Support to the Development of the ECOWAS Initiative on Energy Efficiency in Buildings
Development of a Draft Concept Note

Supporting Energy Efficiency for Access in West Africa (SEEA-WA)

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Power outages and the reasons

Natural cause (draught, seasonal problem)

Electricity networks cause massive distribution losses

Energy efficiency in buildings reduces peak load!

High electricity peak demand (e.g. at noon)

22. April 2013

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Influence of building performance on electricity consumption and peak load

Energy efficiency of building envelope, good architectural design for natural ventilation and cooling, use of daylight and integration of renewable energy systems reduce energy consumption during building utilisation.

Cooling, ventilation-air conditioning
Lighting
Electric appliances
Hot water

Eco-labels
Rapid urban growth: energy consumption is increasing

THE CHALLENGE: to ensure uninterrupted, constant energy services

Hotel Moevenpick, Accra
(source: website of hotel)

Apartment building, Accra
(source: website unity estates Ghana ltd)

Public building, Governor's office building, in Akure, Ondo State, Nigeria
(competition entry, Carlos R. Gomez; source: http://archinect.com)

University building, Dakar
(source: website of university)

Office Building in the Gambia
(source: website gardencity real estate)

Mansion, Monrovia
(source: website gardencity real estate)

Tall buildings, Abidjan
(source: website wikipedia)
Smallholders, low-income and medium-income families

THE CHALLENGE: to improve access to affordable energy services
Procedure and status quo of activity

Survey and interviews with key stakeholders
• On building legislation
• On activities in the field of energy efficiency in buildings
  • Urban areas
  • Rural areas

Define common interests and common challenges

Elaborate key actions and a work programme
Results in short

- Many activities are on-going regarding energy efficiency in buildings
- Some countries are more advanced than others, but in fact there is awareness that a successful implementation of energy efficiency in buildings is based on several pillars:
  - A strong political will and a consistent regulatory framework, including certification of building materials, administration of building permits, and inspection of buildings during construction and after completion
  - A building code which supports energy efficiency and local materials
  - Compliance and control, enforcement
  - Trained architects, energy experts, civil servants/officials, skilled workers
  - Financial support mechanisms
  - Awareness among the population
Development of key actions and work programme

Although there are national approaches, some common interests/common challenges have been identified, and as a consequence some key actions have been developed which build on existing activities.

Common challenges:

- The wild race towards the modernization of buildings with the use of imported materials with low energy efficiency; at the same time the population refuses to use local building materials
- Lack of trained skilled workers and energy experts
- Lack of awareness
- Lack of compliance and control; lack of monitoring, lack of enforcement
Suggested key actions

Energy efficiency building code: development of a framework document for large buildings (including criteria of tropical architecture and link to urban planning)

Motivation: To provide all relevant basic requirements for energy efficiency in buildings well-arranged in one document, serving as template for country-specific customisation

Energy efficiency in small buildings which are not under the building permit procedure: Simple guidelines and training of bricklayers

Motivation: To cover also small and residential buildings without causing additional costs for people; later on the guideline could be developed towards a mandatory standard

Training of government officials (experts level) on energy efficiency in buildings

Motivation: Government has to be involved to develop ownership and to be able to make informed decisions
Suggested key actions

Use of local material in energy efficient buildings: product development, testing facilities, quality assurance, demo-buildings

_Motivation:_ Promote the use of local materials because it (1) reduces overheating → more comfort without additional energy consumption; (2) creates local employment, cheaper than imported material

**ECREEE building award** (architectural competition; criteria: energy, local materials, comfort, costs)

_Motivation:_ Create awareness among architects, building owners, politicians and the public

**Marketing and awareness – cooperation with opinion makers (artists, footballers, etc.)**

_Motivation:_ It is very hard to communicate energy efficiency, therefore testimonials could help
Suggested key actions

Buildings: Energy efficiency in schools (building and education – integrate in curricula)

Motivation: To educate the next generations

Buildings: Energy efficiency in public buildings and publicly accessible buildings

Motivation: Public buildings as leading examples; people have the opportunity to feel the difference

Community fund for energy efficiency: Communities pay into the fund and get cheap money for energy efficiency measures in public buildings

Motivation: To create continuity regarding implementation of energy efficiency measures in buildings