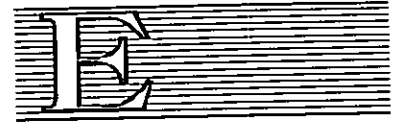


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Ad-hoc Expert Group Meeting
on Guidelines for Natural Resources
and Energy Development in Africa
with emphasis on privatization and deregulation

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**Towards Guidelines for Energy Sector Development in Africa,
with Emphasis on Privatization and Deregulation**

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Introduction

1. The African energy paradox is characterized by dire scarcity and gross underconsumption of electricity, oil and gas in the face of an abundant hydropower and hydrocarbon resource base. The deep-seated crisis is thus not due to a lack of natural, but of financial and technological, institutional and human resources. With no single actor being able to weather the challenges ahead, it is evident that modalities for partnership between governments, local communities, the indigenous private sector, TNCs as well as the international governmental and non-governmental communities need to be identified if the burning issues are to be successfully tackled.¹

2. Massive **financial resources** have to be mobilized for energy development in Africa (i) to achieve immediate energy security, i.e. meeting currently unsatisfied as well as rapidly growing demand, and (ii) to effect energy transition from traditional to commercial fuels within one generation. For the electricity sector alone this implies the mobilization of some 8-10 billion US dollars, estimated to be the shortfall over the next decade (out of a total investment requirement of 18 billion US dollars). Given the long lead time for most energy investment, this task is an urgent one which calls for the involvement of all development actors, significantly including the private sector.

3. **Technological resources** must be transferred, applied and, where needed, further developed and adapted, to operate the sector at efficiency rates compliant with sustainability criteria. While the energy sector in Africa currently displays devices from the three-stone fire to the most advanced drilling and refining equipment and nuclear energy technology (in South Africa), the bulk of technology available to the majority of the population is at the low end of the efficiency spectrum. In spite of progress in some countries, economic, social and cultural factors often mitigate against the introduction of alternative technology (e.g. improved woodstoves, solar cookers) and practices which could result, for example, in reduced biomass consumption. Past projects have often neglected the combination of these factors. - The introduction of renewable energy technology, such as PV systems especially for remote areas, is hampered by lack of capital to acquire the equipment, even though costs have been declining. The lack of large-scale facilitating schemes (subsidization for remote/poor users; incorporation of capital costs into tariffs; etc.) and of local private sector interest (and capital) have so far prevented marked expansion. - In the utility industry, still largely dominated by state-owned companies, the efficient use of existing technology was often hampered by bad management resulting in a lack of maintenance and thus high system and financial losses. Low customer satisfaction and payment morale are, in turn, preventing capital accumulation for system expansion and improvement. - While the technological status in the commercial fuel industry is, by comparison, at the high end (e.g. drilling), management and maintenance problems have also affected downstream activities of parastatals and led to fuel shortages even in petroleum producing countries. Also, the use of advanced environmental technology is lacking behind even where TNCs based in countries with high standards are the operators. -

4. **Institutional resources** for managing and operating the energy economy in Africa remain weak in most countries. At the national level, some progress towards rationalization has undoubtedly been made through legislation, Energy Master Plans and Energy Commissions/ Boards. But, in a host of areas, planning, transparency and accountability in implementation need to be strengthened if purposeful development is to take place and if non-statal actors, be they the private sector or communities, are to be attracted. The optimization of regulatory provisions with a view to promote efficiency and extension of services to the

whole population has so far been too slow and unsystematic a process. While some progress is being made at sub-regional level (e.g. SADC), Africa, unlike other regions in the world, has still no regional body to constantly reflect and act upon its strategic concerns. The long-conceived establishment of the African Energy Commission is yet to materialize.

5. In the development of **human resources**, some countries have undeniably achieved a high level of professional expertise, e.g. in the fields of engineering, marketing and management of their energy sector institutions and companies/utilities. But there remains a significant need (i) to upgrade the skills of cadres and workers in energy institutions and industries so that sound management practices, professionalism and rational regulations evolve and are enforced (e.g. environmental and occupational safety and health provisions); and, (ii) to include women in energy programmes not only as the carriers/providers of energy, but also at all professional levels and in skilled extension work. Both aspects have implications for tertiary and secondary education as well as for vocational training systems. Again, additional actors will need to be brought in and existing arrangements strengthened in order to meet the requirements of a sustainably operating energy sector.

6. In this vein, the purpose of Guidelines on energy sector development, to which this Ad hoc expert group is to contribute, is as follows:

- o to suggest principles and policy options for most effectively operating the energy sector in the interest of the general public, and
- o to identify where and how the private sector can best serve Africa's energy priorities.

7. In drawing up Guidelines for the energy sector which are nationally and regionally applicable, two factors need to be prominently borne in mind. First, within every country reigns a dichotomy, i.e. African energy economies are highly differentiated along the lines of rural vs urban, high vs low income, modern vs traditional economic activities, and, finally, of gender. In considering reforms, it is necessary to depart from the almost exclusive focus on the modern sector which prevailed in the past. Second, there is a marked difference in the degrees of freedom for policy formulation depending on whether a country is an importer or a significant producer of commercial energy, be it oil (incl. petroleum products), gas, coal or hydropower. Guidelines should therefore rather be seen as a framework within which national characteristics can be accommodated.

I. Strategic Background to Ownership and Regulation Issues

8. Energy issues and policies are invariably of strategic importance to a nation. Without secure commercial supplies, the modern sector and transport come to a stand-still; and without secure traditional supplies, and in the absence of a short-term alternative, the subsistence sector and the rural and urban poor are jeopardized in their very existence. Energy and socio-economic development are inseparable. Indeed, as Goldemberg et al point out, *as annual commercial energy consumption per capita increases and surpasses 2 toe per capita (or higher) in industrialized countries, social conditions improve considerably*. This stands in sharp contrast to the 0.53 toe recorded for sub-Saharan Africa². Beyond securing this absolute minimum level of supplies (in the context of which governments try maintaining strategic supplies of, for example, petroleum products), there is, hence, a need to provide

additional energy for development. Such energy must not only be reliably and ecologically soundly supplied, but, as the history of development from other regions teaches, it also has to be reasonably cheap.

9. It is a generational task of African policy-makers to reconcile these, at times conflictual, considerations. The precarious balance which needs to be struck between governmental involvement, regulation and control in the energy sector and increased private sector participation was summarized by the **First Regional Conference of African Ministers for the Development and Utilization of Mineral Resources and Energy**³ as follows:

Privatization and deregulation in the energy sector in Africa: Perspective and Issue

72. *The Committee observed that the energy sector in most African countries was owned and controlled by the state. The State was the owner, the regulator, the price fixer and the operator. This was based on the assumption that energy was a strategic commodity which was essential for economic growth and that the state had the responsibility to ensure a reliable energy supply at affordable prices to its citizens and the economy at large. The Committee noted, however, that comparative studies about the performance of the state owned energy enterprises indicated that their performance had been a mixed blessing. Some had performed well while others were complete failures.*

73. *The Committee underlined the need for the participation of the private sector in the energy sector, in order to mobilize the necessary financial resources for the development of the continent's vast energy resources. The Committee called attention to the fact that participation of the private sector in the energy industry should not lead to the abrogation of the state of its responsibilities as the ultimate guardian of the nation's natural resources. The state should continue to exercise its role to ensure balanced development and compliance with sound environmental policies. Furthermore the Committee stressed the need for devising regulatory mechanisms to prevent abuse and protect consumers from exploitation.*

74. *The Committee noted that currently there was an ongoing debate on what constituted the optimum role of government in Africa in economic activity. While some advocated that the state was ill equipped and disposed to engage in any economic activity and should confine itself to creating an enabling environment for the efficient operation of a free market system, others were equally vocal in asserting that in order to correct market failures or in the absence of a dynamic private sector, the state should play an active role in the energy sector.*

75. *The Committee stressed that reforms in the energy sector should be viewed as an integral part of a wide ranging economic reform programme. In the African context privatization should not be regarded as an automatic answer or a panacea to the problems of African economies and the energy sector enterprises. There was a need for striking a balance between the roles of the government and the private sector in economic activities; the critical issue was not ownership of energy enterprises but the creation of a conducive and*

enabling environment which enabled both the private and public sector enterprises to operate in competitive manner and allowed the operation of market forces.

II. Elements for a Regulatory Framework Governing Energy Sector Activities Involving the Private Sector

10. Grounded in the knowledge of socio-economic and environmental priorities, the conceptualization of deregulation, on one hand, and rational regulating, on the other, need to be well-distanced from any ideological ballast. Recent research is unanimous in its emphasis that a sound and transparent legal and regulatory environment is the single most important element in instilling confidence in potential investors, domestic and foreign. In essence, while investors are willing to take risks, these must be calculable. A priori, the regulatory framework therefore needs to be identified which is most likely to be useful in moving African energy economies towards greater involvement of non-statal actors with the goal of increasing productivity, sustainability and equity. Some elements for such a framework are suggested below:

- Legislation, Energy Master Plans

11. In order to project a general vision, it is imperative that long- and medium-term **Energy Master Plans (at national as well as at sub-regional levels⁴)**, in harmony with development strategies, legally backed by **energy legislation** and conceived by specialized bodies (Energy Commissions/Boards), are drawn up and implemented through programmes and projects. In this context, general guidelines for tariffs can be provided. Without such planning transparency as well as demonstrated commitment to realize the established goals, there will be uncertainty among potential investors, indigenous or foreign. Indeed, it is from the stage of formulation onward that all stakeholders - from the community level via private investors to the highest authority - need to be involved. Energy Master Plans will invariably be a reflection of macro-economic constraints as well as a compromise between short- and long-term perspectives, between profit maximization and social goals. They must, however, respond to sustainability criteria and promote gender equity.

- Indicative plan for energy investment priorities

12. The urgency of the energy transition, i.e. of considerably expanding the consumption of modern, high-heat-value and affordable energy, arises from the desperate need to secure productive employment for a rapidly increasing population (growing at 3% per annum). In quantitative terms, energy strategies and policies need to anticipate a rapidly evolving demand for electricity (annually at about 7%) and of transport fuels as car fleets expand. Depending on lead times for investments, a comprehensive temporally and spatially differentiated plan for energy investment priorities - on the part of government - is, therefore, essential in order to avoid misallocations of scarce public resources and to allow private sector interest to be targeted. Differential interest rates could be anticipated according to levels of priority, anticipated external and cumulative effects and target groups (discriminate subsidization).

- Governance, transparency and public accountability

13. Proceeds, especially from oil and natural gas, constitute an important source of foreign exchange for exporting countries and are crucial for the state budget. They may be devoted

to special funds, for providing resources for developmental programmes in urban and rural areas and for energy efficiency and diversification projects. Such proceeds have also been used for financing development in other countries in the African region. It is imperative that proper public control be exercised over proceeds emanating from national assets and over such funds. Improved governance is particularly important in order to limit the temptations arising in any rentier economy and the corresponding enormous leakages of national wealth into private hands. The public and the private sector must both be subjected to careful scrutiny and be held accountable.

- *Control of foreign-owned private sector monopolies and oligopolies*

14. The strategic relevance of energy assumes a larger stage as the well-established activities of a special segment of the private sector, major transnational corporations (TNCs), are considered. Since more than three decades, they have been involved in oil and gas exploration, exploitation, refining and distribution in Africa. Supra-national interests, e.g. of the respective home-base governments, have in many instances adversely affected internal peace and stability. Given their economic clout, TNCs can wield an oligopolistic if not monopolistic influence, even if operating in association with domestic capital. Of the legal and regulatory issues associated with the presence of TNCs, two shall be highlighted in this context.

15. In recent years, environmental issues related to the oil and gas industry have assumed prominence in some African countries as was highlighted by the **First Regional Conference of African Ministers for the Development and Utilization of Mineral Resources and Energy**⁵ which felt that such matters

had to be systematically addressed, particularly in light of the economic, social and political consequences that were increasingly associated with the failures in the past. (para 154)

Governments in African countries should be encouraged to work with communities to highlight such environmental issues and ensure that multinational companies did not escape their responsibilities. Such companies often did things in our countries that they would not dare do in their own. The resultant damage should be systematically assessed and redress sought from the offending companies. Political support as well as an effective regulatory system were needed to ensure compliance by these companies. (para 155).

16. Anti-trust legislation in developed countries is based on the experience that uncontrolled oligopolistic and monopolistic behavior may lead to artificial scarcities and sub-optimal allocation of national resources as genuine competition is absent.⁶ The task of judiciously regulating and controlling market domination is all the more daunting where parliaments, an independent judiciary, law enforcement and consumer rights organizations are not in place or weak. While petroleum legislation - governing the relation between the industry and producing countries - has over the years considerably evolved (see Guidelines on Petroleum Legislation in African countries - ECA/ NRD/ MES/ ERU/ 12/92), basically moving from concessions to joint ventures, the sphere of environmental, community and consumer protection in production and downstream activities has remained largely untouched. This is an area of relevance to oil-producing and -importing countries, respectively.

- *Provisions for energy diversification, conservation and general development purposes*

17. For African countries without sufficient domestic sources of commercial energy, the amount of foreign exchange used for importing products absorbs a major share of their often meager foreign exchange earnings. In order to effect the transition towards other energy sources (such as solar), levies are imposed to fund endeavors such as transition to Renewable Energy Technologies (RETs) and energy conservation. Yet, in many countries, the critical mass of thus generated public resources remains small and insufficient to tackle the transition task in a satisfactory manner. Best national practices, e.g. concerning effective public control over funds or successful schemes at community level (e.g. with commercialization of services), which have yielded results, should be exchanged among countries.

18. In pursuit of overall national strategic interest African countries have been utilizing national resources for ensuring the fuelling, at below world market prices, of their domestic economies. They have thus followed historical precedents of development, such as the one set by United States of America, in an attempt at economic diversification and indigenization. Throughout the 1980s, the contention that this constituted economically irrational subsidization and led to inefficient use of energy was refuted by the argument that energy prices needed to be seen in relation to average per capita incomes, and that prices at world market levels would stifle economic activity and stir rounds of inflationary pressures. Most governments have in the meantime raised transport fuel and kerosene prices as well as electricity tariffs, with inflationary as well as economically depressive effects, under structural adjustment programmes.

- Provisions for environmental protection and sustainability

19. National strategic concerns are usually geared to fossil fuels and electricity - those sources energizing the modern sector of the economy and, for example, the military. Yet, in the future, the management of traditional sources of energy, such as biomass and animal residues, will need to be addressed in a qualitatively new manner. Their increasing strategic importance arises from the fact that, being the only fuels of the vast majority of rapidly growing populations, their **depletion erodes crucial national assets**: soil, vegetation cover, arable land and water tables on which people depend for their livelihood. It is well-understood that, if the external effects of biomass utilization are considered, its costs would be exorbitant in many African countries where extraction exceeds regrowth.

20. Regulations concerning environmental impacts related to the exploitation and utilization of hydrocarbons and hydropower (urban air pollution, leaded gasoline, flared gas) as well as of biomass (e.g. charcoal production) need to be in place for the efficient operation of the sector at all levels: TNCs could yield benefits in the context of technology transfer and adherence to home-country standards. Small-scale energy operators (e.g. charcoal), in an effort to curb environmental devastation, could be held to sustainable biomass management or, if impossible, urged and assisted in alternative energy provision (e.g. in LPG distribution schemes).

- Provisions for establishing and safeguarding occupational safety and health (OSH) standards

21. The standards for OSH in the energy sector in Africa, where regulations exist, tend to be below those in developed countries and/or not well enforced. Yet, respiratory diseases are classically associated with hydrocarbon extraction (silicosis of coal miners, chronic bronchitis and carcinogenic exposure in the oil and gas industry, etc.) as are accidents, such

as gas explosions in coal-mining, platform-drilling and refining etc.. Added to these are radiation exposure in uranium mining and in nuclear power plants (e.g. in South Africa). There is a strong case for industry associations, Chambers of Commerce and Industry, transport associations and trade unions to collaborate and to ensure the adherence to standards. TNCs can play a lead role in introducing safer industrial practices.

22. A known, but largely unattended issue is the risk to which women and girls are exposed in their various energy-related functions, be it as carriers of heavy loads of wood or as cooks inhaling high levels of tar/ benzopyrene etc. As these activities tend to occur largely outside formal channels, their regulation is particularly intractable. It is therefore important to integrate women's health concerns related to energy activities into appropriate development projects and highlight the problem, at the political level, through its coverage in national master plans and in educational programmes.

- Inter-governmental cooperation

23. The securing of economically feasible energy supplies makes **collaboration at sub-regional and regional levels** imperative. Given the strategic national importance of energy, cooperation is, however, predicated on the existence of a climate of mutual trust and a long-term commitment among governments to join hands. Growth points or multi-country development corridors are most useful in creating the critical mass for ensuring economic viability of energy investments, both private and public. Among the areas for collaboration are joint resource exploitation; transboundary interconnections and electricity pooling; multi-country spanning pipelines (e.g. gas); agreements on refining; and, joint bulk purchases of petroleum products. Increasingly, environmental cooperation in areas of common interest - including environmental regulations governing the energy sector - is being pursued.

III. Suggested Guidelines for Private Sector Involvement - the Case of Electricity Services

24. The overriding message emanating from recent research appears to be that while reform towards higher productivity is essential, the success is not necessarily linked to the form of ownership. Representative for the discussion, issues debated in the electricity sub-sector are presented below.

25. A consensus is emerging among various actors on the priorities for the development of the sub-sector, based on lessons learnt in Africa and elsewhere. At a recent World Bank/ESMAP organized Symposium on Power Sector Reform and Efficiency Improvement in Sub-Saharan Africa, they were summarized as follows: *"(1) expanding access to electricity for rural and low-income households, (2) improving pricing of electricity, (3) global reform trends, (4) need for commercialization of African utilities, (5) need for regional integration and power trading, (6) social consequences of reform, and (7) need for private sector participation."* It is most interesting to note that the report stresses that *"Structural reform is a separate dimension from privatization of the electricity industry, and reform can be highly effective in improving results without privatization."*

26. Contrary to earlier beliefs, it is not correct that market size and domestic capital market endowment are the essential factors for attracting private foreign investors to the utility industry, but, instead, institutional, legal and regulatory transparency. The

determinants for attracting private investment are, according to the same report, macroeconomic stability (control of inflation); credible restraints to the arbitrary intervention of government; adequate financial returns; clear property rights; freedom from the fear of expropriation; and firm agreements, esp. concerning the repatriation of profits. Once these elements are in place, neither subsidization nor tax breaks are required. The report emphasizes, however, that Africa needs "transitional strategies" and to build up a reputation for sound regulation and economic management - for which donor support was obtainable (technical assistance, cofinancing, guarantees for private investments).

27. The report equally spells out the **risks of private sector involvement**: increase in tariffs (at least initially until competition exerts a depressing influence); regulatory capture (nondisclosure of information to the regulator); and cherry picking (utilities focussing on the urban, large, nonpoor consumers). While the report claims that eventually these risks were far outweighed by the benefits to all stakeholders, it also concedes that the special conditions of Sub-Sahara Africa need to be considered and required a range of supportive measures.

28. Against this background, **basic guiding principles**, for the reform of the electricity sub-sector in Africa, as privatization is being considered, are suggested to be as follows:

- o greater autonomy for the utility industry from government control and interference;
- o commercialization of the utility industry (from generation, transmission to distribution);
- o selection of most appropriate reform measures (ranging from performance or management contracts to outright full-fledged privatization);
- o efficiency improvement in generation; reduction of transmission losses;
- o regional power pools, interconnections in order to reap economies of scale;
- o tariff reform which reflects costs (including the consideration of inclusion of connection and of equipment - in the case of solar PV systems - costs in the tariff structure; subsidization to low income households)⁸;
- o sound analysis of resource and demand potential (temporally and spatially disaggregated); generation potential and market size per supplier;
- o incorporation of rural power supply schemes (central or decentralized/stand-alone/hybrid) into the planning of the utility industry;
- o feasibility of diversification - involvement of independent power producers (IPP), including supplies by small producers feeding self-generated (solar/wind/hydro) energy back into the grid against credit;
- o institutional and human capacity-building plans;
- o schemes for technology transfer;
- o establishment of an independent regulatory body in charge of devising and monitoring adherence to regulations to limit market controlling behavior of oligopolistic/monopolistic suppliers (e.g. checking tariff proposals);
- o promotion of consumer organizations and their representation in regulatory boards, commissions etc.;
- o devising and monitoring of environmental regulations concerning modalities of generation, transmission and appliances; efficiency criteria (Environment Ministry in collaboration with regulating body and ministries of energy, health, etc);

- o incorporation into the planning process and into operations of international commitments, such as climate change mitigation/ combatting desertification into national strategy, plans and programmes; recognition of externalities.
- o credit schemes for extending the financing of stand-alone systems, such as wind, solar PV and small hydro schemes;
- o community involvement through fund-raising (e.g. for local transformer, streetlighting) and in-kind contribution (work).
- o clear definition of role of international donors, multi- and bi-lateral in capacity-building and human resource development.

Notes

1. For a comprehensive review of privatization issues in the European energy industry, see A. Barnett. *Privatising European Energy. Issues and Lessons*. Financial Times, Energy Publishing. London 1994
2. UNDP. *Energy as an Instrument for Socio-Economic Development*. (edited by Jose Goldemberg and Thomas B. Johansson), New York 1995.
3. UNECA. *Report of the First Regional Conference of African Ministers for the Development and Utilization of Mineral Resources and Energy*, Accra (Ghana) 20-23 November 1995 (ECA/NRD/RC/DUMRE/MIN/6)
4. SADC. *Energy Policies and Strategies*, Mbabane 1996
5. UNECA. *Report of the First Regional Conference of African Ministers for the Development and Utilization of Mineral Resources and Energy*, Accra (Ghana) 20-23 November 1995 (ECA/NRD/RC/DUMRE/MIN/6)
6. Unchecked monopolistic structures inherited from colonial times remain a highly important element in the post-colonial economic system and, as Claude Ake analyzed, "hampered the development of productive forces by discouraging competition". Any thorough discussion seeking to identify a larger role for the private sector and genuine competition will need to revisit the topics of colonial and post-colonial monopolies in Africa, their role in the emergence of statism and "the tendency to recede to primitive accumulation" (Ake, Claude. *A Political Economy of Africa*, New York, 1981). Most structural characteristics appear to linger on and explain why no fundamental socio-economic transformation has materialized.
7. ESMAP (World Bank/UNDP). *Symposium on Power Sector Reform and Efficiency Improvement in Sub-Saharan Africa*, Johannesburg, 5-8 December 1995, Washington 1996
8. If PPP (purchasing power parity) exchange rates are applied, electricity tariffs in Africa are among the highest in the world, well above the 11c per Kwh common in developed countries;