

**WEC AFRICA WORKSHOP ON ENERGY EFFICIENCY
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**SESSION VI – Case Studies in Africa
on Successful Policy Measures & Best Practices
and Their Impacts**

Contribution from Ethiopia

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Outline of Contribution:

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- 2. Background to the EE Practices: Early Starts; Trends of Energy Utilization Patterns and Energy Lack of Technology Dissemination Practices**
- 3. Challenges Being Faced: Diminishing Biomass Energy Supplies for Domestic Requirements & Solutions Introduced in Urban Centers**
- 4. Energy Utilization Patterns & Lack of EE Practices in Industry**
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1. Energy Efficiency (EE) in Relation to the National Energy Policy : Scope and Goals for Development & Harnessing of Resources

Concepts and Definition:

- By Energy Efficiency (EE), it is commonly understood to mean that “ there is adequate energy at the end of either a productive process or of a domestic energy requirement socio-economic activity to produce a desired result”.
- So, a working definition could be to say that EE is “the ratio of the output energy to the input energy”, i.e. irrespective of the dynamics of a process starting from a three-stone open air stove (possibly discovered in SSA) to the most complex industrial or transportation system.

1. (continued)

In Line with the National Energy Policy (NEP) for Development and Harnessing Potential Energy Resources, the fundamental Scope and Goals of Achieving EE Practices are:

- Managing and Saving Scarce Energy Resources (i.e. Both Non-Renewable/Renewable Energy Sources, both still to be fully developed);
- Planning and Maximizing Energy-Use Benefits in Terms of Improved Socio-Economic Conditions and Poverty Reduction, and by Preferably/Possibly Using better/best Energy Technologies/Devices;
- Protecting the Environment and the Climate so as to guarantee Sustainable Developments for Succeeding and Future Generations.

2. Background to EE Practices in Ethiopia:

- **Early Starts and awareness about EE were slow, probably beginning from the foundation and establishment of Addis Ababa as the Capital City in the late 19th century.**
- **Basic biomass and fuel-wood supply problem was partially solved for growing urban centers through the importation of the eucalyptus tree.**
- **However, the fundamental issue of fuel switching and finding energy substitutes (e.g. like kerosene and electricity or coal) still remains to be fully resolved as far the rural communities are concerned addressed and**
- **Trends of Energy Utilization Patterns in rural areas are also still largely unchanged.**
- **Lack of Energy Technology Dissemination Practices appear to have had also significant negative effects on initiating timely EE traditions, as well as modes of traditional energy consumption patterns.**

2. (continued)

While serious Research work appears to be needed, it could be said that serious activities in introducing Energy Efficiency Practices in Ethiopia were started earnestly:

- After the mid 1970s , i.e. after the effects of the first oil price increases were universally;**
- When NGOs from Europe, especially Germany and other countries began to be actively engaged in developmental activities in the late 1980s and early 1990s, and**
- After the Ethiopian National Energy Committee (ENEC) was established, and its successors were strengthened (like the EEA, and the present EREDPC).**
- As well known, inevitably, focuses in introducing EE practices have been laid on improving the efficiencies of cooking and baking stoves in the domestic sector, and in opting for newer or improved vehicles in the transport sector.**

3. Challenges Being Faced are too many, involving lack of energy supplies and end-use devices and financial supports:

In implementing EE Practices Three key Challenges are being faced to be briefly identified as follows:

- **Diminishing Biomass Energy Supplies for Domestic Requirements, both in rural areas and urban centers;**
- **Solutions Introduced in Urban Centers for cooking purposes have been found to be efficient, but still largely remain unaffordable for rural areas;**
- **Research work and experimentation still remain to be extended and to standardize EE practices.**

3. (continued)

- **While the above identified Challenges are being addressed, there are also urgent needs to standardize EE Practices in line with the goals and strategies of the NEP.**
- **Without going into unnecessary debates, it could be stressed that the roles of different stakeholders are yet to be need to be strengthened and coordinated.**
- **As an example, it is noteworthy to mention that most Sub-Saharan African countries will need to take useful EE lessons from the experiences of other countries in the different regions of the world.**

4. Energy Utilization Patterns & Lack of EE Practices in Industry

- In terms of needs for standardizing energy utilization patterns in the growing industries in Ethiopia, it could be said that there have been partial successes on hand, and perhaps needed EE practices.**
- The biggest success to be mentioned here is that much experience has been built since the late 1960s in protecting industrial electrical installations against faulty designs by meeting voltage drops and using appropriate wiring systems with appropriate protective devices.**
- Mainly for the regulations imposed, industrial installations are safe.**

4. (continued)

- **However, the issue of maximizing electric energy utilization through the installations power factor improving capacitors remains largely unresolved.**
- **Without making the issue too technical, it can be stressed that much will need to be expected from the professional groups and factory managers since it is becoming absolutely essential not to waste electric energy, but to conserve.**
- **There are also possibly requirements for streamlining efficiencies in usages of fuel oil for boilers and steam generators.**
- **Simply stated, EE practices in the Ethiopian industries will need to be audited and significantly improved.**

5. Needs for EE Benchmarking & Regulatory Practices

- This is truly a very new idea that is fortunately being derived from the current WEC Workshop.**
- While it may not be easy to adopt/adapt innovations on EE practices from the northern or southern sub-Regions of Africa due to various reasons (e.g. language, terminologies, etc.), it is becoming obvious that Sub-Saharan African countries in the central, southern and eastern sub-regions will need to be assisted in establishing benchmarks for effectively monitoring and implementing EE practices.**
- One hopes that the necessary recommendations will be the outputs of the present workshop**

5. (continued)

- **The biggest hurdles will be in instituting the regulatory frameworks fairly and realistically.**
- **One further hopes that energy will be seen for all as a combination of renewables and non-renewables since both are needed for sustainable development despite the exponential price increases of the non-renewables.**
- **Therefore, one ventures to suggest that such statements that “the rural areas of Sub-Saharan African countries on sustainable biomass energy” will be curtailed or somehow amended.**

6. Closing Remarks

- Although a bit late, it can be said that the WEC Africa Workshop on Energy Efficiency has come to Ethiopia at a challenging time.
- The WEC and the Ethiopian organizers are to be highly commended.
- One would like to add that the conclusions reached, and recommendations to be made will be of common interest and uses to all African counties.
- One finally hopes that energy for sustainable development and poverty reduction will also be universally only seen to be benefiting all Africans throughout the Continent.

Thank You