ECONOMIC COMMUNITY
OF WEST AFRICAN STATES

WEST AFRICAN
ECONOMIC & MONETARY
UNION

White Paper FOR A Regional Policy

Geared towards
increasing access to energy services
for rural and periurban populations
in order to achieve
the Millennium Development Goals

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Foreword

Fellow citizens, partners and readers,

It is a great honour and pleasure for me to come to you with this policy document drawn up by ECOWAS and the UEMOA at the request of the Members States. This policy reflects our vision for 2015 and will play a critical role in the improvement of the conditions and well-being of the ECOWAS rural and peri-urban populations.

These populations jeopardize their health and that of their children by burning harmful domestic fuels; they spend a great part of their day trekking several kilometres with heavy loads; they give birth in semi-darkness ; in short, they are deprived of economic opportunities because they do not have access to or cannot afford adequate energy services. In short, it is needless to say that our populations deserve better and we have to free them from these hardships. All those who wish to take a commitment so that the Millennium Development Goals be not solely a condition of the economic growth of our economies will agree with that.

This White Paper first and foremost confirms our 15 West African Members States' commitment to co-ordinating their efforts around a shared and ambitious policy. Their goal is to increase by four in a 10-year period, access to modern energy services for the rural and peri-urban populations. In short, five years after the dawn of the new millennium, their goal is to have the capacity to give access -15 years later - to these basic services to more than half the population of the region.

Access to energy as such does not ensure by itself sustainable development and the achievement of the Millennium Development Goals. However, this remains an essential condition for that. And today, both ECOWAS & UEMOA Member States and the international community agree on that point.

By its very nature, energy is multisectoral and as such, it should be taken into account in all sectors. But let us not be naïve; we know our current development strategies require that financial support be provided for the sector development, and this should be regarded as a priority in our strategic documents.

Energy, as a basic and strategic sector, and the shortcomings of models developed to date prompt us to develop strong and integrated steering frameworks which can boost access to energy services. Meeting the people's energy needs in order to achieve the objectives of all priority sectors should be the guiding principle of our action.

ECOWAS is currently putting in place a regional electricity market that should allow its Member States to ensure cheaper and more reliable supplies of both electricity and gas. We are convinced of the all important role that infrastructures, in general, and energy, in particular, play to boost growth in our states so that they contribute to the regional economic integration.

Nevertheless, we should widen the scope of our energy policies in the region to help eradicate poverty, foster gender equality and give the poorest people greater access to basic social services. To do so, access to energy services is fundamental.

Therefore, access to energy services should be part of priority goals in our countries and communities, if we wish to achieve our respective development goals by implementing the relevant strategies.

ECOWAS and UEMOA are not the first to affirm the necessity to get mobilized to ensure better access to the energy which is a condition necessary to the development of rural and peri-urban populations.

NEPAD has set goals relating to electricity access in rural areas across the continent. Recently, the Forum of Energy Ministers of Africa – FEMA – during last September's Millennium Summit in New York, also defined the sector priorities namely: modern cooking fuels, energy for productive purposes, and energy services for community infrastructures such as refrigeration and lighting.

This White Paper seeks to show how the region can meet the challenge of change of scale , at a time when our development partners, the UNDP particularly, the European Union and the OECD, show their increasing interest to give us their support and call for a new strategy in terms of energetic infrastructures in order to reduce poverty.

The region has defined a clear objective to undertake action where it has the best value added , in order to strengthen regional integration through exchanges among Member States and to promote harmonised political and institutional frameworks which integrate access to energy services as a priority, and lastly to develop themes for energy programmes, such as poverty reduction in rural and peri-urban areas. All these actions are made in view to achieving the Millennium Development Goals (MDGs).

I would then ask you, to read very carefully this regional programme strategy and the Action Plan, which both are designed to support and develop the necessary regional investment programmes we need to achieve the specific and ambitious objectives that Africa, in general, and the ECOWAS, in particular, wish to meet. We hope that you too will make them yours.

Aid and investment have dropped over the last ten years, but I am convinced that the current work, which was done by all our 15 Member States, will convince our public and private development partners, to invest in the project, whose efficiency is one of our guiding principles and a common concern.

I know some of you may find this project ambitious, that is true. However, this ambition was shared by the international community as a whole when they adopted the MDGs in 2000. We must say that this new policy confirms that, through access to energy services, energy does play a central and fundamental role in attaining the MDGs. This White Paper equally proposes a pragmatic and realistic project which can mobilise all sectors in our states as well as our partners in order to achieve our priority goals.

We do hope this White Paper will be finalised and submitted to the Heads of Sates and of Government of the Member States early next year. We also believe that our partners would not fail to consider the mobilization of the 15 ECOWAS states along a shared and vital project as a firm stand by the whole region.

This White Paper was produced with the UNDP technical support and with assistance from France. We would like to thank them for their constant support to the development of the regional policy.

I wish you will enjoy reading this paper and that you will make good use of it by taking active action , so the greatest number could commit themselves for regional cooperation.

Abuja, 19 October 2005

Dr. Mohamed Ibn Chambas
ECOWAS Executive Secretary

Economic Community
of West African States

Communauté Economique
des Etats de l'Afrique de l'Ouest

Twenty ninth Summit of the Authority of Heads of State and Government
Niamey, 12 January 2006

DECISION A/DEC.24/01/06 ADOPTING AN ECOWAS/UEMOA REGIONAL POLICY ON ACCESS TO ENERGY SERVICES FOR POPULATIONS IN RURAL AND PERI-URBAN AREAS FOR POVERTY REDUCTION IN LINE WITH ACHIEVING THE MDGs IN MEMBER STATES.

THE AUTHORITY OF HEADS OF STATE AND GOVERNMENT,

MINDFUL of Article 7, 8 and 9 of the ECOWAS Treaty establishing the Authority of Heads of State and Government and defining its composition and functions;

MINDFUL of Article 28 of the revised Treaty relative to the coordination and harmonization of the Energy Policy of the Members States;

MINDFUL of Decision A/DEC.3/5/82 relative to ECOWAS Energy Policy;

MINDFUL of Decision A/DEC.5/12/99 relative to the development of a West African Power Pool (WAPP);

MINDFUL of Decision A/DEC.2/12/03 relative to the European Initiative for Poverty Eradication and Sustainable Development, which decided on the PRSP Revision to the Integration of the Energy Programmes into the EDF eligible programmes, and the National PRSP review, intending to include the Energy field as part of the priority programmes eligible to the EDF;

MINDFUL of Decision A/DEC.3/12/03 relative to the Regional Rural Electrification Programme;

CONSIDERING the Regulation C/REG.7/12/99 relative to the adoption of a Master Plan of energy production and interconnection of electricity networks of the ECOWAS Member States;

CONSIDERING the convention signed between ECOWAS and UEMOA on the 22nd of August 2005, on joint implementation of actions in the energy sector;

CONSIDERING the MOU signed between UNDP and ECOWAS on the 15th of September 2005, granting UNDP the status of technical partner;

AWARE of the challenges ECOWAS countries face in terms of looking after the well-being of their peoples and achieving the Millennium Development Goals (MDGs) by 2015, especially halving poverty and increasing access to basic services,

AGREEING that particular attention must be given to populations in rural and peri-urban areas, whose living conditions are especially difficult, considering prevalent poverty rates and the level of access to basic social and productive infrastructure,

CONVINCED that Energy, at the same time resource, collective service, and production factor, has a multisectorial scope, and lies at the heart of any socio-economic development process and is central to meeting fundamental human needs (food, health, education, etc.),

AWARE that existing initiatives and programmes aimed at reducing poverty often fail to take adequate account of the concept of energy poverty and the pivotal role of energy, and that this oversight may jeopardise the implementation of development programmes and the achievement of the MDGs targets ;

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AWARE that ECOWAS and UEMOA Member States are confronted with the challenge of changing the scale of policies and programmes aimed at accelerating the development process required to achieve the MDGs,

DESIRING to contribute to the development of the on-going policies and initiatives in the energy sector, and within the general framework of poverty reduction and PRSP elaboration;

CONSIDERING previous commitments made by NEPAD, and more recently, by the Forum of African Ministers in charge of Energy (FEMA), during the Millennium Summit in September 2005;

CONSIDERING the recommendations made by the multisectoral Delegations of Member States, at ECOWAS and UEMOA Bamako Forum from 16 to 19 May 2005;

CONSIDERING the recommendations made by the Regional Multisectoral Committee, at ECOWAS and UEMOA Accra Meeting from 24 to 26 October 2005,

DESIRING to adopt a regional policy that would increase access to modern energy services of rural and peri-urban populations;

ON THE RECOMMENDATION of the Fifty fifth Session of the Council of Ministers held in Niamey on 7 to 9 January 2006:

DECIDES

Article 1:

Member states shall assign themselves one (01) global objective :

To increase Access to modern energy services of rural and peri-urban populations, to provide by 2015, access to modern energy services to at least half the populations living in rural and peri-urban areas.

This entails multiplying by four the number of people with access to modern energy services in comparison to 2005.

This also entails supplying 36 million more households and 49 000 more localities with access to energy services.

Article 2:

Member states shall assign themselves three (03) specific objectives as follows:

I. To strengthen regional integration by pooling knowledge of good practices, exchanging experiences, adopting a regional information system and developing cross-border co-operation, with a view to fostering development and building capacities.

II. To help harmonise political and institutional frameworks (i.e. PRSPs, MDG monitoring framework, etc.), in taking into account essential role energy services play in boosting human development and achieving the MDGs.

III. To develop, on the basis of national political frameworks, coherent energy policies based on reducing poverty in rural and peri-urban areas and achieving the MDGs. The energy programmes will focus in particular on:
- Stimulating productive activities, especially those related to processing and added value to agricultural produce,
- Modernising basic social services (healthcare, education, water, etc.) and improving living conditions,
- Improving the situation of women, who are disproportionately, affected by all aspects of poverty, most particularly health problems (arising from the difficulty of chores such as wood-gathering and water-drawing, etc.).

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Article 3:
Member States shall target three (3) Results by 2015:

I. 100% of the total populations or 325 million people, will have access to a modern cooking fuel

II. At least 60% of people living in rural areas will have access to productive energy services in villages, in particular motive power to boost the productivity of economic activities;

III. 66% of the population, or 214 million people, will have access to an individual electricity supply, or:
   (a) 100% of urban and peri-urban areas;
   (b) 36% of rural populations;
   (c) Moreover, 60% of the rural population will live in localities with
      (i) modernised basic social services – healthcare, drinking water, communication, lighting, etc.
      (ii) access to lighting, audiovisual and telecommunications service, etc. and
      (iii) the coverage of isolated populations with decentralised approaches.

Article 4:
Member States shall have for guiding Principles of this Policy:

- **Subsidiarity**, to be applied to all regional policies and according to which the only policies that will be conducted at regional level will be those for which regional action can bring added value to national action;

- **Participatory Approach:** promotion of the approach based on the involvement of the end users in the definition of technical and organisational options.

- **Cohesion, consultation and co-operation:** these are particularly important because of the size of the investments, the value of accessing a regional market, and the complementarities of situation between importing and exporting countries. This includes co-operation with other sub-regional institutions;

- **A multisectorial approach:** energy programmes will be based on an approach that identifies development needs and services and co-ordinates other sectorial investments to ensure the requisite equipment – and therefore the market – is in place. Past programmes have been limited, fully or in part, to a single sector – it has been proven that this restricts development dynamics.

- **Technological neutrality:** the energy programmes will endeavour to uphold technological neutrality, meaning that the technology used in any given circumstance will be the one that is likely to be best in the long-term according to local and national contexts. This neutrality will be applied, in particular, to comparing centralised and decentralised solutions and mobilising renewable energies that require heavy investment. It also entails taking account of externalities when making comparative analysis of technical solutions;

- **Promoting public-private partnerships:** this partnership will cover technical aspects, management systems, fund-raising and financial risk-taking. It is highly important that public actors (state, public institutions, local authorities, etc.) and private actors (national and local entrepreneurs, financial Institutions, associations and co-operatives, NGOs, etc.) are mobilised. This will entail setting up appropriate regulatory frameworks and a transparent, incentive based framework;

- **Sustainable Development :** taking into account the three pillars (economic, social and environmental), first at local level, but also at global level, because of the potential impact of Energy Projects, especially on climate change or on biodiversity ;

- **Support to gender equality:** by, for example, alleviating women's workload, creating income-generating activities for women, their households and their communities, access to quality social services, including healthcare and literacy training;

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- **Security of Supply and the reduction of economic vulnerability to external shock,** such as oil prices raise; this is a fundamental principle in all programmes and is crucially important in the current context of rising oil prices;

- **Optimisation of the use of available financial resources and the raising of additional resources:** Public Development Aid (multi– and bi-lateral), national financing and private funding. This will be done by seeking complementarities between regional and national funding sources and by prioritising 'high impact/ low cost' solutions.

- **On the sustainability of retained solutions:** sustainability of investments beyond 2015 must be a central concern; all alternative options hence have to be analysed over the long term (perspective of life cycle analysis approach).

Article 5:

The Member States aim at the realisation of a joint investment programme, defined in the document annexed to the Policy, to reach the objective previously defined.

Article 6:
Entry into force

This Decision shall be published by the Executive Secretariat in the Official Journal of the Community within thirty (30) days of the signature by the Chairman of the Authority. It shall also be published by each Member Sate in its National Gazette within the same time limit.

Done at Niamey, this 12th day of January 2006

H.E. MAMADOU TANDJA
CHAIRMAN
FOR THE AUTHORITY

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APL: Adaptable Programme Loan

CEP: Common Energy Policy of the UEMOA

CILSS: Interstates Committee for the Control of Drought in the Sahel

ECOWAS: Economic Community of West African States

EUEI: European Union Energy Initiative

FEMA: Forum of Energy Ministers of Africa

CEP: Common Energy Policy of the UEMOA

GDP: Gross Domestic Product

HDI: Human Development Indicator

HIPC: Highly Indebted Poor Countries

LDC: Least Developed Countries

MDG: Millennium Development Goals

NEPAD: New Partnership for Africa's Development

ODA: Overseas Development Aid

OMVS: Organization for the Valorization of the Senegal River Valley

PRSP: Poverty Reduction Strategy Paper

RIP: Regional Indicative Programme

RSP: Regional Solar Programme

SSA: Sub-Saharan Africa

ToE: Ton oil equivalent

WAPP: West African Power Pool

UEMOA: West African Economic and Monetary Union

DEFINITIONS

Rural population: Population living in rural areas: the definition of "Rural" varies from country to country

Urban population: Population living in urban areas: the definition of "urban" varies from country to country

Penetration rate: For a given area, % of the population connected to the service

Coverage rate: % of the population living in areas where the service is available

Access rate: % of the considered population which is effectively connected to the considered service

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- **The European Commission (MEPRED project – EUEI Coopener)**
- **ENDA and KITE**
- **The consultancy firm IED**
- **The Regional Energy for Poverty Reduction Program**
- **Professor Vijay Modi from the University of Columbia and the Millennium Project**
- **The team of consultants : Dibongue Kouo & Frank Atta-Owusu, Souleymane Diallo, Bocar Sada Sy, Gabriel Yaméogo**

Many thanks also go to individual contributors, especially those from the Members States, whose contribution to the White Paper was significant.

Executive Summary

Background

Poverty is a characteristic of ECOWAS and the UEMOA countries, and the Millennium Development Goals will only be achieved by 2015 if at least half the population of rural and peri-urban areas of the region are provided access to modern energy services.

However, the gaps between what current initiatives and programmes allow for and actions to be implement in order to achieve the MDGs are enough justification for the definition of strategies based on a significant increased access to modern energy services.

Both the analysis of the challenges facing the region and that of its potential resources make it clear that a common action should be undertaken and an efficient and creative regional cooperation developed in order to successfully ensure the change of scale which is on the way and to increase access to energy services in Member States in a significant way.

Vision and objective of the regional policy

Therefore, Member States and the Region have decided to embark on an ambitious regional policy in order to increase access to modern energy services. In that process, their objective is to enable at least half of the population to have access to modern energy services by the year 2015. That is 36 million extra households and more than 49 000 extra localities with access to modern energy services. This will mean to multiply the number of people having access to energy services by four as compared to the 2005 figure.

This regional policy builds on:

- the commitments made previously through the NEPAD and more recently, at the Forum of African Energy Ministers (FEMA) during the September 2005 Millennium Summit.

- the pursuance of those actions ECOWAS and UEMOA have already undertaken successfully during the last decade and whose objective was to reduce energy costs in the region, for instance through the WAPP. It also builds on the achievements of national policies and programmes, which, more recently, have made access to electricity a national priority.

So, ECOWAS and the UEMOA, as mandated by their Member States, have committed themselves today, through a voluntary policy and strong actions, to give support to Member States in order for them to create the necessary conditions allowing the less privileged populations of the region to have a quick and greater access to modern energy services, and also fully benefit from opportunities offered them through an access to affordable modern energy services.

Specific objectives

To achieve these ambitious objectives, based on existing political commitments and in keeping with the recommendations of the Bamako Forum (May 2005), **the regional policy centres around three specific objectives:**

- **Objective 1: Reinforce regional integration, by pooling best practices sharing, experiences sharing, a regional information system, development of a cross-border co-operation which will lead more particularly to feed capacity building and strengthening.**

This objective, which reflects one of the fundamental mission given ECOWAS and the UEMOA will enable the region to better capitalise on national complementarities.

- **Objective 2: Promote harmonised political and institutional frameworks (e.g. PRSP, MDGs monitoring frameworks, etc.) which regard access to energy services as one of the key national priorities for ensuring human development and the achievement the MDGs.**

The existence of such political and institutional frameworks which take into account – through a multisectoral formulation process, the multidisciplinary nature of energy function – should enable concerned policies to have the financial means necessary for the required scaling up in order to achieve the MDGs by 2015.

Besides, coherence in the political frameworks of Member States will ease the setting up of a regional market, which will mobilise the required investments, thus creating the necessary conditions for an increased support from development partners.

- **Objective 3: Develop, on the basis of national policy frameworks, coherent energy policies centred on poverty reduction in rural and peri-urban areas and achievement of MDGs.**

These energy programmes will put special emphasis on the following:

- the development of productive activities, especially those linked to the valorization and processing of agricultural produce to be sent to urban markets,
- the modernization of basic social services (healthcare, education, water, etc.) and the improvement of people's living conditions,
- the improvement of the situation of women, who more than everyone, else suffer from all dimensions of poverty, particularly as concerns their health conditions (e.g. heavy chores such as collection and transportation of firewood and water)

Expected results of the regional policy

To achieve the regional policy global objective, Member States should formulate programmes which can bridge the gap existing between the current effective access rate to energy services and the necessary access to energy rates needed to achieve MDGs, and also mobilise the funds required to meet this objective.

Also, the implementation of the regional policy should produce the following results:

1. **Access to improved domestic cooking services for 100% of the total population by 2015, that is 325 million people or 54 million households over a 10-year period. 30 million of this population have access to LPG cooking devices.**

2. **At least 60% of the rural population will live in localities that have access to motive power, with the objective to increase productivity of economic activities, and will have access to common modern services**

3. **Access to individual electricity services for 66% of the population, that is 214 million people living in rural and peri-urban areas ; that will go as follows :**
   - **(a) 100% of urban and peri-urban populations, roughly twice the current rates ;**
   - **(b) 36% of rural populations – as compared to 1% today in those African countries with the least population density, and to roughly 10% in the most advanced countries;**
   - **(c) Besides, 60% of the rural population will live in localities equipped with basic modern social services: health, education, drinking water, communication, and lighting. All these amenities will be achieved either through decentralized electrical facilities or through grid extensions, more than thrice the current levels.**

Each of the specific results will benefit from a specific investment programme so that it could be given the resources required to achieve the set objectives.

Lines of action of the regional policy

The analysis of national energy contexts and the various similarities which arise therefrom make feel that the region can make a very significant contribution towards the removal of a number of barriers to modern energy services access.

Similarly, the analysis of the added value of the regional action – in terms of capacity building, exchange of experiences, support for fund raising – has already been experienced by CILSS – a sub regional institution – through the PREDAS and PRS programmes and more recently, by ECOWAS through the WAPP.

Based on the preceding, participants to the Bamako Forum identified and validated **four lines of action** aiming at suppressing such barriers at the regional and country levels. They include:

- **Line of action 1: Capacity building of private and public actors**
  This concerns both private (local operators, investors, donors, etc.) and public actors (ministries, regulatory agencies, rural electrification agencies, etc.), be they of the technical or political sectors (formulation of a coherent framework) which could attract increased investments and lead to greater access to energy services.

- **Line of action 2: Help raise soft loans , grants and private sector funds for projects aimed at extending energy services to rural or peri-urban areas**
  The region will help mobilize soft financing and attract private sector involvement into projects aimed at extending energy services to rural and peri-urban areas (in keeping with the successful models of the WAPP and the WAGP).

- **Line of action 3: Exchange, promotion and dissemination of sub-regional experiences relating to energy services in rural and peri-urban areas (knowledge management)**
  The region also has a role to play in the exchange, promotion and dissemination of sub regional experiences in terms of the supply of energy services in rural and peri-urban areas, in order to capitalise on national achievements and succeed in bringing the change of scale necessary to meet the MDGs.

- **Line of action 4: Promoting local production of energy goods and services**
  Finally, the region has an important role to play in promoting local production of energy services equipments thereby creating employment, knowledge and added value within ECOWAS, notwithstanding the lowering of equipments costs compared to the imports prices.

Required Financing

In the light of the objectives and magnitude of its stakes, the region will have to formulate institutional, financial and human means, which match its ambitions.

The first estimates of investments needed to reach the above listed targets are as follows:

- **17,5 billion dollars over a ten-year period** for those investments for access equipment, including the costs of studies and accompanying measures;

- **34,6 billion dollars over a ten-year period** for energy, including production and transportation costs, that is 3,46 billion dollars per year. This represents the overall amount, including depreciation costs for production and transportation. It is understood that with the set level of penetration rates, consumers may not have enough money to foot the whole bill. Therefore, the States will have to bear part of this invoice by granting them subsidies. Each state will have to decide on that and on how much this subsidy could amount to.

- The overall cost amounts roughly to **16 dollars per capita per year.**

Quick and efficient implementation of investments will rely on the region's capacity to mobilise in order to:

- strengthen operators' capacities and develop tools and methods.

- develop technical and economic engineering for local projects, mostly feasibility studies.

- raise funds. Here, two types of actions should be identified: (1) actions for which effective funds management is the responsibility of states, while studies and mobilization are the responsibility of regions, (2) and actions for which financial management is the responsibility of the region.

- undertake actions aiming at exchanging experiences and promoting more promising technical, regulatory and organizational or financial measures.

The total estimated cost of activities to be carried out in the region is 248,7m$ (implementation of the issues for action) over a 10-year period.

The total estimated cost is 248.7 million $ over a 10-year period and can be broken down as follows amongst the 4 lines of action:

Line of action 1: capacity building . . . . . 83.1 M$
Line of action 2: support to funds mobilization . . . . . 121.2 M$
Line of action 3: promotion and experience dissemination. . . . . 15.6 M$
Line of action 4: promotion of local equipment production . . . . . 12 M$
Preparatory activities & operation of the agency over 1O years . . . . . 16.8 M$

Implementation strategy

In terms of strategic management, the region has already laid the foundation of a suitable institutional mechanism with the signing, in June 2005, of the UEMOA-ECOWAS Convention on the implementation of common actions in the energy sector and the creation of an enlarged joint Energy Committee.
The successful implementation of this ambitious commercial regional policy -- which aims at widening access to energy services to rural and peri-urban populations -- lies on the involvement of all actors , not only those of the energy sector. All of the Region's actors and public development partners should be involved in this process. Therefore, the Steering Committee of the programme of access to energy services -- which will play a strategic role for activities management and guidance , -- will bring together the main regional actors , namely : UEMOA/ECOWAS technical secretariat, Energy Committee, donors, the Multi - Sector Regional Committee, and representatives of the civil society and the private sector.

Given the diversity of issues to be dealt with, the Steering Committee will set up thematic Working Groups, composed of national representatives of Member States in charge of conducting studies related to regional priority issues.

For a better visibility of the undertaken actions and the results achieved, a Regional Forum on Access to Energy services in the ECOWAS, bring together Energy Ministers, will be convened every year. These high level events will doubtless help boost experience sharing, regional integration and enhance sector visibility. These common meetings and working sessions will promote exchanges, contribute to harmonise policies and strengthen regional integration.

In the operational sphere, ad hoc human, institutional, and financial resources are required and should be guided by a double principle of continuous efficiency and operation. As a result, a structure – called Regional Agency for Access to Energy Services will have to be set up to implement regional policy, and specifically catering for activities resulting from the four lines of action previously defined.

Therefore, the proposed implementation strategy tends to focus regional action on those areas with the highest value added, and provide the region with an enlarged management framework as well as a performing operational structure. Once this structure is put in place, conditions for a successful implementation of action plans will be met.

1. WEST AFRICA'S SOCIO-ECONOMIC CONTEXT

1.1 Demographic situation and geographical contrasts

The total population of the **Economic Community of West African States** (ECOWAS) today stands at **262 million**, representing 40% of the total population of sub-Saharan Africa (SSA). Only three countries - **Nigeria, Ghana and Cote d'Ivoire** – account for two-thirds of this total. In 2002, the average population density for the region was 99 inhabitants per km^2, with variations ranging from 11 inhabitants per km^2 in Mali and Niger, to 142 inhabitants per km_ in Nigeria[1].

The region's cities are attracting more and more people, since they offer better living conditions and greater potential for economic activity. According to estimates, 50% of the population will live in urban areas by 2015, compared to 43% today. Though this is still a lower ratio than in other developing countries (the rate stands at 70% in Latin America), absolute demographic pressure is still high.. It is estimated that by 2015, the population of the ECOWAS region will have risen to 320 million thus experiencing one of the highest annual growth rates in the world – that is 2.65%, compared to an average of 1.5% in India and 0.5% in China[2].

Unequal distribution of natural resources

This unequal population distribution reflects significant geographic contrasts, with conditions varying gradually from the Sudano-Sahelian zone in the north, to a humid tropical climate along the southern coastal strip. Though the ECOWAS may be well endowed with natural resources in per capita terms, these resources are, in fact, highly concentrated and relatively less exploited. Nigeria, for example, has 98% of the region's proven crude oil, natural gas and coal reserves. Similarly, 65% of the region's hydro-electricity potential is found in Nigeria and Guinea (Kouo, 2005). The same pattern prevails with other minerals, with Liberia and Sierra Leone possessing the biggest iron deposits, Ghana having the lion's share of gold, Ghana and Sierra Leone having much more diamond reserves than anywhere else, which is also the case of Guinea for bauxite. Finally, when it comes to agricultural output, Nigeria produces 55% of the region's cereals[3]. These demographic (population density) and geographic realities mean that the infrastructure investment costs that are required vary greatly across the region.

1.2 A socio-economic context characterised by poverty

In 2015, West Africa will be home to 320 million people, and the challenges facing it will be considerable given that 13 of its 15 nations are currently categorised as Least Developed Countries (LDCs). Only the Cape Verde Islands and Ghana are classified as countries with a "medium" level of development. These nations also belong to the Heavily Indebted Poor Countries (HIPCs), and 14 of them have low levels of human development indicator (HDI lower than 0.5) and high poverty rates.

In 2000, there were some 100 million poor people in West Africa that is about 44% of the total population. Even more alarming, the poverty rate is rising steadily due principally to the weak growth of per capita income (0.9% on average from 1990 to 2000).

Growing inequality

Inequality measurements used in studies of income distribution confirm not only that there are wide disparities, but that these are growing - even within countries under consideration - compared to other parts of the continent. Table 1 highlights the large gulfs in income between the richest 20% and the poorest 20% in West Africa. Almost 55% of income in West Africa is in the hands of the wealthiest quintile, while less than 6% is left for the poorest 20%(UNDP, 2002 and World Bank 1999 and 2001, in Grégoire and Mellali).

Figure 1: Income differential within ECOWAS

Country	20% Lowest in % 1998	20% Highest in % 1998	Ration of 20% highest to 20% poorest in 1998
Burkina Faso	5,5	55,5	10,0
Ivory Cost	7,1	44,3	6,2
Ghana	5,6	46,7	8,4
Gambie	4,0	55,2	13,7
Mali	4,6	56,2	12,2
Niger	2,6	53,3	20,7
Nigeria	4,4	55,7	12,7
Senegal	6,4	48,2	7,5
Sierra Leone	1,1	63,4	57,6

[1] UN World Population Prospects
[2] World Bank Atlas
[3] See FAOSTAT

The different aspects of poverty in West Africa[1]

Poverty is a phenomenon that manifests itself in a variety of aspects measured by different indicators. In West Africa, it is apparent in the following ways:

- **The rate of human poverty** (assessed in terms of longevity, level of education and decency of living conditions) is estimated at 44%[2]

- **Regarding the monetary poverty rate** (where poverty threshold is understood as $1 per day), annual per capita income for the region is around $465, or $1.3 per day. It is considered then, that approximately half the region's populations live in absolute poverty, surviving on less than a dollar a day, compared to 35% of the people in South Asia and 15% in East Asia.

- **Furthermore, poverty hits women harder than men:** the illiteracy rate for adult women (over 15) is 25% higher than for men in all ECOWAS states, where for every 10 literate men there are only seven literate women.

- **Finally, poverty is particularly pronounced in rural areas:** in some Member States, poverty indicators are two or even three times higher in rural areas than in urban ones. This stems from the fact that the portion of Gross Regional Product generated in urban areas climbed from 37% in 1960 to 70% in 1990, a period during which the urban population rose from 14% to 37% of the overall population. This trend is likely to intensify over the years ahead; forecasts suggest that by 2020 85% of Gross Regional Product will come from cities. This is in spite of rapid urban growth and the fact that the economic crisis that has engulfed the region over recent years has affected cities more than rural areas.

- **Level of access to basic social services is one of the lowest in the world:**

  - In 2003, 60% of the population had access to drinking water, compared to 75% in East Asia and 85% in South Asia;
  - 56% of children completed primary education, compared to 85% in South Asia and 95% in East Asia;
  - The infant mortality rate (children under 5) is 187 out of 1000 live births, as opposed to 100 in South Asia and 50 in East Asia;

Economic growth is fragile and not sufficient to reduce poverty in the long-term

Abject poverty and vulnerability will continue to spread unless the region can achieve dynamic economic growth and equal redistribution of the income generated (see above: Growing inequality); as things stand, however, growth rates in West Africa are not enough to cut down poverty nor even to slow down its growth (M. Kankwenda, L.J. Grégoire et al, 1999). From 1995 to 2001, GDP increased by an average of 3.92% per year for all ECOWAS countries. The required rate varies from 5.9% depending on the member country - this rate is well below the rate required to reach poverty reduction targets by 2015 (UEMOA – WAEMU , 2004)

There has been only very limited growth and diversification in productive sectors over the last 15 years, and gross internal investment has also remained very low.

In addition to this inadequate growth, other **macro-economic factors** render West African economies fragile (*Grégoire L.J. et Mellali S., 2003*):

1. **The population has almost doubled** in the space of a generation, and this rapid demographic growth exerts heavy pressure on employment opportunities in both rural and urban areas.

2. **The challenge of increasing women's involvement in the dynamics of development** has yet to be sufficiently met, since nearly half of West Africa's human assets are under-used, as women's access to basic resources that would enable them to contribute to production and economic development (such as land and credit) is still restricted.

3. In the specific area of **capacity building**, human and institutional capacities have not been developed with sufficient speed, or in a way that pre-empts requirements and broadens the skills base so as to better cater to constantly changing national, regional and international needs.

4. **The lack of macro-economic policies encouraging private companies** has held back profitability and discouraged investors, despite the fact that the sub-region, like the continent in general, offers considerable potentialities.
5. **The region's wealth derives first and foremost from rural output (agriculture, fishing and pastoral farming),** which

[4] There are many aspects to poverty. It reflects the inability to secure socially decent living conditions and also includes other forms of deprivation. The different dimensions of poverty relate to mankind's various distinct capacities: economic capacities (income, means of subsistence and decent work), human capacities (health and education), political capacities (means of action, rights, freedom of speech), socio-cultural capacities (status and dignity) and defensive capacities (insecurity, risk and vulnerability) – see OECD/ADC definition of poverty – poverty reduction, Paris, 2001.
[2] See the UNDP Human Development Report, 2002

is geared towards national food requirements. The food and agro-forestry sectors raise export earnings (groundnuts, cotton, palm oil, coffee, cocoa, etc.). Most exports from ECOWAS countries are primary, non-processed goods, with the exception of Ivory Coast and Nigeria, both of which boast of significant fossil fuel resources. A major concern is that the primary sector is extremely sensitive to climatic swings, and to exchange rate fluctuations (especially in the CFA zone) and, of course, to changing market prices for raw materials. And to crown everything, West African producers are squeezed out by unfair competition, as EU and U.S producers subsidise similar goods .

6. **Most of the countries in the sub-region are in the margins of globalization,** this is especially true for the majority of countries among the least develpped of the sub region, as is proven by statistics of their participation in international exchanges (0.7% of world exports), their contribution to industrial added value (0.1%), and the low level of direct foreign investment they attracted (0.01%) from 1990 to 1999 (ECA, 1995).

7. **An increasingly restricted access to global markets:** the trends in global markets for primary products have generally not been favourable to sub-Saharan countries since the early 1980s and the medium- and long-term prospects look ominous.

8. Imports of oil products represented on average 40% of total exports from 1993 to 2000 (see Appendix 1) – excluding Nigeria and Ivory Coast. The doubling of the barrel price (as could happen if current trends persist) would have disastrous macroeconomic consequences on the region's balance of trade, and would severely curtail countries' ability to servvice their debts. Naturally, it would then be a major blow to economic growth.

In terms of overall **human development**, the challenges facing West Africa appear all the more daunting because indicators of nutrition, health and education show serious deficits since HIV/AIDS pandemic has spread rapidly throughout the sub-region (A. Adedeji, R. Green, A. Janha , 1995) in the last decade (infecting more than six million adults and almost two million children). The situation could deteriorate further unless fast and appropriate remedial measures are taken.

Nevertheless, the region has also enjoyed some startling successes. From 1970 to 2000, life expectancy has jumped from 42 to 51 years. Adult literacy rate has more than doubled, and net rate of school attendance has increased from 21% to 48% at primary level and from 12% to 23% at secondary level. The proportion of the population with access to clean water was 28% in 1970, and now stands at more than 50% on average throughout the region (Grégoire L.J., Mellali. 2003).

However, despite these achievements which pave the way for development, ECOWAS Member States should recover from this extremely unfavourable social and economic environment if they are to meet the challenges of poverty eradication.

1.3 West Africa and the Millennium Development Goals

1.3.1 The Millennium Development Goals

On September 8th 2000, one hundred and ninety one (191) countries adopted a resolution at the United Nations General Assembly called the Millennium Declaration. The main purpose of this was to set out a shared vision of development to be achieved by 2015, and to raise the international community's awareness of, and commitment to, ideals of peace, justice and equality between peoples.

In keeping with the recommendations of this Summit, the Secretary General of the United Nations invited each country to establish a permanent framework for monitoring the Millennium Development Goals (MDGs) that emerged from a series of conferences held by the United Nations during the 1990s. The Millennium Initiative endeavoured to draw up 8 main goals and 18 target figures to be reached by 2015 and 48 progress indicators (see Appendix 2).
These objectives were to serve as guidelines for the formulation of national development plans and measure progress

Insert 1 – The eight MDGs to be reached between 1990 and 2015:

1. **Extreme poverty:** Reduce by half the proportion of people who live below the national poverty line - & hunger: reduce by half the malnutrition level of children under 5.
2. **Universal primary education:** Achieve universal primary education for all by 2015.
3. **Gender equality:** Promote gender equality and and women empowerment .
4. **Reproductive health:** Reduce the maternal mortality rate by three-quarters by 2015.
5. **Mortality of children under 5:** Cut down by two-thirds the mortality rate of children under 5 by 2015.
6. **HIV/AIDS and other diseases:** Halt and reverse the spread of the HIV/AIDS epidemic, malaria and other diseases.
7. **Environmental protection and access to drinking water:** Halve, by 2015, the proportion of people without access to drinking water and safeguard the sustainability of the environment.
8. **Consolidate a global partnership** for development.

milestones. They should also be used as tools for raising awareness, forging partnerships and harnessing the involvement of governments and civil society, so that the goals may be attained at national, continental and global level.

The MDGs do not suggest how to achieve them. Instead, they help shape strategic outlines, particularly resulting from poverty reduction strategic frameworks with a view to achieving specific measurable targets outputs. To this end, it is up to each individual country to determine the operational links between the Millennium Development Goals and the policies and strategies they implement.

1.3.2 West Africa's state of progress

All ECOWAS member countries have committed to devising investment policies and programmes to meet the challenges described above, and achieve the MDGs by 2015.

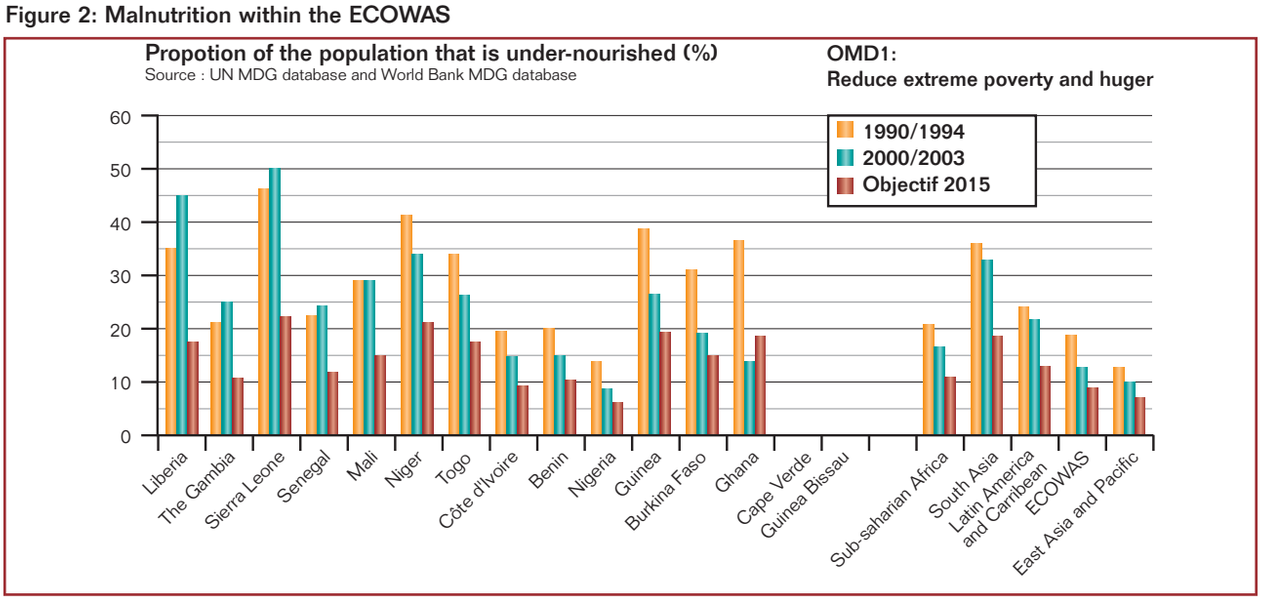
If we look solely at the goals relating to the reduction of monetary poverty and improvements in education and health, we can identify the following trends (see Appendix 3 for a comprehensive review of the eight MDGs in ECOWAS countries):

MDG 1: Reduction of extreme poverty (< US$1 per day) and hunger

West Africa has a population of 100 million poor, which means 44% of the region' s population lives below the monetary poverty line of $1 per person per day. This is the highest percentage of any region in the world. Worse still, the figure is rising steadily and all signs indicate that the poverty reduction goal will not be met in this region by 2015, because no one seems to be in the capacity to do so.

As regards **malnutrition**, available figures for 13 of the 15 countries indicate that the region is broadly on track in terms of the 2015 objective. However, there are still stark contrasts between countries, the situation is rather deteriorating in five of them (The Gambia, Liberia, Mali, Senegal and Sierra Leone).

Figure 2: Malnutrition within the ECOWAS



MDG 2: Ensuring primary education for all

With a primary school completion rate of just 56%, ECOWAS is by far the least advanced region of the world in this regard. To meet the MDGs, it must greatly increase this rate, yet it is struggling just to sustain it. The figures for the rest of the world are: the whole of sub-Saharan Africa – 60%, South Asia – 85%, the Middle East and North Africa – 88%, East Asia and the Pacific– 95%.

MDG 4: Cut by two-thirds the infant mortality rate of children under-five

The average infant mortality rate for the whole of ECOWAS is weak. However, the figures for 1990-2000 suggest that it is highly unlikely that the sought-after rate will be reached by 2015. Of the 15 Member States, only the Cap Verde Islands and Guinea seem to be meeting it, while Ivory Coast and Guinea are actually moving further away from the target.

Figure 3: Primary education within the ECOWAS

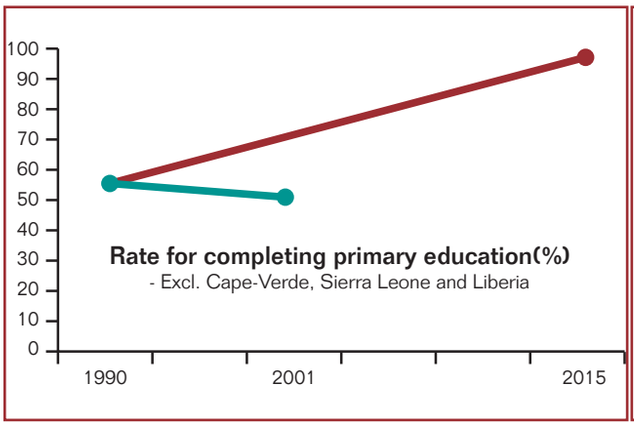


Figure 5: Access to drinking water

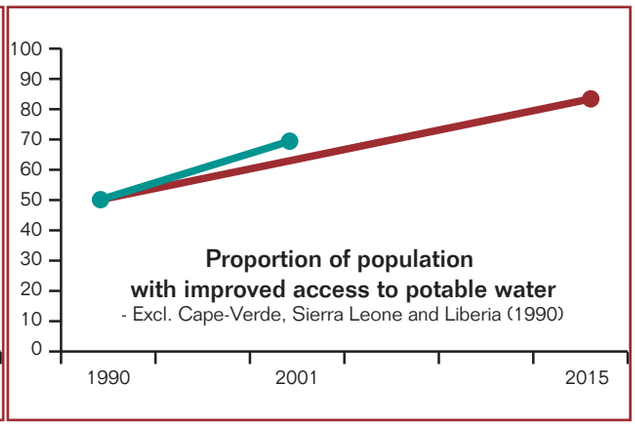
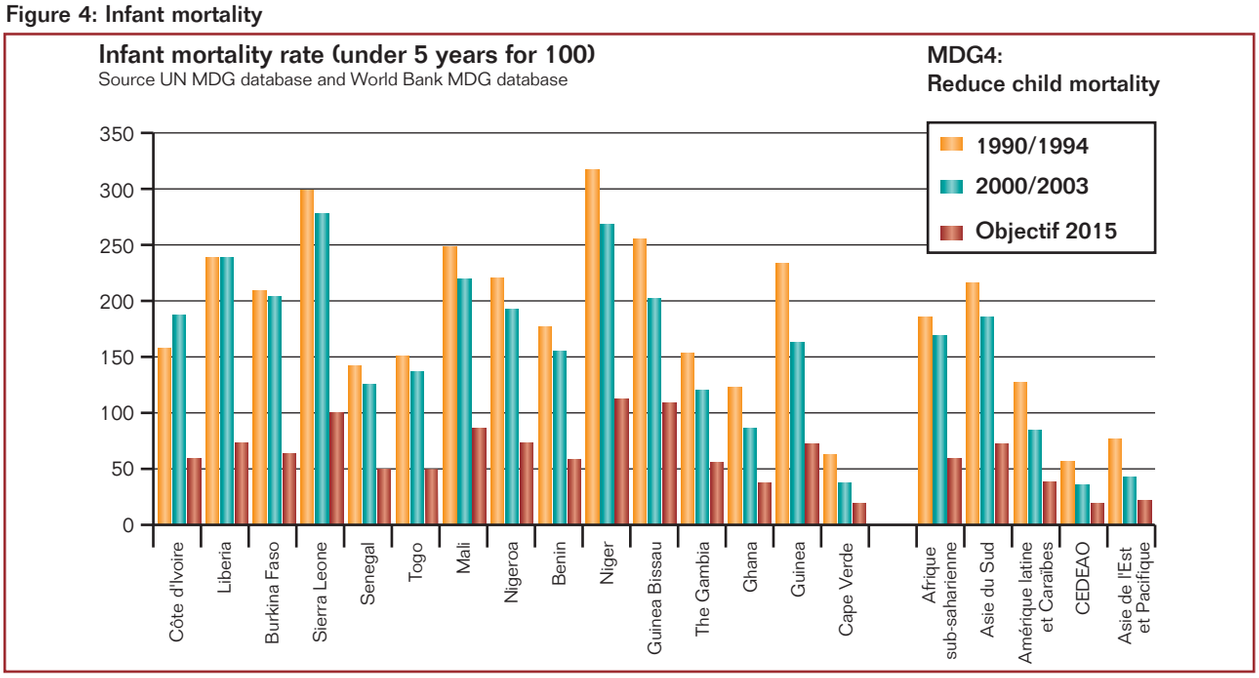


Figure 4: Infant mortality



MDG 7: Safeguarding a sustainable environment

One of the major thrusts of the MDGs is aimed at increasing peoples' access to sources of drinking water. Governments made efforts throughout the 1990s to widen this access and also to improve sanitation, while simultaneously drawing up conventions and action plans for protecting the environment. These endeavours, however, did not always bear fruit, and investment and capacity-building has not kept pace with needs.

The prospects in terms of drinking water are relatively promising in two-thirds of the region's countries. Priority is generally being placed on revamping and consolidating existing infrastructure, seeking low-cost maintenance, improving the sustainability of systems and amenities, and reducing water-related risks by taking preventive measures.

In conclusion, the overall analysis of progress on the Millennium Development Goals suggests that one or two West African countries could achieve some of the specific targets within the set timeframe. Some countries could attain the main objectives relating to schooling, health and drinking water if they succeed in meeting certain number of conditions. However, despite strong national commitments, most of the countries in the Region are not likely to achieve the MDGs without increased support from the international community.

1.4 Poverty eradication: a priority at the heart of national and regional development policies

The process of drawing up the MDGs equipped the international community with a **long-term** reference framework featuring quantified targets on which poverty reduction strategies and policies should build on.

The global framework is gradually applied today at national and regional level in a way that allows each country and region to tailor a strategy for addressing the specific challenges it faces, by following an investment plan geared towards achieving precise results within a set time period.

At national level

This process, rooted specifically in poverty reduction, is pursued along with the process of drawing up and reviewing Poverty Reduction Strategy Papers (PRSP). These papers were initiated in 2000 for heavily indebted poor countries, and will be backed by International Financial Institutions who have recognised that structural adjustment policies failed to alleviate poverty.

PRSPs are now the **medium-term** (3-5 years) reference frameworks for budgetary planning of strategies and programmes aimed at reducing poverty in countries eligible for the enhanced Initiative towards heavily indebted poor countries (Enhanced HIPC).

From examining the PRSPs of the 15 ECOWAS Member States, it seems that most countries base their strategies on three priorities:

1. Building capacities and reforming State apparatus;
2. Improving economic productivity, also referred to as "wealth creation", "production and employment", "helping or supporting growth", "developing the productive sector";
3. Increasing people's access to basic services (also known as the "social sector").

This approach aims then to develop the economy by making it more competitive. The main device for stimulating this is liberalization, opening up to market competition, while devoting more attention to poverty reduction by expanding access to basic services to the deprived populations.

Though there are factors that distinguish the PRSP process from the process for devising the MDG-oriented strategy – differences that each country addresses in the way it believes will best reduce poverty – the two processes do share one point regarding energy: national reports on both the PRSPs and the MDGs make little mention of energy and how it affects other sectors (notably health, education, etc.), and only on rare occasions do they refer to a connection between energy services and poverty reduction.

The following are the two main topics addressed by **PRSP** [see Appendix 4]:

1. **On the one hand, the economy must be rendered competitive by securing access to energy at affordable prices.** PRSPs view energy as an infrastructure carrying an economic cost factor; they mostly advocate privatising big national energy companies, and also seek to raise hydrocarbons or interconnections that may boost its efficiency. No mention is made of rural electrification, biomass substitution or energy efficiency when it comes to improving productivity and economic efficiency.

2. **On the other hand, rural electrification and increased access to modern energy services** are part of the dynamic that aims to give populations access to basic social services such as drinking water, health facilities, electricity and telecommunications.

Most analysis in the **MDG** reports dwell on **energy efficiency and decreased carbonic gas emissions.**
One immediate consequence of this is that little financial resources are allocated to energy programmes that are based on poverty reduction. This is reflected in the fact that only one third of PRSPs devote medium-term budgetary resources to priority energy programmes.

Decentralization is at the forefront of poverty reduction strategies

Decentralization, which entails transferring public powers (in administrative, budgetary or political areas) from upper government to lower levels, is intimately tied to the issue of poverty reduction even if the topic has only recently received real attention (*Jütting and alii, 2005*).

Furthermore, PRSP evaluations that have been conducted to date have stressed the importance of bolstering institutional capacities so that policies benefiting the poor may be effectively implemented. Accordingly, it can be said that a coherent decentralization strategy aims at enhancing the quality of local institutions, without which poverty reduction strategies cannot be effectively applied.

In that way, decentralization offers an opportunity to local executives to stimulate, foster and support local development initiatives, and manage, for example, aspects related to energy by coordinating investments in this sector.

However, in the light of the present situation in Africa (based on a World Bank study (Ndegwa, 2002) on decentralization in 30 African countries), it has to be acknowledged that only a handful of countries (South Africa, Uganda, etc.) have so far chosen to delegate a meaningful amount of power and resources to local authorities.

However, this trend should become more pronounced over the coming years so that decentralization can have a genuine impact on the methods used to implement programmes affecting decentralised infrastructure, regardless of whether they are used for social services (health centres, etc.), energy services (micro-grids) or economic amenities.

At regional level

Recognising the difficulty of tackling poverty and boosting development while operating only at the national level, states and international co-operation bodies have increased the number of initiatives aimed at advancing regional integration with a view to fighting poverty:

1. **A regional PRSP** was commissioned by the Member States and backed by UEMOA and ECOWAS[1]. This document prioritises economic growth to be achieved by fostering greater macro-economic stability and ensuring more rigorous management, which should reduce poverty.

2. Similarly, a **Regional Indicative Programme** (RIP), an aid-scheduling programme run with the European Union, was compiled to complement the National Indicative Programmes. In this programme, the emphasis is placed on promoting stronger economic development in the region by enhancing integration of the region's economies into the global economy. 50% of the RIP's budget is devoted to supporting economic integration and trade, while 35% goes to improving transport, which is the second sector on which efforts are focused. This programme does not specifically target poverty alleviation; rather it treats it as an effect of vibrant economic growth driven by further regional integration.

At international level

After committing themselves to help achieve the Millennium Development Goals, development partners agreed at the Monterrey conference in March 2002 to reverse the downward trend in Official Development Aid (ODA). Therefore, the OECD countries committed to increase PDA to 0.7% of their GDP (2001), while G8 countries have doubled their aid to Africa since 2001.

As the most recent human development report declared[2], (UNDP, 2005) revamping the international aid system is one of the most urgent priorities facing governments. The report suggests that aid can only be effective[3] if it is based on a partnership in which responsibilities and obligations are shared. The two main messages that can be taken from the analysis are the following:

- If aid is not increased on a sustained basis, the MDGs will not be met,
- An increase in aid through existing structures would yield exemplary results, thereby helping to reduce incidences of tied aid, reducing the volatility and unpredictability of aid flows and reassessing the extent of conditions attached to aid.

However, it is essential to look at how development aid is spent in ECOWAS countries. Aid may have decreased both in absolute value and in per capita terms between 1990 and 2000 (falling from US$29 to US$19 per capita), but the amount received per capita is still much more than in other developing regions for less results in terms of human development. (see. Appendix 3). It is crucial to change the way this aid is used.

The same development partners also identify **regional co-operation in Africa** as one of the springboards to economic, social and political progress. NEPAD is the key partner for the Action Plan for Africa, and the strides that have been made since the G8 summit in Evian in 2001 are to a large degree attributable to the co-operation between the two. Similarly, progress made in reducing conflicts and improving governance is connected to better regional co-operation and the involvement of the African Union (formerly known as the Organization for African Unity).

[1] See provisional version of PRSP dated August 2004.
[2] 2005 Human Development report, International cooperation at crossroads: aid, trade and security in a world of inequalities.
[3] See appendix 3. If we look at UEMOA on the basis of MGD 8, Aid decreased both in absolute value and in per capita terms between 1990 and 2000 (falling from US$29 to US$19 per capita), but the amount received per capita is still much more than other developing regions.

In the specific case of energy, there is an overall consensus on that fact that energy services undoubtedly help to reduce poverty and to stimulate economic development. This consensus was built via a variety of events: the **Millennium Summit** (2000) and **World Summit on Sustainable Development** (2002), the **NEPAD Initiative**, the **Commission for Africa** set up by British Prime Minster Tony Blair, and the **Millennium Project**, all of which have come at a time when there is more regional co-operation in West Africa, and when main development initiatives are increasingly in line with each other. One of the notable effects of this has been that over the last few years several initiatives launched by development actors have taken account of energy, such as those by the **World Bank** and the **European Union** (European Union Energy Initiative) (see insert 2). Naturally then, it has been recommended that the contributions of energy be acknowledged as a main strategic theme, that can help achieve development targets, particularly the MGDs.

Insert 2 – European Union Energy Initiative for reducing poverty (EUEI)

Because it recognised the importance of improving energy access for disadvantaged populations, the European Union launched – after the World Summit on Sustainable Development, the European Union Energy Initiative with the aim of eradicating poverty and promoting sustainable development.

This initiative was launched jointly by the EC and Member States in order to strengthen synergies in the area of policies and activities in the area of energy sector cooperation. Its main funding tool is an 'energy facility' with a budget of 220m which comes from the EDF. This facility will support:

- Technical assistance projects (studies, capacity building and institutional strengthening)
- Energy access projects
- Studies and other activities required to mobilise funds from development banks
- Feasibility studies in the area of infrastructure

But as we have seen, this consensus is not yet reflected to any great degree in national poverty reduction strategies. This is mostly due to the fat that there is a **poor understanding of the various determinants of energy poverty and its links to people's living conditions (in terms of education, health, sustainable environment or women empowerment)**. This situation currently stands as a big obstacle, preventing the formulation of appropriate policies that would yield better resource distribution and bolster energy services, all of which would bring the region close to fulfilling the Millennium Development Goals.

1.5 The energy dimension of poverty

1.5.1 Energy poverty: an aspect of poverty often inadequately understood

The role energy plays in improving poor people's living conditions must be fully understood if it is to be allowed to contribute to development. Energy has a profound bearing on people's well-being. It supplies water and fuels agricultural output, health, education, job creation and environmental sustainability.

Despite this, still in 2002, 1.6 billion people in developing countries were deprived of access to reliable and affordable energy services (such as electricity and butane gas), and 89% of the population of sub-Saharan Africa use traditional biomass fot cooking and heating (AIE, 2002). With more than one-third of a household's budget being set aside for fuel costs in many countries, the region's population pays an onerous price for a substitution fuel (mainly biomass) that is of poor quality and not very effective, whereas energy in some countries is as high as one third of a household budget.

Energy poverty can also be defined as *the lack of sufficient choice that would give access to adequate, affordable, effective and environmentally sustainable energy services that could support economic and human development (Reddy, 2000)*. Because energy poverty affects, and is affected by, other aspects of poverty, it is vital to explore issues surrounding it, including the gender aspect.

Insert 3 – The gender aspect of energy poverty

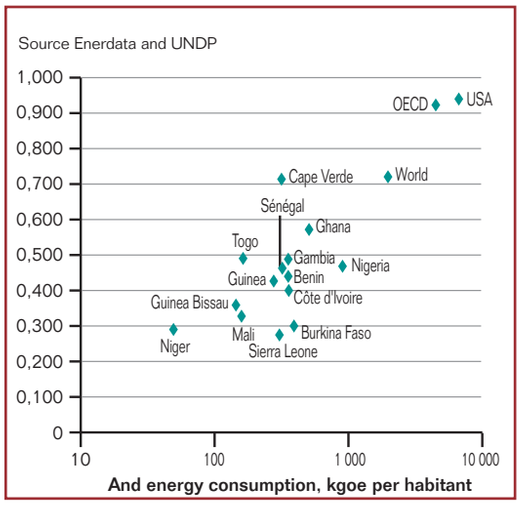
Women, especially in rural areas, are affected in a disproportionately severe way by the lack of access to modern fuels and electricity. Roles are distributed so that women and girls usually have the most burdensome and time-consuming chores, leaving them, for example, to spend several hours each day gathering wood so they can cook meals, and carrying water so they may look after basic needs (Clancy, Batchelor and Skutch).

1.5.2 The strong link between energy and human development

In order to illustrate the geographic areas where energy poverty is most heavily pronounced, several studies (Modi, 2004) compared energy consumption (Kgoe/capita) and the level of human development (HDI), thereby exposing the relationship between these two variables. Most ECOWAS Member States feature amongst the Least Developed Countries and have **some of the lowest levels of energy consumption on the planet:** on average, ECOWAS countries consume 88 kWh of electricity per capita each year, compared to 350 kWh in East Asia. The statistical analyses in the tables above amply demonstrate the intimate relationship between human development and energy consumption.

Most ECOWAS Member States feature amongst the Least Developed Countries and have **some of the lowest levels of energy consumption on the planet:** on average, ECOWAS countries consume 88 kWh of electricity per capita each year(Enerdata, 2005), compared to 350 kWh in East Asia. The statistical analyses in the table below amply demonstrate the intimate relationship between human development and energy consumption.

Figure 6: Energy consumption and HDI 2003



This low level of consumption is compounded by **very inefficient modes of consumption and production:** to generate one unit of national wealth (US$1000 constant in 1995), Africa consumes 0.787 TOE, whereas OECD countries only require four times less than that, or 0.19 TOE.

The massive recourse to traditional fuels – 67% dependency on biomass in Africa, and 80% in ECOWAS countries - is one of the main reasons for this, though another significant factor is the general energy inefficiency of the industrial sector and office air-conditioning systems in capital cities. The main cause of the dependency on biomass is people's low purchasing power, which prohibits them from affording modern fuels: their low income means they consume much more energy per unit of added value than in developed countries. This over-consumption takes a toll on the environment (soil erosion, desertification, etc.). Therefore, the absence of modern fuels propels the poverty spiral further downward.

Given all of this, it is obvious that increasing access to good, affordable energy services is likely to engender considerable benefits in terms of people's living conditions, as well as helping to achieve MDGs.

1.5.3 The role of energy services in achieving MDGs

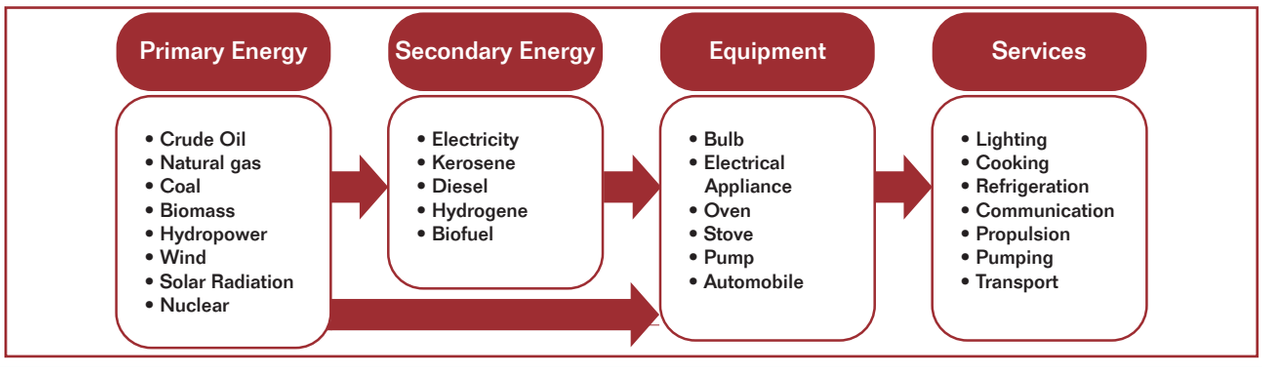
Though energy is not explicitly taken into account in the Millennium Development Goals, the contribution of **energy services** to their achievement is widely acknowledged.

Firstly, it is worth noting that emphasis is put on links between MDGs and energy services, i.e. on usage needs as opposed to purely infrastructural issues. As Reddy (2000) underlined, what the end consumer or user is interested in is what the service fuel

Insert 2 – Defnition of energy services

The idea of energy services (or useful energy) describes the end uses that the addition of fuel makes possible. These services are the last link in the "energy chain" encapsulated in the diagram below. The idea considers the supply of the end service and the satisfaction of human needs, rather than looking at the energy source or the production, transportation or distribution technology used. (Adapted from the World Energy Assessment)

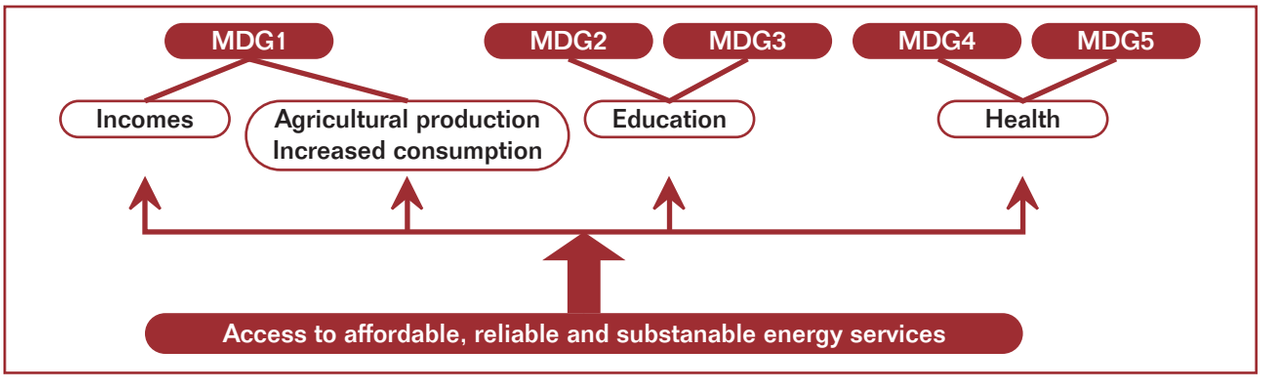
Figure 7: Defining energy services



can render him or her. Hence, we follow the approach on which the Millennium Project is founded: transforming quantities of energy into services that can help achieve MDGs, and considering how the whole population can benefit from them.

Although the influence of energy on economic growth and human development may now be well understood, it remains that this understanding is only now starting to be supported by figures, as the Millennium Project team demonstrated with the support of Columbia University[1].

Figure 8: Causal chain between energy and achieving MDGs



Below are the analysis of some concrete impacts of energy services on a selection of the eight Millennium Development Goals – the analyses do not purport to be exhaustive (see Appendix 2 for a matrix drawn up by DFID to illustrate the relationship between energy and all of the MDGs).

The impact of energy access on schooling rate (MDG 2)

Engine-powered food processing equipment is faster to use, and therefore results in huge time savings and less strenuous chores – it can help improve the schooling rate for girls . In Mali, girls are responsible for domestic chores such as drawing water and processing food (grinding, shelling, etc.) from as young as eight, a situation that excludes them from normal schooling. Since the introduction of multi-purpose platforms in 1996, villages have been able to use alternative means (the use of mechanics, most notably) to perform an array of essential tasks that were hitherto done by girls, which has freed them from this strenuous daily burden. The success of this multi purpose platform, which freed young girls from those basic chores done for the subsistence of the poor rural populations, has contributed to improve the ratio of girls to boys in some Malian schools which has leapt to 90%, while an average of 7% more young people are enrolling in secondary school. (Diagana 2001)

The impact of energy access on health and women's empowerment (MDG 3 and 5)

A household survey (Calvo, 1998) conducted in, amongst other African countries, Burkina Faso and Ghana, showed that 87% of trips in rural Africa are undertaken on foot and that in an average household, women make 65% of these trips. Besides, the average daily load carried by women is 20kg over a distance ranging from 1.4 to 5.3 kilometres.

The time women spend carrying out chores such as drawing water, gathering wood, preparing meals, etc. greatly limits the opportunities they have to avail avail themselves of healthcare. As an example, drawing water, collecting wood and working in fields – all of these daily chores central to preserving a family well-being – prevent them from benefiting from pre-natal care.

The impact of energy access on sustainable development (MDG 7)

In order to address issues such as land degradation and rural poverty, the Senegalese government has over the last thirty years, undertaken a campaign to substitute biomass (fuel wood and charcoal) with LPG. Thus a series of reforms have been undertaken which led the LPG consumption rising by 11% on average since 1974. One of the effects has been a marked reduction in deforestation. In 2002, the consumption of 100,000 tons of LPG saved some 40,500 hectares of woodland and averted the production of some 337,500 tons of charcoal.

The formulation of national poverty reduction strategies that include access to energy services: a priority

To ensure that non access to energy services does not hamstring efforts to achieve the MDGs, it is crucial that action be urgently taken to improve ECOWAS countries' energy policies. The approach that has prevailed thus far has concentrated on increasing supply, mainly by extending the electricity grid. But this approach has revealed its limitations.

The time has come to consider the role of modern energy services in stimulating human development, (UNDP, 2005 b) because there can be no access to basic social services without these services. (drinking water, transport, lighting, refrigeration or telecommunications).

[1] Energy services for the Poor, Earth Institute and Department of Mechanical Engineering, paper commissioned for the Millennium Project Task Force 1, 2005

2. THE SPECIFIC SITUATION OF ENERGY: THE STOCK AND THE STAKES

2.1 The region's energy profile: resources, consumption and access to energy services

2.1.1 A significant but unequally distributed energy potential

UEMOA/ECOWAS member countries are well endowed with energy resources, notably:

a. A Hydro electric potential mainly concentrated in five of the 15 Member States[1] and estimated at a total of 23,000 MW, of which only 16% is currently exploited (Kouo, 2005). A distinction should be made at regional level between very large hydro-electricity works which require heavy investments and can supply several countries, and smaller hydro-electricity facilities[2] (mini- and even micro), whose potential can be exploited only on the national market and particularly in rural areas.

b. Fossil fuels – Nigeria alone is endowed with 98% of the proven reserves of crude oil, natural gas and coal , that is 30% of Africa's total proven crude oil reserves (3,017 million tons), and 31% of Africa's proven natural gas reserves (3,581 billion m^3).(Kouo, 2005).

c. Biomass represents one of the main energy resources of Member States. These resources are mainly concentrated in the humid southern tropical part of the region, and the available quantities vary from one country to another according to the climate. In 2000, ECOWAS total forest area was estimated at some 69 822 000 ha (FAO, 2001). Recent studies (IUCN) reveal that the forest potential in many ECOWAS countries is considerable enough to cater for the overall fuel demand (although there are significant disparities among countries).

d. Wind power: high wind speeds along coastal lines or in desert zones could represent an attractive solution, since investment costs dropped significantly these last years reaching levels almost equal to those of big main thermal power plants (i.e. around $1000/kW, depending on local conditions).

e. Braodly speaking, the average **sunshine** potential in West Africa is around 5 to 6 kWh/m^2 per day, as against only 3 kWh/m_ per day in temperate Europe. Because of the importance of sunshine and the real although slow prospects of cost reductions of the photovoltaic technology, it is now clear that solar energy can contribute significantly to improve the population's access to basic electric services. However, these forecasts seem somewhat overestimated today.

2.1.2 Energy consumption levels among the lowest rates in the world

With 4 % of the world population, (13% for Africa) and a 2 % production of world commercial energy (7% for Africa), ECOWAS accounts for only 7 % of the world GDP (2% for Africa), and 1.7 % of world energy consumption (3% for Africa). (AIE, 2004 and Enerdata, 2005)

Figure 9: Fossil fuel and hydro-electrical reserves and resources (Kouo, 2005)

	Crude Oil Reserves (Millions Tons)	Natural Gas Reserves (millions m^3)	Coal Reserves (millions Tons)	Available Hydropotential (MW)
Benin	21	2,800	0	300
Burkina Faso	0	0	0	900
Cape Verde	0	0	0	0
Côte d'Ivooire	13	20,000	0	1,650
The Gambia	0	0	0	0
Ghana	1	24,000	0	2,000
Guinea	0	0	0	6,000
Guinea Bissau	0	0	0	60
Liberia	0	0	0	2,000
Mali	nd	0	nd	2,000
Niger	0	0	70	400
Nigeria	3,300	3,400,000	495	10,000
Senegal	10	500	15	300
Sierra Leone	0	0	0	1,000
Togo	0	0	nd	250
EOWAS	3,324	3,444,500	580	25,760

[1] Nigeria 37.6%, Guinea with 25.8%, Ghana, 11.4%, Ivory Coast 10.9% and Sierra Leone 5.2%

[2] The power of mini- stations is generally between a few hundred kW and a few MW, while micro-stations have a few dozen kW.

Insert 5 – "Modern" biomass

Modern' biomass, which mobilises plantations managed in a sustainable manner or agricultural residue, is by itself an important potential which can be relied on for a number of services: heating, power and electricity from cogeneration techniques in the agro-industries, direct combustion or gasification. With the hike in oil prices , the production of bio fuels has become an important issue : As an example, the production of bio ethanol from sugar cane today covers 40% of Brazil oil products, at an estimated cost of 40$ per barrel. It should be noted that it will be rather difficult to replicate such an example in West Africa, but other sectors of production of bio diesel or vegetable oil for burning could for instance, be produced from some cereals or from non eatable plants whose production could restore degraded lands (pourgher), we could have local productions at a cost of 60 to 70 $ per barrel. Research on these sectors is still underway and the cost of the local production follows a quick downward trend. The natural potential do exist but there is lack of the mastery regarding the more or less complex technological sectors, the establishment of links between research and adaptation of technology, and the production of equipment and the technical capacity to implement them.

These data once more confirm the correlation between the indicator of human development (HDI) and energy consumption, as shown in the table below.

Levels of energy consumption of ECOWAS populations indicate the degree of energy poverty which afflicts most rural and peri- urban populations.

2.1.3 Insufficient access to energy services

The low consumption levels show that there is insufficient access to energy services which does not allow for the development of economic activities or access to basic social services and as such, does not contribute to poverty reduction[1].

Based on the three priority issues set by the Millennium Project (UNDP, 2005) to achieve the MDGs, these access rates are as follows:

Rates of access to electricity

Four out of the community's 15 countries have an overall electricity access rate ranging from 20 to 40%; these are Benin, Senegal, Ghana and Cote d'Ivoire. There are considerable Service access gaps among urban zones (average 40%) and rural

Figure 10: Some economic, social and energy indicators

Source: A = UN DESA 2004; B = O'Sullivan and Hamaide 2002; C = Enerdata 2005; D = CIA 2005; E = UNDP 2004; F = AIE 2004.

	Population 2005 (thousands)	Pop. GR 1990-2005	% urban pop 2005	Household acess to electricity	Primary energy production per capita kgoe/capita	Final Energy consumption per capita kgoe/capita	2004 GDP PPP/Pop ($/hab)	Electricity Consumption / Population (KWh/capita	CO2/ Population (t CO2/ Capita	IDH	Energy Intensity of GDP kep/$95
Bénin	8 439	3,3%	46	22%	183	228	988	45	0,3	0,421	0,761
Burkina Faso	13 228	3,0%	19	5%	191	234	255	36	0,1	0,302	0,800
Cape Verde	507	2,4%	58	?	49	217	1 183	-	0,3	0,717	0,185
Côte d'Ivoire	18 154	2,4%	46	39%	348	227	1 365	157	0,7	0,399	0,512
Gambie	1 517	3,3%	26	5%	221	221	1 845	121	0,2	0,452	0,703
Ghana	22 113	2,4%	46	35%	280	332	2 183	244	0,3	0,568	0,957
Guinée	9 402	2,8%	37	5%	104	181	2 074	96	0,2	0,425	0,385
Guinée-Bissau	1 586	3,0%	36	5%	62	147	636	74	0,2	0,350	1,067
Libéria	3 283	2,9%	48	?	703	737	884	234	-	nd	3,730
Mali	13 518	2,8%	34	8%	124	160	814	57	0,1	0,326	0,583
Niger	13 957	3,4%	23	8%	57	63	696	26	0,1	0,292	0,392
Nigeria	131 530	2,5%	48	20%	1 610	680	956	73	0,3	0,4666	0,838
Sénégal	11 658	2,6%	551	32%	159	210	1 575	125	0,4	0,437	0,498
Sierra Leone	5 525	2,0%	40	5%	158	190	604	30	0,1	0,273	1,144
Togo	6 145	3,0%	36	12%	176	160	1 413	208	0,4	0,495	1,020
ECOWAS	260 562	2,6%	43	20%	915	454	1 154	88	-	-	-
OECD	1 145 060				3 360	3 224	22 161	8 046	11,0	0,911	0,19
USA	287 460				5 798	5 418	32 042	13 228	19,7	0,939	0,25
WORLD	6 195 660				1 663	1 145	7 008	2 373	1,2	0,729	0,29

[1] Access rate: percentage of connected household

Figure 11: Electricity access rate (O'Sullivan and Hamaide, 2002)

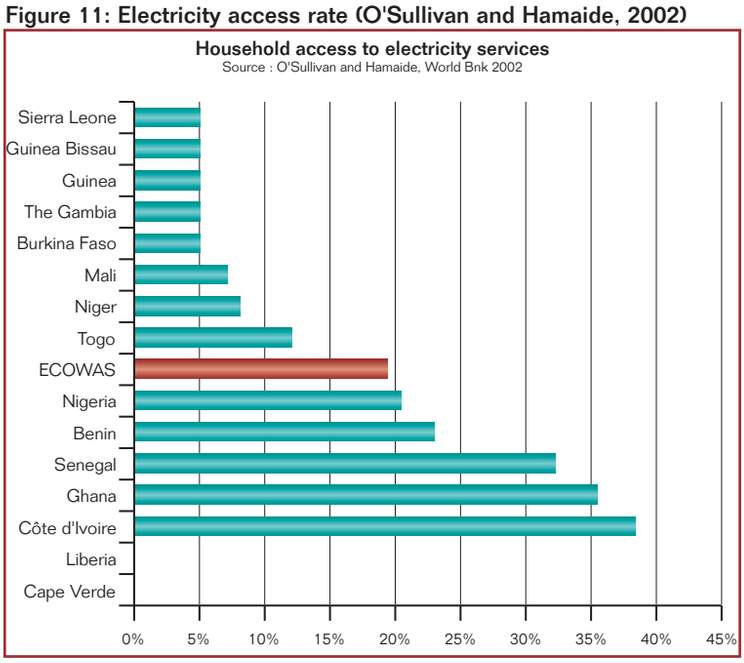
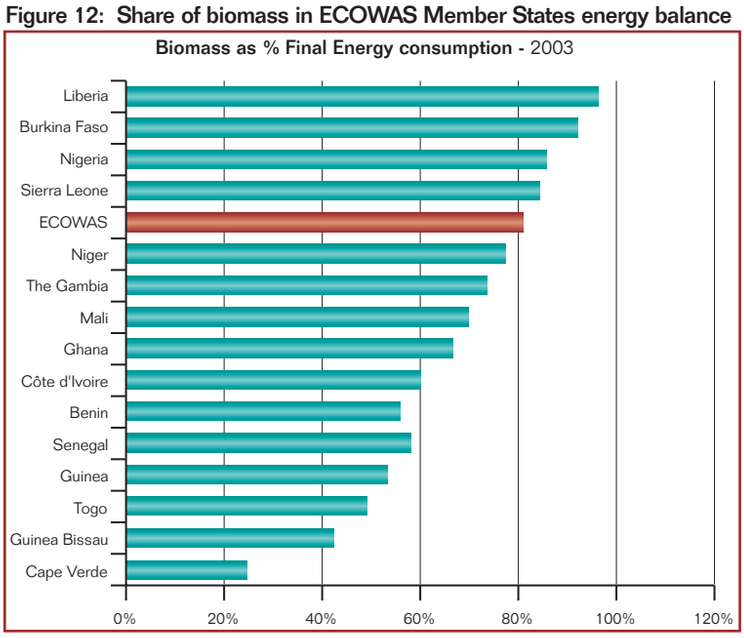


Figure 12: Share of biomass in ECOWAS Member States energy balance



areas (average 6% to 8%) , as illustrated by the following two specific cases: in Niger, only 2% of rural households are connected, as against 17% of urban households (DE-ENR, 2004); as for Senegal, the rate ranges from 12% for rural areas to 67% in cities (ENERDATA-UEMOA 2005).

Unequal tariffs also exist: in urban zones, residential tariffs for electricity services may often be quite low (around $0.10 per kWh) because of state subsidies geared at offsetting the cost of thermal generation compared to hydro-electricity, or owing to the fact that pricing policies include a 'lifeline price' that is subsidised by the state. But in many cases, no distinction is made between residential users and corporate users.

This is not the case in rural areas, where local grid operators (often local entrepreneurs) set prices that reflect the real costs borne by the small thermal electricity production (between $.40 and $1 kWh).

Access rate to modern fuels in rural areas (motive power/electricity)

The very low access rates to decentralised energy services in rural zones indicate a generalised lack of access to fuels for motive power, which is indispensable for economic development. This limited access to energy services in the rural zones, which very much need modern energy for food processing and other motive power needs, peaked to 10% in 2004 (Obaid, 2003) in Mali, a country which stands as a reference in the field, because it was the first to innovate with a project involving multi-purpose platforms .

Rate of Access to domestic cooking fuels

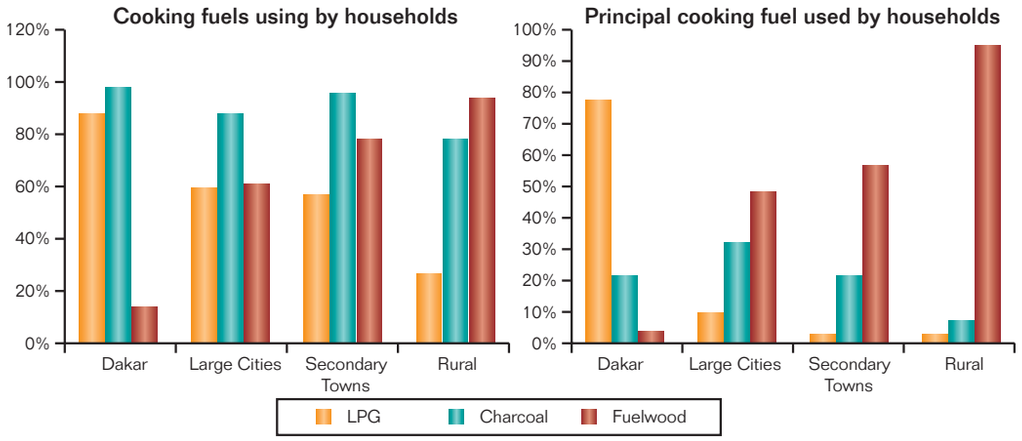
Biomass accounts for more than 80% of total energy consumption for domestic purposes (Enerdata, 2005), and this has a harmful effect on human health and may result in a potential degradation of the environment.

Access to modern energy sources for cooking is still very limited, with very low rates of access to liquefied petroleum gas (LPG). These rates are lower than 5% in all Member States, as compared with those of Senegal, which is seen as a very advance country in this field.

Senegal is a pioneer in the region in terms of her efforts to access LPG. The country's urban populations are main consumers of LPG, because it is available and they can afford it. Because of the high cost of LPG, rural and peri-urban users are most frequently compelled to resort to charcoal and fuel wood. Due to their availability on the market and the inexistence of adequate regulation on forestry resources, these fuels are considered cheap for individuals because their price does not reflect their real cost.

Insert 6 – Mitigated results for Senegal's butanization programme

Senegal's butanization programme led to the replacement of wood and charcoal with LPG, especially in urban areas. It made spectacular strides (see 1st chart below). This success was due to an incentive-giving policy that the Government implemented for over two decades. However, it must be noted that the number of households that use LPG as their **main** fuel is still quite low (see 2nd chart to below), and this is primarily due to its cost, which is linked to oil prices.



2.2 Current initiatives undertaken and policies formulated in response to the issue of providing greater access to energy services.

2.2.1 At the national level

An examination of countries PRSPs show that during the 90s, a number of reforms were implemented with a focus only on the energy sector and without even addressing their direct effects on the remaining sectors [see Appendix 2]

Electricity sub-sector

Reforms were undertaken to change the prevailing regulations (laws and codes) and modes and forms of company ownership (privatization) with a view to increasing sub-sector financial viability. , Companies of the sector, which until then, were entirely or mostly state-owned, have since been opened up to private holdings through public-private partnerships. Beyond each member state's specificity, segmentation of market between urban and rural areas has led to the creation of agencies which cater specifically for rural electrification development.

Domestic cooking fuels

In some member countries, changes related to traditional domestic fuels are recorded in Domestic Fuel Strategies whose goal is to supply urban and rural households with domestic energy including traditional biomass that preserves forest resources and environment. For decentralization purposes, some countries have delegated the management of their forests to local entities.

Modern fuels

The liberalisation of liquefied and gas fuel distribution sub-sector and efforts to foster competition should bring down the costs of modern fuels (LPG, kerosene, mineral coal), while enhancing the quality of the products.

Renewable energy

A number of countries have committed themselves to supporting renewable energies, among others through fiscal incentives. Unfortunately these initiatives remain quite few.

Policies and tariffs

Some countries have initiated social tariffs and other approaches, in view to ease energy access to the poorest. The move is a starting point which needs to be extended to the whole ECOWAS region.

2.2.2 At the regional level

Historically, the main priority of the regional plan was to address the impact of energy on economic growth by striving systematically to reduce the costs of energy supply. This approach led to projects such as the West African Gas Pipeline (WAGP) or the West African Power Pool Energy Exchanges system (WAPP) based on regional entities like the Organization for the Valorisation of the Senegal River Valley (OMVS) and the Organization for the Valorisation of The Gambia River Valley (OMVG), or the ABN (Development of the Niger River Basin).

Policies of regional integration, with the development of big energy interconnection structures, are the basis of the energy development strategy that ECOWAS and UEMOA have implemented since the 90s.

Common Energy Policy (CEP)

The CEP, which was adopted in 2001, falls within the purview of UEMOA's mandate before the implementation of the national sector reforms which changed the relationships between energy actors and public authorities. The CEP seeks to:

- implement an integrated energy planning system,
- promote renewable energies
- speed up the interconnection of electricity grids in collaboration with and under the auspices of ECOWAS.

The West African Power Pool (WAPP) system

In accordance with the May 1992 decision on the Community energy policy which seeks to harmonise Member States' energy policies and increase collective energy autonomy, ECOWAS adopted, in December 1999, the principle of setting up a West African Power Pool system (WAPP).

This led to the formulation of a master plan for the development of energy production means and inter-connecting electricity grids with a view to boosting Member States' inter-connection capacity and multipling it by four between 2005 and 2020. WAPP's objective is to interconnect national grids across 5,600 km in most West African countries (Nigeria, Benin, Togo, Ghana, Cote d'Ivoire, Niger, Burkina Faso and Mali). Total investment in all infrastructures will amount to 11.8 billion US dollars over 19 years. The resultant facility will equip the ECOWAS region with an installed capacity of some 17 000 MW, which can adequately satisfy estimated demand until 2023. (ECOWAS, 2005)

Insert 7 – World Bank financing for WAPP

Total amount of facility is $350m to be paid in three instalments of $100m, $125m and $125m, with the goal to provide flexible funding to electricity companies which are members of the WAPP to help them build generation and transmission infrastructure and revamp or construct the load dispatching centres identified as critical for the 2005-2001 period. The principle is that 1/3 of the financing will be secured through the 'country' programme, while the other two-thirds will come from funds allocated to the region for **regional integration** purposes. The Condition for eligibility to the facility is that interested countries ratify the ECOWAS Energy Protocol (ECOWAS, 2005) negotiated in January 2003, and which formalizes the legal framework for the guarantee offered to direct foreign investments in the sector. Taken individually, Member States would probably not have been able to raise such a budget for inter-connections.

The West African Gas Pipeline (WAGP) Project

This project benefits from the 18 billion m3 of natural gas that Nigeria currently burns off with flare towers. It stands as a complement to the WAPP regional strategy for the development of WAPP hydro-electricity. The 687 km pipeline , whose cost is estimated at US$ 617 million and will supply thermal power stations in Benin, Ghana and Togo, and yield a capacity of 3 000 MW in 20 years' time. It will be built, run and will be the property of the West African Gas Pipeline Company (WAPCo), a public-private partnership comprising the following shareholders:

- Chevron Texaco West African Gas Pipeline Limited (38.2%)
- Nigerian National Petroleum Corporation (26%)
- Shell overseas Holding Limited (18.8%)
- Takoradi Power Company (17%)
- SOBEGAZ (Benin) and SOTOGAZ (Togo) are also to take shares in the consortium.

ECOWAS-UEMOA energy partnership agreement

Encouraged by their success story: reduction of global energy prices through actions mentioned below, ECOWAS and UEMOA signed, in August 2005, a collaboration agreement which covers wide-ranging areas including people's access to energy , which constitutes the central theme of this White Paper:
Activities provided for in the agreement relate to : WAPP; access to energy services in rural and peri-urban zones; cross-border oil and gas pipelines in West Africa; promotion of renewable energy sources; regional energy information systems; improvement of hydrocarbons supply; energy control; human and institutional capacity building; raising development partners' awareness, and fundraising for energy projects.

Joint implementation mechanisms have been provided for towards: the establishment of a UEMOA/ECOWAS Energy Committee, which will play the vital role of preparing encounters of the region's energy sector actors, sourcing for funding and coordinating the implementation of planned actions.

Some instances of implementation of hydraulic management : Organization for the development of the Senegal river Valley, OMVS – Organization for the development of The Gambia river Valley, OMVG - and the ABN -

With the construction of the multi- purpose Manantali dam – irrigation, water and power production, the OMVS stands as a successful example of regional cooperation that the three countries involved, (Senegal, Mali and Mauritania) would like to duplicate through the Felou and Gouina dams.

ABN and OMVG also wish to engage in similar projects.

Other regional initiatives

At operational level, and beyond the WAPP and the WAP, which focus respectively on exchanges of electricity or natural gas, other regional projects relating to specific spheres and which have not yet been subject to similar approaches are underway.

- **The Regional Solar Programme** (RSP) seeks to use modern energy services to provide the population with drinking water. It was launched in the late 1990s by the Interstate Committee for Drought Control in the Sahel (CILSS) and was backed by the European Union. The programme aims at promoting the use of photovoltaic solar power, particularly for water pumping, in order to meet the needs of the main urban centres in Sahelian coubtries.

- **The Regional Programme for the Promotion of Household and Alternative Energies in the Sahel** (PRADES). This programme is implemented by CILSS and Sahelian governments, with the support of the European Union (5.4M) and the German co-operation Agency. RPPHAES' objective is to help Member States design, adopt and implement their Domestic Energy Strategy.

- **The Multi-Functional Platforms Project** (MFP) aims at bringing motive power to rural areas. The project was initiated in Mali in 1996 with the backing of UNDP and UNIDO, and has since been extended to Senegal, Burkina Faso, Ghana, Nigeria and Guinea. Its goal is poverty reduction as a whole but specifically poverty of rural women, by enabling them to create income-generating opportunities through the supply of energy services.

- **The Regional Biomass Energy Programme** (RBEP) is a programme whose objectives are poverty reduction and environment protection. It is implemented by UEMOA with the support of Dutch cooperation. The RBEP aims at helping Member States conceive and implement projects and programmes on modern uses of biomass.

* More recently, a number of initiatives were launched through the EUEI and some of them cover several states (MEPRED, DEA, IMPROVES-RE …) .or other partners(AREED, etc).

2.3 Learning from past achievements to build the future

2.3.1 At national level

Energy reforms have given rise to a new institutional model and positioned new operators such as:

- rural electrification agencies which aim , among others , to combine private expertise and publics funding;
- private sector actors whose role as operators is now clearly recognised.
- Past experiences have caused the concept of "domestic fuels" to evolved to that of "domestic energy service" resulting in a shift from an approach focussing on energy demand to an integrated approach covering all of the biomass sustainable production / consumption chain.

2.3.2 At the regional level

The initiatives and programmes have clearly encouraged the establishment of a harmonised planning framework and regional investments aimed at reducing energy costs. The WAPP and the WAGP are without doubt the main results of this, since they pave the way for Member States to share electricity and gas.

These programmes have also made it possible to:

- test and validate a regional institutional model. The WAPP was set up as part of and put under the responsibility of an organization that explicitly seeks to foster regional integration. This exchange system was adopted in 1999 by the Energy Ministers of ECOWAS Member States, who are members of WAPP steering committee. This regional institution comprises Member States public or private electricity companies, as well as energy transmission grid managers and lastly, the ECOWAS executive secretariat, which is mandated to raise the funds required to implement inter-connection projects;

- test the effectiveness of WAPP fund-raising approach through the mandate given to ECOWAS Executive Secretariat;

- develop a joint legal framework with the adoption, in January 2003, of the **Energy Protocol** signed by heads of state and government of Member States. The Protocol, which is a new appendix to the **1993 revised ECOWAS Treaty** , provides for a legal framework for investments in the energy sector;

- establish and reinforce capacities for management, co-ordination and planning of projects and programmes through the necessary harmonization of operating standards for electrical systems. All WAPP member companies will eventually have to be operated according to a joint cooperation agreement;

- set up, in February 2003, an **Energy Observatory** (energy information system) to monitor and record energy flows. This information collecting tool is to become financially independent through contributions levied on cross-border energy exchanges in the region,

- test and validate the elaboration of large-scale public-private partnerships, with financial package of the WAGP funded by a consortium led by private companies (Chevron Texaco and Shell) associated to state run enterprises belonging to the four Member States concerned (Benin, Ghana, Nigeria and Togo).

The WAPP and the WAGP are prototypes of unifying projects which take advantage of the regional institution's central position.

Other regional programmes such as RSP, PREDAS and the MFP are specific for having contributed to laying the foundations necessary to acknowledge the relevance of energy issues in the process of development.
More specifically, the MFP project has the particular merit of being a "High Impact Low Cost" programme that should serve as an example to improve access of rural populations to energy services.

Comprehension and capitalization of mechanisms implemented with a view to developing all these regional initiatives are fundamental because they could ensure an adequate support to Member States and enable them to take the challenge of massively increasing access to energy services for rural or semi urban areas.

More recently, recognition of the connection between energy and human development has highlighted the need to increase access to energy services as a development priority and a condition for the achievement MDGs in the region. This is the second component of the regional commitment already formulated as part of the August 2003 UEMOA- ECOWAS convention It also serves as a guide for the compilation of the this White Paper.

These two successive approaches are complementary to each other and benefit from the rationality of economics of scale and the need to offer affordable and quality energy services to the majority of ECOWAS populations.

2.4 Increasing access to energy services to boost development and achieve the MDGs: qualitative and quantitative Stakes.

Existing programmes at national level were designed to place emphasis on a supply which derives from the development of infrastructures. Electricity and gas inter-connections will considerably increase the availability of energy to urban population in the ECOWAS region.

However, in terms of energy services rendered to rural and semi urban populations, notably in order to combat poverty and contribute to the achievement of the MDGs in 2015, the West African region is faced with quantitative and qualitative stakes.

2.4.1 Qualitative stakes

As an example, qualitative stakes are presented for Health and Education sectors as follows:

Sphere of objective	Stakes
Maternal health	In terms of human development, the achievement of these targets require that most of Member States dispensaries and health centres be supplied with energy services for lighting and communication, or even refrigeration. In the ECOWAS region today, less than 20% of villages, on average have access to a modern energy system. Increasing this rate to 100% in the villages of over 1000 inhabitants will ensure the required access to modern services in order to achieve the MDGs.
Education	ECOWAS countries hold the unenviable record of being the world region with the lowest rate of primary education completion – 56%. Member States have committed themselves to increase efforts in order to remedy to this situation: Therefore they will have to provide relevant primary and secondary school programmes which will greatly benefit from modern services, and also computer access, evening classes, internet access, and schooling through video broadcasting.

2.4.2 Quantitative stakes

Existing programmes, whether at regional or national level, do not explicitly build on the consensus arrived at during the Johannesburg World Summit on Sustainable Development (WSSD) held in 2002, regarding the decisive importance of energy access to fight poverty and achieve the MDGs. Access to and the availability of energy services are still taken lightly in the poverty reduction strategy papers that Member States negotiate with multilateral funding institutions[1].

Generally speaking, it should be noted that quantification exercises still have to be undertaken: as an example, investment programmes in the sectors of energy, supply of drinking water, health and education for Benin, Niger and Mali are identified in Appendix 6. If investment programmes in the energy sector are explicit (access to modern fuels, rural and semi urban electrification) the component relating to energy for investment programmes for sectors directly linked to MDGs (health, education…) remains inexplicit, even neglected or forgotten.

It appears quite difficult to imagine that greater access to energy services would be possible and the MDGs achieved if these practices are not changed and if the financial stakes of energy in the different sectors are not clearly defined. If the current trend is not reversed, and if we assume that the global access rate will rise to an average 25% by 2015, the number of people with no access to energy services would go from 210 million to nearly 245 million in Member States.

To conclude, the gaps to bridge between what can be provided for under current initiatives and programmes and actions to be implemented in order to achieve MDGs are justification for the implementation of programmes and initiatives based on a veritable increase of access to modern energy services. The energy component should be clearly taken into account in all its dimensions. The regional initiative is in step with this approach, and builds definitely on the fight against poverty and the achievement of MDGs in order to significantly increase access to energy services in Member States.

[1] Only eight of the 15 Member States have finished drafting their PRSPs, three others have submitted provisional versions, while another three have nothing. (See appendix).

3. ANALYSIS OF MAJOR REGIONAL ISSUES

Analysis of the national contexts of ECOWAS Member States clearly indicated that inadequate access to modern energy services inhibits economic and social development and the achievement of the Millennium Development Goals (MDGs). The analysis also highlighted the common barriers to overcome, and specifically:

- the institutional and regulatory framework offers little incentives for new service providers and little protection for investors;
- financing issues, particularly the little involvement of the local and national financial institutions which are still reluctant to support energy projects and operators;
- weak technical, financial and management capacity of local and national operators which are consequently unable to operate energy services in rural and semi urban areas.

Based on the series of common issues facing ECOWAS countries, highlighted through the analysis of the various national contexts, we are facing the emergence of **a regional dimension of access to modern energy services in rural and peri-urban areas.** Therefore, a joint action should be undertaken based on the fact that Member States face common and similar problems in terms of **energy resources and markets**.

3.1 Energy issues common to ECOWAS Member States

3.1.1 Low rate of access to modern energy services

Even in the most advanced Member States, coverage rates for localities and households access rates to modern energy services (for cooking, motive power and electricity) remain very low and simply do not exist in most parts of member countries, particularly in rural areas. This seriously hampers efforts to achieve MDGs.

3.1.2 Growing inequality between urban and rural areas

In 2015, half of the region's population will still be living in rural areas, and the challenges they will face are immense : migration trends towards urban centers will continue at the same pace, the portion of gross regional product generated in urban areas keeps rising, as do the gulfs in wealth distribution. Coping with this situation calls for the equipment of 'secondary centers', or areas that meet certain defined criteria , so that they may become development hubs, which provide basic economic opportunities and access to energy services, all as part of efforts to a better land use management . Analyses made over the last decade by the Sahel and West Africa Club indicated that growth in the sub region's national economies result from local economies, which develop around those urban centers or those in the process of urbanization. Given this, providing the rural areas with appropriate development structural equipment is a priority for the region.

3.1.3 Little co-ordination between sectors

Inter sector coordination of investments is of paramount importance if there is to be any real impact on poverty reduction and development.

If having access to energy services is a prerequisite to achieving the MDGs, achieving MDGs necessarily requires a coordination of energy investments with social services and productive sectors.

A significant amount of past investments for energy infrastructures failed to yield the expected results, because they were dissociated from investments for social, productive, or domestic use ; besides that, the potential services could not find markets, and therefore, energy infrastructure's viability was compromised.

3.1.4 An electricity sector under restructuring

Characteristics of the region's electricity sub-sector were recently highlighted for the whole of Africa (Estache and Gassner, 2004).

The macro-economic and financial crisis of the 1980s led to profound reforms in the sector based on the need to raise the sector funding from 1 to 2% of GDP (prevailing situation in the 1990s) to 3 to 4%, which represent what the World Bank considers as prerequisites for the development of quality services.

Reforms undertaken during the 90s broadly focused on privatization of public companies and a gradual liberalization of energy markets.

The reform goals were as follows:

- make the sector more efficient;
- raise private investments (national and international);
- attract more Public Development Aid.

The long-term objective of these actions was to increase rates of access to energy services. More than 60% of power utility companies in Sub-Saharan Africa embarked on reforms, which produced what they as well as the donors now consider as disappointing results because of the following four reasons:

- Though most countries privatised their national utilities (two thirds via concession contracts, and the rest through management contracts) and/or opened production to independent producers, or even instituted regulatory agencies, reforms did not led to the satisfaction of the sector's investment funding needs. **In fact, investments in the sector fell during this period – and the total amount of ODA and private investment plummeted to 0.2% of GDP in the early 2000s, that is, to barely 15%[1] of total estimated service quality maintenance needs**;

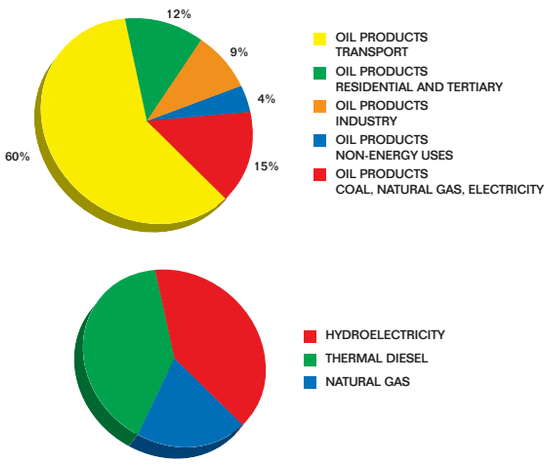
- Because they can no more meet the investment, maintenance and renovation needs, **a great number of national electricity systems in the sub region record growing failure rates.** This is a real problem in a number of countries where companies are forced to invest in a very costly private alternative energy source.

- In terms of access to energy services, the trend merely followed that of the population growth, though biasing towards the wealthiest populations who benefit most of these services; **reforms have benefited users in urban centres (administrations and services as well as middle and upper class residential users), while the poorest are still deprived of those benefits** as companies did not have the necessary means to invest in grids extension, even though they committed themselves to doing so, based on the terms of the contract they signed[2].

- For the sector to raise its self-financing capacity, companies need to be able to spread their recovery cost, for a long period, over the different types of users. Under-capitalization prevents them from accessing financial markets so that they can also finance their renovation or development investments and, as a result, be able to considerably increase energy services in the rural and semi urban areas. This rather delicate self-financing issue should be addressed within the context of the needed solidarity between the rural and urban populations in terms of energy tariff fixing.

Electricity sector reforms should lead to increased rates of access to services, especially in rural areas.

Insert 8 – Oil products as a share of commercial energy consumption



Source: Enerdata 2005

3.1.5 Heavy dependence on oil products

The share of oil products in ECOWAS' energy balance remain modest[3], but conversely commercial energy consumption is highly oil-dependent.

- **In macro-economic terms,** it is estimated that if the price of a barrel were to climb by 20$ more than the 2002 prices, this will stifle the region's economic growth over the coming years, making it impossible to achieve the MDGs (IMF, 2000);

- **Access to modern cooking fuels** (LPG, kerosene….): the most advanced countries have already been confronted with the limitations of the butanisation programmes, which is quite expensive in terms of the population's purchasing power and resulting from price fluctuation. An increase in international prices put extra pressure on national budgets, making these services even more unaffordable for the poorest people.

[1] The total amount of annual bilateral aid dropped from $330m between 1990 and 1998 to $186m in 1999-2000, and the total annual budget allocated from the World Bank fell from $208m to $127m

[2] In a context of privatization and re-organization of concession contracts, private investors often negotiate franchise limited to urban and industrial areas.

[3] The transport sector is dominant – 60% of total modern energy consumption.

- **Access to motive power service:** this is usually fuelled by oil products, whose cost is proportionate to the costs of energy services used – any increase would harm the fragile economic activities of the poorest populations;

- **Poor people's vulnerability is also apparent in the electricity sector, of which 60% in ECOWAS is powered by fossil fuels:** and in several countries, such as The Gambia, Guinea Bissau and Liberia, where 100% of electricity production is generated from oil products. A 50% price rise, or even the doubling of crude oil price, will have devastating effects on the cost of electricity! If we include services supplied by the informal sector and independent production of generators in rural areas – which are the only services that poor people can access, we can see that overall dependency on hydrocarbons in the ECOWAS' electricity sector exceeds 60%[1].

3.1.6 Barriers to development of local and renewable energy sources.

Because of the heavy dependency on oil products and the vulnerability of energy sector in general and of poor rural populations in particular, it is imperative that local and renewable energy sources be mobilised urgently. The financial viability of renewable energy investments increases whenever the barrel prices rises. Furthermore, another merit of developing local resources is that it creates economic activity and employment in rural areas themselves.

The reason why more efforts are not made in this regard is not connected to the availability of natural resources (see chap. 2) nor to the maturity of the technologies, but it lies on a series of barriers that the operators of the energy sector are familiar with . All these barriers exist in all ECOWAS Member States and are as follows:

- financial barriers are the toughest to overcome, since investment costs in these 'renewable' energies are often higher than those for diesel production[2];

- shortage of local actors with the capacity to run projects financially, technically, and in terms of management;

- weak equipment production capacity at the regional level;

- institutional and regulatory barriers : with a non incentive fiscal framework, repurchase pricing, connection regulations;

- member States are aware of the importance of this potential and take steps to harness it. As an example, photovoltaic equipments are tax free in most UEMOA countries.

3.1.7 Lack of a political will to achieve energy efficiency

Considering the region's potential in natural resources, reaching energy autonomy and diversification should be possible. There are considerable barriers to this, but the region could overcome them if it takes a certain number of initiatives: investment capacity, market density – which determines investment return; in some cases, technological know-how and elaboration of sustainable management models. What is required most of all in order to engage in energy diversification and, just as importantly, making consumption patterns more efficient, is the political will to do so. All countries which have made commitments in this regard had long-term visions, and set targets for themselves (for example, penetration rates for renewable energies), then they secured the requisite fiscal, financial and regulatory means they needed.

Insert 9 – Examples of energy efficient policies

- Mali, as part of a programme co-funded by the World Bank and the GEF, embarked on a programme to distribute efficient equipment, including more than 20,000 low-consumption lamps and 2,000 air coolers to replace air conditioning systems, all in a bid to cut energy consumption by 5 MW.

- With the support of a Danish co-operation authority, Burkina Faso devised a national plan for controlling energy use. It targeted a 30% reduction of energy consumption in the public sector.

- Ghana states explicitly in its PRSP that one of the priority sectors for creation of a competitive economy is energy, and that this requires that renewable energy sources (PV and biomass) and energy efficiency must be promoted. However, the country does not set any target figures.

[5] 52% of final commercial energy consumption (excluding biomass) in UEMOA is covered by oil products (and 23% by gas). 22% is met by electricity, of which, of course, 57% is generated using oil products and natural gas, meaning total dependency on hydrocarbons for commercial energy consumption amounts to 88%. (Enerdata, 2005)
[6] Though cost per kWh is lower in terms of life cycle

3.1.8 Lack of a multi sector institutional structure providing rural and peri-urban areas with energy services

Every Member States is grappling with the question of how to encourage local actors to supply energy services to the poorest zones, and how such endeavours can best be financed. One key requirement in this regard is a clear, stable regulatory framework to win the trust of the private sector so they could mobilise funds. In the most advanced countries, there has been stark changes in the institutional landscape, with the formation of new public operators – such as rural electrification agencies, regulators, etc.- increased involvement in the energy sector by public actors that already existed – such as local authorities – and fresh involvement of new private operators of very different types and sizes – such as local entrepreneurs, village associations, user co-operatives and international companies. These reforms are driven by the belief that a single operator, no matter whether it is public or private, can not achieve the goal of rapidly increasing access to energy services and diversifying technical options, financial and organization systems. This decentralization of actors affords an opportunity to think in terms of the end-uses that energy fuels. The only way to surmount the challenges posed is to set up an appropriate institutional and regulatory framework in which the needs of the poor are overtly reflected. At a time when all ECOWAS countries are undergoing significant institutional changes, ECOWAS has a critical role to play in arranging experience sharing and promoting organizational, technical and financial initiatives that have succeeded elsewhere. For example, creating rural electrification agencies dedicated specifically to bringing energy to the poorest populations, which five countries have already done, seems to be a promising move, especially as they combine private expertise with public funding.

3.2 Energy issues specific to the region

3.2.1 Unequal distribution of energy resources and stakes of regional integration

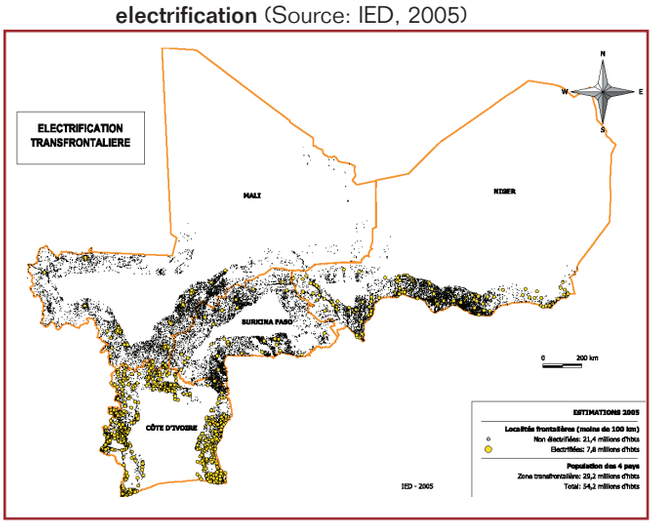
Taken as a whole, the region possesses ample resources to power its development (see chapter 3); however, the geographical spread is very uneven. The traditional tendency to develop and structure this supply strictly within national borders has exacerbated the problem, insofar as the geographical distribution does not obey political boundaries, and the cleanest and least expensive resources of a given zone may be located just over a border rather than within a given country.

An example of interconnection in the electricity sector

In the electricity sector, the fact that the use of **hydro electric resources** – which can be viable as base load plants but is highly seasonal – and **thermal resources** – good for peak consumption and not seasonal – makes **interconnection** development particularly attractive. ECOWAS Member States are fully aware of the potential of such an approach, as they have demonstrated by launching the **WAPP**, which has raised 350m$ and serves as an ideal example of regional integration in the energy sphere.

These investments will lower overall energy costs across the region, benefiting the most inland regions in particular, since they depend on thermal sources. It is important that this general price drop ultimately benefits populations who currently do not have access to modern energy services. **The region can play a pivotal role in this regard, by systematically incorporating rural electrification measures into regional inter-connection programmes:** a sample of four Member States, Burkina Faso, Ivory Coast, Mali and Nigeria, shows that 40% of their populations live in areas deprived of electricity and located just 100 km from a neighbouring state[1]. This is a hefty chunk of the population, who could clearly profit from inter-connections of the region's grids or programmes aimed at covering at least two countries.

Figure 13: Illustration of potential of cross-border electrification (Source: IED, 2005)



3.2.2 Narrowness of markets

Many national markets are too small to justify the investments needed to develop energy production sources. If regional regulations were introduced to merge these markets, a suitable size would be reached.

[1] 100 km is the distance that is technically possible for a medium voltage line

Since markets mature and the effects of competition take hold, combining small markets to achieve the size needed to stimulate competition is an effective measure that ultimately leads to price drops. It is indeed the case for inter-connecting electricity grids. It could also work for small-scale hydro-electricity facilities, energy generation using biomass, solar thermal power, etc.

3.3 Regional responses to the question of providing access for rural and peri-urban populations to modern energy services

The many similarities between Member States' energy positions mean regional co-operation can go a long way to removing certain barriers to increasing access of rural and peri-urban populations to modern energy services. Since they face common challenges, there are four angles of intervention that could be approached at regional level to improve matters:

3.3.1 Capacity-building

This should be aimed both at private operators (local operators, investors, donors, etc.) and public actors (Ministries, regulatory authorities, rural electrification agencies, etc.) and should address technical and political aspects (e.g. formulating enabling frameworks) for investment in easing access to energy services.

3.3.2 Resource mobilisation

A second angle of approach by the region is to help raise concessional capital, large grant programmes and boost the involvement of the private sector in energy service supply projects in rural and peri-urban areas (following the successful example of the WAPP and the WAGP – and biomass programmes such as the PREDAS and the PRBE).

3.3.3 Knowledge Management

The region also has a role to play in promoting the sharing and dissemination of regional experiences of providing energy services in rural and peri-urban areas in order to capitalise on national good practices and perform the scale-changes needed to acheive the MDGs.

3.3.4 Encouraging local operators to build amenities

Finally, the region has an important role to play in promoting local production of energy amenities, which would create employment, knowledge and value added production within the ECOWAS region. And decrease the cost of facilities compared to imports.

4. REGIONAL POLICY VISION AND OBJECTIVES

Poverty is a very serious challenge in the ECOWAS region , and the MDGs will not be achieved by the year 2015 unless at least half of the rural and periurban populations are given access to modern energy services. The analysis of problems and natural resource potentialities of the region shows that there is need to embark on collective action and an efficient and creative regional co-operation in order to meet the challenges of change of scale which is in the making. That is why the ECOWAS and UEMOA, as mandated by the Member States, now commit to achieving the ambitious objectives of the regional policy.

As a matter of fact, ECOWAS member states are confronted with a daunting challenge of ensuring the welfare of their population with a view to achieving the MDGs by the year 2015 and particularly reducing poverty by half as well as easing access to basic social services. A special emphasis should be put on populations in rural and periurban areas, whose living conditions, notably the level of poverty and the rate of access to social and productive basic infrastructures are the most difficult. The existing poverty alleviation initiatives and programmes very often fail to take account of the concept of energy poverty and the all-important role of energy. As a consequence, this oversight may become an impediment to the implementation of development programmes and the achievement of the MDGs. As a resource, a collective service and a factor of production,, energy, by its very nature, affects many sectors. It lies at the centre of each process of economic and social development and determines the satisfaction mankind's fundamental needs (food, health, education, etc.).

Hence, the decision by ECOWAS member states to invest in the energy sector should be based both on the direct profits of such investments and the contribution of these investments to the satisfaction of mankind's fundamental needs.

The existing country and regional energy sector initiatives and programmes cannot enable Member States to achieve their development goals by the year 2015, particularly the MDGs. ECOWAS Member States are therefore confronted with the daunting task refocusing their policies and programmes aimed at speeding up the development processes required to achieve the MDGs.

This White Paper seeks to engage ECOWAS Member States and the Region in an ambitious regional policy to increase access to modern energy services. Its objective is to enable **at least half the population to have access to modern energy services, by the year 2015,, this means. enabling 36 million[1] more households and 49,000 extra localities to access modern energy services. This entails increasing four-fold the 2005 figure.**

This regional policy is very much in step with the commitments already taken under the NEPAD and, more recently, by the Forum of Energy Ministers of Africa (FEMA) during the Millennium Summit in September 2005.

This objective concerns all countries, prioritising rural and peri-urban areas; it aims to carry out specific investment programmes to:

1. increase access to domestic cooking fuels for rural and periurban populations of the region;

2. increase access to production energy services in villages - in particular, access to motive power in order to increase rural productivity and the quality of community services;

3. increase access to electricity services.
   (a) for urban and peri-urban populations;
   (b) in rural areas with a view to (i) modernising basic social services such as healthcare, education, drinking water, communication, lighting, etc. (ii) increasing access to lighting, audiovisual, telecommunications services, etc. and (iii) using decentralised approaches to cover populations in isolated areas.

This policy is a continuation of successful actions already undertaken by ECOWAS and the UEMOA over a decade and that aimed at cutting the cost of energy in the region and increasing access to the energy services required to secure people's welfare and stimulate economic growth. The policy also builds on the achievements of the national policies and programmes which, more recently, have made energy access a national priority.

Also, mandated by Member States, ECOWAS and the UEMOA,now commit, through voluntary policy and actions, to helping Member States create the necessary conditions for a quick increase of access to energy services for the most disadvantaged populations of the region,and to equally enable them to fully benefit from the opportunities offered through access to energy services at an affordable price and with good quality services.

[1] 36 million households representing approximately 214 million people.

4.1 Specific objectives of the policy

In order to achieve these ambitious objectives, the regional policy, building on existing political commitments and in keeping with the Bamako Forum recommendations (May 2005), centres on the following three specific objectives:

(1) to strengthen regional integration by pooling good practices, experience sharing, adopting a regional information system and developing cross-border co-operation, that foster development and building capacities.

This objective, which is in step with one of the essential missions of the ECOWAS and UEMOA institutions, will enable the region to better capitalize on national complementarities and on the sheer weight of all Member States acting as one .

(2) to promote harmonised political and institutional frameworks (i.e. PRSPs, MDG monitoring framework, etc.), integrating access to energy services as one of the national priorities with a view to ensuring human development and achieving the MDGs.

The existence of such political and institutional frameworks, which are based on the taking into account, through a multi-sectoral formulation process, of the multidisciplinary nature of energy, should enable the relevant policies to acquire the financial means required for the **change of scale** necessary for the achievement of the MDGs by the year 2015.

In addition, harmonising Members States' political frameworks will facilitate the setting of a regional market that can mobilise the required investment, thereby creating the enabling environment for increased support from development partners.

(3) to develop, on the basis of national and local policy frameworks, harmonised energy policies that centre on the reduction of poverty in rural and peri-urban areas and the achievement of the MDGs. These energy programmes will focus in particular on:

- the development of production activities, especially those related to the valorisation and processing of agro-pastoral products destined for urban markets;
- the modernising of basic social services (healthcare, education, water, etc.) and the improvement of living conditions;
- the improvement of the situation of women, who are disproportionately affected by all aspects of poverty, most particularly health problems arising from burdensome chores such as wood-gathering and water-drawing, etc.),

4.2 Expected results of the regional policy

4.2.1 Sharp increase in the rate of access to energy services

In order to achieve the objectives of the regional policy, namely . to enable at least half of the rural and periurban populations to have access to modern energy services by the year 2015, which entails increasing four-fold the number of people with access to modern energy services in 2005, member states will have to draw up programmes capable of bridging the gap that currently exists between the effective rate of access to energy services and the rate of access that is required for the achievement of the MDGs by 2015. They will also have to raise the required funds.

Besides, the regional policy must also build on and pursue the objectives that have already been endorsed:

1. At the continental level, "To take the challenges facing African countries, the NEPAD set the objective of increasing the African population's rate of access to energy from 10% to 35% over the next twenty years, representing 60 to 300 million people to be covered over the next 20 years ." (NEPAD, 2001).

2. At the sectoral level: African Energy Ministers gathered in a forum, FEMA[1], held during the Millennium Summit in New York in September 2005 (BUMBA, 2005). Here they committed to working together to fulfil the following aims over the next ten years in order to enable Africa to achieve the MDGs:

    - 50% of Africans living in rural (and peri-urban) areas and using traditional biomass for cooking should have access to improved stoves and kerosene or efficient-gas cookers in order to cut internal pollution;
    - 50% of urban and peri-urban populations should have access to a reliable modern energy services that enable them to meet basic needs such as lighting, communication, and small production-related activities;

[1] Forum of Energy Ministers of Africa

- 50% of schools, clinics and community centres in rural areas should have access to a modern energy services for lighting, refrigeration, information and communication etc. The centres must also be equipped with productive energy capacity.

Therefore, to ably take up these challenges the **implementation of the regional policy should lead to the achievement of the following results:**

1. **100% of the total populations or 325 million people, will have access to a modern cooking facility;**

2. **At least 60% of people living in rural areas will reside in localities with access to motive power to boost productivity and also have access to modern community services;**

3. **66% of the population, or 214 million people living rural and urban areas will have access to individual electricity services, that is:**
   - **(a) 100% of urban and peri-urban population;**
   - **(b) 36% of rural populations;**
   - **(c) moreover, 60% of the rural population will live in localities with (i) modernised basic social services – healthcare, drinking water, communication, lighting, etc. (ii) access to lighting, audiovisual and telecommunications service, etc. and (iii) the coverage of isolated populations with decentralised approaches.**

Each of these results will be the subject of a specific investment programme in order to assign the resources needed for the achievement of the set objectives.

4.2.2 A direct impact on the achievement of the MDGs

The implementation of the regional policy, and the resultant considerable increase in the rate of access to energy services, will be reflected by the acceleration of the development process in ECOWAS member states.

This impact will be measured by the following success indicators related to the MDGs:

Indicator 1: 100% of administrative headquarters and localities with more than 2000 inhabitants will be equipped with a modern electricity service for the running of essential infrastructure such as drinking water, health centres, primary, secondary and professional schools, computer services and internet access .
Contribution: [MDGs 1 to 6]

Indicator 2: 100% of administrative headquarters and localities with more than 2000 inhabitants and 80% of localities with more than 1000 inhabitants will be equipped with mechanical motive power.
Contribution: [MDGs 1 to 6]

Indicator 3: 60% of the rural population of ECOWAS member countries will live in a locality equipped with modern energy services.
Contribution: [MDGs 1 to 6]

Indicator 4: At least 36% of households in rural areas will be electrified, thus easing access to, at least, communication and lighting services, thereby doubling the 2005 level.
Contribution: [MDGs 1, 2, 3, 5, 6]

Indicator 5: 100% of urban and peri-urban households will be provided with an electricity service.
Contribution: [MDGs 1, 4, 5, 6]

Indicator 6: 100% of the total population in the region will have access to a modern fuel service (LPG, kerosene, mineral coals, etc) or improved stoves and to sustained biomass supply.
Contribution: [MDGs 3, 5, 7]

Indicator 7: As a result, the share of traditional biomass in the average energy balance in the region will decrease by at least 20% from its current level of 80%.
Contribution: [MDGs 3, 5, 7]

Indicator 8: 4.3% of the region's GDP will be set aside for energy sector expenses in order to achieve these objectives.
Contribution: [MDG 8]

Indicator 9: In all ECOWAS Member States, the regional body will facilitate the putting in of an energy control policy comprising, at least the following component : energy efficiency, renewable energy, social measures (pricing), and regulations for encouraging public-private partnerships. The objective will be to ensure policy convergence and capacity building.
Contribution: [MDGs 1 and 7]

Indicator 10: At least 20% of new investments in electricity generation will be driven by local and renewable resources, including hydro-electricity, in order to achieve energy self-sufficiency, reduced vulnerability and sustainable environmental development in keeping the regional plan.

4.3 Guiding principles

Having been accepted, regional co-operation should respect a number of guiding principles :

- **Subsidiarity**, applies to all regional policies and requires that issues to be handled at regional level be only those on which regional action can be more effective than national action;

- **Cohesion, consultation and co-operation:** these are particularly important because of the cumbersome nature of investments, the stakes involved in accessing a regional market, or still the complementarities of situations between importing and exporting countries. This includes co-operation with other sub-regional institutions;

- **A multi-sectoral approach:** energy programmes will be based on an approach that identifies development needs, and services, and co-ordinates other sectoral investments to ensure the requisite equipment – before a market is put in place. Past programmes limited, fully or in part, to a single sector – have shown their limits on the dynamics of development and that this restricts multiplier effects.

- **Technological neutrality:** energy programmes will endeavour to uphold technological neutrality, meaning that the technology used in any given circumstance will be the one that is likely to be best in the long-term according to local and national contexts. This neutrality will be applied, in particular, when comparing centralised and decentralised solutions and mobilising renewable energies that require costly investments. It also entails taking account of externalities when making comparative analysis of technical solutions;

- **Promoting public-private partnerships:** this partnership will cover technical aspects, management systems, mobilisation of funds and risk-taking, especially financial risk. It is highly important that public actors (state, public institutions, regional and local authorities, etc.) as well as private actors (national and local entrepreneurs, financial institutions, associations and co-operatives, NGOs, etc.) be mobilised. This will entail setting up appropriate regulatory frameworks and a transparent incentive and attractive structure;

- **Environmental conservation and sustainable development:** firstly at local level but also at global level given the potential impact of major energy projects on climate change or biodiversity;

- **Supporting gender equality:** by, for example, relieving women's workload, creating income-generating activities for women, their households and their communities, access to quality social services, including healthcare and literacy programmes;

- **Ensuring security of supply for the economy and the reduction of economic vulnerability to external factors, in particular, increase** in oil prices. this is a fundamental principle in all programmes and is very important in the current context of rising oil prices;

- **Promotion of participatory approach:** this is based on the involvement of end users in the definition of technical financial and organizational approaches.

- **Optimising the use of available financial resources and mobilising additional resources:** ODA (multi– and bi-lateral), national financing and mobilisation of private funds. This will be done by seeking complementarities between regional and national funding sources and by prioritising 'high impact/ low cost' solutions.

- **Sustainability of adopted solutions:** seeking sustainability of investments well over the year 2015 should be a permanent move. This entails analyzing alternative solutions in the long-run. (life analysis).

Therefore, the implementation of the regional policy should enable member states to create an enabling political and institutional conditions for the formulation and implementation of national policies and programmes necessary for the achievement of the MDGs, NEPAD and FEMA objectives.

Creating a coherent policy framework that targets development and poverty alleviation and treats energy as a national priority is another sine qua non for raising the financial means required to achieve the ambitious objectives. These means will come from national budgets and be supplemented by contributions from development partners.

Finally, the MDGs will confirm the effectiveness of these programmes as they are being implemented.

The problem of implementation remains a topical issue, since it often determines the success or failure of policies and programmes. That is why particular attention is paid to the regional policy's implementation modalities, by capitalising on lessons learned from regional initiatives such as the WAPP.

5. STRATEGY FOR IMPLEMENTING THE REGIONAL POLICY

The adherence of Member States to the regional policy's objectives of widening access to modern energy services creates the enabling political framework for the achievement of such objectives.. However, the exact method of effectively doing so is still to be defined. It is therefore necessary to work out the institutional conditions and strategic implementation framework for the effective achievement of the said objectives. These include:

- formulating and operationalising policies and programmes for widening access to energy services in order to achieve the MDGs,
- strengthening national and regional human and institutional capacities;
- Then mobilising the financial means required for the achievement of the objective set by member states as per the mandate given by the region namely, to enable at least half of the ECOWAS population to have access to modern energy services.

The strategic implementation framework must be capable of meeting the region's expectations and mobilising the large sums of money needed. Between 1990 and 2000, public and private investments in the energy sector in the ECOWAS region fell sharply, so huge sums of money should be raised over the coming decade if these objectives are to be achieved.

The implementation strategy should emphasise the use of regional action only in situations where it would generate greater benefits than would do national actions. This is in keeping with the principle of subsidiarity.

5.1 Value added of the regional action

Under the principle of subsidiarity, the implementation of the main investment programmes is the responsibility of member states. Accordingly, the value added of a collective regional response lies first and foremost in the upstream activities of investment programmes, when there is an advantage handling an issue together rather than individually within each state:

- Inter-state exchanges on common problems make it possible to capitalise on certain countries' achievements. Problems that could benefit from regional exchanges include: institutional reforms, technical standards, financial mechanisms, cross-border tariff issues, etc. Even in the absence of a regional experience that could serve as a model, there are a host of topics that could be enriched by regional exchanges and the quest for a common solution. For example, the problem of stimulating small-scale private operators in rural and peri-urban areas, or still a local authority carrying out an exemplary action by implementing a multi-sectoral investment programme designed to reduce poverty and achieve the MDGs.

  The establishment of a knowledge management system will directly support capacity-building strategy by fostering expertise based on shared practices. Indeed, Africa's experience over the last decade constitutes a mine of lessons, knowledge and good practices. Unfortunately, there are few organisations where such information can be shared. The ability to create and disseminate knowledge would constitute an added value for the region, in particular and Africa as a whole.

- Savings; optimizing and valorizing resources, especially human resources, can be done via regional capacity building actions such as: joint training sessions on common themes , for tariff solidarity regulatory frameworks ;the development of tools that can be adapted at low-cost to country situations thanks to similarity of contexts; the creation of regional centers of excellence – research and development centers – tests unit and performance measurement centers.

- Considerable springboard effects should be made possible, notably concerning the mobilization of fund for investments, like the first achievements of WAPP in the interconnection of electric grids. For example, a manufacturer of small hydro-electricity turbines might not necessarily invest in a country with a relatively small market. But so far as fiscal and customs barriers in the regional market will be removed, the size of the potential market and the diversification of commercial risk in various countries would make up for a much less risky context for investors. Meanwhile, donors often cite the very high cost of preparing projects in rural or peri-urban areas as prohibitive – the more so as these projects are small-sized projects compared to the heavy infrastructure projects for capacity development or for primary electric grids often considered as one of the reasons/ if not the unique reason why donors are reluctant to invest in and are relatively withdrawing from them. Building projects on similar principles for various countries, is more attractive and more promising for donors as they allow for high levels of heavy investments.

- Regional co-ordination of development projects at local-scale will make it possible to better quantify energy investments in terms of the expected economic effects, which will also be quantifiable. This co-ordination enables investors to get a better appreciation of the time-scales on returns on investments, of the rules applied by development banks, of the type of guarantees that can be secured through ODA.

This appreciation of the value added of regional — capacity building, experience sharing, support towards the mobilisation of funds -- has been buttressed by the experience of a regional organization such as CILSS through its PREDAS and PRS programmes and, more recently, by ECOWAS' (WAPP and PGAO) and UEMOA (PRBE).

5.2 Links with other regional initiatives and policies

From its objectives, the regional policy should directly support the following initiatives:

- **At the African level**, the implementation of a regional policy should contribute to the achievement of the NEPAD objectives (source: CME Activity report, 2003): namely, to increase access to financing and increase the reliability of infrastructures, both for companies and households, in order to increase the access rate to energy services by serving 35% of the population.

  The regional policy should also help meet another priority, more specific to NEPAD: the promotion of knowledge sharing and the dissemination of good practices. It will do this by capitalising on:

  - Regional training centres,
  - Increased involvement of universities and research bodies.

- **At the regional level**, the policy is in conformity with the objectives of the regional integration policy because; by supporting the formulation of adequate policy and institutional frameworks at member states level (Policy objective 1) it will help to reinforce the convergence of the economic policies and the integration of the economies of Member States.

  For this reason, due to the prioritisation of poverty reduction and the achievement of the MDGs, it should also contribute considerably towards the achievement of the aims set in the Regional Poverty Reduction Paper, which is currently being finalised. Moreover, this policy is likely to have a positive impact on governance in the energy sector by encouraging a multisectoral approach that facilitates the participation of all key operators.

  The regional policy reflects the six objectives of the UEMOA's Common Energy Policy: to ensure secured energy supplies to the Union; valorise and safeguard the Union's energy resources by systematically inter-connecting electricity grids; promote renewable energies; promote energy efficiency; develop and improve rural population's access to energy services across the Union; and help preserve the environment.

  Beyond these synergies with the CEP, the regional policy will also, thanks to its multidisciplinary nature and its heavy involvement in various poverty reduction strategies, exert a strong influence on all other UEMOA programmes and policies relating to industry, agriculture, telecommunications, and social development, environmental management, land-use planning and the economy.

  This regional initiative based on satisfying needs in rural areas clearly complements other endeavours such as the WAPP, which assign priority to high-demand areas and catering to the needs of economic actors located therein.

- **At the sectoral level**, implementing the regional policy will help the sub-region achieve the objectives set by the Forum of Energy Ministers of Africa (FEMA) at the Millennium Summit in New York in September 2005.

- **At the institutional level,** this complementarity was clearly expressed when ECOWAS and the UEMOA, in August 2005, signed an agreement aimed at reinforcing co-ordination in the implementation of joint energy-related actions. This convention covers specifically the implementation of the regional policy which is the subject of this White Paper.

Therefore, the regional policy should help intensify cohesion in the energy sector in the sub-region, and valorise and strengthen the means used to achieve the objectives of the various regional initiatives and policies.

5.3 Regional policy's lines of action

The Forum on access to energy services in rural and peri-urban areas, jointly organised by the ECOWAS executive secretariat and the UEMOA in Bamako, Mali, from 16-19 May 2005, was attended by all the main institutional actors concerned (Ministers of the economy and finance, planning, rural development, agriculture, health, education and foreign affairs/regional integration) from the fifteen member states. During this forum, four main lines of action for the region were identified in order to overcome the main obstacles to the implementation of a major action.

But limiting regional action merely to actions preparing investment programmes would be too restrictive: therefore, regional action could be deployed to good effect for monitoring, capitalising and co-ordinating the implementation of investment programmes in order to render them more effective.

5.3.1 Line of action 1: Building capacities of public and private actors

Apart from the problem of inadequacy of financing the unequal distribution of skilled human resources in rural and peri-urban areas constitutes the main problem that must be overcome Action at regional level can go a long way towards overcoming this obstacle.

For this reason, this line of action covers capacity building– including information and awareness-raising – of targeted actors, among others:

- staff of public institutions in Member States, especially newly created institutions (rural electrification agencies, regulation authorities, etc.) and ministries in charge of energy and technical ministries represented in the multi-sector committees;
- local and regional authorities (councils, divisions, provinces, etc.) and attached services and agencies;
- public or private operators working at the local level (producers, energy system users, equipment manufacturers and fitters, and financial institutions) in view to strengthening public – private partnerships;
- civil society organizations and consumer representatives (cooperatives, NGOs, consumer associations, professional organizations, etc.);

Capacity building also covers the development of tools and methods, and the training actors in how to use and appropriate them. One crucial objective is to equip the region with the capacity to manage data bases and geographical information systems that could be used for carrying out identification studies, drawing up technical and economic models and planning energy investment projects that integrate economic and social development projects, and the coordination of the implementation of such programmes and projects.

These tools should also make it possible to monitor and implement policies and programmes, and assess the results obtained and their impact on poverty eradication and economic development.

The goal, then, is to build the capacities required to devise harmonised policy and institutional frameworks that rank energy as one of the regional priorities, and to develop coherent energy policies and programmes geared towards reducing poverty.

5.3.2 Line of action 2: Help mobilise soft loans and funds from the private sector for projects aimed at extending energy services to rural and peri-urban areas

The region's contribution to mobilise additional funds will take different forms, both in terms of the type of funds mobilised and the role that this region plays in this fund raising process:

- The Region will support Member States' efforts to secure soft loans , for instance for cross-border electrification projects like the WAPP inter-connections. This support could be designed for projects covering all of ECOWASS Member States or a subset of countries coming together for a specific project. This support can extend beyond fund mobilization into assistance for implementation;

- The Region will also support the mobilization of national private and public funds for the energy sector; in particular financial sector resources in the form of micro credits. This implies supporting initiatives that promote financing mechanisms and micro-financing dedicated to increasing access to energy services for the poorest populations.

- The Region, via the ODA, will also mobilise direct additional funds, meant to support regional programmes and /or regional integration programmes such as the RIP of the European Commission or UNDP regional programmes. like regional programmes under implementation such as the RSP, the PREDAS or the Multi-Functional platforms project, whose management can be ensured at regional level or be delegated to Member States;

- The regional body can directly raise finances for projects that aimed at demonstrating the effectiveness of mature technologies run on the principle of co-financing with the private sector; in addition, the region can raise 'patient capital' ( ) for renewable technologies -- small-scale hydro-electricity, biomass valorization and photovoltaic solar power.

The goal being pursued is to raise extra funds, which would complement those from national budgets, especially via debt remission initiative schemes, and which are necessary for the implementation of energy programmes.

5.3.3 Line of action 3: Sharing, promoting and disseminating sub-regional experiences relating to the supply of energy services in rural and peri-urban areas (knowledge management)

Conscious of the failures and limits of policies sought to replicate schemes and models conceived elsewhere, the region can help formulate a methodology – and even a 'West African model' – for drawing up policies geared towards increasing access to modern energy services. This could be done through the promotion of exchanges between all actors involved in the implementation of the regional policy and the setting up of 'knowledge network' practices:

- To ensure a maximum positive impact of these exchanges, thematic studies will be conducted with a view to identifying – in the region or in other similar countries -- the most promising technical models, regulations, organizational methods, financial schemes or public private partnership approaches.;
- For those member states which are still lagging behind in reforms, experience sharing would allow them discover institutional and organizational systems already adopted elsewhere within or outside the region;
- For freshly created institutions – for example. rural electrification agencies and regulatory authorities – and for market companies, experience sharing will form part of capacity building programmes covered in line of action 1.

Beyond their direct impact, these exchanges will create a veritable network among the regional actors, by building on multi-sectoral national groups and regional actors. This will further ease the definition and implementation of the political frameworks and investment programmes referred to in line of action 2.

The goal pursued is to create a system for sharing knowledge and good practices which will serve as a springboard for the capacity building strategy by stimulating the setting up or the reinforcement of a multi-sectoral spirit both at national and regional levels, and the creation of an expertise based on common practices.

5.3.4 Line of action 4: Promotion of local production of energy goods and services

In the long term, the sector can only be sustainable and justify the major financial investments the region is about to make, if regional enterprises promote goods and services that go into the realisation and use of the required infrastructure and energy services. This presuposes that market-driven enterprises in the region must become the primary providers of energy services in rural and peri-urban areas.

In addition to the activities covered in Lines of action 1, 2 and 3, which will also benefit from the private sector, the region will make a specific contribution by:

- making a vigorous effort to locally produce and distribute energy service equipment by securing 'demonstration funds' for technologies being developed, and which may be operational in the near future,
- providing specific support towards the setting up of regional centers of excellence specialised in technology sectors that can support and control the manufacture of components for locally-produced equipment; this means forming test benches and organizing equipment tests,which can eventually lead to the issuing quality labels,
- setting up a regional network of centres for support to local authorities and their partners who have projects (supplying energy goods or services) in rural and peri-urban areas. These centres will specialise in giving support relating to financial engineering, and the 'bankability' of projects assistance for the development rules for the sound economic and financial management of energy companies.

[1] "Patient Capital": investment funds accepting longer payback periods for their investments than conventional investors

The set goal is to establish a network of private suppliers capable of meeting the demand for energy equipment and services resulting from the implementation of investment programmes arising from the regional policy and national sectoral policies, notably in the areas of education, health, access to water and economic development (craft, micro-industry, etc.).

5.4 The implementation framework

5.4.1 Context

Given the set objectives and the magnitude of the challenges facing the ECOWAS region, it is essential that sufficient institutional, financial and human resources matching these objectives be raised. The region has a wealth of experiences gained through the WAPP and WAGP, which can now serves a reference for mobilising public and private funds via regional endeavours, but which are implemented at state level.

The region has already laid the initial foundation for an appropriate institutional apparatus with the signature in August 2005 of the ECOWAS-UEMOA agreement on the implementation of joint actions relating to energy. A joint ECOWAS-UEMOA Energy Committee was set up. The role of this Energy Committee is to schedule and evaluate the implementation of the activities provided for by the agreement. This also holds true of for the WAPP's Steering Committee, which is made up of electricity company' managing directors.

5.4.2 At the steering level

For the successful implementation of the ambitious regional policy aimed at increasing access to commercial energy services in rural and peri-urban areas, it will be necessary to ensure the involvement of actors beyond the energy sector. All the stakeholders in the region, as well as public development aid partners should be involved in the management of the programme.

Therefore, the Steering Committee of the programme for widening access to energy services will have a strategic role in guiding activities and monitoring progress of the energy access work plan on a yearly basis.

The steering committee will be composed of the following main relevant actors in the region:

- the ECOWAS/UEMOA Technical Secretariat,
- the ECOWAS / UEMOA Energy Committee;
- the regional multi-sectoral committee;
- representatives of the civil society and private sector, and
- donors.

The Steering Committee will have to designate, some of its members to see to the day-to-day management of the committee.

5.4.3 At the thematic level

Considering the variety of topics to be handled, the steering committee will establish thematic working groups (TWG). These groups will be responsible for examining the most urgent regional problems, with at least one national representative per topic so that the roles of regional and national actors complement each other. The following topics could be covered:

- Decentralization of contracting powers relating to energy services in rural and peri-urban areas, and multisectoral co-ordination at local, national and regional levels in order to improve the technical and economic viability of projects, achieve economies of scale and optimise the use of the sub-region's energy resources.
- Harmonization of wealth redistribution policies, so that they increasingly target the development of rural and peri-urban areas, particularly through fiscal incentives for developing and stimulating energy services in such area across the region.
- Harmonization of ad hoc public aid to operators and users of these services, including standardization of tariffs with a view to creating a 'solidarity pricing' system.
- Mobilization and reinforcement the capacities of local actors – who are implementing projects or proposing services, on modelling in size and time the required energy investments required for the feasibility of local development projects, in conformity with the adequacy of investments responses in keeping with the region financial market practices.

These Thematic Working Groups, of which the number and exact topics are yet to be defined, will report annually to the Steering Committee. They will set a work programme and identify the means for realising it. Each TWG will discuss how to finance its activities. The funding may come from a host of different sources, such as national contributions, development partners, etc.

5.4.4 At the Political level

In order to ensure sufficient visibility of the actions undertaken and to the results obtained, a Regional Forum on Access to Energy Services in ECOWAS Countries will be held each year and will be also attended by the Energy Ministers. This high profile event will be of very great importance to for experience sharing, regional integration and the visibility of the sector. These common encounters and activities, which will promote experience sharing, will also lead to the convergence of policies and regional integration. They will also provide an opportunity for the Steering Committee to report to the ministers on the state of progress of the implementation of the action plan, and to put forward proposals for regulatory or legislative modifications that could boost regional energy integration and help achieve the goals of the regional policy of access to modern energy services.

Insert 10 – Example of a regional institutional model in the energy sector: the ASEAN countries

The countries members of the Association of South-East Asian Nations (ASEAN) organised themselves into energy sub-sector networks (SSN) featuring one national representative per country. The role of this body is to devise annual work programmes. It meets at least once per year, though various sub-groups may meet on an even more regular basis. The presidency of each group rotate among the members. Presently, there are more than half a dozen active SSNs: HAPUA (electricity companies), which comprises sub-groups working on inter-connections, renewable energy or rural electrification; oil company networks; coal companies network; renewable energies network; and the energy control network. The activities identified by each sub-group are funded either through national resources, or by funds raised through the ACE (ASEAN Centre for Energy). ACE also facilitates meeting and working groups, although which ever country holds the presidency at the time continues to steer them. Each SSN submits an annual report to the energy ministers' forum, during which regional policy decisions are generally taken. This high-profile event (featuring a conference and an energy exhibition) always culminates in the annual meeting of the Energy Ministers , so it can be seen that the event plays a major role in increasing awareness on the sector, mobilising national and international operators and investors, and stimulating regional experience sharing. ACE is the operational body, having merged from AEEMTRC, which was originally a regional training centre, financed by the European Commission. ACE is now financed by ASEAN Member States and its operating costs are covered by a trust fund run with the contributions of all Member States.. The chief executive officer – appointed by each country on a rotational basis – and the key staff are seconded from their national governments. The rest of the staff are recruited on fixed term contracts for specific tasks.

5.4.5 At the implementation level

At the operational level, ad hoc resources need to be mobilised to ensure the effective implementation of this ambitious programme. Just as consultation among Member States' representatives is a fundamental principle for devising strategic guidelines, the success of the action plan and the instruction given by the Steering Committee depends on the reality of the two principles of efficiency and continuity. This means a permanent dedicated body must be set up to implement the regional policy relating to widening access to modern energy services. This body must have operational autonomy.

Such a Regional Agency for Widening Access to Energy Services will be mandated to carry out a number of permanent activities relating to the four lines of action. It will also perform occasional activities relating to specific projects. The permanent activities would include:

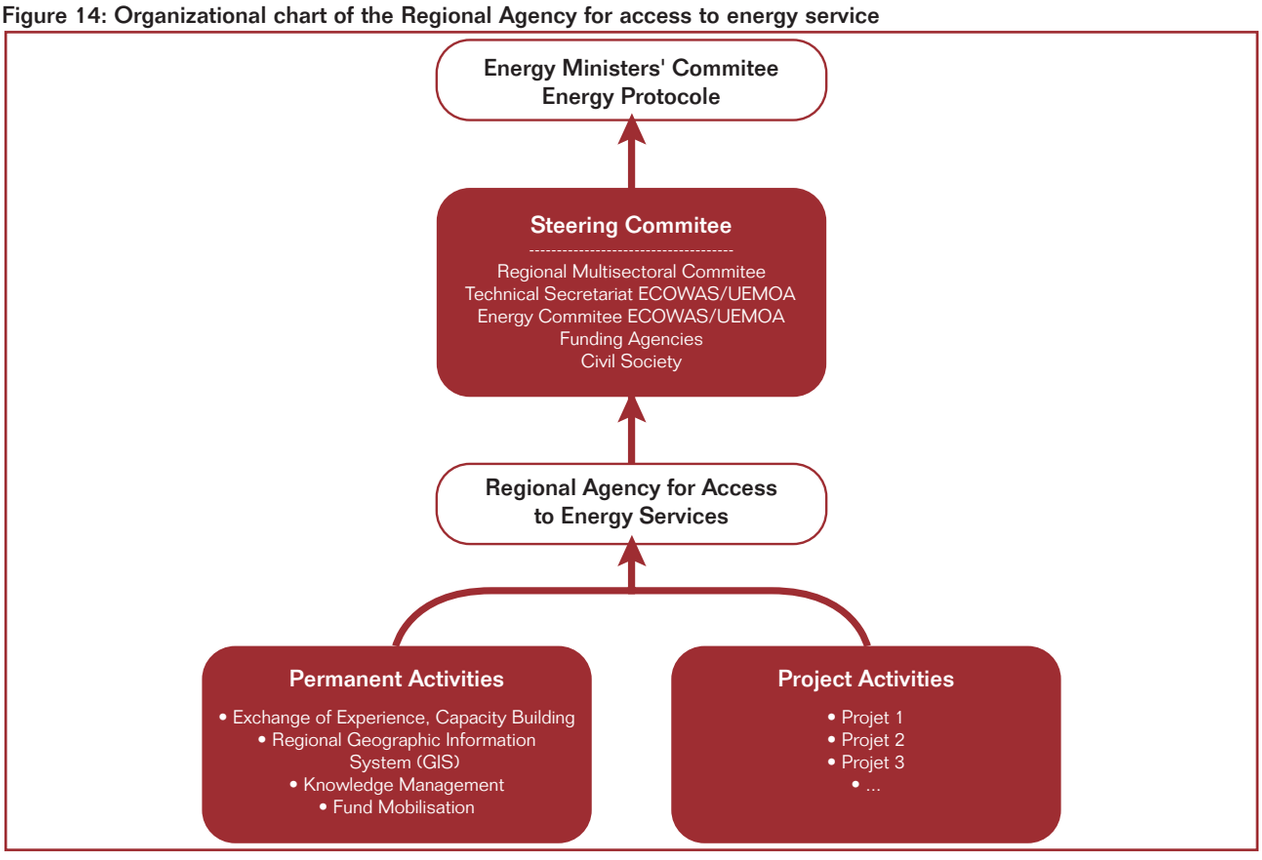
(1) managing the energy and regional development information systems: this entails gathering data from Member States, updating it and distributing to the relevant actors in the sectors;

(2) helping Member States set up systems for assessing the impact of policies and programmes; also helping them with their communication and lobbying;

(3) holding regional workshops, training sessions, and discussions on sustainable energy policies that will bring energy supplies to the poor; organise training and exchange activities at regional level.

(4) designing and distributing, to energy development contracting authorities, decision-making tools (geographical information systems specially focused on evaluating the ties between energy input at local level and the corresponding economic and social output), and supporting the networks for the support of project development centres;

Figure 14: Organizational chart of the Regional Agency for access to energy service



(5) helping Member States, including those at decentralised level, with fund-raising: developing project proposals and guidelines and arranging meetings with donors, all with a view to achieving a springboard effect across the region;

(6) managing an 'innovation and development fund.' This will make it possible to save time by quickly launching activities aimed at attaining priority goals on a learning-by-doing basis. It will also foster the development of a competitive regional sector, since the risk associated with starting up projects would be more acceptable for market investors and banks who are never prepared to assume all the risk themselves and therefore normally wait for involvement of public funders (development banks, ECOWAS financial institutions, ODA, etc.), which guarantees at least a minimum return on their heavy investments. For a 'trust-based dynamic' to be born, parties must co-operate at regional level;

(7) running the Steering Committee secretariat and organising regional fora on widening access to energy services for ECOWAS countries in tandem with the host country.

Alongside these activities, the Agency will perform more specific project-related activities, for which financing will be found on an ad hoc basis. Examples of such activities include:

(1) helping Member States incorporate an energy component into their PRSPs;

(2) conducting case studies and impact studies to document good practices. This should be done with reference to the international schedule, so that the work can help inform and bolster the region's – and Africa's participation in major international conferences and global political processes;

(3) carrying out feasibility studies and reviews of various productive services likely to meet expressed needs, especially in rural areas;

(4) conducting a regional study on the technical and economic conditions for viably harnessing the full potential of renewable energy sectors (biomass energy), hydro-electricity, solar heating and PV pumping);

(5) investigating the market potential for bio-fuels and the conditions for developing industrial crops on an ad hoc basis;

(6) conducting a feasibility study on a regional plant for manufacturing components of renewable energy equipment such as solar water heaters and a biomass plant for steam/electricity co-generation, …at local level;

(7) carrying out a prospective study of some local economic zones, featuring a central town and its hinterlands, in order to determine how they could develop, economically and socially, if regional integration opened their subsistence economies to a wider market: this study should produce models of technical options and more or less decentralised methods for supplying energy and harnessing any local energy potential, as well as sharing the best way possible, energy resources between Member States.

The vision and goals contained in the White Paper make it obvious that an operational body will be required, but the Agency must be established through consultations that will determine its legal status, devise its initial five-year plan, decide how it will be organised and what human and financial means will be devoted to it. The Agency will have to prove its efficiency and its effectiveness in reaching the targets set for it. These objectives will be set over a five-year period, at the end of which its progress will be evaluated and the decision will be taken as to whether or not its role should be renewed.

During this trial period, the Regional Agency for Widening Access to Energy Services will be supported by specific funding for the first three years, with the amount allocated to it declining after five years as the Agency gradually becomes self-financing, in part by levying a management commission on the funds mobilised, with more coming from Member States.

In conclusion, the proposed implementation strategy entails focusing regional action along the intervention lines where it can bring the highest amount of added value. It also entails establishing a broad-base steering framework and an efficient operational body. Once this is in place, the conditions for a successful implementation of the action plan will exist.

6. ACTION PLAN AND INVESTMENT PROGRAMME

In order to succeed in halving poverty in the ECOWAS region and achieving the MDGs, the Member States have set themselves the following targets relating to widening access to modern energy services by the year 2015:

1. Access to improved domestic cooking services for 100% of total population by the year 2015. That is 325 million additional people or 54 million households over a 10-year period. 30 millions of this population will be using LPG cooking devices;

2. At least 60% of the rural populations will reside in localities with access to motive power with the objective to increase productivity of economic activities and will have access to modern community services; according to present estimates, that is doubling the 2005 level;

3. Access to individual electric services for 66% of the population, that is 214 million people living in rural and peri-urban areas; that will go as follows:

   (a) 100% of urban and peri-urban populations; roughly twice the access rate compared to current rates;
   (b) 36% of rural populations - as compared to 1% today in those African countries with less population density, and roughly 10% in the most advanced countries;
   (c) Besides, 60% of the rural population will live in localities equipped with modern basic social services: health, education, potable water, communication and lighting. All these amenities will be achieved through decentralized electrical facilities or through grid extensions, thus multiplying the current level by three.

Achieving these goals will entail:

- **Mobilising considerable amounts of investment;**
- **Putting in place an ambitious regional plan;**
- **Launching prompt preparatory activities.**

An exercise was conducted to establish an estimate of the overall amount of investment needed to reach these targets. This consisted in modelling based on a bottom-up approach, starting by ascertaining present levels of poverty and the distance from the MDGs, and then calculating how much investment would be required to bridge the gap. Obviously, the resulting figures will need to be refined for individual countries on the basis of official national data. The figures given here are simply to establish an indicative framework for the required amount.

Total cost are subdivided into :

Access investments: they cover the equipment required for access to modern energy services; they cover end-use equipment for improved cooking fuels; for electrical services, it includes connection costs (household and community) and low voltage lines as well as medium voltage lines for rural areas; for decentralised productive and motive power they cover system costs.
- Energy costs, including cost of generation and transmission
- cost of studies and accompanying measures: this is estimated at 15% for 'conventional' programmes and 30% for the most decentralised programmes for services in rural areas.

6.1 Estimated amount of financing required

Initial estimates suggest the amount of investment needed to reach the goals are as follows:

- **17.5 billion dollars over ten years for investment in equipment needed for access to modern energy services including studies and accompanying measures;**

- **34.6 billion dollars over ten years for energy costs, or 3.46 billion dollars per year; the figure is an overall total that includes depreciation of generation and transmission costs: given the amount required, it goes without saying that consumers will not be able to foot all of this bill, therefore states will have to provide subsidies, with each one to decide how much;**

- **The overall cost of three programmes is around 16 dollars per inhabitant per year;**

- **The total annual cost for programmes is estimated at US$ 5.2 Billion[1], around 4.3% of regional GDP[2];**

[1] Annual average over ten years
[2] 2004 GDP, source World Bank

6.2 Methodological approach

There are wide contrasts in the geographical and demographic situations of ECOWAS countries, which means investment costs vary considerably between them for modern energy services (see comparative table in Appendix 5).

For the purposes of appraising investment needs, we can distinguish two types of countries, using three criteria:

- The 2015 urbanization rate: 49% on average, with figures varying from 23% to 65% ;
- 2015 population density: average of 65 inhabitants per km^2, varying between 11 and 152;
- The 2005 household access rate to electricity services, which varies from 5% to 38%, with the average being 20%.

Countries are classified according to the following rule (see comparative table in appendix 5):
- in category 1, countries have higher than average rates in two of the three criteria listed above. The countries in this category are: Benin, Cap Verde Islands, Ghana, Cote d'Ivoire, Nigeria and Senegal.
- the other nine countries fall into category 2.

	Cat. 1	Of which I Nigeria	Cat. 2	ECOWAS Total
Urban population 2010 ('000)	128,704	89,317	32,789	161,493
Rural population 2015 ('000)	106,725	71,614	57,302	164,027
Total	235,429	160,931	90,091	325,520

If we exclude Nigeria, whose population is much bigger than any other country the two categories represent roughly the same number of people.

For these two categories of countries, the initial situations (access in 2015) are often quite different as well as the access targets as will be seen in the next paragraphs.

Average number of persons per household is taken as six, right across the region.

The calculation for all three investment programmes are based on real data from sample countries in each of the two zones for which data was available; the results were then extrapolated to the entire zone according to population levels.

6.3 Access Investments

6.3.1 Access to modern cooking fuels

Various estimates suggest that the access rate to modern cooking fuels is below 5% in rural areas: we estimated an average of 3% of the rural population in 2005.

In urban areas in which ambitious programmes have already been undertaken, such as in Senegal, the access rate is as high as 70% in the capital cities, but just about 20% in secondary cities. In 2005, the access rate in urban areas is therefore estimated at 5% for category 2 countries, and 20% for those in category 1.

The objective for 2015 is for all of the population to have access to a modern or improved cooking service. This may be obtained through:

- Access to modern fuels – which requires, in the case of LPG, that households buy a gas stove and canister.
- Improved biomass stoves, in conjunction with the construction of chimneys to reduce in-door air pollution. Where biomass is used, biomass production must be sustainable, using sustainable energy crops. This entails, as we saw earlier, carrying out in-depth reform of the forestry and rural sectors.

In order to reach LPG access targets, 30 million stoves must be supplied over the next ten years.

Unit costs are taken as follows:

Improved cooking fuels	Unity prices	Population access target				Total ECOWAS
		Cat. 1 countries		--Cat. 2 countries		
		Urban	Rural	Urban	Rural	
LPG stoves and canisters	50$	80%	50%	80%	50%	100%
Improved biomass cookstoves and chimneys	50$		50%		50%	
Substained biomass forestry	50$	80%	50%	80%	50%	

6.3.2 Access to motive power service

No real economic activity can prosper without access to mechanical or electrical motive power. Such power makes it possible to run, for example, water pumps and mills. Experiments carried out show that the costs of fitting a diesel motor and some key accessories is around 15,000$ for a locality.

For all of the ECOWAS countries, 100% of villages with more than 1000 habitants will have access to this service by the year 2015.

For category 1 countries, where village electrification rates stand at between 20% and 40% in 2005, 100% of villages with more than 500 people will have access to this service by 2015.

Over the 10 coming years, an estimated 46.000 thousand villages will have to be served.

When these villages are eventually connected to an electricity grid, the end-use equipment will remain, but the diesel generator may be used in another village or for other purposes.

6.3.3 Electrification programme

This features an urban and peri-urban component, and a rural electrification component:

Urban and peri-urban electrification

In category 1 countries, the urban household electrification rate is estimated at 50% on the basis of sample countries. The rates in category 2 countries vary from 17% to 46%.

The target is to connect 100% of peri-urban households by 2015, i.e. some 15.7 million households over the ten years ahead.

Cost estimates are based on the assumption that, in most cases, the MT grid reaches the entrance of neighbourhoods to be electrified. On this basis, the cost of connecting a household is put at $350.

Rural electrification

a) Access to electricity services by connecting localities for production uses and community services

The target is to interconnect localities of more than 2000 inhabitants across the region, this threshold is reduced 1000 inhabitants for category 1 countries, since in countries such as Cote d'Ivoire and Senegal, and almost 50% of localities are already served. In zone 1 countries, barely 1% of villages have electricity at present.

The access investment budget therefore includes the following estimates:

- The number of km of MV lines to be built, estimated on the basis of the geographical information systems that are available in some countries;
- The cost of MV lines is estimated at US$ 15,000 per km;
- 20% per km is added to this to cover the installation of transformers;
- Providing one to five community or productive connections within each locality costs on average US$ 5,000 per locality.

Achieving this objective entails serving 25,000 localities via inter-connected or local grids over the next ten years.

b) Electrification of households in localities connected to centralised or decentralised grids

It is essential that this cost be covered if there is to be any realistic chance of qualified people – nurses, teachers, doctors, entrepreneurs, etc. – settling and remaining in these areas.

The target is to get 40% of households in these electrified localities connected by 2015.

The average cost of connecting a household is estimated at 350$.

c) Decentralised electrification of small isolated localities and dispersed populations

This category covers localities of between 500 and 1000 inhabitants (category 1 countries), and those of between 1000 an 2000 for category 2 countries.

The objective is to cover 80% of localities by 2015.

The estimated average cost of bringing a sufficient level of service to cater for small-scale production and communal services, and connecting 50 households, is 40,000$.

6.4 Cost of energy

Reminder: energy costs include depreciation of production and transmission.
To calculate the annual energy consuming costs, it has been estimated that 10% extra households will be served each year.

6.4.1 For the domestic cooking fuel programme:

It is estimated that every household that can use LPG will consume 150 kg of it each year. The annual tax-free cost of LPG in the region is 1000$ per ton.

For households that have improved stoves, no budgetary estimates for wood fuel or charcoal have been included because this programme does not lead to any additional expenditure on these.

6.4.2 For the motive power programme:

For appliances in rural communities and a small amount of motive power, annual consumption is estimated at 12,000 kWh, or 4,000 litres of fuel oil – at an average efficiency of 3kWh/litre. The cost of kWh is estimated at 0.4$ – including depreciation of the generator.

6.4.3 For the electrification programme

- Consumption per household under electrification programme for peri-urban areas is estimated at 300 kWh per annum. The cost of electricity is 0.15$ per kWh, assuming that the populations could benefit from reduced costs thanks to investment in inter-connections.

- Consumption for production purposes and community services in secondary centres: it is assumed that once a village has been connected, consumption for community purposes will increase annually by 6 000 KWh to reach a total of 18 000 kWh / year. The villages will be supplied from an inter-connected grid at a cost of 0.2$ per kWh, which is higher than for peri-urban areas because losses are higher...

- Household consumption in connected villages: it is estimated that households consume an annual average of 250 kWh at 0.2$ per kWh, which is very much less than in urban areas.

- Consumption in decentralised programmes: in addition to motive power, for which consumption levels are detailed above, it is estimated that 50 households per locality will benefit from a service, and one household will consume an estimated 200 kWh per year, slightly less than in urban areas. Households may be supplied by mini-grids at a cost of 0.4$ per kWh, or by a photovoltaic service for which the (high) cost will be maintained to cover the replacements of parts.

6.5 Cost of studies and support measures

Implementing the investment programmes described above entails, first of all, conducting technical feasibility and engineering studies and undertaking social and institutional support measures during implementation. 'Classical' programmes, which are mainly based on grid extensions, requires proportionately less support in the form of 'rural development' investments.

Drawing on the experience of similar programmes, the cost of studies and support measures are estimated at:
- 15% for peri-urban electrification and secondary centres;
- 30% for residential fuel programmes, access to mechanical energy, decentralised electrification and household connection – estimated on the basis of the UNDP multi-purpose platforms programmes.

Programme	2005 Status	Objective 2015	Number of connections added		% total pop served in 2015	Investment		Programme Development and support			Cost of Energy consumption		Total	
						Cost over 10 years (M$)	$ per capital per year	%	Cost over 10 years (M$)	$ per capital per year	Cost over 10 years (M$)	$ per capital per year	Cost over 10 years (M$)	$ per capital per year
Improved Cooking Fuels	**~10% (i) tot pop. GPL access**	**100%**	**29 656**	**'000 LPG households**	**100% pop has access (ii)**	**2 850**	**0,88**	**30**	**855**	**0,26**	**24 467**	**7,52**	**2 817**	**8,65**
Mechanical Power (vii)	**0% (i)**	**100% villages**	**46 228**	**decentralised and secondary settlements**		**741**	**0,23**	**30**	**222**	**0,07**	**1 696**	**0,52**	**266**	**0,82**
Electrification	**20%**	**60%**				**10 957**	**3,37**		**1 909**	**0,59**	**8 458**	**2,60**	**2 132**	**6,55**
Periurban and urban electrification (iii)	~20% urban pop	100% urban population	15 683	'000 households	54%	5 484	1,68	15	823	0,25	3 882	1,19	1 019	3,13
Productive uses, social and community services (iv)(viii)	25%	100% secondary towns	24 611	secondary towns (ix)	idem	3 703	1,14	15	555	0,17	-162	-0,05	410	1,26
Household connection in electrified settlements	-	40% village population	13 429	'000 households	64%	1 494	0,46	30	448	0,14	3 693	1,13	564	1,73
Decentralised Electrification (v)(vi)	negligeable	80%	21 617	decentralised localities (ix)	66%	276	0,08	30	83	0,03	1 046	0,32	141	0,43
			1 081	000 households										
Rural electrification Programme						5 473	1,686		1 086	0,33	4 557	1,41	1 114	3,42
Total Cost						**14 549**	**4,47**		**2 986**	**0,92**	**34 621**	**10,64**	**5 216**	**16,02**

6.6 Summary of access investment costs, support and energy costs

(i) Estimate
(ii) Access rate % TOTAL population being served
(iii) Business as usual tendancy regarding rural population access
(iv) Target settlements: > 2000 hab for cat 2 and > 1000 hab for cat 1, investment NET of cost of Mechanical power
(v) Target settlements > 1000 hab and > 2000 hab for cat 2 and >500 and >1000 hab for cat 1 ; investment NET of Mechanical power - hence only for 50 household conbnections per settlements
(vi) Energy consumption includes household consumption but not mechanical power which is in the related programme
(vii) Investment in settlements > 1000 hab for cat 2 and >500 for cat 2 ; energy consumption are @ 12000KWh/yr and @ 0,4 cts for secondary towns and decentralised settlements
(viii) Une fois les villages connectés au réseau, la conso prod et comm passe à 18000KWh @ 0,2 cts, which implies saving as compared to 12000KWh @ 0,4 cts (Mechanical power)
(ix) 24 611 secondary towns and 21 617 decentralised settlements total 46 228 settlements under the mechanical power programme
(x) population access rate

6.7 Details of the regional action plan

Investments will be carried out on the ground all quickly and effectively because the region will mobilise to:

- build operators' capacity and develop tools and methods;
- local projects are designed to have effect at technical and economic levels (feasibility studies).
- mobilise capital: two types of actions can be distinguished: (i) those in which Member States handle the financial management, but in which the region conducts studies and plays a mobilising role; (ii) those where the Agency is responsible for financial management.
- experience sharing and the promotion of more effective technical, regulatory, organizational and financial measures.

The total estimated cost is 248.7 million $ over a period of 10 years and can be broken down as follows:

1. Line of action 1: capacity building .....83.1 M$
2. Line of action 2: support to fund mobilization .....121.2 M$
3. Line of action 3: sharing and dissemination of experiences .....15.6 M$
4. Line of action 4: promotion of local production of equipment .....12 M$
5. Preparatory activities and functioning of the agency over 10 years .....16.8 M$

	millions $
Line of action 1 : Capacity building for private and public actors, development of tools and methods	**83.1**
Help Member States incorporate energy concerns into poverty reduction strategy papers, and support multisectoral committees	**6**
Train agents in Ministries and regulation agencies and more broadly local financial institutions and players in the sector on regulatory, fiscal and financial aspects.	**18**
Support towards the development of national energy balances and compilation of forest atlases posting information online to increase accessibility.	**11.1**
Formulation of a method for monitoring the impact of access to modern energy services on development and support for national institutions for the implementation of monitoring campaigns.	**2.4**
Tools for training private operators: on simplified technical studies, and existing material and supply sources in the region and beyond, development of client management tools for "small" private operators and training in how to use such equipment.	**2.4**
Study of medium-term promising technology sectors, including those using medium-term promising renewable energies (bio fuels, gasification) and support towards the setting up a technological watch and monitoring system.	**2.4**
Feasibility study for cross-border electrification projects, peri-urban electrification projects, MFPs, project aimed at distributing equipment for replacing traditional fuels, or projects for equipping health centres and schools with modern energy services	**34.8**
Mobilisation of specific expertise at the behest of Member States or regional institutions	**6**

	millions $
Line of action 2 : Support with raising soft loans and attracting private sector investment in projects aimed at supplying energy services in rural and peri-urban areas	**121.2**
Support with fund-raising and determining the implementation methods of, in particular cross border programmes – negotiation of PPAs, implementation of guarantee facilities	**12**
Feasibility study on the investment and innovation fund and determination of its size	**1.2**
Investment and Innovation Fund • For the implementation of 200 demonstration projects, including mature renewable energy technologies (small scale hydro power facilities, biomass electricity (agro residue based or forest based, solar PV or thermal power), and covering end-use equipment co-funding with the private sector. Investments of the Innovation and demonstration fund	**90**
• Support fund (patient capital) for the local manufacture of end-use energy service equipment industry, energy efficient equipment and renewable energy equipment	**18**

	millions $
Line of action 3 : Promotion and dissemination of sub-regional experiences of supplying energy services to rural and peri-urban areas	**15.6**
Inventory (ECOWAS region and other developing countries) of rural electrification schemes, implementation of simplified PPA for small scale facilities, using appropriate regulatory framework, including fiscal and financial issues. Exchanges on these topics and regional support for setting up at the national level	**2.4**
Access in rural and peri-urban areas through innovative technical and organizational approaches: collective meters, pre-payment, cooperative organization and consumer associations, involvement of municipalities in transmission companies: review of experiences, experience sharing in workshops and visits by experts.	**2.4**
Benchmarking of standards and costs, inventory of experience on simplified technical standards within the ECOWAS region.	**3.6**
Increasing exchanges with rural electrification agencies: thematic meetings, workshops, groups work on given topics, etc.	**2.4**
Multi-sectoral programmes, whereby energy is treated along with its end uses – healthcare, education, pumping, etc. Exchanges on real implementation experiences, including difficulties and applicable formats.	**2.4**
Efficient consumer equipment : demonstration of benefits in terms of electricity generation and the use of materials such as pumps, refrigerators, motors and lamps, studies on potential markets for most appropriate technologies	**2.4**

	millions $
Line of action 4 : Promotion of local production of energy service equipment	**12.0**
Selection and strengthening of technological centres of excellence in energy issues, including renewable energies (small-scale hydroelectricity, biomass, solar photovoltaic and thermal power)	**12.0**

6.8 Strategy for setting up the ECOWAS action plan for widening access to energy in rural and peri-urban areas

Drawing up a master plan and assessing development impacts of the proposed activities will considerably leverage ODA and private investments. It is therefore imperative to launch studies to assess and budget sub-regional needs relating to priority themes, in order to mobilise financing as was done for phase 1 of the WAPP.

To this end, it is critical to expedite the establishment of a regional data base, and a related geographical information system - GIS. This is a sine qua non for the development of the necessary investment plans for the achievement of the set objectives of the regional policy.

Furthermore, a detailed feasibility study on the establishment of the proposed Regional Agency for Widening Access to Modern Energy Services in Rural and Peri-Urban Areas is urgently needed – as it is the operational arm of this White Paper : the Agency's legal status, first five-year plan, organizational format, human and financial resources required, all of these have yet to be determined. The Agency will have to prove its efficiency and effectiveness in achieving its goals. Precise goals will be stipulated in its five-year plan, after which the Agency's performance will be assessed and a decision taken regarding its renewal.

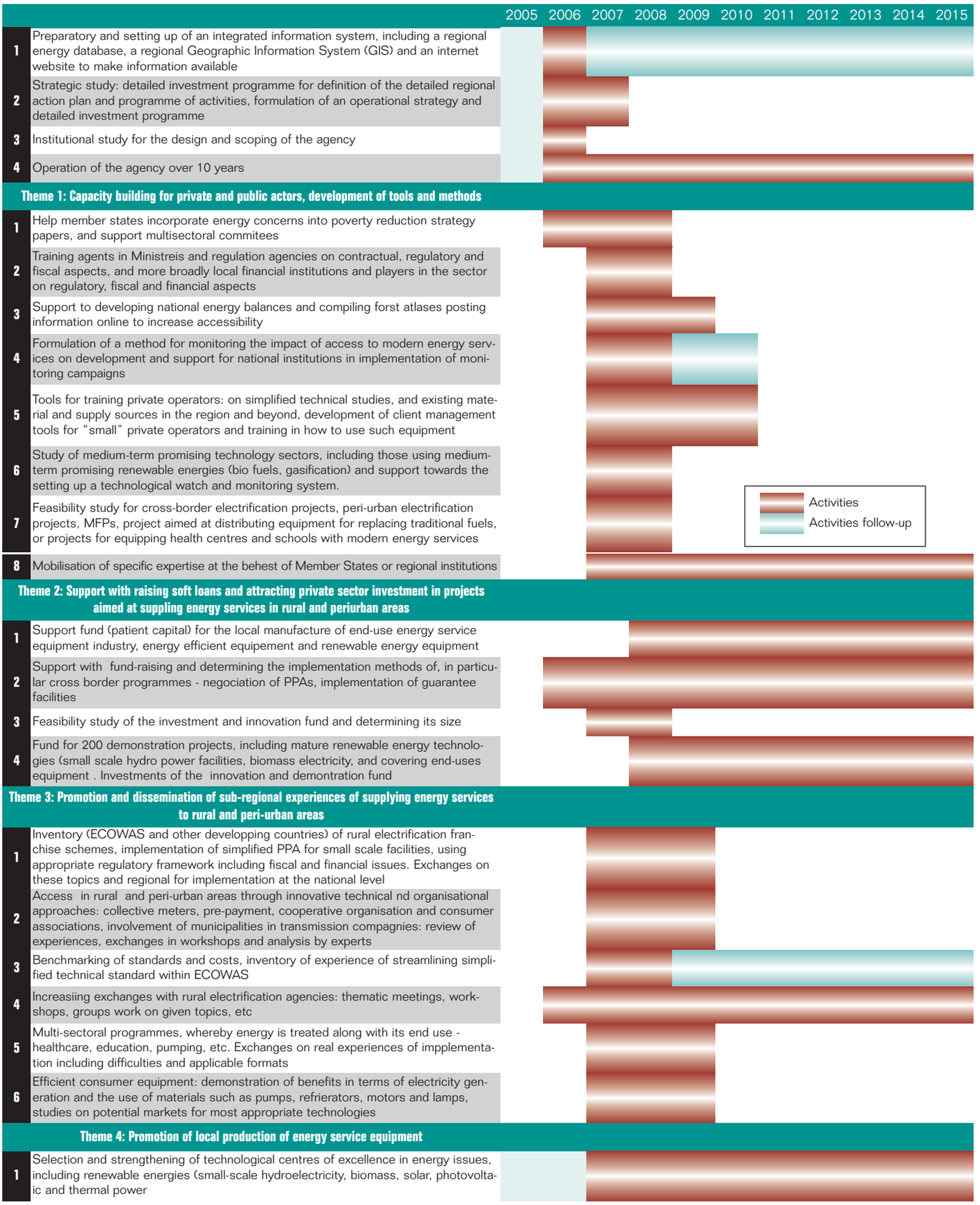
The Agency should also be given managerial and financial autonomy and the required means to fulfil its duties: including its roles as an information centre and "knowledge centre". Following initial estimates, the study budget has been set at 6,6 M$. The annual operating cost of the agency is estimated at 1M$.

	millions $
Preparatory activities and operation of the agency	**16.8**
Development and setting up of an integrated information system, including an regional energy data base, a regional Geographical Information System (GIS) and an internet web site to make information available	**2.4**
Strategic study: detailed investment programme for definition of the detailed regional action plan and programme of activities, formulation of an operational strategy and detailed investment programme.	**2.4**
Institutional study for the design and scoping of the agency	**2**
Operation of the agency over 10 years	**10**

6.9 Indicative implementation schedule

For a perfect match with the deadline of the MDGs, the action plan of the agency is spread over a a ten-year period from 2005 to 2015

Figure 15: Indicative implementation Schedule



7 • REFERENCES & BIBLIOGRAPHY

- Adedeji A, Green R, Janha A, 1995. Remuneration, productivity and public services: priorities for recovery in Sub-Saharan Africa. New York: UNICEF-UNDP, June 1995, 22p
- Thoraya A, Obaid. 2003. Achieving the Millennium Development Goals. UN FPA (United Nations Population Fund), New York (USA)
- AIE. 2002. World Energy Outlook. Paris (France) : International Energy Agency
- AIE. 2004. Key World Energy Statistics 2004. Paris (France) : International Energy Agency
- AMADER (Malian Agency for the Development of Domestic Energy and Rural Electrification). 2004. Data calculated from Presentation given by the head of AMADER and the workshop organised by the Rural Electrification Agencies Club in Ouagadougou (Burkina Faso).
- Bbumba H.S. 2005. FEMA (Forum of Energy Ministers of Africa) Position Paper: Energy and the MDGs. Speech during the Heads of State Dinner at the UN Millennium Summit, New York, 14 September 2005.
- Calvo C.M. 1998. Options for Managing and Financing Rural Transport Infrastructure. World Bank Technical Paper N° 411
- ECOWAS and UEMOA. 2004. West African Regional Poverty Reduction Strategy Paper – draft version. Ouagadougou (Burkina-Faso) and Abuja (Nigeria): Economic Community of West African States, August 2004.
- ECOWAS and UEMOA. 2005. Agreement on the Implementation of Joint Actions between ECOWAS and UEMOA in relation to Energy
- ECOWAS. 2005. Activity report on the ECOWAS Energy Programme, Presentation by the Executive Secretariat, 7th Donors' Co-ordination Meeting, 14-15 June 2005
- CIA. 2005. The World Factbook. Central Intelligence Agency, [http://www.cia.gov/cia/publications/factbook]
- Clancy J., Batchelor S. and Skutch M. 2003. The Gender-Energy-Poverty nexus. Finding the energy to address gender concern in development. DFID
- European Community. 2001.Strategy Document on Regional Co-operation and the Regional Indicative Programme. For ECOWAS, UEMOA and the European Union
- DFID. 2002. Energy for the poor : Underpinning the Millennium Development Goals. London (UK): Department for International Development, August 2002.
- Diagana M. 2001. Etude d'impact de la plate-forme multifonctionnelle sur les conditions de vie des femmes. Bamako (Mali) : UNDO
- DOE (Department of Energy of the USA) 2005. Official Energy Statistics of the Energy Information Administration. [http://www.eia.doe.gov]
- Modi V.2004. Energy services for the poor. (Commissioned paper for the Millennium Project Task Force 1). Earth Institute and Department of Mechanical Engineering Columbia University (USA)
- ENERDATA. 2005. Africastat database. Grenoble (France)
- ENERDATA / ECOWAS. 2005. UEMOA country profile
- Estache A. and Gassner K. 2004. "The Electricity Sector of Sub-Saharan Africa: basic facts and emerging issues". The World Bank / INFVP, Washington D.C (USA)
- FAO 2005. FAOSTAT Statistical Database. Food and Agriculture Organization : [http://faostat.fao.org]
- FAO. 2001. Situation des forêts du monde. Food and Agriculture Organization

- Financial Times. 2005. Rising cost of oil counters Africa debt relief. July 1 2005
- FMI. 2000. The Impact of Higher Oil Prices on the Global Economy. FIM /IMF International Monetary Fund ; Research Department
- Grégoire L.J. and Mellali S. 1999. L'Afrique de l'Ouest et les Objectifs du Millénaire pour le Développement. Paris (France): Economica
- IED. 2005. Etude COOPENER: Improving Economic and Social impact of Rural Electrification. Francheville (France)
- Jütting J. et al. 2005. Decentralization and poverty reduction: OECD development centre
- Kankwenda M., Grégoire L.J. et al. 1999. La lutte contre la pauvreté en Afrique subsaharienne. Paris (France): Economica
- Kouo D. 2005. Technical document from the White Paper project. ECOWAS/UEMOA (Economic Community of West African States / Economic and Monetary Union of West Africa), French ministry of foreign affairs, European Commission
- Ndegwa, N. 2002. Decentralization in Africa: A Stocktaking Survey. World Bank, Washington D.C (USA); Africa Region Working Paper Series, No. 40.
- NEPAD. 2001. The New Partnership for Africa's Development
- OCDE. 2001. Les lignes directrices du CAD - La réduction de la pauvreté. Paris (France)
- O'Sullivan and Hamaide. 2002. Calculation sheet of access to electricity by country used for Business Renewal Strategy. World Bank, downloaded from [http://www.energynet.co.uk/infosite/AEF/StatsInfo.htm]
- UNDP. 2005. 2005 Human Development Report 2005. New York (USA): United Nations Development Programme [http://hdr.undp.org/reports]
- UNDP. 2005b. Energizing the Millennium Development Goals : A Guide to Energy's role in reducing poverty. New York (USA): United Nations Development Rage.
- UNDP. 2005c. Millennium Development Goals (MDG) [http://www.undp.org/french/mdg/mdghome-f.htm]
- UNDP. 2004. 2004 Human Development Report 2004. New York (USA): United Nations Development Programme [http://hdr.undp.org/reports]
- UNDP. 2004b. MDG Needs Assessments for Ghana, Tanzania, and Uganda. Millennium Project, Commissioned by the UN Secretary General and supported by the UN Development Group. New York (USA)
- UNDP. 2002. 2002 Human Development Report 2002. New York (USA): United Nations Development Programme [http://hdr.undp.org/reports]
- UNDP and UNICEF. 2002. The Millennium Development Goals in Africa: promises and progress. Report prepared by UNDP and UNICEF at the request of the G-8 Personal Representatives for Africa, New York (USA)
- Reddy, A.K.N. 2000. Energy and Social Issues. New York: UNDP; World Energy Assessment
- Sy, Bocar. 2005. Country report : Senegal. ECOWAS-UEMOA, UNDO-REPP
- UEMOA (West African Economic and Monetary Union). 2001. UEMOA Common Energy Policy (CEP)
- UICN. 2003. Review of Policies of the Traditional Energy Sector. Union Mondiale pour la Nature, RPTES (World Bank)
- UN ECA, 1999. Critical capacities for the mobilization and efficient allocation of domestic and external financial resources. Addis-Ababa: United Nations Economic Commission for Africa; ECA Doc. 20/11

- UN DESA. 2004a. World Population Prospects: The 2004 Revision. New York (USA): United Nations Department of Economic and Social Affairs – Population Division [http://esa.un.org/unpp]
- UN DESA. 2004b Millennium Development Goal Indicator Database. United Nations Department of Economic and Social Affairs - Statistics Division [http://millenniumindicators.un.org/unsd/mi/mi_goals.asp]
- UN DESA. 2005. UN Commodity Trade Statistics Data base (UN Comtrade). New York (USA): United Nations Department of Economic and Social Affairs - Statistics Division [http://unstats.un.org/unsd/comtrade]
- UNDP. 2005. Achieving the MDGs: the Role of Energy Services. Case Studies from Brazil, Mali & The Philippines.
- WEC (World Energy Council). 2004. World Energy Assessment, Overview 2004 Update. United Nations Development Programme, New York (USA)
- World Bank. 2005a. World Bank Atlas 2005. Washington DC (USA)
- World Bank. 2005b. Millennium Development Goals Database. Washington DC (USA); [http://ddp-ext.worldbank.org/ext/MDG/homePages.do]
- World Bank. 2001. World Development Report.. Washington DC (USA)
- World Bank. 1999. World Development Report. Washington DC (USA)
- World Energy Council. 2003. Potential for integrated regional energy development in Africa: working document. [http://www.worldenergy.org/wec-geis/publications/default/launches/afrique/afrique.asp]
- WAPP (West African Power Pool), 2005. Adjustable Program Lending Facility. Presentation by Amarquaye Armar, AFD Paris, 14 June 2005

8. APPENDIXES

8.1 Appendix 1 – ECOWAS countries' imports and exports

Average 1994-2004	Imports	Exports	Balance of trade	Oil Imports	Oils Exports	Natural Gas Imports	Natural Gas Exports	Oil Import / Total Imports
Benin	680 250	210 084	-470 166	91 532	1 027	1 231		**13%**
Burkina faso	615 820	184 718	-431 102	107 091	1 823	4 065	5	**17%**
Cape Verde	243 109	11 654	-231 455	11 761		1 740		**5%**
Côte d'Ivoire	2 534 149	3 831 850	1 297 701	527 154	504 386	1 001	1 557	**21%**
The Gambia	196 210	12 743	-183 467	16 929	14	1 776	3	**9%**
Ghana	2 842 620	1 554 406	-1 288 214	458 070	51 375	12 489	2 324	**16%**
Guinea	590 134	536 328	-53 806	104 913	808	137		**18%**
Guinea Bissau			0					
Liberia			0					
Mali	791 265	401 619	-389 646	150 580	26	1 273	1	**19%**
Niger	369 833	177 245	-192 588	51 144	758	521	1	**14%**
Nigeria	5 089 280	13 873 170	8 783 890	76 544	13 627 293	2 752	153	**2%**
Senegal	1 845 138	577 301	-1 267 837	390 187	96 670	24 507	649	**21%**
Sierra Leone	372 146	43 789	-328 357	147 505		258		**40%**
Togo	4428 562	264 980	-163 582	63 804	1 352	686		**15%**
ECOWAS	16 598 516	21 679 887	5 081 371	2 197 214	14 285 532	52 436	4 693	**13%**
ECOWAS (1)	8 975 087	3 974 877	-5 000 210	1 5593 514	153 855	48 684	1 710	
Share of Oil Imports	**18%**	**40%**	**-32%**					

(1) Excluding Côte d'Ivoire & Nigeria
Source: UN Statistics COMTRADE data base

8.2 Appendix 2 – Summary of links between energy and the MDGs (DFID, 2002)

Goal 1 – Eradicate extreme poverty and hunger

- Halve, between 1990 and 2015, the number of people living on less than US$1 a day
- Halve, between 1990 and 2015, the number of people suffering from hunger

Importance of energy in achievement of these goals

- Access to energy services enable companies to develop
- Lighting extends trading hours beyond daylight
- Using machines improves productivity
- Energy may be provided by small local businesses, thereby creating jobs (maintenance, etc.)
- Privatising energy services can raise funds for governments who can then invest them in social services
- Clean and efficient fuels reduce the portion of income households spend on cooking, lighting and heating
- 95% of basic food must be cooked before being eaten and require water for cooking
- After-harvest losses are reduced thanks to conservation through drying, refrigeration and/or freezing
- Energy for irrigation boosts productivity and improves nutrition

Goal 2 – Achieve universal primary education

- Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling

Importance of energy in achieving this goal

- Energy provides access to water, hygiene, lighting and heated/air-conditioned rooms, all of which lower absenteeism and encourage children to stay in school by creating a better environment both for them and their teachers
- Electricity makes it possible for schools to access media outlets for communication and educational ends (distance learning)
- Having energy makes it possible to use all kinds of educational equipment such as projectors, computers, printers, photocopiers and scientific apparatus,
- Modern energy systems and efficiently-designed buildings cut costs and, therefore, reduce school enrolment fees, increasing access of poor families to education

Goal 3 – Promote gender equality and empower women

- Eliminate gender disparity in primary and secondary education, preferably by 2005 and in all levels of education by 2015 at the latest

Importance of energy in achieving this goal

- The availability of modern energy services greatly reduces the amount of time women and girls have to spend on basic survival activities (gathering wood, drawing water, cooking, manual harvesting, etc.)
- Clean cooking equipment diminishes women's exposure to pollution and improves health
- Quality lighting makes it possible to study in the home and follow evening courses, public lighting makes women safer,

Goal 5 – Improve maternal health

- Reduce by three-quarters, between 1990 and 2015, the maternal mortality ratio

Importance of energy in achieving this goal

- Energy services are needed to improve medical conditions for mothers – for refrigeration, sterilization, surgical operation equipment, etc.
- Excessive work loads or manual labour are harmful to the general health of pregnant women

Goal 6 – Combat AIDS/HIV, malaria and other diseases

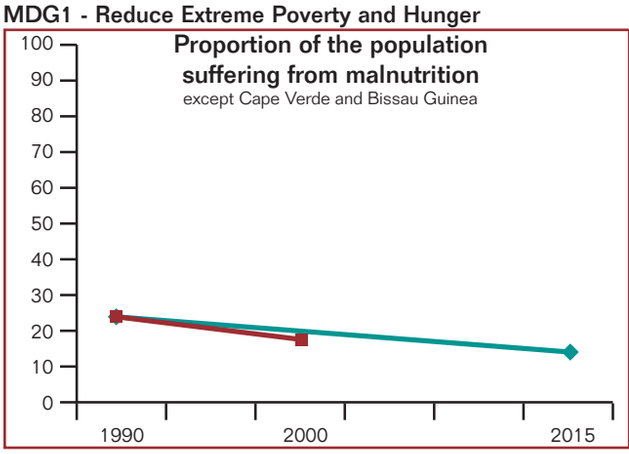
- Halted, by 2015 and begin to reverse the spread of AIDS, malaria and other major diseases

Importance of energy in the achievement of this goal

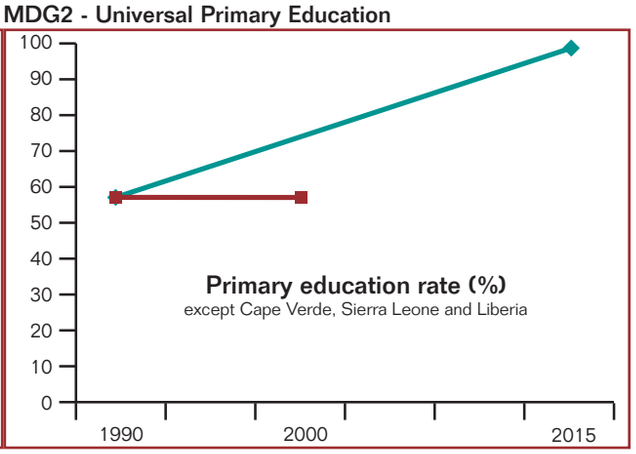
- Electricity in health centres makes it possible to open them at night-time, maintain qualified staff, use specialist equipment (for sterilization, refrigeration medicine, etc.) and storage of vaccines and medicine
- Energy is required to develop, manufacture and distribute medicines and vaccines

8.3 Appendix 3 –ECOWAS and the MDGs

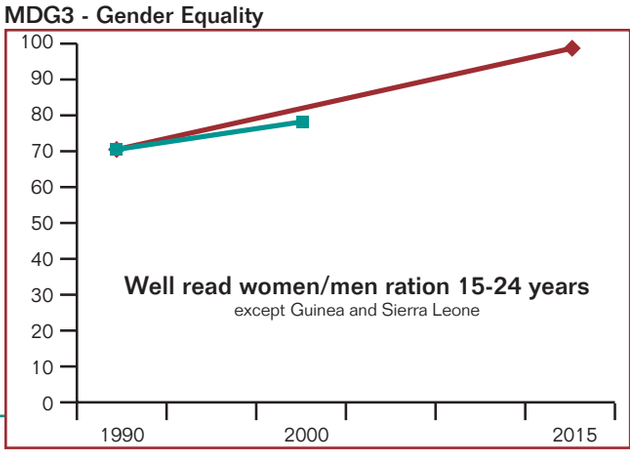
MDG1 - Reduce Extreme Poverty and Hunger



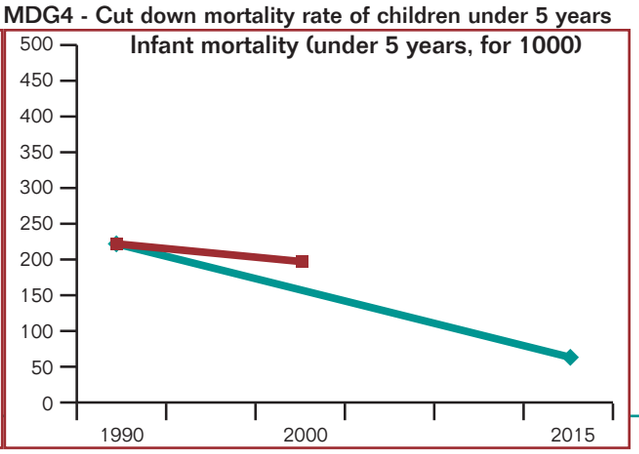
MDG2 - Universal Primary Education



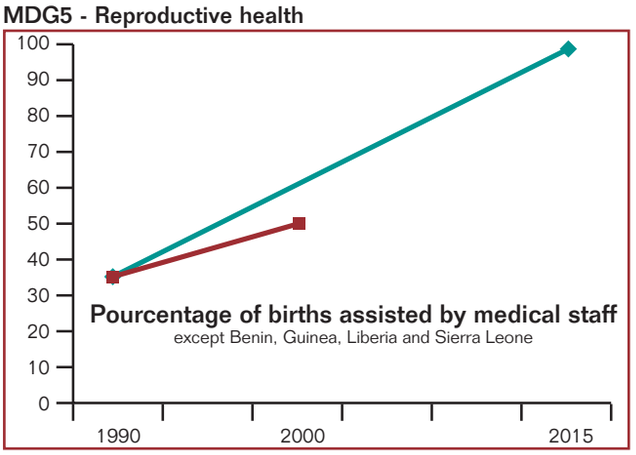
MDG3 - Gender Equality



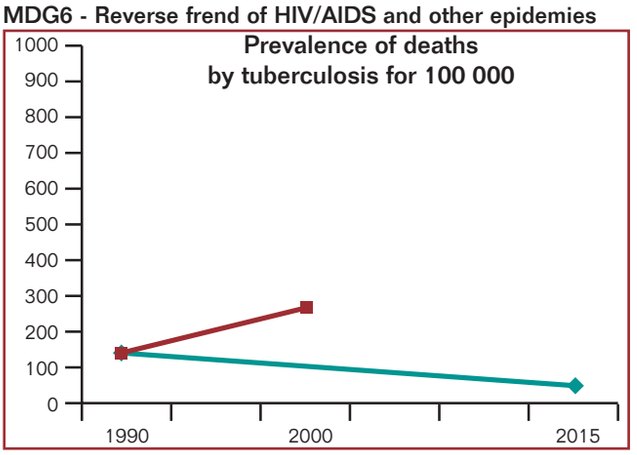
MDG4 - Cut down mortality rate of children under 5 years



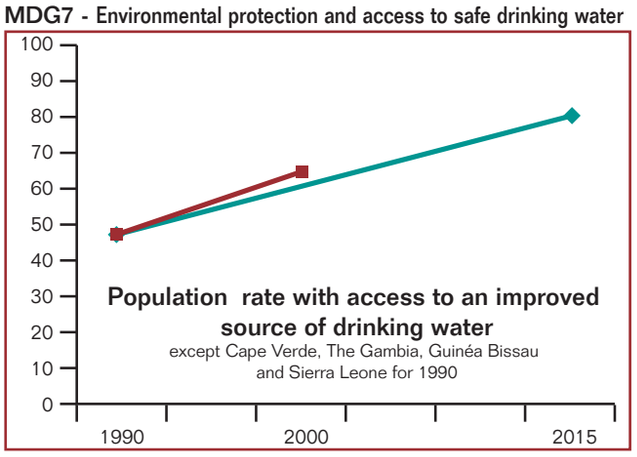
MDG5 - Reproductive health



MDG6 - Reverse frend of HIV/AIDS and other epidemies



MDG7 - Environmental protection and access to safe drinking water



MDG8 - Consolidate a global partnership for development

Official Development Aid (ODA) per capita

	1990	2000
CEDEAO	**29**	**19**
South Asia & Pacific	5	4
Latin America & Carribean	12	12
East Asia	5	4
Sub Saharian Africa	35	34

ODA to EXOWAS Countries has reduced hat is higher then aid per capita to other regions.

The HDI (Human Development Indicator of ECOWAS) is rising slower than in other regions.

8.4 Appendix 4 – PRSPs in ECOWAS member states

Country	Status	Year of publication	PRSP review	PRSP quantified priority sectors	PRSP citing energy as a factor of economic competitiveness	PRSP citing energy as a social need	Budgets in which energy is directly or indirectly indicated
Benin	PRSP	2003		• Bolstering basic infrastructure • Education • Health • Potable water • Rural electrification	• Liberalisation • Inter-connections • Hydrocarbon exploration	Electrification of 51 rural localities Rural electrification plan Rural electrification agency	
Burkina Faso	PRSP	2000	2004	• Education • Health • Potable water • Agriculture and livestock	• Privatisation • Inter-connections		
Cape Verde Island	Provisional PRSP	2002		**Economic growth strategies** • Tourism and services • Light export industry • Fishing, agriculture **Infrastructures (land-use management)** • Education • Health • Promotion of private sector			
Ivory Coast	Provisional PRSP	2002		**Productive sectors** • Agriculture and forestry • Oil and mining • Industries and public construction works • Energy (electricity/water) • Tertiary : Transport, commerce, telecoms, tourism **Basic social services and infrastuctures** • Rural electrification • Environment • Women and development	• Electricity rates increase • Liberalisation • Energy autonomy	Rural electrification of 250 localities per year to arrive at 33% coverage by 2005	
The Gambia	DSRP	2002		• Agriculture • Education • Health • Infrastructure • Employement	• Grid extension (lack of electrification seens as an obstacle to economic activity		
Ghana	PRSP	2003	2004	**Production and employement** • Rural zones (irrigation and electrification) • Employement in the food sector • Export promotion • Environment • Empliyement **Human ressources and basic services** • Education • Entreprise • Health/AIDS prevention • Population management • Potable water	• Energy supply in rural areas for productive purposes • Promotion of PV, biomass and energy efficiency • Reduce forest degradation arising from energy needs by 10%		PRSP energy budget: $450m
Guinea	PRSP	2002	2004	**Economic growth** • Basic infrastructure (water/electricity/transport) • support for sectors that drive growth (rural & mining) **Basic services and equal access** • Education • Health and nutrition/AIDS prevention • Drinking water • Rural electrification • Social security • Gender equality	• Electrification: from 16,4% to 65% of the population between 1999 to 2010 • Rate reduction	Rural electrification	
Guinea Bissau	Provisional PRSP	2000		**Economic growth** • Widen number liable • Improve customs management • Economic mesures to improve cohesion within the WAEMU • Strenghten foreign debt management • Reform civil service and pension • Bolster banking system and monitoring of it • Promote provate investment through privatisation • Reform water and electricity sectors **Improve access to basic services** • Health	• Privatisation • Liberalisation • Energy autonomy		
Liberia	no PRSP						
Mali	DSRP	2002	2004	**Macro-economic conditions** **Develop human resources and access to basic social services** • Education/literacy training • Health and population • Employement and vocational training • Environment and living conditions • Income - solidarity and social security - generating activities **Development basic infrastructure for productive sectors** • Rural development and natural resources • Basic development infrastructure **Institutional development and governance** • Governance and institutions • Culture, religion, harmony and security	• Populations' access to modern fuels and rational energy use		Basic development infrastructure: 630 billion CFA F
Niger	PRSP	2002	2003	**Developmen of productive sectors** • Rural sector • Agriculture/forestry/pastoral farming • Desertification control and manage natural resource management • Develop income-generating activities • Roads, mines and energy sector **Develop social sector** • Education • Access to potable water sanitation	• Grid coverage from 4% to 15% by 2005 • Electricity access rate from 5% to 25% by 2005 • Reduce use of biomass by encouraging use of alternative fuels		Rural development: 202 Urban development : 67
Nigeria	no PRSP						
Senegal	PRSP	2002		**Wealth creation within a healthy macroeconomic framework** **Skills building and improved basic social services** **Improvingvulnerable populations' living conditions**	• Developing production capacities • Liberalisation	Improving the supply of, and access to, national energy sources	Development budget (energy, water, health, etc): 277 billion CFA F
Sierra Leone	Provisional PRSP	2001			• Bolstering rural electrification • Privatisation • Construction of Bambuna dam	Rural electrification via donor funding	
Togo	no PRSP						

8.5 Appendix 5: Comparative table showing population distribution within the ECOWAS region

	Surface area km²	Population 2005 (Thousands)	Population 2015 (Thousands)	Density 2005 (inhab/km²)	Density 2015 (inhab/km²)	Households' access to electricity	% urban pop 2005	% urban pop 2015	% rural pop 2005	% rural pop 2015	Urban pop 2005 (Thousands)	Urban pop 2015 (Thousands)
Benin	110 620	8 439	11 217	76	101	22,0%	46%	54%	54%	46%	3 890	6 024
Burkina Faso	273 800	13 228	17 678	48	65	5,0%	19%	23%	81%	77%	2 460	4 031
Cape Verde Islands	4 033	504	628	126	156	?	58%	65%	42%	35%	292	409
Ivory Coast	318 000	18 154	21 553	57	68	38,5%	46%	51%	54%	49%	8 315	10 949
The Gambia	10 000	1 517	1 889	152	189	5,0%	26%	27%	74%	73%	396	512
Ghana	230 940	22 113	26 562	96	115	35,0%	46%	51%	54%	49%	10 238	13 573
Guinea	245 857	9 402	11 890	38	48	5,0%	37%	44%	64%	56%	3 432	5 267
Guinea Bissau	28 000	1 586	2 133	57	76	5,0%	36%	44%	64%	56%	565	930
Llberia	96 320	3 283	4 381	34	45	?	48%	54%	52%	46%	1 573	2 370
Mali	1 220 000	13 518	18 093	11	15	7,6%	34%	41%	66%	59%	4 556	7 364
Niger	1 266 700	13 957	19 283	11	15	7,9%	23%	29%	77%	71%	3 252	5 650
Nigeria	910 768	131 530	160 931	144	177	20,0%	48%	56%	52%	45%	63 529	89 317
Senegal	192 000	11 658	14 538	61	76	32,2%	51%	58%	49%	42%	5 946	8 432
Sierra Leone	71 620	5 525	6 897	77	96	5,0%	40%	48%	60%	52%	2 221	3 283
Togo	54 385	6 145	7 847	113	144	12,0%	36%	43%	64%	57%	2 231	3 382
ECOWAS	5 033 043	262 567	327 535	52	65	19,6%	43%	49%	57%	51%	112 864	161 493

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