

REPORT OF THE UNITED NATIONS CONFERENCE ON NEW AND RENEWABLE SOURCES OF ENERGY

Nairobi, 10 to 21 August 1981



UNITED NATIONS

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ABBREVIATIONS

ACC	Administrative Committee on Co-ordination
ECA	Economic Commission for Africa
EEC	European Economic Community
ECE	Economic Commission for Europe
ECLA	Economic Commission for Latin America
ECWA	Economic Commission for Western Asia
ESCAP	Economic and Social Commission for Asia and the Pacific
FAO	Food and Agriculture Organization of the United Nations
GATT	General Agreement on Tariffs and Trade
IAEA	International Atomic Energy Agency
IBRD	International Bank for Reconstruction and Development
IDA	International Development Association
IFAD	International Fund for Agricultural Development
IFC	International Finance Corporation
ILO	International Labour Organisation
IMF	International Monetary Fund
ITU	International Telecommunication Union
OAU	Organization of African Unity
OECD	Organization for Economic Co-operation and Development
OPEC	Organization of Petroleum Exporting Countries
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFPA	United Nations Fund for Population Activities
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
UNIDO	United Nations Industrial Development Organization
UNITAR	United Nations Institute for Training and Research
UNU	United Nations University
UPU	Universal Postal Union
WFP	World Food Programme
WHO	World Health Organization
WIPO	World Intellectual Property Organization
WMO	World Meteorological Organization

Chapter I

DECISIONS OF THE CONFERENCE

1. At its 16th and 17th plenary meetings on 21 August 1981, the Conference adopted the Programme of Action (sect. A below) and the resolutions and decisions (sect. B) below) the text of which is set out in this chapter.

A. NAIROBI PROGRAMME OF ACTION FOR THE DEVELOPMENT AND UTILIZATION OF NEW AND RENEWABLE SOURCES OF ENERGY

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INTRODUCTION

1. A fundamental purpose of the United Nations is to achieve international co-operation in solving global problems of an economic, social, cultural or humanitarian character. The Declaration and the Programme of Action on the Establishment of a New International Economic Order, the Charter of Economic Rights and Duties of States and the resolutions on development and international co-operation (General Assembly resolutions 3201 (S-VI), 302 (S-VI), 3281 (XXIX) and 3362 (S-VII)) call, inter alia, for the equitable, full and effective participation on the basis of sovereign equality of all countries in the solving of world economic problems in the common interest of all countries, bearing in mind the necessity to ensure the accelerated development of all developing countries.

2. The adoption of the International Development Strategy for the Third United Nations Development Decade 1/ was an important step in the promotion of international co-operation for development and reaffirmed the commitment of the international community to accelerate the development of developing countries. In this context, it was, inter alia, agreed that:

"In order to create conditions more favourable to the development of the developing countries and the growth of the world economy in general, efforts for the development and expansion of all energy resources of the world should be intensified in search of a long-term solution to the energy problem. The international community will have to make substantial and rapid progress in the transition from the present international economy based primarily on hydrocarbons. It will have to rely increasingly on new and renewable sources of energy, seeking to reserve hydrocarbons for non-energy and non-substitutable uses. In view of the finite supply of fossil fuels in the world economy and the often wasteful and inefficient utilization of those resources, effective measures for their conservation will have to be urgently adopted and/or improved, in particular by developed countries which consume the major share of the world's hydrocarbon production." 2/

3. In convening the United Nations Conference on New and Renewable Sources of Energy, the General Assembly defined its objectives in resolution 33/148 of 20 December 1978 and called, in particular, for the elaboration of measures for concerted action designed to promote the development and utilization of new and renewable sources of energy, 3/ with a view to contributing to meeting future over-all energy requirements, especially those of the developing countries, in particular in the context of efforts aimed at accelerating the development of the developing countries.

1/ General Assembly resolution 35/56 of 5 December 1980.

2/ Ibid., annex, para. 34.

3/ Defined for the purposes of the Conference to include solar, geothermal and wind power, tidal power, wave power and thermal gradient of the sea, biomass conversion, fuelwood, charcoal, peat, energy from draught animals, oil shale, tar sands and hydropower.

4. The General Assembly subsequently decided that the Conference should consider the adoption of a programme of action in the area of new and renewable sources of energy that would, inter alia, contain concrete operational measures for subregional, regional and international co-operation in this area. ^{4/}

5. The Conference had before it for consideration the reports of technical panels and consultants on the new and renewable sources of energy, the report of the ad hoc groups of experts on selected policy issues, the report of the Synthesis Group, comprehensive reports of the relevant organs and organizations as well as the regional commissions of the United Nations system. In addition, national papers were presented by Governments wishing to do so.

6. It is in this context that the United Nations Conference on New and Renewable Sources of Energy met in Nairobi from 10 to 21 August 1981 and adopted this Programme of Action, to be called the "Nairobi Programme of Action for the Development and Utilization of New and Renewable Sources of Energy".

I

A. Energy transition

7. The challenge and the opportunity confronting the international community is to achieve an orderly and peaceful energy transition from the present international economy based primarily on hydrocarbons ^{5/} to one based increasingly on new and renewable sources of energy in a manner which, consistent with the needs and options of individual countries, is socially equitable, economically and technically viable and environmentally sustainable. The transition must be based on technological, commercial, financial and monetary modalities consistent with the determination of Governments to establish a New International Economic Order, to accelerate the the development of developing countries and to promote balanced global development. An effective energy transition must conform with the principle of full and permanent sovereignty of each country over its natural resources and should be implemented in accordance with its national plans and priorities.

8. The issue is not whether an energy transition will take place but whether the international community will achieve it in an orderly peaceful, progressive, just and integrated manner. This transition entails the rationalization of the energy development process. In view of the often wasteful and inefficient utilization of hydrocarbon resources by some countries as well as their finite supply and depletable nature it has become clear that the previous assumption of abundant and cheap energy is not valid any longer. Hydrocarbon resources will no longer be available at the traditionally low levels of earlier years. At the same time, future demand for energy will increase not only in industrialized countries but also much more dramatically in developing countries. If the global demand for energy is to be met, it will require a shift away from the current excessive reliance on hydrocarbons towards a more diversified mix of energy sources. It will also require significant and continuing progress in the efficient and rational use of available resources. In this context, energy planning should play a significant role.

^{4/} General Assembly resolution 35/204 of 16 December 1980.

^{5/} Defined for the purposes of this Programme as petroleum and gas.

9. It is equally clear that patterns of consumption with the effect of giving access to energy to a limited number of countries or to a few within countries are not compatible with the agreed goals of the international community.

10. There is a common interest shared by all countries in ensuring an effective energy transition, which is of critical importance to the future of all mankind. Such a transition, if based on equitable and open co-operation, would offer new opportunities for accelerating economic and social development of developing countries in particular, and reducing the present pattern of economic and technological dependence. Therefore, continuing adjustments and institutional and structural changes in international economic relations are required, taking into account the goals and objectives of the New International Economic Order. What is needed now is for nations to demonstrate the necessary political will to respond to the challenge and seize the opportunities presented.

11. In this regard the developed countries have a particular responsibility to manifest their political will and use their economic and managerial potential to support efforts aimed at an effective energy transition. All countries should adapt themselves to such a transition, which often involves high-cost adjustments required to sustain and raise levels of economic growth. For developing countries, an effective energy transition may involve the question of economic survival, and increased energy availabilities will be essential if a rate and pattern of growth necessary to meet their social and economic development objectives is to be attained. Effective achievement of this energy transition should be viewed as an essential element for assuring sustained growth of the international economy, in a manner that, consistent with the needs and options of individual countries, is technically and economically feasible, socially equitable and environmentally sustainable and for safeguarding world peace and stability. Attention is also drawn to the interrelationship between the development of new and renewable sources of energy and broader issues, such as genuine disarmament. In this regard, concrete progress towards the goals of general and complete disarmament under effective international control, including the urgent implementation of measures of disarmament, would release substantial additional resources which could be utilized for social and economic development - including new and renewable sources of energy - particularly for the benefit of the developing countries.

12. Bearing in mind the importance of energy for development and the growing energy requirements of the developing countries, it is recognized that these requirements, if not met adequately, will hinder the process of their economic and social development. While efficient use of energy should be an objective for all countries, it should be kept in mind that the exploration, development, expansion and processing of all energy resources of the developing countries must be intensified in a manner commensurate with their development objectives and thereby contribute to the growth of the world economy. For this purpose, adequate financial, technical and human resources should be generated. It is recognized that the success of an effective energy transition will depend, inter alia, upon the extent to which the critical issues of mobilization of financial resources for, and transfer of technology available to, in particular, developing countries can be effectively tackled.

13. The ultimate aim of socio-economic development is the constant improvement of the living conditions of the entire population. The successful achievement of the energy transition has direct implications for shelter, physical infrastructure, health, sanitation, nutrition and general well-being in rural and urban communities.

It should aim at the generation of improved productivity, better income earning opportunities and increased employment through local manufacture and maintenance services, in both rural and urban sectors. At the same time, it should include, where appropriate, provisions to ensure adequate supplies of energy in case of acute shortage of energy for subsistence. The energy transition must include consideration of the social dimensions, including the role of women as agents in and beneficiaries of the process of development, in view of their special burdens as producers and users of energy, particularly in rural areas. The energy transition should take place in a manner which recognizes the existence of competing demands for basic resources and the need to optimize their usage. The energy transition should take place in a manner which would not cause harmful changes in the environment but would, in so far as possible, improve environmental conditions.

14. In order to ensure the energy transition, in addition to actively developing all types of energy sources, effective measures for the conservation of energy, including the maximum efficiency of energy utilization, will have to be urgently adopted and/or improved, in particular by developed countries. The benefits to be derived from a more rational use of energy can, in some cases, contribute significantly to the effect brought about by the development of new and renewable sources of energy.

15. The development and utilization of new and renewable sources of energy must be viewed in the context of the energy transition. New and renewable sources of energy can make a significant contribution, but their role and potential in the short term should not be overstated. It has been estimated that new and renewable sources of energy at present meet some 15 per cent of global energy requirements. In the foreseeable future, hydrocarbon supplies will continue to play a very important role in meeting the global energy demand, but, over time, that role will decline. To facilitate the energy transition, a process should now be set in motion to ensure the most efficient identification, exploration, assessment, development and utilization of energy sources, including new and renewable sources of energy. In this context, the potential of new and renewable sources of energy must be considered as a dynamic variable, that will tend to increase with the refinement, development and popularization of technologies.

16. The concept of new and renewable sources of energy as embraced by the General Assembly in resolution 33/148 of the Nairobi Conference encompasses a heterogeneous range of energy forms, as well as a wide range of associated technologies of different degrees of maturity, from those proven and in operation to those on the frontier of scientific knowledge. It is clear that the dynamic scientific and technological progress in the field, in conjunction with the developments in the over-all energy situation, is an essential factor to be constantly scanned in the process of assessing the new and renewable sources of energy potential. In this context, there is a need to utilize the proven technologies to the fullest extent possible. Of equal importance is an early involvement of all countries, commensurate with their abilities, in the research and development, assimilation, adaptation, development and utilization of the new and renewable sources of energy. To this end, effective and efficient international co-operation should be undertaken to assist national action at the governmental and, where appropriate, at the non-governmental level in recipient countries in research, development, pre-investment and investment efforts, as required, so that the full potential of new and renewable sources of energy is realized.

17. The development and utilization of new and renewable sources should be a common objective for all countries of the world. New and renewable sources of energy are not necessarily more suited to satisfy the energy needs of developing countries than those of industrialized countries. The development of such sources should, therefore, not be interpreted as a rationale for limiting the access of developing countries to conventional sources of energy, which will continue to play a very important role in their development.

18. The development of new and renewable sources of energy opens up the prospect of increasing indigenous energy supply and thereby contributing to greater self-sufficiency. The development of new and renewable sources of energy also creates new options to respond to the energy requirements of the rural, industrial, transport and other domestic sectors, in accordance with national goals and priorities and provides for a more diversified and decentralized pattern of energy supply.

19. Like any energy source or product, new and renewable sources of energy are themselves both an "input" and an "output" of the development process. The role of new and renewable sources of energy should be perceived as a dynamic interaction between resources, technologies and present and future requirements for energy, all serving national objectives for economic and social development.

B. Framework for national action

20. All Governments recognize the need to undertake efforts to promote the development and utilization of new and renewable sources of energy in accordance with their national plans and priorities. 6/ The primary responsibility for promoting the development and utilization of new and renewable sources of energy rests with individual countries. The strengthening of national capacities should embrace elements such as:

(a) Assessment of new and renewable energy sources, including surveying and mapping programmes, to provide the necessary information and data base for planning and decision-making with respect to over-all energy development;

(b) Preparation of a policy framework for defining the role of new and renewable sources of energy and determining priorities;

(c) Establishment or strengthening of appropriate national institutional arrangements;

(d) Adequate research and development programmes to support the scientific and technical capacity to develop, choose and adapt technologies, including testing and demonstration facilities and research focal points in new and renewable sources of energy;

(e) Specific programmes to promote the exploration, development and utilization of new and renewable sources of energy, taking into account, as appropriate, social, economic and environmental considerations;

6/ Preparations for the Conference included the presentation of national papers which indicated, inter alia, the nature of actions already taken and planned by individual countries in this respect, thus enabling countries to benefit from the sharing of their national experiences.

(f) Programmes to encourage the efforts of national public and private entities in interested countries, as appropriate, to expand the development and utilization of new and renewable sources of energy;

(g) Mobilization of adequate resources;

(h) Availability of qualified personnel, to include specialized education and training programmes equally accessible to men and women;

(i) Development or strengthening of industrial capacity to manufacture, adapt, repair and maintain energy-related equipment.

In this regard, international co-operation is indispensable and should be directed to assist and support national efforts. Developed countries bear a special responsibility to ensure that both their bilateral and multilateral efforts contribute actively to this end. Other countries in a position to do so should also continue to promote efforts in this regard.

21. Efforts designed to explore and develop conventional energy resources must be continued, together with efforts designed to explore and develop new and renewable sources of energy. This must also be accompanied by efforts aimed at the rational use of energy wherever possible and particularly in the developed countries.

C. Objectives

22. The fundamental objective of this Programme of Action is to promote concerted action in the context of the energy transition, the development and utilization of new and renewable sources of energy with a view to helping meet future over-all energy requirements, especially those of developing countries. This Programme of Action should be viewed as an integral part of the efforts of the international community to accelerate the development of developing countries as set forth, inter alia, in the International Development Strategy for the Third United Nations Development Decade, and the relevant declarations and resolutions related to the establishment of the New International Economic Order.

23. The Programme of Action is directed to the achievement of the following objectives:

(a) To strengthen international co-operation for the promotion and intensification of research and development of technologies related to new and renewable sources of energy and to facilitate the transfer and adaptation of technology from developed to developing countries, in particular, as well as exchange of technology among developing countries, in order to strengthen the indigenous scientific and technological capacity, including the capacity for the production of capital goods in developing countries;

(b) To stimulate the mobilization of additional and adequate financial resources from developed countries, international financial institutions and other international organizations and the private sector, as appropriate, to the developing countries for the development of new and renewable sources of energy through programmes and projects at the national, subregional, regional and international levels. Other countries in a position to do so should also continue to make efforts in this regard;

(c) To provide, through international co-operative efforts, for the exchange of information and manpower training, particularly in the developing countries, as well as to promote their ability to undertake energy resource evaluation and energy planning in order to accelerate the introduction of new and renewable sources of energy in their energy balances;

(d) To promote and provide support for:

- (i) The attainment of the national objectives and priorities established by developing countries in the field of new and renewable sources of energy, related to the strengthening of their national capabilities and institutional infrastructures for the effective incorporation of new and renewable sources of energy into national policy and planning processes;
- (ii) The drawing up and implementation of new and renewable sources of energy programmes and projects in the context of over-all energy plans by all countries and, in particular, by developing countries;

(e) To provide, as requested, and as appropriate, assistance and support for co-operative efforts among developing countries;

(f) To specify measures designed to heighten international awareness of the advantages, potential and economic viability of new and renewable sources of energy, and to support efforts of all countries to take necessary steps to bring about the maximum feasible development of new and renewable sources of energy, taking special account of the stage of development reached in the various technologies and of their socio-cultural and environmental impact.

24. The successful implementation of the Programme of Action will require the continuing commitment and efforts of Governments. The organs, organizations and bodies of the United Nations system will assist appropriately in the implementation of the Programme. In certain countries, non-governmental entities will also have a significant role to play. All these measures should be taken with due regard to the necessity to promote the full participation of men and women on an equal basis in the realization of the foregoing objectives. Such participation should thus receive due consideration in any national energy strategy or implementation thereof. In this context, it is necessary to designate adequate mechanisms for the implementation, monitoring, follow-up and evaluation of the action taken to carry out the Programme of Action.

II. MEASURES FOR CONCERTED ACTION

25. The objectives set out in the preceding section will be most effectively met if efforts undertaken at the subregional, regional and international levels are supportive of national efforts. The Conference preparatory process has involved examination of general policy measures applicable to all sources as well as measures specific to each individual source with a view to determining areas for concerted action.

A. Policy measures

26. On the basis of the results of the preparatory process, the Conference has identified five broad policy areas for concerted action with the support of the international community according to national plans and priorities:

- (a) Energy assessment and planning;
- (b) Research, development and demonstration;
- (c) Transfer, adaptation and application of mature technologies;
- (d) Information flows;
- (e) Education and training.

Every effort should be made to ensure that the concerted action in the above-mentioned areas involves and benefits men and women equally.

1. Energy assessment and planning

27. The role of each and every source of energy, including new and renewable sources of energy and conservation, in meeting the needs of countries can best be determined in the context of national energy planning, an essential element of which is national energy assessment. It is an especially acute problem with respect to the data infrastructure pertaining to energy demand and resource inventories, as well as the impact on the ecology, which can provide the basis for assessing the possible future role of new and renewable energy sources and related technologies, as well as developing national energy policy and plans. Action is required as follows:

(a) Map, survey and undertake other appropriate activities to determine the full range of physical resource endowment, using, whenever possible, standardized methodologies for data collection, processing and storage and dissemination;

(b) Determine in a dynamic way energy supply and demand and energy balances, including projections of future energy requirements;

(c) Identify and keep under review mature and near-term promising energy technologies as well as ongoing research, development and demonstration activities and assess their economic, socio-cultural and environmental costs, potential and benefits;

(d) Strengthen and/or establish institutional infrastructure to collect, maintain, analyse, classify and disseminate information on all the above as well as information pertaining to the policy, programme and project decision-making process; the legislative framework and related procedures (and their impact on energy supply and use patterns), and the availability of financing.

2. Research, development and demonstration

28. The pace and extent of the contribution of new and renewable sources of energy and related technologies will depend to a large extent on scientific research

directed towards their development and widespread utilization. While such research is expanding rapidly world wide, co-ordination and information sharing is poor, duplication is widespread, and certain important aspects are relatively neglected and receive few resources. Moreover, the bulk of current research is being carried out in developed countries, and much of it will have to be extensively adapted for use in developing countries. In addition self-sustained indigenous research work should be actively stimulated. The following series of measures to which international co-operation should be directed are needed in order to enhance the indigenous scientific and technological capabilities of developing countries, enabling them to exploit their own resource potential fully and independently and to enter into collaborative research, development and demonstration efforts, which should be closely co-ordinated with education and training programmes:

(a) Select promising technologies with a view to launching concerted efforts to accelerate their development, increase their cost effectiveness and widen their applicability;

(b) Identify the research needed concerning the economic, social and environmental implications of emerging technologies, including employment potential;

(c) Establish or strengthen institutional machinery and national and regional capacity, including the private sector, where appropriate, for undertaking and co-ordinating research, development and demonstration activities, on the basis of a review initially to be undertaken at national, subregional and regional levels to of present capabilities and existing resources to respond to identified needs and priorities, in particular to those of developing countries; this review could later be extended to the global level with a view to the consideration of the need for a global research and development network around one or several lead institutions;

(d) Establish or strengthen institutional machinery to provide links between research and development activities and the production sector (public investments, industrial property systems, etc.);

(e) Consider the establishment of testing programmes to increase the ability of prospective consumers; producers and investors to make informed decisions regarding technological options;

(f) Establish criteria for technical and economic evaluation of new technologies that will help national experts to identify their potential at specific locations;

(g) Identify and implement demonstration projects relating to new and renewable energy technologies, including those which can be undertaken on a collaborative basis, taking into consideration the benefits in terms of stimulating further related research and development, the training of specialists, and increased industrialization.

3. Transfer, adaptation and application of mature technologies

29. There are a number of technologies utilizing new and renewable sources of energy which have reached a stage of maturity at which little or no further research and development is required for their widespread utilization. Channels and

procedures for the widespread transfer of technology to all countries, under conditions of mutual benefit to all parties, taking into account the special needs of developing countries, need to be established and supported through international co-operation, particularly in those cases where such technology originates in the developed countries. In this context, account should be taken of agreements to be reached within the framework of UNCTAD with regard to the International Code of Conduct on the Transfer of Technology. Furthermore, issues related to the climatic, cultural and institutional settings within which the technology is to be applied and the managerial aspects associated with its introduction and full operation in industry, agriculture, transport and human settlements will need to be taken into account by those who have to decide on the application of the technology. In addition, comprehensive analyses of its economic and social costs and benefits as well as of its environmental effects are needed. The following measures are required in order to accelerate the application and adaptation as well as the transfer of mature technologies under conditions of mutual benefit to all parties, taking into account the special needs of developing countries, and to enhance their contribution to total energy supply:

(a) Identify and keep under review with respect to mature technologies utilizing new and renewable sources of energy their role within sectoral programmes and, where appropriate, establish or strengthen institutional arrangements to promote their application;

(b) Strengthen and/or establish measures to promote and facilitate the accelerated transfer of technology on new and renewable sources of energy, especially from developed to developing countries, in order to enhance the contribution of these energies to the total energy supply of developing countries;

(c) Support measures to increase economic and technical co-operation among developing countries, including the undertaking of joint programmes of activities;

(d) Develop national capabilities to undertake, inter alia, the manufacture, adaptation, management, repair and maintenance of devices and equipment related to technologies for the assessment and utilization of new and renewable sources of energy;

(e) Strengthen the ability of developing countries to make financial and technical evaluations of the different elements of the technologies, thereby enabling them to better assess, select, negotiate, acquire and adapt technologies required in order to utilize new and renewable sources of energy;

(f) Formulate innovative schemes for investments related to manufacture of equipment for new and renewable sources of energy, including the establishment of joint industrial programmes among interested countries for the manufacture and commercialization of capital goods;

(g) Strengthen national capacity to review and assess domestic, fiscal, regulatory, socio-cultural and other policy aspects required to accelerate the introduction of technologies related to new and renewable sources of energy;

(h) Support as appropriate demonstration projects related to the application of new and renewable sources of energy technologies prior to a decision on commercial operation and widespread implementation.

4. Information flows

30. The availability of adequate information is a prerequisite for sound decision-making for development policy and planning and for co-ordinated and effective basic and applied scientific and technological research. The need for improved information flows on energy generally and on new and renewable energy sources, in particular, must be viewed within the broader context of global information sharing and exchange in all relevant sectors.

31. Access to information pertaining to the development and utilization of new and renewable sources of energy raises particular issues and problems associated with the newness of much of the subject-matter and the rapid pace of development in the area. A series of measures are called for along the following lines:

(a) Identify currently available information systems and services and assess their capability to provide the required categories of information on the development and utilization of new and renewable sources of energy, in a manner and form suitable to different types of users, taking into account existing studies in that area;

(b) Establish and/or strengthen national, subregional and regional energy information centres, preferably based on existing data banks or with institutions of research and learning, with related programmes of workshops, seminars and other information services, and integrate them into regional networks, which could later be joined into a global information network, where and when it may be deemed necessary and feasible;

(c) Develop and make use of standardized methodologies, terminologies, procedures and, where feasible, equipment (software and hardware) for the collection and dissemination of information to facilitate the linkage of data centres and systems;

(d) Support measures which ensure the maximum availability of technological information contained in patent documents.

5. Education and training

32. The establishment, development, operation, maintenance and dissemination of new energy systems requires skilled scientific and technical manpower and increased public awareness and support. Specific educational and training programmes are required, not only in schools and universities but also for the training of decision-makers, planners, managers, extension workers, and the general public as well as facilities for the training of specialized personnel. Those programmes, while taking into account the special needs relating to technologies utilizing new and renewable energy within the framework of broader energy programmes, must be viewed in the context of the general educational system.

33. In order to help meet the required educational and training needs, the following actions are called for:

(a) Support national efforts to estimate the requirements for the various categories of trained personnel;

(b) Assess the capability of existing institutions to undertake the training of required personnel, and strengthen institutional infrastructure accordingly, paying special attention to the training of teachers and trainers;

(c) Co-ordinate and promote the exchange of information on educational systems, teaching materials, training programmes and technical experience relating to new and renewable sources of energy, between developed and developing countries and particularly among developing countries;

(d) Support efforts directed at the establishment or strengthening of national, subregional and regional training and educational centres;

(e) Establish training programmes for decision-makers, planners, managers and extension workers;

(f) Establish programmes to increase the awareness of the general public of the opportunities that exist for using new and renewable sources of energy, especially in small-scale, decentralized applications, involving the general educational system and the mass media so as to ensure the full and effective participation of the entire population at all stages of the development process.

B. Specific measures

34. In preparation for this Conference, panels of technical experts reviewed the status of technologies for new and renewable sources of energy and the prospects for their early use, and suggested specific activities at the national and international levels needed to realize the full potential of these technologies. This unprecedented review should lead to a new appreciation of the contribution that new and renewable sources of energy can make to meet the growing energy requirements of both developed and developing countries. Understandably, the diversity of energy resource endowments, of demands for various end-uses, and of economic factors affecting each application, precludes the universal application of a single solution for all countries.

35. Within the above-mentioned broad policy areas, specific measures are needed. Many of the areas of new and renewable sources of energy considered during the Conference preparatory process are in a stage of scientific and technological evolution. Therefore, the findings and related priorities and measures must be kept under review, bearing in mind that technologies used on a widespread basis should be cost effective, technically appropriate, socially and environmentally sound and affordable by the users; also technologies that show good future prospects either for local or for wider use should be promoted through development and demonstration projects even if these are not cost effective at present. With this in mind, the Conference, after due consideration of the results of the preparatory process, recommends the following measures at the national, subregional, regional and international levels as indications of broader activities in the context of such comprehensive programmes as may subsequently be developed. The measures listed in paragraphs 36 to 45 below are source-specific. The measures listed in section A above (such as energy assessment and planning, programme appraisal, demonstration, standardization and education and training) relate to all energy sources. They are therefore not repeated in each source section below, but should be explicitly considered among actions to be taken in reference to each energy source.

1. Hydropower

36. Bearing in mind the immense and unused hydro potential that exists, especially in developing countries, and the current availability and widespread use of hydrotechnology for the multipurpose exploitation of the water resources, the following specific actions have been identified:

(a) Assessment and planning

- (i) Evaluate river hydro potential using stream records and apply existing and developed new methodologies to determine stream flow at ungauged sites;
- (ii) Establish criteria for the evaluation and integration of small, lowhead, as well as large-scale hydro resources within the context of over-all energy development and multipurpose programmes;
- (iii) Support studies of the relation between the use of dams for power generation and for other purposes.

(b) Research, development and demonstration

- (i) Establish and/or strengthen research, development and demonstration capacities of national Governments for assessing, selecting and adapting relevant hydropower technologies;
- (ii) Intensify research into ecological consequences caused by hydro development.

(c) Transfer, adaptation and application of mature technologies

- (i) Standardize design and performance specifications for hydro equipment and facilities as far as possible and make optimum use of package designs for small-scale plants suitable for replication and widespread use, consistent with national needs and practices;
- (ii) Adopt measures designed to accelerate the widespread utilization of small-scale (including micro) hydropower systems;
- (iii) Conduct pre-investment studies related to enhancing the industrial capabilities of developing countries to design, adapt and manufacture hydropower equipment with a view to identifying the most promising projects;
- (iv) Support the design, production and/or adaptation of hydro equipment and civil engineering survey and design procedures, especially in developing countries;
- (v) Support the collaborative efforts of interested developing countries in large-scale joint projects, which could include the interconnexion of electrical networks.

2. Fuelwood and charcoal

37. Bearing in mind that fuelwood, including charcoal, constitutes an important source of energy for large populations especially in the rural areas of developing countries; that adequate management of forest resources to provide fuel, food and timber requires the assessment of projected supply and demand and the identification of deficit areas; that their proper role must be seen in the context of the over-all energy requirements and the particular problems of rural areas of most developing countries, and notwithstanding financial feasibility, especially in agroforestry systems, and that broad-based support and participation of men and women in the development, management and efficient use of fuelwood are essential, taking into account the need for maintaining the ecological balance, the following specific actions have been identified:

(a) Assessment and planning

- (i) Assess and evaluate forest resources in order to estimate their present and future sustainable yield of fuelwood, to identify deficit areas and areas in which reafforestation is both urgent and practicable;

(b) Research, development and demonstration

- (i) Intensify and/or establish basic and applied research on more productive species;
- (ii) Support and promote work aimed at improving the efficiency of stoves and cooking utensils, develop low-cost stoves and promote their widespread use, taking into account social and cultural acceptability;
- (iii) Improve the preprocessing of fuels, including those presently wasted such as twigs, branches, and dry leaves, for use in direct combustion and other processes and improve the conversion efficiency of charcoal making;
- (iv) Develop promising fuelwood and charcoal substitutes or supplements utilizing other new and renewable sources of energy.

(c) Transfer, adaptation and application of mature technologies

- (i) Improve and/or establish forest management practices;
- (ii) Increase and/or establish reforestation and afforestation programmes with selected and tested species;
- (iii) Promote and support programmes, projects and activities to establish large-scale plantations, including afforestation in deficit areas and wood lots, establish distribution, control and pricing policies, and improve conversion and utilization technologies (charcoal production and gasification, kilns, ovens).

3. Biomass

38. Bearing in mind that considerable information and experience is available on biomass production and conversion systems within the international community and that the further evaluation of the potential of biomass resources requires the development and utilization of specific assessment techniques in order to determine their quantitative and qualitative potential, the following specific actions have been identified:

(a) Assessment and planning

- (i) Assess and evaluate biomass resources, with special attention to the identification and development of plant species, specifically for energy conversion, taking into account the crucial role that can be played by the recycling of organic matter in sustaining biomass productivity.

(b) Research, development and demonstration

- (i) Initiate and/or intensify basic and applied research and development on specific aspects of biotechnology and bio/thermochemical conversion systems and on the use of byproducts as fertilizers and animal feed;
- (ii) Accelerate the utilization of biomass resources for energy production through the initiation of and/or support for demonstration schemes such as biomethanation of manures, agricultural residues and other organic materials in different regions of the world; integration of biomethanation and ethanol production; small-scale gasifiers and stationary engines; electricity production, using gasifiers and engine generators and including short-rotation forestry in energy farms; gasification and indirect liquefaction to produce synthetic liquid fuels from lignocellulosic materials.

(c) Transfer, adaptation and application of mature technologies

Accelerate the utilization of biomass resources for energy production through the initiation of and/or support for the utilization of mature technologies such as: direct combustion; gasification; biomethanation of manure and municipal and industrial waste, including collection and handling; alcohol production from sugars and starches; anaerobic microbiological processes and the production of fuels from vegetable oils, giving due consideration to possible implications for food and fertilizer production and other environmental and economic considerations.

4. Solar energy

39. Bearing in mind that solar energy technologies are rapidly evolving and that some are on the threshold of large-scale and extensive applications in developing and developed countries alike, and that several solar applications have reached a mature state of technical development and are therefore ready under certain conditions for implementation, among them domestic and industrial water-heating with flat-plate collectors, low-pressure steam production, small-scale solar ponds for low temperature process heat production, solar crop and timber drying, active and passive space-heating and cooling, water pumping (thermal and electric), water desalination, telecommunications and certain other applications of solar photovoltaic systems - the following specific actions have been identified:

(a) Assessment and planning

Evaluate the solar resource through:

- (i) Use of existing data supplemented by support for meteorological surveys, radiation and other relevant data collection, using ground-based measuring stations, satellites and reliable photo-interpretation techniques for all climatic conditions;
- (ii) Development and application of methodologies to estimate radiation data based, for instance, on space and time correlation functions;
- (iii) Preparation of guidelines for the assessment of solar energy potential in various climatic zones;
- (iv) Support for the preparation of national solar resources maps and data to be incorporated in a world solar atlas on the global distribution of solar radiation.

(b) Research, development and demonstration

Initiate, intensify and support research, development and demonstration in promising applications, especially those which are small and decentralized, in order to reach a level of development sufficient for widespread utilization such as: solar cooking, solar electricity production (thermal and photovoltaic), solar air conditioning and refrigeration, solar industrial process heat, synthetic fuel production and solar crop drying. Among the main areas for research and development are material and thermal sciences, photochemical conversion, durability and reliability of products, design and adaptation of processes, system analysis and control, storage systems and social acceptability.

(c) Transfer, adaptation and application of mature technologies

- (i) Initiate and/or support national programmes for the widespread use of mature solar energy technologies;
- (ii) Study the problems associated with the widespread use of solar energy such as those relating to right of access to sunlight, transfer of development rights, building codes and warranties. Insurance of solar devices should be explored.

5. Geothermal energy

40. Bearing in mind that important and unevaluated geothermal resources exist in many countries, substantial effort is required to develop their energy potential. The following specific actions have been identified:

(a) Assessment and planning

Identify and evaluate the resources by:

- (i) Utilizing all appropriate geological, geochemical and geophysical techniques;
- (ii) Utilizing, where applicable, oil and gas exploration data in the identification and assessment of geothermal energy prospects;
- (iii) The preparation and periodic revision of national and regional assessments of geothermal potential.

(b) Research, development and demonstration

Uncertain research and development in:

- (i) Drilling technology;
- (ii) High, medium and low enthalphy geothermal systems;
- (iii) Multipurpose developments;
- (iv) Stimulation techniques;
- (v) Geopressurized systems;
- (vi) Hot dry rock system;
- (vii) Rock properties under high temperatures, and heat transfer in solid and fractured media;
- (viii) Chemical recovery and effluent disposal;
- (ix) Material selection and scaling control;
- (x) Binary and other alternative generation systems;
- (xi) Problems of subsidence, gaseous emissions and other environmental impacts.

(c) Transfer, adaptation and application of mature technologies

Promote geothermal applications by:

- (i) Supporting the initial stages of exploration for promising sites;
- (ii) Encouraging the location of appropriate activities near the source;
- (iii) Encouraging integrated heat and power projects;

- (iv) Encouraging appropriate small-scale uses, especially for small or remote resource sites.

6. Wind energy

41. Bearing in mind that wind energy has been one of the few forms of renewable energy which have traditionally been practical and cost effective, that several wind technologies have been available for a long time - namely, windmills for shaft power and wind energy for sea transport - and that wider use of the resource, based on technological advance and changes in the energy structures, could make an important contribution to future energy needs, the following specific actions have been identified:

(a) Assessment and planning

Assess the resource by:

- (i) Improving and supporting increased collection of wind data at standard heights in forms appropriate for the evaluation of its potential as an energy source, using standardized instrumentation, methods and analysis and, where applicable, for all climatic conditions;
- (ii) Support for the preparation of national wind power resource maps and data to be incorporated in a world wind atlas, including data on the occurrence of extreme wind speeds.

(b) Research, development and demonstration

- (i) Initiate and support research, development and demonstration in such promising technologies as: wind machines rated at 0.1-100 KW, especially for rural applications where a variable output is acceptable, in particular for water pumps and wind turbines coupled with conventional power supplies or storage systems so as to yield reliable stand-alone systems (in the range 10-100 KW); larger wind turbines and arrays suitable for integration in networks in order to conserve conventional fuels or hydropower;
- (ii) Support research and development on wind characteristics for siting, design and operation of windmills, rotor design, materials, storage systems, wind turbine - storage system matching environmental impact, safety standards and social acceptability.

(c) Transfer, adaptation and application of mature technologies

Promote national programmes for the widespread use of mature wind energy technologies.

7. Oil shale and tar sands

42. Bearing in mind the vast proven and prospective reserves of oil shale and tar sands, including both surface and deeply buried deposits, and the currently

available technology and that these resources are already being used in some countries to produce oil as a primary energy product to be used directly in helping to satisfy consumption needs or to be converted to thermal energy either by direct combustion or through production of liquid fuel, the following specific actions have been identified:

(a) Assessment and planning

Initiate and intensify resource assessment by:

- (i) Reviewing and indexing possible occurrences, using the existing literature on geological and mineral exploration;
- (ii) Standardizing evaluation and measurement procedures.

(b) Research, development and demonstration

Undertake research and development on:

- (i) Adapting capacity of shale retorting with particular reference to the end uses;
- (ii) The environmental consequences on land and water resources of production and waste disposal;
- (iii) Extraction and recovery methods.

(c) Transfer, adaptation and application of mature technologies

Initiate and/or support national programmes for widespread use of mature oil shale and tar sands energy technologies.

8. Ocean energy

43. Bearing in mind that several conversion technologies based on ocean energy systems have potential for generating electrical power, the following specific actions have been identified:

(a) Assessment and planning

Assess the ocean energy resource by identifying sites of potential Ocean Thermal Energy Conversion (OTEC), tidal and wave energy utilizing archival data and other existing information as well as by undertaking OTEC, tidal and wave energy surveys through the joint efforts of oceanographic and meteorological organizations.

(b) Research, development and demonstration

(i) Initiate or continue research and development in such areas as:

- Aquaculture based on nutrient-rich deep waters, floating, land-based and shelf-based ocean systems directed to the production of electricity, fresh water and energy-intensive products;

- Ocean wave systems including technical solutions suited for the trade wind belts.
- (ii) Accelerate the application of ocean energy systems when this appears justified, for example by:
 - An extension of existing facilities, where feasible, for use as regional or international demonstration sites;
 - Efforts directed at isolated communities.

9. Draught animal power

44. Bearing in mind that draught animal power is still a major source of energy, particularly in the rural areas of certain developing countries, the following specific actions have been identified:

(a) Assessment and planning

Resource assessment and planning through:

- (i) Collection of basic data on distribution of species, breeds, draught capabilities, the effect of energy on crop yields, agricultural implements, harnessing devices and existing draught animal power technologies;
- (ii) Consideration of animal power as a basic energy input in agriculture planning.

(b) Research, development and demonstration

Research and development activities in the following areas:

- (i) The design, development, testing and evaluation of agricultural implements, animal-drawn vehicles, harnesses and hitching devices so as to enhance the productivity of draught animals;
- (ii) Appropriate breeding schemes, draught animal feeding and management, fodder and improvement of pastures.

(c) Transfer, adaptation and application of mature technologies

In order to ensure more efficient application, where appropriate, measures should be taken to support ongoing draught animal programmes in developing countries.

10. Peat

45. Bearing in mind that small and large-scale peat technology is well established, is normally site-specific, and offers a viable alternative to fuelwood for domestic purposes and can be used in suitable boilers as an alternative to

other fuels for the generation of medium- to large-scale heat or power and that in many countries this resource has not been adequately surveyed, the following specific actions have been identified:

(a) Assessment and planning

- (i) Initiate and/or expand the data base on the availability of peat to evaluate its potential;
- (ii) Support the selection of suitable peat production areas, taking into consideration economic, employment and other social and environmental factors as well as the location of potential consumers.

(b) Research, development and demonstration

- (i) Develop and improve technologies for peat production, particularly in tropical and sub-tropical vegetation zones, as well as combustion and processing, including gasification and liquefaction processes;
- (ii) Conduct studies on alternative uses of peat;
- (iii) Promote research in the utilization of cutaway peatlands for production of fuelwood and timber for industry, agricultural use, etc.

(c) Transfer, adaptation and application of mature technologies

Promote measures to encourage the industrial use of peat and its use domestically, particularly as a replacement for fuelwood and charcoal in the sod, briquette and pellet forms.

III. IMPLEMENTATION AND MONITORING

46. The preceding section outlined the measures required to promote the development and utilization of new and renewable sources of energy. The effective implementation of those measures for concerted action will require:

A. The identification of selected priority areas requiring urgent action within the framework of the measures for concerted action;

B. Institutional arrangements for implementation and monitoring, to include:

- (a) an intergovernmental body;
- (b) co-ordination mechanisms;
- (c) task forces for implementing specific programmes and projects of the Nairobi Programme of Action;
- (d) secretariat support;

- (e) regional and subregional action;
- (f) economic and technical co-operation among developing countries;
- (g) intergovernmental and non-governmental organizations.

C. The mobilization of financial resources for the implementation of the Nairobi Programme of Action.

A. Areas for priority action

47. The Conference agrees that, in order to establish priorities in the field of new and renewable sources of energy, it is necessary to consider a large number of parameters such as the availability of resources, the state of development of the technology involved, the size, type, geographical location and time-frame of the energy requirements, the characteristics of the end users, as well as social, economic, environmental and technical considerations, the potential of increased energy efficiency and conservation and the relative impact on the energy transition. In this context, the Conference decided that priority actions should cover all policy areas listed in paragraph 26 in order to ensure coverage of the full range of the Programme of Action, but that within each policy area priority is to be assigned to certain types of actions and programmes, which are deemed to require more urgent action, consistent with national needs, in the context of international co-operation. In particular, the Conference recognizes that meeting rural energy requirements within the context of integrated rural development programmes, including agricultural production and transportation, small-scale and rural industries, household requirements and socio-cultural aspects such as education, health care and communications, is of great urgency, especially for developing countries.

48. The Conference recommends that the international community and the United Nations system, in particular, should develop and implement programmes and projects in the areas for priority actions. To this end, the efforts of the international community should be in accordance with the explicit requests, needs and priorities of the country, or countries concerned. Every effort should be made to ensure that the above programmes involve and benefit men and women equally.

49. In accordance with these concepts, the Conference agrees that urgent action is required in the areas outlined below, particularly in least developed countries, on the understanding that such actions represent only a first step towards the implementation of the Nairobi Programme of Action. The Programme of Action will be kept under regular review so as to make such adjustments as may be necessary in the light of emerging needs as they are identified. It will also be necessary to establish specific aims and objectives, both in respect of time and measurable execution of programmes and projects, so as to ensure an adequate review and evaluation of the progress made in implementing the Nairobi Programme of Action for the Development and Utilization of New and Renewable Sources of Energy.

1. Energy assessment and planning

50. The Conference recommends that international co-operation by all Governments and competent national, subregional, regional and international institutions should be directed to the assistance and the support of national efforts, particularly of developing countries, to assess new and renewable energy sources, needs and technologies within the total energy context and to develop energy programmes and plans consistent with national development objectives.

51. One goal of the programmes is that, during the present decade, all countries wishing to do so will be in a position to formulate and implement national energy strategies as an integral part of their development planning. To that end countries may wish to designate immediately national energy assessment and planning focal points to begin the process of preparing inventories of resources, needs and technologies as well as estimates of supply and demand according to end-use, in order to identify areas for near or longer-term action, including international co-operation. National surveys of appropriate new and renewable energy resources and of energy requirements should be completed as soon as possible. While the development of the necessary qualified personnel is a long-term process, early identification of projected national needs would provide the basis for the formulation of specific national and international programmes to respond to those needs.

52. Priority programmes in this policy area should include support and assistance in the following areas:

(a) Strengthening of national capacity for data gathering, energy assessment and planning, including the strengthening or establishment of the appropriate institutional infrastructure, the training of required personnel, and the preliminary identification and formulation of proposals for external assistance on the basis of national needs;

(b) Comprehensive national energy planning efforts, including sectoral studies of energy supply and demand and preparation of national energy balances. Such planning efforts, including assessment of natural resources for energy, should be based on reliable data and should take into account the dynamics of the situation and distinguish between competing and multiple uses of particular resources;

(c) Identification and assessment of new and renewable energy resources, including the need for exploration, and their potential contribution to the total energy supply, through appropriate national surveys;

(d) Evaluation of existing technologies and local capacities for developing and utilizing different sources of energy with a view to determining specific measures necessary better to promote and utilize such sources of energy for specific end-uses, in particular new and renewable sources of energy.

2. Research, development and demonstration

53. The Conference recommends that international co-operation by all Governments and competent national, subregional, regional and international institutions should

be directed to the assistance and the support of efforts primarily at the national level, and particularly of developing countries, to initiate and/or enhance research, development and demonstration activities in the field of new and renewable sources of energy. Such research, development and demonstration efforts should include periodic assessment of the state of the art of the various technologies, including application-oriented fundamental research, in order to promote the accelerated development and effective use of new and renewable sources of energy. To this effect, the Conference recommends that measures be considered and adopted, where appropriate, to strengthen and/or establish national, subregional, regional or international programmes for research, development and demonstration in technological and non-technological fields related to new and renewable sources of energy.

54. The following priority programmes have been identified. Some of the measures listed under either (a) or (b) below may be applicable to both headings. Although no specific heading is made for special cases, such as small islands, it is understood that priority research and development efforts and appropriate demonstration projects should take into account their special energy needs.

(a) Rural energy

- (i) Identification of fast-growing species for fuelwood production, reforestation and afforestation, especially in areas short of fuelwood;
- (ii) Development of more efficient low-cost stoves and charcoal production processes;
- (iii) Development of promising new and renewable sources of energy technologies suitable for replication and widespread use that are able to compete technically and economically with conventional alternatives, in a given region, and are ecologically sound and socially acceptable especially for such purposes as cooking, crop drying, pumping and agro-industries;
- (iv) Improvement of equipment used in conjunction with draught animals;
- (v) Evaluate existing and develop new bio-technological processes based on manure and other organic materials for the production of mechanical and electrical power, heat and light, as well as small-scale gasifiers based on thermo-chemical processes to fuel engines;
- (vi) Develop new or improved technologies based on new and renewable sources of energy for harvesting, preserving and processing food and for using agricultural and forest residues for energy purposes. Such development should involve the major end-users.

(b) Urban and industrial energy

- (i) Intensification of research in solar technologies for domestic and industrial use, especially in the areas of heat and power generation, solar passive architecture, solar refrigeration, air conditioning and water desalination;

- (ii) Intensify research for the production of fuels from biomass and the processing and use of urban and agro-industrial wastes for energy and other purposes;
- (iii) Undertake research and development in the areas of multipurpose development of hydro and geothermal energy, including drilling technologies;
- (iv) Intensify research, development and demonstration in increased energy efficiency and conservation as well as in the area of energy storage systems.

3. Transfer, adaptation and application of mature technologies

55. The Conference recommends that international co-operation by all Governments and competent national, subregional, regional and international institutions should be directed to the assistance and the support of the implementation of national energy programmes for the widespread utilization of new and renewable sources of energy, particularly in the developing countries. The following priority areas have been identified:

(a) General programmes

- (i) Designation, strengthening and/or establishment of national, subregional or regional centres to serve as focal points for transferring and adapting new and renewable sources of energy technologies. These focal points could be based on a source and/or end use specific approach as appropriate. Field testing, demonstration and evaluation of complete systems, in the context in which they are to be used and in accordance with local energy characteristics are included within the transfer and adaptation functions of these centres. Such centres should work in co-operation with local industry and also serve for information, education and training purposes, and could later be integrated into subregional, regional and international networks;
- (ii) Establishment and development at the national, subregional and regional levels of the capacity for the manufacture, operation, maintenance, marketing and management of equipment and spare parts related to the use of new and renewable sources of energy.

(b) Rural energy

Of particular concern to developing countries is the need for taking urgent measures aimed at alleviating the acute domestic energy supply problem, particularly the fuelwood crisis, which is assuming alarming dimensions. One goal of the Nairobi Programme of Action is that during the present decade countries will undertake planned programmes with a view to ensuring that the energy needs of the rural areas can be met on a sustainable basis. To that end the following priority actions for transferring, adapting and applying mature technologies in rural areas have been identified:

- (i) Widespread application of improved practices and technologies for the conservation and more effective use of natural forestry resources;
- (ii) Establishment and acceleration of programmes for large-scale reforestation and afforestation with selected and tested species, as well as for smaller scale wood lots and plantations of energy crops, particularly in arid, semi-arid and deficit regions, as part of an effort to increase five-fold the annual rate of fuelwood planting and to meet effectively and sustainably the demand for biomass fuels by the year 2000;
- (iii) Generalized rural application of locally available new and renewable sources of energy, in particular integrated systems where feasible, using mature or proven technologies;
- (iv) Adoption of programmes to expand the application of improved techniques for utilizing draught animal power, including improved husbandry practices.

(c) Urban and industrial energy

In order to help meet the growing industrial and urban energy demand in many countries, in particular that brought about by development and industrialization efforts of developing countries, and to diversify the energy supply base, efforts are needed to increase significantly the contribution of new and renewable sources of energy to urban and industrial energy requirements. To that end the following priority areas have been identified:

- (i) Expand, where appropriate the utilization of small and large-scale hydro resources, geothermal resources and associated transmission systems;
- (ii) Initiate and encourage the wider application of active and passive solar heating and cooling systems for domestic, commercial and industrial purposes;
- (iii) Initiate and implement programmes to promote the use of urban and industrial wastes for energy and other purposes;
- (iv) Initiate and implement programmes to accelerate the incorporation of cogeneration and total energy systems in the industrial sectors and other such energy efficiency and conservation programmes.

4. Information flows, education and training

56. The Conference recognizes that to increase significantly the utilization of new and renewable sources of energy, it is of vital importance to stimulate, support and assist actively the implementation of education and training programmes at all levels, particularly in developing countries, and to promote the exchange and sharing of information to the fullest and freest extent possible between developed and developing countries and among developing countries, as well as programmes for the enhancement of public awareness of the energy situation. To these ends, the following priority actions have been identified:

(a) Designation, strengthening and/or establishment of national, subregional or regional centres to serve as focal points for information, education and training at all levels in the field of new and renewable sources of energy. These focal points could also serve for the transfer, adaptation, evaluation and demonstration of technologies;

(b) Establishment of education and training programmes in the following areas, in order to ensure a self-generating capacity and to meet personnel requirements in such areas of expertise:

- (i) Courses on energy assessment, planning and utilization for personnel of institutions dealing with those responsibilities, as well as for decision-makers and personnel of local financial institutions;
- (ii) Specialized courses to train scientists, engineers and qualified technicians to select, design, construct, test, operate, maintain and evaluate equipment and installations needed to utilize new and renewable sources of energy;

(c) Establishment of effective systems of information on new and renewable sources of energy at the national level which should be closely linked with information systems and networks at the subregional, regional and international levels utilizing existing information systems at all these levels to the maximum extent possible.

B. Institutional arrangements

57. Adequate institutional mechanisms are needed to ensure the effective mobilization and co-ordination of the resources required for the development of new and renewable sources of energy as well as the implementation of the measures contained in the Nairobi Programme of Action. Further, the United Nations system and other international organizations should help ensure that appropriate assistance will be available to Governments for pursuing projects in the field of new and renewable sources of energy.

58. To this end, the Conference recommends to the General Assembly the following arrangements, drawing to the fullest extent possible on the resources available within the United Nations:

1. Intergovernmental body

59. There should be an intergovernmental body in the United Nations specifically concerned with new and renewable sources of energy and entrusted with guiding and monitoring the implementation of the Nairobi Programme of Action. For this purpose, this body should be open to the participation of all States as full members and should submit its reports and recommendations to the General Assembly through the Economic and Social Council, which may transmit to the Assembly such comments on the report as it may deem necessary, particularly with regard to co-ordination. The recommendation of the General Assembly on the report of the committee would be transmitted for follow-up to the organs, organizations and

bodies of the United Nations system, as well as to Governments and the international community.

60. The intergovernmental body would, inter alia, undertake the following functions:

(a) To recommend policy guidelines for different organs, organizations and bodies within the United Nations system in regard to new and renewable sources of energy, on the basis of the Nairobi Programme of Action;

(b) To formulate and recommend action-oriented plans and programmes for carrying out the Nairobi Programme of Action in accordance with the priorities identified in paragraphs 47 to 56 above;

(c) To keep under review and modify as may be necessary the priorities established in paragraphs 47 to 56 above;

(d) To review and assess trends and policy measures related to the development and utilization of new and renewable sources of energy, with a view to increasing their contributions to meeting future over-all energy requirements;

(e) To promote the mobilization of the resources required in the implementation of the Nairobi Programme of Action;

(f) To recommend guidelines to the financial organs, organizations and bodies of the United Nations system in the financing of the activities related to the implementation of the measures of the Nairobi Programme of Action, and to help ensure the implementation of the measures listed in this section of the Programme of Action relating to financial resources;

(g) To monitor the implementation and help ensure co-ordination of the measures established in the Nairobi Programme of Action as well as of the activities of the organs, organizations and bodies of the United Nations system in the field of new and renewable sources of energy;

(h) To be informed of, draw upon and contribute to the work and expertise of governmental and other intergovernmental institutions in the field of new and renewable sources of energy;

(i) To review the activities of the United Nations system in the field of new and renewable sources of energy and the implementation of the Nairobi Programme of Action, and where necessary make recommendations on the adaptation of the Nairobi Programme of Action.

61. It is necessary that there should be continuity between the preparatory process for the United Nations Conference on New and Renewable Sources of Energy and the launching of the Nairobi Programme of Action. Accordingly, and without prejudice to final institutional arrangements, the Conference recommends that the immediate launching of the implementation of the Nairobi Programme of Action should be entrusted to a committee patterned on the Preparatory Committee for the United Nations Conference on New and Renewable Sources of Energy. This committee will hold one session only and that in 1982, which would last not more than two weeks.

On that occasion, the committee would be entrusted with the functions and responsibilities detailed in paragraph 60 above. It will report to the General Assembly at its thirty-seventh session through the Economic and Social Council, which may transmit to the Assembly such comments on the report as it thinks necessary. The final decision on further institutional measures will be taken by the General Assembly at its thirty-seventh session.

2. Co-ordination mechanisms

62. The United Nations system should fully participate in and support the implementation of the Nairobi Programme of Action, with due consideration to national plans and priorities, so as to ensure its successful implementation. It is imperative to increase the responsiveness of the system in this respect, as well as to provide for the co-ordinated action of the organs, organizations and bodies of the United Nations system in the development of new and renewable sources of energy. Such institutions should organize their work and rationalize their activities according to established priorities in such a way as to meet the need for implementing the Nairobi Programme of Action.

63. The Director-General for Development and International Economic Co-operation, acting under the authority of the Secretary-General who chairs the Administrative Committee on Co-ordination, would be entrusted with the task of co-ordinating the contributions of the organs, organizations and bodies of the United Nations system within the framework of his mandate as defined by the General Assembly in its resolutions 32/197 and 33/202. In order to ensure the necessary co-operation and co-ordination for the implementation of the Nairobi Programme of Action, co-ordinating capacity for new and renewable sources of energy in the Office of the Director-General, who would exercise the supervisory role, should be provided for, making full and efficient use of resources already existing within the United Nations and subject to the normal procedures of the General Assembly. All organs, organizations and bodies of the United Nations system are called upon to co-operate with the Director-General in the accomplishment of his over-all co-ordination tasks.

64. Specialized intergovernmental organizations and institutions related to the field of new and renewable sources of energy are invited to extend their co-operation in order to strengthen the co-operative action of the international community and to ensure that further resources are made available for the development of new and renewable sources of energy.

65. United Nations resident co-ordinators, designated by the Secretary-General in accordance with General Assembly resolution 34/213 with the consent of the Governments concerned, should provide a focal point for new and renewable sources of energy activities at the national level in consultation with the country representatives of the organizations concerned.

3. Task forces for implementing specific programmes and projects of the Nairobi Programme of Action

66. Since the activities that will have to be carried out in the field of new and renewable sources of energy will require actions that differ widely in nature,

size, complexity and level of application, adequate mechanisms may be devised to undertake specific actions related to the implementation of the Nairobi Programme of Action at the appropriate level.

67. In this connexion, and in cases where other machinery within the United Nations system cannot effectively undertake a specific task or programme, the intergovernmental body may recommend the establishment of ad hoc task forces tailored to the requirements of specific time-limited tasks related to the research, development, demonstration, application and utilization of new and renewable sources of energy on a sectoral or cross-sectoral basis, from among the organs, organizations and bodies of the United Nations system and other appropriate intergovernmental organizations, in consultation with these bodies. Other appropriate institutions may be invited to participate in these task forces.

4. Secretariat support

68. The intergovernmental body will require a range of secretariat services in carrying out its functions as defined in paragraph 60 above. The co-ordinating functions of the secretariat shall be carried out in accordance with paragraph 63 above. The Secretary-General is requested to make recommendations to the thirty-sixth session of the General Assembly on the most effective and efficient arrangements for carrying out the substantive services required, including the possibility of a small separate secretariat unit for new and renewable sources of energy, making full and efficient use of resources available in the United Nations, subject to the normal procedures of the General Assembly.

5. Regional and subregional action

69. One of the tasks of international co-operation with respect to the development of new and renewable sources of energy includes support to regional and subregional efforts for implementing the Nairobi Programme of Action.

70. In this context, whenever appropriate and necessary, the strengthening of regional commissions, and regional development banks, support for regional programmes relevant to new and renewable sources of energy and the establishment of intergovernmental bodies should be undertaken in order to facilitate the implementation of the Nairobi Programme of Action.

71. Priority attention should be given to the following.

(a) Support of resource evaluation, research, development and demonstration, training, energy planning and identification of regional or subregional projects for the development of new and renewable sources of energy;

(b) These activities should be developed and carried out through the establishment of specialized institutions and/or the strengthening of the ones existing in the countries of each region, which would co-operate in order to achieve a more effective implementation of their respective regional programmes;

(c) The strengthening and/or establishment of regional information networks which could connect with the international information networks and focus at the

regional level on technologies and application and on the centralization and diffusion of information on equipment, its use and its limits;

(d) Organization of joint research and development activities related to promising technologies;

(e) The feasibility and usefulness of organizing regional demonstration and pilot projects and installations designed both to test application and to disseminate information on technologies related to new and renewable sources of energy;

(f) Development of pre-investment activities designed to provide a basis for the accelerated implementation of technologies for the utilization of new and renewable sources of energy;

(g) The strengthening and support of regional efforts directed at the transfer and diffusion of technologies;

(h) Undertaking of joint industrial activities for the production of energy-related capital goods; and

(i) The organization of technical meetings, seminars, conferences, study tours and like events with a view to facilitating and developing exchanges of information and experience on the utilization of new and renewable sources of energy.

6. Economic and technical co-operation among developing countries

72. Developing countries seek to enhance their collective self-reliance in various areas, which are in their mutual benefit, through programmes of economic and technical co-operation in such areas as exchange of information, joint ventures in project development, joint efforts in research, development, demonstration and adaptation of technologies for new and renewable sources of energy, and technical assistance, to supplement the indispensable action to be undertaken by the international community.

73. In this context, the international community will take measures to provide, as appropriate, support and assistance to the efforts of developing countries to accelerate co-operation among themselves in the field of new and renewable sources of energy.

7. Intergovernmental and non-governmental organizations

74. Intergovernmental and non-governmental organizations can make a useful contribution to the successful implementation of the Programme of Action and are requested to review their activities to determine how they can best support and contribute to the implementation of the Nairobi Programme of Action.

75. Non-governmental organizations in both the developing and developed countries can contribute in various ways to the implementation of the Nairobi Programme of Action. In this regard, Governments and financial agencies are encouraged to draw,

as appropriate, upon the expertise and support of non-governmental organizations in the implementation of projects in the field of new and renewable sources of energy.

C. Mobilization of financial resources for the implementation of the Nairobi Programme of Action

76. The implementation of the Nairobi Programme of Action requires the mobilization of additional and adequate resources. Each country will continue to bear the main responsibility for the development of its new and renewable sources of energy which would require vigorous measures for a fuller mobilization of its domestic financial and and other resources. In pursuing national programmes potential applications at the regional and international levels should also be considered where appropriate. The implementation of the Nairobi Programme of Action requires additional and adequate international financial resources, both public and private, from all developed countries, international financial institutions and other international organizations. Developing countries in a position to do should also continue to provide assistance to other developing countries. Such financial resources would be used to support national efforts of developing countries aimed at the development of new and renewable sources of energy, within the context of the Nairobi Programme of Action. Efforts should be made to increase concessional flows allocated to the financing of projects and programmes in the field of new and renewable sources of energy in developing countries in accordance with their national plans and priorities. Particular attention should be given to the need for accelerated development of the least developed countries and other developing countries where development needs and problems are greatest.

77. The development of new and renewable sources of energy involves numerous types of undertakings, ranging from supporting actions, including national assessment of new and renewable sources of energy for over-all energy development and pre-investment activities, to capital investment in projects and programmes.

78. The supporting actions include, in addition to the assessment of new and renewable energy resources, such areas as strengthening of the relevant national institutional infrastructure, data collection, training and education, research, development and demonstration, etc., while the pre-investment activities encompass feasibility studies, design and engineering, etc.

79. The magnitude of the demand for financing such types of actions or activities is already considerable and will increase in the years to come, particularly with the implementation of the Nairobi Programme of Action.

80. In addition to the financing of supporting actions and pre-investment activities, it is of paramount importance to promote the financing of capital investment in the field of new and renewable sources of energy in developing countries.

81. The financing requirements for these purposes are of a very significant magnitude and it is expected that such requirements will grow progressively as new and renewable sources of energy become, on a wide scale, technically and

economically more and more feasible. This should make it possible to attract greater amounts of traditional international development financing, including concessional financing, as well as commercial financing for development projects of new and renewable sources of energy in the developing countries.

82. Consistent with national development plans and priorities, Governments should consider developing and implementing policies and programmes which serve to promote the contribution of new and renewable sources of energy to total energy supplies and encourage a transition from excessive dependence on non-renewable sources.

83. Joint ventures in activities related to new and renewable sources of energy should be based on sound economic considerations consistent with national plans and priorities. Efforts should be made by interested countries to promote, as appropriate, an environment conducive to an increase in net flow of non-concessional capital and a mobilization of domestic resources required for contributing to the financing needs of new and renewable sources of energy in the developing countries, in the framework of their national plans and policies.

84. All countries might also examine gaps in which regional co-operation can be supportive of efforts undertaken at the national level.

85. For the purpose of undertaking the various activities in line with the Nairobi Programme of Action, the financial mechanisms and institutions of the United Nations system should be provided with additional and adequate funds to meet the growing requirements for preliminary supporting actions and pre-investment activities related to the development of new and renewable sources of energy in developing countries. In this context, it is necessary to improve existing mechanisms and institutions with a view to enhancing their effectiveness and efficiency. Specific and additional resources should be directed through such channels as the United Nations Development Programme, the Revolving Fund for the Exploration of Natural Resources, the interim financial arrangements for science and technology, the UNDP Energy Account and others directly or indirectly involved, in accordance with national plans and priorities. Consideration might also be given to establishing on a voluntary basis new financing mechanisms for the development of new and renewable sources of energy in the developing countries within the United Nations system if and when necessary.

86. Within over-all efforts to ensure the growth of official development assistance, all developed countries will emphasize the development and utilization of new and renewable sources of energy as one of the priority areas in their international co-operation and development assistance. Other countries in a position to do so should also continue to make efforts in this regard. In accordance with its mandate, as described in paragraph 60 above, the intergovernmental body should keep under review the financial needs of the field of new and renewable sources of energy and suggest measures to meet these needs.

87. In order to secure access to the widest possible range of financial resources, international and regional development financial organizations and institutions, in particular the World Bank, are urged to provide additional and adequate resources specifically for large-scale supporting actions, pre-investment and investment activities in the field of new and renewable sources of energy, in accordance with national priorities.

88. These financial mechanisms and institutions are urged to respond more widely and effectively to national requests, as well as to requests from the subregional, regional and international organizations engaged in the development of the new and renewable sources of energy in developing countries, according to the priorities established in the Nairobi Programme of Action and in response to recommendations from the intergovernmental body as regards its implementation.

89. Financial requirements for over-all energy investment will continue to grow at a fast rate during the coming years. According to studies undertaken by a World Bank expert group, during the period 1981-1985 total annual energy investment needs of all developing countries will be of the order of \$54 billion. Investments in new and renewable sources of energy will account for a substantial and growing proportion of investment needs. While developing countries will continue to bear the main responsibility for their development, which would require vigorous measures for a fuller mobilization of their domestic financial and other resources, external financial resources, private and public, particularly concessional flows and official development assistance, will constitute nevertheless an indispensable element of support for the developing countries' own efforts.

90. In view of the urgency of meeting the developing countries' needs in this respect, early and specific measures will have to be taken for purposes of financing supporting actions, pre-investment and investment activities as warranted by the progress of project preparation efforts. To this end, the World Bank and the United Nations Development Programme should be invited to undertake a joint study for making as accurate an estimate as possible of the supporting actions and pre-investment requirements for new and renewable sources of energy in the developing countries in the 1980s to be completed as soon as possible and, if practical, by the end of 1981.

91. In the course of the United Nations Conference on New and Renewable Sources of Energy held in Nairobi, many countries indicated their willingness to make more resources available for the financing of the development and utilization of new and renewable sources of energy. In order to generate additional funding and to encourage co-financing of new and renewable sources of energy, the Conference recommends that, at the global, regional and subregional levels, multilateral and bilateral donors and interested recipient countries should consider convening, where appropriate, consultative meetings to review and facilitate concerted action in this field, bearing in mind the need to avoid duplication of efforts and taking fully into account national plans and priorities. These consultative meetings should address the priority areas identified by the Nairobi Programme of Action, and deal particularly with financing the promotion of research, demonstration and development activities in new and renewable sources of energy.

92. These consultations should take into account the guidelines recommended by the intergovernmental body which should be kept informed of activities for increasing and improving the efficiency of financial and technical assistance for the development and utilization of new and renewable sources of energy in developing countries.

93. The Secretary-General of the United Nations Conference on New and Renewable Sources of Energy in his report to the General Assembly at its thirty-sixth session

should indicate progress made towards the implementation of the consultative meetings mentioned above.

94. In addition, the Conference urges all interested parties to accelerate consideration of other possible avenues that would increase energy financing, including, inter alia, the mechanisms being examined in the World Bank, such as an energy affiliate.

95. In order to enhance the efforts of developing countries towards greater collective self-reliance, the implementation of the Nairobi Programme of Action should reflect their commitments to utilize fully their own capabilities in the field of new and renewable sources of energy. In this respect, the international community should support and enhance the actions of economic and technical co-operation among developing countries as appropriate and especially as regards the areas of supporting actions, pre-investment and investment activities in the field of new and renewable sources of energy.

B. RESOLUTIONS AND DECISIONS ADOPTED BY THE CONFERENCE

Resolution No

1. Integration of the energy strategy with soil, water and forest policies
2. Right of nations to develop and control non-fossil energy resources
3. Aggression against natural energy resources
4. New and renewable sources of energy in Namibia
5. New and renewable sources of energy in the context of rural development
6. Implementation of the Lagos Plan of Action and other regional plans in Asia and Latin America on new and renewable sources of energy
7. Expression of thanks to the host country

Decision No

1. Credentials of representatives to the Conference
2. Right of countries to transfer of technology

Resolutions

1. Integration of the energy strategy with soil water and forest policies

The United Nations Conference on New and Renewable Sources of Energy,

Considering that hydroelectric power and biomass of plant origin, in particular fuelwood, which are some of the most practical, economical and promising new and renewable energy resources for many developing countries, depend on a sound environmental policy of soil, water and forest conservation and management,

Taking into account resolution 9/15 of the Governing Council of the United Nations Environment Programme on "World Soils Policy",

Considering that soil erosion and deforestation in many developing countries seriously affect possibilities of hydroelectric power generation and the utilization of biomass of plant origin,

1. Invites the Governments of Member States, with due respect to the sovereignty of each State, to consider in their development plans energy policy in close relation with general environmental policies and, in particular, with soil, water and forest policies:

2. Invites Governments to consider co-operation with the programmes of the "World Soils Policy" sponsored by the United Nations.

16th plenary meeting
21 August 1981

2. Right of nations to develop and control non-fossil energy resources

The United Nations Conference on New and Renewable Sources of Energy,

Recalling Security Council resolution 487 (1981) of 19 June 1981 condemning strongly the military attack by Israel on the Iraq Nuclear Research Centre, in clear violation of the Charter of the United Nations and the norms of international conduct,

Fully recognizing the inalienable, sovereign right of Iraq, and all other States, especially the developing countries, to establish programmes of technological and nuclear development to develop their economies and industry for peaceful purposes, in accordance with their present and future needs and consistent with the internationally accepted objectives of preventing nuclear-weapons proliferation,

Knowing that Iraq has declared its peaceful intention in the nuclear fields,

1. Strongly condemns the Israeli aggression against Iraq's Nuclear Research Centre;

2. Warns against the danger of joint military nuclear activities between Israel and South Africa.

16th plenary meeting
21 August 1981

3. Aggression against natural energy resources

The United Nations Conference on New and Renewable Sources of Energy,

Reiterating the necessity of abiding by the United Nations Charter and international law, which confirm the illegality of any action taken by the occupying authorities to change the nature of the occupied territories,

Recognizing that the Israeli project linking the Mediterranean with the Dead Sea through a water canal constitutes a violation of the United Nations Charter and international law,

1. Denounces Israel for its Mediterranean-Dead Sea Canal project as it is an aggression against the legitimate national rights of the Palestinian people and their occupied land;

2. Calls upon Israel to stop implementing the mentioned project.

16th plenary meeting
21 August 1981

4. New and renewable sources of energy in Namibia

The United Nations Conference on New and Renewable Sources of Energy,
meeting in Nairobi, Kenya, from 10 to 21 August 1981,

Recalling the provisions of the Charter of Economic Rights and Duties of States, 7/ and in particular its article II pertaining to the permanent sovereignty of a State over its natural resources, and General Assembly resolution 626 (VII) of 21 December 1952,

Further recalling Decree No. 1 of 27 September 1974 of the United Nations Council for Namibia protecting the natural resources of Namibia,

Concerned about the continuous aggressive acts by the Fascist South African régime on the territory and people of Angola,

Recognizing that the South-West Africa People's Organization is the sole and authentic vanguard for the liberation of the people of Namibia,

1. Strongly condemns the plunder and illegal exploitation of Namibian energy resources by the South African régime and multinational corporations:

7/ General Assembly resolution 3281 (XXIX) of 12 December 1974.

2. Deplores all South African military activities in Namibia and Angola, which are having serious ecological consequences, thereby limiting the future capacity of the peoples of Namibia and Angola to develop to the full their potential for the new and renewable sources of energy;

3. Urges all Member States to respect the provisions of Decree No. 1 of the United Nations Council for Namibia;

4. Demands the complete and unconditional withdrawal of all South African troops from the occupied Angolan Provinces of Cunene and Kuando Kubango.

16th plenary meeting
21 August 1981

5. New and renewable sources of energy in the context of rural development

The United Nations Conference on New and Renewable Sources of Energy,

Recognizing the importance of urgent action to meet the energy requirements of rural communities in vast areas of the world,

Noting that growing population and increasing pressure on land on account of development activities have led to denudation of forests with a consequent crisis of fuelwood and ecological damage in several developing countries,

Noting further that various renewable energy technologies have been developed and are being developed which could, in particular national circumstances, increasingly meet the household, agricultural and industrial energy requirements of rural communities,

1. Urges the immediate acceleration of programmes of reforestation and afforestation consistent with national energy policies with a view to significantly enhancing the production and availability of fuelwood, and in seriously affected areas, as part of the effort to achieve a fivefold increase in annual tree-planting rates by the year 2000;

2. Urges also the acceleration of programmes for the development and widespread utilization of other new and renewable energy sources such as biogas, wind, solar, hydro and geothermal energy and peat where economically viable, with a view to reducing the pressure on fuelwood supplies and also to improving the standards of living in rural areas;

3. Calls upon all countries, the United Nations system and international financial institutions effectively to encourage, support and promote programmes mentioned in paragraphs 1 and 2 above in the developing countries.

16th plenary meeting
21 August 1981

6. Implementation of the Lagos Plan of Action and other regional plans in Asia and Latin America on new and renewable sources of energy

The United Nations Conference on New and Renewable Sources of Energy,

I

Referring to the Lagos Plan of Action, 8/ Chapter XI, on energy, dealing particularly with the development of new and renewable sources of energy, which was adopted at the Second Extraordinary Session of the Assembly of Heads of States and Governments of the Organization of African Unity in April 1980,

Noting the decisions contained in the Lagos Plan of Action, particularly the establishment of an African Energy Commission and an African Energy Development Fund for the implementation of the Plan in the field of new and renewable sources of energy,

Noting the significant efforts in the area of new and renewable sources of energy such as hydro, biomass, solar and geothermal energy and fuelwood,

Recognizing the need to strengthen existing efforts in the development of new and renewable sources of energy,

Further recalls all the decisions which the General Assembly and the specialized agencies have taken to facilitate the implementation of the Lagos Plan of Action,

Appreciating the consensus decision by the General Assembly to incorporate the Lagos Plan of Action in the International Development Strategy for the Third United Nations Development Decade,

1. Calls on the United Nations organs and institutions and other international bodies to give effective financial and technical support for the development of new and renewable sources of energy in Africa and further urges Governments and the international community to do the same;

II

Noting further the conclusions and recommendations of the Regional Preparatory Meeting for Asia and the Pacific held in Bangkok in December 1980 in preparation for the United Nations Conference on New and Renewable Sources of Energy, of the Asian Working Group on Solar Energy sponsored by UNESCO and other regional programmes in Asia and the Pacific,

1. Calls on the United Nations organs and institutions and other international bodies to give effective financial and technical support for the development of new and renewable sources of energy in Asia and further urges Governments and the international community to do the same;

8/ Lagos Plan of Action for the implementation of the Monrovia Strategy for the economic development of Africa, text reproduced in document A/S-11/14.

III

Referring to the Declaration of San José and the Lima Agreement of the Latin American Energy Organization, and the programme of activities in the area of new and renewable sources of energy within the Latin American Energy Co-operation Plan,

Noting the decision of the Second Extraordinary Meeting of Ministers of the Latin American Energy Organization held in Lima on 6 and 7 March 1981, which approved the implementation of the Latin American Energy Co-operation Programme,

1. Calls on the United Nations organs and institutions and other international bodies to give effective financial and technical support for the development of new and renewable sources of energy in the developing countries of Latin America and further urges Governments and the international community to do the same.

17th plenary meeting
21 August 1981

7. Expression of thanks to the host country

The United Nations Conference on New and Renewable Sources of Energy,

Having met in Nairobi from 10 to 21 August 1981 at the invitation of the Government of the Republic of Kenya,

Having adopted a programme of action relating to new and renewable sources of energy,

1. Expresses its thanks to the President of the Republic of Kenya for his inspiring inaugural address and for the personal interest he has taken in the proceedings of the Conference:

2. Expresses its warm gratitude to the Government and people of Kenya for their cordial welcome and generous hospitality:

3. Requests the Government of Kenya to convey to the authorities concerned the appreciation of the Conference for the services and facilities placed at the disposal of participants in the Conference:

4. Decides that, in recognition of the contribution of the Government of Kenya and the City of Nairobi to the organization of the Conference and to its work, the programme of action adopted should be known as the "Nairobi Programme of Action for the Development and Utilization of New and Renewable Sources of Energy".

17th plenary meeting
21 August 1981

Decisions

1. Credentials of representatives to the Conference

At the 16th plenary meeting on 21 August 1981 the Conference approved the report at the Credentials Committee.

2. Right of countries to transfer of technology

The Conference agrees that it is the sovereign right of all countries, particularly the developing countries, to explore, acquire and obtain the transfer of technology relating to all kinds of new and renewable sources of energy, and to use and control it without political constraints or fear of aggression from any other State Member of the United Nations.

16th plenary meeting
21 August 1981

Chapter II

ORIGINS OF THE CONFERENCE

2. As long ago as 1961 a United Nations Conference on New Sources of Energy was convened in Rome to consider such sources as solar, geothermal and wind power - the first major international conference to deal with the subject. As the progressively widening gap between the consumption and the supply of energy caused increasing concern to many countries, in particular developing countries, in the 1970s and the finite nature of supplies of conventional forms of energy came to be recognized, more and more attention was given to the utilization of sources of energy that had not previously been tapped or had been exploited on a limited scale only. In the light of these conditions and also of the prospects opened up by technological innovations, the Economic and Social Council, by its resolution 2119 (LXIII) of 4 August 1977 requested the Secretary-General of the United Nations:

"in co-operation with the specialized agencies, the regional commissions and other United Nations bodies concerned, to submit a report to the Economic and Social Council, at its sixty-fifth session, on the feasibility of holding an international conference on new and renewable sources of energy such as solar, geothermal and wind power, biogas, and tidal and wave power, bearing in mind the particular situation of the developing countries".

3. One year later, on 3 August 1978, having received and taken note of the Secretary-General's report it had asked for (E/1978/68), the Council adopted resolution 1978/61, paragraphs 2 and 3 of which provide:

/The ... Council/

"2. Stresses the importance of international action in the development and utilization of new and renewable sources of energy, including the holding of an international conference on the subject, and especially international co-operation in favour of the developing countries;

"3. Recommends that the General Assembly at its thirty-third session give favourable consideration to, and take definitive action on, convening at the earliest possible time a United Nations conference on new and renewable sources of energy; and in that context define the objectives, scope, nature and timing of such a conference, as well as the required preparatory arrangements, including intergovernmental machinery.

4. Acting on this recommendation, the General Assembly adopted on 20 December 1978 its resolution 33/148 by which it decided inter alia "to convene an international conference on new and renewable sources of energy under the auspices of the United Nations in 1981". In addition, it decided what should be the objective of the Conference and defined its scope as:

"confined to the area of such new and renewable sources of energy as solar, geothermal and wind power, tidal power, wave power and thermal gradient of the sea, biomass conversion, fuel-wood, charcoal, peat, energy from draught animals, oil-shale, tar sands and hydropower".

The Assembly specified a number of points on which the Conference should concentrate its attention, such as the relevant technology, the existing potential, the economic viability of schemes for using these sources of energy, the flow of information about these sources and the question of financing related activities, and stressed in all these respects special attention to the development of the developing countries. It requested the Secretary-General to appoint, after consultation with Member States, a Secretary-General of the Conference, and further requested him to entrust the Director-General for Development and International Economic Co-operation with the function of co-ordinating the contributions of the various parts of the United Nations system to the preparations for the Conference. The Assembly's resolution contained also certain other provisions relating to preparations for the Conference, in particular to the preparation of studies by technical panels of experts, and called for a report by the Secretary-General on the progress of these preparations by the time of its subsequent (thirty-fourth) session in 1979.

5. On 3 August 1979, the Economic and Social Council adopted its resolution 1979/66 by which, after welcoming the appointment of the Secretary-General of the Conference, 9/ it addressed a number of recommendations to States, to the General Assembly and to organizations of the United Nations system to further progress in the preparations for the Conference, and requested the Secretary-General of the Conference to report on such progress to the General Assembly at its thirty-fourth session.

6. At that session, the General Assembly adopted resolution 34/190 of 18 December 1979 by which it decided inter alia:

- (i) that the Conference should be held at Nairobi in August 1981:
- (ii) that the Committee on Natural Resources should act as the Conference's Preparatory Committee, open for this purpose to the participation of all States.

The resolution also contained provisions concerning sessions of the Preparatory Committee, ways in which the United Nations system and Governments in a position to do so might assist developing countries in preparing for the Conference, the staff, facilities and services to be placed at the disposal of the Conference, consultations with the Government of the host country, and other related matters.

7. In the course of its next session, on 5 December 1980, the Assembly adopted resolution 35/56, containing the International Development Strategy for the Third United Nations Development Decade, paragraphs 126 and 127 of which deal expressly with the subject of energy. These provisions touch on questions of direct relevance to the Conference, such as the rational use of energy resources, conservation of energy, the assessment of energy needs, national programmes for

9/ Mr. Mohamed Habib Gherab: he was subsequently replaced by Mr. Enrique Iglesias.

the exploitation of new and renewable sources of energy, and other questions of concern to the international community as a whole and to the developing countries in particular.

8. In the meantime the Preparatory Committee for the Conference had held two sessions 10/ at which it considered reports concerning preparatory activities undertaken by the secretariat, the work of technical panels and expert groups, the participation of intergovernmental bodies and regional and non-governmental organizations in preparations for the Conference, the dissemination of information about the topics to be dealt with at the Conference, etc., as well as the specific date for the convening of the Conference. The Committee also considered a report by the Secretary-General (E/AC.51/99 and Corr.1 and Add.1) on the work of the Committee for Programme and Co-ordination and describing the responses of departments of the United Nations Secretariat and of regional commissions, specialized agencies and other bodies and organizations of the United Nations system to the request, made in paragraph 11 of General Assembly resolution 34/190, for assistance to Member States (in particular developing countries) in certain specified respects connected with preparations for the Conference. 11/ Another report by the Secretary-General (A/35/321 and Add.1) which was brought to the Preparatory Committee's attention outlined activities undertaken or envisaged in the course of preparations for the Conference, e.g. information activities, meetings of technical panels, meetings of expert groups scheduled by regional commissions, technical assistance to particular developing countries in carrying out studies or designing projects related to energy, and meetings organized by specialized agencies and other bodies.

9. At the regular session preceding the Conference, the General Assembly adopted resolution 35/204 dated 16 December 1980 by which it made provision for the steps then remaining to be taken for the holding of the Conference under the most favourable conditions. By that resolution, the Assembly settled the definitive dates of the Conference, determined the countries and organizations to be invited to participate in the Conference, gave directions concerning the services, facilities and personnel to be placed at the disposal of the Conference, called for certain documentary material to be submitted to the Preparatory Committee at its third and fourth sessions, asked that Committee to draft the provisional agenda and rules of procedure for the Conference, and invited Member States and international organizations to intensify their efforts with a view to ensuring the success of the Conference.

10. The Preparatory Committee held its third session at United Nations Headquarters from 30 March to 16 April 1981. 12/

11. The fourth session of the Preparatory Committee was held in two parts. The first part was held at United Nations Headquarters from 8 to 26 June 1981. The session was resumed at the Kenyatta International Conference Centre, Nairobi, on

10/ From 4 to 8 February and from 21 July to 1 August 1980. For the reports on the two sessions and the Committee's resolutions and decisions see Official Records of the General Assembly, Thirty-fifth Session, Supplement No. 43 (A/35/43).

11/ See ibid., part two, paragraphs 55 and 56.

12/ For the report on the session see Official Records of the General Assembly, Thirty-sixth Session, Supplement No. 47 (A/36/47).

3 August and concluded on 7 August 1981. 13/ At these sessions particular attention was given to the drafting of the proposed programme of action.

12. As part of the preparations for the Conference, meetings were organized by the five regional commissions, at which representatives of the governments of countries in the region concerned and representatives of interested intergovernmental bodies considered questions of regional importance and of relevance to the work of the Conference. 14/

13. In addition, and also in the context of preparations for the Conference, the specialized agencies and other intergovernmental bodies contributed papers giving particulars of their past and proposed activities in connexion with matters likely to be discussed at the Conference which were within the scope of their competence.

14. Symposia organized in the framework of preparations for the Conference and dealing with the subject of the Conference were held in Moscow, Tokyo and Stockholm.

15. A large number of national authorities contributed papers for submission to the Conference describing existing or prospective measures for supplementing or replacing energy resources in their countries.

16. At the technical level, eight technical panels of experts were convened for two sessions each in pursuance of General Assembly resolution 33/148 to study the potential of the new and renewable sources of energy specified by the Assembly. 15/

17. Ad hoc expert groups also met to consider the topics of education and training, flow of information, research and development, financial constraints, infrastructure and institutions, in the context of preparations for the Conference. As a culmination of this process, a Synthesis Group with the participation of panel chairmen, group chairmen and eminent experts met and drafted a synthesis report (document A/CONF.100/PC/41 and Add.1).

13/ See ibid., for the report on the fourth session.

14/ For the reports of regional preparatory meetings see documents A/CONF.100/8/Add.1-Add.5.

15/ For the list of the documents, contributions by specialized agencies and national papers see annex II to this report.

Chapter III

ATTENDANCE AND ORGANIZATION OF WORK

A. Date and place of the Conference

18. The United Nations Conference on New and Renewable Sources of Energy was held at Nairobi from 10 to 21 August 1981 in conformity with General Assembly resolution 35/204 of 16 December 1980. During that period the Conference held 17 plenary meetings.

B. Pre-Conference consultations

19. Pre-Conference consultations open to all States invited to participate in the Conference, as well as interregional meetings, were held at Nairobi on 7 August 1981 to consider a number of procedural and organizational matters. The pre-Conference consultations were conducted under the presidency of Mr. Makoto Taniguchi (Japan), Chairman of the Preparatory Committee. The report on these consultations (A/CONF.100/5) was submitted to the Conference and was accepted as the basis for the organization of its work.

C. Attendance

20. The following 125 States were represented at the Conference:

Afghanistan	Cuba
Algeria	Cyprus
Angola	Czechoslovakia
Argentina	Democratic People's Republic of Korea
Australia	Democratic Yemen
Austria	Denmark
Bahrain	Djibouti
Bangladesh	Dominica
Belgium	Dominican Republic
Benin	Ecuador
Bhutan	Egypt
Botswana	Ethiopia
Brazil	Finland
Bulgaria	France
Burundi	Gabon
Byelorussian Soviet Socialist Republic	German Democratic Republic
Canada	Germany, Federal Republic of
Cape Verde	Ghana
Chad	Greece
Chile	Grenada
China	Guatemala
Colombia	Guinea
Comoros	Guyana
Congo	Haiti
	Honduras

Hungary	Peru
Iceland	Philippines
India	Poland
Indonesia	Portugal
Iraq	Republic of Korea
Ireland	Romania
Israel	Rwanda
Italy	Saudi Arabia
Ivory Coast	Senegal
Jamaica	Seychelles
Japan	Somalia
Jordan	Spain
Kenya	Sri Lanka
Kuwait	Sudan
Lesotho	Suriname
Liberia	Swaziland
Libyan Arab Jamahiriya	Sweden
Luxembourg	Switzerland
Madagascar	Syrian Arab Republic
Malawi	Thailand
Malaysia	Tunisia
Mali	Turkey
Malta	Uganda
Mauritania	Ukrainian Soviet Socialist Republic
Mauritius	Union of Soviet Socialist Republics
Mexico	United Kingdom of Great Britain and
Morocco	Northern Ireland
Mozambique	United Republic of Cameroon
Nepal	United Republic of Tanzania
Netherlands	United States of America
New Zealand	Upper Volta
Niger	Uruguay
Nigeria	Venezuela
Norway	Yemen
Oman	Yugoslavia
Pakistan	Zaire
Panama	Zambia
Papua New Guinea	Zimbabwe
Paraguay	

21. The United Nations Council for Namibia was represented at the Conference.
22. The Palestine Liberation Organization and the South West Africa People's Organization attended the Conference in the capacity of observers.
23. The following national liberation movements were represented by observers: African National Congress (South Africa), Pan Africanist Congress of Azania.
24. Members of the secretariat of the following United Nations offices were present throughout or during part of the Conference:

Office of the Director-General for Development and International
Economic Co-operation

Department of International Economic and Social Affairs

Centre for Science and Technology for Development

Department of Technical Co-operation for Development

United Nations Centre on Transnational Corporations

25. The secretariats of the following regional commissions were represented at the Conference:

Economic Commission for Europe

Economic Commission for Latin America

Economic and Social Commission for Asia and the Pacific

Economic Commission for Africa

Economic Commission for Western Asia

26. The following United Nations bodies and programmes were also represented:

United Nations Centre for Human Settlements (Habitat)

United Nations Children's Fund

United Nations Conference on Trade and Development

United Nations Development Programme

United Nations Environment Programme

United Nations Fund for Population Activities

United Nations Industrial Development Organization

United Nations Institute for Training and Research

United Nations Sudano-Sahelian Office

United Nations University

World Food Council

World Food Programme

United Nations Interim Fund for Science and Technology

Office of the United Nations High Commissioner for Refugees

Second United Nations Conference on the Exploration and Peaceful Uses of
Outer Space

27. Representatives of the following specialized agencies and related organizations participated in the work of the Conference:

International Labour Organisation

Food and Agriculture Organization of the United Nations

United Nations Educational, Scientific and Cultural Organization

World Health Organization

World Bank

World Meteorological Organization

International Fund for Agricultural Development

International Telecommunication Union

International Atomic Energy Agency

23. The following intergovernmental organizations were represented by observers:

Agency for Culture and Technical Co-operation

African Development Bank

African Regional Organization for Standardization

Asian Development Bank

Arab Organization for Mineral Resources

Asian-African Legal Consultative Committee

Caribbean Community Secretariat

Caribbean Development Bank

Centre for Industrial Development (ACP-EEC)

Commonwealth Secretariat

Communauté économique des pays des grands lacs

Communauté économique de l'Afrique de l'Ouest

Council for Mutual Economic Assistance

Council of Europe

East African Development Bank

Economic Community of West African States

European Economic Community

European Patent Office

European Space Agency

Inter-American Development Bank

International Energy Agency

Inter-American Institute for Co-operation on Agriculture

International Livestock Centre for Africa

Latin American Energy Organization (OLADE)

League of Arab States

Nordic Investment Bank

Organisation for Economic Co-operation and Development

Organization of African Unity

Organization of American States

OPEC Fund for International Development

Organization of the Petroleum Exporting Countries

Organization of Arab Petroleum Exporting Countries

29. A large number of non-governmental organizations in consultative status with the Economic and Social Council, or on the Roster, attended the Conference. The list of participants is given in document A/CONF.100/INF.1.

D. Opening of the Conference and election of its President

30. The Conference was called to order by the Secretary-General of the United Nations. In the course of his address he stated that the goal of the Conference was to promote international co-operation in a field of critical importance to social and economic development in both the industrialized and developing countries. He noted that, until recently, supplies of energy had been taken for granted. With no constraints arising from long-term considerations, nations had pursued their economic activity in ways which did not make the most efficient or least wasteful use of available sources of energy, the underlying assumption being that of a cheap and inexhaustible supply of oil and gas. The reality had disproved the assumption. A change in attitudes was thus inescapable, which involved in particular a more judicious use of conventional energy sources and the development and utilization of new and renewable sources of energy.

31. The United Nations had played a pioneering role in the energy field. In 1961 it had sponsored a major conference on the subject in Rome. Events since then had emphasized the urgency of removing the dangerous uncertainty about the supply and distribution of energy. The decision to convene the present Conference was a recognition of that urgency. For the first time in history, nations were getting together to initiate a collective effort to master future energy supplies and diversify their base so as to provide a solid foundation for economic progress. This effort should draw strength from the realization that the energy problem was manageable. There were energy resources sufficient to meet the needs of the world's population. Technologies existed or were being developed which could ensure the full and efficient utilization of these resources. The issues involved were no doubt complex, and a diversity of views was only natural. However, given a genuine commitment on the part of all countries, there was no barrier to a collective response which would advance the cause of peace and prosperity for all.

32. Energy was not merely a matter of economics and could not be viewed in isolation. The present energy situation was fraught with instability. There existed a close relationship between energy and certain important aspects of the current world crisis. It was obvious that, without rational management and planned exploitation of relevant technologies, the potential struggle for access to resources which were limited and exhaustible could give rise to political tensions. Technical and economic co-operation which the Conference was meant to initiate, could certainly help in dissolving many of the underlying causes of international tension and conflict. Otherwise, the fear of scarcity of future energy supplies would defeat all efforts to ensure their more equitable distribution.

33. The energy transition which the world had to achieve implied the compelling need to expand and diversify the base of its present energy supply, to utilize fully available and potential resources and thus reduce dependence on oil and gas. The

prospect was for an accelerating pace of scientific and technological breakthroughs. In this context, the Conference should be seen as a major international forum for the exchange of information about existing and future possibilities.

34. There was also a need for changes in patterns of access to energy. The establishment of a new international economic order remained one of the primary objectives of the world community and its realization would involve structural readjustments to ensure just and equitable access to the basic ingredients of economic activity. The adoption of the International Development Strategy for the Third United Nations Development Decade reaffirmed the commitment to accelerate the development of developing countries. If the minimum needs of the development process and increased populations were to be met, substantial amounts of energy, both conventional and non-conventional, would have to be made available to the developing countries. For this purpose they would require assistance in exploiting their indigenous energy resources and in securing access to the conventional ones which they lacked.

35. The Conference was meeting at a time of deep concern over the weakening of multilateral co-operation which was apparent from the worsening of the international economic situation. More and more, countries were resorting to unilateral measures which could be only of limited effectiveness and which did not brighten the prospects of international peace and prosperity. Governments should demonstrate their willingness to take concrete steps, in co-operation, to deal with international problems. The Conference offered a significant opportunity to do so. New and renewable sources of energy would not, of course, constitute the final answer to all energy-related problems. But in this area, significant progress was both urgent and feasible, with the support of the international community.

36. In conclusion, the Secretary-General stated that it was a special feature of the Conference that it dealt with an issue that transcended conventional divisions of the world into North and South or East and West. All countries had a stake in a successful energy transition and all had a contribution to make to it. Fragmentation and dispersal of efforts could be most wasteful. The world's scientific and technical resources sufficed to make energy available for the sustenance and progress of all peoples. The great endeavour which the Conference was meant to inaugurate was that of devising ways and means by which these resources could be harnessed for the benefit of all mankind.

37. In his inaugural address, the Hon. Daniel arap Moi, President of the Republic of Kenya, the host country of the Conference, expressed the hope that the deliberations of the Conference would elicit an urgent global response to some of the problems threatening the advancement of mankind.

38. He recalled that in 1961 the United Nations had organized a meeting of experts in Rome to look into the question of energy. But at that time oil had been cheap and seemingly plentiful, and hence the meeting itself - regarded almost as an academic exercise - had made no profound impact. A great deal had changed in the 20 years that had elapsed since then. The Nairobi Conference should regard it as one of its responsibilities to identify, at least in the general area of energy and related subjects, practical and decisive measures bearing upon the sustained vitality of human progress and the shaping of human destiny.

39. He stressed, first, that it was impossible to discuss the subject of energy without looking at the existing life styles and their consequences for energy consumption. While the importance of energy in, for example, manufacturing and agricultural production was generally recognized, the role of energy in sustaining certain life styles was often underestimated. If substantial savings of energy were to be achieved, some of the prevailing life styles, especially in industrialized countries which consumed most of the energy, would have to change, in order to lessen the demands on non-renewable energy resources.

40. Secondly, more than 70 per cent of the world's population lived in the so-called developing countries, so called because the term "developing" was a euphemistic description of countries suffering from mass poverty and all the consequences of lack of development. It would be more accurate to describe the industrialized countries as "developing", for their per capita income had been increasing, whereas in many poor countries they had been stagnant and even declined. So far as the Conference was concerned, what mattered was that the development of the poor countries would require an ever-increasing deployment of energy, and that the international community must ensure to those countries access to energy resources. Special measures would be necessary, since reliance on market forces would lead to maldistribution of those resources, with the further consequence of social upheavals and instability nationally, regionally and, ultimately, internationally. The industrialized countries should cease to be self-centred and recognize their interdependence with the third world. He believed that no single country was capable of resolving in isolation the whole diversity of problems now emerging.

41. He stressed, thirdly, that the economic situation facing the international community, including the energy crisis, called for international co-operation that was positive and practical, and untainted by self-interest. But he hoped that it would bear in mind other related matters. In the last two decades, international conferences had considered such subjects as population, the human environment, food, employment, human settlements, water and desertification. Those conferences were evidence of efforts made within the United Nations system to promote the total welfare of man. However, where and when would a conference be held to discuss the total crisis so clearly apparent by welding all these topics together? The era of mere talk, just like the era of cheap oil, had gone forever. What was now needed was the implementation of all those sensible recommendations already agreed by the international community. This called for political commitment and understanding in every country and in every continent.

42. Commenting on the specific subject of the Conference, he observed that the end of the era of cheap oil had forced the world to concentrate on conservation in the use of a finite and important natural resource. In earlier decades there had been great wastefulness or lack of foresight in the liberal use of oil, most notably in the affluent societies. Since then, concern with conservation in the use of oil had contributed, but perhaps not as fully as it should have done, to the whole psychology of conservation; there was now greater awareness of the need to use natural resources in a sustained manner with an eye to the requirements of future generations.

43. At the time when oil prices had been increased, oil had become practically indispensable to human communities. Accordingly, the multiple increase in the basic price of oil had sent a shock-wave through the economic and social structures

of all countries. And as a result, in many nations development programmes had had to be revised or postponed. The increases in the prices of petroleum had produced dire effects on the developing countries, many of which were in any case in desperate straits. Some of them were spending 50 per cent or more of their foreign exchange earnings on oil imports. Moreover, unlike the industrialized nations, they had little room for manoeuvre and were now facing a threat to their own survival. Their situation should receive some attention during the deliberations of the Conference, for a collapse of the poor countries would be far more expensive to treat than to prevent.

44. He believed that the countries members of OPEC had recognized the situation. OPEC itself as an organization had established a substantial aid programme in favour of a number of oil-importing poor countries. In addition, some of the members of OPEC were carrying out bilateral aid programmes which were substantial in relation to their gross domestic product. Whereas most of the industrialized countries had yet to reach the modest United Nations target of official development assistance corresponding to 0.7 per cent of GNP, and indeed some of them were actually reducing their aid, some OPEC countries were contributing commendable proportions of their national incomes as aid. In this connexion, he suggested that consideration should be given to the introduction of a two-tier price system which would enable the poor countries to import oil at lower prices than those charged to industrialized ones.

45. At the same time, he pointed out that the OPEC countries were themselves still under-developed, even though some had accumulated substantial foreign exchange reserves. Hence, he considered that the industrialized countries should accord even greater attention to the development of the poor countries than in the past, and he proposed in this connexion that more weight should in future be given to the trade requirements of the poor countries. Indeed, the financial aid given was in many cases taken back by the donors through the deterioration in the terms of trade of the poor countries. In saying this he would not wish his remarks to be understood to mean that aid should not be given: he wished to stress, rather, that to give aid and then to deny trade was hypocritical.

46. Proceeding, he said that there was a widespread idea that the present high dependence on petroleum products had to be reduced. Much thought had been given to the development of new kinds of energy and it was generally recognized that all nations should endeavour to achieve a large measure of self-sufficiency in energy. But to translate the idea into practice was not so easy. For instance, in Africa and in other densely populated developing regions there was an incessant demand for wood and charcoal as domestic fuel in daily usage. If the rate of consumption of this resource continued unabated, the prospect of a dearth of this source of energy, and its implications, became terrifying. The destruction of the forests and of the natural vegetative cover would not merely have a physical impact but would disrupt the cycles and balances of the biosphere, as the studies of UNEP had shown.

47. It would be one of the tasks of the Conference to design imaginative plans for the universal transfer of technology, while inspiring the full elaboration of ideas or processes which, for some time, had existed as blueprints or prototypes. Effective methods would have to be devised for financing new techniques or projects. In this connexion, he said that the harnessing of new energy sources on a sufficient scale might require in some cases initiatives and funding directly by

the United Nations. There was a need to organize effectively some rapid and unqualified exchange of information, covering all useful experiments and experiences, and a need for the training of technical and professional manpower, especially in the poor countries.

48. In conclusion, he said that, while the problems were immense, mankind could and must find the solutions. The world possessed the resources and technology for dealing with its economic problems. What it lacked and therefore desperately needed, was the vital ingredient, the essential force, of political will.

49. At the opening meeting, the Conference heard addresses by Her Excellency Mrs. Indira Gandhi, Prime Minister of India, the Rt. Hon. Mr. Edward P.G. Seaga, P.C., Prime Minister of Jamaica; H.E. Mr. Thorbjörn Fälldin, Prime Minister of Sweden; and by H.E. Baron Rudiger von Wechmar, President of the General Assembly.

50. In her keynote address Mrs. Gandhi, Prime Minister of India, said that human beings had regarded the earth as a playground to use, to despoil and to destroy. As a consequence of excessive exploitation the supplies of fossil fuel - a depleting asset - had become precarious. She called on the international community to view energy in its entirety, for the energy crisis threatened not only Asia, Africa and Latin America but also the developed regions of Europe and America. The short-sighted and self-centred economic policies of individual nations should be replaced by an enlightened approach. The present pattern of exploiting the world's resources and the resultant search for and attempt to dominate world energy sources could only cause friction. Monopoly of the energy potential by the affluent was depriving the poor, arresting their growth and leading to instability and insecurity. Similarly, within nations serious imbalances in energy supply intensified social ills, especially those associated with unplanned urbanization.

51. She described the energy situation in contemporary India, where experience ranged from the use of the most primary and uncomplicated forms of manual and animal power to the most advanced use of nuclear and solar energy technology. Large quantities of commercial energy were produced from coal, lignite, oil and hydroelectric plants; non-commercial sources of energy included firewood, agricultural wastes and animal dung. India was committed to the rational use of energy and natural resources with the ultimate objective of preserving the environment. Accordingly, through its national energy programme India had sought to introduce innovations and improvements, mostly very simple, that would enhance the efficiency of machinery, relieve drudgery and economize the consumption of fuel. She drew attention to the consequence of the indiscriminate exploitation of forest resources. Certain renewable sources of energy, such as solar energy and biogas, were being used in India, which was willing to share its experience in this field with other countries.

52. Proceeding, Mrs. Gandhi said that the industrial revolution in developed industrial countries had succeeded because of the availability of an abundant and cheap supply of fossil fuels. When oil producers had asserted their right to fix prices, those countries had been startled to discover how myopic had been their assumption that they had the right to unlimited quantities of fuel. The adjustment process had been relatively easy for the industrialized countries because minor economies in consumption enabled them to control the growth in demand and make up their losses by passing on the higher costs of energy through exports. Developing countries, however, suffered both from the high costs of oil and from the higher costs of imports of manufactures and industrial raw materials.

53. She considered that the present disturbed and insecure state of the world was attributable partly to a scramble for fossil fuel deposits and the accumulation of increasingly sophisticated and energy-intensive weapon systems which were a concomitant of the arms race and policies of confrontation. Obviously those were aimed at maintaining the status of the affluent and powerful by supporting the existing infrastructures and disparities. Hence the urgent need for an energy revolution. There must be a move from the present international economy primarily dependent on hydrocarbons to one increasingly based on new and renewable sources of energy. She stated that such a transition was likely to change profoundly international relationships. Instead of the physical transfer of resources, there could be co-operation in harnessing widely dispersed resources by means of appropriate technologies. With proper sharing of knowledge, developing countries would not need to invest in obsolescent technologies and the process of transition itself would have a longer lifespan.

54. Mrs. Gandhi stated that developed economies should be prepared to accept a portion of the responsibility to redefine their relationship with the developing world. The New International Economic Order and the principle of the common heritage of mankind needed to be endorsed in theory and in practice. All international forums should aim at changing attitudes of exploitation and bargaining to those of co-operation and accommodation. She added that the emphasis on new sources of energy should not be an excuse for diverting attention from the immediate task of the equitable sharing of conventional energy. New sources were crucial for those that had an abundance of available fuels as well as for those not so favourably endowed.

55. While hoping that the international community would support and reinforce the national effort, especially of developing countries, she urged developing countries to strengthen their collective self-reliance. Technical co-operation, the sharing of training facilities, the exchange of experts and information, joint research and development programmes, including the testing of equipment, mutually beneficial consultancy and related measures, were ways of making self-reliance a reality.

56. The Conference should outline a world energy policy, generate momentum and indicate courses of action. An international consortium dedicated to mobilizing bilateral credit and aid and to the planning and monitoring of the world energy programme would be most useful. The Conference should initiate an expanded programme of technical assistance in energy planning, manpower training, support for research and development and pre-investment studies. Mrs. Gandhi suggested that a powerful call should go out from the Conference to make energy a focal point of contemporary international co-operation and collaboration.

57. Mr. Seaga, Prime Minister of Jamaica, stated that on two occasions in this century the issue of energy had exploded fundamental concepts with dramatic effect. The first had been the demonstrated potential of atomic energy nearly four decades earlier. No less traumatic had been the second occasion: the eruption of oil prices since 1973, which had shattered the settled régime of cheap and reliable energy as an unfailing resource and had disrupted the world's financial system. Although the shock of the escalation of the price of oil was still being felt, yet out of the chaos a pattern of new technology was emerging that evidenced the beginnings of a new world approach to energy.

58. In the era of cheap oil, the rural areas where the majority of the world's population lived had not been energized because the resource base had been cheap, but the cost of the infrastructure was crippling. The situation had now been reversed: the infrastructure was cheap, but the cost of the resource base was crippling. He emphasized that Governments should work out national energy plans. Jamaica was one of the countries that had developed such a plan. The objective of Jamaica's national plan was to reduce, by using alternative energy sources, from 97 per cent to 64 per cent the share of imported oil in commercial energy uses by 1990.

59. He stressed that whether the Conference achieved its purpose or failed depended on three basic decisions. First, a decision by the Conference to identify and promote a mechanism to aid research and development in new and renewable sources of energy and to promote new technology that would reach the international market; secondly, a decision to determine the mechanism of financing research and development in the field of new and conventional energy resources; and thirdly, a decision to take action in these directions forthwith.

60. He proposed that a centre should be established (i) for research and development in the field of new and renewable sources of energy sources; and (ii) for promoting and facilitating access to new technology that was internationally available and the transfer of technology to developing countries. He suggested that such a centre might perhaps be associated with an existing agency such as the International Atomic Energy Agency. He considered that there was little justification for a new agency to carry out functions for which an existing agency was equipped.

61. He added that, owing to insufficient support, the World Bank had had to delay plans for the establishment of an energy affiliate. A critical decision of a Nairobi Conference would be to reactivate support for the World Bank affiliate without which the prospect of securing adequate finance would be bleak.

62. Mr. Thorbjörn Fälldin, Prime Minister of Sweden, stated that radical changes must be made in the world energy sector to reduce its dependence on oil. New and renewable resources of energy must play an increasingly important role in global energy supplies.

63. The Stockholm Conference on the Human Environment in 1972 had greatly stimulated a more active environmental policy at both national and international levels. That Conference should serve as a model for the Nairobi Conference which, he hoped, would have as strong an impact within its field. Energy was one of the areas in which international interdependence was very evident. Questions of disarmament, environment and energy were closely related. Environmental considerations were an important reason for the development of new and renewable sources of energy, and environmental aspects should be given an adequate place in the programme of action.

64. Being a small industrialized country heavily dependent on energy imports, Sweden had come to realize the importance of formulating a national energy policy in a long-term international perspective. This policy would significantly reduce the consumption of oil and it aimed at creating an energy system which would primarily rely on renewable and indigenous sources of energy with the least possible impact on the environment. Determined efforts had been made to promote the development and use of renewable sources of energy. Sweden would be prepared to

co-operate with other countries in research and development in the field of energy and, as far as possible, to share with them the results of its own efforts.

65. All countries should give high priority to the formulation of energy policies which included measures to conserve energy and increase energy efficiency, and to develop renewable and environmentally safe sources of energy. Only on the basis of determined national measures could the assistance efforts of the international community be really effective.

66. It was important that the programme of action should be adopted unanimously by the Conference in order to provide a common platform as a basis for future work. Some parts of the draft programme of action being discussed merited particular attention. The question of energy supplies to rural areas should receive priority. Strengthened efforts were needed to preserve and restore forests. Firewood should be utilized more efficiently and alternative sources of energy should be made available to rural populations. It was also of fundamental importance to strengthen the national capacity of the developing countries in the energy field especially in energy planning and training. Sweden attached great importance to supporting the development of energy resources in developing countries, and the Swedish International Development Authority had drawn up guidelines for energy assistance. As a result, Swedish assistance in the energy field would be increased.

67. Partly on the basis of the priorities to be determined by the Conference, multilateral organizations should find ways to increase and make more effective their support for the development and use of new and renewable sources of energy in the developing countries. Conditions must be created to make it possible for the World Bank to increase lending for energy purposes. This could be done by the establishment of an energy affiliate attached to the World Bank, by increasing the Bank's guarantee capital or by changing the ratio between the capital of the Bank and outstanding loans.

68. Such measures would have to be supplemented with other measures which would give the poorer developing countries access to more multilateral assistance on soft terms. Sweden was prepared to discuss financing facilities which could gain broad support.

69. It was also essential that an effective follow-up of the programme of action should take place within the United Nations system.

70. Baron von Wechmar, President of the General Assembly, said that the volume of energy used and of the monetary flows involved was so large as to influence all economies and the equilibrium of the world's financial and monetary system. The global structure of the supply, distribution and consumption of energy affected the conduct of international relations. He recalled that energy, among other matters, had figured prominently in the earlier discussions relating to the establishment of a new international economic order. Furthermore, the consensus text of the International Development Strategy for the Third United Nations Development Decade emphasized the link between the results of the Conference and the implementation of the strategy itself. The developing countries were limited in their ability to reduce energy use without jeopardizing their development goals. In consequence, the international community would have to adopt concerted and adequate measures to further their immediate and long-term development. Exploration for energy

resources together with associated development and processing should therefore be promoted, and adequate financial and technical resources should be available for that purpose. He indicated several areas in which such action might be taken: national energy plans in which the energy sector was closely integrated with the rest of the economy; development of national research and development capacities to facilitate the transfer of appropriate energy technologies; development of national information on all aspects of current and potential energy sources; financing and funding of projects and programmes in the energy sector, particularly for new and renewable forms of energy; and lastly, greater international co-operation, whether at the regional or global level with a view to overcoming the present difficulties of the energy economy and to ensure also, that all countries had access to the infrastructure necessary for the production and use of energy in development.

71. The difficulties associated with the supply and use of energy were not temporary: they must be dealt with promptly. No nation was immune and no country could act in isolation. In this connexion he cited a relevant passage from the report of the Independent Commission on International Development Issues:

"Energy must become the shared responsibility of the whole world community, and to reach an understanding will clearly require a serious attack on these and other issues to which we address ourselves. All our futures could depend on the success which attends such global efforts." 16/

He hoped that all Governments would rise to this challenge, since there was general recognition of the need for a transition to a fuller participation by all countries in the world economy. As a result, there was a concomitant need to plan for, and manage, a smooth transition to a more broadly based energy economy that would take full account of the potential of new and renewable sources of energy.

72. At its 3rd plenary meeting on 11 August 1981 the Conference heard an address by the Rt. Hon. Mr. Pierre Elliot Trudeau, Prime Minister of Canada.

73. Mr. Trudeau said that it was important for the Conference to prove that the United Nations could stimulate practical progress. Although spectacular achievements had been realized within the existing order in the northern hemisphere and in many countries of the South, for too many of the world's poorest peoples diminishing hope had turned into despair. The number of absolute poor was increasing. Without a large infusion of external assistance the world's poorest countries could not hope to overcome the poverty of their people within the foreseeable future. Middle-income developing countries had demonstrated that given the chance, they could achieve higher levels of productivity and growth. While this was so, for too many oil-importing developing countries the encouragement of visible progress had been replaced by the shock of crushing deficits. At the same time, the industrialized North had emerged from a period unprecedented growth into a period of unprecedented economic uncertainty.

16/ North-South: A program for survival, report of the Independent Commission on International Development Issues under the chairmanship of Willy Brandt, MIT Press, Cambridge, Mass., 1980.

74. The rising cost of traditional energy and the massive capital cost of developing non-conventional energy sources imposed fundamental reallocations of national wealth. Less was available for social services, for example, and the result in many countries was an increased level of inequity and consequently of social tensions. In both North and South, therefore, there was a craving for national and international stability. But this could only be satisfied by a higher level of international co-operation, a much higher level of co-ordination of economic policies, and an improvement of the global framework within which economic relations are conducted. There had been encouraging signs of the emergence of the necessary political will to achieve the required international stability. At recent summit conferences at Ottawa, and Venice, for example, participants had expressed a willingness to respond more effectively to the needs and aspirations of the third world and to collaborate more closely with developing countries in the interest of both North and South. In this context, he said that Canada had expressed willingness to participate in preparations for global negotiations leading to the establishment of a new international economic order.

75. He said that the Conference came at a good time to initiate fruitful global co-operation in the area of energy, in view of the necessity to effect an efficient transition to greater use of non-oil energy. The Prime Minister stated that Canada had taken a hard look at its international development policies, with a view to expanding its efforts towards meeting the energy needs of developing countries. He added that the energy-related component of Canadian bilateral assistance had consistently been close to 25 per cent, and the amount of the Canadian assistance would expand even further in the next five years. During that period, Canada would devote more than \$1 billion dollars to energy-related development projects.

76. Proceeding, Mr. Trudeau said that the great majority to the world's 2.5 billion poor were living in rural areas and depended for almost all of their energy needs upon wood, agricultural residues and dung - the so-called non-commercial fuels. Energy-related research in and for the developing countries therefore presented a considerable challenge. The great bulk of such research, however, was carried on in the industrialized countries and was geared to their needs. Little work was being done which had immediate application to the small-scale need of the rural populations of developing countries. Moreover, since renewable energy technology was still in its infancy, many questions remained unanswered about its potential use in the developing world. An immense amount of work was therefore required on the technologies appropriate for the poorest countries. Canada was ready to commit \$10 million to support for energy research related to developing countries. The funds would be made available to Canada's International Development Research Centre. The research would be carried on largely in developing countries and would stress the use of indigenous resources of energy. In the context of its industrial co-operation programme, Canada was establishing a programme with an initial capital of \$5 million to encourage private companies to adapt new energy technologies to developmental needs. In addition, Canada would contribute \$25 million towards African needs, especially in the Sahel region, with a view to helping the countries concerned to develop their energy resources, grow more food, arrest desertification and retard the depletion of scarce forest fuel resources.

77. At the Ottawa summit, Canada, along with other nations, had stressed that the World Bank should strengthen its role in energy lending and called for the creation of an energy affiliate to the Bank for that purpose. In the meantime, he said, much could be achieved bilaterally and at national level. For example, a new

subsidiary of his country's national oil company would provide assistance directly to third world countries and would be available to act as an executing agent for other institutions such as the World Bank. He believed that such action as his country had taken comprised a total approach to the energy crisis: exploration and exploitation of all energy sources; research into new methods, incentives for the private sector, new help for better public planning, and a healthy infusion of capital to achieve the desired objectives.

78. At its 2nd plenary meeting on 10 August 1981 the Conference elected by acclamation the Hon. J. H. Okwanyo, Minister for Energy and head of the delegation of Kenya, as President of the Conference.

79. In thanking the Conference for his election, the President said that the Conference was taking place at a critical time when negotiations between the North and South had almost reached a stalemate. There was urgent need for action, not rhetoric, and he hoped that the Conference would act decisively with collective wisdom and deliberate determination to resolve the main issues before it. The principal task of the Conference was to formulate and adopt a Nairobi Programme of Action which would promote the development and utilization of new and renewable sources of energy. In that connexion, it would consider those notions, concepts and ideas which could be made operational through well designed short-term, medium-term and long-term programmes. In addition, it would have to consider what financial and institutional machineries would be needed for the implementation of the Programme.

80. The task before the Conference was therefore enormous and called for the support and co-operation of all participants. For his part, the President said that, in keeping with Kenya's motto of "Peace, love and unity", he would do his utmost to ensure that the Conference was equal to the task entrusted to it by the international community.

E. Messages from Heads of State or Government

81. The Conference received messages addressed to it by H.M. Juan Carlos, King of Spain; H.E. José López Portillo, President of the United Mexican States; H.E. Ronald Reagan, President of the United States of America; H.E. Alhaji Shehu Shagari, President of the Federal Republic of Nigeria; and H.E. Zhao Ziyang, Premier of the State Council of the People's Republic of China. 17/

F. Adoption of the rules of procedure

82. At its 2nd plenary meeting on 10 August 1981 the Conference adopted the provisional rules of procedure recommended by the Preparatory Committee (A/CONF.100/2), subject to the amendment of rule 6 to read:

"The Conference shall elect the following officers: a President, a Vice-President in charge of co-ordination, 22 other Vice-Presidents and a Rapporteur-General as well as a Chairman for each of the Main Committees established in accordance with rule 42. Each Main Committee shall elect three Vice-Chairmen and a Rapporteur".

17/ For the text of the messages see annex I to this report.

G. Adoption of the agenda

83. At the same meeting the Conference adopted as its agenda the provisional agenda recommended by the Preparatory Committee (A/CONF.100/1), viz:

1. Opening of the Conference
2. Election of the President of the Conference
3. Organizational and procedural matters
 - (a) Adoption of the rules of procedure
 - (b) Adoption of the agenda and organization of work
 - (c) Election of officers other than the President
 - (d) Credentials of representatives to the Conference
 - (i) Appointment of members of the Credentials Committee
 - (ii) Report of the Credentials Committee
4. General debate: new and renewable energy sources in the context of development
5. Consideration and adoption of the programme of action
6. Adoption of the report of the Conference.

H. Election of officers other than the President

84. At its 2nd plenary meeting on 10 August 1981 the Conference elected Mr. Porfirio Munoz Ledo (Mexico) as Vice-President in charge of co-ordination and the following 22 States as Vice-Presidents:

Argentina
China
Ecuador
Federal Republic of Germany
German Democratic Republic
Hungary
Iceland
India
Jamaica
Mozambique
Nigeria
Pakistan
Peru
Phillipines
Senegal
Sri Lanka

Sudan
Turkey
Union of Soviet Socialist Republics
United States of America
Zaire
Zimbabwe

85. Mr. Jan Witek (Poland) was elected Rapporteur-General.

86. The Conference elected Mr. Makoto Taniguchi (Japan) chairman of the First Committee and Mr. Mario Franzi (Italy) Chairman of the Second Committee.

87. The First and Second Committees elected their Vice-Chairmen and Rapporteurs:

First Committee

Vice-Chairmen: Mr. Pentcho Moraliisky (Bulgaria)
Mr. Jukka Valtasaari (Finland)
Mr. Sebastiao R. Barros (Brazil)

Rapporteur: Mr. Hachimou Boukari (Niger)

Second Committee

Vice-Chairmen: Mr. Slavoj Odehnal (Czechoslovakia)
Mr. Mohamed Mokhtar El Halwagi (Egypt)
Mr. Raul Villatoro (Guatemala)

Rapporteur: Mr. Bakr Khoshaim (Saudi Arabia)

I. Other organizational matters

1. Allocation of items to the Main Committees and organization of work

88. At its 2nd plenary meeting the Conference decided that

- (i) items 1, 2, 3, 4 and 6 would be considered in plenary meetings;
- (ii) item 5 entitled "Consideration and adoption of the programme of action" would be considered by the two Main Committees as follows:
 - (a) The First Committee should consider issues dealt with in the Introduction and chapters I, II, III and V (B) and (C) of the draft programme of action (A/CONF.100/4-A/CONF.100/PC/L.36).
 - (b) The Second Committee should consider issues dealt with in chapters IV (A) and (B) and V (A) of the draft programme of action (A/CONF.100/4-A/CONF.100/PC/L.36).

2. Credentials of representatives to the Conference
Appointment of the members of the Credentials Committee

89. In conformity with rule 4 of the rules of procedure, the Conference at its 6th plenary meeting on 12 August 1981 established a Credentials Committee composed of

the following States: Angola, China, Guatemala, Haiti, Kenya, Spain, Thailand, Union of Soviet Socialist Republics and United States of America.

J. Implications of Conference decisions for the programme budget of the United Nations

90. At the 17th plenary meeting on 21 August 1981, before the consideration of the recommendations made by the Committees and of other draft resolutions, the Secretary of the Conference stated that any provisions of the Programme of Action or draft resolutions that had implications for the programme budget of the United Nations would be brought to the attention of the General Assembly by the Secretary-General at the time when the Assembly considered the report of the Conference.

Chapter IV

NEW AND RENEWABLE SOURCES OF ENERGY IN THE CONTEXT OF DEVELOPMENT

Summary of the general debate

91. The general debate took place in the course of 14 plenary meetings of the Conference from 10 to 19 August 1981. The passages which follow reflect, in succinct form, the points stressed by Government representatives in the debate.

92. The representatives of States, observers and the representatives of specialized agencies, regional commissions and other United Nations bodies and programmes and of several intergovernmental organizations made statements. Statements were also made by a number of non-governmental organizations.

93. Opening the general debate, the Director-General for Development and International Economic Co-operation said that the Conference was taking place at a time of disequilibrium in the world economy and disjunction in international economic relations. There was deep concern about the ability of the international economic system to deal with the multiple and interlocking crises that currently beset it and to put in place a viable process of international development. No group of countries had escaped the impact of those crises. But owing to their greater vulnerability, the majority of developing countries had been particularly hard hit, and the strains on their economies had assumed critical proportions.

94. Yet those considerations should not give rise to defeatism. There were some matters on which agreement could be reached. One was that the world economy was not self-equilibrating; tendencies in one direction or the other were cumulative rather than self-reversing. Second, the various crisis areas of the world economy were interrelated; the fields of trade, raw materials, energy, money and finance could not be treated independently of one another or separately from the question of development. Third, the present framework of international economic relations did not adequately serve the interests even of the affluent countries let alone those of the poor.

95. He said that, according to various studies, a continuation of current energy consumption policies would lead to serious scarcity of oil and to mounting uncertainties regarding assured supplies at required levels; even with lower growth rates, the dependence of the industrialized countries on oil imports would remain materially unchanged in the medium term; and foreseeable scarcities would force real prices upwards. If the global demand for energy was to be met, a shift would be required, as the International Development Strategy underlined, away from the current excessive reliance on liquid hydrocarbons towards a more diversified and sustainable mix of energy sources.

96. A main task of the Conference should clearly be to identify the contribution that new and renewable sources could make in the short and medium term to meeting future over-all energy requirements, especially those of the developing countries.

It should aim realistically to assess the prospects of those sources in the energy transition. It should permit an authoritative evaluation of the possible and the probable, the unlikely and the impossible, the myth and the reality of these sources. And it should permit Governments to identify wider range of options in accordance with the national development objectives. Finally, it should delineate the scope of international action.

97. He hoped that the major effort of the Conference would be the adoption of a programme of action that would establish the framework for subsequent action by Governments and by the international community.

98. The Secretary-General of the Conference said that, as stated by the Secretary-General of the United Nations at the opening meeting, the Conference was a historic opportunity, since it was the first time that the international community had resolved to examine jointly the energy future of mankind. It was a historic event which posed two great challenges: to the scientific capacity of mankind and to the political vision of leaders. Governments should display political will and vision so as to realize the profoundly mutual interests involved in that effort and the need to diversify the energy base of mankind, bearing in mind considerations of equity. As the President of Kenya had stated, there could be no development without energy, and energy was needed to speed up economic growth.

99. An energy transition was in progress which posed differing challenges to societies. Modern societies could continue to function, both economically and socially, by means of conservation, exploration and expansion of conventional sources and utilization of new and renewable sources. The developing world, on the other hand, would need large quantities in order to meet their minimum economic growth rates, cope with the inevitable population increases and satisfy their urbanization and modernization requirements.

100. The World Bank had estimated that, by about 1990, the developing countries would need not less than 10 million additional barrels of oil per day. One quarter would come from their own hydrocarbon resources, the remaining three quarters from imports of energy resources or from new and renewable sources. In addition to the demand aspect, there was the problem of the more than 2 billion persons for whom forest resources, fuelwood and coal accounted for 80 per cent of energy needs.

101. Consequently, the Conference in its Programme of Action should give a clear and realistic message showing that the industrialized world and the developing world had a mutual interest and that energy resources were an input productive of development and not a passive input of development.

102. The Conference should seize the opportunity for dialogue, bearing in mind that mutual recrimination and confrontation did not help. The energy was there. Nature and providence had placed it at man's disposal. What was needed was co-operative efforts to ensure that that energy was brought out and apportioned equitably among all countries and peoples of the globe.

A. Highlights of the general debate

103. Ten days of extensive debate demonstrated a unique sense of concern about the world energy situation. It was underlined that the world had entered a period of transition during which concentrated efforts at all levels, national and

international, would be needed to lessen the consequences of the diminishing resources of conventional and traditional energy, especially of hydrocarbons, and to pave the way for effective new sources of energy. Although the Conference had been dealing with a specific aspect of energy - new and renewable sources of energy - the statements in the general debate touched on the broader and related areas of the world economy, specifically the interrelationship of economic and social development and energy resources. It was stressed that this situation had already affected the economy of many countries, particularly development programmes of the developing countries dependent on energy imports, especially the least developed among them. It was also emphasized that there was an urgent need to consider the energy issue as a global one, calling for the integration of this issue in development efforts as a whole, including the energy transition which should take place in an orderly, progressive, just and integrated manner.

104. It was a general view that every effort should be made to strengthen national energy policies, to develop regional or subregional links of co-operation wherever justified by regional resources, and to expand and deepen international co-operation in all relevant fields, including institutional mechanisms, financial means, technical and scientific co-operation and assistance, and research and development relating to exploration, exploitation and management activities. The view was widely held that the limited resources of fossil fuels constituted a problem of global dimensions and may produce unforeseen global consequences. It was widely agreed that the concentration of national efforts was indispensable for the purpose of facing the new challenge. It was recognized that, without a similar concentration of efforts at the international level, the shortage of energy resources might have the consequence of accentuating world economic disorder.

105. It was considered that new and renewable sources of energy could make an important contribution in the long term to filling energy requirements. Although the period of transition might be long and painful, the potential of currently "wasted" energy and the unexploited potential of untapped resources held out promising prospects. Some representatives stated that what might be of marginal use to developed economies in the short term could be greatly beneficial for the growing rural population of developing countries. Some representatives expressed the view that recourse to new and renewable sources of energy should not be used to deny to developing countries access to conventional energy.

106. It was pointed out by several representatives that in the utilization of new and renewable sources of energy care would have to be taken to safeguard the environment and the ecological balance.

107. Many speakers stated that the Conference was a high-level and representative gathering for the exchange of views and of the experience acquired by many countries in evolving sound guidelines for national and international policies designed to develop new and renewable sources of energy and to place them in the service of humanity. The outcome of the Conference - the Nairobi Programme of Action - was widely acknowledged as a necessary and most important instrument and basis of international, regional and subregional co-operation and as a possible guide for national efforts. Most representatives noted that it also contained certain elements of wider programmes, notably those of the new international economic order and the International Development Strategy for the Third United Nations Development Decade, which showed that the direction which the Conference had chosen was correct and firmly rooted in the emerging philosophy of

international relations. In that respect the impression was underlined by some representatives that the success of the Conference would contribute favourably to the North-South dialogue and to the launching of global negotiations.

108. It was further stressed by several representatives that the solution of the energy problem and the achievement of proper rates of economic and social development of all countries, in particular of the developing countries, could be achieved under conditions of consolidation of peace and security, of deepening political detente, and of the realization of an effective disarmament programme. The resources released as a result of the cessation of the new arms race might be used for the social and economic development of the countries and, in particular, for the development of new and renewable sources of energy. Some delegations expressed deep concern about the increasing arms race and the decision of the President of the United States to start the mass production of neutron weapons, which brings the world to a new spiral of the arms race, diverting humanity from peaceful co-operation and the solution of the vital energy problem.

109. The representative of the United States of America, speaking in the exercise of the right of reply, expressed his deep regret that the delegations referred to in the preceding paragraph had deemed it necessary to inject a political attack, irrelevant to the subject of the Conference on a decision of the President of the United States. He affirmed the commitment of the United States Government to work tirelessly for world peace.

110. The speakers participating in the general debate welcomed the opportunity offered by the Conference for considering, in a universal forum, the preoccupations aroused by the current world energy situation. Although they appreciated that the evolution which had taken place in the structure of the energy economy affected different countries and regions in diverse manner, they considered that the opinions expressed in the course of the Conference reflected a particular sense of concern with the current situation. Many of them emphasized the efforts being made by countries adversely affected by the change in the price and supply pattern of conventional fuels to help themselves by applying measures of energy conservation. Tributes were paid to the assistance given by more favourably placed countries to energy-deficient developing countries.

111. Many delegations considered that what lent additional urgency to the deliberations of the Conference was the economic climate prevailing in some of the industrialized and in most of the developing countries. They pointed out that the combination of recession, inflation and protectionist policies had serious repercussions both on the exports and on the imports particularly of the developing countries, in so far as the latter relied on their earnings from exports of, mainly, primary commodities in order to be able to pay for imports of manufactured goods and capital goods - the prices of which had risen steeply owing to the inflation in the supplying countries. As a consequence, these speakers stated, the balance-of-payments deficits and the public and private debt incurred by many of the developing countries had risen to unprecedented levels.

112. Most participants urged an intensification of global, regional and subregional co-operation in the field of energy and a shift towards a more forthcoming approach by Governments having the capacity to do more for the energy-deficient developing countries. Different views were expressed as to the institutional and financial arrangements that might be devised for translating recommendations of support into

reality but it was the broadly agreed view that, thanks largely to the momentum generated by the Conference and to the policies of some Governments, a beginning had been made in a process that should contribute to relieving the situation of the developing countries affected by the current crisis.'

113. A widely expressed opinion was that new and renewable sources of energy offered a useful alternative to conventional sources and might replace these in certain uses. Caution was counselled by some delegations against the temptation to be excessively enthusiastic about the potential of non-conventional sources of energy, for (they said) this potential was regarded as limited in practical scope in the near future. At the same time, they expressed full understanding of the often desperate plight of the rural population in certain energy-deficient developing countries for which recourse to new and renewable sources of energy was the only possible choice. It was generally recognized that the oil-importing developing countries merited special treatment, particularly those in which the energy situation had assumed dramatic proportions.

114. The statements of the majority of delegations reflected a widespread recognition that energy was of vital importance to the future economic and social situation of mankind. It was acknowledged that the era of cheap and readily available energy had come to an end.' Most delegations emphasized the need for a transition from dependence on depleting petroleum reserves to increasing recourse to alternative sources of energy to meet future requirements.' Greater efficiency in energy use and conservation had to be achieved. The necessity was also emphasized for rationalizing the whole process of the energy transition.' Many speakers stressed the dramatic impact of increased energy prices on the economies of energy-deficient developing countries.

115. In some regions of the world, as was pointed out by many representatives, there exists established machinery for regional co-operation. The countries of Latin America emphasized the important role which the Latin American Energy Organization was playing in the region in dealing with energy questions. The representatives of some African countries cited as an example of subregional co-operation the efforts of the Southern Africa Development Co-ordination Conference. The representatives of the countries members of The Association of South-East Asian Nations stated that they had adopted a policy agreement concerning energy questions arising in their region. Representatives of socialist countries of Eastern Europe referred to the activities of the Council for Mutual Economic Assistance as an example of a fruitful development of international co-operation in the field of energy production, to the long-term purpose-oriented programme of socialist countries for the economically justified development of traditional types of fuel, and accelerated development and utilization of new sources of energy. For their part, the representatives of the countries members of the European Community underlined their present joint financial support for international co-operation in the energy field and their determination to increase their joint contribution in the field of new and renewable sources of energy. Regionally based co-operative activities in the energy sector by Commonwealth countries were noted by other delegations.

116. A number of representatives considered that the regional commissions should be strengthened in order to be able to promote effective regional programmes of co-operation in the development and use of non-conventional sources of energy.

117. Representatives of energy-deficient developing countries drew attention to the effects of high prevailing international prices for some conventional sources of energy on their economies and on national development plans. Even though the consumption of hydrocarbon fuels by these countries accounted for but a fraction of that of the industrialized countries, the impact of the high cost of imported fuel - on which they were vitally dependent - on their weak economies was far greater than in the industrialized nations. The scope for conservation and saving of fuel was extremely limited, and through the chain of transport and distribution the high prices were propagated to all sectors of the economy. However, it was generally acknowledged that all these countries benefited substantially from direct and indirect assistance of the oil-exporting developing countries. Hardly any branch of activity remained unaffected by the general rise in prices; the farmer had to pay more for hydro-carbon based fertilizers, irrigation by fuel-driven pumps became more costly, haulage charges increased, the industries had to pay higher charges for the energy they consumed and hence, in turn, raised the prices of their products. All these effects, the speakers stressed, bore most heavily on the developing countries. At the same time, because the financial resources that had to be used for paying for imports of energy accounted for a large share of the export earnings of many of these countries, they could not be devoted to the execution of projects which were essential to the modernization and advancement of the national economy and to the establishment of a sound infrastructure.

118. Many descriptions were given of schemes that were being carried out or contemplated for utilizing non-conventional energy. Reference was made to the potential - as yet largely untapped - of water courses in certain regions which could be harnessed for the generation of electricity, and to biomass, geothermal, solar and other unused or underutilized sources of energy that might supplement or replace the conventional sources on which most of the world had been relying in modern times. It was pointed out by some speakers that relatively simple improvements or refinements in existing equipment could greatly enhance its efficiency and hence lower the consumption of energy; examples cited were improved lubrication of moving parts of machinery, better insulation, and other methods of husbanding resources. Yet, they stressed, conservation would not eliminate the need for efforts by national authorities, supported by international institutions, to facilitate access to sources of energy that would lessen or eliminate dependence on conventional fuels.

119. Many speakers referred to the national measures taken or envisaged by the countries badly affected by the constraints of limited resources of hydrocarbons - and they added that all but a few countries were so affected, in order to stimulate the exploration and exploitation of indigenous sources of energy. They recognized the importance of these national efforts and the political determination inspiring them. The majority of the representatives expressed the view that it was primarily the responsibility of each Government to ensure the satisfaction of its country's energy demand and to formulate its own policies and programmes for this purpose, in conformity with the principle of the permanent sovereignty of States over their natural resources. A number of representatives stressed that, in the interest of international peace and peaceful co-operation, this principle should be scrupulously respected. They added that any breach of the principle had detrimental effects on relations between States and offended national rights and dignity.

120. Representatives of centrally-planned economy countries and some others considered that the success of the developing countries in the establishment of their national energy bases and the development of new and renewable sources of energy could only be achieved by implementing necessary social and economic changes based on planned development of national energy production as the major basis of industrialization and agricultural development, first of all through mobilization of internal resources, and also through attracting additional foreign assistance on a multilateral and bilateral basis, by exercising full national sovereignty over natural resources. The representatives of developed market economy countries and some others emphasized the potential role of the private sector as a partner in energy-related projects in developing countries, and the role of the banking system in the financing of projects.

121. Many speakers referred to the question of priorities in dealing with the existing energy situation and especially to the development and applicability of new and renewable sources of energy. It was generally recognized that no single source nor any single method of utilizing such energy was applicable in every circumstance. The representatives indicated that regional, national or local conditions or factors inevitably affected the order of priorities chosen by Governments. Among the topics mentioned by speakers as deserving high priority in future action, including action at the national level, were financial resources, the conservation of energy, the utilization of improved indigenous technology, the strengthening of the scientific and technological capacity of developing countries, transfer of applicable technology, research, training of manpower, special consideration for afforestation (particularly for fuelwood) in energy-deficient rural areas in developing countries. In addition, the view was frequently expressed that the exploitation, exploration and consumption of energy should be covered by the integral development plans of developing countries, taking into account the extent to which the country concerned was endowed with sources specified in General Assembly resolution 33/148. Other factors mentioned as possibly influencing the choice of energy alternatives were the political setting, and the extent to which the establishment of the new international economic order and North-South and East-West relations might be conducive to the expansion of international co-operation in the energy field.

122. It was widely agreed that appropriate mechanisms should be employed within the United Nations system to co-ordinate effectively the system's activities in promoting the development of new and renewable sources of energy and for implementing the action programme to be adopted by the Conference. Most of the delegations of developing countries expressed the opinion that an intergovernmental committee should be established with a strong mandate to give effect to the Nairobi Programme of Action. Many other delegations considered that an existing body should be designated for this function, possibly with certain modifications as to terms of reference and membership (closed or open-ended). Several representatives expressed the opinion that the Committee on Natural Resources might be entrusted with the responsibility for monitoring the implementation of the Nairobi programme and co-ordinating the activities arising out of it.

123. The representatives of most developing countries proposed that a new secretariat unit under the Director-General for Development and International Economic Co-operation should be established to provide the required secretariat services. The representatives of several developing countries were of the view that such a unit should be headed by an officer at senior level. Other

representatives were of the view that no new secretariat was required since existing secretariats could discharge these functions. Many representatives considered that the Division on Natural Resources and Energy could provide the requisite secretariat support and that the Administrative Committee on Co-ordination could effectively carry out the important co-ordinating function.

124. As regards the co-ordination of the activities of the organizations of the United Nations system in the field with which the Conference was concerned, many delegations expressed the view that there should be more effective co-ordination among the agencies, bodies and programmes of the system that had a direct interest in specialized knowledge of new and renewable sources of energy. To effect this inter-secretariat co-ordination an appropriate body should be designated within the United Nations system.

125. Many delegations suggested that ad hoc task forces should be established tailored to the requirements of specific tasks related to research, development, demonstration, application and utilization of new and renewable sources of energy on a sectoral or cross-sectoral basis. Such task forces would be constituted by organs, organizations and bodies of the United Nations system and other appropriate intergovernmental organizations.

126. Some representatives considered that a consultative mechanism, comprising donor countries and United Nations bodies and other international institutions might be established which would pool information and encourage the mobilization of resources for international co-operation in the development of new and renewable sources of energy. Such a mechanism would tend to eliminate duplication in development activities and might at the same time identify sound and viable projects.

127. A number of representatives, commenting on various suggestions regarding the possible establishment of new intergovernmental body to be responsible for monitoring the implementation of the programme of action, expressed certain reservations. They stated that their reservations were motivated, not by a misconception of the value of the programme of action and its recommendations, but by scepticism as to the efficiency of such a body and of its secretariat services.

128. The financial aspects of the implementation of the Nairobi Programme of Action were the subject of extensive comments and proposals. Although views differed as to the modalities, machinery and targets of the needed financial support, the prevailing trend of opinion was that for most energy-deficient developing countries, including the least developed among them, domestic energy resources would be unable to satisfy the domestic energy demand or to realize their justified aspirations for economic and social progress without concerted and co-ordinated external financial, economic, scientific and technical assistance.

129. The representatives of developing countries considered that the sources of finance for strengthening the capability of these countries, especially those adversely affected by the existing energy constraints, might include increased contributions by Member States to the United Nations system, voluntary contributions by these States, funds reallocated within the system, increased contributions to the resources of the World Bank and contributions to an energy affiliate of the World Bank that might be established.

130. Some representatives strongly supported the concept of concessional credit arrangements, whether on a bilateral, multilateral or regional basis, in support of programmes of developing countries for the exploitation of new and renewable sources of energy. Several delegations suggested that the existing international financial institutions should be strengthened and rationalized in order to enable them to support expanded investments in research and development in the field of new and renewable resources of energy and to grant to the developing countries, in particular the least developed among them, credit on favourable terms for the purpose of helping them to defray the cost of meeting their energy needs.

131. A considerable number of representatives called upon the Governments of countries in a position to do so to support, or to support more generously, the struggling economies of oil-importing developing countries that were particularly vulnerable to price movements in the international petroleum market. A number of representatives urged that not only developed countries but also the oil-producing developing countries in a position to do so should increase financial support for energy-deficient developing countries. In that context it was pointed out that the ratio of aid as a percentage of GNP from inter-alia to oil exporting developing countries was greater than the corresponding ratio of aid from the Developed countries. In addition, the developed countries were called upon to follow suit.

132. A number of delegations cited the target for official development assistance established in the International Development Strategy for the Third United Nations Development Decade by the General Assembly. The representatives of several developed market economy countries referred to promised or planned increases in the bilateral assistance of their Governments to developing countries, either through bilateral or through multilateral channels, for purposes related to energy, including new and renewable sources of energy.

133. The representatives of many developed market economy countries indicated that, in view of the prospective need for increased financial support for international action arising out of an agreed Nairobi programme, their Governments were prepared to consider favourably the strengthening of their existing bilateral and multilateral aid programmes with an emphasis, in response to priorities of recipient countries, on aid for the development of new and renewable sources in the countries with special needs.

134. A number of delegations of developing countries expressed the view that any funds that might be made available or established should not be restricted to the financing of activities related solely to specific energy sources, nor should specific financial sub-targets or sectoral targets be fixed for such funds.

135. The representatives of most developed market economy countries said that it was to be hoped that the financial and other assistance accorded to developing countries by developed market economy countries would be matched by assistance on a comparable scale by other countries in a position to give such support to the international effort envisaged in the programme of action.

136. The representatives of oil-exporting countries explained that the increase in the price of oil was due to overconsumption in industrialized countries and increasing scarcity and to increased prices of other depletable commodities. They also stated their sovereign right to establish equitable prices for natural resources. Further, oil resources would one day be exhausted. In spite of the

accumulation of monetary surpluses, some oil-exporting countries were in the same position as many other developing countries so far as their indigenous capacity to develop alternative sources of energy was concerned. These representatives said that already their countries were making every effort to aid developing countries hard hit by the increase in the price of oil. They proposed that, in any new programme of financial co-operation, the developed countries should assume their share of contributions.

137. Reference was made to the efforts undertaken by two oil-producing developing countries in order to co-operate with other developing countries in their region through the provision of assured supplies of hydrocarbons as well as long-term finance for development projects, particularly projects relating to energy development. It was also stressed that such co-operation efforts might be emulated by others and should be further strengthened.

138. Reference was also made to a proposal for the establishment of an OPEC Development Bank with a capital of \$25 billion which would be at the disposal of developing countries. In addition, it was stated that the members of OPEC had declared their readiness to support the energy account of UNDP through the OPEC Fund and were willing to expand their contribution to that account should others also be prepared to do so.

139. Many representatives expressed the opinion that the existing United Nations system was capable of contributing constructively to implementing the Nairobi Programme of Action adopted by the Conference by organizing mutually beneficial and equal co-operation in the interests of all countries, as well as rendering effective aid to the developing countries in strengthening their national energy and in developing new and renewable sources of energy, under conditions of efficient co-ordination of all organs of the United Nations system and more efficient utilization of the existing resources and means, and elimination of all types of parallelism and duplication in the activities of the United Nations and its Secretariat.

140. Many representatives expressed the opinion that the World Bank and the energy affiliate which they expected to be established might be valuable instruments in channelling financial resources to developing countries for energy-related purposes and allocating those resources in the light of the criteria spelt out in the Nairobi programme of action.

141. A number of delegations announced the readiness of their Governments to increase their support for energy-related development projects, for the adaptation of indigenous technologies, for training programmes and technical services or for specific activities in certain regions, in particular in Africa, and activities connected with the fight against desertification. Several representatives reported that their Governments had committed concrete resources to the above-mentioned areas of co-operation.

142. A proposal made by the representative of a developing country was that consideration should be given to the formation of an international consortium of donors that would facilitate the mobilization of credit and allow the comprehensive planning and monitoring of the execution of the Nairobi programme.

143. Most delegations stressed the importance of technology transfer and adaptation in harnessing the potential of new and renewable energy in developing countries. The representatives of the developed market economy countries emphasized the important role of the private sector in this process. However, most of the representatives of developing countries stressed that developing countries needed to have access to technology on reasonable and equitable terms, and considered that developed countries, where most modern technology originated, had a special obligation and responsibility in respect of such transfers.

144. Several representatives mentioned the assistance given by non-governmental organizations to developing countries in the development of new and renewable sources of energy and noted the useful role which those organizations could play in this regard.

145. The representatives of several developing countries stated that their countries would be prepared to make available to other developing countries their experiences as well as technologies relating to new and renewable sources of energy. Many delegations proposed that access to such knowledge, information and technologies should be made available to all interested developing countries without restrictions.

146. The representatives of some developing countries said that the development of relevant technologies for new and renewable energy should not create in the developing countries a captive and lucrative market for the transnational corporations but should lead to joint ventures undertaken for the benefit of all parties concerned.

147. The representatives of developing countries emphasized the role and responsibility of developed countries in carrying out research and development in the field of new and renewable sources of energy and in ensuring the dissemination of the results of these efforts to the rest of the world, particularly to developing countries. Many representatives stressed to have access to information about new and renewable sources of energy. Some delegations recommended that an economic inventory of new and renewable sources of energy should be compiled which would present the state of the art of new and renewable sources of energy. Several representatives emphasized the need to strengthen or establish research centres in both developed and developing countries and training facilities for scientists and technicians.

148. The representatives of some Asian developing countries stressed that the development of new and renewable sources of energy should be strictly based on the specific conditions prevailing in the country concerned, such as social economic and technical conditions, local customs and habits, and the willingness of the population to accept the adjustment. As regards more advanced techniques, the most important thing was to train technical personnel, improve management, and solve problems as they arose, to formulate appropriate and suitable policies, enlist the full participation of the local population, improve information exchange and education in popular science, and a better understanding on the part of managers at all levels and the broad masses of the people. Governments should provide funds and technical assistances for these purposes.

149. Many representatives pointed out that before any new or renewable sources of energy could be efficiently exploited, a great deal of research, testing and evaluation would have to be undertaken. In this connexion several delegations supported a call for the establishment of a global energy research centre under the auspices of the United Nations. These and other delegations emphasized the importance of education and training in fields specially related to the practical exploitation of the potential of new and renewable sources of energy.

150. Many representatives stressed the importance of drawing up national energy plans and strategies, defining their objectives in terms of the needs of the individual countries and in the light of the potential availability of new and renewable sources of energy. Some of them suggested the formulation of a global energy policy that would mitigate the financial and technological vulnerability and the managerial weakness of developing countries during the period of transition.

151. Many representatives referred to the potential importance of new and renewable sources of energy for both urban and rural sectors and to the existing imbalances in the pattern of consumption as between the two sections in developing countries. They added that, in the absence of prompt action, the rural population in many of these countries which relied largely on fuelwood as the sole or almost the sole source of energy for cooking and heating would, before long, suffer, from an acute shortage of wood, as a consequence of indiscriminate felling of trees, failure to replant, progressive erosion of the land and poor management of the land and the environment. Some representatives drew particular attention to the relevance of new and renewable sources of energy to the situation of women, especially in rural areas. The urban population in many developing countries - often swollen by the exodus from the countryside of people wishing to escape from precisely those harsh conditions - had to pay the high prices for the kerosene, electricity and other forms of energy which were themselves propelled upwards by the steep rise in the world prices of petroleum. Hence, these representatives said, the economic circumstances in which both city folk and country people lived in some of the developing countries could in many cases be described as desperate.

B. Statements by representatives of organizations in the United Nations system and by observers for intergovernmental bodies

152. The Under-Secretary-General for International Economic and Social Affairs stated that the world had entered, almost unprepared, into a period of transition in which new and renewable sources of energy would have to play an increasingly important role. The lack of sufficient financial resources was likely to become a major constraint, and the achievements of the objectives of the programme of action would depend on deliberate initiatives in the area of financing, for which the main ingredient should be the additionality of resources, flexibility of modalities and continuity and convergence of efforts. From the broader social and cultural point of view, he stressed the need for the participation of women in the formulation of projects and programmes, so that they could benefit from and contribute to technical advances in the production and utilization of energy. He expressed the hope that the programme of action would take into due consideration the importance of popular participation and of women in particular.

153. The Under-Secretary-General in charge of the Department of Technical Co-operation for Development described the activities of the Department in the

field of conventional and non-conventional energy sources. The Department executed projects and also provided advisory services and training opportunities to developing countries in this field. Technical co-operation would have a pivotal role to play in translating the global possibilities of new and renewable sources of energy into tangible national actions. The conference was urged to adopt an effective programme of action to be undertaken individually and collectively by nations and to mobilize adequate resources for realizing it. Technical co-operation should be intensified in order to assess the energy potentials of developing countries, to develop energy plans within the framework of their own development objectives, to foster country-specific forms of non-conventional energy and to develop appropriate national institutional arrangements. He offered to place the expertise and experience of the Department at the disposal of the institutional mechanism established to implement the Nairobi Programme of Action, and added that appropriate arrangements would be made in the Department.

154. The Executive Director of the United Nations Centre for Science and Technology for Development described the opportunities presented by recent developments in science and technology which might contribute to the more efficient exploitation and utilization of new and renewable sources of energy. He mentioned that many of the principles and techniques relating to the application of science and technology to the development of new and renewable sources of energy were already available. One of the constraints had been the lack of concerted and significant efforts to mobilize the existing knowledge and direct them towards efficient and practical means of using renewable sources of energy. In this context, he explained the links between the goals of the Conference and the Operational Plan for the Implementation of the Vienna Programme of Action dealing with the policies and plans, the infrastructure, the choice, acquisition and transfer of technology, human resources, the financing system, the information system, the research and development activities and co-operation in the field of science and technology for development.

155. The Deputy Executive Secretary of the Economic Commission for Africa (ECA) stated that the solution of energy problems had a particular importance for the future of Africa. The world economy had suffered a grave shock in the quadrupling of oil prices in 1973-1974, and further increases in 1978-1979. The already precarious situation of African countries had further worsened. The costs of importing oil for African countries had increased from \$0.8 billion in 1973 to \$7.4 billion in 1980, an annual increase of about 37 per cent. Energy was becoming more expensive precisely at the moment when African countries needed more energy to meet the requirements of a growing population, industrialization, urbanization, agricultural development and the development of transportation. Energy systems should be appropriate to the African continent. The development of new and renewable sources of energy in the long run would help Africa to become self-sustaining. The need for new and renewable sources of energy on the African continent was obvious. Discussions had been organized within the ECA on these issues. A plan of action had been formulated calling for the development of new and renewable sources of energy, and measures such as the training of personnel and the establishment of institutes. The conference should take measures tending to increase aid to the developing countries in this area. The regional commissions must and could play an important part in implementing the Nairobi Programme of Action.

156. The Executive Secretary of the Economic and Social Commission for Asia and the Pacific (ESCAP) stated that the countries in Asia and the Pacific, though at various stages of development and with different resource endowments, shared a common feature in that they were about to enter a period of transition to energy systems which would be less dependent on oil and progressively more on new and renewable sources. The transition had to be so managed that it would result in substantial increases in the availability of energy to developing countries. The guidelines provided by the technical panels, appointed during the preparatory phase of the Conference, were invaluable in determining policies and measures for exploiting the considerable potential for new and renewable sources of energy in the ESCAP region. He pointed out the active interest that the regional commissions had been taking in new and renewable sources of energy and the enlarged role they could assume, particularly with the assistance of their regional centres concerned with the technological and socio-economic aspects of development. Adequate resources must, however, be made available to the regional commissions to enable them to play such an enlarged role.

157. The Executive Secretary of the Economic Commission for Western Asia (ECWA) said that the ECWA region was distinguished by the fact that most of its countries are situated within the sun-belt and enjoy more than 3,000 hours of sunlight a year, a fact that encouraged use of this major energy source. The countries of the region have long coastlines on the Mediterranean, the Red Sea, the Indian Ocean and the Gulf. ECWA's satisfaction at the holding of the Conference and at its constructive discussion of modes of action must not, in itself, be seen as a terminal point. Its decisions must rather be translated into practical measures imbued with the political will and the sincere intention for full co-operation between advanced and developing countries in order to ease the period of transition from the era of quasi-total dependence for energy on oil to one in which new and renewable sources of energy would contribute to alleviating the difficulties of these countries. Such measures should include the provision of all kinds of technical, financial and manpower-related assistance within the framework of the transfer, development and application of appropriate technologies for the exploitation of national resources related to new and renewable sources of energy. The importance of the role assumed by the regional commissions in strengthening this international co-operation and in following up the implementation of the recommendations and decisions which will emanate from the conference, should be emphasized.

158. The Executive Director of the United Nations Centre for Human Settlements (Habitat) stated that Habitat had made a comprehensive analysis of the availability, needs and technologies of various sources of energy for rural as well as urban settlements, both in developed and in developing countries. The analysis indicated the need for a long-term energy plan in every country within the framework of national development plans. Short-term crash programmes were also needed. The shortage of finance for infrastructure and for manufacture as well as for the purchase of equipment by the poor was serious. The Commission on Human Settlements at its fourth session and the Economic and Social Council at its second regular session of 1981 had endorsed five specific recommendations relating to energy for human settlements: (a) Settlement and energy policies should be closely co-ordinated as an integral part of over-all development policies; (b) Spatial patterns of existing and new settlements should be designed to conserve energy and to make greater use of renewable sources of energy; (c) Human settlements infrastructure, such as transportation networks, water supply system, sewerage,

utility systems and social services should be designed or redesigned so as to conserve energy; (d) Applied research should be undertaken to encourage the design, construction and maintenance of buildings and to choose building materials and technologies so as to promote greater use of renewable sources of energy; (e) Pilot projects should be implemented in a variety of climatic conditions in settlements of different sizes and in a variety of socio-economic situations in the urban and rural areas of various regions to promote the use of renewable sources of energy.

159. The Deputy Secretary-General of UNCTAD stated that the economic difficulties faced by developing countries were not transitory but reflected a number of deep-seated changes in the world economy, including changes in the field of energy. In this context, world-wide application of new and renewable energy technology assumed particular importance. Not only should access by developing countries to technology be improved through the establishment of an International Code of Conduct on the Transfer of Technology but greater financial resources should be mobilized to permit intensified R and D efforts in this area. Furthermore, the results of the research, particularly that undertaken with public funds, should not be monopolized by the private sector to the detriment of access by developing countries. Noting the link between the Nairobi Conference and the United Nations Conference on the Least Developed Countries in Paris in September 1981, he urged that particular attention should be given to the needs of the least developed countries.

160. The Administrator of the United Nations Development Programme stated that UNDP had increasingly supported the implementation of 393 energy projects in 90 developing countries in the past five years, with a total commitment of \$165 million. Of these projects, 190 were concerned with new and renewable sources of energy; 39 with conventional energy and 114 with energy planning, training and institution buildings. In order to expand energy programmes in priority areas and to provide more effective services to the developing countries served by the UNDP, it had initiated a survey of the needs of developing countries for technical co-operation. Another project involved the evaluation of the energy requirements of and development potentialities in 60 developing countries in collaboration with the World Bank. Assistance in the co-ordination of energy policies and development in the Caribbean region, and the training of qualified personnel, including a feasibility study (in co-operation with UNESCO), were under study. Another initiative involved mobilization of financial resources through the establishment of an "Energy Account", to fund energy programmes particularly in poor developing countries. He added that developing countries required expanded assistance in order to be able to adopt new energy policies and implement programmes for increased energy self-sufficiency, particularly through the exploitation of new and renewable sources, as heavy dependence on oil imports could not continue indefinitely.

161. The Executive Director of the United Nations Environment Programme (UNEP) pointed out that environmental protection was a prerequisite for the improvement of the quality of life and that environmental objectives and development goals were mutually supportive. He considered that an environmentally-sound energy policy should be based on: conservation by restrained and rational use of energy; establishment of appropriate energy mixes; and the development of new energy sources, especially renewable ones. Such a policy would be governed not only by available technical options but more substantially by political, socio-economic and

environmental considerations. He added that knowledge of the environmental impacts of production and use of fossil fuels and nuclear energy was more advanced than that about the impact of new and renewable sources of energy, and that concerted efforts should be made to assess the environmental effects of these sources of energy at an early stage of development. He called for accelerated research and development, through the mobilization of appropriate human and financial resources, in the field of renewable sources of energy, which could undoubtedly play an important role in meeting future energy needs, especially in rural areas of the developing countries.

162. The Executive Director of the United Nations Industrial Development Organization (UNIDO) pointed out the central role played by industry in the development and utilization of energy, including new and renewable sources of energy. He indicated that, of the total energy used in the world, 35 per cent was consumed directly by industry and another 50 per cent in the utilization of industrial products, and by capital and consumer goods (cars, household appliances, tractors, etc.). He further pointed out that, to attain the "Lima target", developing countries must be supplied with an additional energy input of about 4,800 M.toe per year (96 M.boe per day) between 1980 and 2000, bringing their total energy consumption in the year 2000 to about 6,500 M.toe per year. At least 50 per cent of this "energy gap" must be covered by new and renewable sources of energy. He mentioned the three main components of the UNIDO energy programme of assistance to developing countries, namely: "energy for industry", "industry for energy" and energy management. The first dealt with the development of an industrial pattern based on the local pattern of energy availability, since the development of energy-efficient industrial processes and products was an imperative. The second dealt with the development of a capability to produce equipment for the energy sector. The third covered national industrial energy planning, plant energy balances, and conservation and substitution of energy and optimization of its use.

163. The Deputy Executive Director of the United Nations Fund for Population Activities (UNFPA) said that the world's energy problems would soon become more serious, particularly in view of the rapid growth in population in the immediate future. In most developing countries population growth rates in the 1980s would be around 2 per cent a year, in some even around 3 per cent. Population growth of such a magnitude had to be taken into account in projecting the future energy needs of these countries. Rapid urbanization would greatly increase the demand upon energy resources. The development of new and renewable sources of energy could contribute to the creation of employment, the modernization of traditional societies, improvements of health and to raising the level of living in general, and so to a reduction of the rate of population growth. At the same time, it would contribute to the satisfaction of the energy needs created by population growth.

164. The representative of the United Nations Institute for Training and Research (UNITAR) underlined the need for all countries to consider both new and renewable sources of energy and conventional sources in drawing up their energy plans in the coming years. He also emphasized the importance of enhancing the development of small energy sources - whether small oil deposits, mini-hydro sites, small wind generators or other small energy sources. In the light of the limited funds at its disposal, the United Nations might find it particularly appropriate to promote small energy development, which required lesser amounts of capital and relied more on local resources. He also mentioned the establishment jointly by UNITAR and UNDP

of the International Information Centre on Heavy Crude and Tar Sands, in which governments, public enterprises, private companies and research institutions could participate. Such a structure could perhaps serve as a model for other United Nations activities in the energy field. He expressed the willingness of UNITAR to support fully the results of the Conference and to help implement its recommendations.

165. The Director-General of the International Labour Office, noting the Conference's emphasis on energy supply issues, focused attention on the other side of the energy equation: energy demand and more specifically the users of energy. Priority should be given to projects in the field of new and renewable sources of energy which provided the most positive social impact, e.g. through the creation of employment, generation of incomes and improvement of conditions of work and life. The participation of men and women in the development and implementation of energy policies and projects was essential, and he stressed the relevance of institutions adapted to society such as workers' organizations and co-operatives. The energy training challenge called for an immense and innovative response. Special attention should be given to the assessment of manpower and skill requirements, modular training methods, rural, vocational, and management training programmes, and the training of trainers.

166. The Director-General of the Food and Agriculture Organization of the United Nations (FAO) said that the present world food situation required the developing countries to undergo an "energy transition" from traditional low input farming systems to higher energy, high yielding modes of production to meet their food demand. Pending the large-scale use of renewable sources of energy, increased productivity of tropical agriculture like that of the temperate zone would continue to demand largely on an increased use of commercial energy. The firewood crisis called for emergency action in conjunction with massive planting of woodlots with quick-growing species as well as large-scale programmes of conservation and management of fuelwood resources. Agriculture itself could provide commercial energy, notably in the form of liquid fuel. However, the scope for the production of energy from agricultural crops was strictly limited. Other forms of biomass, such as the cellulose of trees and shrubs, might be more promising sources of energy.

167. The Director-General of the United Nations Educational, Scientific and Cultural Organization (UNESCO) stressed the vital importance of long-term energy supplies for the human community. The judicious and progressive utilization of new and renewable sources of energy was already feasible, but should benefit all mankind and not merely a few nations. UNESCO was endeavouring, within its fields of competence, to promote the use of such sources of energy as solar energy, tidal and wave power, biomass and other fuels of vegetable origin, with due regard for the protection of the environment. He stressed three points of special interest to UNESCO: training, the flow of scientific and technical information, and social and cultural aspects. The technical and practical training of research workers, engineers, technical personnel and others was the key to the mastery and exploitation of sources of energy. As regards information, he said that UNESCO was preparing an international information system which would pool all existing resources and services and would be at the disposal of any user. He expressed the hope that the Conference's recommendations would contribute to the realization of the universal ideals of progress, justice and peace.

168. The Secretary-General of the World Meteorological Organization (WMO) stressed the crucial role of meteorology in the quest for an optimum energy system, including the tapping of new and renewable energy sources. WMO and its predecessor, IMO, had been fostering international co-operation among meteorological services for more than a century and a great deal of work relating to energy had been accomplished, mainly through WMO Technical Commissions. WMO's contribution to the Conference consisted of two substantial Technical Notes on the meteorological aspects of the utilization of solar radiation and of wind as energy sources. The broad aim of the energy sector of the World Climate Programme, established in 1973, was to influence, by the provision of specialized climatological advice, the design of the future global energy system so that it would be optimized and its harmful effects minimized. WMO was undertaking a number of energy-related programmes, such as Education and Training, Techniques Transfer, Climate Applications Referral Systems, Applied Research and Development Programme, and Resource Assessment and Demonstration Projects, in addition to missions of experts to developing countries, training seminars, workshops and technical conferences.

169. The representative of the International Fund for Agricultural Development (IFAD) emphasized the importance of the transition from an era of inexpensive oil to that of recourse to new and renewable sources of energy, and called for an intensification of the research effort to accelerate the pace of the transition. In the meanwhile, the sharing of available sources of non-renewable resources of energy between nations and within nations had become a very important issue. Priority should be given to meeting the energy requirement of the rural population in developing countries, within the framework of comprehensive national energy policies, for agricultural and rural development. IFAD believed that it was possible to meet the energy needs of the rural poor on an economically sound basis if the production and distribution of energy were recognized as an essential part of rural development and carefully integrated with the institutional framework of rural development. Because of its focus on the rural poor, IFAD had paid special attention to institutional factors in rural development. It was therefore in a unique position to play a significant part in assisting its member countries to meet the energy needs of their rural poor, provided that its resources were augmented on an adequate scale for this purpose.

170. The Director-General of the International Atomic Energy Agency (IAEA) stated that the world possessed abundant energy resources, the exploitation of which depended on the application of the right technologies. He estimated that it might take about 25 years before new and renewable sources of energy could replace even a fraction of existing fossil fuels. While nuclear energy was being used extensively in several of the industrialized countries, it would probably have only limited application in most developing countries. At present, only four developing Member States of the IAEA (Argentina, India, the Republic of Korea, and Pakistan) had nuclear power plants in operation; additional plants were under construction or consideration in other developing countries. IAEA had been assisting developing Member States in reviewing their needs for both centralized and decentralized electricity supply systems in order to assess the scope for the possible use of nuclear power for electricity supply within the context of over-all development plans, as a substitute for fossil fuels, hydro and other sources of energy. The IAEA had also been providing assistance to Member States by developing and making available to them, mainly through publications and training courses, special methods for energy planning. Furthermore, the International Centre for Theoretical

Physics in Trieste, operated jointly by the IAEA and UNESCO, had been fostering research and providing training in fields of physics directly related to solar energy and various other forms of non-conventional energy.

171. The representative of the Commission of the European Communities said that the Conference offered a unique opportunity to agree, at the world level, on a message which closely concerned the future of our world and its peoples. The global energy strategy of the European Community was to ensure that economic growth should no longer be accompanied by an increasing demand for oil. At the same time, in the field of development, the European Community and its Member States were in the front rank among donors of aid for energy co-operation (\$275 million for the period 1975-1980, a fifth of which in support of alternative energies). Further opportunities were opening up in the context of the new Lomé Convention. The Community aimed to offer all developing countries with which it has association or co-operation agreements the fullest possible assistance in realizing the techniques and practical application of new and renewable energy sources; an extension of professional training and education activities; an extension of research projects for evaluating energy needs and resources in developing countries; the widest possible dissemination of the results of research and development programmes and associated demonstration projects in the field of alternative energies; and transfers of knowledge by proposing specific projects to be carried out in co-operation between countries and national and international organizations interested in the promotion of particular technologies. It was proposed that the Joint Research Centre of the European Communities should be shared between the Community and the African, Caribbean and Pacific (ACP) States in the specific field energy.

172. The representative of the Council for Mutual Economic Assistance (CMEA) referred to questions of multilateral co-operation among the CMEA member countries in developing new, effective methods of transforming solar, chemical, wind and geothermal energy into electrical, thermal and mechanical energy and in devising on this basis economical devices and installations. Experience was shared and assistance was rendered in the framework of the Council to less industrially developed socialist countries with a view to drawing closer and evening out economic, scientific and technological development levels of the CMEA member countries. As CMEA's contribution to the Conference, the CMEA Secretariat had prepared a publication entitled "New Sources and Conversion Methods of Energy, Problems and Prospects: Experience in Co-operation of the CMEA Member Countries", which had been distributed to the Conference participants. Moreover, the Conference had before it two more CMEA documents, submitted jointly with the ECE, concerning experience in multilateral co-operation of the CMEA member countries in applying methods of joint forecasting by interested CMEA member countries of the development of science and technology and forecasts in the field of new sources of energy.

173. The representative of the Inter-American Development Bank (IDB) stated that, historically, development had been made possible by an ample supply of oil at declining costs in real terms. In the years ahead, however, alongside higher energy costs there would be important problems in financing energy development. The Bank's estimated indicated that to maintain a rate of growth of about 6 per cent per year, its member countries alone would have to invest in energy development in the next ten years approximately US \$350 billion in

1980 US dollars. Of this total, about 60 per cent, or US \$21 billion annually would constitute expenditures in foreign exchange. The bank was keenly aware of its responsibility to provide as much support as it could to its member countries in the area of energy development. Accordingly, the bank had adapted a new energy policy giving high priority to the sector for both project financing and technical assistance operations. During the 1979-1982 operations cycle, 25 per cent of the bank's own resources, or approximately \$500 million per year, was being assigned to this sector and an even higher proportion was expected in subsequent years. As a catalyst and in addition to its direct lending, the bank's role of bringing together other lenders in the capital markets for the financing of large projects was being strengthened. As a development promotor, the bank would also make efforts to contribute to the orientation of broader sectorial objectives, policies and strategies, as well as to strengthen related national technical and financial capabilities. The bank would also pay special attention to projects emanating from the adopted programme of action, in particular those of the Latin American Energy Organization (OLADE), a unique institution in the world energy scene.

174. The observer for the OPEC Fund for International Development stated that the Fund, established in 1976, provided financial assistance to developing countries. The least developed countries had since 1978 received financial assistance from OPEC sources in excess of their entire incremental oil bills. Between 1978 and 1979, the incremental cost of the net oil imports of all the least developed countries had been about \$3 billion, while they had received over \$4 billion in ODA disbursements (mostly grants) from OPEC sources. The share of the Energy Sector in OPEC Fund project lending had steeply increased: from 27 percent in its first year of operation to 64 per cent in 1980. He suggested that the strengthening, restructuring and reorienting of international financial institutions should receive attention. Co-operation among developing countries - though no substitute for national action - was badly needed, as was international co-operation. The Fund was ready to consider the co-financing of energy projects, especially those related to the development of new and renewable energy sources in all low-income and middle-income developing countries. The Fund was considering the co-financing of a projected regional Solar Energy Institute in West Africa.

175. The observer for the Organization of Arab Petroleum Exporting Countries (OAPEC) stated that OAPEC believed that developing countries should receive priority in the supply of energy sources. The future energy requirements of the developing countries would be many times their present levels, while their proven conventional energy reserves were relatively low. The OAPEC area provided the world with about 16 per cent of its total energy consumption, while it owned only about 8 per cent of global energy resources. The present maldistribution of energy resources would get worse and might reach a stage where many oil-exporting developing countries would become net energy importers. The energy problems of the industrial countries had received more than their due share of attention compared with the urgent needs of developing countries. More attention and resources should be directed towards the energy and development needs of the less developed countries. The Conference should stress the need for adequate national and regional institutions with special reference to energy planning and development. Another important aspect was the recognition that all forms of energy sources were needed for development and that there should be no institutional division between conventional and new and renewable sources of energy.

176. The representative of the Latin American Energy Organization (OLADE) described the collective efforts made in Latin American to strengthen regional integration, in the context of which OLADE had been established to act as a consultative forum and to support joint action by its member countries in the field of energy. Recognizing that hydrocarbons would continue to play a dominant role for the rest of the century and that the transition to the post-petroleum era would be difficult and expensive, he stated that what was needed was a world-wide mobilization of resources and talent and that, hence, it was also urgent to promote the development of new and renewable sources of energy, chiefly in order to satisfy the demands of the world's underprivileged - mainly rural - population groups. He invited other developing regions to form their own energy organizations.

C. Consideration of draft resolutions and decisions

177. At the conclusions of the general debate, the Conference considered a number of draft resolutions and draft decisions.

178. At the 15th plenary meeting, on 19 August 1981, the representative of Colombia introduced a draft resolution entitled "Integration of the energy strategy with soil, water and forest policies" (A/CONF.100/L.2) which read as follows:

"The Conference of the United Nations on New and Renewable Sources of Energy,

"Considering that the renewable energy sources most promising for developing countries - hydroelectric power and biomass of plant origin - depend on a sound environmental policy of soil, water and forest conservation and management.

"Considering that soil erosion and deforestation in many developing countries seriously affect possibilities of hydroelectric power generation and the utilization of biomass of plant origin,

"1 Invites Member Governments in their development plans to consider energy policy in close relation with general natural resource policies and, in particular, with soil, water and forest policies;

"2. Urges Governments to endorse the soil, water and forest policies sponsored by UNEP, FAO, UNESCO and other United Nations bodies."

179. At the 16th plenary meeting, on 21 August 1981, the representative of Colombia, on behalf of Australia, China and Colombia, introduced a revised text of the draft resolution (A/CONF.100/L.2/Rev.1), which was adopted by the Conference. For the final text, see chapter I B above, resolution 1.

180. At the same meeting the representative of Colombia withdrew the draft resolution entitled "Local planning of energy policy" (A/CONF.100/L.3) which he had introduced at the preceding meeting on behalf of Colombia and Kenya and the text of which had read as follows:

"The United Nations Conference on New and Renewable Sources of Energy,

"Bearing in mind the importance of incorporating energy strategy in development plans and of promoting the participation of urban and rural communities in the formulation and implementation of such plans,

"Considering that one of the most significant aspects of new and renewable sources of energy, in particular solar and wind energy, small-scale hydroelectric power plants and the utilization of biomass, is the possibility of decentralizing energy sources and utilities,

"Recognizing therefore the need to promote the adoption of energy planning policies at the municipal and local level, through co-ordinated action by interested United Nations agencies and bodies,

"1. Invites member States to consider the expediency of adopting energy planning policies at the municipal and local community level;

"2. Requests the competent United Nations bodies and, in particular, the United Nations Environment Programme and the United Nations Centre for Human Settlements to promote energy planning policies at the local and municipal level through:

"(a) The development of models and methods for integrated planning at the local community level including evaluation of potential resources and development of new and renewable sources of energy;

"(b) The promotion of studies and dissemination of relevant information;

"(c) Co-operation with competent United Nations bodies in assisting States which request such assistance in the formulation of local policies for planning new and renewable sources of energy;

"(d) Supporting, at the request of Governments, programmes for the training of local officials in subjects related to energy planning at the local level, with the co-operation of universities and public administration schools;

"(e) Organization of national and regional seminars for the purpose of defining methods and formulating models of local and municipal planning and integrating them in the national plans."

181. At the 15th plenary meeting, on 19 August 1981, the representative of Morocco, on behalf of Iraq, Morocco and Pakistan, introduced a draft resolution entitled "Right of nations to develop and control non-fossil energy resources" (A/CONF.100/L.4/Rev.1).

182. At the 16th plenary meeting, on 21 August, the Conference adopted the draft resolution by a roll-call vote of 61 votes to 1, with 26 abstentions. 18/

The result of the vote was as follows:

In favour: Afghanistan, Angola, Argentina, Bahrain, Bangladesh, Benin, Bhutan, Brazil, Bulgaria, Burundi, Byelorussian SSR, China, Comoros, Congo, Cuba, Cyprus, Czechoslovakia, Democratic People's Republic of Korea, Democratic Yemen, Egypt, Ethiopia, Gabon, German Democratic Republic, Ghana, Guinea, Guyana, Hungary, India, Indonesia, Iraq, Kenya, Kuwait, Madagascar, Malaysia, Mali, Mexico, Morocco, Niger, Oman, Pakistan, Poland, Portugal, Romania, Rwanda, Saudi Arabia, Senegal, Seychelles, Somalia, Sri Lanka, Sudan, Syrian Arab Republic, Tunisia, Turkey, Ukrainian SSR, Union of Soviet Socialist Republics, United Republic of Tanzania, Upper Volta, Venezuela, Yugoslavia, Zaire, Zambia.

Against: Israel.

Abstaining: Australia, Austria, Belgium, Botswana, Canada, Denmark, Finland, France, Germany, Federal Republic of, Greece, Guatemala, Iceland, Ireland, Ivory Coast, Japan, Luxembourg, Malawi, Netherlands, New Zealand, Norway, Sweden, Switzerland, United Kingdom of Great Britain and Northern Ireland, United Republic of Cameroon, United States of America, Uruguay.

For the final text see chapter I B above, resolution 2.

183. At the 15th plenary meeting, on 19 August 1981, the representative of Morocco, on behalf of Iraq, Morocco and Pakistan introduced a draft resolution entitled "Aggression against natural energy resources" (A/CONF.100/L.5/Rev.1) which read as follows:

"The United Nations Conference on New and Renewable Sources of Energy,

"Reiterating the necessity of abiding by the United Nations Charter and international law, which confirm the illegality of any action taken by the occupying authorities to change the nature of occupied territories,

"Recognizing that the Israeli project for linking the Mediterranean with the Dead Sea through a water canal constitutes an illegal act infringing on the sovereign rights of the Palestinian people,

18/ The representatives of Algeria, Cape Verde, Jordan, Nigeria, the Philippines, the Republic of Korea and Zimbabwe stated subsequently that, had they been present at the time of the vote, they would have voted in favour. The representative of Italy stated subsequently that, had he been present at the time of the vote, he would have abstained. For statements in explanation of vote on this and other draft proposals see paras. 199 to 223 below.

"1. Strongly denounces Israel for its project and condemns this aggression against the legitimate national rights of the Palestinian people and their occupied land;

"2. Calls upon Israel to desist from implementing its project."

184. At the 16th plenary meeting, on 21 August 1981, the representative of Morocco, on behalf of the same sponsors, introduced a revised draft resolution (A/CONF.100/L.5/Rev.2), which was adopted by the Conference by a roll-call vote of 63 votes to 1, with 33 abstentions. 19/ The result of the vote was as follows:

In favour: Afghanistan, Algeria, Angola, Argentina, Bahrain, Bangladesh, Benin, Bhutan, Brazil, Bulgaria, Burundi, Byelorussian SSR, Chad, China, Comoros, Congo, Cuba, Cyprus, Czechoslovakia, Democratic People's Republic of Korea, Democratic Yemen, Djibouti, Egypt, Ethiopia, German Democratic Republic, Ghana, Guinea, Guyana, Hungary, India, Iraq, Kenya, Kuwait, Libyan Arab Jamahiriya, Madagascar, Malaysia, Mali, Mexico, Morocco, Niger, Oman, Pakistan, Philippines, Poland, Romania, Rwanda, Saudi Arabia, Senegal, Seychelles, Somalia, Sudan, Suriname, Syrian Arab Republic, Tunisia, Turkey, Ukrainian SSR, Union of Soviet Socialist Republics, United Republic of Tanzania, Upper Volta, Venezuela, Yemen, Yugoslavia, Zaire.

Against: Israel.

Abstaining: Australia, Austria, Belgium, Botswana, Canada, Colombia, Denmark, Ecuador, Finland, France, Gabon, Germany, Federal Republic of, Greece, Guatemala, Iceland, Ireland, Ivory Coast, Jamaica, Japan, Luxembourg, Malawi, Netherlands, New Zealand, Norway, Papua New Guinea, Portugal, Spain, Sweden, Switzerland, United Kingdom of Great Britain and Northern Ireland, United Republic of Cameroon, United States of America, Uruguay.

185. For the final text, see chapter I B above, resolution 3.

186. At the 15th plenary meeting on 19 August 1981, the representative of Pakistan introduced a draft decision entitled "Right of countries to transfer of technology" (A/CONF.100/L.6) which read as follows:

"The Conference agrees that it is the sovereign right of all countries, particularly the developing countries, to explore, acquire and obtain the transfer of technology relating to all kinds of non-fossil fuels, and to use and control it without political constraints or fear of aggression from any other State Member of the United Nations."

19/ The representatives of Indonesia, Jordan, Nigeria, Sri Lanka and Zimbabwe stated subsequently that, had they been present at the time of the vote, they would have voted in favour. The representative of Italy stated subsequently that, had he been present at the time of the vote, he would have abstained.

187. At the 16th plenary meeting on 21 August, the Conference had before it a revised text of the draft decision (A/CONF.100/L.6/Rev.1). The Conference adopted the revised draft decision by 60 votes to none, with 36 abstentions. For the final text, see chapter I B above, decision 2.

188. At the 15th plenary meeting, on 19 August 1981, the representative of Zimbabwe, on behalf of Algeria, Angola, Benin, Botswana, Burundi, Cape Verde, Chad, Congo, Djibouti, Egypt, Ethiopia, Gabon, Ghana, Guinea, Ivory Coast, Kenya, Lesotho, Liberia, Libyan Arab Jamahiriya, Madagascar, Malawi, Mali, Mauritania, Morocco, Mozambique, Niger, Nigeria, Rwanda, Senegal, Seychelles, Somalia, Sudan, Swaziland, Uganda, United Republic of Cameroon, United Republic of Tanzania, Tunisia, Upper Volta, Zaire, Zambia and Zimbabwe, introduced a draft resolution entitled "Implementation of the Lagos Plan of Action on New and Renewable Sources of Energy" (A/CONF.100/L.7) which read as follows:

"The United Nations Conference on New and Renewable Sources of Energy meeting in Nairobi, Kenya, from 10 to 21 August 1981,

"Referring to the Lagos Plan of Action, chapter XI on Energy, reproduced in United Nations document A/S-11/14 of 21 August 1980, dealing particularly with the development of new and renewable sources of energy, which was adopted at the second extraordinary session of the Assembly of Heads of State and Government of the Organization of African Unity (OAU) in April 1980,

"Noting the decisions contained in the Lagos Plan of Action, particularly the establishment of an African Energy Commission and an African Energy Development Fund for the implementation of the Plan in the field of new and renewable sources of energy,

"Recognizing the need to strengthen existing efforts in the development of new and renewable sources of energy,

"Calls on the United Nations organs and institutions and other international bodies to give full financial and technical support for the development of new and renewable sources of energy in Africa and further urges Governments and the international community to do the same."

189. At the 17th plenary meeting, on 21 August, the representative of Zimbabwe, on behalf of the same sponsors and of the following additional sponsors: Brazil, Colombia, Cuba, Dominican Republic, Ecuador, Guyana, India, Indonesia, Jamaica, Nepal, Pakistan, Philippines, Peru, Sri Lanka, Suriname, Uruguay and Venezuela, introduced a revised text of the draft resolution (A/CONF.100/L.7/Rev.1) entitled "Implementation of the Lagos Plan of Action and other regional plans in Asia and Latin America on new and renewable sources of energy". In introducing the revised draft, he further orally revised it by inserting the words "institutions and" before the words "other international bodies" in operative paragraph 1 of part I of the draft resolution.

190. The Conference adopted the revised draft resolution, with the oral revision, without a vote. For the final text see chapter I B above, resolution 6.

191. After the adoption of this draft resolution, the representative of Uruguay, speaking on behalf of the Latin American countries members of the Latin American Energy Organization (OLADE), stated that, in keeping with the spirit of the Conference and with the Declaration of San José and the Lima Agreement, these countries were committed to OLADE as the regional instrument for the development of energy and for giving effect to the Nairobi Programme of Action. They looked to the international community for support and hoped that it would encourage the flow of financial and technological resources to existing and future regional bodies. Inasmuch as the organization, planning, research, demonstration and large-scale development of new and renewable sources of energy constituted a task exceeding the capability of individual countries, it was the joint and autonomous responsibility of the regions, with the support of the international community to channel the national and external efforts of the countries through appropriate bodies.

192. At the 15th plenary meeting on 19 August 1981, the representative of Zimbabwe, on behalf of Algeria, Angola, Benin, Botswana, Burundi, Cape Verde, Chad, Congo, Djibouti, Egypt, Ethiopia, Gabon, Ghana, Guinea, Ivory Coast, Kenya, Lesotho, Liberia, Libyan Arab Jamahiriya, Madagascar, Malawi, Mali, Mauritania, Morocco, Mozambique, Niger, Nigeria, Rwanda, Senegal, Seychelles, Somalia, Sudan, Swaziland, Tunisia, Uganda, United Republic of Cameroon, United Republic of Tanzania, Upper Volta, Zaire, Zambia and Zimbabwe, introduced a draft resolution entitled "New and renewable sources of energy in Namibia" (A/CONF.100/L.8) which read as follows:

"The United Nations Conference on New and Renewable Sources of Energy, meeting in Nairobi, Kenya, from 10 to 21 August 1981,

"Recalling the provisions of the Charter of Economic Rights and Duties of States, and in particular the sections pertaining to the permanent sovereignty of a State over its natural resources,

"Further recalling Decree No. 1 of 27 September 1974 of the United Nations Council for Namibia protecting the natural resources of Namibia,

"Concerned about the continuous aggressive acts by the Fascist South African régime on the territory and people of Angola,

"Recognizing that the South West Africa People's Organization is the sole and authentic vanguard for the liberation of the people of Namibia,

"1. Strongly condemns the plunder and illegal exploitation of Namibian energy resources by the South African régime and other countries;

"2. Deplores all military activities in Namibia and Angola, which are having serious ecological consequences, thereby limiting the future capacity of the peoples of Namibia and Angola to develop to the full their potential for the New and Renewable Sources of Energy;

"3. Urges all Member States to respect the provisions of Decree No. 1 of the United Nations Council for Namibia;

"4. Demands the complete and unconditional withdrawal of all South African troops from the occupied Angolan Provinces of Cunene and Kuando Kubango."

193. Introducing the draft resolution, the representative of Zimbabwe orally revised the text by replacing the words "other countries" in operative paragraph 1 by the words "multinational corporations" and by inserting the words "South African" before the words "military activities" in operative paragraph 2.

194. At the 16th plenary meeting on 21 August the representative of Zimbabwe, on behalf of the sponsors, further orally revised the text by replacing the words "the sections" in the second preambular paragraph by "article II" and adding the words "and General Assembly resolution 626 (VII) of 21 December 1952" at the end of that paragraph.

195. The Conference adopted the draft resolution, as orally revised, by 77 votes to none, with 24 abstentions. For the final text see chapter I B above, resolution 4.

196. At the 15th plenary meeting, on 19 August 1981, the representative of India, on behalf of Colombia, India, Kenya, Rwanda, Tunisia and Zimbabwe, introduced a draft resolution entitled "New and renewable sources of energy in the context of rural development" (A/CONF.100/L.9) which read as follows:

"The United Nations Conference on New and Renewable Sources of Energy,

"Recognizing the importance of urgent action to meet the energy requirements of rural communities in vast areas of the world,

"Noting that growing population and increasing pressure on land on account of developmental activities have led to denudation of forests with consequent crisis of fuelwood and ecological damage in several developing countries,

"Noting further that various renewable energy technologies have been developed and are being developed which could increasingly meet the household, agricultural and industrial energy requirements of rural communities,

"1. Urges immediate acceleration of programmes of afforestation with a view to significantly enhancing the production and availability of fuelwood and in seriously affected areas, to achieve a fivefold increase in annual tree-planting rates by the year 2000;

"2. Urges also the acceleration of programmes for the development and widespread utilization of other renewable energy sources such as biogas, wind, solar, hydro and geothermal, with a view to reduce the pressure on fuelwood supplies and also to improve the standards of living in rural areas;

"3. Calls upon all countries, the United Nations system, and international financial institutions to fully encourage, support and promote programmes mentioned in paragraphs 1 and 2 above in the developing countries."

197. At the 16th plenary meeting, on 21 August, the Conference had before it a revised text of the draft resolution (A/CONF.100/L.9/Rev.1) sponsored by Angola, China, Colombia, India, Kenya, Nepal, Philippines, Rwanda, Sweden, Tunisia and Zimbabwe. The Conference adopted the revised draft resolution without a vote. For the final text, see chapter I B above, resolution 5.

198. After the voting on the draft resolutions and decisions in question had been completed, a number of representatives made statements at the 16th plenary meeting on some or all of the draft resolutions: A/CONF.100/L.4/Rev.1 entitled "Right of nations to develop and control non-fossil energy resources"; A/CONF.100/L.5/Rev.2 entitled "Aggression against natural energy resources"; A/CONF.100/L.8 entitled "New and renewable sources of energy in Namibia"; and draft decision A/CONF.100/L.6/Rev.1 entitled "Right of countries to transfer of technology".

199. Statements were made by the representatives of Zimbabwe, Israel, India, Uruguay, Indonesia, China, Colombia, Syrian Arab Republic, Italy, Nigeria, Rwanda, Algeria, Philippines, Cape Verde, Jordan, Iceland (on behalf of the Nordic countries), Ivory Coast, United Kingdom of Great Britain and Northern Ireland (on behalf of the States members of the European Community), United States of America, Austria, Japan, Australia, Republic of Korea, Canada, Kuwait, United Republic of Cameroon, Switzerland and Sri Lanka.

200. In a statement made in explanation of his delegation's vote on draft resolution A/CONF.100/L.4/Rev.1, the representative of Israel said that the Conference had been called to discuss new and renewable sources of energy. Its mandate did not include political matters, for which other United Nations forums existed, notably the Security Council and the General Assembly. The limited scope of the Conference's mandate was set forth in paragraphs 2 and 3 of General Assembly resolution 33/148. Accordingly, draft resolution A/CONF.100/L.4/Rev.1 was not only irrelevant to the concern of the Conference but also constituted a blatant act of politicization which violated its non-political mandate.

201. He stated that the draft resolution affirmed the right of nations, specifically of Iraq, to establish scientific projects and facilities pertaining to the development and utilization of all sources of energy, including nuclear energy. The sponsors of the draft resolution had not bothered to reaffirm other rights of nations, e.g., those included in paragraph 4 of Article 2 of the Charter of the United Nations, which had been systematically violated by Iraq during more than 30 years, in that it did not consider Israel as a State but as a deformed entity.

202. Realizing the weakness of their arguments the sponsors had found it appropriate to warn against the so-called military nuclear joint activities between Israel and South Africa. The representative of Israel pointed out that figures of South Africa's total international trade, based on latest trade statistics of the International Monetary Fund, showed that Israel accounted for a mere two-fifths of 1 per cent of the total. Virtually every nation in the world was represented in the other 99.6 per cent, among them countries sponsoring the draft resolution. Israel had denied allegations of nuclear co-operation, with regard to which no evidence had been adduced. Furthermore, on 14 September 1979, in an official communication to the Security Council, Israel had reconfirmed its earlier undertakings, that it would comply with Security Council resolution 418 (1977), and accordingly Israel would not provide South Africa with arms or related materials of all types. These assurances had been reconfirmed again on 23 June 1980, in another letter to the Security Council Committee established by resolution 421.

203. In conclusion, he stated that his delegation had voted against the draft resolution A/CONF.100/L.4/Rev.1 because the draft was irrelevant to the concerns and beyond the mandate of the Conference, because it was based on false and biased assumptions, and because the singling out of Israel for condemnation conflicted with the very purpose of those who sincerely wished to eliminate any form of discrimination.

204. In a statement in explanation of its vote on draft resolution A/CONF.100/L.4/Rev.1, the delegation of India said that it had voted in favour of the draft resolution in order to show its Government's solidarity with the Government and the people of Iraq who had been victims of unprovoked aggression by Israel. The Israeli attack on Iraq's nuclear facilities on 7 June 1981 had been a clear violation of the United Nations Charter and had threatened the maintenance of international peace and security. This act of aggression deserved appropriate action by the Security Council, the principal organ for the maintenance of international peace and security. In the Indian delegation's considered opinion, Security Council resolution 487 of 19 June 1981 fell short of deterring Israel from further acts of aggression against its Arab neighbours. While voting for the draft resolution adopted, the delegation of India wished however to clarify its position with regard to the phrase at the end of the second preambular paragraph: "... and consistent with the internationally accepted objectives of preventing nuclear weapons proliferation ...". The internationally accepted objectives of preventing nuclear weapons proliferation related both to horizontal and vertical proliferation. This was explicitly stated in the final document of the first session of the General Assembly devoted to disarmament, held in 1978. Unfortunately, the text of the draft resolution as adopted did not state this provision clearly and explicitly.

205. In a statement in explanation of his delegation's vote on draft resolution A/CONF.100/L.5/Rev.2, made before the vote, the representative of Israel referred to previous statements made by his delegation concerning the projected water conduit from the Mediterranean to the Dead Sea. Since the draft resolution did not present any factual data to sustain the allegations of illegality and aggression, he assumed that the allegations were based on the arguments put forward by the Permanent Representative of Jordan to the United Nations in a letter addressed on 10 April 1981 to the Secretary-General and circulated as a document both of the General Assembly (A/36/180) and of the Security Council (S/14432). The representative of Israel stressed that the project would be of great advantage to the area, supplying economical and pollution-free energy in years to come. Israel's largest chemical industrial complex, as well as hotels and tourist development projects, were situated on the shores of the Dead Sea. They were all at the same level as the projected Jordanian potash plant. The sea level was to be raised so as to suit the crest levels of the dikes of both the Israeli Dead Sea Works and the Jordanian potash plant. If only for clear reasons of self-interest, Israel had no intention whatsoever of flooding this level: existing and projected dikes and dams would provide full protection. The possible effects (if any) on the composition and chemical balance of the waters of the Dead Sea would be negligible. Large-scale work was due to commence in about two years' time. At its maximum level, in the year 2012, the level of the Dead Sea would only reach the level prevailing before the use of Yarmuk and Sea of Galilee waters for irrigation by Jordan and Israel years ago.

206. Proceeding, he said that the letter of the Permanent Representative of Jordan erroneously referred to the flooding of the Jordan Valley and of sites along the River Jordan. In fact, the projected conduit would have no bearing whatsoever on the Jordan Valley. Also, contrary to a claim in the Jordanian letter, the conduit would not traverse "the breadth of the occupied West Bank": without going into a discussion as to the legal status of the area, the representative of Israel noted that the planned conduit would nowhere touch the area of Judaea and Samaria (the West Bank). As regards the Gaza Strip, the claim that the conduit would lead to "acquisition of territories, confiscation of properties, depopulation of whole areas" etc., was similarly without merit. No more was involved than the laying, deep under the ground, of a pipeline approximately five metres in diameter. The pipeline would in no way harm the population of the Gaza Strip or their livelihood, nor would it affect the quality of their water supply.

207. He added that nature had endowed the area with remarkable features of geography making it possible to produce clean and cheap energy. Jordan itself was aware of these opportunities, for otherwise it would not have presented the idea of building a similar project, the Red Sea-Dead Sea link, mentioned in paragraph 5.2.3 of the Jordanian National Report, document A/CONF.100/NR/61.

208. The representative of Israel reiterated his country's willingness to co-operate with Jordan in the projected enterprise for the common benefit of all the inhabitants of the area. Instead of calling on the parties concerned to co-operate the Conference had, regrettably, found it appropriate to denounce Israel.

209. The representative of Uruguay stated that his delegation had abstained in the votes on draft resolutions A/CONF.100/L.4/Rev.1, L.5/Rev.2 and L.8 on the grounds that the content of those draft resolutions was extraneous to the purpose and mandate of the Conference as defined in General Assembly resolution 33/148 of 20 December 1978. Nevertheless, he pointed out that at the meeting of the International Atomic Energy Agency, held not long before in Vienna, Uruguay had condemned Israel's attack on the Iraqi Nuclear Research Centre.

210. The representative of Colombia stated that his delegation had abstained in the votes on draft resolutions A/CONF.100/L.4/Rev.1, L.5/Rev.2 and L.8 because it had not received instructions on the subject and because the issues raised in those drafts were beyond the scope of the mandate of the Conference. He added that the Government of Colombia had defined and would define its position in the General Assembly - the appropriate forum for considering the matters mentioned - in conformity with the tradition of the Colombian State which advocated the peaceful settlement of disputes and respect for international law and for sovereignty of States.

211. The representative of Rwanda, explaining his vote on Draft Decision A/CONF.100/L.6/Rev.1, stated that he had abstained in the vote on the revised draft decision because he had not fully understood the import of the revisions made in the text.

212. The representative of Iceland, speaking on behalf of Denmark, Finland, Norway, Sweden and Iceland, stated that the abstentions of the delegations of these countries in the votes on the four draft texts in question (A/CONF.100/L.4/Rev.1, L.5/Rev.2, L.6/Rev.1 and L.8) were not attributable to their positions with respect to the substance of the drafts. Their positions on the issues involved were

well-known. In particular, there could be no doubt about the support of these delegations for Security Council resolution 487 of 19 June 1981 or their opposition to South Africa's illegal occupation of Namibia. The reason for their abstentions was that in their opinion the Conference was not the proper forum for the consideration of the subject-matters concerned. They held the view that questions of a political nature should be considered in those United Nations forums which existed for the purpose.

213. The representative of the United Kingdom, speaking on behalf of the States members of the European Community, stated that the delegations of these countries had abstained in the votes on the four draft texts (A/CONF.100/L.4/Rev.1, L.5/Rev.2, L.6/Rev.1 and L.8) because in their opinion the contents of these texts were beyond the scope of the Conference. He added that the well-known views of these delegations on the matters dealt with in those texts, as expressed on different appropriate occasions, remained unchanged.

214. The representative of the United States of America stated that his delegation had abstained in the votes on the three draft resolutions A/CONF.100/L.4/Rev.1, L.5/Rev.2 and L.6/Rev.1 on the grounds that these draft resolutions were extraneous to the important work of the Conference, raising political, legal and other issues beyond its mandate as established by the pertinent resolutions of the General Assembly. Referring specifically to draft resolution A/CONF.100/L.4/Rev.1, he stated that the United States Government's position on the Israeli raid on Iraq's nuclear facilities had been declared when it had joined in Security Council resolution 487 in June 1981, condemning that action. Its position on the other issues raised by these three resolutions had been or would be, set forth in competent forums at appropriate times. As regards draft resolution A/CONF. 100/L.8, in the vote on which his delegation had likewise abstained, he stated that in the opinion of the United States Government the important issues raised therein were outside the mandate of the Conference. With its Contact Group partners, the United States was dedicated to finding a peaceful solution to the question of Namibia. Since 1977, the Western Five had worked to negotiate a settlement in conformity with Security Council resolution 435. Because of its intimate role in these ongoing negotiations, the United States had not taken a position on draft resolution A/CONF.100/L.8. With respect to all four of the draft resolutions in question, he emphasized that his delegation's abstentions were without prejudice to the United States Government's past, present or future positions on the substantive and legal issues involved.

215. The representative of Austria stated that Austria's position with regard to the substance of draft resolutions A/CONF.100/L.4/Rev.1, L.5/Rev.2, L.6/Rev.1 and L.8 had been clearly and publicly expressed on various occasions and in various forums. Furthermore, some of the issues raised in the draft resolutions had been or would be discussed in the competent forums. His delegation felt, therefore, that a substantive discussion of the issues referred to in these draft resolutions would be more effectively conducted in the competent organs. This was the reason why the Austrian delegation had abstained in the votes on all draft resolutions in question. Its abstention should not, however, be interpreted as the taking of a position on the substance of the issues raised.

216. The representative of Australia stated that for his delegation the underlying difficulty with all four draft resolutions (A/CONF.100/L.4/Rev.1, L.5/Rev.2, L.6/Rev.1 and L.8) was that the matters raised by them were not within the concerns

or mandate of the Conference. As regards draft resolution A/CONF.100/L.4/Rev.1, he recalled that Australia had made known its views in appropriate United Nations forums. He stressed that his delegation's abstention in the vote on that draft resolution was in no way intended to detract from Australia's attitude towards Security Council resolution 487. So far as draft decision A/CONF.100/L.6/Rev.1 was concerned, he pointed out that the subject-matter was under negotiation in other United Nations forums and was not the proper concern of the Conference. Similarly, the Australian delegation had abstained in the vote on draft resolution A/CONF.100/L.8 because it regarded the subject-matter of that draft resolution likewise as not being within the concern of the conference. He stressed, however, Australia's support for United Nations efforts to achieve a just settlement in Namibia, and emphasized that Australia would continue its position and constructive role in developments affecting Southern Africa and that it would do all it could to contribute to an expeditious and peaceful transition towards Namibian independence.

217. In a statement in explanation of its vote on the draft resolution A/CONF.100/L.4/Rev.1, the representative of Canada said that his delegation had abstained in the vote because it considered the draft resolution to be of a political nature and to raise issues outside the mandate of the Conference. The issue of the Israeli attack on Iraq's nuclear installations had been considered by the Security Council which was the competent forum for considering such questions. The Canadian Government had condemned that act of violence and viewed it as extremely harmful to the cause of peace in the Middle East.

218. As regards draft resolution A/CONF.100/L.5/Rev.2, the representative of Canada said that his delegation had abstained in the vote because it considered that the draft resolution raised issues of a political nature outside the competence of the Conference. As its name suggested the Conference was concerned essentially with technical and economic issues and thus the introduction of such a resolution with its complex political and legal issues was inappropriate.

219. The representative of Canada stated further that in the vote on the revised draft decision A/CONF.100/L.6/Rev.1 his delegation had abstained because the issue of transfer of technology was being addressed directly in other United Nations forums and it was therefore inappropriate for the Conference, which dealt essentially with other matters, to pronounce itself on this complex issue.

220. In a statement made in explanation of its abstention in the vote on the draft resolution A/CONF.100/L.8 the representative of Canada said that, as a member of the Contact Group since 1977, Canada noted with deepest regret four years later that the issue of Namibian independence was still on the world agenda where it had been all too long. Namibia should long ago have become independent and joined the world community. South African occupation was legally, morally and politically untenable and had been fully rejected internationally. Canada considered the highly complex issue of Namibian independence to be outside the defined mandate of the Conference which dealt with issues of new and renewable sources of energy. However, the Canadian delegation wished to stress that its position on Namibia was that it was necessary to achieve a negotiated settlement based on the self-determination of the Namibian people in accordance with Security Council resolution 435.

221. The representative of Canada added that, since the inception of efforts in the United Nations to achieve an internationally acceptable settlement, Canada had worked closely with France, the Federal Republic of Germany, the United Kingdom and the United States of America in the Contact Group of Five. These countries had maintained close co-operation with the African Group, particularly the front-Line States and Nigeria, to achieve the goal of Namibian independence. Canada was deeply concerned over South Africa's intransigent attitude which had thus far blocked implementation of the United Nations Settlement Plan based on Security Council Resolution 435 of 1978, and had heightened tensions throughout southern Africa. Without an internationally accepted settlement in Namibia, the situation would only deteriorate, with the inevitable intensification of armed conflict and growing regional instability. There had already been increased military efforts on the part of South Africa in neighbouring areas and calls for intensified armed struggle. Canada was gravely concerned about the escalation of this conflict in the southern African region. Canada remained fully committed to the pursuit of a negotiated settlement in accordance with resolution 435. Canada and other Western countries shared the frustrations of the international community over the failure to bring United Nations efforts to a successful conclusion. Active consultations among the Contact Group had been intensified and every effort was being made to search for the path leading to self-determination for the people of Namibia. His Government remained convinced that it was in the interest of all parties directly concerned that Namibian independence should be achieved by negotiated settlement and not through the destructive process of armed struggle, with high human costs, which imperilled the political and economic stability of the southern African region.

222. The representative of the United Republic of Cameroon stated that, unlike certain other delegations, his delegation was not convinced that the Conference was the right forum for dealing with the issues raised in draft resolutions A/CONF.100/L.4/Rev.1, L.5/Rev.2, L.6/Rev.1 and L.8. His delegation had abstained in the vote on some of these draft resolutions for the sole reason that it had had difficulty in communicating with its Government and in obtaining instructions as to the position it should adopt with regard to these issues.

223. The representative of Switzerland stated that his delegation had abstained in the votes on the four draft resolutions A/CONF.100/L.4/Rev.1, L.5/Rev.2, L.6/Rev.1 and L.8 because it considered that these drafts dealt with matters that were patently outside the terms of reference of the Conference. In addition, his delegation noted that most of these matters were under discussion in other forums where they should continue to be dealt with. He added, as a general remark, that his delegation attached the utmost importance to the respect by all for the rules of international law.

Chapter V

REPORTS OF SUBSIDIARY BODIES AND ACTION TAKEN ON THESE REPORTS BY THE CONFERENCE

224. At its 2nd plenary meeting on 10 August 1981, the Conference decided that agenda item 5 entitled "Consideration and adoption of the programme of action" would be considered by the two Main Committees, each of which would deal with specific parts of the draft programme of action (see chap. III above, para. 88).

225. At its 17th plenary meeting on 21 August 1981, the Conference had before it the reports of the First and Second Committees as set out below.

A. Report of the First Committee

226. The First Committee met from 11 to 21 August 1981 and held three meetings and a number of informal meetings.

227. Mr. Makoto Taniguchi (Japan) was elected Chairman of the Committee by the Conference at its second plenary meeting.

The Committee elected the following other officers:

Vice-Chairman: Mr. Pentcho Moraliisky (Bulgaria)
Mr. Jukka Valtasaari (Finland)
Mr. Sebastian R. Barros (Brazil)

Rapporteur: Mr. Hachimou Boukari (Niger)

228. The Conference allocated to the First Committee the following sections and chapters of the preliminary draft of a programme of action contained in document A/CONF.100/4-A/CONF.100/PC/L.36: Introduction, Chapters I, II and III and Chapter V (B) and (C).

229. At the 2nd meeting, on 12 August, the Committee decided to consider informally those sections and chapters of the draft programme of action, as well as proposals and amendments submitted thereto.

230. At its 3rd meeting, on 21 August 1981, the Committee considered and adopted its draft report contained in documents A/CONF.100/C.1/L.1/Rev.1-L.5, as orally corrected.

231. The First Committee recommended to the Conference the adoption of the following sections of the draft programme of action: Introduction; Chapters I (A), (B) and (C) and III (B) and (C), as contained in documents A/CONF.100/C.1/L.2, L.3, L.4 and L.5.

Action by the Conference

232. At the 17th plenary meeting, the Conference considered the report of the First Committee. Attention was drawn to a number of typographical errors in the draft text submitted by the Committee and to the renumbering of chapters in that text.

233. The Conference took note of the report of the First Committee and adopted the text recommended by the Committee for inclusion in the Programme of Action (for the final text, see chap. I A above).

B. Report of the Second Committee

234. The Second Committee held two meetings, on 11 and 19 August 1981. During the period 11 to 19 August, a series of informal meetings was also held.

235. At the 2nd plenary meeting the Conference elected Mr. Mario Franzì (Italy), Chairman of the Committee.

236. The Committee elected the following other officers:

<u>Vice-Chairman:</u>	Mr. Slavoj Odchnal (Czechoslovakia)
	Mr. Mohammed Mokhtar El Halwagi (Egypt)
	Mr. Raul Villatoro (Guatemala)

<u>Rapporteur:</u>	Mr. Bakr Khoshaim (Saudi Arabia)
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237. The Conference, at its 2nd plenary meeting, on 10 August 1981, decided to allocate to the Second Committee consideration of chapter IV, sections A and B and chapter V, section A of the draft programme of action submitted under agenda item 5 (A/CONF.100/4-A/CONF.100/PC/L.36).

238. At the 1st meeting, the Committee decided to meet informally to consider those sections of the draft programme of action, as well as the proposals and amendments submitted thereto.

239. At the 2nd meeting, on 19 August 1981, the Committee considered and adopted its draft report (A/CONF.100/C.2/L.1 and Add.1 and A/CONF.100/C.2/CRP.8), as orally corrected and revised during the discussion.

240. The Second Committee recommended to the Conference the adoption of chapter IV, sections A and B, and chapter V, section A, of the draft programme of action, as contained in the Committee's report.

Action by the Conference

241. At the 17th plenary meeting on 21 August 1981, the Conference considered the report of the Second Committee (A/CONF.100/10) which was introduced by the Committee's Rapporteur, who drew attention to certain rectifications and adjustments in the draft text submitted by the Committee for inclusion in the Programme of Action and to the renumbering of sections of the Programme.

242. After the Committee's report had been introduced, the President announced that, as a result of further informal consultations, it had been possible to reach agreement on certain paragraphs in the Committee's draft which had been left pending. In particular, it has been agreed that the word "six" in paragraph 30 of that text should be replaced by "five", that subparagraph 30 (f) should be deleted, and that paragraph 38 should be omitted. He further announced that a new agreed text had been worked out to replace former paragraph 54 in the Committee's draft. 20/

243. The Conference adopted the draft text proposed by the Second Committee with the rectifications, adjustments and amendments referred to above and subject to a renumbering of sections and paragraphs in consequence of the action taken with respect to the text recommended by the First Committee and the agreement announced by the President (for the final text, see chap. I A above).

C. Adoption of the Programme of Action as a whole

244. Having adopted the various chapters and sections of the Draft Programme of Action recommended by the two main Committees, the Conference adopted the Programme of Action as a whole (for the text, see chap. I A above, the "Nairobi Programme of Action for the Development and Utilization of New and Renewable Sources of Energy").

Statements by delegations upon the adoption of the Nairobi Programme of Action

245. After the adoption of the Programme of Action, several delegations made statements and requested that the substance of their statements should be reflected in the report of the Conference.

246. The representative of the United States of America stated that the United States was extremely pleased to join in the consensus adoption of the Nairobi Programme of Action. The document was the culmination of two years of valuable preparatory work. The process which had culminated in the Programme of Action had educated all participants as to the important role new and renewable sources of energy could play for all Members of the United Nations. The process had also provided guidelines for co-operative endeavours that would shape the future of new and renewable energy.

247. His delegation was heartened by the co-operative and constructive spirit in which the Programme of Action had been fashioned. Accommodations had been made by all to reflect on the one hand the expectations, and on the other hand the constraints which shaped individual national policies and attitudes. The result was a Programme of Action that encouraged countries to continue to share their experience and to learn from the experience of others.

248. The United States was also particularly pleased that the Nairobi Programme of Action reflected the important role of the private sector - along with the public sector - in furthering the development and use of new and renewable sources of

20/ The new text became paragraph 49 in the Programme of Action.

energy. It was his delegation's firm belief that both the private and public sectors had vital and mutually supportive roles to play, and the incorporation of that concept in the Programme of Action was especially valuable.

249. There were three subjects in the text, however, upon which the United States must comment and present explanations of its position:

250. First, the United States believed that substantial improvements could be made in the management and allocation of resources available to the financial mechanisms and institutions within the United Nations system. These improvements would result in additional resources becoming available for support of various activities in furtherance of the Nairobi Programme of Action. In joining the consensus on paragraphs 85, 87 and 88 of the Programme of Action, however, the United States wished to make it clear that at the moment, it was not in a position to contribute additional financial resources to the United Nations for this purpose. The United States supported other Governments in a policy of zero net programme growth for the United Nations system for the 1982-1983 biennium, and it believed that any increase in the United Nations system's budgetary resources for new and renewable sources of energy must be offset by identifiable savings in other areas.

251. Second, and similarly, in joining the consensus on institutional arrangements (paras. 57 to 75 of the Programme), the United States believed that any increase in costs resulting from the Nairobi Programme of Action must be offset by identifiable savings in other areas.

252. Third, the United States supported the efforts of the international community to facilitate financing for energy investment, particularly in developing countries. In this regard, the United States was participating actively in an examination of World Bank lending priorities, procedures and mechanisms in the light of future energy investment needs. On one of the issues under discussion, however, the proposal to establish a World Bank energy affiliate, the United States had expressed its position on several occasions, namely that at present it could not support the establishment of, or participate in, a World Bank energy affiliate.

253. Finally, on two points the United States formulated reservations. Given its well known position on the applicability of international law, the United States formulated reservation with respect to the phrase "permanent sovereignty over natural resources" in paragraph 7 of the Programme of Action, because the phrase was used without being made expressly subject to international law. In addition, the United States reserved its position with respect to paragraph 29 (e) of the Programme of Action.

254. The representative of Bulgaria, speaking on behalf of the delegations of Bulgaria, the Byelorussian SSR, Czechoslovakia, the German Democratic Republic, Hungary, Poland, the Ukrainian SSR and the USSR, stated that the socialist countries had given active political support to the fundamental progressive orientation of the programmes put forward by the developing countries in the field of new and renewable sources of energy. They had made constructive proposals designed to ensure that the decisions of the Conference would contribute to equitable and mutually advantageous international co-operation in that field in the interest of all countries, including the developing countries. The Nairobi Programme of Action adopted by the Conference took account of the link between development, the maintenance of peace and the adoption of concrete disarmament measures; the need for the developing countries to

attain full sovereignty over their natural resources; and the strengthening of the State sector. In addition, it made recommendations for mobilizing international efforts in the development of alternative sources of energy. In the light of these and other positive recommendations, the delegations of the socialist countries had agreed to the adoption of the Programme of Action by consensus.

255. At the same time, by reason of their position of principle with respect to international economic, scientific and technical co-operation, they felt bound to make certain comments on the Programme of Action. In the first place, they considered that the prerequisites for the implementation of the Programme of Action were the strengthening of world peace, the maintenance and consolidation of détente and the curbing of the arms race. In that connexion, he stated that these delegations noted with serious concern the decision of the Government of the United States to expand the production of neutron weapons, a subject referred to by a number of delegations in the course of the general debate. The delegations for which he was speaking considered that the threat to détente and the spiralling arms race affected the interests of all States and peoples, hampered international co-operation, including co-operation in the energy field, and impeded the implementation of the decisions of the Conference.

256. In the opinion of the delegations for which he was speaking, the basic efforts needed to carry out the Programme of Action should be undertaken by the countries themselves, through the introduction of progressive social and economic reforms, for only the Government, supported by the State sector, was in a position to achieve the effective mobilization and rational use of human and financial resources for the introduction of new and renewable sources of energy in the context of national plans for social and economic development. Accordingly, they were unable to agree with the provisions in the Programme of Action which attached excessive importance to the role of external economic factors, especially private foreign capital, in harnessing the energy potential of the developing countries. They further considered that the implementation of the Programme of Action should help limit the negative consequences of the activities of transnational corporations in developing countries.

257. While appreciating the difficulties which the developing countries were encountering in finding additional sources of finance needed for the development of their energy infrastructure, these delegations considered it unjustified to apply to the socialist States the criteria concerning the granting of material and financial aid which the developing countries rightly applied to the developed capitalist States. That approach concealed the continuing neo-colonialist exploitation of independent States by the imperialist countries and their transnational corporations and ignored the fundamental distinction between the socialist and capitalist systems, and the principles governing economic relations between the socialist and the developing countries. The socialist countries were prepared to assist and co-operate with countries in building up and strengthening their energy potential, on the basis of the principles of true equality, respect for sovereignty and mutual advantage, and in conformity with the views set forth by the socialist countries in their joint statement at the eleventh special session of the General Assembly.

258. The consensus reached, after difficult negotiations at the Conference, on the subject of the institutional machinery within the United Nations system for implementing the Nairobi Programme of Action should make it possible to take immediate steps to implement the basic provisions of the Programme. Nevertheless, the delegations concerned stressed that the relevant activities to be undertaken by

the United Nations system must conform to the provisions concerning the restructuring of the economic and social sectors of the system laid down in General Assembly resolution 32/197, for they were convinced that the establishment of new organs would not advance the restructuring of international economic relations on a democratic and just basis. In their opinion, therefore, the existing Committee on Natural Resources of the Economic and Social Council, strengthened by a new mandate, together with the Natural Resources and Energy Division of the Department of Technical Co-operation for Development should be able to give effect to the decisions of the Conference. He added that all organizational measures should be carried out within the framework of the present United Nations budget and should not involve further financial implications. It was on that basis that the socialist countries would consider the organizational and financial questions at subsequent sessions of the General Assembly.

259. As regards the reference in the Programme of Action to the possible establishment of a new financing mechanism, he said that, in the opinion of the delegations for which he was speaking, a thorough analysis should be carried out of the existing methods and sources of financing of United Nations activities with a view to enhancing their efficiency. In so far as it was proposed to have recourse to additional sources, the principle of voluntary financing must be strictly observed. The socialist countries would define at a later stage their position with regard to the possible establishment of financing mechanisms. He added that, in general, the socialist countries took a favourable view of the results of the Conference and would contribute as far as possible to the implementation of the progressive provisions of the Nairobi Programme of Action.

260. The representative of Japan stated that the Conference, although confined to a limited type of energy sources, was the first occasion at which energy problems had been taken up by the United Nations at a higher level. Since energy was one of the crucial factors in North-South relations and in the world economy as a whole, the Japanese delegation had come to Nairobi with the hope that the Conference would make a step forward toward the formulation of guidelines and mechanisms for international co-operation for the development and supply of energy. It felt indeed that the Nairobi Programme of Action was a constructive step in that direction and represented a world-wide agreement on international co-operation in the field of the development of new and renewable sources of energy.

261. At the outset of the Conference, the Japanese delegation had emphasized that it would be of crucial importance that appropriate mechanisms and financial resources should be found to make possible co-operation in this field. It hoped that a truly global forum, commensurate with the historical importance of the Nairobi Programme of Action, would be established with the aim of promoting universal and common interest. During the deliberation of the Programme of Action, the delegation had proposed concrete mechanisms to help co-ordinate and expand operational activities in the field of development and utilization of new and renewable sources of energy within and outside the United Nations system. It was happy that the Conference had forged, for instance, the area of priority for concerted actions and a mandate for the global forum. On the other hand, however, the institutional arrangements were still to be elaborated in the future. The Japanese delegation sincerely wished that the Committee which was to be convened in 1982 would, in the same spirit as that which had prevailed at the Conference, produce a satisfactory solution in this regard and that the thirty-seventh session of the General Assembly would reach a final decision on this matter and provide the Programme of Action with a viable and stable foundation for its implementation.

262. With regard to the paragraph 29 (e) of the Programme of Action, he said that the Japanese delegation had accepted it in a spirit of compromise in the Second Committee. He wished to reiterate, however, the position of the Japanese delegation that the agreement reached at the Conference by no means prejudged the outcome of the ongoing negotiation of this matter within UNCTAD.

263. With regard to paragraph 49, the Japanese delegation believed that the specific aims and objectives as formulated in that paragraph should be of an indicative nature through which the public opinion of the international community in general could be effectively mobilized. It was on this understanding that the Japanese delegation had joined in the consensus adoption of the proposed formulation in the paragraph.

264. He added that his delegation, on behalf of the Japanese Government, would like to renew its commitment made during the general debate to do its utmost to join in the international efforts toward the achievement of the objectives of the Conference.

265. The representative of Switzerland stated that his delegation welcomed the adoption of the Nairobi Programme of Action and the spirit of co-operation which had prevailed during the Conference. He hoped that the Programme would lead to early concrete action in the field of new and renewable sources of energy, the development of which was in the interest of all countries. At the same time, however, the Swiss delegation wished to formulate a reservation with respect to a specific passage in the Programme of Action. The Programme referred to the principle of the sovereignty of States over their natural resources. Switzerland recognized the principle. Nevertheless, the effects of possible measures taken by States in pursuance of that principle on the property of aliens, notably in the event of nationalization, should be governed by the rules of public international law. That was a position which had been repeatedly affirmed by the Swiss Government.

266. The representative of the United Kingdom, speaking on behalf of the Member States of the European Community, stated that the delegation of these States were pleased with the adoption by consensus of the Nairobi Programme of Action. They believed that the spirit of co-operation which had prevailed throughout the Conference must be preserved and that what had been agreed must be speedily translated into practical action. These delegations considered that, for the purpose of the most effective arrangements for the follow up to the Nairobi Programme of Action, it was important to use to the full bodies and staff within the United Nations system competent to deal with such complex tasks. They interpreted the formulations in paragraph 61 of the Programme of Action as being in conformity with the provisions of General Assembly resolution 34/190. On the question of the principle of permanent sovereignty over natural resources, as mentioned in the Programme of Action, he stated that, while these delegations accepted such a principle, they were unable to agree to formulations which ignored the duty of States exercising this right to fulfil their international obligations in good faith. He added that these delegations interpreted phrases concerning support for economic co-operation among developing countries in the Programme of Action as being in accordance with the established rules and procedures of the United Nations.

267. The representative of China stated that the Conference represented a substantial effort by the international community to deal with the increasingly serious energy situation. It had performed a positive function in promoting the development of new and renewable sources of energy and in preparing the transition

towards a heterogeneous energy system. The Conference had adopted a Programme of Action, the implementation of which would call for a determined effort by all parties. He expressed the hope that the participating States and the international organizations concerned would take action to translate the Programme into reality. In the preceding three or more decades a few countries, thanks to abundant supplies of cheap energy, had achieved rapid economic development, thus intensifying the imbalance in the development of the various countries in the world. He expressed the hope that all industrially developed countries would provide the developing countries with the financial and technical assistance they needed. He was gratified to note that some countries had responded positively in this respect. He added that China wished to participate actively in all forms of international co-operation - bilateral, multilateral, regional and global - and to make its contribution to the joint international endeavour envisaged in the Programme of Action.

D. Report of the Credentials Committee

268. At its 5th plenary meeting held on 12 August 1981, the Conference, in accordance with rule 4 of the rules of procedure of the Conference, appointed a Credentials Committee consisting of the following States: Angola, China, Guatemala, Haiti, Kenya, Spain, Thailand, the Union of Soviet Socialist Republics and the United States of America.

269. The Credentials Committee held a meeting on 18 August 1981.

270. Mr. Jorge Luis Borrayo Reyes (Guatemala) was unanimously elected Chairman.

271. The Committee had before it a memorandum by the Secretary-General of the Conference dated 14 August 1981 indicating the status of credentials of representatives to the Conference. The memorandum showed that as of 14 August 1981, 121 States were participating in the Conference. Credentials issued by the Head of State or Government or by the Minister of Foreign Affairs, as required by rule 3 of the rules of procedure, had been received from 82 States: Afganistan, Angola, Australia, Bahrain, Belgium, Bhutan, Bulgaria, Burundi, Byelorussian Soviet Socialist Republic, Canada, Chad, Chile, China, Colombia, Comoros, Cuba, Cyprus, Czechoslovakia, Democratic People's Republic of Korea, Democratic Yemen, Denmark, Ecuador, Ethiopia, Finland, France, German Democratic Republic, Germany, Federal Republic of, Greece, Guatemala, Guinea, Guyana, Hungary, Iceland, Indonesia, Iraq, Ireland, Israel, Japan, Jordan, Kenya, Kuwait, Lesotho, Liberia, Malaysia, Malta, Mauritius, Mexico, Mozambique, Netherlands, Niger, Nigeria, Oman, Panama, Peru, Philippines, Portugal, Republic of Korea, Romania, Rwanda, Senegal, Seychelles, Spain, Sri Lanka, Suriname, Sweden, Switzerland, Syrian Arab Republic, Tunisia, Turkey, Uganda, Ukrainian Soviet Socialist Republic, Union of Soviet Socialist Republics, United Kingdom of Great Britain and Northern Ireland, United Republic of Cameroon, United Republic of Tanzania, Upper Volta, Uruguay, Venezuela, Yugoslavia, Zaire, Zambia and Zimbabwe. In the case of the representatives of eight States, namely, Gabon, Jamaica, Luxembourg, Nepal, New Zealand, Paraguay, Thailand and Yemen, credentials has been communicated to the Secretariat by means of a cable from the Minister or Ministry of Foreign Affairs concerned. The appointment of the representatives of two States, namely, Botswana and the Ivory Coast, had been communicated to the Secretariat by a letter or cable from a Minister or Ministry of the State concerned other than the Minister or Ministry of Foreign Affairs. In respect of 20 States, the appointment of representatives to the Conference had been

communicated to the Secretariat by a letter or cable from the Permanent Mission to the United Nations, the Embassy or the High Commissioner in Nairobi of the State concerned. The States included in this category were: Algeria, Argentina, Austria, Bangladesh, Brazil, Egypt, Ghana, India, Italy, Libyan Arab Jamahiriya, Morocco, Norway, Pakistan, Papua New Guinea, Poland, Saudi Arabia, Somalia, Sudan, Swaziland and the United States of America. With respect to nine States participating in the Conference, namely, Benin, Congo, Djibouti, Dominica, Dominican Republic, Haiti, Honduras, Malawi and Mali, the Secretariat of the Conference had not yet received any communication from the Governments concerned regarding the appointment of their delegations as of Friday, 14 August 1981.

272. At the request of the Chairman, the Secretary of the Committee informed the members of the Committee of the credentials received subsequent to Friday, 14 August 1981. From Algeria credentials in the form required by rule 3 of the rules of procedure had been received by the Secretariat. With respect to Brazil a cable designating that State's delegation had been received from the Minister of External Relations, and from Malawi, the Secretariat had received credentials issued by the High Commissioner of Malawi to the Republic of Kenya.

273. The Chairman suggested that the Committee, in accordance with usual practice at conferences convened by the United Nations, should accept the credentials of all the States referred to in the memorandum from the Secretary-General of the Conference on the understanding that those States which had not yet submitted credentials in the form required by rule 3 of the rules of procedure should transmit them to the Secretariat as soon as possible. The Chairman then proposed the following resolution for adoption by the Committee:

"The Credentials Committee,

Having examined the credentials of the representatives of States to the Conference referred to in the memorandum dated 14 August 1981 from the Secretary-General of the Conference,

Accepts the credentials of all these representatives."

274. The representative of the Union of Soviet Socialist Republics stated that his Government did not approve of the credentials issued by the fascist régime of Chile.

275. The representative of the United States of America stated that the fact that his delegation did not object to the credentials of the representatives of Afghanistan in no way implied acquiescence in the Soviet armed intervention in that country. Such a government, maintained in power solely by the Soviet occupation, could not be considered to be representative of the Afghan people.

276. The representative of the Union of Soviet Socialist Republics said that the Credentials Committee was neither the time nor the place to consider the accusations made by the United States' representative. The situation in the Democratic Republic of Afghanistan should be seen in the proper context. The democratic rights and freedom of the people, including the right of self-government, had been restored.

277. The representative of China reaffirmed China's position that the admission of the Afghan delegation to the Conference and the permission given to it to make a statement in no way could be interpreted as an acquiescence in the situation created by the Soviet armed intervention in Afghanistan.

278. The representative of Angola associated himself with the position taken by the representative of the Union of Soviet Socialist Republics with respect to the credentials of the delegation from Afghanistan.

279. The Chairman said that the statements made in the Committee would be reflected in the Committee's report.

280. On the proposal of the Chairman, the Committee thereupon decided to submit its report to the Conference for approval.

Action by the Conference

281. At the 16th plenary meeting on 21 August the Conference considered the report of the Credentials Committee (A/CONF.100/9).

282. The President announced that, since the date of the Committee's meeting, four more States had registered and that consequently there were 125 States participating in the Conference. Credentials had been received in respect of the delegations of Cape Verde and Grenada, and Madagascar and Mauritania had notified their participation in the Conference.

283. The Secretary of the Conference stated that credentials in good and due form had been received in respect of the delegations of Austria, Benin and Saudi Arabia.

284. After taking note of this supplementary information, the Conference approved the report of the Credentials Committee (see chap. I B above, decision 1).

Chapter VI

ADOPTION OF THE REPORT OF THE CONFERENCE

285. The Rapporteur-General introduced the draft report of the Conference (A/CONF.100/L.1 and Add.1-3) at the 17th plenary meeting on 21 August 1981.

286. The Conference considered chapters II, III and IV of the draft report and adopted them with certain oral amendments.

287. At the same meeting the representative of Venezuela, on behalf of States Members of the Group of 77 which participated in the Conference, introduced a draft resolution (A/CONF.100/L.10) expressing the Conference's gratitude to the host country. The Conference adopted the draft resolution by acclamation. For the text, see chapter I B, resolution 7.

288. The Conference adopted the draft report as a whole and authorized the Rapporteur-General to complete the report, in conformity with the practice of the United Nations, with a view to its submission to the General Assembly at its thirty-sixth session.

289. After statements by the representatives of Uruguay (on behalf of the Latin American countries), Kuwait (on behalf of States of Asia and of States members of the League of Arab States), China, Iceland (on behalf of the Nordic countries), the United States of America, and Zimbabwe (on behalf of the group of African States), the Secretary-General of the Conference made a statement summing up the principal results of the Conference.

290. The President of the Conference made a closing statement and declared the Conference closed.

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ANNEX I

MESSAGES FROM HEADS OF STATE OR GOVERNMENT

1. Message from H. M. Juan Carlos, King of Spain

I think we should all congratulate ourselves on the fact that the United Nations has convened this Conference, the objective of which is to examine both the current situation and future prospects as regards new and renewable sources of energy.

The availability of growing amounts of energy has decisively broadened mankind's horizons. The expansion of man's capacities, the possibility of entrusting the most tiresome and routine tasks to machines, and access to well-being and leisure are intimately linked to energy consumption, so that levels of living and energy consumption are closely linked.

This fact leads us to recognize that if all the peoples of the world have the right to economic growth and well-being, they also have the right to energy. Large sectors of mankind lack the minimum quantities of energy necessary to ensure, under current technological conditions, a way of living worthy of man. Moreover, the energy available is provided at a price which has serious economic effects.

In a world where, for hundreds of millions of people, the energy crisis continues to make itself felt in the form of the growing distance they must travel every day to find fuel to cook their food, it seems essential that we should concentrate on a major co-operation effort aimed at ensuring mankind's supply of energy and facilitating an equitable distribution of available resources. The battle for energy should not lead to confrontation among peoples, but to international solidarity in the face of a problem common to all.

What is lacking in order to ensure the supply of energy is not so much resources as knowledge of how to use them and the ability to make that knowledge available to all peoples. No source of energy can be disdained or disregarded. In the immediate future, we must continue to rely on petroleum, coal and nuclear energy. But it is obvious that new and renewable sources of energy must be developed vigorously if we wish to preserve our achievements and give all mankind access to higher levels of well-being.

Moreover, new and renewable sources of energy have characteristics which make them particularly attractive, especially for the developing countries. The very fact that they are widely dispersed, the difficulty of establishing any form of monopoly over most of them and the spontaneity and universality with which Nature generally provides them guarantee a desirable equality of opportunities for all, once the technological barriers have been overcome. There is an old saying that the sun shines on all men, and this adage embodies the reasons for the hopes awakened by these sources of energy.

Fortunately, the technological differences among countries in this area are not excessive, and this should serve as a common incentive to master them and place them at the service of mankind. Spain has undertaken an ambitious but realistic programme of promoting the new technologies, and believes it has a duty to make its experience available to peoples which may be interested in it.

Overcoming the current energy crisis requires recourse to two qualities which only human beings possess: ingenuity and solidarity.

Confident that in tackling its work this Conference will not be lacking in either, and that its results will contribute to world peace, Spain places the qualities it possesses at the service of this endeavour.

2. Message from H. E. José López Portillo, President of the United Mexican States

On the occasion of the inauguration at Nairobi of the United Nations Conference on New and Renewable Sources of Energy, I wish to stress the great importance of this first organized effort of the international community to respond to the challenge posed for all the peoples of the world by the complex process of transition in the energy field. It is the common responsibility of all nations to find formulas and initiate activities that will ensure that this transition takes place in an orderly and rational manner, that its negative impact on levels of living in the energy-deficit developing countries is reduced, that it becomes a factor promoting the efforts of those countries to achieve self-sustained growth which will consolidate their political and economic autonomy and, finally, that progress is made towards the coherent, organized and just management of energy resources at the world level.

The Nairobi Conference is focused basically on two types of energy: energy from traditional sources, the use of which must be modernized and re-evaluated in the light of world economic conditions prevailing since the historic adjustment of petroleum prices in the past decade, and energy from new sources, the widespread use of which must be planned as of now, when many of these types of energy are still in the experimental stage. This Conference is thus dealing with the crucial questions of the transition in the energy field.

It would be erroneous, however, to assume that action can be taken to modernize the use of the energy sources of the past, such as firewood and charcoal, or to plan the development of the energies of the future, such as solar energy and other more technologically complex forms of energy, without also organizing and rationalizing the use of the energies of the present. The efforts undertaken at Nairobi are thus related to the larger endeavour which I proposed to the General Assembly in 1979 involving progress in the formulation of a World Energy Plan. This Conference must make a useful contribution to future discussions on energy within the context of the series of global negotiations, the speedy initiation of which we must all promote.

At other meetings whose objective is to forge agreements for the global negotiation process, such as the International Meeting of Heads of State or Government on Co-operation and Development, to be held at Cancún, Mexico, next October, the conclusions of this Conference could be taken up and incorporated in the broad effort aimed at defining the future of international co-operation for development and promoting the revitalization of the world economy.

I wish the Conference success, congratulate its distinguished authorities, pledge the commitment of the Mexican delegation and express the conviction that this significant first effort to undertake international negotiations in the field of energy will initiate and orientate new actions ensuring an orderly, progressive and just transition in the energy field, so as to permit the transformation of the system of international economic relations into a just and equitable world economic order.

3. Message from H. E. Ronald Reagan, President of the United States of America

This Conference is testimony to our shared conviction that the energy problems faced by all nations can be transformed, through foresight and statesmanship, into opportunities for industry, employment and prosperity. This Conference will gauge our common determination to deal with our energy problems and the difficult task of finding and exploiting new energy sources.

The United States has made considerable progress in the development and diffusion of new and renewable energy technologies. Thousands of private companies, citizens groups and individuals are now involved in the research, manufacture and marketing of new energy systems. We will continue to share our experience with other nations as we also benefit from theirs. We attach high priority to the energy needs of developing countries and intend to emphasize innovative energy projects in our development assistance programmes.

This Conference has the chance to become a milestone for co-operation. To achieve this, we need the serious and responsible efforts of all countries, supported by well-conceived regional and global initiatives. With imagination, a co-operative spirit, and hard work, we can ensure that all countries have sustainable and abundant energy resources.

In this spirit, I sincerely wish all assembled delegates a successful conference.

4. Message from H. E. Alhaji Shehu Shagari, President of the Federal Republic of Nigeria

The decision by the United Nations to convene a conference on "New and Renewable Sources of Energy" is an excellent one for a variety of reasons. First it focusses attention to, and rallies our energies in confronting one of the most vital problems facing mankind - that is how to ensure that we satisfy our long term energy needs.

Secondly, by concentrating on "new and renewable sources of energy" you have ensured that the pursuit of an energy solution is placed in an appropriate context, the search for a lasting solution.

Thirdly, the Conference, by according priority to long term problems and solutions, avoids the familiar but recurring blunder of ignoring important problems until they reach crisis point.

Finally, I am pleased that this Conference views alternative energy resources as an issue for developing countries. It is in this light that I would like on behalf of the Government and people of the Federal Republic of Nigeria first to express our support for the initiative taken by the United Nations and to assure you that it strengthens our confidence in the United Nations. Secondly, I would like to offer some thoughts for consideration by the delegates to this august gathering.

It was always quite evident that there was something basically irrational about mankind's accelerating use of non-renewable fossil fuels as a basis for the world economy. The complex forecasts for ever abundant supply possibilities, despite their apparent scientific sophistication, reflected more wishful thinking than sound analysis, and ignored the simple logic that use of finite resource ultimately leads to its exhaustion at some point in time.

The 1973 oil price increases apart from redressing the distribution of benefits between producing and consuming countries, performed an invaluable service by imposing an economic restraint on the heedless exploitation of these fossil fuel resources. The price increases ensured the real efforts now being made to search for and exploit other forms of energy. This diversification away from petroleum is not a development that we in Nigeria oppose but is one that we welcome. It allows us to use our limited resources domestically for a longer period of time.

For us developing countries which are moving from energy patterns dominated by wood fuels to more commercial energy forms, we now have an opportunity to take action before stumbling into a fossil fuel trap. We ought now to investigate the possibilities in at least three directions:

- (a) We need to reinvestigate the use of crop and wood plantations as basis of renewable energy supplies. Fortunately, much of the developing countries lie in equatorial and tropical zones where such development is eminently feasible.
- (b) Solar energy seems an appropriate form given the very size of that source. Here, considerations of technology are of course paramount.
- (c) In an energy scarce period, we cannot afford to leave unutilized the potential for hydro-electric power schemes. Much of what remain in this field are in developing countries.

Let me conclude by wishing you all the very best in your endeavours at this conference and beyond. I do hope that this conference will be conducted in a fraternal atmosphere and with a determined spirit. We must not forget that in today's interdependent world, global problems such as these require the co-operative efforts of all nations.

5. Message from H. E. Zhao Ziyang, Premier of the State Council of the People's Republic of China

On the occasion of the onvening of the United Nations Conference on New and Renewable Sources of Energy, I wish to express, on behalf of the Chinese Government and People, warm congratulations to the Conference.

At present, the energy problem is a matter of universal concern for the people of all countries. Its solution will contribute to the social and economic development and improvement of the livelihood of the people of all countries, particularly the developing countries. I hope that with the encouragement of the United Nations, international co-operation will be strengthened in the process of the exploration and development of New and Renewable Sources of Energy to the benefit of the people of the whole world, particularly of the developing countries. I wish the Conference a complete success.

ANNEX II

List of documents

A. Basic Conference documentation

<u>Symbol</u>	<u>Title</u>
A/CONF.100/PRE-CONF/L.1	Annotated list of questions
A/CONF.100/PRE-CONF/L.1/Add.1	<u>Idem</u> : decision adopted by the Preparatory Committee for the United Nations Conference on New and Renewable Sources of Energy at its resumed fourth session, on 7 August 1981
A/CONF.100/PRE-CONF/L.2	Proposed time-table for the work of the Conference
A/CONF.100/1*	Adoption of the agenda
A/CONF.100/2	Provisional rules of procedure of the Conference
A/CONF.100/3	Organizational and procedural matters: Note by the Secretariat
A/CONF.100/4	Consideration and adoption of the Programme of Action
A/CONF.100/5	Report of the pre-Conference consultations
A/CONF.100/6	Activities of the relevant organs, organizations and bodies of the United Nations system in the field of new and renewable sources of energy: note by the Secretary-General
A/CONF.100/6/Add.1 and Corr.1	_____: activities of the United Nations
A/CONF.100/6/Add.2	_____: report submitted by the United Nations Conference on Trade and Development

<u>Symbol</u>	<u>Title</u>
A/CONF.100/6/Add.3	____: report submitted by the United Nations Children's Fund
A/CONF.100/6/Add.4	____: report submitted by the United Nations Development Programme
A/CONF.100/6/Add.5	____: report submitted by the United Nations University
A/CONF.100/6/Add.6	____: report submitted by the International Labour Organisation
A/CONF.100/6/Add.7	____: report submitted by the United Nations Educational, Scientific and Cultural Organization
A/CONF.100/6/Add.8	____: report submitted by the World Bank
A/CONF.100/6/Add.9	____: report submitted by the World Meteorological Organization
A/CONF.100/6/Add.10	____: report submitted by the World Intellectual Property Organization
A/CONF.100/6/Add.11	____: report submitted by the United Nations Centre for Human Settlements (Habitat)
A/CONF.100/6/Add.12	____: report submitted by the United Nations Industrial Development Organization
A/CONF.100/6/Add.13	____: report submitted by the Food and Agriculture Organization of the United Nations
A/CONF.100/6/Add.14	____: report submitted by the United Nations Environment Programme
A/CONF.100/6/Add.15	____: report submitted by the United Nations Institute for Training and Research
A/CONF.100/6/Add.16	____: report submitted by the International Fund for Agricultural Development

<u>Symbol</u>	<u>Title</u>
A/CONF.100/7	Comprehensive reports on the activities of the regional commissions: note by Secretary-General
A/CONF.100/7/Add.1	____: report submitted by the Economic Commission for Europe
A/CONF.100/7/Add.2	____: report submitted by the Economic Commission for Africa
A/CONF.100/7/Add.3	____: report submitted by the Economic and Social Commission for Asia and the Pacific
A/CONF.100/7/Add.4	____: report submitted by the Economic Commission for Western Asia
A/CONF.100/7/Add.5	____: report submitted by the Economic Commission for Latin America
A/CONF.100/7/Add.6	____: regional programmes in the field of new and renewable sources of Energy
A/CONF.100/8	Reports of the regional preparatory meetings: note by the Secretary-General
A/CONF.100/8/Add.1	____: report submitted by the Economic Commission for Europe
A/CONF.100/8/Add.2	____: report submitted by the Economic Commission for Africa
A/CONF.100/8/Add.3 and Corr.1	____: report submitted by the Economic and Social Commission for Asia and the Pacific
A/CONF.100/8/Add.4 and Corr.1	____: report submitted by the Economic Commission for Western Asia
A/CONF.100/8/Add.5	____: report submitted by the Economic Commission for Latin America
A/CONF.100/9	Report of the Credentials Committee
A/CONF.100/10	Report of the Second Committee

<u>Symbol</u>	<u>Title</u>
A/CONF.100/L.1	Draft report of the Conference: Table of contents
A/CONF.100/L.1/Add.1	<u>Idem</u> : Chapter II. Origins of the Conference
A/CONF.100/L.1/Add.2	<u>Idem</u> : Chapter III. Attendance and organization of work
A/CONF.100/L.1/Add.3	<u>Idem</u> : Chapter IV. Summary of the general debate
A/CONF.100/L.2	Integration of the energy strategy with soil, water and forest policies: draft resolution submitted by Colombia
A/CONF.100/L.2/Rev.1	<u>Idem</u> : revised draft resolution submitted by Australia, China and Colombia
A/CONF.100/L.3	Local planning of energy policy: draft resolution submitted by Colombia and Kenya
A/CONF.100/L.4	Right of nations to develop and control non-fossil energy resources: draft decision submitted by Iraq and Pakistan
A/CONF.100/L.4/Rev.1	<u>Idem</u> : revised draft resolution submitted by Iraq and Pakistan
A/CONF.100/L.5	Aggression against natural energy resources: draft decision submitted by Iraq and Pakistan
A/CONF.100/L.5/Rev.1	<u>Idem</u> : revised draft resolution submitted by Iraq and Pakistan
A/CONF.100/L.5/Rev.2	<u>Idem</u> : revised draft resolution submitted by Iraq, Morocco and Pakistan
A/CONF.100/L.6	Right of countries to transfer of technology: draft decision submitted by Pakistan
A/CONF.100/L.6/Rev.1	<u>Idem</u> : revised draft decision submitted by Pakistan

<u>Symbol</u>	<u>Title</u>
A/CONF.100/L.7	Implementation of the Lagos Plan of Action on New and Renewable Sources of Energy: draft resolution submitted by Algeria, Angola, Benin, Botswana, Burundi, Cape Verde, Chad, Congo, Djibouti, Egypt, Ethiopia, Gabon, Ghana, Guinea, Ivory Coast, Kenya, Lesotho, Liberia, Libyan Arab Jamahiriya, Malawai, Mali, Mauritania, Morocco, Mozambique, Niger, Nigeria, Rwanda, Senegal, Seychelles, Somalia, Sudan, Swaziland, Uganda, United Republic of Tanzania, Upper Volta, Zaire, Zambia and Zimbabwe.
A/CONF.100/L.7/Rev.1	<u>Idem</u> : revised draft resolution submitted by Algeria, Angola, Benin, Botswana, Brazil, Burundi, Cape Verde, Chad, Colombia, Congo, Cuba, Djibouti, Dominican Republic, Ecuador, Egypt, Ethiopia, Gabon, Ghana, Guinea, Guyana, India, Indonesia, Ivory Coast, Jamaica, Kenya, Lesotho, Liberia, Libyan Arab Jamahiriya, Madagascar, Mali, Mauritania, Morocco, Mozambique, Nepal, Niger, Nigeria, Pakistan, Peru, Philippines, Rwanda, Senegal, Seychelles, Somalia, Sri Lanka, Sudan, Swaziland, Tunisia, Uganda, United Republic of Cameroon, United Republic of Tanzania, Upper Volta, Uruguay, Zaire, Zambia and Zimbabwe.
A/CONF.100/L.8	New and renewable sources of energy in Namibia: draft resolution submitted by Algeria, Angola, Benin, Botswana, Burundi, Cape Verde, Chad, Congo, Djibouti, Egypt, Ethiopia, Gabon, Ghana, Guinea, Ivory Coast, Kenya, Lesotho, Liberia, Libyan Arab Jamahiriya, Malawi, Mali, Mauritania, Morocco, Mozambique, Niger, Nigeria, Rwanda, Senegal, Seychelles, Somalia, Sudan, Swaziland, Tunisia, Uganda, United Republic of Tanzania, Upper Volta, Zaire, Zambia and Zimbabwe.
A/CONF.100/L.9	New and renewable sources of energy in the context of rural development: draft resolution submitted by India and Kenya
A/CONF.100/L.9/Rev.1	<u>Idem</u> : revised draft resolution submitted by Angola, China, Colombia, India, Kenya, Nepal, Philippines, Rwanda, Sweden, Tunisia and Zimbabwe.

<u>Country</u>	<u>Available languages</u>	<u>NATIONAL REPORTS Symbol</u>	<u>SUMMARIES* Symbol</u>
ISRAEL	(E)	A/CONF.100/NR/19	A/CONF.100/NR/19/Summary
ITALY	(E)	A/CONF.100/NR/37	
JAMAICA	(E)	A/CONF.100/NR/16	A/CONF.100/NR/16/Summary
JAPAN	(E)	A/CONF.100/NR/49	A/CONF.100/NR/49/Summary
JORDAN	(E)	A/CONF.100/NR/61	
KENYA	(E)	A/CONF.100/NR/36	
LEBANON	(E and A)	A/CONF.100/NR/46	
LIBERIA	(E)	A/CONF.100/NR/8	A/CONF.100/NR/8/Summary
LIBYAN ARAB JAMAHIRIYA	(A)	A/CONF.100/NR/58	
MADAGASCAR	(F)	A/CONF.100/NR/83	
MALAWI	(E)	A/CONF.100/NR/87	
MALI	(F)	A/CONF.100/NR/84	
MAURITANIA	(F)	A/CONF.100/NR/53	
MOROCCO	(F)	A/CONF.100/NR/86	
NEPAL	(E)	A/CONF.100/NR/78	
NETHERLANDS	(E)	A/CONF.100/NR/15	
NEW ZEALAND	(E)	A/CONF.100/NR/57	
NIGERIA	(E)	A/CONF.100/NR/59	A/CONF.100/NR/59/Summary
NORWAY	(E)	A/CONF.100/NR/18	A/CONF.100/NR/18/Summary
OMAN	(E)	A/CONF.100/NR/75	
PAKISTAN	(E)	A/CONF.100/NR/1	A/CONF.100/NR/1/Summary
PERU	(S)	A/CONF.100/NR/17	A/CONF.100/NR/17/Summary
PHILIPPINES	(E)	A/CONF.100/NR/79	
POLAND	(E)	A/CONF.100/NR/9	A/CONF.100/NR/9/Summary
PORTUGAL	(E)	A/CONF.100/NR/71	
REPUBLIC OF KOREA	(E)	A/CONF.100/NR/31	
ROMANIA	(E)	A/CONF.100/NR/29	A/CONF.100/NR/29/Summary
RWANDA	(F)	A/CONF.100/NR/45	
SENEGAL	(F)	A/CONF.100/NR/48	
SEYCHELLES	(E)	A/CONF.100/NR/39	A/CONF.100/NR/39/Summary
SIERRA LEONE	(E)	A/CONF.100/NR/38	A/CONF.100/NR/38/Summary

<u>Country</u>	<u>Available languages</u>	<u>NATIONAL REPORTS Symbol</u>	<u>SUMMARIES* Symbol</u>
SPAIN	(S)	A/CONF.100/NR/56	
SRI LANKA	(E)	A/CONF.100/NR/76	
SUDAN	(E)	A/CONF.100/NR/11	A/CONF.100/NR/11/Summary
SURINAME	(E)	A/CONF.100/NR/69	
SWAZILAND	(E)	A/CONF.100/NR/90	
SWEDEN	(E)	A/CONF.100/NR/21	A/CONF.100/NR/21/Summary
SYRIAN ARAB REPUBLIC	(E and A)	A/CONF.100/NR/70	
THAILAND	(E)	A/CONF.100/NR/65	
TUNISIA	(F)	A/CONF.100/NR/12	A/CONF.100/NR/12/Summary
TURKEY	(E)	A/CONF.100/NR/63	
UGANDA	(E)	A/CONF.100/NR/88	
UKRAINIAN SOVIET SOCIALIST REPUBLIC	(R)	A/CONF.100/NR/66	A/CONF.100/NR/66/Summary
UNION OF SOVIET SOCIALIST REPUBLICS	(E and R)	A/CONF.100/NR/51	
UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	(E)	A/CONF.100/NR/10	A/CONF.100/NR/10/Summary
UNITED REPUBLIC OF CAMEROON	(F)		A/CONF.100/NR/72/Summary
UNITED STATES OF AMERICA	(E)	A/CONF.100/NR/40	A/CONF.100/NR/40/Summary
VENEZUELA	(S)	A/CONF.100/NR/25	
ZAIRE	(F)	A/CONF.100/NR/20/Rev.1	
ZAMBIA	(E)	A/CONF.100/NR/64	

2. Background papers submitted by intergovernmental organizations

<u>Symbol</u>	<u>Organization and title</u>
A/CONF.100/IGO/1	Organisation for Economic Co-operation and Development (OECD): "Financial and technical assistance from members of the OECD Development Assistance Committee for energy development in developing countries, with special reference to new and renewable sources of energy"

<u>Symbol</u>	<u>Organization and title</u>
A/CONF.100/IGO/2	European Space Agency: "ESA's participation in the United Nations Conference on new and renewable sources of energy"
A/CONF.100/IGO/3	International Energy Agency: "Renewable Energy in the International Energy Agency - Preparing Today for the Needs of Tomorrow"
A/CONF.100/IGO/4	Organization of American States: "Action on new and renewable sources of energy within the inter-American system"
A/CONF.100/IGO/5	Council of Europe: "Contribution to the United Nations Conference on New and Renewable Sources of Energy"

3. Papers submitted by non-governmental organizations

<u>Symbol</u>	
A/CONF.100/NGO/1	International Electrotechnical Commission: Contribution by the International Electrotechnical Commission (IEC) on international standardization in the field of photovoltaic energy conversion
A/CONF.100/NGO/2	Associated Country Women of the World: "The Needs of Rural Women"
A/CONF.100/NGO/3	SUNSAT Energy Council: "The Solar Power Satellite - an Opportunity for Third World Development"
A/CONF.100/NGO/4	Organisation Internationale de Normalisation (ISO): "Aperçu des travaux de l'organisation internationale de normalisation (ISO) dans le domaine des sources d'énergie nouvelles et renouvelables"
A/CONF.100/NGO/5	Commission of the Churches on International Affairs of the World Council of Churches: "Towards more just and sustainable energy policies"
A/CONF.100/NGO/6	Bio-Energy Council: "1981 International Bio-Energy Directory"
A/CONF.100/NGO/7	Danish Organization for Renewable Energy: "Renewable Energy in Denmark"
A/CONF.100/NGO/8	International Council for Research in Agroforestry: "Fuelwood or Food? Why not have both?"
A/CONF.100/NGO/9	International Confederation for Disarmament and Peace: "The responsibilities of the Industrialised Nations"
A/CONF.100/NGO/10	International Hotel Association: "Energy conservation for hotel industry"

Symbol

A/CONF.100/NGO/11	Asian Institute of Technology: "The Energy Technology Division - a High Level Regional Training Center in the Field of Renewable Sources of Energy for Engineers and Planners from Asian Developing Countries" - information paper
A/CONF.100/NGO/12	International Chamber of Commerce: Statement to the Conference by Mr. Indra Chatterji, Vice-Chairman, ICC Energy Commission
A/CONF.100/NGO/13	Conférence mondiale de l'énergie (World Energy Conference): Utilisation des ressources hydroélectriques encore disponibles et structures industrielles
A/CONF.100/NGO/14	Society for International Development: "The Economic Realities of Alcohol Fuels"
A/CONF.100/NGO/15	The International Organisation for the Elimination of all Forms of Racial Discrimination (EAFORD) background paper
A/CONF.100/NGO/16	Conseil international des femmes: Rencontrer nos besoins en énergie: aujourd'hui et demain choix et propositions de femmes - comment informer et aider les femmes dans le domaine de l'énergie
A/CONF.100/NGO/17	International Union of Public Transport (UITP): "The role of public transport in energy saving and conservation in the transport sector"

4. Other background papers

A/CONF/100/PC/L.36	Preliminary draft of a Programme of Action. Revised text
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C. Documents issued before the Conference

<u>Symbol</u>	<u>Title</u>
A/CONF.100/PC/23 and Corr.1	Report of the Technical Panel on Geothermal Energy on its second session
A/CONF.100/PC/24 and Corr.1	Report of the Technical Panel on Wind Energy on its second session
A/CONF.100/PC/25 and Corr.1 and 2	Report of the Technical Panel on Ocean Energy on its second session
A/CONF.100/PC/26	Final report of the Technical Panel on Oil Shale and Tar Sands
A/CONF.100/PC/27 and Corr.1	Report of the Technical Panel on Solar Energy on its second session

<u>Symbol</u>	<u>Title</u>
A/CONF.100/PC/28	Report of the Technical Panel on Biomass Energy on its second session
A/CONF.100/PC/29	Report of the <u>Ad Hoc</u> Expert Group on Financing of New and Renewable Sources of Energy
A/CONF.100/PC/30	Report of the Technical Panel on Hydropower on its second session
A/CONF.100/PC/31	Final report of the <u>Ad Hoc</u> Expert Group on Information Flows
A/CONF.100/PC/32	Report on the use of peat for energy: note by the Secretary-General
A/CONF.100/PC/33	Report of the <u>Ad Hoc</u> Expert Group on Education and Training
A/CONF.100/PC/34	Report of the Technical Panel on Fuelwood and Charcoal on its second session
A/CONF.100/PC/36	Report of the <u>Ad Hoc</u> Expert Group on Industrial Issues, including Utilization of Energy in Transportation and Allied Sectors
A/CONF.100/PC/37	Report of the <u>Ad Hoc</u> Expert Group on Research and Development and Transfer of Technology
A/CONF.100/PC/38	Report of the <u>Ad Hoc</u> Expert Group on Rural Energy, including the Utilization of Energy in Agriculture
A/CONF.100/PC/39	Report of the <u>Ad Hoc</u> Group on Draught Animal Power
A/CONF.100/PC/41	Report of the Synthesis Group
A/CONF.100/PC/41/Add.1	Report of the Synthesis Group: appendix to chapter V - Recommendations made by the technical panels and the <u>ad hoc</u> groups of experts: note by the Secretariat
A/CONF.100/PC/42	Synthesis of technical panel reports
A/CONF.100/PC/43	Compendium of existing studies on new and renewable sources of energy

D. Reports of the Preparatory Committee

The Preparatory Committee for the United Nations Conference on New and Renewable Sources of Energy held four sessions; the reports of these sessions are contained in the undermentioned documents:

First session (4-8 February 1980) and second session (21 July-1 August 1980):
Official Records of the General Assembly, Thirty-fifth Session, Supplement No. 43 (A/35/43);

Third session (30 March-17 April 1981) and fourth session (8-26 June 1981):
Official Records of the General Assembly, Thirty-sixth Session, Supplement No. 47 (A/36/47).

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