



Economic Commission
for Africa

Optimizing UN Resources for the Development of Africa's Energy Sector

UN system-wide support to AU/NEPAD



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The African energy context

The current situation of access to modern energy in Africa is alarming. While in Northern Africa, about 90 percent of the population had access to electricity in 2002, in Sub-Saharan Africa, this number ranged from 4 percent to 70 percent depending on the country. Also electricity access in the rural areas of many Sub-Saharan African countries can be as low as 1 percent, with an average of about 8 percent. Sub-Saharan countries, except South Africa, heavily depend on biomass (wood, animal dung, agriculture waste, etc.) for more than 80 percent of their energy use. Electricity use per capita is less than 2 percent, and, in most countries, electricity consumption has stagnated due to low supply, and inadequate form of energy supply for the end usage. Without access to sufficient, quality and reliable energy, every social and development activity is critically constrained. This brings to light the unique challenge that African countries face today to launch and reach their development goals in a sustainable manner.

Prioritizing the energy challenge

Building on the outcome of the ninth session of the Commission on Sustainable Development (CSD9), the World Summit on Sustainable Development (WSSD) identified "*increasing access to reliable, affordable, economically viable, socially acceptable and environmentally sound energy services and resources*" to be the first priority challenge for Africa where only about 8 percent of rural people have access to modern energy services. Continued reliance on traditional fuels and technologies brings hardships and health problems to people and ecological strains to countries.

The second priority challenge is to *improve the energy production mix by increasing the proportion of energy obtained from renewable energy sources*. A variety of renewable energy technologies (RETs) that can convert resources such as biomass, solar, wind, and hydraulic power into more useful and convenient forms (gaseous and liquid fuels, electricity, heat or shaft power) are well developed and commercially available. Their modular nature and the fact that they usually require little maintenance render RETs ideal candidates for decentralized energy production.

However, widespread diffusion of RET-based systems faces *strong legal, institutional, technical and financial barriers* that need to be overcome if they are to make any significant contribution to improving access to modern energy services for

rural population on a sustainable basis. Sustainable RETs development will require appropriate measures aimed at solving problems such as low technical capacity of projects developers, unfavorable taxes, ignorance and misconception, inappropriate marketing and financial mechanisms that are hindering their widespread dissemination.

A whole range of targets has been agreed in pursuit of these goals. The international community and African nations recognize that the **New Partnership for Africa's Development (NEPAD)** provides a framework for efficient actions to achieve sustainable development in Africa.

According to the WSSD Plan of Implementation, achieving sustainable development calls for actions at all levels to deal effectively with energy problems in Africa, including through initiatives to:

- Establish and promote programmes, partnerships to support Africa's efforts to implement NEPAD objectives on energy: securing access for at least 35 per cent of Africa's population within 20 years, especially in rural areas.
- Provide support to implement other programmes on energy, including the promotion of cleaner and more efficient energy; use of natural gas; and increased use of renewable energy.

UN Agencies' work in the energy sector

Since no UN agency or programme has the prime responsibility for energy development, and due to their crosscutting nature, several UN agencies have energy activities as part of their work programmes. While all UN agencies can potentially play active roles in UN-Energy/Africa, the following are the current active members of the collaborative mechanism.

[Department of Economic and Social Affairs \(DESA\)](#)

DESA's efforts in energy focus on assisting developing countries and countries in transition with the implementation of the sustainable development agenda, as outlined in Agenda 21, and the WSSD/JPOI. Capacity building efforts focus on energy indicators, energy financing, energy efficiency policies, renewable energy development, legal and regulatory reforms, cleaner fossil fuels, and hydropower. With a core staff of in-house energy and transport experts, and with over 200 associated consultants, DESA implements projects dealing with all aspects of the energy sec-

tor.

Specific activities include:

- Access to energy—increasing the share of renewable energy
- Energy efficiency—cost-effective emission reductions
- Power sector—setting the stage for expanding access and driving development
- Linking projects with policy to ensure a strong connection between the normative and operational activities of DESA.

Economic Commission for Africa (ECA)

ECA's energy agenda was formulated from its general mandate and in line with the energy sector priorities established by its member States. In particular, the focus of ECA's work in the energy sector is based on priorities and commitments made in the framework of the WSSD, the NEPAD energy initiatives, and other energy priorities related to the achievement of globally agreed objectives such as the MDGs. Under this agenda, ECA is assisting member States to formulate policies and strategies aimed at lifting institutional barriers, promoting good practices, and accelerating the development of the African energy sector. Areas of intervention relate to improving energy accessibility, especially to disadvantaged populations; promoting energy policies and management; and developing energy from renewable sources.

Specific activities include:

- Coordination of UN activities in energy in Africa in support of NEPAD; and
- Improvement of Africa's energy sector management and policies, by:
 - Providing technical assistance in the formulation of energy policy;
 - Strengthening human resources and capacity building;
 - Improving power sector reforms for the provision of sustainable energy;
 - Promoting regional integration in the development of renewable energy;and
- Improving energy accessibility

United Nations Human Settlements Program (UN-HABITAT)

As part of its normative work in energy, the overall goal of the United Nations Human Settlements Program is to develop standards and management toolkits to assist stakeholders in the energy and transport sectors to improve management and planning capabilities, particularly as applied in the context of informal settlements. UN-HABITAT's primary energy focus is on urban energy and urban transport.

Specific energy-related activities include:

- Urban energy programme; and
- Urban transport programme.

The United Nations Development Programme (UNDP)

UNDP's energy portfolio is the largest among the UN agencies. Since 2001, UNDP's total energy programme portfolio has amounted to over US\$1.5 billion, with nearly 500 full-scale energy-related projects in 159 countries—representing over 95% of country operations. UNDP's efforts in energy are focused on supporting the achievement of the MDGs, especially the target of reducing by half the proportion of people living in poverty by the year 2015. Increasing access to sustainable energy services is one of six priority areas in UNDP's energy and environment practice and one of 30 service lines in UNDP's development support worldwide. UNDP supports energy activities to reduce poverty and achieve sustainable development objectives at the local, national, and global levels. The organization aims to: (1) strengthen national policy frameworks to support energy for poverty reduction and sustainable development; (2) increase access to energy services to support growth and equity; (3) promote clean energy technologies for sustainable development; and (4) augment access to investment financing for sustainable energy. Activities in these areas complement and help integrate GEF programmes in climate change.

Specific activities include:

- Strengthening national policy frameworks;
- Promoting rural energy services to support growth and equity;
- Promoting clean energy technologies;
- Increasing access to investment financing for sustainable energy; and
- Country-level energy initiative support.

United Nations Environment Programme (UNEP)

The United Nations Environment Programme's energy programme focuses on building human and economic capacity—the technical skills, institutions, and markets to create sustainable development that avoids the huge environmental burdens of past development programmes. Underpinning all UNEP energy activities is the integration of environmental and social factors in energy-related decisions, bringing a longer-term, more comprehensive approach to the sector.

Specific activities include:

- Rural energy enterprise development programme; and
- Indian solar loan programme.

The Food and Agriculture Organization (FAO)

The Food and Agriculture Organization's energy work focuses on bio-energy, agro-energy, wood energy, and climate change. Providing multiple energy services for cooking and heating as well as power for electricity, industry and transportation, and bio-energy can contribute significantly to increase labour productivity and diversification of economic activities in rural areas.

FAO's work in bio-energy consists of four main areas of action:

- Generation and dissemination of information on bio-energy production, trade, and utilization;
- Technical assistance to member countries;
- Assessment of carbon finance for bio-energy development; and
- Cooperation with national, regional and international partners.

The International Atomic Energy Agency (IAEA)

The International Atomic Energy Agency's objective is to accelerate and enlarge the contribution of atomic energy to peace, health, and prosperity throughout the world. The IAEA is the sole UN agency mandated to build national capabilities in overall energy planning, in particular, nuclear power for peaceful purposes. **IAEA's Major Programme 1** on nuclear power, fuel cycle, and nuclear science provides three major services: (1) Support of power programmes for additional uses of power reactors, specifically desalination, district heat, and hydrogen production, and nuclear science; (2) Catalyse innovation; and (3) Conducting energy analysis and build capabilities in planning in interested member States, principally in developing countries.

Specific activities include:

- Development and transfer of energy planning models such as the Electricity System-Planning model, the MESSAGE model, and the SIMPACTS.

United Nations Educational, Scientific and Cultural Organization (UNESCO)

The United Nations Educational, Scientific and Cultural Organization is an initiator of international cooperation for long-range scientific and technological solutions to energy problems, especially through renewable energy sources. UNESCO has provided the world community with an instrument for the promotion of renewable energy sources. Its activities on renewable energy are implemented as a main line of action "Renewable Energy Sources for Development".

Specific activities and programmes include:

- Technical assistance and support to pilot initiatives on renewable energy.
- Capacity building, training, advocacy, and public information

United Nations Industrial Development Organization (UNIDO)

UNIDO's energy programmes address both supply side issues that deal with the provision of energy for industrial applications and the use of renewable energy resources, and the demand side which includes improvements in industrial energy end-use efficiency. UNIDO targets assistance to developing countries and countries in transition, within which it has implemented some 200 energy-related projects

over the past two decades. UNIDO focuses on decoupling the intensity of energy use from economic growth and reducing the energy-related environmental damage that can occur. These two objectives are met through three core energy programmes: industrial energy efficiency; rural energy (with particular emphasis on renewable energy); and climate change, including the Kyoto Protocol.

Specific activities include:

- Micro-hydropower programmes;
- Improving energy efficiency; and
- Transforming energy efficiency markets in China.

The World Bank Group (WBG)

The Group's comparative advantages derive from its ability as a multilateral lender to offer a combination of financing instruments and a comprehensive approach to economic and social development. This equips the WBG to support reform design and implementation and capacity building for well-regulated and competitive energy markets, facilitating the transfer of knowledge and catalyzing private investment. IBRD loans and the International Development Association (IDA) credits are provided to countries to develop energy infrastructure. Where country and project creditworthiness is sufficient, the International Finance Corporation (IFC) issues loans and equity and MIGA guarantees to support private investments. The IBRD and IDA partial risk and partial credit are issued to help catalyze long-term private financing for projects that improve public services. All these instruments have similar requirements with respect to the assessment and mitigation of environmental and social impacts and other safeguard policies. The IBRD and IDA energy portfolio currently comprises 125 projects (US\$9.8 billion) and the IFC portfolio currently has US\$2.3 billion of investment worldwide in power generation, distribution, transmission, and energy efficiency projects.

Specific activities and programmes include:

- Support to renewable energy and energy efficiency development;
- Progress in regional energy integration, including support to the development of Power Pools (The Southern African Power Pool (SAPP), West Africa Power Pool (WAPP));
- Energy access issues;
- Rural and peri-urban electrification; and
- Climate management.

African Development Bank (AfDB)

The overarching goal of all the activities of the African Development Bank is reduction of poverty in Africa. The strong link between sustainable energy provision and poverty reduction implies that the provision of energy is high on the Bank's

agenda. Currently, the Bank is supporting a number of energy projects and programmes in Africa.

Between 1976 and 2003 the ADB Group had cumulative loan and grant approvals exceeding US\$49 billion . Of this amount, approximately 9.4 percent was invested in the power sector. This translates to about US\$4.5 billion . With 87 percent, the majority of these investments were made in the electricity sub-sector. The remaining 13 percent supported projects in the rest of the sub-sectors: petroleum, fuel wood, solar, geothermal, coal and energy in general.

Some projects and programmes in renewable energy in Africa, either in the pipeline or recently approved include:

- Eleven Sub-Saharan African countries capacity building small hydropower (€ 37.5 million total amount of which € 18 million is supplied by the AfDB and € 10 million Global Environment Facility GEF);
- Renewable energy studies for Uganda, Tanzania and Gambia (€ 2.5 million);
- Mozambique energy reform program on rural electrification (isolated grids and PV) (€ 67 million);
- Solar/gas power stations in Morocco and Egypt (€ 200 million each); and
- Nigeria small hydropower and rural electrification study (€ 2 million).

The Bank has been implementing the Financing Energy Services for Small-scale Energy (FINESSE) in Africa since 2004.

Objectives and strategies of UN-Energy/Africa

UN-Energy/Africa was created under the dual mandate of African Ministers of Energy, and of the United Nations, to constitute a regional collaborative mechanism to promote more efficient, coherent and coordinated actions of UN and non-UN organizations working in Africa on the issues of energy for development.

UN-Energy/Africa promotes coherence in the UN system's multi-disciplinary response to WSSD, other global initiatives related to Africa, and the NEPAD by:

- Promoting the sharing of information, knowledge, experiences, and good practices;
- Building and strengthening synergies among independent initiatives at sub-regional, and regional levels; and
- Promoting joint programming, harmonization, and cooperation in energy-related activities of UN organizations, including technical programmes, and selected non-UN organization.

UN-Energy/Africa focuses on substantive and collaborative actions in energy,

ranging from policy planning and development to on-the-ground project implementation. Its membership is open to all relevant organizations and entities.

The work programme developed by organizations in the framework of UN-Energy/Africa emphasizes practical actions rather than conceptual approach. Organizations are encouraged to join efforts in implementing important projects for the development of sustainable energy in Africa.

Selected achievements of UN-Energy/Africa

The work programme of UN-Energy/Africa includes the following specific activities that were implemented or are in the process of being implemented:

Improving rural energy access and consumption

Unleashing Energy Access in Africa: A study that seeks to promote the mainstreaming of best practices in rural energy development in Africa, and the design and development of the *Rural Energy Access Scale-Up Mechanism* (REASUMA). Its ultimate objective is to design and assess the feasibility of a Rural Energy Development Facility.

Policy and Institutional Reform

Study on Power Sector Reform in Africa: The Sustainable Development Division of ECA, in partnership with UNEP and in the framework of UN Energy/Africa, carried out an in-depth analysis of the economic, social and environmental impacts of power sector reforms in Africa.

The study titled “**Making Africa’s Power Sector Sustainable**” also maps the way forward for making Africa’s power sector more sustainable with regards to social and environmental objectives. It covers 14 countries in various depths, and was completed in December 2005.

Policy Dialogue Stakeholders’ Forum: The findings of the above-mentioned study were presented during a high-level multi-stakeholders policy dialogue forum, co-organized by ECA, UNEP and UNDESA. High-level decision-makers and senior officials from power sector ministry/departments, regulatory bodies and utilities from 19 countries (Burundi, Cameroon, Côte d’Ivoire, Ethiopia, Ghana, Kenya, Lesotho, Malawi, Mali, Mozambique, Namibia, Nigeria, Senegal, Sudan, Swaziland, Tanzania, Uganda, Zambia, Zimbabwe), and representatives from nine regional and international organizations (African Union Commission, ECOWAS, SADC, COMESA, IEPF, AFREPREN, UNDESA, UNEP, and ECA) participated in the Forum.

The Forum adopted a policy summary on “Making the Africa’s Power Sector Reform Sustainable”, and a “Policy statement on power sector reform in Africa” pre-

sented at CSD-14.

Capacity development and investment

Micro/mini-hydropower development: The project aims at developing capacity in designing and managing micro/mini hydropower plants and promoting investment in these systems in order to increase electricity access for rural people in sub-Saharan Africa. Twenty countries are to benefit directly from this initiative.

Capacity building in Integrated Resource Planning (IRP): This activity is to be jointly implemented by the IAEA and ECA, and is aimed at training African energy planners from Regional Economic Communities (RECs), and Power Pools on integrated resource planning in the energy sector.

Energy information dissemination and coordination

The development of a **UN-Energy/Africa** website linked to ECA UN Regional Consultation Clusters to enhance e-discussions amongst UN agencies and pertinent non-UN organizations on energy issues.

Advocacy actions

UN-Energy/Africa is to publish "Energy for Sustainable Development: Policy Options" to serve as a UN-Energy/Africa flagship input to CSD-15. The publication will be jointly written by various members of UN-Energy/Africa, and should contain key policy recommendations.

Support to NEPAD and the African Union

UN-Energy/Africa plays an important advocacy role in support of NEPAD energy initiatives, and aims to support the African Union in operationalizing the African Energy Ministerial Forum, an important institutional tool for mainstreaming successful practices in energy sector development. Also, UN-Energy/Africa provides technical support to the African Union, and took part in the development of the Africa Energy Vision 2030.

Perspectives in inter-agency collaboration

Overall, UN-Energy/Africa, as a collaborative mechanism, has achieved some tangible results in support of the Africa and in pursuit of NEPAD energy priorities. This may be mainly attributed to the dedication of participating agencies.

However, some important constraints remain. They include, inter alia:

Financial and budgetary constraints: Many agencies have found it difficult to

participate in coordination meetings because of limited travel budgetary resources. Notwithstanding the use of remote communications tools such as e-forum, tele/ videoconferencing, e-mail and so on, actual physical meetings are more effective in selling energy activities to sister agencies.

Constraints of divergent budget cycle and work programme: In order to achieve efficiency in supporting NEPAD, agencies need to create better coherence and complementarities in their regular activities in support of NEPAD. This can effectively be done only at the earliest stage of programming/design of activities. The different programming/implementation cycles of agencies often prevent the establishment of key partnerships for providing efficient and coherent support to NEPAD.

Participation of non-UN organizations: Though the terms of reference of UN Energy/Africa calls for the collective engagement of UN and non-UN organizations, the effective participation of non-UN organizations such as the AfDB and the NEPAD has not materialized. Because of the strategic advantage of some non-UN organizations in the development of energy sector in Africa, their effective involvement in the collaborative mechanism must remain an important objective of UN Energy/Africa.

Institutional and human constraints internal to NEPAD and the RECs: According to the "African Review Report on Energy for Sustainable Development for the CSD14", some of the shortcomings in the various initiatives undertaken in support of NEPAD energy initiatives, derive from many factors, including:

- Evolving institutional status of the NEPAD with respect to the African Union and regional organizations;
- Low and insufficient human and institutional capacity at the NEPAD secretariat and technical divisions;
- Slow progress in the design and formulation of priority energy projects of the NEPAD;
- Unclear procedure and framework on how best development partners can assist NEPAD; and
- A general lack of human, technical, financial and institutional capacities of the RECs to play their role adequately as implementation arms of NEPAD.

While many international organizations are active at country, sub-regional and regional levels on various aspects of the development of the energy sector, only a few are involved in UN Energy/Africa, or in any type of collaborative mechanism.

Addressing the above constraints should create incentives for more active collaboration and thus improve effectiveness of programmes for energy development in Africa.

