Lessons Learned from Nigeria

The Case of Cameroun and Ghana

Completion Report

I. Introduction

1. The Nigerian LP Gas Sector Improvement Study of 2004, produced by the Oil and Gas Policy Division with ESMAP funding, lead the Program to draw the lessons learned from the study and to envisage replicating this exercise elsewhere in the Africa Region. The objective of the Nigerian study had been to: (i) investigate and identify reasons for the failure of the LPG market in Nigeria to live up to its potential, (ii) develop a strategy for reviving Nigeria's domestic LPG market, and (iii) expand LPG availability to more consumers including to the poor. The stated quantified objective was to reach the Regional annual average of per capita consumption of 3.4 kg per capita in Nigeria's urban areas, within a reasonable timeframe.

2. In light of the successful outcome of the Nigerian LPG Sector Improvement Study, it has been suggested that lessons learned there should tentatively be applied to other countries likely to benefit from similar investigative and analytical work. Two countries, Cameroon and Ghana, were selected and their current and projected LPG markets were analyzed. They are reported in Volume I (Cameroon) and Volume II (Ghana).

3. A third report, Volume III, pulled together the LPG work that was done in Nigeria, Cameroon, and Ghana. Its objective was to determine whether LPG markets in developing countries share certain common characteristics and, if so, whether the lessons learned in Nigeria could be applied, in part or in whole, to Cameroon and Ghana. Volume III found many similarities but also some noteworthy differences in the three countries, suggesting that fundamental basic policy options overlapped to a significant degree, but that these would have to be adjusted to respond to unique conditions found in each country. VOL III also contained tentative policy recommendations for Cameroon and Ghana, which were reviewed by various World Bank Officials, with the principal results condensed below in II, issues and answers.

4. A wide dissemination exercise was carried out by the Task Team Leader before a global audience of renowned Government and Industry leaders and experts, at the World LPG Forum in Cape Town on October 23 and 24, 2007. This was in the form of (i) a Power point presentation (attachment 1) and (ii) a Round Table discussion which were both, well attended and lead to several Q&A and considered as one of the most interesting session by the Forum participants' evaluation. The Pakistani delegation specifically asked the Bank to advise the Government and Private Sector operators on the best way to address the burning issue of LPG subsidies, how to better targeting them to the needy and letting the market develop its full potential, with those willing and able to pay, especially the urban middle- and upper middle-class consumers.

II. Issues and answers.

5. The general understanding when preparing the study were that it never was its intent and that it would be unrealistic to pursue, a policy of unqualified access to LPG by an entire population. The principal force at work in expanding the use of LPG would have to be demand-driven. However, in those areas, predominantly but not exclusively urban, where an LPG infrastructure now exists or where one is under development, the local population should be encouraged to switch from wood or liquid fuel to LPG.

6. Apart from the very real shortcomings of LPG market infrastructure which were shared to different degrees by all three countries, there was agreement that the two principal factors that kept the poor from access or entering the market, were price-related. Prices of the fuel were often too high, relative to the essentially "free" cost of wood fuel, and they were too volatile. In addition, in a country such as Cameroon where 40% of the population lives below the poverty line of $32.00 per month, burners priced at $20 at a minimum and fuel tanks at $17.40 (5 kg) meant that an indigent household would have to give up 1 ¼ month's worth of money wages to switch to LPG, not counting the fuel itself. From a low income consumer's point of view, this is clearly an inordinately high entrance fee which acts as a real barrier to LPG consumption.

7. There was agreement as well that a subsidy program, or at least a transitional subsidy program, would be needed, if substantial numbers of current non-users of LPG are to be persuaded to make the switch. However, subsidy programs are extremely expensive to the underwriting government in terms of percentages of GDP absorbed or other national developmental opportunities foregone. That is why subsidy programs might not be sustainable in the long run as world energy prices continue to rise, especially if the subsidy takes the form of cash contributions for, or tax concessions on, fuel consumption. For better or for worse, "transitional" fuel-related subsidies more often than not turn out to be forever, or until phased out for lack of funds. While in force, they become entrenched in the economy, making consumers, especially poor consumers, dependent on them. This makes them politically and socially, considerably more difficult to phase-out than it was to introduce them in the first place.

8. Universal cash subsidies or tax concessions have proven to benefit the non-poor, high-volume consumers more than the poor low-volume users. Targeting the poor for subsidies of fuel purchases is difficult, since that would require the establishment and maintenance of a very expensive, cumbersome, ever-changing and corruption-prone data base to identify qualifying subsidy recipients. Attempts along those lines are generally doomed to failure. Intra-sector block-rate subsidies or lifeline rates, such as those used in the electric sector, are technically next to impossible to apply in the LPG market. In the electric sector, the consumption of each household comes from one provider and goes through one meter, presenting the opportunity for the use of efficient automatic billing procedures using low lifeline rates for minimal survival needs and increasingly higher compensating rates for greater amounts. In the multi-dealer LPG market where there is no such billing specificity the lifeline approach cannot be applied.

9. In reality, fuel subsidies offer limited chances for success in providing a long-term

solution to stimulating LPG consumption in preference to biomass fuels. Unless targeted to the poor, fuel-related subsidies are regressive and they are subject to leaks into the automotive fuel market, a condition they share with kerosene. Even where they have brought on conversions, these subsidies do not stop the use of biomass in newly converted households, most of which will use LPG occasionally or seasonally, with continued use of biomass, depending on cash availabilities. Most governments that have tried to fund such subsidy programs have found out that they are unable to carry the fiscal burden for long and have phased them out. Others are seriously considering phasing them out. In short, in decades of experimentation throughout the world, no effective fuel-based LPG subsidy scheme has been found. Accordingly, it was agreed that it would not be advisable to propose a fuel subsidy scheme that has repeatedly proven to lead to failure.

10. That leaves the option of facilitating access to LPG markets by subsidizing the one-time start-up cost of cylinders and cooking equipment. As mentioned earlier, a family below the poverty line living in Cameroon would have to give up more than one month's worth of its cash income to acquire the equipment it needs to make the transition from wood to LPG, which makes conversion prohibitively expensive.

11. Start-up cost subsidization could take the form of having the government subsidize the acquisition costs of small cylinders and low-cost appliances through cash contributions or through tax concessions. The obvious advantage of this targeted approach is that it is progressive, that it involves a one-time payment and thus does not constitute an ongoing and growing fiscal burden to the supporting government. As an alternative, the cylinder subsidy could be financed by large-cylinder users, i.e., by imposing a higher than competitive price on large cylinders that are used by the well-to-do segment of LPG consumers, with balancing discounts on smaller cylinders. This type of subsidy is not funded by the government and it is not affected by changing energy prices and therefore does not present the government with uncontrollable fiscal uncertainties. However, it would require the imposition of cylinder prices and the establishment of a balancing fund to overcome regional inequalities in distribution. Otherwise dealers in urban markets where larger cylinders dominate would mostly under-collect, and dealers in rural areas would likely over-collect on subsidies.

12. From the foregoing, it would appear that a targeted fiscal approach regarding start-up cost subsidization has promise. Exempting small cylinders (3-5 kg) from all taxes, and supplementing the tax discounts with partial cash contributions, if absolutely necessary, is the least cumbersome mechanism, but it is not free from problems. Reviews of similar subsidy regimes have shown that too low an LPG appliance threshold will entice poor consumers to make the switch, only to find out later that they cannot afford the still relatively expensive fuel costs. (That, by the way, is a common phenomenon in real estate markets in advanced countries, where a zero down-payment policy will boost residential sales, only to create difficulties when monthly payments come due, especially when there is a downturn in the economy). Insistence on a reasonable down-payment by potential LPG users will provide some assurance regarding their ability to meet future fuel needs. Of course, part of the start-up costs could be financed by micro-loans. This approach is close to the way the market would operate. While the overall equipment cost would be boosted by interest charges, the lumpiness of the capital "investment" is reduced and the consumer's cash-flow burden is eased.

13. An earlier exhaustive World Bank report on the subject of fuel subsidies has come to the conclusion that allowing market-determined prices to test consumer willingness to pay, and to give market forces a chance to equilibrate supply and demand, is likely to do more to expand the use of LPG than any of the subsidy schemes discussed above. The market option will be very much on the table in the recommendations that follow.

III. Conclusions and Recommendations of the Study

14. For the two countries here under review, it is recommended that a study be undertaken to weight the merits and work up specific proposals to stimulate the expansion of LPG fuel use. The proposals will build on the work done to date. They will primarily aim at the development of a market-oriented mechanism designed to expand and improve the quality of service, by creating an open and competitive LPG market with clearly defined and well-enforced rules and regulations for all participants. This will include free market access to all qualifying participants, free exports and imports, the development of regulatory standards, especially regarding safety and competitive behavior, and the establishment or upgrading of a regulatory authority, with sufficient funding and legislative backing to enforce ever evolving standards.

15. The proposed policy reviews will also assess subsidy programs currently in use in Cameroon and Ghana, especially their costs in terms of cash obligations and foregone opportunities, and they will make specific recommendations regarding the phasing out of ill-designed or ineffective subsidy schemes. It is not expected that fuel subsidies will pass objective and rational continuation analyses. The recommendations therefore, will likely propose that fuel subsidies be phased out.

16. The proposed policy reviews however will also asses the merit of start-up subsidies for small cylinders and low-cost cookers, to be funded through tax waivers coupled, if deemed necessary, with targeted micro-loans to needy urban and rural dwellers. These one-time start-up subsidies, which offer some promise of success and are less damaging fiscally, may well be part of the emerging policy proposals.

17. Beyond these generic policy proposals, the study will now address, country-specific critical issues as follows:

IV. Cameroon

18. *Current Status:* Even though the Cameroonian LPG market has grown over the years, it has failed to achieve its real potential. Total LPG consumption has more than tripled over the last twenty years and per-capita consumption has doubled, but much of the country's associated gas is still being flared and will continue too be flared for another 3 years, until a major associated-gas recovery project is completed. Perhaps the greatest hurdle Cameroon still has to overcome is the achievement of deeper and more evenly divided market penetration. Practically no LPG is used where it is needed most, in the Far North Province where the annual per-capita consumption is 0.1 kg. Efforts to stabilize the domestic price of LPG in the face of volatile international markets have been partially

successful, but at a substantial cost, since they have introduced a rigid pricing mechanism that keeps domestic market forces at bay. This has led to capital shortages in the industry and to shortages and obsolescence in equipment, which resulted in a sluggish growth and uneven use patterns as well as a high level of dramatic incidents, especially in the transport and marketing segment as well as at the distribution or consumption end. In response, there have been suggestions regarding the need to compel industry to expand into areas where, under the current system, little LPG is being delivered. Mandatory market adjustments generally signal the absence of effective incentives and if implemented, they would merely compound the existing capital shortage.

19. There is one area that does require compulsory action in Cameroon, and that is in the enforcement of safety and other regulations. A review of the current regulatory oversight mechanism is needed, including a determination of the character of the oversight board, its independence and non-involvement in operational activities, and its ability to develop and impose sanctions.

20. *LPG Industry Structure:* The three major participants in the Cameroonian LPG market are the government, quasi-public corporations, and private operators. While the government seems committed to move the industry away from government ownership and towards unimpeded private-enterprise markets, its presence and influence in the market continue to be pervasive and need to be minimized.

21. *Legal and Regulatory Structure:* A number of laws, decrees, and orders govern every aspect of the LPG sector. Among them, the Caisse de Stabilisation des Prix des Hydrocarbures under the Ministry of Trade is in charge of regulating the LPG distribution sector, where it operates the country's price stabilization and equalization programs which, as mentioned, have undercut the creative energies of a free market and have hindered rather than advanced the expansion of LPG availability. The effectiveness and continued reliance on the price stabilization and equalization funds needs to be objectively and critically probed. Meanwhile, the Ministry of Water and Energy is the lead agency for all administrative and technical activities of the petroleum products industry, including the development and implementation of legislation and oversight responsibility of all regulatory activities in the petroleum products sector.

22. *LPG Demand:* Almost all of the LPG consumed in Cameroon is used by the household sector. However, the development of an automotive market for LPG is slowly picking up steam, with potential leakages of subsidized fuel from the target household sector. Under almost any scenario, LPG consumption is expected to rise substantially over the foreseeable future, which gives rise to concern how the demand increase will be accommodated within the existing distribution infrastructure.

23. *LPG Supply:* The completion of the ongoing associated-gas project to capture natural gas currently flared at the wellhead, to strip it and ship the methane components to Equatorial Guinea for liquefaction and export, will create a new source of supply of some 300,000 MT of LPG per year for consumption in Cameroon. While this extraordinary opportunity is scheduled to come to fruition by 2010, current LPG import restrictions need to be removed to close the existing supply gap, and to allow the importation of LPG to compete with Equatorial Guinean LPG once it arrives. The impending arrival of massive LPG shipments represents a challenge since such a dramatic increase in LPG

availability will require substantial capacity investments to handle them.

24. *LPG Distribution Infrastructure:* The entire LPG marketing chain, from storage facilities and transportation to the distribution network, is underdeveloped and in urgent need of upgrading, rehabilitation, and new capacity development. The principal storage company in Cameroon, SCDP (Société Camerounaise des Dépôts Pétroliers), has not expanded its storage capacity in 20 years. As of 2005, the SCDP storage capacity for LPG was 3,077 MT below legal requirements. Similar problems exist in coastal transportation, where there is a shortage of safe (double hulled) marine vessels, and in railway and road transportation where serious regulatory and safety problems place equipment and people in jeopardy.

25. *Household Cooking and Lighting Demand:* In 2002, wood constituted by far the most important energy source in Cameroon, at 61% of the country's total energy consumption, with oil products running a distant second at 21%. Within the various oil products, LPG ran second to last, out of seven categories of oil products, at 3.1%, with aviation fuel being last. In other words, LPG consumption was, and continues to be, a relatively insignificant source of energy in Cameroon despite a significant endowment in LPG resources upstream.

26. *Household Survey:* A household survey conducted in 2001/2002 revealed that LPG consumption is unevenly distributed across the nation. Forty percent of the population lives below the poverty line, and only 3.7% of the poor households use LPG. This divergence in LPG consumption also manifests itself regionally and in terms of urban vs. rural consumption.

27. *Household Appliances:* Almost all of Cameroon's LPG is consumed in households, where it is used mostly for cooking, with limited use for lighting and refrigeration in rural zones that have no access to electricity. The use of LPG as automotive fuel, now in its early stages, will pick up if the fuel continues to be subsidized.

28. *Safety and Image:* In Cameroon, LPG has the reputation of being an unsafe fuel, and for good reason. In 2004, 20,955 households have experienced gas-related accidents resulting in the deaths of 279 people and injuring 4,270. This unacceptably high accident rate is almost exclusively attributable to careless handling of the gas in all sub-sectors of the LPG market, including storage, transportation, distribution, and above all consumption. The situation requires the development of new safety regulations and a more vigorous enforcement of existing regulations in the LPG industry, better training of professionals in the LPG sector, and a serious safety campaign targeted to address commercial and residential end-users.

29. *Investment and Funding:* Serious under-investment characterizes the Cameroonian LPG industry. There are shortages in storage capacities of major depots, an undersized and in part deteriorated truck fleet, a severe shortage of retail outlets and of LPG cylinders, to name a few. These shortages will become worse as consumption rises, unless the government finds a mechanism to attract investors through market-oriented policies.

30. *Automotive Use of LPG:* Even though, as of 2004, Cameroon had an estimated automotive fleet of 300,000 vehicles, LPG has not yet been put to significant use as an

automotive fuel, mostly because of the safety problems associated with LPG and because of the poor condition of the vehicles in circulation. This appears to be changing, however, as the price of LPG continues to be held below market clearing level, and especially in expectation of the massive arrival of LPG from the joint Cameroon-Equatorial Guinea associated gas recovery project.

31. *Availability of LPG to the Poor:* Only 3.7% of the poor households use LPG as a residential fuel. The average LPG availability rate in 2004 was 19.5% for the country at large; it was 38.1% in urban zones and 3.1% in rural areas. The LPG availability to the poor still seems a long way from coming to fruition.

32. *Special Opportunities:* The one unique event that makes Cameroon a worthwhile target for an LPG expansion program is the impending availability, in 2010 of some 300,000 MT/year of the fuel. Unless the LPG infrastructure is enhanced especially in storage and distribution, there will be no capacity to absorb the vitally needed fuel in the economy. This would subject the Cameroonian LPG sector to the Dutch disease, with all newly available LPG being exported, as was the case for Nigeria and leaving no trace of it in Cameroon. Addressing these infrastructure requirements at the earliest is prerequisite to mitigating unmet demand on the domestic market.

33. *Principal Concerns:* Cameroon is in the lowest quintile on the International Corruption Perceptions Index, ranking 138 out of 163 countries. There is a good chance that a substantial part of the new LPG-supply will benefit the well connected elite at the expense of the middle class or every-day consumer.

V. Ghana

34. *Current Status*: The LPG industry has made some strides since the launch of an LPG promotion program by the government in the early 1990s. LPG has gained a relatively high level of market acceptance among urban dwellers, but rural and peri-urban areas have remained largely unaffected. The uncertain supply of LPG from local refinery as well as imports to the Ghanaian market coupled with price hikes has compelled some current LPG users to switch back to traditional cooking fuels such as charcoal and firewood, and it has served as a deterrent to most potential users. The perennial shortage of the product is partly due to bottlenecks in the delivery infrastructure for LPG at the government-owned Tema Oil Refinery (TOR) and to operational inefficiencies within the refinery. An improved supply environment is essential to retain existing users and to encourage prospective LPG users to make the necessary initial cash outlay required for the wood-to-LPG conversion. It is also important that private investors be attracted to the distribution chain.

35. *Industry Structure*: An effective industry-wide LPG Association, currently absent, is needed to coordinate the efforts of the various retailers and distributors and to provide a channel of communication with all stakeholders, particularly with the National Petroleum Authority on pricing and regulatory issues. A dialogue should begin as soon as practicable among key industry players, particularly the existing LPG Retailers Association and the Liquefied Petroleum Gas Marketing and Oil Marketing Companies involved in the LPG industry.

36. *Policy*: The government's LPG policy has not achieved the desired result of ensuring improved access and safeguarding the integrity of the industry. Most operators in the LPG industry have not lived up to expectation with regard to adhering to standards and regulations and, most importantly, protecting lives and property. An improved LPG policy framework that promotes the expansion of the LPG infrastructure and prescribes pragmatic strategies to stimulate private sector investment is necessary. That policy should also be designed to help elevate the LPG industry to an improved level of performance.

37. *Regulation*: The National Petroleum Authority and the Ghana Standards Board lack the capacity to effectively regulate the various participants in the LPG industry. Over the years, regulation of the sector has been limited to screening applications for licenses. Monitoring LPG facilities to ensure conformity to and compliance with safety standards and regulations has been minimal due to the limited logistical and human resource capacity of the regulators. End-user safety standards and regulations are lacking. The Ghana Standards Board, which is expected to ensure adherence to them, either lacks the capacity or the will-power to undertake this task effectively. The capacity of the regulators will have to be strengthened to enable them to establish and enforce relevant laws and regulations for the smooth operation of the LPG industry.

38. *Supply*: The LPG supply in Ghana has been erratic due to unreliable deliveries from the Tema Oil Refinery. Diversifying the sources of supply of LPG for the Ghanaian market is critical for sustainable development of the industry. There is a need to get LPG closer to consumers by increasing imports and effectively decentralizing storage away from the refinery.

39. *Refinery*: Inefficiency and limited storage and loading facilities at the Tema Oil Refinery, which is entirely dependent on imports, have greatly affected the LPG industry in Ghana. Long down times at the TOR and inadequate loading facilities when LPG is available are hindering LPG availability on the Ghanaian market. The operating efficiency of the TOR has to be improved. Other refineries need to be established or, better, imports need to be liberalized, to supplement supply from the TOR. In addition, there is a need to increase storage, loading and unloading facilities across the country. Privatization of the Tema Oil Refinery appears to be inevitable to achieve state-of-the-art operating efficiencies. This will require considerable persuasion, as both the Ghanaian public and the Government consider the refinery to be the "last remaining industrial legacy" in the country.

40. *Distribution Infrastructure*: The LPG distribution infrastructure in the country is severely limited. It is mainly private-sector owned and concentrated in a few urban centers leaving the rural and peri-urban areas without service. The LPG distribution infrastructure of the country has to be increased to facilitate improved regional LPG service delivery and availability.

41. *Transportation*: The main mode of transport for LPG in Ghana is by road. The poor nature of the road network increases the risk of transporting the product. The establishment of LPG storage depots in strategic locations across the country will help improve the efficiency of road transportation and reduce risk. In addition, alternative modes of transport such as rail and pipeline will have to be considered in the near future

to supplement road transportation of the product. None of these improvements are likely to occur in a government-directed market.

42. *Cylinders*: The country has no efficient cylinder management system in place. Many cylinders in circulation are in poor condition and are either due for maintenance or disposal. The issue of who owns, who fills, and who maintains all cylinders in the country needs to be clarified. An appropriate cylinder management system should be established to deal with the threat of an ever-increasing number of dangerous cylinders circulating in the country.

43. *Access by the Poor:* There are a number of barriers limiting access to LPG by the poor. Key amongst them are the financial constraints. The high upfront cost of end-use equipment such as cylinders and stoves and the high recurrent cost of filling large cylinders are factors that inhibit access by the poor. An increased number of LPG retail outlets in the rural and peri-urban areas are essential to improve the availability of LPG. In addition, targeted subsidies on LPG appliances and financial support systems may be required to assist the poor to acquire LPG end-use appliances. Small cylinder sizes will also have to be promoted to reduce the heavy cash outlay associated with refilling large cylinders.

44. *Household Appliances*: A variety of LPG household appliances are on the Ghanaian market. However, there is a need to improve the technology for locally designed appliances to make them cheaper and more efficient. Adaptation of the existing appliances to meet local needs at home will help improve the acceptability of LPG among Ghanaians.

45. *Safety/Image*: There are currently no nationally accepted operational and safety standards in the LPG industry, which has a bad reputation for its poor safety standards. Appropriate safety legislation and guidelines for the LPG industry are required to streamline safety standards in the industry. Public education for all stakeholders is necessary to improve the safety environment in the industry and to instill consumer confidence in the product. In addition, the media should be engaged to support public education on LPG safety.

46. *Investment Funding:* Significant investments will be required in the LPG supply/distribution infrastructure to facilitate end-user access to the product. Potential funding sources for the LPG industry will have to include the provision of incentives to the private sector to invest in the LPG industry and, as a second-best alternative, the promotion of Public-Private Partnerships (PPPs). The PPP involves securing private-sector investments in partnerships with the public sector for capitalization of the LPG supply system to expand existing supply and distribution networks.

47. *Special Opportunities:* The one unique event that makes Ghana a worthwhile target for an LPG expansion program is the fact that the country has been selected by the Millennium Challenge Corporation for a massive $547 million poverty-reduction project. The two largest items in the assistance budget are agriculture development ($241 million) and transport development ($143 million). The first of these will stimulate demand for LPG by increasing the purchasing power of rural populations and the second item will improve the supply infrastructure thereby enhancing Ghana’s LPG delivery capability. If

an LPG market enhancement project were to be implemented, it could be coordinated with the Millennium Challenge Corporation Project, thereby leveraging the impact of the two projects beyond what they would be able to achieve separately. On the face of it, Ghana appears to be a worthwhile LPG-market enhancement target. The country is ranked seventieth out of 163 countries listed in the 2006 Corruption Perceptions Index. It is ranked fifth (along with Egypt and Senegal) among African Nations.

48. *Principal Concerns:* All indications are that Ghana is not likely to agree to privatize its Tema Oil Refinery. What to the objective market analyst is one of the principal barriers to market forces is symbolic of industrial accomplishments to the Ghanaians. That, and the removal of Ghana's current LPG price stabilization and equalization policy, which is popular in the country, may turn out to be politically out of the question.

VI. Strategy and Action Plans for Cameroon and Ghana

49. History is replete with instances where sound rehabilitation plans have been developed and presented to governments of emerging economies or developing nations, only to have them put on shelves with little or no implementation. This is an opportunity for change for both Cameroon and Ghana to let privates sector driven ventures lead the sector as was done in Nigeria. For these two countries, a novel approach is suggested, an approach that will gage the recipient government's willingness and political ability to implement, and implement fully, proven recommendations that will flow from the studies here proposed. This will involve an enticing reward / penalty approach as follows.

50. The rewards will involve the development of a proposal for Cameroon and/or Ghana along the lines of this brief and the LPG analyses that precede it, outlining the required changes and their impact on the recipient country's economy. This brief will include certain things that need to be done and that the government will have to be prepared to accept in principle as a precondition to the investment in the types of studies that will be required for a full market assessment and the development of a detailed LPG market rehabilitation plan. Certain key measures that are known to be needed for successful market rehabilitation will be spelled out (Introduce private participation in the capital- and the management of-, (i) the Tema Oil Refinery in Ghana and (ii) the Société Camerounaise des Dépôts Pétroliers in Cameroon, for example). If the governments can agree in principle to accept such measures, the reward will include a commitment to develop a full-fledged market rehabilitation plan, including a competitive investment procedure designed to find qualified and proven buyers/operators for newly privatized enterprises. If the governments cannot accept such measures up front, the investment in yet another study will not be justified and existing LPG market rehabilitation plans will simply be deferred at the expense of the end consumer, economic efficiency as well as the environment. .

VII. The Road Ahead.

Performance of the Sector: The Study does not suggest that prices will necessarily come down, or will be more stable, in the face of volatile world markets, following reorganization or more stringent enforcement of existing regulations in the LP Gas sectors. It states however that the existing pricing regime which, in the case of Cameroon includes equalization and a stabilization mechanism, has added its own costs and uncertainties to the price of LPG. Certainly, the introduction of tighter safety standards and their rigorous enforcement will, ceteris paribus, move prices upwards. Whether the downward pressures of removing monopolistic market behavior will fully compensate for these upwards movements in prices has not been fully investigated and is at present unknown. A more detailed price analysis is an absolute requisite in follow-up studies designed to produce workable policy recommendations.

Extending the Market for LPG. The deliberate use of the term "access" in the LPG Study follows the Nigerian LPG Market Study terminology. As used here, it generally means availability, but there may well be passages that lend themselves to a different interpretation. Indeed, the Study is skeptical of overly optimistic expectations and recommendations, such as the UN Millennium Project, which recommends, inter alia, that countries should ensure that at least 50% of households currently using traditional biomass for cooking be provided with easier access to modern cooking fuels by 2015. Instead, a more realistic target based on consumption patterns in neighboring countries was recommended, i.e., 3.7 kg per capita and there is an absolute need for the pricing issue in both countries to be further investigated.

Subsidy Schemes for LPG. There is no definitive suggestion in the LPG Study regarding subsidies, except a clear reluctance to allow them, and only for transitional purposes. There are repeated reminders that subsidies have a tendency become governmental liabilities that are extremely difficult to remove later on and if necessary, differential tax rates could provide one plausible approach and a viable possibility, but more work needs to be done to fully develop the idea. This is especially true for tax rates to be applied to competing fuels. Finally, the near tripling of oil prices over the last six years has led to unsustainable financial burdens for the governments (or state oil companies) in those countries which had attempted to moderate product price increases through direct subsidies. This has at times forced the subsidies to be phased out whereas the development and maintenance of an ever-shifting data base to differentiate the poor from the rich is very expensive, very inaccurate, and very prone to abuse through corruption. The Study focuses on appliance acquisition costs which may offer a workable and equitable approach to removing barriers to entry into the LP Gas market, especially if combined with making small loans available for the purchase of these appliances, cylinders or cookers. For cylinders, this would include a moderate down payment and an add-on interest and capital charge each time the cylinder is refilled, until the loan is paid off. The idea of using micro-credit financing arrangements is a specific LPG Study recommendation, at least in the Ghana LPG Study. In conclusion, there is a need to put more emphasis on pricing issues and subsidy mechanisms which is valid and deserves due consideration especially in a high price environment, which was not the case when the study was started and ensure that low income consumers would not fall back into wood and biomass with the related regression in progress made during the past decade.

That would mean of course reactivating the Cameroon and Ghana studies with a view to provide the in-depth analysis that they need for the development of specific and implementable pricing and subsidy strategies, in addition to the recommended sector regulatory and other requirements.