

Reliable Electricity Supply for Nigeria-What Will it Take?

By Bob Grabham*

After 18 years working for an oil company, followed by 18 years as an energy economics consultant, in April 2008 I made my first visit to Nigeria – to attend the first annual NAEE/IAEE Conference in Abuja.

From the conference, three things made a big impression on me. First, the warmth of the welcome I received. Second, the knowledge and enthusiasm of the NAEE student members. Third, that there is a whole generation of Nigerian school children trying to do their homework in a computer age with no electricity¹ - because the 10th largest net gas exporter in the world cannot supply enough gas to its domestic market. This final point has spurred me to write this article.

What will it take to ensure reliable electricity supply for the population of Nigeria? Some of the answers are physical – reliable gas supply, investment in gas infrastructure, investment in generation and other electricity infrastructure. These physical requirements were described in detail in the May 2008 Nigeria Gas Master Plan Roadshow². However, the Gas Master Plan is long on analysis and short on solutions.

In my view, to deliver these physical solutions first requires some difficult policy decisions – followed by demonstrated examples of successful policy implementation to win the confidence of the population.

Possibly the biggest policy decision is to accept that Nigeria is part of a global energy market and therefore, at some point, gas prices in the domestic market must reflect the netback price from international gas markets. Perhaps this is easier answered as two questions: when should gas prices in the domestic market reach the equivalent of the netback price from international gas markets? And what are the yearly steps in order to make the transition in gas prices from the current level to the netback equivalent?

These questions are best addressed through an iterative process of analysis and negotiation with gas producers. I am sure NNPC, the NERC and other Government agencies have the necessary models to calculate gas prices and resulting electricity prices for alternative average and marginal gas prices and for different levels of gas and electricity sector investment.

When it comes to negotiating with gas producers, maybe the second big policy decision is to accept that the State negotiators of the original exploration and production licenses and production sharing contracts (PSC's) failed to provide for domestic gas. Imposing a domestic market obligation (DMO) retroactively is unlikely to succeed because the international oil company (IOC) gas producers probably feel they have enough Nigeria risk without investing more to produce additional gas for the domestic market – especially low-price gas. In these circumstances, State coercion is unlikely to increase the amount of gas available for the domestic market – negotiation is the only way forward.

Both NNPC and the gas producers are understood to have engaged consultants to show the cost of producing additional gas for the domestic market. Not surprisingly, the producers claim incremental gas production costs are higher than those presented by NNPC and its consultants. As incremental investment and operating costs will be different for every field, the only solution would seem to be for NNPC, supported by respected independent technical specialists, to negotiate a Gas Supply Contract for incremental gas production from each field individually.

Gas producers are also likely to be concerned about credit risk and to want the option (but not the obligation) to sell to a State-guaranteed Single Buyer. A Single Buyer with transparent accounts would fulfil the aggregator role described in the Gas Master Plan, operate with a regulated margin to cover costs and ensure that any sector-specific Government subsidies are measurable and transparent.

Any Government subsidies should phase out over a pre-determined transition period. But what is the source of any subsidy? Some of the funds will come from tax revenues delivered under the Natural Gas Fiscal Reform Act (NAGFRA) – the rate and base for which must necessarily come from a collective negotiating process with gas producers. Any balance must come from other Government sources – and only the Government can decide how much it is prepared to invest. However, the social and economic benefits from electricity supply are immeasurable – the Government should just get on with that investment.

The end-result of what will inevitably be an iterative process of negotiation and analysis should be a gas price transition formula that can be fixed in legis-

*Bob Grabham works independently and as a NERA Special Consultant. He has extensive experience of energy sector reform in Central and Eastern Europe and in Asia. The views expressed in this article are his independent opinion.

See footnotes at end of text.

lation to provide certainty to investors and consumers alike. Projected gas and electricity prices should be published – as in the Multi-Year Tariff Order³.

The Multi-Year Tariff Order (July 2008 – June 2013) is a small step in the right direction – in that it is multi-year. However, the delivered gas prices on which the tariffs are based⁴ do not cover average gas costs – much less the marginal costs presented in NNPC’s own analysis⁵. Also, the MYTO provides for discretionary changes to generation tariffs in response to changes in inflation, exchange rates and delivered gas prices – when it should include an indexation formula that automatically changes the tariffs in response to changes in each of these parameters with a clear definition of how delivered gas prices are measured.

Perhaps the biggest challenge of all is to convince the population of Nigeria that if they pay more for electricity, supply really will become more reliable. The expression “seeing is believing” comes to mind.

There is a need for an integrated resource planning process to determine how the gas and electricity infrastructure (and potentially other fuels such as coal) should be developed in order to maximise security of electricity supply for each State or region. The objective should be to ensure that if/when the electricity supply fails in one region the impact in the rest of country is minimal. Such integrated resource planning with security of supply as its objective is unlikely to result in the cheapest option for energy sector development – but defining energy regions and demonstrating improved security of supply is essential to convince a sceptical population that increased electricity prices really do lead to a better electricity service.

The Government is not in a position to fund the required investment in energy infrastructure – only the private sector can mobilise investment of this scale. The Government launched the Nigeria Gas Master Plan Roadshow in order to attract private investors for gas sector development. Yet the Government seems surprised at the lack of interest by investors, when it is so obviously attempting to coerce the one group of private investors who have invested in Nigeria – the international oil and gas companies.

Potential investors in generation and gas and electricity infrastructure who, unlike the IOC’s, do not have an export option will need to be assured that their investment is safe and that they will achieve a rate of return commensurate with the risks. For the resulting costs to be acceptable to the Government, it must minimise the investment risks. This means offering initial contracts (PPA’s for generators; Ship or Pay contracts for gas and electricity transmission; franchises for distribution) and making sure that, when these initial contracts come to an end, effective wholesale electricity market arrangements are in place supported by a fair regulatory system for monopoly activities which balances the interests of investors and consumers.

Newsletter Disclaimer

IAEE is a 501(c)(6) corporation and neither takes any position on any political issue nor endorses any candidates, parties, or public policy proposals. IAEE officers, staff, and members may not represent that any policy position is supported by the IAEE nor claim to represent the IAEE in advocating any political objective. However, issues involving energy policy inherently involve questions of energy economics. Economic analysis of energy topics provides critical input to energy policy decisions. IAEE encourages its members to consider and explore the policy implications of their work as a means of maximizing the value of their work. IAEE is therefore pleased to offer its members a neutral and wholly non-partisan forum in its conferences and web-sites for its members to analyze such policy implications and to engage in dialogue about them, including advocacy by members of certain policies or positions, provided that such members do so with full respect of IAEE’s need to maintain its own strict political neutrality. Any policy endorsed or advocated in any IAEE conference, document, publication, or web-site posting should therefore be understood to be the position of its individual author or authors, and not that of the IAEE nor its members as a group. Authors are requested to include in an speech or writing advocating a policy position a statement that it represents the author’s own views and not necessarily those of the IAEE or any other members. Any member who willfully violates the IAEE’s political neutrality may be censured or removed from membership.

My message to the policy-makers in Abuja is to get the best advice you can on the issues raised in this article – from the World Bank and from leading independent experts. These are complex issues, there is no “quick fix” – but decisive action is required. Set a timetable for developing a clear, workable policy. Then, tell the people of Nigeria what you intend to do, with defined objectives and detailed steps – and keep them informed of progress during implementation.

Footnotes

¹ Footnote for electricity economists – in these circumstances, what is the Value of Lost Load?

² See www.ngmproadshow.org

³ NERC/GL059

⁴ US\$0.50/mmbtu in 2008 rising to US\$0.70/mmbtu by 2012

⁵ The Nigerian Gas Master-Plan, Gas Stakeholders Forum, Abuja, November 26th, 2007 - Slide 36