on the development of a novel Unmanned Aircraft System (UAS) for the Oil and Gas industry. The research aims to produce novel unmanned air vehicle that offers the Oil and Gas industry new capabilities that would reduce cost and operational risks while also improving efficiency. The developed UAS could be used to measure and quantify oil spills, determine how the oil is moving in water and provide information and imagery to a command center using Infrared (IR) Imaging. IR is invaluable in surveying oil spills because it makes it easier to see where the oil is spreading. This critical information increases the situational awareness of first responders to the incident, increasing safety and the ability to make better decisions in the clean-up planning efforts. Other uses of UAS include pipeline and/or right-of-way monitoring/investigation, surveying including geophysical surveys, environmental monitoring, and drill site inspection. Using IR imaging capabilities, UAS can detect leaks

that would otherwise not be visible. Additionally, specialized sensors can be placed onboard the UAS to detect emissions of gas leaks. UAS can also be used for terrain mapping and to provide security for oil installations.

My research is progressing very well. I have completed the development of a robust, flexible design tool for the conceptual design synthesis of novel unmanned aerial vehicle based on the Blended Wing Body aircraft configuration. I am now in the process of validating my models sequel to preliminary design. I have also published 3 journal papers including the paper titled 'Packaging in a multivariate conceptual Design Synthesis of the Blended Wing Body Aircraft' which was published in the International Journal of Mechanical, Aerospace, Industrial and Mechatronics Engineering Vol:8 No:6, 2014. Courtesy of PTDF, I was at the last International Conference on Aeronautics and Astronautics in New York to make a paper presentation on my work. The presentation was well received with rave reviews. As a ground breaking research which has generated a wide ranging interest in the aerospace community, the Cranfield University is also seeking to manufacture the first model and subsequently test fly it. Hence, there is the need for the PTDF to key into this research in order to obtain the best benefit from it especially in terms of patenting and extending my scholarship to complete manufacture and test flight of the system.

Are you confident that your research findings would be adopted and used in Nigeria?

I am very confident that this research will have the necessary impact and be adopted in Nigeria. The vehicle could be used to monitor and hence contain oil spillage in oil producing regions of the country. With suitably designed imaging device, the vehicle could be adopted for oil exploration as well as to access and provide real time monitoring of oil installations. This will increase revenue earning and minimize wastage from the activities of vandals. Additionally, the knowledge gained from this study would be invaluable to the Nigerian Air Force in extending the capabilities and functionalities of its locally developed Unmanned Aerial Vehicle. Furthermore, my research findings would have significant effect in enhancing the capabilities and operations of the National Space Research and Development Agency in development of spacecraft and other aerospace vehicle technologies and systems.

What are the challenges you have encountered so far in terms of your research work?

PTDF has done very well in ensuring the smooth flow of my research work. Except for occasional delays in funds, everything has progressed as planned. However, my research work due to its peculiarity is planned to run for 4 years as against the 3 years awarded by PTDF. This is because am expected to not only design but also manufacture and test-fly the model in order to derive the maximum benefit from the study. Consequently, I use this medium to appeal to PTDF to kindly continue to support me in the remaining one year of my study.

Do you think the industry is deriving the benefits from PTDF interventions through its scholarship scheme?

Yes, I believe the industry is deriving full maximum benefit from the scholarship scheme through the utilization of quality



human capacity. This is evident from the large number of PTDF scholars currently contributing their quota to the development of various sectors of the oil and gas industries. Nigerian Air Force has also used some of the expertise from this scheme for the development of the first indigenous unmanned aerial vehicle which was unveiled by Mr President on 17 December 2013. I am currently a member of the Nigerian Air Force team working to extend the capabilities and functionalities of this first indigenously produced unmanned aerial vehicle. Additionally, I lecture at the Air Force Institute of Technology where I would apply the skills and knowledge gained from this study to improve the quality lectures and hence graduates from the institute.

What do you think the future holds for you after concluding your program, what are your aspirations?

The future is enormously bright. As a serving military officer, my posting and deployment is definitely dependent on service exigencies. Nonetheless, the knowledge gained from this study will go a long way to improving on-going research and development efforts on novel unmanned aircraft systems for Nigeria. Furthermore, I will offer my expertise to improve the quality of instructions and lectures at the Air Force Institute of Technology.

What opportunities do you foresee and what are the various ways you think you can contribute to the overall mandate of PTDF which is to ensure indigenous dominance of the oil and gas industry by qualified internationally certified Nigerians?

I see enormous opportunities in developing dedicated unmanned aerial platform to undertake various roles in the oil and gas industry such as real-time pipeline monitoring, detection of oil spillage and security of oil installations in the Niger Delta and oil producing states of the federation. Though companies have been using the services of manned platforms and off the shelf systems, my knowledge could be harnessed to produce dedicated unmanned aerial systems specifically designed to achieve the objectives of any organisation. Additionally, I see opportunities in extending the capabilities and functionalities of existing unmanned systems to adequately undertake current and future demands.



RICHARD AUTA

My name is Richard Auta, a PhD research student at the

University of Wolverhampton. I was born in the Eastern part of Nigeria and had my elementary education there until the end of kindergarten, spent some years in Port-Harcourt then moved to the city of Kaduna where I grew up. I obtained my first and second degree in Biochemistry at the great Ahmadu Bello University Zaria. By the time I had completed my second degree, I knew I needed to pursue a higher (research) degree based on my keen interest in research, particularly in the UK. Deciding to travel to UK to undertake a programme of study is a huge commitment, not only financially but also emotionally, as many of your support networks will be left behind. I applied for the PTDF scholarship for the first time in 2011 and was among the lucky ones to be selected. Before coming to study in the UK, I remember having mixed feelings. There was this sense of excitement and positive anticipation. I was caught up in plans of how to devote myself to study, how to cope with the weather and the English food, and I also had concerns about how to get my family across. It was an expensive decision but on the other hand, it was worth it. Whilst I have been in the UK, they have had one of the coldest winters, one of the coldest springs, one of the wettest/warmest winters and the warmest September since record began. This has led to ordinary people in the UK now becoming aware of climate change and importance of technologies to deal with it. I am a registered member of Biochemical Society and Society for General Microbiology UK. I have been to a number of conferences both within and outside the UK for presentation of scientific research papers, networking and keeping myself abreast with recent developments in my field of research. I do appreciate the financial support of PTDF for making my dreams come true.

Can you enlighten us on your area of research, how far you have gone with it and its relevance to the oil and gas industry in Nigeria?

Agricultural residues such as grasses, tree wastes and many other green plants whose disposal is considered as an environmental problem in Nigeria can represent large renewable resources for enzyme production by fungi which are used in the hydrolysis of cellulolytic materials to fermentable sugars for biofuel production. However, the cost of obtaining sugars from lignocellulose biomass for fermentation is still high, mostly due to the low enzyme yields of producing microorganisms. My research focuses on the purification and characterization of novel recombinant β -glucosidases with much higher activity from *Aspergillus* (and related species) with enhanced properties for cellulose degradation. So far, I have developed a plate assay that allows me to detect the hydrolysis of cellulolytic activity of enzymes. Several strains of *Aspergillus* and bacteria have been screened for β -glucosidase production by the rapid plate assays. Bioinformatics work on β -glucosidase gene distribution in the *Aspergillus* genus has been completed which has informed the rational decisions in the selection of candidate enzyme for direct gene synthesis. I have also cloned genes from microbes that encode enzymes that may be particularly efficient at recycling agricultural waste into novel biofuels. At the end of my project, I hope to design a cocktail of enzymes for use for cellulose degradation. Biomass is a renewable resource that has the potential to supply the future energy needs of Nigeria. It will contribute to



rural economies and help to reduce greenhouse gas emission. If sustained, it will play a significant role in meeting Nigeria's future energy demands.

Are you confident that your research findings would be adopted and used in Nigeria?

Yes. Worldwide, attention is now focused on the conversion of cellulolytic material into fermentable sugars for biofuel production. Nigeria cannot be an exception. Fossil fuel which we are depending on at the present is fast depleting, there is also the issue of environmental factors such as global warming and air pollution among other factors. Nigeria is a country where a lot of waste (biomass) is generated. What is termed waste can actually be turned to wealth. It is an area we need to catch up with the developed countries where the road transport sector is already using biofuels and there will soon be biofuel substitutes for aircraft and railway fuel. If our fossil oil is exhausted, we will not have any alternative but to produce energy from what we have. Bio-energies have very good potentials as substitutes for the fossil fuels because they are renewable, sustainable and environmentally friendly.



My research findings have already been presented at several international conferences both in the UK and in Canada. I have a draft paper of part of my research work which will soon be published in a reputable international journal. This emphasizes the wider relevance of my work to the broader scientific community. I have also met several Nigerians colleagues at conferences where network was established on the conference circuit.

What are the challenges you have encountered so far in terms of your research work?

Well, so far so good. It is important to note that the PhD is the highest academic qualification involving original research on a specific topic; therefore, it comes with challenges in so many ways. I have encountered difficulties and periods of self-doubt considering the frame of time I have to finish my research. I also lost both parents during the period of my research but being able to focus on my original motivation and also having a realistic view of what PhD involves has kept me going. My supervisors, Dr Paul Hooley and Dr IzaRadecka are always there for me, provide me with support and take time to work through problems.

Do you think the industry is deriving the benefits from PTDF interventions through its scholarship scheme?

I would say 'yes'. Before mentioning some of the key areas where the industries have derived benefits from PTDF interventions, it is worth drawing your attention to the fact that there is no amount of money spent on research that is a waste. Scholars have been trained at different UK Universities at both MSc and PhD level, coming back to Nigeria; they are recognized by the industry as providing an innovative workforce able to proffer solutions to difficult questions and challenges. A remarkable number of UK-trained PTDF scholars have come back to Nigeria with a PhD to either occupy senior positions in leading multi-national companies such as Mobil, Shell etc, which is one of the objectives of the scheme. Some have even set-up successful companies to exploit their PhD research. Some PTDF scholars in their research have identified the best ways to reduce our impact on the climate and have been able to support the government's climate change agenda, the list goes on and on.

What do you think the future holds for you after concluding your program, what are your aspirations?

One of the fastest and rapidly advancing fields in today's job market is biotechnology. It has career prospects in every sphere of science and technology. After my program, my aspirations are to go back to the class room as a lecturer for knowledge transfer and to set up a research group, attract research funding and carry out meaningful research particularly in the area of renewable energy. I have involved UK project students in my work taken responsibility for supervising students, developed bioinformatics tools and analysed publicly available databases. My host institution has also greatly benefited from my work. Staff and students have increased awareness of key research objective in Nigeria which could help foster further international collaborations.

What opportunities do you foresee and what are the various ways you think you can contribute to the overall mandate of the Fund which is ensuring indigenous dominance of the oil and gas industry by qualified internationally certified Nigerians?

As a biotechnologist, I foresee a lot of career prospects. Getting a PhD in the field is a lot of work but it opens many doors for career opportunities. A PhD in biotechnology prepares me with knowledge and experience necessary within academia, industry or as a researcher in almost any area of scientific study. Part of the PTDF mandate includes manpower development through research and training of Nigerians as professionals in different fields. As a professional in my own field of study, I wish to come back to Nigeria to equip others by way of teaching and supervision of students and also by directly linking laboratory research with the oil and gas industry. By so doing, the aims and objectives of PTDF will be achieved ■

THE FACULTY AND INFRASTRUCTURAL UPGRADE OF PETROLEUM TRAINING INSTITUTE (PTI), EFFURUN, WARRI BY THE PETROLEUM TECHNOLOGY DEVELOPMENT FUND

The massive infrastructure upgrade and the provision of state of the art workshop and laboratory equipment by the Petroleum Technology Development Fund (PTDF) at the Petroleum Training Institute, Effurun, Delta State has positioned the institution to effectively engage in quality manpower training and development necessary for local participation in Nigeria's oil and gas sector.

The Petroleum Training Institute, Effurun, Delta State was established by the Federal Government of Nigeria in 1973 as a requirement for membership of the Organization of Petroleum Exporting Countries (OPEC). Following the massive upgrade by PTDF it is expected to become the leading oil and gas training institute with the mandate of producing middle level manpower that will bridge the gap in the foreign domination of the industry.

Over the years, the institution had degenerated to a level that it was no longer capable of achieving the purpose for which it was established. The Petroleum Technology Development Fund was mandated to intervene to arrest the deteriorating infrastructure and enhance the quality of the academic faculty, improve on teaching and learning facilities, its organizational structure as well as boost the morale of teaching staff of the institute.

The Petroleum Technology Development Fund (PTDF) designed a series of intervention programs to develop the capacities of the teaching personnel of the institution, upgrade its infrastructures and update its facilities in order to bring it at par with other oil and gas related institution around the world. In the pursuit of that, PTDF spent huge sums of money in training its lecturers at the Univer-



The Training Centre at the Petroleum Training Institute, Effurun, Delta State

sity of Aberdeen, Scotland, built new faculties and departments in the institute, and provided modern practical facilities in critical areas of studies that are relevant to the oil and gas industry.

The specific areas of intervention by PTDF apart from the continuous human capacity building of the staff, include the construction and renovations of the administrative block, the schools hostels, the library, the laboratory block, the welding and mechanical workshops, the drilling rig and flow stations, improvement of water and electricity supplies, the data centre and the entire network fibre, the Vsat and local area network as well as upgrade of all the onshore and offshore training centers among others.

PTDF also renovated the dormant training rig at the school and made it to be the only demonstration land rig in Africa where international oil companies now send students for hands on training. PTDF also provided

the latest drilling simulators, known as simulator B5000 and C6000 as a result of which other institutions send their students for oil drilling training programme in addition to providing training for amnesty programs of the federal government.

PTDF also provided an ultra modern laboratory complex, a one stop laboratory for research in diverse areas of onshore and offshore activities, refining and safety.

These include the Unit Operation laboratory, the Refining simulation laboratory, the Pressure, Volume and temperature (PVT) laboratory, the Petroleum Analysis laboratory, the Unit Laboratory, the Instrumentation Laboratory the Fluid Mechanic laboratory, among others.

Items provided in the various laboratories are as follows;

a. Unit Operation laboratory; - process control equipments, engine test bed, hydraulic bench and flow meters.

- b. Refining Simulation laboratory;** - modern control refining, trouble shooting and sulphur recovery equipments.
- c. Petroleum Analysis laboratory;** - Pvt Equipment and Pvt systems (PVT), sulphur content analysis equipments, crude analyzer, density parameters, freezing point tubes and flash points machine.
- d. Unit laboratory;** - drills oil cake machine, engine and petrol test bed machines, thermal property test machine.
- e. Instrumentation laboratory;** - the calibration bench, simulation PLC, control systems.
- f. Fluid Mechanic laboratory;** - modules, vetri-metre, optional turbine, laminar and transitional flow and many laboratory equipments too numerous to mention.

The Petroleum Technology Development Fund also upgraded the welding department of the institute to make it one of the best in the country. This is in recognition of the significance of welding in the oil and gas related activities. PTDF provided a new welding laboratory with modern machines that cater for the 21st century welding practices and certification in the industry.

As a result PTI is now positioned to qualify students in all welding procedures and conduct material characterization which was hitherto done outside the country. Some of the welding equipments provided by PTDF include the Sharp grinding machines, the Resistance welding machine for sim and spots welding, the only one in Africa, Flat board welding machine, the miller 60arms welding machine, the small mild welding machine, flat machines, milling machines while modern density testing machines and scanning electron microscopes and others were installed in the laboratory.

The mechanical workshop is an important part of the institute's practical training facility. PTDF upgraded the unit to a world class standard and provided it with state of the art machines for gas welding. The lathe machines of different kinds, the bend machines, milling and grinding machines, as well as tools used in the training of students in the institute



A drilling system at the Petroleum Training Institute, Effurun, Delta State

were also provided by PTDF in the workshop.

In recognition of the importance of diving in the offshore activities of the oil and gas sector, PTDF took a bold step to upgrade the Offshore Technology Centre (OTC) of the institute for the production of professional divers that meet international standard.

Among the materials procured and supplied by PTDF are the schubar bottles, the underwater diving apparatus, helmet, panels, communication box and diving cameras while the diving tank and the aqua blast were also upgraded by the PTDF to meet the industry standard.

PTDF realizes the significance of information and communication technology (ICT) to modern learning and teaching. To this end it upgraded the school's ICT infrastructure and

facilities by ensuring the whole of the institution's cabling was brought together into a single datacenter. A wireless system was also deployed to the fibre optics with PTDF hosting the entire website via a Vsat connection in addition to the procurement of hundreds of computer units connected at the school's computer centre for conducive ICT teaching and learning activities.

PTDF also procured and installed a 1.5mva generating set that is capable of providing uninterrupted power to the school with additional installation of 7.5MVA transformer, switch board and main control panel console as well as line extension and injection substation.

Engineer OJ Ambrose, the resident engineer in charge of PTI projects describes the intervention



The Digital Flow station at the Petroleum Training Institute, Effurun, Delta State



of the Fund in the school as great. According to him this has positioned the school to compete favorably with its international counter parts around the globe. He said prior to the PTDF intervention in the school, the institute was a ghost of itself with dilapidated equipments and structures begging for renovation.

The Institute, also expressed its appreciation to the Petroleum Technology Development Fund (PTDF) for the massive infrastructure upgrade of the institution admitting that, PTDF's timely intervention lifted the institution to enviable heights in the delivery of its training programmes.

According to the institute, PTDF intervention has reflected in the quality of teaching staff and also in the quality of the students that graduate from the institute. It is such that, PTI has now become a centre of recruitment for the oil and gas industry because graduates from the school go through practical training using the equipments in the laboratories, workshops and classrooms provided by PTDF. They become employable on graduation and are much sought after not only in the oil and gas industry but also in the manufacturing sector of the economy.

PTDF intervention is a practical manifestation of President Goodluck Ebele Jonathan's transformation agenda of transforming academic institutions into centres of excellence and human capacity development to provide the manpower requirement of the oil and gas sector.



Mrs Nnenne Clara Derna
- Former Principal, Petroleum Training Institute

Q. What are the critical areas of PTDF intervention in PTI.

A. One of them is in the area of human capital development. PTDF made it possible for Senior Management Staff, Middle Management Staff to be trained overseas, specifically at the Robert Gordon College in Aberdeen, That category of staff were actually involved

“Because of the intervention of Mr President through PTDF, PTI is now able to turn out competent middle level manpower to take over from the foreign middle level workers in the oil and gas industry”



in areas of Management processes. I want to say that every staff in PTI had one training or the other, outside the country and within the country as I result of PTDF upgrade of the institute. That is in the area of human capital development. Another critical area of PTDF intervention is the area of infrastructural development and it is in this area particularly that we could that we could see all that PTDF has actually done for us. There was an upgrade in the power that we had, there was an upgrade in the ICT programs and facilities in the institute and we also have the laboratories and workshops, well equipped with State of the art equipment, that actually took the PTI to another level, so I want to say that these are the critical areas of PTDF intervention in PTI.

Q. What has been the impact of these interventions on the training, research and learning process in the institute?

A. The impact of these interventions have been quite tremendous. We appreciate the Federal Government and the PTDF for the upgrade. For instance, the impact has actually been seen in the quality of our teaching, and also in the quality of the students that we churned out in the institute. PTI has actually become a centre for recruitment for the oil and gas industry, because by the time our students are put through the practicals using the equipments, in our labs, in our workshops, in our classrooms provided by PTDF, you find that, they turn out as graduates that are employable and graduates that are sought after not only in the oil and gas industry but also in the manufacturing sector of the economy. So the impact has actually taken us to a level that is comparable to any institution like this anywhere in the world.

Q. Lets take some of the projects, like the welding workshops the ICT, etc can you give specific values added to the institute as a result.

A. Yeah, for instance, on welding because of the facilities provided for us, PTI has now become a member of the international welding association, that is, we now have certification that

is internationally recognized, and you also find out that, because of the sensitive nature of the equipments, and the effective use of these equipments, you now find that, everybody, wants to come to PTI to be trained as a welder. In the areas of the oil rig, not just the rig, we have other equipments like the sim simulator 600, we have the machine shop in the mechanical Engineering Departments and so many other facilities in the workshop. With these provisions, we now have trainings for the oil companies, for instance, we train for shlumberger, we also are able to provide trainings for some other oil companies who want to show their corporate social responsibilities for the localities where they operate, so what they do now, because they know that we have the facilities they now send youths from their areas of operation to PTI and we train them. So what I am trying to say is that, our training activities has actually increased, because of these facilities that were provided to is by PTDF.

Q. What about the laboratories.

A. What, I just said, does not exclude the laboratories. As I said, the laboratories and workshop where our students do their practical works, they now have all they need, to do practicals which in-turn make them highly marketable for employment in the labour market.

Q. What do you have to say about the maintenance and sustenance of these facilities?

A. Here, I just have a plea; first of all, I want to use this opportunity again to thank PTDF for providing all these equipments for us. They are actually useful to us, and they are quite diverse and cover all areas of our operations. We are thankful to President Goodluck Ebele Jonathan for using PTDF to do this provision for us. And the issue of maintenance of these equipments are very paramount to us, because there would be need for us to maintain them, there would be need for us to have sufficient funds to carry out this maintenance, for us to be able to use them for a long term. We know the

importance of maintenance of these facilities and how useful it is to us as an institute to use this equipment for as long as is necessary, so there is need to maintain them, but we also need the wherewithal, the funds to do the maintenance.

Q. How do these facilities add up to Mr. President's transformation of academic institutions as encapsulated in his transformation Agenda?

A. Well, I don't even think, I will be able to thank the President enough, because through PTDF, he has been able to ensure that PTI is contributing to human capital development which is also one of the cardinal issue of concern to the President. Another thing is that, when we look at his concern about local content involvement in the industry, PTI is actually playing a very vital role in that, because all our graduates are employed in the industry at the middle level segment and in the process, we are saving a lot of money for the country which is also of primary concern of the Mr President. So rather than get all these middle-level manpower from outside the country, because of the intervention of the President through the PTDF, we are able to turn-out competent manpower to take over from the foreign middle level workers and at the same time ensure that, the President's Agenda on local content is also being met ■

We appreciate the Federal Government and the PTDF for the upgrade. For instance, the impact has actually been seen in the quality of our teaching, and also in the quality of the students that we churned out in the institute. PTI has actually become a centre for recruitment for the oil and gas industry...



PTDF UNIVERSITY UPGRADE PROJECT FACILITATES THE CREATION OF A DEPARTMENT OF PETROLEUM AND GAS ENGINEERING AT THE UNIVERSITY OF LAGOS

The vice chancellor of the University of Lagos Professor Rahamon A Bello has expressed gratitude to the Federal Government for the successful upgrade of the Department of Chemical Engineering by the Petroleum Technology Development Fund (PTDF). PTDF intervention he said has uplifted the department to a world class facility with the infrastructure, state of the art laboratory and workshop equipment, comparable to similar departments anywhere in the world. The vice chancellor who received the Executive Secretary PTDF, Mr Femi Ajayi during a visit to the university, thanked the Fund for the upgrade which positions the university to compete with its counterparts around the world.

"I want to use this opportunity to formally thank PTDF for assisting us with these facilities, because the department of chemical engineering is key to the university. I want to say that, our chemical engineering facility is complimenting our effort in producing first class engineers and this was attested during the last accreditation"



Professor Rahamon further maintained that, the cooperation between the Nigerian universities and



the PTDF is the kind of collaboration that Nigerian universities need to be able to have their facilities upgraded and ensure that, they meet international standard.

The Petroleum Technology Development Fund initiated the University Upgrade project to improve the infrastructure and of departments in Nigerian universities that offer courses that are relevant to the oil and gas industry.

So far twenty six (26) universities

from the six(6) geo-political zones of the country have benefitted from the programme. The components of the upgrade include a brand new departmental building, complete with auxiliary infrastructure such as borehole and power generators. Others are laboratory and workshop equipment, ICT facilities, auditorium, lecturer's offices, modern classrooms, library among other facilities.

Executive Secretary of the Petroleum Technology Development



The new Department of Chemical Engineering, UNILAG

Fund, Mr Femi Ajayi commended the university of Lagos administration for putting the upgraded department of chemical engineering to good use for teaching, research and community service.

"The idea is to ensure that, the all round capacity of the university to deliver on their mandate is improved. We want a situation where we will build the capacity of those universities to the level of their counterparts in other parts of the world, our universities are doing very well but where there are challenges in the areas of insufficient equipments or inadequate manpower among others, we move to bridge that gap, that is why you see us building brand new laboratories, lecture theatre, lecture rooms, libraries and ICT support in virtually all the twenty six universities we are involved in"

He said, the essential goal is to increase the local content and be able to add value to the industry in terms of capacity building so that the country will get more per unit value on the volume of crude we produce for export. *"What PTDF is doing by way of training and institutional capacity building is to fulfill the dream of Mr President to get more and more professionals that will take over and man the Nigerian oil and gas industry in the future"*.

Mr Femi Ajayi urged the university faculty to tailor their research towards solving specific oil and gas industry problems assuring them of the Fund's continued support.

The Head of Department of Chemical Engineering, University

of Lagos, Professor A O Denloye, thanked PTDF for giving the department what he called a pride of place in the university in terms of space, equipments and other facilities.

"We are extremely grateful to PTDF and by implication the federal government because I don't think any department in the university has anything that comes close to what we have. Certainly it will help to significantly improve on what we do, because what we have now even by global standard can be rated with any facility anywhere in the world as far as teaching and learning is concerned, courtesy of the PTDF".

Professor Denloye admitted that, the department had serious challenges with the equipment prior to the intervention by the Fund, which brought new life into the entire faculty. *"Obviously we had some challenges with our equipments which were installed over 30 years ago between 1973 and 1974, so we had some challenges in carrying out experiments. So this has really brought new life to our programmes"*.

The major components of the university of Lagos upgrade project involved the construction of a three storey building equipped with laboratory and workshop equipment, 250 capacity lecture theatre, six classrooms, five professors offices and six other lecturers offices, two large and well equipped laboratories, a well stocked library with a twenty six networked computers, a seminar room, and departmental offices as well as the provision of borehole, surface tanks and a 500kva generator.

Professor A. O. Denloye, Head of Department, Chemical Engineering, University of Lagos Speaks on the benefit of PTDF upgrade project.



Sir, what are the specific areas of PTDF intervention in this department?

The PTDF intervention in chemical engineering involves the construction of a three storey building and also the provision of furniture, provision of equipments to support our programme. We have about 250 lecture theatre and we have six class rooms. In terms of office we have the provision of five professorial offices and six additional offices for other lecturers. We also have two fairly large laboratories both of these laboratories are extremely well equipped with the state of the art equipment for teaching at the undergraduate level. We also have a library which is of quite a decent size. It also came with provision of books to support teaching not only at the undergraduate level but also at the post graduate level. Then we also have computer laboratories, I think we have about 26 installed computers, they are all networked. So again this also provided a facility for us to be able to teach students especially in the design classes where all the students have to be able to have access to the computer. Off course it came with a pivotal office for the management of the department so that we can be able to move from the old building to the new facility. This in summary is what PTDF has contributed to the building. The building also came with some support facilities. We have a bore-hole and surface tank which has helped to boost our water supply. We have a massive 500kva generator to also provide power in case of disruption,



so with that generator we can actually power not only this building but the other building.

What are the equipments specifically provided by PTDF in this upgrade project?

The equipment are basically what we call unit operations equipment. In chemical engineering a lot of what we do can be broken down. Our processes can be broken down in to what we call unit operations. So we have equipment for process like distillation, we have a teaching equipment for gas absorption, we have fluid flow, we have gas transfer, process control, we have a boiler there and a lot of equipment are also computer supported. That means we can acquire a data and store it while the experiment is going on, so we don't have to sort of take down the result, the computer does everything, so that means that at least the data taken is more reliable and also verifiable because a lecturer can go to his system and actually confirm that these were the results that were taken. So we have that and I think all the laboratories are air conditioned too which is also a good thing. So these are all the training modules that are required to train a chemical engineer. I think some of them also are equipment that we can modify so that we can also use it to do graduate work especially masters work, where we can sort of explore further and push or explore the frontiers of knowledge.

What was the status of the department prior to PTDF intervention?

Well, prior to PTDF intervention we had some challenges with equipments because basically the department was built around 1973, to 1976 and that was over 30years ago. The equipment were no longer reliable, so we were having some challenges in doing some of the experiments. So this has really brought new life. Also the academic staff are now comfortable, we don't have to share offices. Infact now we are able to house staff from other departments. So the staff accommodation is good, everybody has an office and off course that facilitates the work. For the library, we had a very small library before, now we have a bigger library, students can sit down and study and also we have 12 computers in the

library provided by PTDF so that we can access the internet, do some work while in the library.

Generally how beneficial has the PTDF intervention been to the department and the university?

Off course it been very beneficial because the first thing is the learning environment. Your staff must be comfortable for them to be able to teach and give results. So PTDF has been able to provide comfortable accommodation for staff in addition to providing new books which were also given to staff. And then off course the class rooms, we have additional class rooms, so that means again the issue of having clashes is over, we use our masters class rooms, the class rooms at the masters level is now much more comfortable. There are also projectors to make the learning environment more conducive.

On the whole, how has PTDF intervention impacted on your teaching, learning and the conduct of research?

Certainly it helped to significantly improve on what we have. Like I said, what we have now at least by global standard is comparable with any facility anywhere in the world, as far as teaching at university level is concerned. This is because of the classrooms that we have, laboratories that we have, library that we have. So we now have what we can call a first class facility.

What is your final word to PTDF now?

Off course we are extremely grateful, obviously, this has cost a lot of money, I am sure other institutions are equally benefiting, but we are lucky because it has given us a pride of place in the university level. I don't think any department in the university has anything that is close to what we have, in terms of space, class rooms, offices, etc. so we are grateful because with these we can compete with any institution anywhere in the world. We are very pleased with what has been done, we are very grateful and we hope that this can be replicated in other universities.

PTDF EXECUTIVE SECRETARY JUSTIFIES PTDF UPGRADE PROJECTS IN UNIVERSITIES



Sir! What is the nature of PTDF's intervention in this department, and what is the University upgrade project all about?

Well, the university upgrade programme as the name suggests is to improve the capacity or develop the capacity of the university to deliver on its three mandates. That is teaching/training, research and also community service, and of course how do you do this? By giving them better research equipment, better research environment, just building the capacity of these universities generally. That is what university upgrade is all about. And why are we doing that? We want a situation where we can lift these universities to the level of their counterparts in other parts of the world. Our universities are already doing a good job but if there are small challenges in the area of insufficient equipments, then we bridge that gap, or if they have problems with man power we help to train more people. That is what university upgrade is about.

So the idea is to ensure the all round capacity of the university to deliver on its mandate. Why are you doing that?

Off course, the essential goal is to increase local content. We want to be able to add value, for instance as it is now, we export most of the crude that we produce, that is not the dream of Mr. President. Mr. President believes that we should be able to add value to the crude before we export it. So the idea is to build the capacity of our universities so that they will be in the position to produce more oil and gas



professionals who can engage in the processing and the refining of these products. You know that in order for us to make better use of our crude oil we need to develop the petro-chemical industry in our country. We cannot do this without the man power, so what PTDF is doing as a way of trying to fulfill the dream of Mr. President is to train more oil and gas professionals to man our oil companies in the country. But in doing that, we will be producing people who will man the future petro-chemical industries that will be built. Because for now we don't have a full fledged petro-chemical industry, most of the crude that we are exporting,

we should be processing them into products, we should be doing more refining and should be doing more of the products that we are importing now, infact some of the things we are throwing away, we will be using them to produce. Things like shoe polish and all those other things are some of the by-products of oil and gas industry. But rather than convert them into useful products, we are just dumping them and that is a consequence of lack of sufficient core competence in chemical and petroleum engineering and that is the gap that PTDF is trying to bridge. For now we are trying to bridge the gap by sending people

abroad to go and train, but how many people can we send abroad to train. At this point in time for every 1,000 people that apply to PTDF maybe we can afford to support like 50 people, what then happens to the rest of them? But if we can empower and upgrade our universities such that those trainings can take place in Nigeria, maybe rather than training like 200 Ph.D holders in 3years, maybe we can do 500 in a year. So that is why we are so anxious to upgrade the facilities in our universities, so that they can be more useful to our capacity building programme and be more useful to the economy ■



Executive Secretary, PTDF, Femi Ajayi with Management Staff of UNILAG



THE IMPACT OF OIL ON NIGERIA'S ECONOMIC POLICY FORMULATION

BY
Engr. NEEKA JACOB BIRAGBARA Ph.D.FCIAR, MNIM. HEAD (R&D) DEPT.

Economic Policy is the action-statement of the government pertaining to particular sectors of the economy, describing the intended objectives and how to achieve them. Ordinarily, the object of economic policy is to improve the welfare of the people, either in the short-run the long run.

The Formulation of an Economic Policy involves the collection, arrangement, analysis, summary and interpretation of economic data. Economic Policy is normally formulated to solve indentified and analyzed problems that stand between the economy and its goals over a defined period of time.

By the time Nigeria became politically independent in October 1960, agriculture was the mainstay of the economy, contributing about 70% of the Gross Domestic Product (GDP), employing about the same percentage of the working population, and accounting for about 90% of foreign earnings and Federal Government Revenue. The early period of post – independence up to mid – 1970s saw



a rapid growth of industrial capacity and output, as the contribution of the manufacturing sector to DGP rose from 4.8% to 8.2%. This pattern changed when oil suddenly became of strategic importance to the world economy through its supply-price nexus.

Crude oil was first discovered in commercial quantities in Nigerian in 1956, while actual production stated in 1958. It became the dominant resource in the mid-1970s. On-shore oil exploration accounts for about 65% of total production and it

is found mainly in the swampy area of the Niger Delta, while the remaining 35% represents offshore production and involves drilling for oil in the deep waters of the continental shelf. Nigeria has proven reserves of about 32 billion barrels of predominantly low sculpture light crude, which at current rate of exploitation could last another 38 years. The intention is to expand the reserves to 40 billion barrels and production capacity to 4 million barrels per day.

The massive increase in oil revenue as an aftermath of the Middle-East war of 1973 created unprecedented, unexpected and unplanned wealth for Nigeria. Then began the dramatic shift of policies from a holistic approach to benchmarking them against the state of the oil sector.

STRUCTURE OF THE NATIONAL ECONOMY

At this point, there is sufficient ground to examine how economic policy formulation has been impacted by petroleum oil in Nigeria. As much as

possible, major economic policies since Nigeria gained political independence has been driven by series of issues in the oil sector:

The nationalistic fervor that followed the attainment of independence in 1960 made Nigeria to evolve a seven-year first National Development Plan (1962-1968). The focus of that plan was to industrialize the economy quickly through the import substitution strategy. The implementation of this plan was chequered because of the political instability that eventually led to the civil war of 1967 to 1970. Most of the political of the 1960 were targeted at prosecuting the civil war successfully. You can recall that agriculture was at that time the mainstay of the Nigerian economy, accounted for only 0.3% of the GDP and was quite insignificant in foreign earnings.

The disruptions to economic activities by the civil war gave way to broad economic policies for reconciliation and reconstruction. This meant huge investments in infrastructure by the Federal Military Government. The command structure of the military created a strong centre and this has remained a major determinant of the nature of economic policies. As Nigeria gradually settled into normal economic activities, the first major economic policy of the 1970s was introduced. This was the Udoji Commission's comprehensive review and evaluation of jobs in the public service, which led to new pay and benefits structure, representing the first policy impact of the oil wealth.

This was followed by the Indigenization Decree in 1974 and 1977. The policy sought to put the commanding heights of the Nigerian economy in the hands of Nigerians within the context of nationalism. Several foreign investors divested from Nigeria, not by choice, but because of the policy that made it impossible for them to own certain ventures 100%, or not more than 60% or 40% as the case may be.

The Nigerian oil sector can be categorized into three main sub-sectors, namely, upstream, downstream and gas. The most problematic over the years has been the downstream sector, which is the distribution arm and connection with final consumers of refined petroleum

products in the domestic economy. The incessant crisis in supply of products culminated in the decision by Government in 2003 to deregulate the downstream sub-sector.

The over-dependence on oil has created vulnerability to the vagaries of the international market as observed in the preceding section that show the contribution of oil to some macro-economic variables. In particular, the place of oil in the psyche of the average Nigerian has become more profound since the "imperfect" deregulation of the downstream segment of the Nigerian oil industry in 2003. The policies designed to address the deficiencies and defects in the structure end up being poorly articulated and/or implemented because of regional, political or self-seeking selfish interests. It is the same self-seekers that continually sabotage the reinvigoration of the domestic refineries, making Nigeria to depend on importation of refined products to meet the domestic need. At present, Nigeria has four refineries, with a combined installed refining capacity of 445,000 barrels per day.

OIL AND THE EXCHANGE RATE

The major challenge that petroleum oil has posed to monetary policy in Nigeria is with respect to liquidity management. The penchant of Nigerian Governments for monetization of oil receipts tasked the management of the apex bank, torn between administrative and market-based instruments.

In the years of economic buoyancy, triggered by robust oil earnings, the Central Bank relied more on administrative tools that included: Fixing of interest rates; Reserve requirements that had little relevance to liquidity management because they remained fixed over long intervals; Credit allocation on sectoral basis and designation of preferred sectors; Foreign exchange allocation through import licensing; and Dual exchange rate mechanism.

These policies created distortions as well as strange business opportunities that rent seekers found easy to exploit. The collapse of crude prices in the early 1980's started a process of rethink of monetary policy in Nigeria, in line with the reforms

that were launched in 1986.

There is virtually no exchange rate system that Nigerian has not tried in order to find the "realistic" exchange value for the Naira. The difficulty is simply that of Nigeria being a net importer, whose external earnings derive largely from one product - crude petroleum oil. The different exchange rate regimes in Nigeria can be classified into different epochs relating to the vagaries of the international oil market.

The Nigerian Pound was pegged at par to the British Pound Sterling (GBP), using administrative measures to sustain the party. The devaluation of the GBP in 1967 made Nigeria to adopt the US Dollar, which was deemed better able to support Nigeria's import substitution industries that depended heavily on imported inputs. Throughout this period, the Nigerian Pound was overvalued, inhibiting optimal growth in agriculture and production for export. This was however, in consonance with other fundamentals such that fiscal operations were in surplus for most of these years, inflation rate averaged about 5% and there was no fear over the economy.

The exchange rate mirrored movements in oil prices and the Naira remained over valued as a result of the huge increase in foreign exchange earnings. The currency was anchored to the GBP until 1972 when the GBP was floated, and then pegged to the US Dollar. However, in 1978, the Naira was anchored on a basket at 12 currencies of Nigeria's major trading partners. This was again jettisoned in 1985 and the Naira reverted to quotation against the US Dollar.

CONCLUSION AND WAY FORWARD

There is no doubt that the upstream sector of the oil industry in Nigeria is the most developed and it has attracted considerable foreign capital inflows. The investment yield has also been very good. The same can be said for the gas sub-sector. The revenue spin-off from these sub-sectors should provide the needed capital to jump-start other sectors of the economy, especially those that have the greatest socio-economic impact ■



ACADEMIA, OIL INDUSTRY FARE BETTER WITH PTDF INVOLVEMENT IN RESEARCH ...Experts



Vice Chancellor Federal University, Ndufu Alike-Ikwo, Ebonyi State Prof. Ibidapo Obe addressing participants at PTDF TSK held at the University

The Involvement of the Petroleum Technology Development Fund (PTDF) in promoting research activities in various Nigerian universities is contributing substantially in developing relevant technologies to make the universities more productive and assist in improving the country's economic growth and development.

This was the consensus of research experts, professors and research fellows, who converged at the Federal University, Ndufu Alike-Ikwo, Ebonyi State, for the fourth edition of PTDF sponsored Technology Knowledge Sharing Programme (TKSP).

PTDF supports research in various universities across the country by endowing professorial chairs in oil and gas related departments, as well as the award of annual research grant for academics to undertake various researches in identified areas of contemporary significance to the oil and gas industry. The researchers

are expected to produce sterling discoveries that could be used by the industry to catch up with the dynamic challenges of the oil and gas sector.

Periodically, the Fund apart from the Technology knowledge Sharing Programmes (TKSP) organizes the research peer review exercise and close-out seminars, all intended to bring together researchers in various disciplines to share knowledge and critique the work of researches. This is with a view to monitoring the progress of ongoing researches and ensure that value is added. The Fund also introduced an annual public lecture for all its chair occupants to chronicle the achievement of the research programmes and to subject them to public and industry scrutiny.

PTDF has so far awarded 16 research grants to researchers in universities across the six geo political zones of the country and endowed eight professorial chairs most of which

are still ongoing. The research areas are relevant to the Nigerian oil and gas industry. So far six research findings have been filed for patenting.



Professor Samuel Akande who made the lead presentation on "sequence management approach in research development in Nigeria and the implication on PTDF funded research" said the involvement of PTDF has helped a great deal not only in



providing the funding that is needed for academic research, but for providing qualified and competent Nigerians that can undertake researches that are relevant to the oil and gas industry.

"The work that we started was sponsored by PTDF seven years ago and this enabled us to move from the North and Southern part of Nigeria with students being trained from the team to know how we can do oil and gas prospecting. It has yielded result because we graduated many Msc and PhD students and we still have ten(10) M.sc and two(2) PhD students on it with all their monies being paid by the PTDF. So we need to thank PTDF for supporting us, they provided funding for our workstations to process data and we are able to assemble data and do things we otherwise cannot do in Nigeria, all with funding from PTDF".

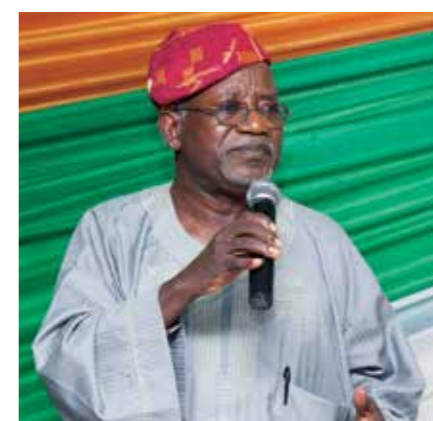


Professor Ibrahim Goni also a PTDF chair holder undertaking research on the prospect of exploring oil in the Chad basin, described PTDF involvement in research as a great milestone that has greatly helped both the academia and the oil and gas industry. According to him it has impacted in all areas that are relevant to the petroleum system and in the production of both undergraduate and post graduate students in universities. "It is extremely important because these days the major limitations in our university system is funding research. The university academics in their letters of appointment were assigned to teach and do research, but funding research is a great limitation, PTDF involvement in research now is contributing in funding high quality research that are very beneficial to the academia and the oil and gas industry where the research is focused and is remarkably helping the industry".



The Vice Chancellor of the Federal University, Ndufu Alike-Ikwo (FUNAI), Ebonyi State, Professor Ibidapo Obe said in an interview that PTDF funded research has made tremendous impact on the academia and the industry.

"PTDF chairs are making wonderful contributions not only to the academia but they are bringing practical knowledge with their relationship with the industry into the training of our students, so from point of view of research employed by PTDF this is a welcome development because it is having great impact and is also motivating a lot of our new staff to want to do research. That's what university is all about. Now in terms of training of candidates for PhD that will take over, PTDF is doing excellently well. I think it is the model of PTDF that TETFUND is following now, because they have bigger money they seem to be doing it in a much wider circle, but clearly PTDF is a pioneer in terms of supporting our education in this country, we are very happy to be part of it".



Professor Ayodele Francis Ogunye from the university of Lagos also spoke glowingly about PTDF intervention in research.

"I must tell you we have benefitted a

lot from PTDFAs a young man I think I was associate professor in 1978, I applied for PTDF research grant and my department, the department of Chemical Engineering University of Lagos, received 259,000 Naira research grant from PTDF, the grant was over half a million dollars then, we used the money to equip our department in the University of Lagos. That is the reason why we have been able to produce 23 PhD's out of which Six(6) are professors today. The department has won the Nigerian National award and also the NLNG award. We are the leader in chemical engineering in this country and PTDF has been so generous to give us new facilities which compares favorably with any facility in the study of chemical engineering in any part of the world".

He continued "I must tell you if there is one government organisations I will give distinction to any day, its PTDF, they are doing well they are applying the money very well, scholarship training, I always see it in the papers, doing post graduate studies. That is how we can develop this country, particularly the Oil and Gas sector. You can see we bring in the Indians, we bring in the Philipinos to come and be our welders PTDF is trying to arrest that situation, they are doing very good"



Dr Eti Ozunmba, Head, Regional Geology, Shell Petroleum plc, admitted that, the involvement of PTDF has been quite beneficial both to the academia and the industry especially as it concerns the growth of the domestic product (GDP) through finding more ways to exploit and explore and produce the needed hydrocarbon that could safely be used by the industry.

"Given that the resources in the academic



community are limited, PTDF input into the academia is a welcome development. They have revolutionised research in the academia and because of the interactive nature and the collaborative nature of the research, it has made the work of the academia more visible and that is going to help in the production of students of the right quality for our country."



Mr Austin Aturu, an industry expert and Chairman, Chief Executive of Seplat Oil and Gas Plc also appreciated the intervention of the PTDF in the areas of research and development which he describe as a very good omen to the oil and gas industry.

"I am satisfied with the investment of PTDF in this very critical area, we use the result of research anywhere in the world, and so if the universities will be enabled to do research, it's in the best interest of the industry".



Prof. A. B. Amakorumo of the Department of Microbiology, University of Port Harcourt said PTDF Technology Knowledge Sharing Programme is a credible platform for bringing Researchers and Industry Operators together.

"PTDF has done a lot because they have been giving scholarship to students



for Masters degree and PhD degrees which is academic, and they also fund research and give grants to people from universities from all over the country, so they are not concentrating on one part of the country, its open to staff of universities all over the country. Apart from the funding of Research they also have a journal, so from time to time we get the research finding from the journals and then this Technology Knowledge Sharing Program which they have had in other places. So through this way, the findings from such studies are made known to people. The Fund also invites people from the petroleum industry so that they get to know what kind of research is going on and there will be an input from them because they are the final users of such technology. That I find very useful for the industry, also for the researchers because they are not just doing some academic exercise, they are doing research that will be applied in the petroleum industry".



PTDF involvement in research according to Mohammed Haruna,

Head, Strategic Planning Research and Documentation department of the Fund is imperative in view of the dynamic challenges of the oil and gas industry as well as the position of PTDF as the lead capacity building agency of government.

"It is necessary for PTDF to invest in research because there cannot be any development without research especially when you are dealing with a giant and strategic sector like the oil & gas sector. There is no way you can move without investing in meaningful research, you have to research and research so that you can have new discoveries and move forward. The mandate of PTDF is to ensure the development of competent manpower and capacities for the oil & gas industry, there cannot be any development without research so research is a very-very important and an integral part of the development of any sector."

The mandate of PTDF is to ensure the development of competent manpower and capacities for the oil & gas industry... research is a very-very important and an integral part of the development of any sector.



EMERGING CHALLENGES IN THE PETROLEUM SECTOR: PTDF SPONSORED RESEARCHERS ADVOCATE SHIFT TO UNCONVENTIONAL PETROLEUM RESOURCES



A gathering of PTDF sponsored Researchers and Industry experts to review and point at the way forward on the Professorial Chair on Petroleum geology endowed by PTDF at the University of Nigeria, Nsukka, have made a case for the Nigerian government to shift its emphasis from the normal petroleum resource found in the Niger Delta region and focus more on the exploration of other unconventional petroleum resources hugely untapped in many potential basins in the country. This is in view of the emerging challenges associated with the dynamics of the oil and gas sector. The Chair occupant, Professor Muoto Onuoha is leading a team of researchers in investigating "Reservoir Characterization, prospect Evaluation and Economic Analysis of our Oil fields, Unconventional Oil and Gas and their impact on the nation's economy". This was on the occasion of PTDF Annual Public Lecture which took place in the university to underscore the significance of unconventional energy resource which have the potentials for creating more job opportunities for Nigerians, boost the country's revenue base, and ensure full diversification of

the economy.

Executive Secretary, Petroleum Technology Development Fund, Mr Femi Ajayi informed the gathering of experts at the university that the programme is a necessary process for monitoring the progress of researches being conducted under PTDF Professorial chair endowments in the various universities. This he said with particular reference to the university is to justify the Fund's investment in research in Petroleum geology especially within the Anambra basins and the Niger Delta. The theme of the annual lecture was "unconventional petroleum resources and the emerging challenges in the Oil and Gas industry". Mr Ajayi who was represented by the Head, Strategic Planning, Research and Documentation Division, Mr Mohammed Haruna said "There are indeed huge exploration and developmental challenges in the upstream sector of Nigeria's petroleum industry and of critical concern are the reservoir characterization, prospect evaluation and economic analysis of our oil fields and unconventional oil and gas and their impact on the nation's economy. These we know are as a result of the near total reliance on foreign

experts in the past for the development of our exploration geology and reservoir development for petroleum production to meet the domestic market"

He added that, the focus of the annual lecture is in line with the research focal area of the PTDF chair which is germane to the developmental aspirations of the present government, particularly its vision on increasing reserve and energy diversification for sustainable development and wealth creation.

The lecture according to the Executive Secretary will help the participants to gain sufficient insights into the operations, opportunities and challenges of the industry as well as geological formations and the huge unconventional resource yet untapped in the country.

"PTDF as a capacity building agency of government for the oil and gas industry will continue to develop the human capital requirements of the industry by providing education and training to deserving Nigerians and also develop the capacity of local institutions and systems to provide world class training and education in-country and to ensure through research, the development of materials and manufacturing process



and relevant technologies utilized by the industry”.

Mr Femi Ajayi urged the industry to give PTDF trained Nigerians sufficient opportunities to prove their potentials in developing the upstream, mid and downstream of the petroleum industry. He emphasized that, PTDF effort is beginning to take root in the industry and will hopefully germinate into a population of well trained, industry ready Nigerian professionals, such as drilling engineers, internationally certified welders and under water welders, petroleum engineers, geologist among others who will be making effective contributions to the various segments of the industry.

The vice chancellor of the University of Nigeria, Nsukka, Professor B.C Ozumba thanked PTDF for singling out their geology department as a befitting place for establishing the professorial chair and for insisting that a public lecture should be given to assess the performance of the chair in the university.

“Today’s event is a historic one because it is the first time that a professorial chair holder is giving a public lecture to showcase the work in an endowed chair and I thank PTDF for insisting that such must be one of the yardsticks for assessing the performance of their chair holders. People or organizations who commit their resources for the establishment of professorial chairs

should have a way of knowing whether they are getting value for the funds that they commit to the chair’s work.”

He said, the shale gas boom is becoming a common expression in the world today and has become a reason why the USA is no longer buying Nigerian crude oil and other conventional petroleum resources. The UNN Vice Chancellor made it clear that in the wake of all these, it is imperative for Nigeria to strive and develop unconventional oil and gas resources, in order to generate massive employment opportunities as has been witnessed in the United States.

The chair occupant, Professor Onuoha while delivering the lecture, said that, the research has been of significant assistance to him as a person and to the institution because it enable them discover many unconventional petroleum resources particularly the shale gas which is found to be in abundance in several basins across the Northern and Southern part of the country with huge revenue potential for the country.

He said most of the International oil Companies are aware of the potential of the shale gas in the world which makes it imperative for planners and policy makers to act fast and confront the challenge of our traditional buyers now having other sources from these unconventional energy resources.

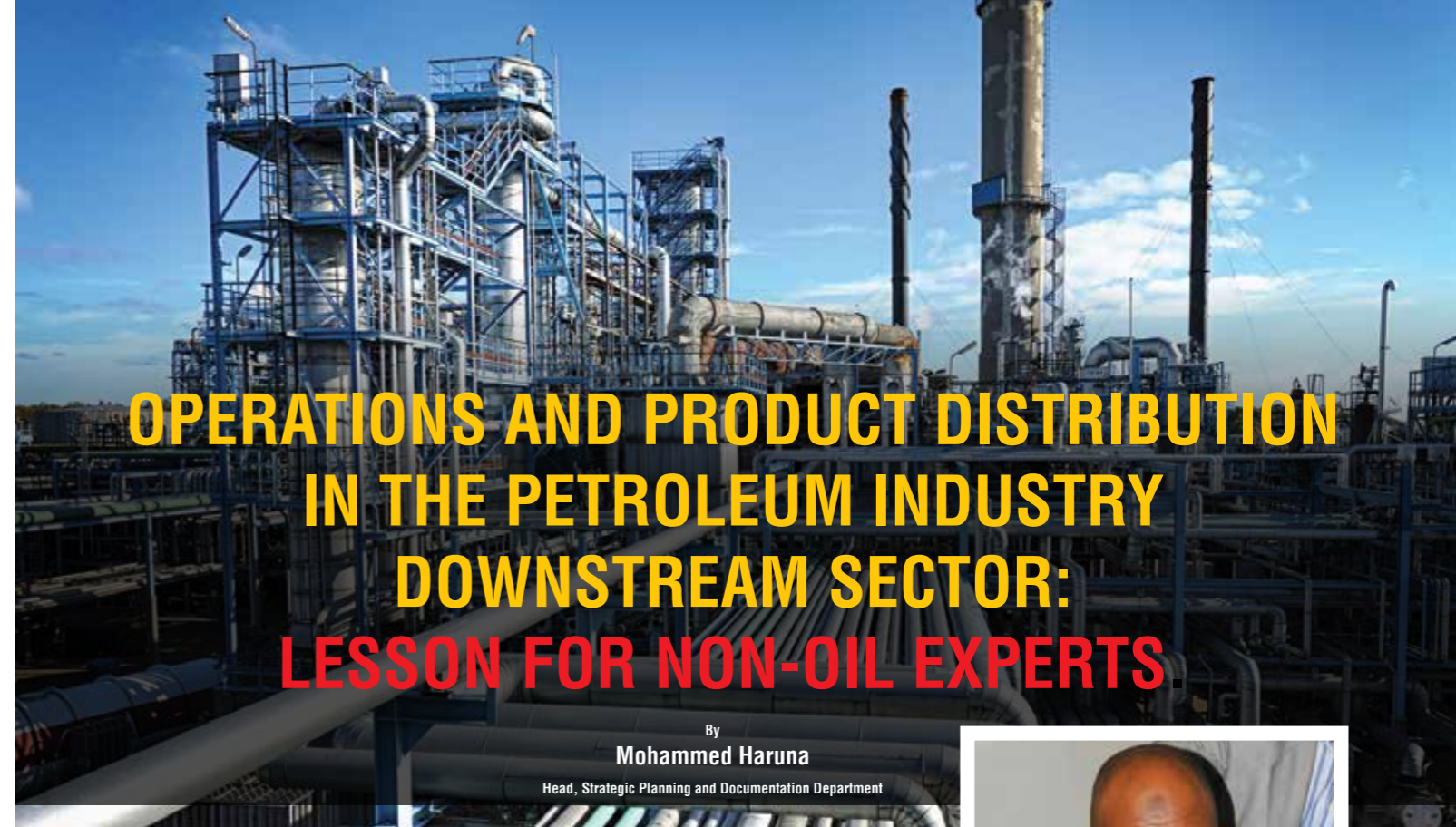
“it’s like a whistle blowing we are doing, the country has no option than to invest in research and development like the PTDF is doing for us to discover and explore this unconventional energy resources. Even though U.S is not importing our oil, we have people who we are selling the oil to. The problem is not about today but it’s about tomorrow, because we need this money in Nigeria for everything we do, so our planners ought to know and act accordingly especially with the challenge of other emerging producers in Africa whom we have to compete with in the international market”

Professor Onuoha who admitted never being compelled to give a lecture in any of the research chairs he occupies in the university, described PTDF’s innovation as very significant because it challenges a chair occupant to publically give account of the progress of his research which is subjected to public scrutiny.

“PTDF has been of great assistance to our research. We are a centre of excellence in geology that is why we have PTDF chair, the upgrade they gave to our department boosted us and we are on the map, they gave us equipments and additional spaces and that gave us an impetus to do more work and get lots of our students to get Msc’s and PhD’s among others, so PTDF intervention has been very positive”.

The Chairman of the occasion, Managing Director of Seplat Oil and Gas Plc Mr Austin Aturu appreciated the intervention of PTDF in the areas of research and development which he describe as a very good omen to the oil and gas industry.

He said, PTDF should continue to support universities in the interest of the economy and described the Fund’s intervention in research as a worthwhile effort that makes the universities more productive. Mr Aturu emphasized that, endowing professorial chairs for research on specific focal areas that are relevant to both the economy and the industry is very important, and advised the universities to go on a marketing drive to broaden their resource base so that they can be more effective on research and development ■



OPERATIONS AND PRODUCT DISTRIBUTION IN THE PETROLEUM INDUSTRY DOWNSTREAM SECTOR: LESSON FOR NON-OIL EXPERTS

By
Mohammed Haruna

Head, Strategic Planning and Documentation Department



The petroleum industry includes the global processes of exploration, extraction, transporting (often by oil tankers and pipelines), refining and marketing petroleum products. The largest volume products of the industry are fuel oil and gasoline (Petrol). Petroleum is also the raw material for many chemical products, including pharmaceuticals, solvents, plastics, pesticides and fertilizers. The industry is usually divided into three major components which are: UPSTREAM, MIDSTREAM AND DOWNSTREAM. The midstream operations are usually included in the downstream category. Petroleum is very vital to many industries, and is of importance to the maintenance of industrial civilization itself, and thus is a critical concern for many nations. The downstream oil sector is a term commonly used to refer to the refining of crude oil, the selling and distribution of natural gas and products derived from crude oil. Downstream sector is just a grouping and is made up of crude oil and its field derivatives into products (or field stocks) and the transportation of all these from points of production to their uses whether by pipelines, road, rail or marine transportation.

Processing of the products can be done as follows; Gathering and stripping of containments or entrainments,

Refining/petrochemicals processing, Packaging. Transportation on the other hand can be done as through Pipelines, Marines, Road and Rail Processing of plant has to do with complex of installation put in place to refine crude oil into its derivatives/products depending on the complexity of the plant such products maybe Gas, Propane, butane, Naphtha, Reformates (blends for premium motor spirit or petrol), kerosene, automobile, gas oil, Sundry derivatives. (Wax, sulfur), fueloil, Bitumen.

All products must be stored and these are mainly in tanks. Tanks are grouped together for ease of operation and these groupings are called tanks farms, pipelines link tanks with process plants tanks to each other and to points of loading or through pumps to distant locations in which of tanks [tank farm]. This brings us to the entity.

Liquid products are pumped while gases are compressed and transported through pipeline. The NNPC currently has a pipelines network of some 5000kilometers stretched over some 3000 kilometers. They vary in sizes from 24 to 26 depending on the fields being transported and their destinations. For example the escravos-Warri crude pipeline operated by the PPMC supplies both the WRPC and KRPC with their

feed stocks of crude oil. The pipeline product marketing company is the product distribution arm of NNPC. PPMC is directly responsible for comparative ease with which petroleum products are sourced and distributed to all parts of the county at a uniform price. A phenomena which Nigerians have come to take for granted. PPMC is a subsidiary of NNPC, ensures among other things the availability of petroleum products to sustain our industries, automobiles and domestic cooking.

Research and development under the downstream sector are as follows;

1. Glass blowing production
2. Renewable energy. studies on biofuels and solar energy
3. Troubleshooting of plants operational problems
4. Improvement of existing processes and development of new ones
5. New products development in fuels, lubes bitumen and petrochemicals
6. Natural gas utilization for produc-



- tion of solvents
7. Environmental research studies and services
8. Toxicological studies
9. Catalysis development
10. Air monitoring of virgin industrial areas
11. Petroleum products testing, total crude assay, analytical chemistry

All refineries evacuate their refined products largely by pipelines classified into systems 2A, 2B, 2C, 2D, and 2E. In Nigeria we have the following classification of pipelines: Mosimi 2A, Lagos-Mosimi-Ibadan-Ilorin 2B, Warri-Benin-Warri-Kaduna 2C, Kaduna-Kano 2D, Warri-Benin-Mosimi 2E, Port Harcourt-Makurdi 2E.

The most topical issue today in refining business is performance, performance of our refineries, performance of our operating plants. A refinery consists of mainly plants which includes Tank Farm (crude storage intermediate finished products), Power Plant, Water Treatment Plant and Process Plant (Crude distillation plant, Vacuum Unit, Reforming unit and Fluid catalytic cracking unit)

Malfunction of one or a number of these units can interrupt the product availability scenario. To the public or for the economy the relevant picture is total availability. When talking about performance, there are conditions for industry performance which are:

1. Total plant availability, i.e. what you use to deliver the assignment
2. Adherence to maintenance schedules
3. Crude stock availability/suitability
4. Products evacuation on schedule
5. Timely replenishment
6. Acceptability synergy.

The plant operator and maintainer must ask seven basic questions to achieve the result that will amount to a reliability centered operational level. These are:

1. What are the functions and associated performance standards of the asset in its present operating context
2. In what ways does it fail to fulfill its functions
3. What causes each functional failure
4. What happens when each failure

- occurs
5. In what ways does each failure matter
6. What can be done to predict or prevent each failure
7. What if a suitable proactive task cannot be found

To review these questions let's consider the following.

Functions and performance standards

1. Determine what its users want it to do (operators).
2. Ensures that it can do what its users want. (performance standards)
3. Plant installation and commissioning team.
4. Operators
5. Inspectors
6. Maintainers

There are at least two categories of functions:

Primary functions: which summarize why the assets were acquired in first place. This category of caution covers issues such as speed, output, carrying or storage capacity, product quality and quantity, and customer service.

Secondary functions: which recognize that every asset is expected to do more than simply fulfill its primary functions. Users also have expectations in areas such as safety, Control, containment, comfort, structural integrity, economy, protection efficiency or operation environmental compliance and even the appearance of the asset.

Functional failures

The objectives of maintenance are defined by the functions and associated performance expectations of the asset. But how does maintenance achieve these objectives? The only occurrence which is likely to stop any asset performing to the standard required by its users is some kind of failure. This suggests that maintenance achieves its objectives by adopting a suitable approach to the management tools; we need to identify what failures can occur.

Reliability Centered Maintenance (RCM) Process does this at two levels. Firstly, by identifying what circumstance amount to a failed state and secondly by asking what events can cause the asset to get into a failed state.

In the world of RCM, failed states are known as functional failures because they occur when an asset is unable to fulfill a function to a standard of performance which is acceptable to the user. In addition to the total inability to function, this definition include partial failures, where the asset still functions but at an unacceptable level of performance (including situation where the asset cannot sustain acceptable levels of quality or accuracy).

Failure modes

Once each functional failure has been identified, the next step is to try to identify all the events that are reasonably likely to cause each failed state. These events are known as failure modes. Reasonably, likely failure modes include those 3 that have occurred on the same or similar equipment operating in the same context, failures that are currently been prevented by existing maintenance regimes, and failures that have not happened yet but which are considered to be real possibilities in the context in question.

Most traditional list of failures modes include failures caused by deterioration or normal wear and tear, however, the list should also include failures due to human errors (caused by operators or maintainers) and design flaws, so that all reasonably likely cause of equipment failure can be identified and dealt with appropriately, it is also important to identify the cause of each failure in enough detail for it to be possible to identify and appropriate failure management policy.

In conclusion, we know that oil and gas affects the economy and that it is easily regulated by strong central government and bank. The infrastructure must be built up to manage growth. The leaders of the country should be committed to the development of the oil industry. Finally the consumers should be aware of how their role in the consumption of oil will affect the economy as a whole. When all parties are aware and committed to the prosperity of their country and to the industry then the consumption, supply, demand, profits, losses, and investment towards oil will be a mutually beneficial one for the country and its people ■



THE 2012/2014 RESEARCH PEER REVIEW EXERCISE



The 2012/2014 PTDF Research Peer Review Exercise for the PTDF Annual Research Grant Competition held in Abuja where peer reviewers known as "Subject Matter Experts" gathered to critique and add their intellectual input into the work of the researchers. This is with a view to ensuring value addition to the overall research output and to provide a strong platform for knowledge sharing among industry practitioners and the academia.

Executive Secretary PTDF, Mr Femi Ajayi at the occasion re-iterated the Fund's commitment to ensuring adequate funding for all research endeavors that are directly relevant to the oil and gas industry said, "The researchers are expected to solve specific industry problems and contribute to the oil and gas value chain in the country, in view of critical challenges emerging in the sector". He added that, "the key focus for discussion in the peer review exercise is to critique the work done by researchers in the past one year, contribute towards enhancing the research results at the end of the cycle and have novelty in both the process and product of the research".

He maintained that, PTDF is committed to genuine collaboration and linkage programmes that would support Nigerian participation in domesticating solutions to problems in the petroleum and related sector of the economy.

The 2nd PTDF Research Grant was

awarded in 2012 and is expected to be completed in 2016. The research topics under the 2012/2013 annual research competition include:

- Immobilized oil degrading Micro-organisms in local cellulosic materials for rapid development in Bioremediation of Petroleum contaminated soil;
- Hydrocarbon Source Rock Evaluation in the Cretaceous to Neogene Basins of Southern Nigeria and implication for the Niger Delta Systems;
- Development of Bentonite Minerals as Drilling Mud in the Petroleum Industry;
- Development of Novel Technology for Diagnosing and remediating problems associated with Oil Field, Reservoir Sourcing and Corrosion in the Petroleum industry and
- Development of Bio-fuel Technology from locally sourced cellulosic materials.

Mr Femi Ajayi urged the experts to leverage on areas of strength in each research work so that possible intellectual property rights could be earned for actual research commercialization, noting that, the programme should be able to assist in proffering solutions to the challenges in the petroleum and related sectors in Nigeria.

In his contribution, Professor R O Ebeuwele, a member of the steering committee on the various research

grants awarded by PTDF commended the transparency in the award selection process which ensures that only researches with specific industry problems are being considered and awarded. This he said has brought credibility to the whole research grant exercise being sponsored by the Fund. He stated that, the peer review exercise is to ensure proper direction and improvement in the research works. "As soon as the exercise is concluded a syndicate group will meet to make presentations on the critiques of the various researchers to the coordinator who in turn will compile a report and send to the sponsors with a view to ensuring value for the resources being expended in the researches".

The peer review exercise is like a performance indicator analysis on the key deliverables of the research. The research grant awardees use the opportunity to submit their milestone achievements to the "Subject Matter Experts" for critique and suggestions; it's also another method of technology sharing among experts in the academia.

The researchers are Dr Chuma Okoro from Federal University, Ndufu-Alike Ikwo, Ebonyi State, Professor Ayoade Kuye from University of Port-Harcourt, Professor Samuel Akande from University of Ilorin, Professor B B Mohammed Dewu from Ahmadu Bello University, Zaria and Dr G.O Agiri from the Petroleum Training institute, Warri, Delta State ■



Congratulations



Mr. and Mrs. Arinze Okoye
29th of November, 2014
Mr. Arinze Okoye is of Upstream Division, Nigerian Content Department, PTDF



Mr. Wahab Olugbenga Olayiwola
M.Sc Construction Project Management
University of Manchester
Year of Graduation: 2014
Mr. Wahab Olugbenga Olayiwola is of Project Department, PTDF



Mr. and Mrs. Adetayo Richard Aromolaran
13th of December, 2014
Mr. Adetayo Richard Aromolaran is of the Protocol Unit, PTDF



Mr. Abdulazeez Rabi'u
MBA General Management Coventry University, United Kingdom
Year of Graduation: 2013
Mr. Abdulazeez Rabi'u is of Education Division, PTDF



Mr. Onuwaje John Omare
M.Sc Project Management
University of South Wales
Year of Graduation: 2013
Procurement Unit, PTDF



Mr. Ibiyeye Olaniyi Tajudeen
M.Sc in Oil and Gas Management
Coventry University, United Kingdom
Year of Graduation: 2013
Mr. Ibiyeye Olaniyi Tajudeen is of Project Department, PTDF



Mr. and Mrs. Augustine A. Ochang
Mr. Augustine A. Ochang is of Legal and Secretariat Services Department, PTDF



Mr. and Mrs. Ibrahim Saleh
Mr. Ibrahim Saleh is of Transport Division, PTDF



Mission

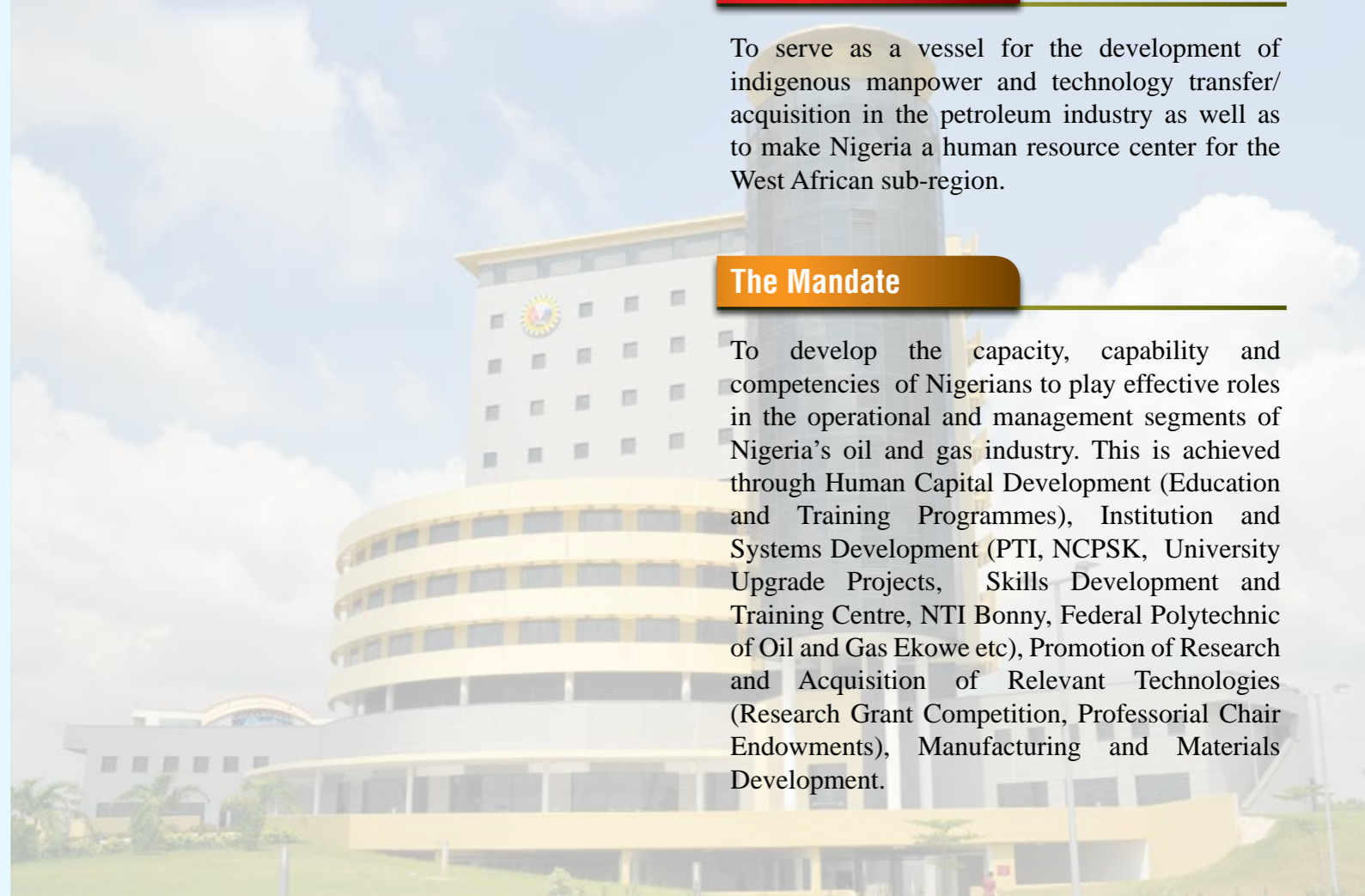
To train Nigerians to qualify as graduates, professionals, technicians and craftsmen in the field of engineering, geology, science and management in the oil and gas industry in Nigeria or abroad.

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 develop the capacity, capability and competencies of Nigerians to play effective roles in the operational and management segments of Nigeria's oil and gas industry. This is achieved through Human Capital Development (Education and Training Programmes), Institution and Systems Development (PTI, NCPSK, University Upgrade Projects, Skills Development and Training Centre, NTI Bonny, Federal Polytechnic of Oil and Gas Ekowe etc), Promotion of Research and Acquisition of Relevant Technologies (Research Grant Competition, Professorial Chair Endowments), Manufacturing and Materials Development.



PTDF Tower, Opp. Shehu Musa Yar'Adua Centre,
Near Silverbird Galleria,
Central Business District, Abuja

Tel: 234-9-3142216-7
Fax: 234-9-314229
Email: info@ptdf.gov.ng
www.ptdf.gov.ng



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; International Oil and Gas Research Centre and Museum, Oloibiri, Bayelsa State; The National Institute for Petroleum Policy and Strategy, Kaduna and the development of Information Communication Technology (ICT) Centers in secondary and tertiary institutions across Nigeria.

- Through its sponsorship of the annual "Catch Them Young" competition in Petroleum Technology, PTDF creates awareness and sustains interest among secondary school students in core science subjects necessary for the study of 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.

PTDF Tower, Opposite Shehu Musa Yar'Adua Centre, Near Silverbird Galleria, Central Business District, Abuja
 Enquiry: ptdfupdate@ptdf.gov.ng, twitter: @ptdf_nigeria, facebook: www.facebook.com/ptdf1, website: www.ptdf.gov.ng