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DEVELOPMENT AND INTERNATIONAL ECONOMIC CO-OPERATION

United Nations Conference on New and Renewable Sources of Energy

Report of the Secretary-General

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\* A/35/50.

## I. INTRODUCTION

1. At its thirty-fourth session, the General Assembly in resolution 34/190 of 18 December 1979, inter alia, requested the Secretary-General to submit to the Assembly at its thirty-fifth session a report on the preparations for the United Nations Conference on New and Renewable Sources of Energy, including recommendations for a detailed programme and calendar of activities and of other measures - particularly the consideration of the final results of the Technical Panels by the Preparatory Committee - which might still be required in order fully to meet the objectives of resolution 33/148 of 20 December 1978.

2. Subsequently, at its first session, the Preparatory Committee for the United Nations Conference on New and Renewable Sources of Energy, which had been established by the same resolution, requested the Secretary-General to submit to it, at its second session, a progress report on the state of preparations for the Conference (A/35/43 (Part I), para. 26, decision 1 (I) which would include the information on the following:

- (a) Implementation of paragraph 12 of General Assembly resolution 34/190, relating to the vital question of the provision of technical assistance to interested developing countries, in the preparation of the Conference and information on the requests received from countries and the assistance provided in response to those requests;
- (b) Implementation of paragraph 14 of resolution 34/190, relating to the programme of public information activities being planned to promote awareness of the Conference;
- (c) Implementation of paragraph 6 of General Assembly resolution 33/148, relating to over-all guidance, orientation and co-ordination of the contributions from the relevant secretariats of the United Nations system to the preparation of the Conference;
- (d) Suggested calendar of preparatory activities;
- (e) Ad hoc expert groups.

3. The Preparatory Committee also decided to reiterate the recommendation made by the General Assembly in its resolutions 34/190 that Governments of Member States should designate national focal points at the earliest possible date and urged that the information on such designations be communicated to the Conference secretariat by 31 March 1980, in order to provide the necessary link to the Conference secretariat so that it could proceed with further preparatory activities (ibid., decision 4 (I)).

## II. STATUS OF PREPARATIONS TO DATE

4. The secretariat of the Conference is making arrangements to provide technical assistance to interested developing countries, along the lines described below in

annex I. A list of the focal points designated by Member States is being issued in a separate document in order to facilitate easy reference. The list will be updated periodically, as necessary.

5. A progress report on the information programme, including a summary of work completed and activities in progress, is contained in Annex II.

6. The Director-General for Development and International Economic Co-operation will provide over-all guidance and orientation with regard to the contributions of the concerned secretariats of the United Nations system and will co-ordinate their work relevant to the Conference. As noted in the report of the Secretary-General (A/34/585), the Director-General has established a co-ordinating committee composed of senior officials from the concerned United Nations units at Headquarters; the committee's function will be to co-ordinate the substantive preparations and contributions of the relevant units and organizations, including the regional commissions, within the United Nations proper. The committee has met five times to date.

7. The Director-General has convened, to date, three interagency meetings for the purpose of maximizing co-operation between the concerned organizations and agencies of the United Nations system and the secretariat of the Conference. A fourth interagency meeting will be held in the fall of 1980 to plan arrangements for the follow-up of the second session of the Preparatory Committee. It is anticipated that further interagency meetings will be held on a regular basis in order to ensure the fullest participation of the relevant organizations of the United Nations system in the preparatory process and in the Conference itself.

8. Informal consultations will take place with the agencies concerned during the course of the second session of the Preparatory Committee, and an interagency meeting - to be held in late September or early October 1980 - will continue the process of co-ordinating interagency preparations for the Conference in the light of recommendations made by the Preparatory Committee at its second session. The Administrative Committee on Co-ordination, at its session in November 1980, will be briefed on developments and, at its spring 1981 session, will give further consideration to Conference-related issues.

9. The Conference secretariat participated in the meeting of the executive secretaries of the regional commissions held at Santiago, Chile, in February 1980. The requirements for preparations at the regional level in particular were discussed. In addition, representatives of the Conference secretariat participated in the meetings in May of the Interagency Task Force on Long-term Development Objectives during their discussions on the relationships between energy and development.

10. The Administrative Committee on Co-ordination discussed preparations for the Conference when it met from 31 March to 2 April 1980. The Committee was addressed by the Secretary-General of the Conference.

11. Finally, extensive informal consultations, supplementing the formal mechanisms, are facilitating the co-ordination of the preparatory activities under way within the United Nations system. They involve members of the co-ordinating committee,

the Conference secretariat and concerned senior officials in other organs, organizations and bodies of the United Nations system.

12. The calendar of preparatory activities (annex III) contains a list of activities envisaged or under consideration for execution during the preparatory period.

13. The draft terms of reference for the proposed ad hoc expert groups are contained in annex IV. The draft has been circulated to the organs, organizations and bodies of the United Nations system for comment and will be made available to the technical panels.

ANNEX I

Provision of technical assistance to interested  
developing countries

1. The Secretary-General of the Conference has approached the question of "provision of technical assistance to interested developing countries in the preparation of the Conference" on the understanding that the Conference secretariat will work in close co-operation with the regional commissions. Consequently, the regional commissions have been offered funds to enable them to employ senior regional advisers in addition to the P-4 staff members already made available. The regional commissions are sending those senior regional advisers on a "crash programme" of visits to the Member States in their region. The main objectives of such visits are as follows:
- (a) To contact key officials and provide them with basic information regarding the objectives of the Conference and, the thrust of the preparatory work already under way and envisaged;
  - (b) To encourage those States that have not already designated focal points to do so;
  - (c) To seek the views of the Governments on the relationship between the preparatory process at the national level and the preparatory processes at the subregional and regional levels;
  - (d) To discuss the guidelines concerning national documents sent to Member States by the Secretary-General of the Conference and to obtain the views of Governments on both the desirability of preparing such documents and their outline;
  - (e) To obtain advance indications about possible technical assistance requirements and ensure that formal requests are conveyed, through the permanent missions to the United Nations in New York, to the Secretary-General of the Conference.
2. The Economic Commission for Latin America, principally in collaboration with the Latin American Energy Organization (OLADE) and other concerned regional and subregional institutions, has made substantial progress: it has not only filled all the posts allotted to it but has also sent its staff on visits to Member States and has informed the secretariat of the Conference of the results obtained. It assisted in the designation of focal points in nine Member States and received preliminary indications of the likelihood of requests for technical assistance from certain countries.
3. The Economic Commission for Western Asia, Africa and Asia and the Pacific are at present filling the posts made available to them.

4. Burundi has made a direct request to the Secretary-General of the Conference for technical assistance, and it is possible that requests may come from at least three other Member States in the African region. Organizational arrangements are being made for responding appropriately to the request of Burundi.

5. Member States should note that, under the provisions of paragraph 12 of General Assembly resolution 34/190, the responsibilities of the Secretary-General of the Conference relate to technical assistance only in regard to preparation for the Conference; requests for regular technical assistance should be submitted in accordance with established procedures. The Secretary-General of the Conference, working through the regional advisers, will consult with concerned Member States and define the nature of the assistance sought. He will then consult the relevant units or organizations of the United Nations system about ways and means of providing such assistance and will co-ordinate all activity in that regard.

ANNEX II

PROGRAMME OF PUBLIC INFORMATION

1. At the end of its thirty-fourth session, the General Assembly approved an information programme for the conference on new and renewable sources of energy, with a budget reduction. The General Assembly decided to leave it to the secretariat of the Conference and the various departments of the United Nations Secretariat to work out a new programme within the limits of the revised budget. The revised information programme is outlined below. Although the information programme will be most active from September 1980-August 1981, it has already begun to be implemented. The following actions and activities are currently under way:

(a) Direct contact has been established with accredited correspondents in New York and Geneva, and news items, interviews with responsible people in the Conference secretariat and so on, will go through those channels. About 10 press releases plus some fact sheets regarding specific topics have been produced and distributed.

(b) An interagency task force of the Joint United Nations Information Committee has been set up, and a substantial number of United Nations organizations have pledged to include activities regarding the Conference in their regular information programmes. Based on information from the different agencies and organizations of the United Nations system, fact sheets are being prepared describing the activities of each organization in the area of new and renewable sources of energy.

(c) Articles will be produced, on request, for specialized publications, such as l'Energie, Environmental Conservation etc.

(d) In order to encourage activities at the regional level, discussions are taking place with those responsible for information activities in the regional economic commissions.

(e) United Nations information centres all over the world were asked to send in their proposals for activities on the national level, and a substantial number of answers have been received and are being examined with a view to funding and other support.

(f) A special mailing list is being drawn up which will be used for sending specific information material to specialized representatives of communications media, institutions, non-governmental organizations etc. The list will facilitate mailings to groups and persons requiring more in-depth information than the general public.

(g) Planning has begun for study tours and encounters at the regional level.

(h) The Division for Economic and Social Information in the Department of Public Information has produced two features for distribution within the regular feature-system of the Division. More features will follow.

(i) The United Nations publication Development Forum has already published articles on the themes of the Conference and will continue to do so on a regular basis. Earthscan and Development Forum are co-operating on a four-page supplement to Development Forum on new and renewable sources of energy and on the subsequent production of a specialized booklet for a more specific audience. The supplement will appear in the summer of 1980.

(j) Negotiations are in progress with Inter-Press Service, a third-world news agency with outlets in Latin America and Africa and with links to all developing countries, and with the Press Foundation of Asia and the "Press Agencies" Pool of Non-aligned Countries. This will lead to a series of features on a bi-weekly basis in the period from January to August 1981.

(k) Starting in July, the Radio Service of the Department of Public Information will produce 12 half-hour radio programmes on new and renewable sources of energy - six in 1980 and six in 1981. These programmes will be available in English, French, Spanish and Arabic. Furthermore, within its regular programme, the Service is recording interviews with experts and other key figures in the area of new and renewable sources of energy.

(l) The Visual Service of the Department of Public Information will start production this summer on a short animated film on energy which will be produced in co-operation with Krathy Films, Czechoslovakia. The cost of production will be \$30,000, of which \$20,000 will be paid by the information programme of the Conference; the remainder will come from the regular budget of the Radio and Visual Service Division, Department of Public Information. The film will be produced in 35 mm, making possible commercial distribution to theatres.

Within the Vignette series, several short films will be devoted to energy matters. Two of them, "Heat from the Earth; Thermal Energy in New Zealand" and "Las Gaviotas; TCDC in the Making of Windmills in Colombia", have already been completed and will soon be distributed. The new film "Bridges across the South", on technical co-operation among developing countries world-wide, will deal in part with energy questions.

The weekly United Nations television programme, "World Chronicle", is planning to devote one of its panel discussions to the Conference.

The Visual Service is also preparing a wallsheet with text and pictures on the topics of the Conference, for use in schools and other educational institutions.

(m) The Directors for Development Information in the member countries of the Organization for Economic Co-operation and Development are being contacted, within the framework of their regular co-operation with the Department of Public Information, with a view to mobilizing their assistance and support in bringing the Conference to the attention of the public in member countries.



Revised programme of public information activities\*

Activities

2. The Activities of three sorts should be conceived - international activities, activities on a regional or national level and activities based on interagency co-operation within the international system. In a number of cases activities on one level will support or be carried out in conjunction with activities on another level.

International activities

Radio

3. A special series of monthly 30-minute radio programmes will be produced starting in June 1980 and will be sent to radio stations in all Member States. Production will be in English and programmes will be translated into French, Spanish and Arabic. In all, 12 30-minute programmes will be produced and distributed.

Television and film

4. Production of a short animated film on energy to be made in co-operation with Krathy Films of Czechoslovakia, will commence this summer and to be completed in 1981. It will be produced in 35 mm, which will make it suitable for showing in theatres around the world, it will also be available for non-commercial use in libraries and educational institutions and by non-governmental organizations. A similar co-operative effort with Krathy Films resulted in the film "Boom", which gained wide recognition and won the jury award for animation at the Cannes Film Festival of 1979. A series of television vignettes on energy questions will be produced under the regular budget of the Visual Service. A special segment on energy will also be contained in the regular television series "World Chronicle".

Press releases, fact sheets and features

5. Given the special nature and periodicity of information on energy, the original proposal for a newsletter in English, French, Spanish and Arabic has been shelved. It was decided that periodic press releases, press notes, fact sheets, and features geared to specific audiences, as events warrant, would be more useful and have greater impact. They should be produced in English, French, Spanish and Arabic.

Third world press agencies and publications

6. A fund has been set aside to support third-world press agencies and a number of specialized publications. It has been proposed that such publications as L'Energie, a well known and highly respected energy publication, should be assisted

\* Prepared by the Department of Public Information in conjunction with the Conference secretariat and reviewed by the Interdepartmental Co-ordinating Committee. See documents A/C.5/34/74 and A/34/7, Add.25.

in producing a special bilingual issue on the themes of the Conference as well as special articles concerning the Conference throughout the year. Inter-Press Service and other press agencies will carry special items on the Conference and, with additional funding from the Conference information programme, will produce articles, interviews and features on new and renewable sources of energy and give them wide distribution, especially in the developing countries.

#### Pre-Conference study tours

7. It has been proposed that a series of study tours be organized, culminating in regional information meetings to prepare journalists for the Conference. The tours would give the media representatives substantive background for covering the Conference. (This scheme of bringing people to a meeting for a certain type of preparation, instead of organizing a formal "encounter" at the Conference itself, is being tried out for the eleventh special session of the General Assembly.)
8. With regard to press agencies, international and regional levels are complementary. Study tours and regional encounters will have to be organized in close co-operation with the regional commissions. The secretariat of the Conference will advise the Department of Economic and Social Information as to the regions and countries using new and renewable sources of energy which could form part of the study tour.

Attention should be focused on not only the economic aspects of the application of new and renewable sources of energy, but also on the sociological and cultural aspects.

9. The Conference secretariat will pay close attention to the interregional exchanges of information about new and renewable sources of energy.
10. As stated in the original plan, a general fund for printing is necessary. The fund should be used as required, either for the production of core material for general distribution or for the support of specific regional or national activities.
11. The information programme also covers the production by Development Forum and Earthscan - both of which are widely known and respected - of a number of booklets and supplements.
12. The original proposal suggested support for the activities of relevant non-governmental organizations, including the activities of the liaison offices in New York and Geneva and documentation for non-governmental groups attending the Conference. Accordingly, a fund has been set aside for such support activities.

#### Regional or national activities

13. A letter has gone to the regional commissions and to United Nations information centres all over the world to announce that limited financial means will be available to support information activities for the Conference. Nevertheless,

regional bodies have so far shown active interest in the Conference and have made practical proposals for projects geared to the specific needs of various countries and regions.

#### National level

14. It has been proposed that an international colloquium on new and renewable sources of energy be convened in Paris on 23 and 24 October 1980, on the occasion of World Development Information Day. The colloquium would serve as a media forum, highlighting energy issues and drawing the attention of non-expert media people to the theme of the Conference. It would bring together prominent figures in the field, such as senior government officials and United Nations staff, to brief economic editors and other journalists on energy and energy-related issues, and economists and spokesmen from the business sector, to serve as panelists. There would be approximately 10-15 panelists and 25-30 economic editors from developing and developed countries, and the meeting would be held at UNESCO Headquarters.

#### Activities based on interagency co-operation

15. The first meetings of the task force of the Joint United Nations Information Committee took place in February and March of 1980, and definite proposals are now awaited from the agencies. A number of agencies have responded very favourably to the idea of co-operation, and the fund which was proposed for that purpose will be maintained.

#### Audiences

16. The information programme must direct itself to three different - although related - audiences. The first is the "energy" community, which is already active. Co-operation with institutions like United Nations University will promote contacts with this target group. The second audience consists of media representatives who are more interested and involved in the "politics of energy" than specific science writers. In order to make them more aware of the relationship between development and the application of new and renewable sources of energy, a constant stream of information and background material should be issued to them.

17. The third audience is the world-wide general public, which is confronted daily with the problems of energy and which should be shown the relevance to daily life of the decisions to be taken at the Conference. Contact with this audience will be made through media representatives and non-governmental organizations; for this purpose, close co-operation with the officer in the Conference secretariat responsible for non-governmental organizations will be essential.

18. In the field of information, time is of the essence. The Conference follows the meeting of the World Food Council, the World Conference of the United Nations Decade for Women and the eleventh special session of the General Assembly, all of which will have an impact on the Conference and its information programme.

19. It has been proposed that the main thrust of the information programme for the Conference should come in the period from September 1980 to March 1981, because by that time, the substantive issues that will confront the Conference will have taken shape.

Financial estimates

20. The following figures have been arrived at for the revised programmes:

	<u>1980</u>	<u>1981</u>	<u>Total</u>
A. Supplementary staff of the Department of Public Information	\$62,800	\$86,600	\$149,400
B. Travel of information act	5,000	5,000	10,000
C. Study tours and encounters	40,000	95,000	135,000
D. Radio programmes	21,900	23,200	45,100
E. Third-world press agencies and publications	15,000	24,900	39,900
F. Earthscan/ <u>Development Forum</u>	26,800	23,200	50,000
G. Regional activities	60,000	30,000	90,000
H. National activities	25,000	25,000	50,000
I. Interagency activities	5,000	10,000	15,000
J. Non-governmental organizations	1,000	15,000	16,000
K. Television and film	20,000	-	20,000
L. Printing fund	5,000	5,000	10,000
M. Paris colloquium	45,000	-	45,000
N. Other special projects	7,400	17,200	24,600
Total	<u>\$339,900</u>	<u>\$360,100</u>	<u>\$700,000</u>

ANNEX III

Calendar of preparatory activities

A. Meetings of technical panels

<u>Panel</u>	<u>Venue</u>	<u>Date</u>
Geothermal	United Nations/Headquarters	8-12 September 1980
Ocean	United Nations/Headquarters	22-26 September 1980
Wind	United Nations/Geneva	29 September-3 October 1980
Oil shale and tar sands	United Nations/Geneva	20-24 October 1980
Biomass	United Nations/Geneva	27-31 October 1980
Solar	UNESCO/Paris	1-5 December 1980
Fuel-wood and charcoal	FAO/Rome	15-19 December 1980
Hydropower	United Nations/Headquarters	5-9 January 1981

B. Meeting of the Chairmen of the technical panels

Venue: United Nations Headquarters; Date: 16-27 March 1980

C. Meetings of ad hoc groups of experts

<u>Group</u>	<u>Venue</u>	<u>Date</u>
Energy storage	United Nations/Headquarters	3-7 November 1980
Finance	United Nations/Headquarters	12-16 January 1981
Rural energy	United Nations/Centre for Human Settlements/ Nairobi	26-30 January 1981
Technology transfer	United Nations/Headquarters	February 1981
Industrial issues	UNIDO/Vienna	February 1981
Information flows	United Nations/Headquarters	2-6 February 1981

D. Activities planned by regional economic commissions

1. Economic Commission for Africa

<u>Activity</u>	<u>Date</u>	<u>Venue</u>
Intergovernmental meeting and meetings of <u>ad hoc</u> expert groups on hydropower, geothermal energy, and ) charcoal, fuel-wood and ) biomass )	27-31 October 1980	Addis Ababa, Ethiopia
	20-25 October 1980	Addis Ababa, Ethiopia

2. Economic Commission for Europe

<u>Activity</u>	<u>Date</u>	<u>Venue</u>
Seminar on new and renewable sources of energy, held at the invitation of the Government of the Federal Republic of Germany	8-12 December 1980	Federal Republic of Germany

3. Economic Commission for Latin America

Meeting organized by OLADE and ECLA of energy-related international institutions in Latin America and the Carribean	1980	
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Two expert group meetings organized by OLADE and ECLA - topics to be determined	1980	
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4. Economic Commission for Western Asia

Seminar/exhibition, including discussion of consultancy papers on solar, biomass, wind, geothermal energy	March 1981	
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5. Economic and Social Commission for Asia and the Pacific

Regional intergovernmental meeting	-	-
Expert group meeting on geothermal energy, organized with the Government of New Zealand	1980	New Zealand
Expert group meeting on fuel-wood and charcoal, organized with FAO	1981	

E. Meetings organized by other organs, organizations  
and bodies of the United Nations system

	<u>Date</u>	<u>Venue</u>
Interagency task force on Long-term Development Objectives (Relationships between energy, development, money and finance)	19-23 May 1981	United Nations Headquarters
Energy and rural development, organized by the United Nations University and the Centre national de recherche scientifique (France)	24-28 May 1980	Bordeaux, France
Expert panel on feasibility study for an international information system on new and renewable sources of energy (UNESCO)	11-13 June 1980	UNESCO/Paris
Technical co-operation among developing countries in biomass technology (China and UNIDO)	July 1980	China
Meetings of the executive secretaries of the regional commissions	7-8 July 1980	United Nations/Geneva
Technical workshop on fuels and chemicals from biomass, organized by UNEP, UNESCO the International Cell Research Organization and Instituto Centro-Americano de investigación y tecnología industrial	4-8 August 1980	Antigua, Guatemala
Comparative analysis of energy sources, organized by UNEP	17-28 November 1980	Bonn, Federal Republic of Germany
African regional meeting, organized by the Commonwealth Science Council and the Conference secretariat	December 1980	Nairobi, Kenya

Date

Venue

International colloquium on  
new and renewable sources of  
energy, on the occasion of  
World Development Information  
Day; organized by the United  
Nations Information Centre  
in Paris, the Department  
of Public Information and  
the Conference secretariat

23-24 October 1980

UNESCO/France



ANNEX IV

Terms of reference for the ad hoc groups of experts

1. The Secretary-General of the United Nations Conference on New and Renewable Sources of Energy has decided to establish six ad hoc groups of experts to advise him on the most appropriate ways and means of ensuring that the Conference will be able to address six issues that cut across all the new and renewable sources of energy - namely, energy storage, financing, industrial issues, information flows, rural energy and transfer of technology - thereby enabling the Conference to fully respond to the stipulations of the General Assembly in its resolution 33/148 - in particular, to those in operative subparagraphs 4 (c)-4 (g).
2. Experts are being chosen for appointment to the six ad hoc groups on the basis of their extensive knowledge of the issue covered by the particular group and on the basis of equitable geographical distribution.
3. Each of the expert groups is required to take note of all preparatory activity concerning the Conference. It will have to pay special attention to the preparatory work under way for the eight technical panels, the two special studies, and the meeting of the Chairmen of the panels and of the other five expert groups. This will involve, inter alia, study of terms of reference, background papers, the interim reports of the panels, the final reports - where available - of the panels, the results of the two special studies, and the reports of the other expert groups.
4. Each expert group will be convened for a single five-day meeting. The Conference secretariat will arrange for the provision of a set of background papers and an agenda for the meeting. Individual experts will be requested to make written submissions for possible inclusion in the report of the expert group. A draft report must be completed during the five-day meeting.
5. Representatives of interested organs, organizations and bodies of the United Nations system will be invited to submit notes, in their special areas of competence for consideration by the groups of experts and will attend the meetings.
6. At its thirty-fourth session the General Assembly approved the allocation of resources needed to constitute the expert group meetings. The number of experts in each group, the approximate dates of the meetings and the likely venues are as follows:

<u>Expert group</u>	<u>Number of experts</u>	<u>Approximate date</u>	<u>Venue</u>
Energy storage	8	November 1980	United Nations Headquarters
Financing	10	January 1981	United Nations Headquarters
Rural energy	12	January 1981	Nairobi
Transfer of technology	8	February 1981	United Nations Headquarters
Industrial issues	25	February 1981	Vienna
Information flows	8	February 1981	United Nations Headquarters

A. Energy storage

7. The expert group on energy storage should review the requirements for energy storage related to the technologies discussed by the various technical panels - in particular, the panels on solar energy, wind energy and hydropower.

8. There should be a review of available strategies for dealing with the problem of diurnal and seasonal fluctuations in energy supply from renewable sources and in demand. Such strategies include:

(a) For grid-connected electric power, the use of the inherent storage of the grid;

(b) The linking of wind and hydropower to take advantage of the inherent storage capability in hydraulic reservoirs and, to some extent, seasonal complementarity of the sources;

(c) The scope for applications which, like irrigation and water-pumping, have inherent storage capability, or, like air-conditioning, coincide with peak supply (of solar energy);

(d) The use of hybrid systems, including a diesel generator combined with a wind or solar source operating in a fuel-saver mode.

9. The group should also review the technological and economic status of the following energy storage systems:

(a) Thermal storage, including sensible heat and latent heat storage;

(b) Mechanical storage, including pumped water, compressed air, fly-wheel and elastomer storage;

(c) Electrochemical battery storage;

(d) Automotive power systems.

10. The group should review the technological prospects for the development of the following energy storage techniques:

(a) Chemical binary storage systems, including hydrates and analogous types (e.g., sulphuric acid and water) and catalytic-dissociation type storage (e.g., sulphur trioxide) - also known as chemical heat pumps;

(b) Electromagnetic systems, including super-conducting storage;

(c) "Hydrogen economy", which is a solution to the problem of fluctuations in both the supply of and demand for energy. It basically involves the generation of hydrogen and the subsequent conversion of the hydrogen to electrical energy.

11. Special attention should be paid to the specific needs of developing countries vis-à-vis energy storage.

B. Financing

12. The expert group on financing will consider the question of financing the activities necessary for promoting the identification, development, exploitation and utilization of new and renewable sources of energy. Funding for the different sources of energy would cover research and development, demonstration projects and education and training. The implication of different United Nations funds, such as the Interim Fund for Science and Technology for Development, the Revolving Fund for Natural Resources Exploration, and the proposed UNDP energy fund, will be considered, along with the question of replenishment, especially for the UNDP fund.

13. The group will examine, inter alia, the following:

- (a) The role of national energy financing policies:
  - (i) Planning and allocation of priorities;
  - (ii) Policy on ventures concerned with exploration, production and development of new and renewable sources of energy;
  - (iii) Regulating measures, taxation and fiscal incentives;
- (b) Measures to promote financing of ventures through triangular co-operation:
  - (i) Traditional financing of an energy project of the public sector with the collaboration of a second partner;
  - (ii) The integrated approach for geographical or economic-sector development or for intercountry, regional and subregional programmes in the third world with the assistance of a financial institution;
- (c) Measures to promote joint ventures:
  - (i) Government-to-Government basis;
  - (ii) Private-sector to public-sector basis;
- (d) The rôle of financial institutions and banks:
  - (i) The role of commercial banks;
  - (ii) The role of the World Bank;
  - (iii) The role of national, regional and international development banks and institutions.

C. Industrial issues

14. The ad hoc group on industrial issues will discuss and examine the following:
- (a) Energy for industry:
    - (i) The present and possible future role of new and renewable sources of energy to industry; energy supply and related development patterns;
    - (ii) The development of small-scale industries and agro-industrial development, with special reference to utilization of new and renewable sources of energy, especially in remote and rural areas;
    - (iii) The decrease in energy consumption in selected industrial enterprises through utilization of wastes (with the application of new and renewable sources of energy);
    - (iv) Case studies from both developed and developing countries on the industrial utilization of new and renewable sources of energy;
  - (b) Industry for energy:
    - (i) The experience and possibilities of producing equipment for the utilization of new and renewable sources of energy, with particular attention to developing countries;
    - (ii) Financial requirements for the production of such equipment in developed and developing countries (by 1990-2000);
    - (iii) Problems of local production, maintenance, operation;
    - (iv) Spare parts;
    - (v) Problems of equipment standardization;
    - (vi) Training of local technicians;
  - (c) Institutional problems:
    - (i) National energy planning for industrial development;
    - (ii) The creation and role of national bodies dealing with energy/industry problems, with particular attention to research, development and engineering for new and renewable sources of energy;
    - (iii) The organization of distribution/consumption systems.

D. Information flows

15. The expert group on information flows will discuss the subject in the context of the vital need for an effective information support system for the formulation of policy and administrative decisions, for transfer of technology, for education and training, and for feedback into the operational activities of the development process in the field of new and renewable sources of energy.

16. The expert group is expected to focus on:

(a) Information needs of the users involved in policy-making, research and development, education and training, commercial and industrial development, and of the general public;

(b) Information sources, systems and services currently available for meeting the requirements of the users identified above. Special attention would also be given to the information delivery infrastructure at the national level;

(c) Methods of improving access to and use of information, including the identification of areas where both services and required information are lacking;

(d) Costs and financing mechanisms for meeting increased demand for improved access to information systems and services required, particularly by the developing countries.

17. The expert group would be provided with the following documents for use as background material:

(a) A UNESCO study investigating the feasibility of establishing an international information system on new and renewable sources of energy;

(b) A study dealing with the establishment of a network for the exchange of technological information undertaken by the Office of Science and Technology and the Interagency Task Force on Information Exchange and the Transfer of Technology;

(c) Studies undertaken by countries for their own use or for the benefit of others on the transfer of information.

18. The following topics for additional papers are at present under consideration as background material to be used by the expert group:

(a) Identification of priority users who are at present inadequately served, types of information they require, and ways to meet their information requirements;

(b) A review of relevant information systems and services within the United Nations which are useful as information resources for new and renewable sources of energy, including ways and means of improving them, identification of gaps that exist among them etc.;

(c) A review of relevant information systems and services outside the United Nations and ways of making them immediately accessible to users especially those in developing countries;

(d) Costs and financial mechanisms for promoting the utilization, exchange and dissemination of information dealing with new and renewable sources of energy.

E. Rural energy

19. The expert group on rural energy will address itself in depth to the following:

(a) The evaluation and analysis of present and future rural energy consumption patterns, by sector - e.g., household (cooking, water and space heating), agriculture (irrigation, crop-, fruit- or fish-drying), small-scale industries including agro-industries, transportation, lighting, rural health facilities (sterilization, cooling), telecommunication etc; for each of the above, taking into account cultural/social preferences and highlighting regional and national variations;

(b) An appraisal of methodologies for the collection, analysis, projection and dissemination of rural energy needs for rural development; small-scale and agro-industries, domestic use, processing etc.;

(c) The collection and analysis of data on energy supplies (e.g., fuel-wood, crop residue, draught animal, gas, electricity, petroleum products, coal etc.) to rural areas - by source and in the short, medium, and long term;

(d) The evaluation of conditions of access to and potential contribution from new and renewable sources of energy as defined by the Conference - i.e., ocean, wind, geothermal, solar, oil shale and tar sands, fuel-wood and charcoal, biomass, and hydropower - in meeting the needs mentioned in 19 (b) above;

(e) The identification and highlighting of the major issues and problems relating to:

- (i) The collection and analysis of consumption data;
- (ii) The development of viable energy supply systems in the rural areas;
- (iii) Environmental and ecological factors and impact related to current use of energy resources in rural areas - for example, deforestation and its consequences;

(f) Questions relating to the effective means of meeting rural energy requirements, including the integrated approach, energy plantation, better designs of energy production, and the use of energy equipment etc., taking into account economic, social, cultural and environmental considerations;

(g) An appraisal of institutional, social and environmental considerations and implications of energy supply, transport, storage and use in rural areas;

(h) Policy options and priorities for the formulation and implementation of viable energy development strategies; for integrating energy into rural development strategies; for the development and promotion of adequate financial means; for building or strengthening existing institutions; for training; for research and development in appropriate fields; for transfer of appropriate technology; for information flows.

F. Transfer of technology

20. The expert group on the transfer of technology will discuss the systematic transfer of knowledge required for the application of technology for the purpose of assessing, developing, exploiting (and managing) and utilizing new and renewable sources of energy.

21. The group will examine the adequacy of the means - now available or projected - for assisting the developing countries in obtaining know-how and technical expertise for the specific purpose of promoting the exploration, development, exploitation and utilization of new and renewable sources of energy. The group will consider, inter alia:

(a) The availability of methodologies for assessing technologies concerned with new and renewable sources of energy;

(b) Problems concerned with formulation, evaluation and implementation of projects concerned with new and renewable sources of energy. These would entail:

- (i) Compiling pre-investment and feasibility studies;
- (ii) Drafting specifications needed to evaluate and purchase the necessary plant and equipment;
- (iii) Formulating proposals for modifying and/or adapting plant and equipment to suit local conditions;
- (iv) Identifying the need for, and arranging for the training of, the necessary skilled personnel;
- (v) Formulating proposals for scheduling and executing the tasks of installing and commissioning plant and equipment;

(c) The enhancement of the endogenous capacity of developing countries to generate and adapt, to an extent advantageous to them, the technologies needed by them in the area of new and renewable sources of energy.

22. The following papers will be commissioned by the Conference secretariat for the use of the expert group:

(a) A review of the experience of developing countries concerning the transfer of technology in the area of new and renewable sources of energy;

(b) The feasibility of creating regional centres for field-testing and demonstrating equipment for generating and utilizing power from new and renewable sources of energy;

(c) Ways and means of improving suitable forms of co-operation and, where necessary, supporting research and development activity in the area of new and renewable sources of energy;

(d) Ways and means of identifying and satisfying the educational and training needs of developing countries in the area of new and renewable sources of energy;

(e) Review of the methodologies and techniques currently available for assessing national requirements for all forms of energy, and devising national strategies for meeting such requirements (near, medium and long term) and identifying the role of new and renewable sources of energy.

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