



**UNITED
NATIONS**

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**United Nations Conference
on New and Renewable Sources
of Energy**

**Nairobi, Kenya
10-21 August 1981**

UN LIBRARY

JUL 6 - 1981

**Distr.
GENERAL**

**A/CONF.100/NR/59 (SUMMARY)
24 June 1981**

ORIGINAL: ENGLISH

UN/CA COLLECTION

**SUMMARY OF THE NATIONAL REPORT SUBMITTED BY
NIGERIA***

* The designations employed, the presentation of material and the views expressed in this paper are those of the submitting Government and do not necessarily reflect the practices and views of the Secretariat of the United Nations in any of these respects.

INTRODUCTION

With the rapid rate of development now going on in Nigeria, the country has begun to experience significant shortages in the supply of electric power and energy resources. These shortages sometimes attain crisis proportions.

The economy has moved remarkably from a dominantly rural agriculture (characterized mainly by subsistence farming on individual land-holdings) and is gradually heading towards an increased collectivization and mechanization of agriculture, with unavoidable modern industrial development. The farms and factories will call for input of much greater amounts of energy than ever before.

It follows that the energy demand-and-supply situation can no longer be taken for granted. There must be sufficient understanding of the energy implications of industrial development in order to ensure that adequate arrangements are made to meet the ever-increasing demand in the country.

Current energy activities in the country involve the use of: (a) fuelwood; (b) coal; (c) oil; (d) natural gas; and (e) hydropower. Sources that have remained untapped include nuclear energy and other new and renewable sources of energy.

I. HYDROPOWER EXPLOITATION

The current mainstay of electric power generation is hydropower, which has been tapped mostly at the large-scale level. Small-scale use has remained neglected. Recently, there have been shortfalls in electric power supply projections caused by drought and this has led to the installation of thermal plants (mostly gas-fired) to make up the shortfalls and stand in for projected new hydropower stations, which are running behind construction schedule.

II. OTHER NEW AND RENEWABLE SOURCES OF ENERGY

Of the other sources, the following are the most promising at the moment.

A. Solar energy

Nigeria's geographical position (between latitudes 4°N and 13°N) ensures sufficient average sunshine (about 2,000 hours per annum) to guarantee profitable commercialization of solar energy applications in the various areas, namely: (a) water heating for domestic, agricultural and industrial use; (b) water pumping for domestic, agricultural and industrial use; (c) space heating or cooling; (d) crop-drying; (e) refrigeration; (f) salt water desalination; and (g) electric power generation through thermal and photovoltaic conversions.

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Solar energy application has remained up until now at the level of traditional methods, which are attended by the serious problem of low efficiency. Manpower training, research and development work are at present isolated and there is no noticeable commercialization activity going on within the country.

B. Biomass

Fuelwood contributes to more than 40 per cent of the total energy consumed in the country, mostly for domestic cooking with crude appliances, which operate at less than 8 per cent conversion efficiency. This source is relatively cheaper than other sources, like charcoal, kerosene, and bottled gas. Stoves need to be developed with a much higher conversion efficiency - in order to reduce drastically the amount of wood used.

Charcoal is of limited use, mostly in urban centres. Organic liquids are at present used hardly at all for energy production.

So far, only laboratory work has been reported on biogas, although there seems to be sufficient availability of raw materials.

C. Ocean wave and tidal energy

Despite a long coastline on the Atlantic Ocean, there is no effort at present to explore the possible harnessing of these sources of energy.

D. Geothermal energy

There are positive indications of several points of availability of this source but very little effort has been channelled into exploration geared towards exploitation.

E. Wind energy

Very little work is being done at the moment in this area. Some earlier water-pumping installations have gone into disuse owing to the advent of conventional electric power supply.

III. CONSTRAINTS LIMITING DEVELOPMENT AND WIDESPREAD APPLICATION OF NEW AND RENEWABLE SOURCES OF ENERGY

The major constraint has been the absence of a clearly articulated comprehensive national energy policy and an institutional framework to operate such a policy. This has meant an absence of adequate data base, poor financing and a lack of co-ordination of isolated research and development efforts, and gross neglect of adequate manpower development in these areas.

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IV. ATTEMPTS TO REMEDY THE SITUATION

A law was recently passed, establishing the Energy Commission of Nigeria. When the law is implemented, the Commission will look into the policy question, including new and renewable sources of energy. All the other constraints will, it is hoped, be adequately dealt with by the Commission.
