Republic of Senegal

United Nations

Operationalizing the NEPAD Energy Initiative:

Workshop for African energy experts, June 2-4, 2003,

Dakar, Senegal

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1. Introduction

Background

The New Partnership for Africa's Development (NEPAD), adopted at the OAU Heads of Summit in Lusaka, Zambia, in July 2001, recognizes the important role that energy plays in the development process of African countries not only as a domestic necessity but also as a factor of production whose cost directly affects prices of goods and services, and the competitiveness of enterprises. In this regard, NEPAD has identified actions that need to be taken to address the critical barriers to universal access to energy in Africa. Energy also featured prominently in the deliberations of the World Summit on Sustainable Development (WSSD), held in Johannesburg in 2002. In the WSSD Plan of Implementation, the section on Africa specifically referred to the steps, which needed to be taken to deal effectively with energy problems in Africa. A number of concrete activities under Track II of the WSSD outcomes address the needs of energy in Africa, and these are in line with NEPAD's objectives in the energy sector.

NEPAD has adopted a partnership strategy to promote development of the African energy infrastructure. In this regard, the NEPAD document has drawn up a short-term Action Plan, which identifies its priorities in the energy sector. The Plan comprises 23 energy projects, which fall into four categories—power systems; gas/oil, studies; capacity building and facilitation. However, further actions are needed to elaborate these projects in order to operationalize them. In addition, under the partnership approach, the roles of other partners to support the energy plan also need to be elaborated. NEPAD has explicitly called for use of African experts in delivering on its energy sector objectives, in partnership with international partners and experts. It is in this framework, the United Nations[1], in collaboration with the Government of Senegal, convened a workshop of African energy experts on ***"Operationalizing the NEPAD Energy Initiative"***, which took place from 2-4 June 2003 in Dakar, Senegal.

Objectives

The overall objective of the workshop was to provide a forum to begin addressing the critical energy issues facing Africa and to elaborate the actions needed to operationalize the NEPAD energy initiative. The specific objectives of the workshop included, among others, the following:

- Review the elements contained in a paper prepared by the United Nations Department of Economic and Social Affairs for consideration in support of the operationalization of the NEPAD energy initiative;
- Discuss strategies to enable NEPAD and its partners to move toward implementation of the Short-Term Action Plan;
- Explore ways to ensure that the outcomes of the WSSD relating to Africa contribute to the implementation of the NEPAD energy objectives, and identify additional short-term energy projects in line with the WSSD implementation plan;
- Identify priority position papers and research areas for the energy sector; and

[1] The Department of Economic and Social Affairs; the Office of the Special Adviser on Africa; and the United Nations Environment Programme Collaborating Centre on Energy and Environment

- Examine the role of development agencies, educational and research and development institutions and non-governmental organizations in the implementation of the NEPAD Energy Action Plan.

Participation and thematic focus

More than 38 participants attended the workshop. These included 30 African energy experts, drawn from the private sector, universities, research institutions, non-governmental organizations (NGOs), and government agencies, from 13 countries in the five sub-regions of Africa; and representatives from the NEPAD Secretariat, international organizations, including the World Energy Council, the United Nations Industrial Development Organization (UNIDO), the United Nations Secretariat, the United Nations Environment Programme Collaborating Centre on Energy and Environment (UNEP-UCCEE) and Electricité de France.

Organized in plenary and working group sessions, the workshop allowed for interactive dialogue and debate among the participants on the strategies and mechanisms for operationalizing the NEPAD energy initiative. The three-day workshop was organized around 8 topics regarded as essential for elaborating the NEPAD energy initiative.[2] Four background papers on key topics—hydropower development; renewable energy development; electric power development and trade; and energy access in rural areas–were commissioned and circulated prior to the workshop,[3] in order to inform discussion and facilitate the formulation of concrete proposals. The United Nations Department of Economic and Social Affairs also prepared a paper for the workshop containing elements for consideration in support of the operationalization of the NEPAD energy initiative. The resource persons presented the papers and also participated in the workshop.

The outcomes, including the recommendations, of these discussions were further developed in working groups, culminating in the formulation of workshop recommendations. This report provides an outline of the discussions that took place, the output of the working groups, and the final workshop recommendations. These are intended as concrete, practical contributions in support of the NEPAD energy initiative.

Opening session

Honourable Mr. Macky Sall, Senegal's Minister of Mines, Energy and Water, made the opening statement. He extended a very warm welcome to participants and wished them a successful meeting. While recalling that NEPAD encompassed a long- term strategy to attain sustainable development in Africa, he reminded the participants of the need to pay attention to meeting in the short run specific needs of African people. The Minister went on to say that Africa was faced with a situation of the lowest rate of consumption and access to modern energy in the world, and in this situation the strategy of NEPAD was to establish an environment to exploit Africa's relatively abundant, if unevenly distributed, energy resources.

[2] Work Programme attached to this report as annex I.
[3] The topics covered were: hydropower development, renewable energy development, electric power development and trade, and energy access in rural areas.

He underscored that NEPAD energy strategy involves building transnational and regional production and transport infrastructures. To this end, African regional economic communities and States had identified 34 projects, worth US$ 27.3 billion, to be implemented in the short and medium terms in the five African sub-regions. These projects include the exploitation and development of the hydropower potential of river basins, and the development of transmission grids and gas pipelines so as to facilitate cross-border energy flows. He then recalled the critical involvement of the African Development Bank (AfDB), which had elaborated a Short-term Action Plan (STAP) comprising energy projects that had attained an advanced stage of preparation and for which feasibility studies had been carried out.

He stressed that the workshop and other initiatives needed to add value to those initiatives currently underway and those being planned. As regards the status of implementation, he reminded the participants of the completion of institutional and regulatory frameworks that should be guiding the Echange d'Energie Electrique en Afrique de l'Ouest (EEEOA) as well the setting up of the Observatoire de l'Energie. He remarked that the core NEPAD staff was quite small, bringing to the fore the need for institutional support.

In concluding his statement, he expressed the hope that the workshop would result in recommendations that could help to effectively implement the NEPAD energy strategy.

Ms. Yvette Stevens, Director in the Office of the Special Adviser on Africa made opening remarks on behalf of United Nations. She thanked the Government of Senegal for facilitating the convening of the workshop in Dakar, Senegal. Ms. Stevens recalled that the United Nations General Assembly had welcomed NEPAD as a programme of the African Union (AU) and had endorsed it as the framework for support to Africa by the international community and the United Nations. She pointed out that NEPAD's emphasis on African ownership set it apart from the past initiatives on African development.

Referring to the development goals set by NEPAD, Ms. Stevens stressed that energy would be a key factor in meeting these objectives. She noted that, although Africa is rich in energy resources, the energy sector was plagued by a number of problems, which NEPAD seeks to address and remedy.

In closing, Ms. Stevens challenged Africans to elaborate their needs succinctly, identify and undertake those actions feasible within the existing resources, and gear up to benefit from existing resources and opportunities, of which other parts of the world had been making greater use.

2. Summary of plenary proceedings

Session 1: Taking the NEPAD initiative forward

In his remarks, Mr. Alioune Fall, President of the Commission de Régulation du Secteur de l'Electricité **(**CRSE), recalled that the NEPAD Short-Term Action Plan (STAP) was the outcome of an extensive process, featuring a number of meetings in the different sub-regions. The African Development Bank (AfDB) had played an important role in identifying suitable projects. He noted that, to accommodate concerns raised by President Wade of Senegal, the portfolio of projects had been modified to include partnerships between developed and developing countries. He informed that the AfDB and the Economic Commission for Africa

(ECA) had been tasked with developing a medium- to long-term action plan under the NEPAD energy initiative.

Mr. Fall then highlighted areas, including the following, that the workshop could address in taking the NEPAD energy initiative forward:

- Untapped opportunities for renewable energy development in Africa flowing from the World Summit on Sustainable Development (WSSD);
- Proposals on how to operationalize the STAP and the NEPAD energy initiative;
- Examining the roles of African countries, ECA, and the AfDB; and
- Considering how to prioritise donor support.

Finally, Mr. Fall underlined the need for coordination, so as to avoid the duplication of effort.

Ms. Stevens provided an overview of the STAP energy projects, stressing the need to examine these projects with a view to their elaboration and to identifying means for their implementation.

Mr. Reatile Mochebelele, representative of the NEPAD Secretariat, provided an update from the NEPAD perspective, clarifying that NEPAD should be perceived as a facilitating organ for creating partnerships and not as a funding or implementing agency. He noted that the AfDB was chosen as the lead agency for NEPAD on infrastructure because of its long-standing involvement and experience in facilitating the development of infrastructure in Africa. The Heads of State considered this approach to be a way of accelerating the implementation of projects. He explained that the STAP is composed of projects that meet the following criteria: their contribution to African economic integration; completion of feasibility studies; and also those that are ready for implementation.

He went on to say that the African Regional Economic Communities (RECs) have ownership of all the projects that comprise the STAP, while the role of NEPAD is to assist the RECs in raising funds for implementation and to intervene to remove political obstacles, where they exist. He also informed participants of proposals to create centres of excellence in the water and energy sectors. In this context, he invited expert advice and inputs that would be critical to the success of the proposals for energy training, which would require regional sharing of resources, an undertaking that NEPAD would support.

In presenting an overview of the current status of NEPAD, Mr. Mochebelele noted that its Heads of State and Government Implementation Committee (HSGIC) had been increased from 5 to 18 members and that the proposed extension of the lifetime of the NEPAD Secretariat, from 12 months to 3 years, had been accepted by the HSGIC and would be presented to the AU Summit in Maputo, Mozambique, for approval. He informed that while the NEPAD Secretariat had experts in the areas of health, environment, information technology, agriculture, and water and sanitation, no experts had yet been appointed in energy and transport.

A joint presentation by resource persons, Mr. Ogunlade Davidson, Mr. Youba Sokona and Ms. Njeri Wamukonya, provided an overview of the African energy situation, with an outline of the main challenges and summary suggestions for a plan of action in key areas. The presentation noted that sub-Saharan Africa showed a very low consumption of commercial

energy, with some two-thirds of energy produced being exported. The areas covered in the plan of action included human resource development, oil and gas development and use, power sector development, regional co-operation and rural transformation.

On the issue of financing, it was emphasized that sustainable local sources of financing needed to be mobilized to reduce the dependence on external sources such as official development assistance (ODA) and loans and attention should also be given to improving financial management. Financial resources should also be deployed to develop downstream infrastructure, in order to benefit more for fully from energy resource extraction. The presenters noted that vast quantities of natural gas, a relatively clean source of energy, were being flared rather than captured for productive use.

The presenters urged the need to take steps to elaborate an African energy agenda, which could be assisted by establishing an African Energy Ministers Forum and at the same time building the analytical and institutional capacity to flesh out and implement the agenda. Under human resource development it would be necessary to develop the technical and negotiating capacity by designing and implementing targeted regional training programmes. A roster of African experts in energy could be a good source of tapping on and mobilizing existing human resources for specific projects.

A concrete suggestion made in connection with improving oil and gas trade across Africa was to establish a fund fuelled by exporters for development in importing countries, which would mirror programmes by Mexico and Venezuela where 20 per cent of the value of oil purchased by a country is made available to it for development projects. The presenters concluded by calling for the elaboration and adoption of a continent-wide energy policy and strategy framework.

In the discussion that followed, participants expressed the view that the workshop focus on the identification and elaboration of strategies to operationalize the NEPAD energy initiative and not discuss the relevance of the NEPAD initiative as a framework for African development. However, the NEPAD approach to the STAP was questioned with the observation that a number of projects in the Plan were focussed on exporting energy, which, in light of the continent's need for energy, could be seen as being in conflict with the overall agenda of NEPAD. It was also noted that the AfDB has a conventional banking approach with respect to project conceptualisation and thus might not be the appropriate agency to develop project plans for NEPAD.

The view was also expressed that, while having a niche role, focusing on renewable energy and energy efficiency were in themselves inadequate in addressing Africa's development and energy needs. It was added that renewable energy did have specialized niche in addressing some aspects of the Millennium Development Goals (MDGs). On the subject of capacity, it was underscored that Africa has significant under-utilised expertise, which the NEPAD Secretariat can tap into for appointing experts in energy and transport at the NEPAD Secretariat. It was suggested that consideration be given to drawing up and maintaining a roster of experts in energy to facilitate information on the nature and extent of the existing capacity in the region.

Session 2: Hydropower Development

The background paper on "Hydropower Development in Africa" was introduced by a. resource person, Mr. E.A.K.Kalitsi. In presenting the key findings of his paper, Mr. Kalitsi noted that the contribution of hydropower to Africa's primary energy needs at present amounted to some 32 per cent.[4] He went on to say that Africa is endowed with extensive hydropower potential and of the feasible hydropower in Africa, less than five per cent was being exploited. However, low demand and a dispersed population hampered rapid exploitation. Although small hydropower constitutes only small proportion of the technically feasible hydropower potential in Africa, it has the potential to service the energy needs of dispersed rural populations and where it was found to have a competitive advantage over wind, solar and other sources of energy.

He emphasized that it was large hydropower that could be exploited economically to meet the bulk of Africa's demand for electricity. Such large projects were best developed as regional projects and would require establishing transmission grids in a phased manner, so that electricity could be transmitted as the various plants came on line. Such phased developments should lead, in the long term, to an Africa-wide interconnected transmission network. In the medium term, sub-regional interconnected networks should be pursued aggressively. He observed that the current lack of interconnections and an electricity market posed a major barrier for regional projects.

Mr. Kalitsi was of the view that NEPAD had a role to play in encouraging regional trade in electricity and assisting the RECs and utilities to develop a proper policy framework and tariff environment. He also drew attention to the environmental and social issues associated with hydropower development, and suggested strategies to mitigate some of the negative consequences. On the subject of financing, he noted that the historical sources of funding for hydropower projects – public finance from bilateral and multilateral sources – had largely dried up, leading to an increased interest in the contribution of private sector finance. However, the technical, economic, environmental and social risks associated with hydropower were such that in the context of Africa they pose challenges that deter private capital.

As regards moving forward, he suggested that the objectives in the short-term should be to improve existing hydro capacity and to advance the development of regional projects that had already been identified. As a concrete measure, he suggested that task forces be formed to map out existing hydropower resources and work with the RECs and appropriate national institutions to undertake the necessary tasks in the project development process, including identifying financing opportunities.

In the discussion that followed, participants stressed the need to mobilise funds, from both African and external sources, for hydropower development. It was noted that NEPAD's role should add to, and not duplicate, efforts in the area of hydropower and interconnections. In this regard, it was suggested that lessons could be drawn for NEPAD from the experiences of the operations of the Southern African Power Pool (SAPP) and Western African Power Pool (WAPP). At the same time, it was observed that the SAPP and WAPP were progressing

[4] This figure is a percentage of primary energy consumption and does not include biomass, mainly in the form of fuel wood, charcoal and animal dung, which are the principal sources of energy in sub-Saharan Africa.

at a slower pace than expected, and that NEPAD could assist by identifying and removing barriers to the advancement of these initiatives.

Session 3: Renewable energy development

Mr. Stephen Karekezi, a resource person, presented the main findings of the background paper on "Renewable Energy: Prospects and Limits". The paper included an overview of the general status and prospects of renewable energy technologies (RETs) – ranging from biomass through to geothermal energy – in sub-Saharan Africa. Although in his view renewable energy could meet a significant proportion of the energy demand from the industrial, agricultural, transport and commercial sectors, he noted that there was a growing consensus among policy makers that efforts to disseminate RETs had fallen short of expectations. The success of RETs in the region had been limited by a combination of factors that included: poor institutional frameworks and infrastructure, inadequate RET planning policies, lack of co-ordination and linkage in RET programmes, pricing distortions that have placed renewable energy at a disadvantage, high initial capital costs, lack of skilled manpower, and weak maintenance and service infrastructure.

Mr. Karekezi underscored the need for African governments to pursue both short- and long-term renewable energy policies and programmes. The policy programmes should be designed to demonstrate the economic and environmental benefits of renewables technologies to Africa's poor. Priority should be given to highlighting the real and tangible economic benefits – such as job and income generation – that renewable energy programmes can deliver to the region. A short-term, fast track programme would consider the implementation of projects that have proven track records and that maximise the use of local resources, expertise and available finance. He cited as examples biomass-based co-generation, geothermal energy and small-scale renewables (improved cooking stoves and kilns, solar dryers, solar water heaters, wind pumps, and small hydro).

The long-term programme would build on the short-term programme and rely largely on ongoing and planned energy sector reform to establish an enabling environment that would attract both bilateral or multilateral, as well as private finance, for major investments in both national and regional renewable energy projects. Examples of such projects include: large-scale wind power projects, large-scale urban waste-to-energy projects, and long-term capacity building and policy programmes. He underlined that the careful selection of appropriate renewable energy technologies also needs to be accompanied by innovative financing mechanisms. He also highlighted the potential contribution that renewable energy can make to employment creation and skills acquisition.

In the ensuing discussion, it was observed that African countries had opposed specific targets for renewable energy at the WSSD because such targets were often tagged to particular technologies. Moreover, the technologies in question frequently did not contribute to Africa's poverty alleviation agenda and did not cover the full range of renewable energy sources available on the continent. Participants were of the view that African energy experts working on renewable energies should be realistic about the contribution these sources can make and relate this information to the donor community.

It was also argued that the comparative cost of renewable energy technologies remains high and that Governments should not subsidize these sources, as the opportunity costs are even higher. Furthermore, renewable sources would not be able to satisfy the energy demand

industry, a critical developmental need. At the same time, the role that renewable energy can play, especially in electrifying rural areas, was recognised. In addition, geothermal energy and modern biomass were identified as two areas where further development could be of benefit to Africa.

Session 4: Fossil fuel development and trade

This session commenced with a presentation on fossil fuel development and trade in Africa by Mr. Michel Lokolo. He stressed the need for partnerships in the development of oil and gas on the continent, especially in constructing pipelines. He recalled that some projects, such as the West African pipeline are underway, while others, such as the Trans-Saharan pipeline, still need to be developed. He called for further development of this source of energy so that domestic demand could be satisfied by oil and gas produced on the continent. He underlined the need for NEPAD's role in catalysing the various projects in the STAP.

In the ensuing discussion, it was noted that the promotion of LPG had led to the increased use of this fuel in a number of cities and many rural areas across the continent. It was suggested that the factors that had contributed to the success of this process should be documented and shared to enable replication, with the support of NEPAD. It was also proposed that a revolving fund, similar to the one adopted in Colombia, could be set up in Africa to support the small-scale local exploration of oil and gas.

Sessions 5 and 6: Electric power development and trade, and Power sector reform

Sessions five and six, on "Electric power development and trade" and "Power sector reform", were combined. Three papers were presented in this session. Surveying the status of the African power sector Mr. Xolani Mkhwanazi, a resource person, noted that it was very small in comparison with the geographic size and population of the continent. He went on to say that at present numerous small interconnections between neighbouring countries existed, however, the only operational regional power pool was the South African Power Pool (SAPP). In addition progress was being made towards finalizing the establishment of the West African Power Pool (WAPP), which would link 14 African countries already affiliated through the Economic Community of West African States (ECOWAS).

The paper noted that the lack of suitable transmission infrastructure and weak local demand were the two key factors holding back optimal utilization of Africa's diverse energy resources. The changing nature of project finance – from grants and "soft loans" to private sector investment – had also had an impact on the power sector in Africa. Many projects had simply been unable to meet investor requirements. Accordingly, satisfying investor requirements should therefore be given priority attention in the NEPAD energy work programme.

Mr. Mkhwanazi stated that while regional and inter-regional trade in electricity needed to be promoted in Africa, it was also necessary to improve the performance of the power sector in individual countries. He summed up the problems facing the electric power sector in Africa as follows: its small size when compared with other regions of the world, limited exploitation of opportunities for interconnections, poor management performance, inability to mobilize the funds needed for expansion, weak maintenance capacity, inappropriate tariff rates, and inadequate revenue collection mechanisms.

The paper proposed a strategy to overhaul poorly performing utilities and to establish financial management along market lines. He underscored the need to take strategic and systematic measures for utilities to improve performance and remain solvent regardless of whether they were in public or private sector, Among the steps that needed to be taken included: setting tariffs based on real cost, effective collection of revenues, and the minimization of wastage and loss in the delivery of energy services.

In order to meet the rapidly growing demand, and to improve the continent's prospects for sustained economic growth, commitment from all African countries was urgently needed to bring about integrated regional solutions and significant new investment in infrastructure, particularly for energy interconnections. He identified a large number of barriers to trade, among them: poor performance of state-owned utilities; the long distances involved, with challenging geography and environment; the weakness of national grids, which require strengthening to enable trading to take place; lack of a commercial, legal and regulatory framework for transactions to take place; energy strategies that rely on self-sufficiency; and lack of infrastructure such as interconnections and control centres.

The paper proposed a number of strategies could be adopted to overcome these barriers. A critical first step would be to undertake a study to identify opportunities for further regional and inter-regional trade between African countries. Making electric power trading work would require, among other things, the removal of trade barriers and the dismantling of restrictions on domestic foreign private investment; the establishment of sound market rules, including the provisions of non-discriminatory access to transmission grids; the establishment of harmonized technical codes, specifications and standards.

He also outlined the challenges facing regulators in Africa. In this context, he informed participants of the objectives of the African Forum of Utility Regulators (AFUR), which include information sharing and capacity building. He concluded his presentation by calling for the establishment of an "African Forum of Power Utilities".

The presentation by Ms. Gudrun Lammers, resource person for this session, reviewed the results of power utility liberalization worldwide, especially in developed countries, which in her assessment were mixed. She shared the experiences of the impact of power liberalization on prices in selected European countries. He conclusion was that electricity provision was a complex business requiring expertise, time, money and effort to create a functioning competitive market, as well as a strong and independent regulator. She advocated gradual reform of the power sector.

Ms. Lammers noted that electric power sector reform in developed countries has led to the misunderstanding in developing countries that all reforms lower prices – in fact, below cost pricing and subsidies are widespread in developing countries. The belief also existed that "privatisation fixes all problems", while in reality it is good management and adequate return on investment that attract private investors. She also noted that since its 1997 peak, private investment in electricity projects in developing countries had fallen by 80 per cent. The collapse of the stock markets in 2000 and competition for capital mean that only the best projects would be able to attract investment.

In conclusion, she pointed out the need for a "third way" for power sector reform, one that is neither government-owned and managed, nor one that is totally privatised, but one that

comprises improved management, the setting of realistic prices, the creation of a viable power utility company, and the separation of social aspects from commercial services.

Another resource person, Mr. Anton Eberhard's, presentation on harmonising the regulatory and legislative environments for electric power in Africa set out the lessons drawn from power sector reform in other parts of the world. In listing the various types of regulatory agencies, he outlined their advantages and disadvantages. He stressed the need to choose reform programmes and regulatory agencies with great care. He also addressed the question of how, in the context of power sector reform, regulatory instruments could be employed to advance public benefits and sustainable development.

He noted that key policy and legislation were vital for public benefits programmes, because these instruments provided a mandate for role players and served to define the public interest. Effective regulation was a critical ingredient for the attainment of public benefits, with monitoring and enforcement having themselves shown to be essential. Empirically it could be shown that the achievement of public benefits was independent of power sector structure and ownership – what matters are the policies and mechanisms that are put in place. He concluded that economic reform of the power sector was important and should be pursued to improve performance. However, explicit policy and regulatory instruments were needed to advance specific public benefits.

The discussion that followed these presentations revealed a range of views on the scope and benefits of electric power sector reform. Some participants stressed that power sector reform should not necessarily imply privatisation. The view was expressed that privatisation does not address the current problems facing African utilities. In this context, there was no need to unbundle small utilities, as this would not lead to improved management or efficiency. The chaotic post-privatisation situation of utilities in Côte d'Ivoire, Cameroon and Guinea was mentioned. Reference was made to the imposition of privatisation on African utilities by the World Bank. However, the apparent recent change of mind by the Bank acknowledging the limits of past policies was alluded to. The need to address the social dimension in the reform process was underscored. In particular, it was argued that rural electrification required special programmes.

On the question of electricity trading, it was observed that while a number of interconnections existed and others were planned, many national grids remained isolated from those of their neighbours. A call was made for countries to undertake joint energy planning. The NEPAD energy initiative was seen as a means to facilitate the harmonisation of the regulatory frameworks that are necessary to permit such interconnections. To this end, it was proposed that AFUR could provide support to NEPAD.

Session 7: Energy access in rural areas

The paper on experiences with rural energy programmes in Botswana, South Africa, Uganda, and Zambia was introduced by Mr. Peter Zhou, a resource person. The presenter noted that more people in rural and peri-urban areas in these countries were poor, and their poverty level was more severe than those living in urban areas. Accordingly, if energy is to make a significant impact on poverty, it should be channelled to stimulate improved incomes in rural and peri-urban areas. The challenges to improved access to energy included low incomes, distribution and supply chain constraints, and lack of information on energy choices.

The paper provided an overview of the various energy options for rural areas, and outlined lessons learned, among them the need to improve the weak entrepreneurship capability, levelling the playing field between grid and off-grid energy sources, the advantage of linking energy delivery to development initiatives that enhance productivity, as opposed to purely welfare services, and the need for subsidies. The paper noted that photovoltaic was very good for social energy needs (lights and radios) but did not provide rural energy for development. From a study of these programmes it can be concluded that both supply costs and prices charged to consumers tend to be high. As a result access to modern energy services is limited in rural areas. Having reviewed the various aspects of rural energy programmes, Mr. Zhou concluded that the reasons for their success or failure are site specific.

In the discussion that followed, participants stressed that rural energisation requires concerted government intervention, which can be in the form of rural energy agencies. It was argued that access to energy is not enough to drive rural development, but must be complimented by other actions, such income generation measures. Thus, analysts have a responsibility to inform policy makers of the importance of integrated development planning.

Session 8: The Africa Energy Commission (AFREC)

A brief presentation made in this session outlined the future plans and role of AFREC. It was noted that the objectives of AFREC were to, among others, develop energy for: economic and social improvement, alleviate poverty, encourage cooperation and integration, and promote energy research and development. AFREC is tasked with mapping out energy development policies and plans, based on sub-regional, regional and continental development priorities and encouraging the development of human resources in the energy sector.

In the discussion that followed, ratification of the convention establishing AFREC was identified as a priority, since, so far only two States had ratified it. It was felt that once AFREC became operational, it could serve as a channel to address several of the concerns raised at the workshop. The development of the African Energy Information System, and the support provided to this endeavour by the World Energy Council (WEC), was also noted.

3. Working Group Reports

The workshop broke into three parallel working groups to discuss in-depth the selected topics. This section sets out the highlights of the recommendations made by each working group, which served to inform the final workshop recommendations, covered in section 4 of this report.

Working Group 1: Operationalizing NEPAD energy action plans through existing mechanisms

The group identified the following priority areas for elaboration:

a. Existing WSSD Mechanisms;
b. Advising on donor funding;
c. A Forum of African Energy Ministers; and

d. Defining appropriate roles of stakeholders.

(a) Existing WSSD mechanisms

The main WSSD mechanisms relevant to the energy concerns of Africa were identified as: the Renewable Energy and Energy Efficiency Partnership (REEEP), the Global Village Energy Partnership (GVEP), the Global Network on Energy for Sustainable Development (GNESD), and the European Union (EU) initiative along with other European bilateral initiatives.

NEPAD can benefit through co-operation with these partnerships/networks, particularly for advancing the goals on cooperation in rural energy and on cooperation in renewable energy and energy efficiency. The partnerships should be used to advance the following objectives:

- The dissemination of good practices among African countries;
- Creating training synergies; and
- Developing sub-regional energy master plans (especially for rural electrification) to enhance potential to attract investment.

(b) Effective use of donor funding

Donor funding of the NEPAD initiative could be structured more effectively, and to this end the following were proposed:

- NEPAD should direct or link donor funding to projects that address the Millennium Development Goals (MDGs).
- A mechanism should be developed to ensure that proposed donor funding is consistent with, and supports, the continental development priorities of NEPAD.
- A NEPAD project-monitoring mechanism should be put in place and used to ensure effective use of donor funds and project follow-through.

(c) Forum of African Energy Ministers

The effective achievement of many of the NEPAD energy goals requires appropriate intervention and consistent political support. While acknowledging that the African Energy Commission (AFREC) will eventually be a major vehicle for providing such support, the need for an interim arrangement was emphasized. One goal of such an arrangement would be to facilitate the speedy establishment of AFREC.

As provided in the treaty establishing AFREC, the latter will consist of Conference of Ministers, Executive Board (senior energy experts), a Secretariat, Technical Advisory Body (TAB) and other subsidiary organs. The group recommended that the TAB consist of independent African technical experts.

AFREC is expected to serve as a catalyst for harmonizing sub-regional efforts to promote energy policies, information, planning, regulatory frameworks and capacity building. However, it was noted that, thus far, very few countries had signed the treaty establishing AFREC. It was concluded that the preparation of a document describing the status of AFREC and identifying barriers to its establishment could contribute to setting up AFREC. Such a

document could then be used to seek support from the Heads of State Implementation Committee of NEPAD.

(d) Defining appropriate roles of stakeholders

The group identified the following stakeholders: the United Nations, including the Economic Commission for Africa, the AfDB, AFREC, civil society, and the private sector. These stakeholders could support NEPAD in various ways, including through:

- streamlining the inputs of various United Nations agencies into the NEPAD energy initiative; and
- regular reporting on the status of short-term projects using a project reporting mechanism.

The role of civil society was seen as contributing to transparency and predictability, as well as facilitating the identification and implementation of projects. It was recommended that relevant background materials on the energy initiative be developed and submitted to the communications arm of the NEPAD Secretariat, in order to raise project awareness among civil society. Africans in the Diaspora were also identified as a resource that could be drawn upon for investment, expertise and networking. It was recommended that an appropriate databank of relevant information be established. It was recommended that appropriate environment for public-private partnerships would need to be created to attract private sector investment in energy projects.

(e) Recommendations

The working group made the following principal recommendations:

- **Existing mechanisms**: A range of WSSD partnerships – the Renewable Energy and Energy Efficiency Partnership (REEEP) and others – could be exploited to advance goals with regard to rural energy, renewable energy and energy efficiency. Such partnerships could be used to disseminate best practices in Africa, create training synergies and develop sub-regional energy master plans.

- **AFREC**: The Commission has a key role to play and urgent intervention is necessary to ensure that it becomes operational as soon as possible. In the interim, a Council of African Energy Ministers should be established. Concerning the structure of AFREC, it was recommended that the Technical Advisory Body (TAB) should consist of independent African technical experts.

Working Group 2: Capacity Building

The group addressed the following issues:

a. Assessing the kind of capacity that should be developed to support the implementation of the NEPAD energy initiative;
b. Association of African energy experts to support the NEPAD energy initiative in the short term; and

c. Mobilizing capacity and evaluating the need for a centre of excellence to support the NEPAD energy initiative.

(a) Assessing the kind of capacity to be developed

It was underlined that capacity building has several components, namely attitudes, knowledge (production and dissemination), and skills. The group identified the need to undertake studies that link NEPAD projects to the objectives set by NEPAD and evaluate how such projects contribute to the achievement of the goals. The need for intra-Africa cooperation was stressed.

(b) Association of African energy experts to support NEPAD

It was noted that collaboration among institutions would be valuable in the search for funds for capacity building. An association of African energy experts and institutions under NEPAD, modelled along the lines of the African Forum for Utility Regulators (AFUR), would be useful in this regard. The first activity such an association would be to identify existing institutions. Organisations and on-going initiatives such as WEC-Africa, UNDP and the Global Network on Energy for Sustainable Development (GNESD) should be involved. The AU should also be contacted and the AfDB kept informed. A small committee, composed of representatives from the NEPAD Secretariat, Senegal (as NEPAD focal point for energy), and the energy experts, with the support of AFUR, should spearhead the formation of the association of African energy experts and institutions.

(c) Mobilizing capacity

The capacities in question were identified as: human and institutional resources, as well as certain skills such as analytical, managerial, advocacy, information and data, and policy and implementation.

Rather than create a new centre of excellence to support NEPAD, it was recommended that existing institutions be linked to form a network. This network should use existing networks such as Knowledge Networks for Sustainable Energy in Africa (KNSEA), African Energy Policy Research Network (AFREPREN), WEC–Africa and the Egyptian training institutes. In addition, some defunct institutions such as the Centre regional d'energie solaire (CRES) in Bamako, Mali and Ecole supérieure interafricaine d'électricité (ESIE) in Bingerville, Côte d'Ivoire could be revitalised. Such a network could help to overcome a critical barrier to the performance of many of these centers – limited political support. The network created by the utility regulators – the African Forum for Utility Regulators – could be used as a template for establishing such a network of institutions. It was also recommended that new centres of excellence should be identified, based on competence. The proposed network could assist existing centres to improve and grow. Activities of the proposed network could include:

- Establishing a database on training and research centres including their areas of expertise;
- Establishing a typology of training needs (e.g. formal, professional, policy and planning, and technology);
- Establishing a list of centres for training of trainers; and
- Providing analytical support to NEPAD.

(d) Recommendations

The working group made the following principal recommendation:

- **Capacity-building**: Existing institutions working on energy – such as the African Energy Policy Research Network (AFREPREN), WEC–Africa and the Egyptian training institutes – should be linked in a network to support NEPAD. Energy experts should be organized to support and advise NEPAD, such as through forming an association along the lines of the African Forum of Utility Regulators (AFUR).

Working Group 3: Concrete Proposals for Action in Areas Indicated but not Elaborated in the NEPAD Short-Term Action Plan of July 2002

The group set out to consider the following issues:

a. Review the energy component of the Short-Term Action Plan of July 2002 and identify areas which need to be elaborated;
b. Review the actions proposed in the various background papers of the workshop and determine how they relate to projects in the NEPAD Short-Term Action Plan;
c. Suggest elements for an overall energy framework that embrace, *inter alia,* the projects and actions listed under the NEPAD Action Plan; and
d. Make recommendations for concrete inputs for the activities of the Short-Term Action Plan.

(a) Review of the energy component of the Short-Term Action Plan

The feasibility studies of the following projects have been completed and await implementation: Mepanda UNCUA Hydropower, Ethiopia-Sudan Interconnection, West Africa Power Pool (WAPP), Algeria-Morocco-Spain Interconnection (strengthening), Algeria-Spain Interconnection, Algeria Gas-fired Power Station, and Mozambique-Malawi Interconnection. Requirements to facilitate implementation include: housekeeping measures, liberalization of the energy market, and mobilizing necessary financial resources. It was noted that a number of other projects required the conclusion of agreements and the mobilization of funds for implementation.

The following projects require feasibility studies, for which the necessary resources will have to be mobilized: Grand Inga Integrator, DRC-Angola-Namibia Connection, Nigeria-Algeria Gas Pipeline, Sub-Regional Interconnections (East, West, and Central). As regards the capacity-building projects, it was agreed that those must await the operationalization of AFREC as well as its supervisory and advisory bodies.

Regarding the facilitation projects, such as the Energy Protocol, it was agreed that most of these activities should be entrusted to the AFREC. At the same time, the group stressed that there is an urgent need for the development and adoption of a coherent energy policies and strategies at the continental level. The lack of a common African institutional framework was seen to be a major handicap to developing and implementing regional energy integration.

b) Review of actions proposed in background papers

The group reviewed the proposals for concrete action contained in the background papers, as well as suggestions made during the workshop. The following are highlights of the proposed actions identified that are additional to the existing Short-Term Action Plan.

- Establishment of a committee on hydropower development, with task forces to map out existing facilities, identify centres of excellence, and work with RECs.
- In the near-term, fast track programmes to promote biomass co-generation, geothermal energy, small-scale renewables (improved cooking stoves and kilns, solar dryers, solar water heaters, wind pumps, small-scale hydro).
- In the long-term, a programme to promote large-scale wind power projects, large-scale urban waste to energy projects, long-term capacity building and training, policy and financing programmes.
- Procuring oil and gas collectively and generating proposals and formulating strategies for intra-Africa oil and gas trade;
- Improving and expanding oil and refining infrastructure;
- Establishment of a natural gas exploration and development initiative for the development of the least developed countries of Africa;
- Improving negotiating capacities with the private sector, bilateral, multilateral and international financing institutions; and
- Developing a clear policy signal in terms of what Africa wants to achieve in terms of energy access; and
- Develop energy packages for productive and income-generating uses in rural areas.

The group examined a number of funding options. It was noted that following the WSSD, a wider range of projects might be eligible for support from the Global Environment Facility (GEF). Entering into or joining WSSD partnerships was also identified as a new avenue for funding. It was also noted that United Nations agencies are in a position to seek funds from the United Nations Foundation. Members of the group also highlighted the need for innovative mechanisms to free up investment from the private sector in African countries, as opposed to sources from outside the continent. African countries should also position themselves to benefit from investments under the Clean Development Mechanism (CDM). Further afield, "green ventures" were seen as a potential source to be tapped for funding environmentally friendly activities.

(c) Elements for an overall energy framework

Cost-effectiveness, sustainability, recognition of resource limitations, and ownership were identified as the guiding principles of the energy framework. The framework should elaborate on the existing short-term plan by setting out complimentary policies and strategies for the short-, medium-, and long-term. The necessary resources should be identified.

(d) Recommendations

The Group made the following principal recommendations:

- **Energy framework for Africa**: There was an urgent need to develop and adopt coherent energy policies and strategies at the continental level. This would also extend

to putting in place legal and regulatory frameworks to promote regional cooperation for integrated development and local utilization of African energy resources.

- **United Nations role**: The United Nations and its agencies can provide assistance for facilitation projects, in accordance with their respective mandates; and
- **Short-Term Action Plan**: The issues identified in the background papers for this meeting should be directed to relevant projects in the Short-Term Action Plan.

4. Summary of workshop recommendations and way forward

In plenary, the participants considered the outputs from the working groups and arrived at the following workshop recommendations.

1. **Establishment of a think tank**
   The mandate of the think tank would be to provide independent advice to NEPAD and AFREC and to elaborate the short- and medium-term plan. The think tank would be an independent and professional entity. In the interim, a task force[5] would be established to:
   - draw up the terms of reference for the think tank;
   - advise NEPAD prior to the formation of the think tank;
   - pursue the realization of the workshop objectives; and
   - further evaluate the recommendations of the working groups to identify those that should be further advanced.

   Timeframe: Within 3 months

2. **Measures to capitalise on the opportunities generated by recent initiatives, such as the World Summit on Sustainable Development (WSSD)**
   A range of WSSD partnerships – the Renewable Energy and Energy Efficiency Partnership (REEEP) and others – could be exploited to advance the NEPAD goals with regard to rural energy, renewable energy and energy efficiency. Such partnerships could be used to disseminate best practices in Africa, create training synergies and develop sub-regional energy master plans**.** It was recommended that the United Nations and its agencies support NEPAD, inter alia, by assisting with access to post-WSSD mechanisms and preparing a document on accessing such existing financing mechanisms as the GEF and UN Foundation.

   Timeframe: Within 3 months

3. **Operationalisation of AFREC**
   In view of the importance of AFREC in meeting the energy objectives of Africa, it is recommended that NEPAD should intervene to ensure that States accede to and ratify the treaty establishing AFREC, that the critical role of facilitation projects under NEPAD be emphasized, and that the Technical Advisory Board (TAB) consist of independent technical experts. Political support is vital to the urgent need to operationalize AFREC. Accordingly, it is suggested that a council of ministers be established, along the same lines as the African Ministers Council on Water

[5] The following experts were identified as members of the task force: Alioune Fall, Ogunlade Davidson, Yaw Afrane-Okese, Abeeku Brew-Hammond, Waeni Kithyoma, and Njeri Wamukonya. Yvette Stevens would act as facilitator of the task force.

(AMCOW) to promote AFREC until it becomes operational, at which time the Council would be dissolved.

Timeframe: As soon as possible

4. Continental energy policy

The group stressed that there is an urgent need for the development and adoption of a coherent energy policy and strategy at continental level. The lack of a common African institutional framework is a major handicap for developing and implementing regional energy integration.

Timeframe: As soon as possible

ANNEX 1: Work Programme

Monday, 2 June 2003

Session I (10:00-10:30) **Welcome and opening**

- Welcome by H.E. Macky Sall, State Minister of Mines, Energy and Water, Senegal
- Remarks by Yvette Stevens, Director, Office of the Special Adviser on Africa, United Nations
- Address by H.E. Macky Sall, State Minister of
- Mines, Energy and Water, Senegal

10:30-11:00 Coffee break

Session II (11:00-12:00) **Taking the NEPAD energy initiative forward:**
Presiding: Alioune Fall
Resource Persons: Ogunlade Davidson, Njeri Wamukonya and Sokona Youba

- NEPAD Energy Initiative by Y. Stevens, United Nations
- Goals and Expectations by A. Fall, NEPAD Focal Point for Infrastructure (Energy), Government of Senegal
- Update on Latest NEPAD Developments by Mochebelele, NEPAD Secretariat
- Overview of the Energy Situation in Africa by O. Davidson and S. Youba

Session III (12:00-13:00) **Hydropower development**
Presiding: A. Fall
Resource Person: E.A.K. Kalitsi

- NEPAD position: R. Mochebelele, NEPAD Secretariat
- Summary of background paper – E.A.K. Kalitsi
- Open discussion
- Identifying potential
- Strategies for rehabilitation and growth
- Financing
- Proposal of elements for the Action Plan

13:00-14:00 Lunch

Session IV (14:00-15:30) **Renewable energy development**
Presiding: A. Brew-Hammond
Resource Persons: S. Karekezi and W. Kithyoma

- NEPAD position – R. Mochebelele, NEPAD

Secretariat R. Mochebelele, NEPAD Secretariat

- Summary of background paper – S. Karekezi
- Open discussion
  - Identifying regional potential for renewable energy
  - Photovoltaic
  - Biomass
  - Strategies and policies for implementation
  - Appropriate technology, technology transfer and capacity building
  - Financing and investment
  - Potential of the Clean Development Mechanism (CDM)
- Proposal of elements for the Action Plan

15:30-16:00 Coffee break

Session V (16:00-18:00) **Fossil fuel development and trade**
Presiding:
Resource Person: M. Lokolo

- NEPAD position – R. Mochebelele, NEPAD Secretariat
- Summary of fossil fuel chapter of OSCAL Paper – M. Lokolo
- Open discussion
  - Promoting cooperation and trade – eliminating barriers to downstream development & purchasing
  - Exploration and development of natural gas
  - Cross-border gas pipelines
  - Gas flaring
  - Financing
- Proposal of elements for the Action Plan

Tuesday, 3 June 2003

Session I (9:00 – 11:00) **Electric power development and trade**
Presiding: A. Eberhard
Resource Person: X. Mkhwanazi

- NEPAD position – R. Mochebelele, NEPAD Secretariat
- Summary of background paper – X. Mkhwanazi
- Open discussion
  - Upgrading and modernization of
  - infrastructure

- Identify technical and non-technical
- barriers to electricity trade
- Interconnections and power pools
- Investment in the electricity sector

- Proposal of elements for the Action Plan

11:00-11:30 Coffee break

Session II (11:30-13:00) **Power sector reform**
Presiding: A. Eberhard
Resource Person: G. Lammers, Electricite de France

- NEPAD position – R. Mochebelele, NEPAD
- Secretariat
- Special presentation – G. Lammers
- Open discussion
  - Institutions and policies for successful
  - reform
  - Creating an enabling environment for
  - investment
  - Strengthening regulators
  - Introducing energy efficiency measures
- Proposal of elements for the Action Plan

13:00-14:00 Lunch

Session III (14:00-15:30) **Energy access in rural areas**
Presiding: Y. Stevens
Resource Person: P. Zhou

- NEPAD position – R. Mochebelele, NEPAD
- Secretariat
- Summary of background paper –
- Open discussion
  - Rural electrification
  - Decentralized systems
  - LPG
- Strategies and policies
- Master plan
- Financing
- Proposal of elements for the Action Plan

Session IV (15:30-16:30) **Harmonization of regulatory and legislative Environment**
Presiding: Y. Stevens
Resource Person: A. Eberhard

- NEPAD position – R. Mochebelele, NEPAD
- Secretariat
- Summary of background paper – P. Zhou
- Open Discussion

- Harmonization and standardization of
- policies and legal frameworks
- Role of Regional Economic Communities
- (RECs)
- Petroleum
- Gas
- Electricity

- Proposal of elements for the Action Plan

16:30-17:00 Coffee break

Session V (17:00-18:00) **Capacity building**
Presiding: Y. Stevens

- NEPAD position – R. Mochebelele, NEPAD
- Secretariat
- Open Discussion
  - Enhancing the skills base in the energy field
  - Regional and sub-regional training and
  - capacity building programmes
  - Promotion of research and development in the
  - energy sector
- Proposal of elements for the Work Plan

Wednesday, 4 June 2003

Session I (9:00 – 11:00) **Energy Institutions (AFREC) and capacity Building**
Presiding: D. Kouo

- NEPAD position – R. Mochebelele, NEPAD
- Secretariat
- Summary of background paper
- Open Discussion
  - Operationalising the African Commission and strategy for linkages with regional
  - organizations
  - Regional and sub-regional energy information
  - systems
  - Energy Protocol
- Proposal of elements for the Work Plan

11:00-11:30 Coffee break

Session II (11:30 – 13:00) **Discussion of draft Action Plan**
Presiding: D. Kouo

- Inputs by drafting committee
- Open Discussion

13:00-14:00 Lunch

Session III (14:00 –16:30) **Consolidation of Action Plan**

- Further presentations on issues, if required
- Drafting

Closing *(16:30)*

ANNEX 2

List of Participants

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