



# The Nigerian Society of Engineers

PORT HARCOURT BRANCH

e-newsletter

2008 / VOLUME 19

15TH MARCH, 2008

## An Interview with Prof. Datoru Promise Sementari Abam, FNSE on the Problem of Power Supply in Nigeria.

*E-Newsletter: Sir, can you tell us about yourself? We want to know you very well.*



Prof. D.P.S. Abam, FNSE

**Prof. Abam:** Thank you very much. I am D. P. S. Abam. I graduated in Mechanical Engineering from King's College, London, on Shell sponsorship. I worked with Shell for about two years and went for a PhD degree program in England. At the end of the program I came back and rejoined Shell in 1981; I spent seven years in Shell. I was invited by the University of Port Harcourt to come and set up the Department of Mechanical Engineering in 1986, which I did. In 1989, I was appointed the Rector of the Rivers State Polytechnic, Bori. I spent five years in Bori Polytechnic at the end of which I went to National Institute for Policy and Strategic Studies, Kuru near Jos on government sponsorship and spent one year there. I came back to the University of Port Harcourt and since then I've been here teaching and training engineers. On the professional side, I was one time Branch Chairman of the Nigerian Society of Engineers, Port Harcourt Branch in 1989. I did not finish my tenure because I was called to serve in Bori. I have been a member of the Council of NSE. I also served in the Board of Fellows of the society and I am currently a member of the National board of the society. I served the Council for Regulation of Engineering in Nigeria (COREN) in many capacities. I have been involved in the accreditation and visitation to Universities in the country for the past five to six years. I have been the chairman of the COREN Zonal Chief Examiner. These are my contributions in addition to the teaching and training of engineers.

*E-Newsletter: Thank you very much Prof. You have done a lot in the engineering profession. There is one big problem Nigerians are facing, that is the issue of power supply. From the engineering point of view, what do you think is responsible for this problem of 'epileptic' power supply?*

**Prof Abam:** Thank you so much. From the Mechanical Engineering point of view, energy is very potent for the efficient availability of work. Energy is fundamental for all kinds of work. Power is the efficiency of Energy. It is not just restricted to Nigeria alone, it is a global issue. Most government fails because they are not able to satisfy their citizens in terms of power availability. In terms of our own local environment, you will find out that since independence, availability of power supply has been a serious problem. We have some power generating systems in Nigeria; we have the hydro-power stations, Kanji Dam, Shiroro Dam and all that. We have the thermal stations, Afam Power Station and a number of them which were established by public power supply system and recently, we are talking of the independent power systems like the Rivers State has one which have been epileptic for a long time and also new systems are coming up, all based on natural gas power.

There are other sources of power which government has not been able to exploit. However, government has tried solely on the natural gas system. We used to have a coal system during the colonial period but that has given way because of the problems of the management of the coal and dangers of mining the coal and quality of the coal in question. The discovery of crude oil now has created a way and then we went into refined petroleum products, including natural gas. We have enough of this power sources but the problem is that there is no proper blending or balancing of the matrix of energy. In the sources of energy we should be talking about solar energy, wind energy because these are reliable sources of energy. We are over relying on fossil fuel energy, with all the environmental problems. But putting all these in perspectives the main issue is management of that sector. We have resources in abundance but to manage them is the pain which has made it impossible for us to have sufficient energy to generate power. If we are to make it available for application to do the things we ought to do, we should look closely into the problems of management, I think it has to do with our mentality. Invariably, government puts her hands where they are not supposed to be. There are certain areas government should not venture, because when they go into those areas a lot of unnecessary controls come in and people can not develop the ability to manage what they are best fitted. If you look down into the genesis of management of all the sectors, you find out that it is because of management interference. Government should be restricted to providing the basic infrastructures. The actual development of the technology should be left for the private sector. If you look at the Nigerian environment, there is quite a number of competent organizations that can run the power industry effectively and government is to regulate the system and apply the necessary regulatory laws, so that the managers do not go on strike, but rather they work within the laws of the land, that's the business of government. Government can over see the tax collection from the availability of services and use them on infrastructures like social services, as far as technology is concerned. The technologies of power station are well established. We have experts there but management is the problem.

*E-Newsletter: What about the issue of population? About two years ago there was census and we had an estimate of our population. Has the cost of consumption per head been considered in the management of power in this country? What about the application of engineering principles like energy costing in thermodynamics on power?*

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### A - 3 DAY COMPULSORY REFRESHER COURSE FOR PROSPECTIVE CORPORATE MEMBERS

As a conscious effort towards Professional Development of engineers, the Nigerian Society of Engineers has put together a compulsory refresher course for prospective corporate members. The course is expected to be of tremendous benefit to practicing engineers in the public and private sectors, as it will keep them abreast of the modern trends in engineering practice.

**The target audience:** The course is compulsory for prospective Corporate Members. It is also a necessity for all engineers who have not had adequate exposure to engineering principles, practice and ethics.

#### **Course Contents:**

- Project management, Legal issues in engineering contracts, Procurement procedures, Analysis of tender, Residency procedures, Basic engineering economics, Engineering entrepreneurship, Preparation of Bills of Engineering Measurement and Evaluation, Cost and Valuation engineering, Introduction to Consultancy Practice

**Course Fee:** N10,000.00, **Duration:** 3 days: Mode of Payment: Cash/Draft made payable to Nigerian Society of Engineers

**Port Harcourt Centre:** 26<sup>th</sup>, 27<sup>th</sup> & 29<sup>th</sup> March, 2008 at NSE PH Branch office, 3 Bernard Carr St. Port Harcourt. **Time:** 8.00 am – 5.00 pm daily



### POINT ENGINEERING LIMITED

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**Many thanks to Point Engineering for donating internet facility to NSEPH Mini Secretariat.**



NSEPH EXCO members in the March EXCO meeting.



### UP COMING EVENT:

The Institute of Appraisers & Cost Engineers:- International Annual Conference & Exhibition. Date: 25th & 26th June, 2008. Venue: Abuja, Nigeria. For more details visit [www.iacenig.org](http://www.iacenig.org)

**NSEPH ON TECHNICAL VISIT TO SHELL (Afam Integrated Gas & Power Project)**

Members of the Nigerian Society of Engineers Port Harcourt Branch, on 13<sup>th</sup> March, 2008 embarked on a technical visit to Shell Petroleum Development Company's Afam Integrated Gas & Power Project (Afam VI). The NSEPH team arrived at the INTEL camp office Shell along Port Harcourt - Aba Road at exactly 0800 hours. At 0820 hours, the Asset Manager, Afam Gas Power, Engr. John Otth briefed the NSEPH team on the Afam VI Project. After the briefing there was a brief Health, Safety & Environment (HSE) talk on the Afam VI project by Ogbonna Chinedu (HSE Adviser) and an overview of the Afam Integrated Gas & Power Project by Engr. Ben Agbagogu who is the Deputy Chief Engineer, Afam Power Plant. At 0950 Hours, the NSEPH team and the Shell team left the INTEL camp for the project site at Afam.

On reaching the project site, another HSE talk was given by Bishop Franklin, one of the Daewoo HSE Officers at the project site. The NSEPH team members were taking round the site by Engr. Renzo Galvagni, who is the Site Electrical Engineer. The NSEPH members that made up the team are Engrs. R. O. Ogoni, I. Z. S. Akobo, B. N. Ahorka, G. G. Ikenyiri, Saidu Njidda, Larry Nyeche & Engr. Dr. M. T. Lilly. We were informed that on completion, the power plant would generate 642MW of power. We do hope that the management of the facilities would put in place all the necessary tools to sustain and maintain the design capacity.



Engr. John Otth briefing the NSE PH team



NSEPH team and the Shell team @ the site

**Interview with Prof. Abam: cont. from page 1.**

**Prof. Abam:** In terms of per capita consumption, if we choose to use and blend all the sources available and provide the power from all the sources efficiently and sufficiently, we can determine overhead cost of power. If we take a household for instance to be ten people, consuming may be a 100kw of power, that is 10kw per head and if we add up the sources of power generation we will be able to establish total power requirements for the populace. With an articulate and proper management of available sources we should be able to have surplus. In a population of 150 million people and even if you project it to 200 million in the next twenty years, we will still have enough. But the problem is improper management. The availability is there, but to harness and manage are the issues.

**E-Newsletter: Last week, in a newspaper, we were told that the supply power plant capacity at EGBIN is 800MW, designed capacity to the national grid and then the special adviser to the president on energy said we can only supply 450MW by this week and we have enough of natural gas in this country. What is responsible for this short coming?**

**Prof. Abam:** Recently the power station is rated very high. In fact one of the major resources now is that we have more capacity than 1000MW if properly utilized. The potential capacity is more than 1500MW or there about if all the trains are working. Gas consumption is very high and unfortunately there was no proper perception of the demand for gas when they were signing the contract with Shell and other companies. There was no proper perception of the supply profile. The profile was not properly articulated and so, about three to four years after start off, problems of gas supply started. The Oil Companies said they could not meet up the demand within the short notice. At the time they started noticing these problems in the oil companies, they had to look for new oil wells to drill, they have to drill the well, build the gas treatment plant, and the least time it takes is about five years, so they could not meet up. That was why we had a serious shortage of gas supply, with this shortage, the production capacity will come down, I think its even less than 450MW. If you add the pipe line vandalisation, the scenario is very bad. This is what is happening now; there is a serious shortage of gas supply because the companies were not properly briefed on the long term demands of the power station. That is also the problem with bureaucracy, if it is a private enterprise, these companies will know the long term demands and profile it and give early warnings to the companies, telling them the period they are expecting supplies. That is the major problem.

**E-Newsletter: There is a system that Nigerian has come up with, build, operate and Transfer (BOT) system. Can government apply this far the power sector?**

**Prof Abam:** This BOT is a new thinking in the power sector, however it has been in practice in the building industries. Now they are trying to see if it can work in the power industry. It may not necessarily work because they are different scenarios. Even in the building industries they had problems even with the BOT system. They source money from the bank, they build these houses and operate, charged exorbitant rent and then recover their money after about twenty years or so and by the time they hand over these buildings, their value would have depreciated. Government taking over the buildings will have to spent money in putting them back into shape. When one does the real economics, it does not actually favour the end users. But if you now transfer that concept to the power sector, I also think that it may have problems but it is a concept that we can try out. It may happen that it may pay out but



Engr. Dr. Ujile interviewing Prof. Abam

**NSE @ 50: PORT HARCOURT ZONE CELEBRATES**

The Nigerian Society of Engineers celebrates its 50<sup>th</sup> anniversary this year 2008. The 18<sup>th</sup> edition of our news-letter reported the flag-off ceremony on the 16<sup>th</sup> of February 2008 by the NSE President Engr. K. A. Ali, FNSE. The committee set up at the inauguration has structured the country into eight geographic zones for the purpose of the nationwide celebration of the event. The Port Harcourt zone which comprises of Port Harcourt, Calabar, Eket, Uyo, Yenagoa & Ikot Abasi would have their celebration in May 2008 in Port Harcourt. All engineers, engineering companies and stakeholders in engineering are expected to identify with this anniversary. Suggested activities include (but not limited to these):



Engr. K. A. Ali, FNSE

- Publicity- Newspaper publication
- TV/Radio interviews
- Public lectures whose theme must revolve around the role of engineers in our daily lives.
- Courtesy visits to Universities/Polytechnics.
- Dinner and other social activities that would enable engineers to interact with each other.

It would be recalled that the Nigerian Society of Engineers (NSE) was founded in 1958 as an umbrella organization for the Engineering Profession in the country and has over the years distinguished itself through progressive and developmental programs.

The first President of the Society is Engr. Chief G. O. Aiwerioba FNSE.

government has to make strict regulations in terms of the tariff that should be charged because people thinking of recovering in a very short period of time and if government does not regulate, people would pay heavily in terms of metering charges. It could be more problematic for government and so government has to regulate tariff properly and standard in terms of material usage, quality of material and quality assurance and when these things are properly taken care of, they can build these systems, operate them and let people have regular power supply and then the period of transfer should not be too close to the design life knowing that much may not be expected at that point. But it is a good concept. They should try it first and if it works well, they should develop that concept as permanent features.

Let me also add here that there is also this environmental problem. The environmental issues in the power sector are quite serious especially with the system we are using. The gas system, the flaring from the power stations, has thermal effect. The carbon dioxide, hydrogen and Carbon monoxide and all that are serious environmental hazards. The green house effect, depletion of the ozone layer, these are all part of the trappings of the ultra-violet light that are heating up the earth surface. Government should come up with some policies or alternatives like hydropower, solar, wind etc. Solar energy is well known and it takes a lot of initial investment but we should begin to have interest in developing solar technology because it could be a way out as a back up. Initially they will be the back bone to the primary system that we are using. Eventually it will have its position also as a major source of power supply especially in the rural areas and household and companies can be powered from other source.

**E-Newsletter: Coming back home in our state, Rivers State, for some years now, in the last administration, they were talking about installation of gas turbines at Trans-Amadi, Omuku etc, up till now we have not felt the positive impact. What do you think is the cause?**

**Prof Abam:** It is the same problem of government bureaucracy. When the state governor came up with this idea, most of us made suggestions, we suggested they should work with NSE, we told government, (Odili's government) to work with Nigerian Society of Engineers. We have experts that can help to make sure that these things work very well and are sustainable but government in her wisdom went into all sort of deals without getting proper professional advice, even from the stage of selecting the plants, the contractual aspect, agreement on the gas supply, in fact there was nothing on ground, no documentation, no engineering. It was after the plan that they went to tell NEPA for distribution and NEPA was not prepared. They are all failures. There should have been a proper planning of technology, distribution etc. They committed huge amount of money and deceived the public. But one thing we the professional body did not do right is that we did not stand up to say the truth. Some people went out to praise government that what was not done has been done, with the intention of getting contract and killing their consciences. We do not loose anything as professionals by telling the truth. That is what the public expect us to do as professionals trained in that aspect.

**E-Newsletter: Thank you very much for the audience given us today.**

**Prof Abam:** I want to advise that Professionals should not compromise their integrity with government. Thank you.