



Renewable Energy in Africa Bulletin

A Summary Report of the International Conference on Renewable Energy in Africa

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INTERNATIONAL CONFERENCE ON RENEWABLE ENERGY IN AFRICA: 16-18 APRIL 2008

The International Conference on Renewable Energy in Africa was held at Le Meridien President Hotel in Dakar, Senegal, from 16-18 April 2008. The Conference focused on the theme “making renewable energy markets work for Africa: policies, industries and finance for scaling up,” and was jointly organized by the Government of Senegal, the African Union (AU), the German Federal Ministry for Economic Cooperation and Development and the UN Industrial Development Organization (UNIDO). It brought together 500 participants, including: high-level representatives and experts in energy and industry from African countries; representatives from the African Union Commission (AUC) and African Regional Economic Communities; and representatives from UN agencies, bilateral organizations, the private sector, as well as regional and international non-governmental organizations.

The Conference aimed to provide visible leadership and commitment to a common strategy for market-based scaling up of renewable energies in Africa. The major objectives were to: assess the potential of renewable energy in addressing Africa’s energy challenges; identify policy and regulatory options and new policy actions to stimulate broader and accelerated market-based dissemination of renewable energy; and identify capacity needs for renewable energy market enablers and players.

The three-day meeting consisted of plenary and parallel sessions as well as a Ministerial Segment. Recommendations from these sessions were consolidated into a Plan of Action on Scaling Up Renewables in Africa, which was endorsed in the Dakar Declaration on Scaling Up Renewables in Africa. The Declaration was adopted during the Ministerial Segment and notes that Conference participants, *inter alia*:

- agree to an African continental target for governments, with support from development partners, to scale up annual renewable energy investments to US\$10 billion between 2009-2014;
- adopt a Plan of Action consisting of five key programme dimensions;
- call upon African governments, their international development partners, non-governmental organizations and the private sector to support implementation of the Plan of Action with adequate resources; and
- recommend that the AU, UNIDO and other relevant development partners establish a ministerial-level policy advocacy group, to be supported by a coordination unit.

This report provides background information on African energy institutions and initiatives, and summarizes the discussions and outcomes of the Conference.

A BRIEF OUTLINE OF AFRICAN ENERGY INSTITUTIONS AND INITIATIVES

This section of the bulletin places the International Conference on Renewable Energy in Africa within the broader context of general energy governance in the region. It describes the main African institutions that address energy issues and provides a chronological overview of major continental energy-related initiatives, decisions and declarations.

ENERGY-RELATED INSTITUTIONS

AFRICAN UNION: The African Union (AU) is the principal organization for the promotion of socioeconomic integration across the continent. It includes 53 African member States, while Morocco has special status. It was established by the Sirte Declaration on 9 September 1999 as a means to accelerate integration, enabling Africa to play a significant role in the global economy, and to address shared social, economic and political problems.

One of the AU’s principal organs, the African Union Commission (AUC), has a Directorate of Infrastructure and Energy. The AU also hosts numerous Specialized Technical Committees, including the Committee on Industry, Science and Technology, Energy, Natural Resources and Environment.

AFRICAN ENERGY COMMISSION: Following a series of regional meetings between 1980 and 2001, African ministers of energy met in Algiers, Algeria, on 23-24 April 2001, where they decided to create the African Energy Commission (AFREC).

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FORUM OF ENERGY MINISTERS OF AFRICA: The Forum of Energy Ministers of Africa (FEMA) was inaugurated during a meeting held on 3 August 2005, in Entebbe, Uganda. It was established to provide political commitment, policy direction and advocacy to increase access to, and better use and management of, energy resources for the continent's sustainable development.

UN ECONOMIC COMMISSION FOR AFRICA: Established in 1958, the UN Economic Commission for Africa (UN ECA) is one of five regional commissions working under the administrative direction of UN headquarters. One of the UN ECA's key tasks is to ensure improved cooperation and coordination between UN agencies and African organizations for the effective implementation of the New Partnership for Africa's Development (NEPAD).

One of the UN ECA's six substantive divisions, the Sustainable Development Division, plays an active role in the energy field, in addition to working in other areas.

UN-ENERGY/AFRICA: Convening in Nairobi, Kenya, on 8 May 2004, African energy ministers adopted a recommendation to create UN-Energy/Africa (UNEA). UNEA is a regional collaborative framework that promotes coordination among the UN and other organizations working on energy for Africa's development.

AFRICAN DEVELOPMENT BANK: The African Development Bank (AfDB) is Africa's principal financial development institution. Its main energy activities involve investments in member countries aimed at: developing energy supply; creating wider and affordable access; connecting electric networks; strengthening institutions; and establishing a favorable environment for private sector participation.

The AfDB is currently revising its 1994 Energy Policy. The new version is expected to include mainstreaming sustainable energy and climate change considerations and set minimum targets for lending and grant assistance programmes related to climate change and sustainable energy. Additionally, the Financing Energy Services for Small-Scale Energy Users Africa programme is currently being implemented by the AfDB's Sustainable Development and Poverty Reduction Unit.

AFRICAN ECONOMIC COMMUNITY: The Abuja Treaty, which established the African Economic Community (AEC), was adopted at the 27th Ordinary Session of the Organization of African Unity (OAU) Assembly, held in Abuja, Nigeria, from 3-5 June 1991. It entered into force in May 1994 and calls for the formation of the AEC through the gradual integration of activities by existing and future regional economic communities in Africa. The current regional economic communities include the Arab Maghreb Union, the Economic Community of Central African States, the Common Market of Eastern and Southern Africa, the Southern African Development Community and the Economic Community of West African States.

ENERGY-RELATED INITIATIVES

NEPAD: NEPAD was adopted at the 27th Session of the OAU Assembly of Heads of State and Government, held in Lusaka, Zambia, 9-11 July 2001. NEPAD was designed to meet the AU's development objectives and serves as an AU programme.

In the NEPAD Framework Document, governments adopted several energy-related targets, including to:

- increase access to reliable and affordable commercial energy from 10% to 35% or more within 20 years;

- improve the reliability and lower the cost of energy supplies, in order to enable a 6% annual economic growth; and
- reverse environmental degradation associated with the use of traditional fuels in rural areas.

NEPAD's work in the energy sector has been supported by the international community, and the Johannesburg Plan of Implementation has identified the need to establish and promote programmes, partnerships and initiatives to support NEPAD's energy objectives.

AFRICAN RENEWABLE ENERGY NETWORK ON COMBATING DESERTIFICATION: Ministers attending the African Ministerial Meeting on Sustainable Energy Development, held in Nairobi, Kenya, on 8 May 2004, officially launched the African Renewable Energy Network on Combating Desertification. This Network brings together organizations operating in the fields of renewable energy and desertification to enhance cooperation and harmonize measures designed to promote renewable energy.

AFRICA'S SCIENCE AND TECHNOLOGY CONSOLIDATED PLAN OF ACTION: At its second meeting, held from 29-30 September 2005, in Dakar, Senegal, the African Ministerial Conference on Science and Technology adopted Africa's Science and Technology Consolidated Plan of Action, which outlines five flagship research and development programmes to be implemented between 2006 and 2010, including one on energy, water and desertification.

GREEN WALL FOR THE SAHARA INITIATIVE: The Green Wall for the Sahara Initiative was formally launched at the AU Summit on Food Security in Africa, held in Abuja, Nigeria, from 4-7 December 2006. Its objective is to arrest the advance of the Sahara desert southward and improve the livelihoods of the inhabitants of the Sahelo-Saharan zone, and specifically to promote the use of renewable and alternative energy sources in order to reduce direct reliance on biomass for domestic energy consumption.

KEY ENERGY DECLARATIONS AND DECISIONS

MINISTERIAL STATEMENT ON RENEWABLES IN AFRICA: At the African Ministerial Meeting on Sustainable Energy Development, held on 7-8 May 2004 in Nairobi, Kenya, ministers adopted a Statement on Renewables in Africa, which calls for, *inter alia*, promoting the sustainable production of biomass and its efficient use in all sectors and enhancing the development of renewables as a way to enable successful implementation of the UN Convention to Combat Desertification and advance sustainable development in Africa.

AFRICAN MINISTERIAL CONFERENCE ON HYDROPOWER AND SUSTAINABLE DEVELOPMENT: The African Ministerial Conference on Hydropower and Sustainable Development was held in Johannesburg, South Africa, from 8-9 March 2006. It adopted a Ministerial Declaration and Action Plan, under which African ministers of water and energy committed to prepare a joint Action Plan to unlock the hydropower potential of Africa in order to promote sustainable development, regional integration, water and energy security, and poverty eradication. The African Ministerial Council on Water, AFREC and FEMA are to implement the Action Plan jointly.

DECLARATION OF THE FIRST AU CONFERENCE OF MINISTERS RESPONSIBLE FOR ELECTRICITY: The first AU Conference of Ministers Responsible for Electricity, which took place in Addis Ababa, Ethiopia, from 20-24 March 2006, adopted a Ministerial Declaration and Decision, agreeing to work together to realize the continent's

energy potential, particularly in hydropower as a major renewable energy option, and to establish an African Fund for Electricity with an emphasis on rural electrification.

CAIRO DECLARATION ON AFRICAN COOPERATION AND SOLIDARITY: Convening in Cairo, Egypt, from 11-15 December 2006, the first AU Conference of Ministers Responsible for Hydrocarbons adopted the Cairo Declaration on African Cooperation and Solidarity and Action Plan. These instruments were later endorsed by AU Heads of State and Government at the eighth AU Summit. Among other things, the Action Plan calls on the AUC to elaborate policies and strategies for the development of renewable energies, particularly biofuels, as an alternative to hydrocarbons.

ALGIERS DECLARATION AND PLAN OF ACTION ON THE CONTRIBUTION OF NUCLEAR ENERGY TO PEACE AND SUSTAINABLE DEVELOPMENT: African ministers and officials convened in Algiers, Algeria, from 9-10 January 2007, within the framework of the High-level African Regional Conference on the contribution of nuclear energy to peace and sustainable development. The resultant Plan of Action underscores the need for Africa to fully benefit from the advantages of the peaceful use of nuclear energy for its economic and social development.

EIGHTH AU SUMMIT DECLARATION ON CLIMATE CHANGE: At the January 2007 eighth AU Summit, Heads of State and Government adopted decisions on, *inter alia*: climate change and development; the implementation of the Green Wall for the Sahara Initiative; and the strengthening of research and development, particularly in renewable energy, forestry and agriculture, to increase the continent's resilience and adaptation to climate change. A ministerial declaration adopted at the Summit encourages the transfer of relevant climate-friendly technologies within and among developing countries.

OUTCOMES OF THE MINISTERIAL CONFERENCE ON ENERGY AND ENVIRONMENT FOR SUSTAINABLE DEVELOPMENT: The Tokyo International Conference on African Development Ministerial Conference on Energy and Environment for Sustainable Development took place from 22-23 March 2007, in Nairobi, Kenya. The Chair's Summary of the meeting emphasizes that clean energy development has great potential for the private sector, including for new businesses in off-grid and community energy systems in areas such as biofuels and low-cost, off-grid lighting products.

MAPUTO DECLARATION: African ministers convening under FEMA met in Maputo, Mozambique, from 28-30 March 2007, adopted the Maputo Declaration on Energy Security and Sustainability in Africa, which identifies the need to:

- increase access to modern energy services;
- better utilize Africa's rich energy resources;
- increase financial flows to match Africa's energy investment needs; and
- promote a better mix of energy supply options.

ADDIS ABABA DECLARATION AND ACTION PLAN ON SUSTAINABLE BIOFUELS DEVELOPMENT IN AFRICA: The first High-level Biofuels Seminar in Africa was held in Addis Ababa, Ethiopia, from 30 July-1 August 2007. The seminar was jointly organized by the AUC, the Government of Brazil and the UN Industrial Development Organization. The seminar concluded with the adoption of the Addis Ababa Declaration on Sustainable Biofuels Development in Africa, and an Action Plan. The Plan encompasses the development



President of Senegal Abdoulaye Wade arrives at le Meridien President Hotel for the Conference.

of ethanol, biodiesel, biogas, biomass gasification, and cogeneration as priority sectors, and contains a number of cross-cutting programme areas, including policy and institutional frameworks, financing mechanisms, resource assessments, capacity building and strengthening technical expertise.

REPORT OF THE MEETING

The Conference opened on the morning of Wednesday, 16 April with a welcoming ceremony. This was followed by an opening plenary session in the afternoon, during which keynote speakers provided an overview on the status of renewable energy development and needs, both globally and in Africa. Participants then convened in three parallel sessions on the theme policy and regulatory frameworks. On Wednesday evening, one of three parallel sessions on investments and financing was held.

On the morning of Thursday, 17 April, participants convened in two plenary sessions on: technology transfer and development; and capacity building and research and development. In the afternoon, they attended four parallel sessions on technologies. In the early evening, participants attended two further parallel sessions on investments and financing.

Participants discussed key outcomes from select parallel sessions in plenary on the morning of Friday, 18 April. They then considered the draft Plan of Action and Dakar Declaration on Scaling Up Renewables in Africa. On Friday afternoon, the Conference schedule was adapted to enable the Prime Minister of Senegal to participate in the Ministerial Dialogue. Participants first met for the Ministerial Dialogue, during which the Dakar Declaration was adopted. The Prime Minister officially closed the Conference, however participants attended a final closing plenary before adjourning.

This report first summarizes the keynote presentations, discussions and outcomes that occurred during the opening ceremony, plenary sessions and select parallel sessions. It then summarizes the Plan of Action and Declaration that resulted from the Conference, and that were discussed during the closing plenary and Ministerial Segment.



President of Senegal Abdoulaye Wade welcomed by Kandeh Yumkella, UNIDO Director-General.

OPENING CEREMONY

On Wednesday morning, Samuel Sarr, Minister of Energy of Senegal, welcomed participants to the Conference. He highlighted the impact of rising oil prices on African economies and noted the role the Conference could play in developing a continental vision, supported by the international community, for renewable energies in Africa.

Regina Ecker, German Agency for Technical Cooperation (GTZ), stressed Germany's support for renewable energy development in Africa. She noted that the Conference should address: mechanisms to ensure that Africa benefits from renewable energy; means to convince the continent's population of the advantages of renewable energy; and enabling conditions for private investors.

Bernard Zoba, Commissioner for Infrastructure and Energy of the African Union Commission (AUC), highlighted Africa's "enormous" renewable energy potential. He emphasized African cooperation to promote hydroelectricity, as well as the importance of legal and institutional frameworks, innovative financing and capacity building.

UN Industrial and Development Organization (UNIDO) Director-General Kandeh Yumkella stressed the need to focus on Africa's long-term future rather than its energy crisis, and on wealth creation instead of poverty management. Calling for



Samuel Sarr, Minister of Energy of Senegal



UNIDO Director-General Kandeh Yumkella

ambitious approaches, he highlighted Africa's potential to contribute to the EU targets to increase the share of renewable energy to 20% of the total consumption by 2020, and in particular to the target to increase biofuels in the transport sector to 10% within the same period.

Abdoulaye Wade, President of Senegal, praised the New Partnership for Africa's Development (NEPAD)

for identifying development priorities, including infrastructure and energy. He highlighted the potential of solar and other renewable energy sources, urged breaking the connection between energy and pollution, and called for global solidarity and financial resources. He discussed action in Senegal, including ecovillages based on local materials.

PLENARY SESSIONS

OPENING PLENARY: The opening plenary session, which presented an overview of renewable energy development and needs in Africa and worldwide, was held on Wednesday afternoon.

Mike Enskat, GTZ, noted that, in contrast to five years ago, the question is not whether renewable energies are appropriate for Africa, but how they should be developed. He stressed that the Conference should send a political signal that Africa has strong ambitions to develop renewable energies. He asked whether renewable energy needs an institutional home within the pan-African context.

Youba Sokona, Sahara and Sahel Observatory, indicated that energy systems must "strike the right balance" between social equity, economic viability, institutional coherence and environmental sustainability. He stressed the need for thinking that reaches beyond the project level in order to enable radical changes in the energy sector.

Emphasizing Africa's "huge and urgent" energy needs, Ogunlade Davidson, University of Sierra Leone, highlighted challenges to renewable energy development, including large upfront costs for many technologies. He lamented that foreign renewable energy investments are taking place largely in India and China and that, in its current form, the Clean Development Mechanism (CDM) does not benefit Africa.

Touria Dafrallah, Environment and Development Action in the Third World (Enda-tm), highlighted increases in global renewable energy investment and installed capacity, amounting to 240 gigawatts in 2007, excluding large-scale hydropower plants. She identified significant increases in the production of wind energy and stressed that developing countries are also following this trend. Dafrallah pointed out that: over 60 countries worldwide have renewable energy policies; European countries and Japan have targets for biofuels in the transport sector; and 17 countries have mandated blending of biofuels into vehicle fuels.

Amadou Diallo, African Development Bank (AfDB), discussed Africa's energy challenges, including air pollution from cooking and poor access to modern energy technologies. He stressed renewable energy's potential to reduce poverty and promote the Millennium Development Goals (MDGs), and outlined the Bank's relevant activities.

Ngagne Dieye, Senegal's Minister of Biofuels, Renewable Energies and Scientific Research, explained that Senegal has developed a broad portfolio of renewable energy projects, and stressed the importance of cooperation with development partners.

RENEWABLE ENERGY TECHNOLOGY TRANSFER AND DEVELOPMENT: The plenary session on renewable energy technology transfer and development took place on Thursday morning.

Abeeku Brew-Hammond, Kwame Nkrumah University of Science and Technology, Ghana, presented on criteria developed to assess the success of technology diffusion for different renewable energy technologies in Africa. He highlighted that technology diffusion is successful when it builds on established industries, links to financial institutions and skills in the labor force. He said failures often occur when renewable energy projects are: driven by donors; pursued by research and development institutions in isolation from local industries and the private sector; and focused on training alone.

Xi Wenhua, Gansu Natural Energy Research Institute (GNERI), China, described GNERI's research initiatives and accomplishments, and how they could improve South-South cooperation. He noted that GNERI has held over 20 international training workshops on solar energy applications since 2001, including several in Africa.

Chudi Ukpabi, Biogas for Better Life: An African Initiative, explained that the Initiative aims to install two million



Chudi Ukpabi, Biogas for Better Life: An African Initiative

household-level biogas plants over ten years. Noting that domestic biogas projects implemented in Nepal and India could be replicated in Africa, he said the Initiative is currently undertaking feasibility studies in 20 African countries. He cautioned that dependence on subsidies is unsustainable and that strong government and long-term donor support, as well as partnerships, will be critical to the Initiative's success.

Albert Rugumayo, Ministry of Energy and Mineral Development of Uganda, explained that his country aims to establish a sustainable and commercially viable biogas sector, including through the establishment of 50,000 biogas plants over the next five years. He highlighted the potential of biogas development in schools, noting that bio-latrines can improve environmental conditions while reducing energy costs. He stressed the need for multi-stakeholder participation and acceptance by the population of bio-latrines.

Pradeep Monga, UNIDO, stressed UNIDO's focus on fuel switching in energy intensive small- and medium-sized enterprises (SMEs), and identified several successful projects. He recommended starting with an assessment of Africa's energy requirements, followed by, *inter alia*, appropriate technology packages and integrated and programmatic approaches.

Arnulf Grübler, International Institute for Applied Systems Analysis, called for a comprehensive and integrated global energy assessment that moves beyond individual projects and sectoral analyses. He stressed the need to consider the efficiency of energy uses and focus on energy demand to satisfy basic human needs. On energy supply, Grübler acknowledged the important potential of biomass, but stressed competing land uses for agriculture and forestry, and economic competition between energy and food production. He drew attention to potential problems with renewable energy technologies, including damage to wind turbines, and recalled that it had taken 25 years of policy and financial support to make Brazil's ethanol production competitive with fossil fuels.

During the ensuing discussion, a participant stressed the importance of focusing on the needs of future generations, and suggested integrating renewable energies into the education system and raising awareness of their benefits. Brew-Hammond drew attention to market barriers for renewable energy in Africa and highlighted plans by the Economic Community of Western African States to open their energy markets. Monga lamented that less than US\$1 billion of the US\$100 billion of global renewable energy investment comes to Africa. He called for bilateral and multilateral assistance, as well as the appropriate market signals, to attract investors. Ukpabi stressed efforts to encourage graduate students to focus on biogas technologies, and identified the need to promote small enterprises.

CAPACITY BUILDING AND RESEARCH AND DEVELOPMENT FOR RENEWABLE ENERGY MARKETS IN AFRICA:

The plenary session on capacity building and research and development for renewable energy markets in Africa took place on Thursday morning.

Brew-Hammond argued that successful capacity building must incorporate social, financial, market and other factors, in addition to technical aspects. He stressed that capacity development should focus on key market players and that it should be integrated into actual project development. He said local governments and policy-making and regulatory institutions have a critical, and often overlooked, role to play in developing capacity. Brew-Hammond encouraged exploring new capacity-development tools, and stressed that "learning-by-doing" is more effective than seminars and workshops.

Hussein Elhag, African Energy Commission (AFREC), presented an overview of AFREC's capacity-building



Hussein Elhag, AFREC

programmes, including: permanent energy policy training centers; targeted and on-site training; project analysis and preparation support; academic scholarships; and internships in advanced facilities. He highlighted novel mechanisms, including the identification of African centers of excellence on renewable energy.

John French, Renewable Energy and Energy Efficiency Partnership (REEEP), outlined regional consultations held in February 2008 on southern Africa, which identified a lack of long-term energy planning and finance. He described available assistance for African governments for energy planning, as well as a capacity-building manual by REEEP and UNIDO on regulation and policy-making in Africa, which includes case studies, analyses and examples.

Sécou Sarr, Enda-tm, presented on the African Rural Energy Enterprise Development (AREED) capacity-building programme for entrepreneurs, which includes training, continuous contact with participating entrepreneurs and financial assistance. He stressed that continuous interaction helps to identify those entrepreneurs who are genuinely interested in the project and not just the seed money.

Minoru Takada, UN Development Programme (UNDP), stressed that the number of people in Africa without access to clean cooking fuels is projected to increase to 720 million by 2030. Based on a case study from Nepal, he highlighted significant initial costs of capacity building. He estimated that decentralized scaling-up options



Minoru Takada, UNDP

for the world's two billion "energy poor" would require an overall investment of US\$200 billion, with external grant needs of US\$20 billion.

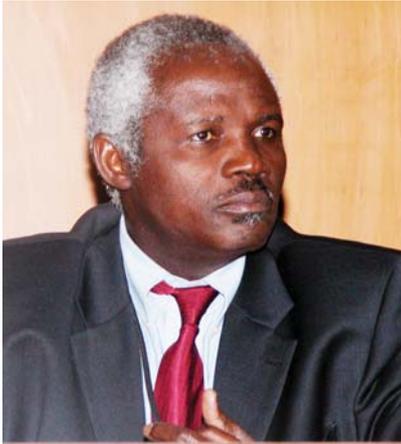
Anna Moreno, Italian National Agency for New Technologies, Energies and the Environment, described DESIRE-net, an

e-learning platform on renewable energy and sustainable development, providing free learning facilities for decision makers, designers and operators of renewable energy. She also highlighted African-Italian educational exchange initiatives, including the African Engineers Association in Rome, and a project in which Italian school students donate photovoltaic plants to African schools and follow up with an electronic exchange of information on technical and social aspects.



Anna Moreno, Italian National Agency for New Technologies, Energies and the Environment

Sibi Bonfils, Institute for Energy and Environment of Francophone Countries, said capacity building should be aimed



Sibi Bonfils, Institute for Energy and Environment of Francophone Countries

at crafting appropriate strategies and policies to ensure the promotion of renewable and sustainable energies. He suggested that policies can help raise awareness of existing and viable renewable energy options, including energy efficiency standards and voluntary actions.

During the ensuing discussion, one participant lamented that ignorance, a lack

of interest on the part of decision makers and corruption are prohibiting advances of renewable energy in Africa. He suggested that capacity building for journalists can enable the African media to better promote renewable energy, and that Africa should develop national information centers for renewable energy. Another participant noted that when renewable energy projects fail, users lose confidence in renewable energy technologies. Takada responded that the purchasing power for renewable energy is low in Africa and that promotion of renewable energy markets must not get lost in overall development schemes.

PARALLEL SESSIONS

POLICY AND REGULATORY FRAMEWORKS FOR SCALING UP RENEWABLE ENERGIES: Three parallel sessions on policy and regulatory frameworks for scaling up renewable energies were held on Wednesday afternoon. The International Institute for Sustainable Development Reporting Services (IISDRS) did not cover the parallel session on policy and regulatory issues for stand-alone renewable energy systems, especially for rural electrification.

Policy and regulatory issues for grid-connected renewable energy: Galal Osman, World Wind Energy Association, stressed the importance of capacity building to enable local manufacturing of renewable energy technologies in Africa. He highlighted that renewable energies are essential for meeting future electricity demands in Africa. He stressed the need for reforms in the electricity sector, including feed-in tariffs, unbundling of ownership of transmission systems, and improved third party access to the electricity grid.

Kwame Ampofo, Member of Parliament of Ghana, emphasized that access to energy is a right, not a privilege, and is therefore an issue that must be considered by Parliament. Outlining international legal instruments in which governments have committed to improve energy access, he argued that legislation is the best means to overcome the barriers to renewable energy development. He stressed the important role of feed-in tariffs in protecting renewable energy technologies from competition with conventional ones.

Mufur Atanga, African Forum for Utilities Regulators, highlighted policy measures to increase renewable energy penetration in Africa, including government targets implemented via regulators and feed-in tariffs. He stated that private sector involvement in energy production is essential if universal energy access is to be achieved. Atanga emphasized the importance of regulatory authorities, noting that most utility regulators in Africa have been in existence for only five to seven years. He called for clarifying the roles of policy makers and regulators in the regulatory decision-making process.

Kevin Nassiep, South Africa National Energy Research Institute, explained that until recently, there was little pull from the market or push from any single utility for renewable energies in South Africa. He noted that although the country's current power crisis has precipitated the uptake of renewable energies, regulatory barriers remain. He highlighted that the current regulatory framework is not conducive to smaller independent power producers entering the market, and argued that solar water heaters should be mandatory in South Africa.

Yinka Omorogbe, University of Ibadan, Nigeria, said law and policy are often confused, and argued that policies cannot be implemented in the absence of a legal framework. She noted that international law creates obligations for States, who must ensure the appropriate implementation of these obligations through their national legal systems. She also stressed the need for the law to protect the poor.

Participants discussed, *inter alia*: whether or not regulators should be multi-sectoral; the importance of coal for development in countries rich in this resource; the need to hybridize renewable energies; and the importance of eliminating monopolies in the energy sector. One participant argued that European solutions cannot solve African energy problems and encouraged the democratization of the energy supply system.

Bioenergy in Africa: Stephen Karekezi, African Energy Policy Research Network (AFREPREN), highlighted sub-Saharan Africa's reliance on bioenergy, noting that its use is projected to grow. He identified challenges with traditional bioenergy technologies, including indoor air pollution and social burden on women and children. Listing modern technology options for bioenergy, he discussed the potential of biofuels for transport, bagasse for cogeneration and biogas for institutional use. He said their potential benefits include

poverty reduction, improved energy services, and reduced health and environmental impacts. Karekezi recommended: standard power purchase agreements; predetermined feed-in tariffs; blending requirements and predetermined prices for biofuels; and energy and technology targets.

Mamadour Dianka, West African Economic and Monetary Union, discussed West Africa's experiences with bioenergy, highlighting a multi-sectoral programme on biomass. He discussed several projects, focusing on biomass from charcoal in Mali and rice in Senegal, and cashew nuts for electricity production in Guinea-Bissau. He underlined the importance of national bioenergy strategies and public-private partnerships, and stressed projections on the end of the oil age and the advent of a new bioenergy era.

Nzola Mahungu, International Institute for Tropical Agriculture, discussed NEPAD's cassava initiative, which focuses on markets, technology, and competitive and sustainable production. He explained that while cassava is used mainly as food in Africa, it could also be used as a biofuel, like in Asia. He stressed that it could be grown everywhere in Africa and highlighted African farmers' competitive production potential.

Dominik Rutz, WIP, outlined the COMPETE project, which aims to create a competence network on energy crops and agro-forestry in Africa, including through exchanging knowledge, promoting sustainable biofuel projects and enhancing South-South cooperation. Underscoring the potential negative social and environmental impacts of biofuels, he called for sustainability standards. He argued that the European Commission's proposed standards for biofuels could amount to export barriers for Africa, and identified the need for compliance facilitation for small-hold farmers.

Youssou Lo, National Sustainable and Participatory Programme for the Management of Traditional and Alternative Energies Management (PROGEDE) Coordinator of Senegal, presented on the PROGEDE programme, which aims to promote household access to sustainable fuels. He explained that the programme consists of policy, regulatory and demand-side components, and outlined information-gathering activities, including surveying over 300 villages. Lo stressed an integrated approach to renewable energy development that



Stephen Karekezi, AFREPREN

covers all relevant aspects of rural economies, including food security and poverty reduction.

During the discussion, Karekezi stressed that too positive a picture has been painted of liquid biofuels, and highlighted the benefits of cogeneration. He stated that Africa should engage in the biofuels industry on its own terms. Dianka identified the need for socioeconomic studies on biofuels and

butane. Participants stressed the importance of biofuels for land-locked countries.

INVESTMENT AND FINANCING FOR SCALING UP RENEWABLE ENERGY IN AFRICA: Three parallel sessions were held on investment and financing for scaling up renewable energy in Africa. The session on making carbon finance work for Africa was held on Wednesday evening,



Participants listen intently during the session on investment and financing for scaling up renewable energy in Africa.

while the parallel sessions on mobilizing international finance and financing of small- and medium-scale renewable energy services and rural electrification were held on Thursday afternoon.

Making Carbon Finance Work for Africa: Daniele Violetti, UN Climate Change Secretariat, underscored the signal from the Bali Climate Change Conference that the CDM will continue in the post-2012 period. He said 1,000 CDM projects have now been registered, with China, India, Brazil and Mexico as the main host countries. Violetti noted that only one CDM sink project has been registered and that most projects are large-scale ones. He stated that 25 projects are registered in Africa, with more in the pipeline. He identified institutional developments in Africa resulting from the increase in Designated National Authorities (DNAs).

Violetti then discussed the Nairobi Framework and its capacity-building activities to assist African countries to increase their participation in the CDM. He highlighted the DNA Forum and the CDM Bazaar website, and highlighted cooperation with the private sector to promote CDM investment in Africa. He mentioned the decision made at the Bali Conference to abolish the registration fee and CDM levy from all projects in least developed countries.

Benoît Lebot, UNDP, outlined UNDP's capacity-building activities, including the MDG Carbon Facility. He said the Facility seeks to: focus on high-priority projects; enhance the CDM's impact on poverty reduction; and act as a pioneer and risk-taker. He underscored the importance of large-scale action on energy efficiency, given that renewable energy alone cannot achieve all the necessary emission reductions required to mitigate climate change.

David Hancock, GTZ, identified several energy challenges in the Southern African Development and Economic Community (SADEC) region, including deforestation, rapidly rising wood prices and the lack of alternative energy sources. He highlighted the need to accelerate technology-development capacity. He explained that "big business" is searching for new markets and is developing products for the low-income population. Hancock also stressed the role of the public sector and called for strong rules on corporate social responsibility.

Rainer Sünnen, KfW, explained that programmatic CDM involves an incentive or policy implementation scheme for the private or public sectors. He outlined possible structures for programmes, including grant, loan, supply and payment-on-delivery. He said Africa's challenges include CDM's complexity, high transaction costs and general investment barriers. He identified as opportunities: Africa's large greenhouse gas mitigation potential; lower transaction costs through "economies of scale" and programmatic CDM; awareness raising and capacity building; and innovative financing.

Robert van Buskrk, Lawrence Berkeley National Laboratory, outlined experiences with community-based carbon financing in Eritrea. He said some of the first Verified Emission Reductions were sold in the 1990s from a stove dissemination project, covering 10% of the country's villages and using independently-developed "rational" crediting methodology. He highlighted further innovative experiments, including a lottery for solar home lighting systems.

During the discussion, Violetti identified barriers for the sale of sink credits under the EU Emissions Trading Scheme, highlighted new potential for forestry projects through programmatic CDM, and said deforestation issues would be addressed during the ongoing negotiations on the future of the climate change regime. Lebot explained that all the proposed projects under the Nairobi Framework require a sponsor and stressed the need for financing in Africa. A participant stressed the need for coordination between UNDP and UNIDO in disseminating CDM information.

Mobilizing International Finance: Sebastian Veit, AfDB, identified the need for substantial resources to achieve universal electricity access by 2030 and outlined key lessons, including the need to focus on energy issues in poverty reduction and country strategy papers. He highlighted the recent approval of the Bank's Clean Energy Investment Framework and outlined plans for a Clean Energy and Climate Adaptation Facility for Africa, a multi-donor trust fund with a total budget of US\$200 million for its first three years of operation. He said the Facility will have two financing windows, one for energy access and one for adaptation to climate change.

John Moran, Overseas Private Investment Corporation (OPIC), highlighted OPIC's objective of facilitating US private sector investment and listed its relevant activities, including: climate change mitigation initiatives; renewable and clean energy financing; and political risk insurance provision for renewable energy projects. Moran explained that projects financed under OPIC must, *inter alia*, be economically and environmentally sound, and have positive development effects. He said OPIC offers loans of up to US\$250 million and listed possible financing areas, including: SMEs in need of small loans; large wind and solar projects; smaller hydro projects; grid and non-grid biomass projects; and energy efficiency projects. Moran noted that OPIC has recently launched a global renewable energy fund and is interested in supporting private investment in renewable energy in Africa.

Bruno Wenn, KfW, described KfW's financing for renewable energy and its two carbon funds. He underscored that KfW offers technical knowledge and tailor-made financing instruments, and is interested in funding flagship projects. Wenn highlighted several financing options, including through the local banking sector and mobilizing national resources.

Laurent Biddiscombe, French Development Agency (AFD), discussed AFD's energy financing, including for renewable energy and energy efficiency projects, almost half of which are in Africa. He stressed the availability of a large number of financing instruments, such as funding for feasibility studies, loans, subsidies and technical assistance. Biddiscombe stated that successful development of renewable energy projects requires: strong political will; appropriate regulatory and fiscal frameworks; incentives for private sector participation; innovative financing; consideration of CDM potential; and improved local technical capacities.

Rainer Hakala, European Commission, discussed the Africa-EU Energy Partnership, stressing its comprehensive nature and the need for joint and coordinated efforts for its implementation. He highlighted that €203 million have been mobilized and 75 projects selected in the African, Caribbean and Pacific (ACP) regions through the ACP - EU Energy Facility. He also emphasized private sector participation in the projects. He discussed the new Infrastructure Trust Fund for Africa, with pledges from the European Commission and 11 EU member States amounting to €150 million. He said the Fund would finance four sectors, namely information technology and communication, water, transport and energy. He also highlighted the Global Energy Efficiency and Renewable Energy Fund, which aims to encourage commercial investors to become shareholders.

During the ensuing discussion, participants noted UNIDO's assistance to the development of small hydro projects in Africa through its regional centre, and the need to translate various African energy initiatives into concrete action. Participants also addressed the need to, *inter alia*: mobilize private sector capital; address financing gaps, including for rural electrification; provide training for local banks; and consider the institutional and policy framework.

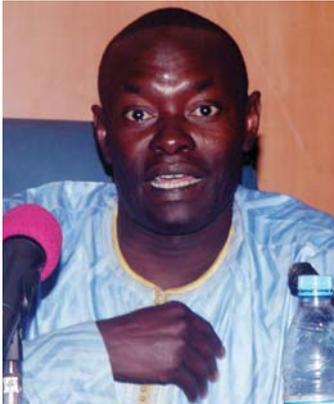
Financing of small- and medium-scale renewable energy services and rural electrification: Paul van Aalst, E+Co Europe, stressed that clean energy is a real investment opportunity for SMEs and explained that his company has invested in more than 175 clean energy enterprises worldwide, including 58 in Africa. He described E+Co Europe's operational model, which includes investing with equity and loans as well as providing enterprise development services, and noted the financial, social, economic, and environmental benefits of these investments. He noted that E+Co Europe also provides capacity building to micro-financing institutions to encourage them to enter the clean energy sector.

Martina Otto, UN Environment Programme (UNEP), noted that investment in renewable energy and energy efficiency has increased significantly in China, India and Brazil, but that investments in Africa have been few and are concentrated in northern and South Africa. She stressed the need to work with local banks and businesses to spur small-scale technology deployment, and said banks will provide loans at the household scale if the demand is sufficient. She recommended tools to raise risk and seed capital to drive innovation, including enterprise development services and policy support for SMEs. She also recommended tools to raise end-user financing to scale up renewable energy development, including: consumer finance, micro-credit, and third party financing.



Paul Van Aalst, E+Co, highlighted options for financing of small-scale renewable technologies.

Sécou Sarr, Enda-tm, stressed that the private sector should be central to renewable energy development. He highlighted barriers to this development, including: low capacity of operators for project development; insufficient risk capital; and lack of financial products to stimulate demand. On funding solvent demand, he said information on the comparative advantage of renewable energy would be useful. On funding non-solvent demand, he said micro-finance and other mechanisms need to be considered.



Sécou Sarr, Enda-tm

Till Danckwardt, First Climate, stated that carbon finance can be a good co-financing mechanism for renewable energy projects and noted that huge investment funds are available. He indicated that, from a buyer's perspective, there is a growing demand for carbon financing in Africa. He explained that the impact of CDM financing on renewable energy projects' internal rate of return is between 1% and 4.5%. He also noted that CDM project development and registration costs can be covered by carbon credit buyers.

Thierno Tall, African Biofuels and Renewable Energy Fund, explained that the Fund aims to become a leading financier of long-term clean energy development in Africa, and highlighted its investment, debt and carbon financing components. He described ethanol and biodiesel projects developed by the Fund. Tall underscored the large and untapped potential for carbon financing in Africa. Noting investors' concerns for non-delivery of credits, he explained that his institution is working on developing guarantee funds.

Participants suggested that: consumers of traditional energy could pay a small charge that would contribute to in-country funds for renewable energy development; governments must develop enabling investment environments for small- and medium-scale renewable energy services and rural electrification; the voluntary carbon market has potential in Africa; and additional funding is needed to facilitate connectivity of renewable energy sources to the grid. Others noted that peri-urban areas are often neglected in discussions on small- and medium-scale renewable energy access, and that failure to properly assess the market can lead to project failure. Till explained that the CDM has been more successful in India than in Africa because India opened its markets to small power producers and quickly developed institutions to support the CDM.

TECHNOLOGIES: Four parallel sessions on technologies were held on Thursday afternoon. The IISDRS did not cover the session on solar energy and wind.

Biomass and biofuels technologies in Africa: Stanislaw Miertus, UNIDO, described UNIDO's focus on the industrial aspects of biofuels, including chemical, physical chemical, biochemical and thermochemical conversion. He outlined the status of second generation biofuels, stressing that they do not compete with food production in the same way that first generation biofuels do. Emphasizing the need for capacity building, Miertus identified challenges in developing countries, including: lack of industrial and human capacity; patenting

and licensing problems; and lack of integrated planning for technology adaptation. He highlighted UNIDO's decision support tool for biofuel assessment and selection.

Stephen Karekezi, AFREPREN, identified benefits of biofuels, including: employment opportunities; improved energy security; greenhouse gas emission reductions; and reduced dependence on fossil fuels. He listed increasing fossil fuel prices, declining biofuels production costs, and existing production capacity as the key drivers for the biofuels industry. Karekezi highlighted Malawi's two ethanol production plants with annual production of 30 million liters, and noted that Kenya's daily ethanol production is around 60,000 liters, which is sold in local and regional markets. He identified cogeneration as an attractive option, and cited Mauritius as a country that has significant cogeneration capacity and has successfully shared revenues and ownership.

Ben Hagan, Council for Scientific and Industrial Research, presented on the workshop "Biofuels: Research and Development Technologies for Sustainable Development in Africa," held in Accra, Ghana, in December 2007. He highlighted main conclusions, including that: in the long-term jathorpa could be used for biodiesel production; in the short term, the focus should be on existing crops; climatic conditions in various African regions should be studied; and Africa should adapt to appropriate international biofuels standards as well as developing local ones. He stressed the need to build an African network of researchers, policy makers and entrepreneurs.

Anna Lerner, GTZ, discussed the Programme for Basic Energy and Conservation in the SADEC region, which focuses on: efficient use of energy devices; policy advice; and development of new knowledge on biomass and biofuels. She highlighted the objective of improving basic energy access for rural and urban households through existing and new technologies.

Arrigo della Gherardesca, OneBioWorld, underscored that rising food prices are leading to agricultural land expansion and deforestation. He highlighted Africa's biofuels potential, including land availability without the need for deforestation, and the possibility to double food production in sub-Saharan Africa while also producing biofuels. He identified local African markets, without the need to transport biofuels, as an attractive alternative to international ones, and stressed the importance of "green" rural energy production for Africa's development. Della Gherardesca supported replicating Senegalese "ecovillages" elsewhere in Africa. He explained that ethanol production has not reduced poverty in rural Brazil, stressing the need for partnerships with small farmers and successful rural cooperatives.



Session on Biomass and biofuels technologies in Africa

During the discussion, participants considered, *inter alia*, the relationship between fieldwork and workshops, and technical and capacity challenges related to the commercialization and use of biofuels. They also discussed “flex-fuel” vehicles developed in Brazil, low wages for agricultural workers in certain countries and the importance of land ownership issues.

Hydropower development and geothermal: Benoît Lebot, UNDP, provided an overview of regional Global Environment Facility (GEF) micro-hydroelectricity projects, and discussed the GEF’s funding principles and programmes that support the development of new energy funding mechanisms. He highlighted the GEF’s strategic objectives, including: promotion of energy-efficient buildings and appliances; re-powering of existing power plants; supporting grid electricity from renewable sources; and encouraging renewable energy for rural energy services as well as for industrial energy efficiency.

Kristján Burgess, Global Center, presented on Iceland’s energy development and its relevance for African development, noting that, until the 1970s, Iceland was defined as a developing country. He explained that, as a consequence of the 1970-1975 oil crisis, geothermal use has grown rapidly and now accounts for over 50% of the country’s total energy use. He highlighted the benefits of geothermal resources, including that it: provides a stable base load power; produces low to no greenhouse gas emissions; and generates green and renewable domestic energy at an attractive price.

Michael Fink, International Hydropower Association, noted high growth in biomass use in sub-Saharan Africa despite the availability of untapped hydropower energy potential, and said Africa continues to lag behind the world’s top hydropower producers. He observed that Africa’s hydropower potential is approximately twice the continent’s current electricity demand and suggested that, by coupling hydropower with bioenergy, solar, wind and geothermal resources, Africa could build an independent and prosperous economy.

Tong Jiandong, International Centre for Small Hydropower (ICSHP), reviewed projects by UNIDO and ICSHP in Africa. He noted the need to enhance capacity building related to small-scale renewable technologies and to focus on the development of small hydropower projects, which can contribute to community empowerment.

Strategies for scaling up energy efficiency in industry, including in SMEs, in Africa: Noting that Africa has the highest energy intensity worldwide and the lowest level of industrialization, M’Gbra N’Guessan, UNIDO, highlighted the opportunity to reduce energy use in the African industrial sector. He suggested that energy efficiency programmes are necessary and noted that, at present, Algeria, Tunisia, Morocco and Egypt are the only African countries to have them. He stressed that incentives and financial mechanisms are required at the international and national levels to promote effective energy management.

Highlighting that the share of energy production costs in relation to overall production costs is higher in Africa than in Asia, Demba Diop, EPM Consulting, presented on methods and action plans for implementing energy efficiency in SMEs. He outlined three steps for implementing energy efficiency measures, namely: pre-diagnosis, in which the energy-saving potential is quickly evaluated; diagnosis, in which the energy-saving potential is quantified; and feasibility, in which necessary actions are determined.

Magaye Ndiaye, Global Management Solutions, stressed that any energy efficiency policies in the industrial sector must target electrical engines, as these represent 70-80% of the total electricity consumption in the sector. He described his company’s approach to identifying energy and cost savings for Sotiba, a textile company in Senegal. He outlined recommended energy and cost saving strategies, including: investment in boilers that use groundnut shells for energy; redistribution of transformers to account for current capacity needs; and renegotiation of Sotiba’s contract with the national electricity board. Makane Mbaye, Sahel Techniques and Industries, described energy and cost saving strategies his company identified for Senegal’s Port Authority.

Riyaz Papar, UNIDO, stressed that energy consumption must be measured if it is to be managed and that management, in turn, can lead to energy and cost savings. He said a systems, rather than components, approach is essential for increasing energy efficiency. He described the Save Energy Now Assessments performed by the US Department of Energy in 18 major US industrial sectors for all forms of energy in 2006. He explained that 76% of the resulting energy-saving recommendations had payback periods of less than two years and that US\$81 million of annual savings have already been implemented.

Oforu Ahenkorah, Energy Commission of Ghana, stated that a Ghanaian industrial energy intensity survey revealed that Africa is not doing well with respect to energy intensity, citing managerial, in addition to technical, factors as a problem. He highlighted initiatives to address high energy intensity in Ghana, including the Efficient Lighting Initiative and the Ghana Energy Efficiency Label. He stressed that SMEs are vulnerable to market distortions and energy prices and said energy financing services should target SMEs.

Heinz Leuenberger, UNIDO, presented on cleaner production, stating that it aims to reduce consumption of raw materials as well as energy. He explained that UNIDO, in partnership with UNEP, has established 43 National Cleaner Production Centres and Programmes, which offer: awareness raising and information dissemination, especially to SMEs; on-job training for national experts and consultants; technical assistance at the plant level; and cleaner production policy advice. He noted that in more advanced enterprises, UNIDO and UNEP hope to combine cleaner production activities with additional services, such as corporate social responsibility and life-cycle analysis.



Heinz Leuenberger, UNIDO

Participants highlighted that recommendations resulting from energy audits require financing and that capacity building is needed to carry out diagnostics. One participant stated that authorities should develop incentives to encourage companies to carry out energy balances of their operations.

SUMMARIES OF SELECT PARALLEL SESSIONS:

On Friday morning, participants convened in a plenary session to hear summaries from those parallel sessions for which chairs were available and to discuss outcomes.

Pradeep Monga, UNIDO, who moderated the session on mobilizing international finance, summarized key points from the session, including that: many African countries face difficulties in accessing financing; several funds and facilities provided by various donors for renewable energy are available; the private sector has an important role to play; appropriate policy and legal frameworks, as well as capacity building for local banks, are required; and economies of scale can be promoted through regional and sub-regional cooperation. Monga also



Pradeep Monga, UNIDO

said some participants had mentioned financing targets for international financial institutions.

During the ensuing discussion, participants addressed: the need to consider the costs of inaction; the importance of feed-in tariffs and guarantees to investors; the feasibility of private sector leadership; the need for socially responsible investment; and the negative impacts of subsidies for fossil fuels and the transport sector.

Jacques Moulot, UN Economic Commission for Africa (UN ECA), moderator of the session on financing of small- and medium-scale renewable energy services and rural electrification, summarized that: appropriate financing for consumers is required; SMEs need to operate in a well-regulated and protected environment in order to survive; and that governments should establish necessary frameworks to protect SMEs.



Jacques Moulot, UN ECA

Martina Otto, UNEP, emphasized that local players must be involved in addressing financing gaps related to seed capital, operating capital and consumer financing. Participants encouraged decentralization of electricity and a



Sid Boubekur, Centre for the Development of Enterprise

renegotiation of the CDM rules in a way that benefits Africa, or the development of a new carbon financing fund for the continent.

Sid Boubekur, Centre for the Development of Enterprise, moderator of the session on strategies for scaling up energy efficiency in industry, highlighted recommendations to the public sector, including the need to: launch a regional initiative on energy efficiency for cost savings

for SMEs; improve communications between financing institutions and SMEs; re-evaluate tariffs and taxes for SMEs; and create energy efficiency norms and standards in specific sectors, including lighting and public buildings. He said participants agreed that companies must develop codes of good conduct as well as energy management and monitoring plans.

During the discussion, participants stressed that energy efficiency should not be limited to the industrial sector.

CLOSING PLENARY AND MINISTERIAL SEGMENT

On Friday morning, participants convened in a closing plenary session, during which they discussed the Plan of Action and Dakar Declaration for Scaling Up Renewable Energy Development in Africa. The Conference closed with a Ministerial Segment.

PLAN OF ACTION: On Friday morning, Stephen Karekezi, AFREPREN, introduced an outline of the draft Plan of Action, prepared by a select group of participants, for scaling up renewable energy development in Africa and explained that the Plan will be finalized at UNIDO headquarters following the Conference. He highlighted the Plan's key quantitative objective of increasing investment flows for renewable energy development to US\$10 billion between 2009-2014. He identified guiding principles for the Plan, including the need to:

- encourage national and sub-regional institutions to focus on those renewable energy sources and technologies where they have a comparative advantage;
- level the playing field for renewable energy compared to conventional energy sources, ensuring that any subsidies and incentives are performance-based and include explicit sunset clauses; and
- ensure that renewable energy initiatives account for gender and equity dimensions of socioeconomic development.

He explained that the Plan consists of five programmatic areas, namely: policies, capacity building and skills development; development of financing options; renewables for enterprise development and industrialization; and cross-cutting issues. He highlighted specific actions under each programmatic areas, including:

- establish pre-determined tariffs and standard purchasing power agreements for electricity from renewables;
- integrate training, capacity building, and skills and experience development in the actual development, implementation and maintenance of renewable energy investment;
- assess the viability of establishing a Pan-African Fund on renewable energy, financed by modest levies on fossil fuel imports and exports;
- support enterprises involved or interested in the local manufacture, maintenance and servicing of renewables in Africa; and
- evaluate risks associated with renewables development and identify appropriate risk mitigation measures.

He outlined a proposed timeline and recommendations for the Plan's implementation.

Participants suggested additional issues for inclusion in the Plan of Action, such as: the potential role of tidal power; the importance of reducing reliance on biomass resources that lead to deforestation and land degradation; the establishment of a regional market for biofuels; quantitative targets for growth in

the renewable energy sector, in addition to quantitative targets on financing for renewable energy; and the necessary mention of the need for laws to achieve policy goals.

Participants also recommended that: the aspiration to eliminate subsidies in the entire energy sector is acknowledged and that climate change risks be included as a clear driver for renewable energy development.

DAKAR DECLARATION ON SCALING UP RENEWABLE ENERGY IN AFRICA: Following their discussion of the Plan of Action on Friday morning, Sécou Sarr, Enda-tm, read the draft Dakar Declaration on Scaling Up Renewable Energy in Africa. In the ensuing discussion, participants stressed the need to, *inter alia*: include reference to education systems and climate change; acknowledge national differences in the availability of renewable energy resources; highlight positive social impacts, including reduced infant mortality; include references to biomass and climate change; remove country-specific examples or add to them; and add language on the commitment of Africa's development partners to the Plan of Action and mobilization of additional funding.

The Declaration was considered and adopted by the closing plenary on Friday afternoon. The Declaration indicates that Conference participants, among other things:

- are aware of the "vast, unexploited and readily available" renewable energy sources in Africa and their potential contribution to increasing energy access and ensuring energy security;
- note the potential of renewable energy to reduce the impact of the high cost of oil and address current power crises in most African countries;
- are mindful of the need to increase energy supply for economic growth;
- recognize significant ongoing national efforts on renewable energy; and
- recognize the need for efforts to overcome various barriers.

The Declaration indicates that Conference participants agreed on a set of guiding principles, as described in the Plan of Action, and that to achieve the vision established by these principles, they:

- agreed to a common continental target for governments, with support from development partners, to scale up annual renewable energy investments to US\$10 billion between 2009-2014.
- adopted a Plan of Action with five key programme dimensions;
- called upon African governments, international partners, non governmental organizations and the private sector to support the Plan's implementation with adequate resources;
- recommended that the African Union (AU), UNIDO and other relevant development partners establish a ministerial-level policy advocacy group, supported by a coordination unit.

Martina Otto said UNEP welcomes the draft Plan of Action, noting that it aligns well with the conclusions from the Tenth Special Session of the UNEP Governing Council/Global Ministerial Environment Forum held in Monaco in February 2008. She highlighted UNEP's work, alongside partners, to develop sustainability criteria for bioenergy.

Jean-Marc Gravelini, AFD, stressed that rising oil prices are making investments in renewable energy more attractive than ever before, and noted, with optimism, current and new financing opportunities for renewable energy.

Mike Enskat, GTZ, highlighted the potential for actions resulting from this Conference to feed into international initiatives, including the EU-Africa Partnership and the International Renewable Energy Conferences, the next of which will be held in India in 2010.

Jacques Moulot, UN ECA, offered that the UN ECA could provide technical assistance to complete the Plan of Action.

Phillippe Niyongabo, AUC, noted the AU's intentions to help implement the Plan of Action, noting that several of its elements align with responsibilities that fall under the AUC's mandate.

Christian Diatta, Minister of Biofuels, Renewable Energy and Scientific Research of Senegal, highlighted the continued role that scientific research can play in renewable energy development.

MINISTERIAL SEGMENT AND CLOSING: On Friday afternoon, delegates convened for a ministerial segment.

Jose Brito, Minister of Economy, Competitiveness and Growth of Cape Verde, highlighted energy challenges in Cape Verde caused by dependence on imported fossil fuels and water shortages. He emphasized plans to exploit the potential of wind energy and achieve a 55% renewable energy target. He condoned the Conference's role in recognizing the need for capacity building, as well as for policy and strategy development.

Haja Kabba, Minister of Energy and Power of Sierra Leone, stressed the link between energy and security, as well as energy's role in improving the lives of the poor. She identified energy as a priority area for Sierra Leone, highlighted the establishment of a national energy task force, and outlined plans and activities to increase renewable energy. Kabba also emphasized the need for regional planning and donor assistance.



Haja Kabba, Minister of Energy and Power of Sierra Leone

Dumsile Sukati, Minister of Natural Resources and Energy of Swaziland,

noted the establishment of a renewable energy task force in Swaziland, and said her country was looking forward to learning from experiences in other African countries.

Manfred Konukiewitz, German Ministry for Economic Cooperation and Development, highlighted changing attitudes vis-à-vis energy, noting that energy issues were not mentioned in the Agenda 21 in 1992, whereas at present there is a strong emphasis on renewable energy. He commended the private sector's interest in renewable energy, but noted several challenges. He stated that development partners are ready to support Africa, highlighting the recent 15th replenishment of the World Bank's International Development Association and the new EU-Africa Energy Partnership.

UNIDO Director-General Kandeh Yumkella outlined plans to finalize the Conference's Plan of Action. He noted proposals to convene a ministerial meeting focusing on energy and related issues, such as economic development and climate change. Yumkella also stressed the need for institution-building to implement the Plan.

Cheikh Soumaré, Prime Minister of Senegal, praised the high quality of the Conference's conclusions, which he said can assist African countries to cope with the current energy crisis. He noted Africa's renewable energy potential and stressed the need for financial and technical assistance. He underlined the importance of the Plan of Action and of national energy information systems. Thanking the organizers and participants, and calling for effective follow-ups, he closed the Conference at 3:55 pm.



Cheikh Soumaré, Prime Minister of Senegal

UPCOMING MEETINGS

FOREST DAY: SHAPING THE DEBATE ON FORESTS AND CLIMATE CHANGE IN CENTRAL AFRICA: This meeting will take place on 24 April 2008, in Yaoundé, Cameroon, and will provide a regional perspective on the issue of forests and climate change. A broad range of forest stakeholders are expected to analyze social, economic, scientific, technological and political issues in order to provide a stepping stone for informed climate policies in the region. For more information, contact: Janneke Romijn; tel: +237-2222-7449/7451; fax: +237-2222-7450; e-mail: ForestDay-Cameroon@cgiar.org; internet: http://www.cifor.cgiar.org/Events/CIFOR/forest_day_cameroon.htm

SIXTEENTH SESSION OF THE COMMISSION ON SUSTAINABLE DEVELOPMENT: This meeting will take place from 5-16 May 2008, at UN headquarters in New York, US. This review session will focus on agriculture, rural development, land, drought, desertification and Africa. For more information, contact: Division for Sustainable Development, UN Department of Economic and Social Affairs; tel: +1-212-963-8102; fax: +1-212-963-4260; e-mail: dsd@un.org; internet: <http://www.un.org/esa/sustdev/csd>

DEVELOPMENT OF RURAL LIVELIHOODS IN SEMI-ARID AFRICA: ISSUES, CHALLENGES, OPPORTUNITIES: This conference will take place at the African Union Commission Headquarters in Addis Ababa, Ethiopia, from 29-30 April 2008. It will bring together producers, policy makers, researchers, development practitioners and strategic partners with a view to: defining key issues that engender rural livelihood processes in semi-arid Africa; ensuring that designed responses adequately address those issues; and formulating a strategy for an effective and synchronized intervention that facilitates the transformation of rural livelihood processes in that region. For more information, contact: Abebe Haile Gabriel, Director, AU-SAFGRAD; tel: +226-5-030-6071 / +226-5-031-1598; fax: +226-5-031-1586 / +226-5-030-8246; e-mail: abebe.safgrad@cenatrin.bf; internet: <http://www.africa-union.org/root/au/index/index.htm>

REGIONAL WORKSHOP ON RENEWABLE ENERGY IN THE CARPATHIANS: POLICY AND FINANCING: This workshop will take place in Lviv, Ukraine, from 6-7 May 2008. Organized by the UN Industrial Development Organization, the workshop will evaluate current regional

experiences, opportunities and challenges for renewable energy development and develop a regional framework approach on renewable energy. For more information, contact: Aloma Macho; tel: +43-1-26026-3399; e-mail: a.macho@unido.org; internet: <http://www.unido.org/index.php?id=o86697>

INTERNATIONAL GEF WORKSHOP ON EVALUATING CLIMATE CHANGE AND DEVELOPMENT: RESULTS, METHODS AND CAPACITIES: This workshop will take place in Alexandria, Egypt, from 10-13 May 2008. The Global Environment Facility (GEF) Evaluation Office is organizing this workshop, during which participants will share experiences in evaluating projects and programmes that target the nexus between climate change and development. For more information, contact: Secretariat of the International Workshop, Evaluation Office of the GEF; tel: +1 202 458 8537; e-mail: IntWorkshop@thegef.org; internet: <http://www.esdevaluation.org>

GLOBAL RENEWABLE ENERGY FORUM IN BRAZIL: This forum will take place in Foz do Iguaçu, Brazil, from 18-21 May 2008. UNIDO and the Brazilian Ministry of Mines and Energy are organizing the workshop, which aims to strengthen interregional bonds and set up joint actions between countries and regions in order to reduce poverty and enhance energy security through the use of renewable sources of energy. For more information, contact: Gustavo Aishemberg; tel: + 43 1 26026 3331; e-mail: g.aishemberg@unido.org; internet: <http://www.unido.org/index.php?id=o86044>

INTERNATIONAL COOPERATION ON ENERGY EFFICIENCY: WORKING TOGETHER FOR A LOW-CARBON ECONOMY: This meeting will take place in Geneva, Switzerland, on 28 May 2008. Organized by the Energy Charter Secretariat in cooperation with the Energy Efficiency 21 Project of the UN Economic Commission for Europe and the International Energy Agency, it will bring senior governments and industry experts together with officials from international bodies to discuss ways to improve energy efficiency outcomes through enhanced international cooperation. For more information, contact: Energy Charter Secretariat; tel: +32 2 775 9851/9854/9800; fax: +32 2 775 9834; e-mail: Geneva2008@encharter.org; internet: <http://www.encharter.org/index.php?id=285&L=0>

G8 ENERGY MINISTERS' MEETING: This meeting of the eight leading industrialized nations' (G8) energy ministers will take place in Aomori City, Japan, from 7-8 June 2008. The meeting will convene in preparation for the 2008 G8 Summit, to be held 7-9 July 2008 in Hokkaido, Japan. For more information, contact: internet: <http://www.do-summit.jp/en/about/summary02.php>

FOURTH TOKYO INTERNATIONAL CONFERENCE ON AFRICAN DEVELOPMENT: This conference will take place in Yokohama, Japan, from 28-30 May 2008, and seeks to promote high-level policy dialogue between African leaders and development partners. For more information, contact: Japanese Ministry of Foreign Affairs, tel: +81- (0) 3-3580-3311; internet: <http://www.mofa.go.jp/region/africa/ticad/ticad4/>

TWENTY-EIGHTH SESSIONS OF THE UNFCCC SUBSIDIARY BODIES: These sessions will take place in Bonn, Germany, from 2-13 June 2008. They include the second meeting of the *Ad Hoc* Working Group on Long-Term Cooperative Action under the Convention and the resumed fifth session of the *Ad Hoc* Working Group on Further Commitments for Annex I Parties under the Kyoto

Protocol. For more information, contact: UNFCCC Secretariat; tel: +49-228-815-1000; fax: +49-228-815-1999; e-mail: secretariat@unfccc.int; internet: <http://www.unfccc.int>

HIGH-LEVEL CONFERENCE ON WORLD FOOD SECURITY AND THE CHALLENGES OF CLIMATE CHANGE AND BIOENERGY: This conference will take place in Rome, Italy, from 3-5 June 2008. Organized by the UN Food and Agriculture Organization, the conference will address food security and poverty reduction in the face of climate change and energy security. A series of expert meetings and stakeholder consultations will take place during the January-April 2008 period as part of the preparatory process.

For more information, contact: Office of the Assistant Director-General, Natural Resources Management and Environment Department; tel: +39 06 57051; fax: +39 06 570 53064; e-mail: cccb-secretariat@fao.org; internet: http://www.fao.org/foodclimate/home.html?no_cache=1&L=7

SEVENTH WORLD WIND ENERGY CONFERENCE AND EXHIBITION: This conference will take place in Kingston, Ontario, Canada, from 24 June-26 June 2008.

The theme of the conference will be "Community Power," reflecting issues relating to ownership and development of renewable energies. It will focus on renewable energy technologies for electricity generation. An exhibition and training sessions on project management, financing, governance and community engagement will also be held. For more information, contact: Ontario Sustainable Energy Association; tel: +1 416.977.4441; fax: +1 416.977.2157; e-mail: info@wwec2008.com; internet: <http://wwec2008.com>

G8 SUMMIT: This summit of the eight leading industrialized nations' (G8) will convene in Hokkaido, Japan, from 7-9 July 2008. For more information, contact: Japanese Ministry of Foreign Affairs, tel: +81- (0) 3-3580-3311; internet: <http://www.mofa.go.jp/policy/economy/summit/2008/info/index.html>

TENTH WORLD RENEWABLE ENERGY CONGRESS: This Congress will be held in Glasgow, Scotland, UK, from 19-25 July 2008. For more information, contact: A. Sayigh, World Renewable Energy Congress/Network; tel: +44-1273-625-643; fax: +44-1273-625-768; e-mail: asayigh@netcomuk.co.uk; internet: <http://www.wrenuk.co.uk/wrecx.html>

UNCCD CRIC 7 AND CST 9: Based on COP 8 decision ICCD/COP(8)/L.30/Rev.1, the seventh session of the Committee for the Review of the Implementation of the Convention (CRIC 7) will convene from 3-14 November 2008, in Istanbul, Turkey. Based on COP 8 decision ICCD/COP(8)/L.17, the ninth session of the Committee on Science and Technology (CST 9) shall be held in conjunction with this session of the CRIC. For more information, contact: UNCCD Secretariat; tel: +49-228-815-2800; fax: +49-228-815-2898; e-mail: secretariat@unccd.int; internet: <http://www.unccd.int>

FOURTEENTH CONFERENCE OF THE PARTIES TO THE UNFCCC AND FOURTH MEETING OF THE PARTIES TO THE KYOTO PROTOCOL: These meetings are scheduled to take place in Poznan, Poland, from 1-12 December, 2008. They will coincide with the 29th meetings of the UNFCCC's subsidiary bodies. For more information, contact: UNFCCC Secretariat; tel: +49-228-815-1000; fax: +49-228-815-1999; e-mail: secretariat@unfccc.int; internet: http://unfccc.int/meetings/unfccc_calendar/items/2655.php?year=2008

GLOSSARY

ACP	African, Caribbean and Pacific
AEC	African Economic Community
AFD	French Development Agency
AfDB	African Development Bank
AFREC	African Energy Commission
AFREPREN	African Energy Policy Research Network
AU	African Union
AUC	African Union Commission
CDM	Clean Development Mechanism
DNAs	Designated National Authorities
Enda-tm	Environment and Development Action in the Third World
FEMA	Forum of Energy Ministers of Africa
GEF	Global Environment Facility
GNERI	Gansu Natural Energy Research Institute
GTZ	German Agency for Technical Cooperation
ICSHP	International Centre for Small Hydropower
IISDRS	International Institute for Sustainable Development Reporting Services
MDGs	Millennium Development Goals
NEPAD	New Partnership for Africa's Development
OAU	Organization of African Unity
OPIC	Overseas Private Investment Corporation
PROGEDE	National Sustainable and Participatory Programme for the Management of Traditional and Alternative Energies Management
REEEP	Renewable Energy and Energy Efficiency Partnership
SADEC	Southern African Development and Economic Community
SMEs	Small- and medium-sized enterprises
UNDP	UN Development Programme
UNEA	UN-Energy/Africa
UN ECA	UN Economic Commission for Africa
UNEP	UN Environment Programme
UNIDO	UN Industrial Development Organization



A view of the Dakar coastline from the conference venue.