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E C L A C

Economic Commission for Latin America
and the Caribbean

REPORT ON THE CONSULTATIVE MEETING FOR THE PROMOTION OF LATIN AMERICAN AND CARIBBEAN PROJECTS IN THE AREA OF NEW AND RENEWABLE SOURCES OF ENERGY

New York, 27-29 June 1984

84-10-511

CONTENTS

/1. Background

1. Background to the Meeting

(a) Mandates

1. The Nairobi Programme of Action for the Development and Utilization of New and Renewable Sources of Energy adopted at the United Nations Conference on New and Renewable Sources of Energy, held in Nairobi, in August 1981, indicates in its paragraph 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 (NRSE)".

2. The General Assembly, through Resolutions 37/250 and 38/169 reiterated this call and gave its full support to the preparations underway.

3. The call for the convening of Consultative Meetings was also stressed during the various Intergovernmental Meetings held as follow-up to the Nairobi Conference. Thus:

(1) The Report on the First Session of the Intergovernmental Committee for the Development and Utilization of NRSE held in New York in April 1983 states that: "At the regional level, the regional commissions should undertake the responsibility for identifying areas and making preparations for Consultative Meetings at the regional and subregional levels, in co-operation, as appropriate, with other interested participants. The Committee welcomes steps already taken by the Economic Commission for Latin American (ECLA), 1/ in collaboration with the Latin American Energy Organization (OLADE), for making the necessary preparations for convening of a Consultative Meeting to mobilize resources for a set of regional projects in new and renewable sources of energy. Other regional commissions

1/ On July 27, 1984 the Economic and Social Council approved the change of name of this institution to: Economic Commission for Latin America and the Caribbean (ECLAC).

/are urged

are urged to undertake or expedite their preparations for convening of similar meetings for developing countries before the end of 1983, so that these meetings at the regional level could be held prior to the second session of the Committee".

(2) The Second Session of the Intergovernmental Committee for the Development and Utilization of NRSE held in New York concluded that: "At the regional level, the regional commissions should undertake the responsibility for identifying areas and making preparations for Consultative Meetings at the regional and subregional levels, in co-operation, as appropriate, with other interested participants. The regional commissions should accelerate their efforts to prepare and convene Consultative Meetings at the regional level and hold subsequent meetings as necessary".

(b) Concept behind the Consultative Meetings

4. The Nairobi Conference offered the International Community a forum to discuss the potential and implementation vehicles for multilateral co-operation in the promotion of New and Renewable Sources of Energy (NRSE) as a vital element for reaching a smooth and orderly energy transition.

The Programme of Action adopted at the Conference sets the context and the field for action and defines priority action areas. In order to promote multilateral co-operation in the field of NRSE, the Programme also indicates that institutional and financial arrangements should be promoted and established which, serving as guiding and supporting vehicles, would provide impetus to the actions called for.

It is within this context that the consultative meetings were conceived as a concerted effort by which multilateral co-operation would be geared to supporting high priority NRSE projects and activities. The purpose of Consultative Meetings is to promote the mobilization of financial resources through a mechanism whose advantage is advancing in the co-ordination of the regional priorities of developing countries with the interests of financing bodies and agencies. The bringing together of the financing organizations with national, subregional and regional bodies interested in multilateral co-operation is the basic principle behind this mode of negotiation.

(c) Consultative Meetings and the Regional Dimension

Consultative meetings at the regional level acquire special significance because the projects conveyed to them are drawn upon from national priorities. Thus, the identification of regional priorities and the formulation of projects which reflect them are vital tasks if full advantage is to be taken of the regional vector.

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There is no doubt that regional action is one of the most useful and effective means of carrying out many of the activities required to promote the utilization of new and renewable sources of energy. Only through joint efforts among countries can the full knowledge of the scientific and technological parameters of the new sources of energy be developed. The preparation and training of specialists on the many different topics related to energy matters can best be pursued through the regional channels. The testing and demonstration/evaluation of specific energy technologies, when carried out at the regional level, permits a maximum use of financial and technical resources. Countries of the Latin American and Caribbean region have fully realized these benefits and have therefore supported regional initiatives.

Many governments, agencies and international financing institutions interested in the promotion of new and renewable sources of energy have, in the last years, supported a number of projects on many of the energy sources considered by the Nairobi Conference. In the cases of resource evaluation, diffusion, information, feasibility studies and the development of normalized methodologies, many positive actions and results have evolved from regional efforts such as those carried out by OLADE, CARICOM and CDB. Regarding demonstration projects there have been a series of bilateral efforts which have had disappointing results due to the lack of local participation, non-coincidence of interests or inadequate specification of scope and objectives. A greater co-ordination among interested institutions could help avoid dispersion of efforts, duplication of actions and ineffective utilization of financial resources.

Thus, the NRSE Consultative Meetings in the regional context have three main objectives:

- Generate a series of regional activities and projects which, as a whole, promotes the development and utilization of NRSE in the countries of the region, in accordance with national priorities.

- Promote a higher degree of co-ordination of the activities of financing agencies in the countries of the region by gearing this support to the established priorities.

- Promote effective flow of technical and financial support in those areas of joint interest and coincidence of goals.

ECLAC decided to convene a Consultative Meeting for Latin American and Caribbean NRSE Projects with a view of launching this kind of process of negotiation. It was ECLAC's view that with an aim of trying to establish this mechanism as one of the vehicles to promote multilateral co-operation, a first encounter should be convened to discuss not the totality of possible regional actions and projects, but a first set of selected projects. Based on the results of this first meeting, ECLAC would analyze, in close consultation with the countries and the regional and subregional institutions

/and UN agencies,

and UN agencies, the need to convene further meetings of this kind. This coincides with the recommendations of the Second Session of the Intergovernmental Committee for NRSE held in April 1984.

(d) Preparations for the Meeting

The Economic Commission for Latin America and the Caribbean (ECLAC), in response to the call for the convening of Consultative Meetings at the regional level, decided to invite the Latin American Energy Organization (OLADE) and the Caribbean Community (CARICOM) to participate at this meeting and to make use of it as a possible negotiation forum for projects derived from:

- OLADE's Latin American Energy Co-operation Programme (PLACE) adopted at the XII Ministers' Meeting of OLADE in November 1981,

- CARICOM's Regional Energy Action Programme (REAP) adopted by the Heads of Governments in July 1983.

(i) OLADE Projects. OLADE maintains permanent contact with the Energy Ministries of its member countries and, in the context of PLACE, it is continously identifying the countries' areas of interest. Based on this work, ECLAC and OLADE carried out, during 1983, a series of formal consultations with the 32 national Ministries. All member countries were asked to indicate which projects would be of their interest and priority to channel to a multilateral forum, such as the Consultative Meeting which was being prepared. Answers were received from 17 countries of the region and varied from a mere indication of areas of interest to fully formulated projects. This material was thoroughly analyzed by OLADE and ECLAC in formulating the 21 regional projects. In order to guarantee the governments' approval of the projects, OLADE submitted them to the XIV Ministers' Meeting held in November 1983 and to the X Ministers' Committee Meeting held in June 1984. This ratification is considered highly significant in that it gave the projects official support on the part of the countries. The set of projects reflects the priorities of the countries and, being in the context of PLACE, are integrated to the global energy initiatives, activities and strategies of the region.

Several months before the meeting, OLADE and ECLAC initiated formal contact with the invited institutions and the set of projects was personally presented by OLADE personnel to many of them, in order to facilitate the analysis on their part.

(ii) CARICOM Projects. The Caribbean Community, based on the framework approved in 1982 by the Heads of Government, proceeded to formulate the detailed projects contemplated in REAP. To this end, close co-ordination was exercised between CARICOM, Caribbean Development Bank (CDB), Organization of Eastern Caribbean States (OECS) and the countries of the subregion.

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Making use of the Consultative Group for Caribbean Economic Development (CGCED) Meeting held in February 1984, CARICOM presented the set of projects to potential supporting organizations. First comments, reactions and in various cases indications of support to specific activities evolved from that Meeting. As a follow-up, during the CDB Board of Directors Meeting held in May 1984, the Caribbean Community projects were further discussed. Five weeks before the NRSE Consultative Meeting was to be held, ECLAC and CARICOM made the REAP available to all invited organizations.

In order to ensure that the relevant documentation and information regarding the meeting's organization of work had been received, ECLAC maintained, during the last four weeks prior to the meeting, close contact with the invited institutions.

The following institutions were invited to participate in the Consultative Meeting for the Promotion of Latin American and Caribbean Projects in the Area of New and Renewable Sources of Energy:

- Canadian International Development Agency (CIDA)
- Commission of the European Economic Community (EEC)
- Federal Republic of Germany-Ministry for Economic Cooperation (BMZ)
- Foreign Affairs Ministry of Japan
- Foreign Relations Ministry of the Netherlands
- French Energy Agency (AFME)
- Iberoamerican Cooperation Institute (ICI)
- Inter American Development Bank (IDB)
- International Development Research Centre (IDRC)
- Italian Commission for Nuclear and Alternative Energy Sources (ENEA)
- Japan International Cooperation Agency (JICA)
- Overseas Development Administration (ODA)
- Swedish International Development Authority (SIDA)
- The OPEC Fund for International Development
- United Nations Development Programme (UNDP)
- United States Agency for International Development (US-AID)
- World Bank

/(e) Co-ordination

(e) Co-ordination with the Office of the Director-General for Development and International Economic Co-operation (DIEC)

Throughout the preparation period for the meeting, close co-ordination was kept with the Special Co-ordinator for NRSE at the Office of the Director-General for DIEC. In several instances, meetings were held with that office, ECLAC and OLADE. Reports on the preparations for the meeting were delivered at the various Interagency Meetings convened by the Special Co-ordinator on occasion of the First and Second Sessions of the Intergovernmental Committee Meeting on NRSE. A first set of projects were presented by OLADE during the first session of this Intergovernmental Body held in New York in April 1983.

(f) Comments on the Experience Gained throughout the Preparation of the Meeting

Based on the experiences gained in preparing this meeting, the following are comments that may prove useful for further efforts of this kind:

- The technological development of NRSE is highly dynamic and projects in this area have a certain valid lifetime which should be taken into consideration, especially regarding the time lag between formulation and implementation of activities.

- The negotiation forum offered by the meeting will probably not be the only channel utilized for promoting support to projects; a clear analysis of the status of parallel negotiations is very important.

- In the case of regional projects it is necessary to guarantee the official support of the governments involved.

- Promotion of co-ordinated activities among regional and international institutions working on similar topics in the same geographical area should be pursued before the meeting and as a result of the meeting.

- Information on the projects to be presented at the meeting should be available to potential financing agencies with enough time prior to the event; if considered appropriate, preliminary discussions could be held.

- Based on these preliminary contacts, possible joint support options could be identified and put forward at the meeting by the implementing agencies.

- In relation to field-type projects it is important to identify equipment requirements which might be covered extraregionally and those which can and should be produced locally.

- All efforts should be made to guarantee the presence at the meeting of the most appropriate representation from potential financing agencies; these agencies should be aware of this issue in order to properly back the support they have offered to this process of negotiation, and not limit their representatives' capacity to reach concrete agreements.

/2. Agenda

2. Agenda for the Meeting

Agenda for the Consultative Meeting for the Promotion of Latin American and Caribbean Projects in the Area of New and Renewable Sources of Energy. New York, 27-29 June, 1984.

1. Opening session.

   (a) Statement by the Economic Commission for Latin America and the Caribbean (ECLAC);

   (b) Statement by the United Nations, Office of the Director-General for International Economic Co-operation (DIEC);

   (c) Statement by the Latin American Energy Organization (OLADE);

   (d) Statement by the Caribbean Regional Agencies: Caribbean Community (CARICOM), Caribbean Development Bank (CDB), Organization of Eastern Caribbean States (OECS).

2. General presentation of projects by OLADE and CARICOM/CDB.

3. General discussion.

4. Detailed presentation of the OLADE projects.

5. Discussion and conclusions.

6. Detailed presentation of the Caribbean projects.

7. Discussion and conclusions.

/3. Presentation

3. Presentation and Discussion of the Projects of the Latin American Energy Organization (OLADE)

OLADE presented in detail the regional projects on NRSE contained in the document entitled: "OLADE-Consultative Meeting for the Promotion of Latin American and Caribbean Projects in the Area of New and Renewable Sources of Energy (Project Profiles)".

It was suggested by the Chairman to divide the presentation into four sections, namely: Hydroenergy, Geoenergy, Bioenergy and Solar and Wind; each presentation was followed by a discussion on the projects contained in each section.

(a) Hydroenergy Projects

(i) Development and Updating of Hydroenergy Inventories in Latin America.

(ii) Evaluation of Small-Scale Hydroenergy Resources-Elaboration of Preinvestment Studies for Specific Projects and Development of Pilot Plants.

(iii) Training in the Area of Small Hydropower Stations.

(iv) Technical Co-operation and Transfer of Technology for Small Hydropower Stations Equipment.

During the discussion of these projects, current activities of several agencies were presented, which suggested potential for more co-operation. The representative from IDRC was interested in knowing to what degree there was any research and development involved in these projects, to which OLADE clarified that although most of the work is field-type, and most of the equipment to be used will be "off the shelf", there is a certain degree of R and D work related to the pilot plant activities. The representative from US-AID was interested in the possibility of using, or establishing, regional training institutions instead of courses at the national level. OLADE clarified that although it is considered more effective to carry out courses at the national level, in some instances, such as the Central American subregion, multinational courses will be the mode followed. They also indicated that an information system will be established with the support of the European Economic Communities and UNESCO, which will help to identify what and where is being done on research and development (R and D), equipment development, etc. This system will further guide on modes for training requirements. The representative from IDB expressed interest in possibly covering financial gaps related to the hydroelectric development in Colombia, specifically

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in relation to the Yopal-Aguazul, Bahía Solano Nuqui and Santa Catalina sites. He also indicated interest of the IDB in supporting work in Bolivia and Suriname.

The issue of local manufacturing of equipment was thoroughly discussed. The representatives of IDB and the World Bank stressed that the manufacturing of equipment will be guided by the forces of the market and that it was therefore important to create these markets. OLADE agreed on these issues and stressed that many of the technological developments could be done locally. The representative from UNDP reported on the current UNDP/ECLAC activities in the field of capital goods and explained that the stress in the region is to reach the maximum manufacturing capability.

(b) Geoenergy Projects

(v) Reconnaissance and Prefeasibility Studies in the Eastern Caribbean.

(vi) Regional Project for the Exploration and Development of Geothermal Resources.

(vii) Implementation of an Isotopic Laboratory.

(viii) Installation and Start-up of Wellhead Generators and Training in this Area.

(ix) Evaluation of the Geothermal Potential in Central America.

(x) Regional Low and Medium-Enthalpy Project.

In relation to project (v), OLADE indicated that it would be presented in detail by the Caribbean Community because it was an area of work in which there existed highly co-ordinated joint efforts. It was also indicated that talks had been undertaken with Los Alamos Laboratories in relation to the activities in Honduras, with IDB, in relation to those in Nicaragua, and with the USG and Italian institutions in relation to project (ix). OLADE also explained that project (x) was a follow-up to work carried out in Haiti and that the activities were contemplated in the Parana River Basin.

The representative from ENEA-Italy provided information on the level of co-operation that existed between Italy and Latin America in the fields of hydroenergy and geoenergy. He emphasized that there was ample room for co-operation in the fields of small-scale hydroenergy systems and geothermal low temperature applications, such as in district heating and in agriculture. He indicated that the Italian Electricity Authorities

/(INEL)

(INEL) would receive the relevant information of the project since it is the most appropriate agency for co-operation in these fields. The representative from IDB asked for clarification on the scope of project (ix) and on the validity of establishing the geothermal potential without drilling activities. OLADE explained that the purpose was to improve the present data on geothermal resources which is at present very diffused, and to normalize the level of knowledge in all Central American countries. The representatives from the World Bank, IDRC and US-AID suggested that, in relation to low-enthalpy applications, it would be useful to consider making a systematic study relating economics, technologies and end-uses. Regarding project (vii), the representative from US-AID was interested in the potential for exchange of information with other laboratories. In response OLADE explained the relations already established and underway and on the possibility of establishing a second laboratory in El Salvador. Several delegates expressed their doubts on the training aspects linked to wellhead generators, which they considered an established technology.

(c) Bioenergy Projects

(xi) Evaluation of the Bioenergy Potential in Latin America.

(xii) Agroindustrial Energy Optimization.

(xiii) Biogas and Waste Processing.

(xiv) Energy Forest and Rational Use of Forest Residues (Dendroenergy).

(xv) Liquid Biomass Fuels.

(xvi) Rural Energy.

During the discussions, the representative from IDRC suggested that one way to facilitate the evaluation of the bioenergy potential was to concentrate on the potential for specific end-uses. Strong interest was expressed by various delegates in the field of energy in the sugar industry. The representative from IDB expressed his institution's tentative interest in financing prefeasibility studies in this field which could lead to feasibility studies. Several delegates expressed their interest in "mill-by-mill" work, since extensive work had been done on the general methodology for improving energy operation in the sugar industry. Ideas were exchanged on the problem of sugar mills selling power to the grids, and on the necessity of developing price policies in this respect. The representative from ENEA-Italy expressed interest in research and development activities in the field of bioenergy and stressed that great potential for collaboration existed in the areas of biogas and of urban residue energy technologies. The representative from US-AID suggested a stronger stress on the use of forest residues for energy production and

/expressed

expressed interest in the technical and economic issues related to the use of sugar bagasse for fuels versus its use for sugar mill operation. OLADE explained that the bioenergy projects were, in general, of ample scope and that it was possible to disaggregate them according to agencies' interests or to divide them into subregional projects.

(d) Solar and Wind Energy Projects

(xvii) Helioelectrical Applications.

(xviii) Heliothermal Applications.

(xix) Solar Applications in Housing and other Buildings.

(xx) Preparation of Methodology Manuals for Solar Applications.

(xxi) Evaluation of the Wind Resource and Feasibility Studies.

During the discussion on these projects, which some delegates considered too abridged to be able to sense their scope, the representative from IDB expressed that any project directed to the improvement on the measurement of the solar resource would be very welcomed by his institution. He also suggested that it would be very helpful to the regional solar programmes to closely monitor what is being done in the industrialized countries. The representative from ENEA-Italy indicated that photovoltaic systems was a high priority to his institution and that he was certain that there would be great interest in collaboration in various of the activities mentioned. He asked OLADE for information on the present work and perspectives for photovoltaic systems in Latin America. The representative from US-AID indicated his institution's interest in domestic solar arquitecture and suggested that an end-use (applications) approach could be very useful. He also mentioned that there is a need to evaluate existing wind-energy technology and applications and, to this end, the measurement and reporting on the performance of existing systems would be important. OLADE commented that one of the purposes of the wind-energy project was to study the systems and machines which are available.

/4. Presentation

4. Presentation and Discussion of the Projects of the Caribbean Community

The Caribbean Community delegation presented in detail the regional projects on NRSE contained in the document entitled: "The Regional Energy Action Plan (REAP)".

The representative from the Caribbean Community explained that the NRSE projects of the REAP were contained in Appendix IV of the document and stressed that a general characteristic of the projects is that they were focussed on the utilization of proven technologies and applications which are economically viable, to expand the energy base and adjust Caribbean energy systems in the shortest time possible, while laying the basis for a more coordinated and rational development of the energy resources of the subregion.

The NRSE components of REAP were divided under biomass, geothermal energy, hydropower, wind energy, solar energy and biodigestion of wastes:

(a) Biomass. This component places high priority on developing opportunities for near-term commercial uses of biomass which are sustainable. Specifically, it seeks to optimize bagasse utilization by sugar factories, use of sawmilling and agricultural wastes for energy production, and intervene in the fuelwood and charcoal economy to optimize the benefits to the local population and rationalize the industry.

(b) Geothermal energy. Evaluation of the geothermal potential of four OECS Member States up to the prefeasibility stage. It is expected that beyond this stage each country will proceed through bilateral arrangements to develop its resources.

(c) Hydropower. Systematic development of streamflow and hydrological data bases for river basins earmarked for future development of hydropower stations and upgrading the facilities of a regional engineering firm to enable manufacture of small hydroturbines.

(d) Wind energy. Establishment of one demonstration wind farm and extension of the wind and solar energy assessment programme to countries not already covered, to identify sites with good economic potential for electric power generation and water pumping.

(e) Solar energy. Establishment of performance standards for solar water heaters to promote confidence in the industry and encourage its orderly development.

(f) Biogas. Establish biodigestion of wastes as a practical means of solving problems of environmental pollution and converting farm and agro-industry wastes to useful by-products such as fuel, fertilizer and animal feed.

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These programmes are expected to identify and prepare a substantial number of large and small capital projects throughout the subregion which could bear loan-financing. Donor assisstance is required for the pre-investment activities which form part of REAP and are needed to attract private investment.

During the discussions several delegates agreed that the REAP was a good basis for negotiation and that its focus was well in line with their institutions' interests. The representative from the World Bank inquired why the wind farms were treated as a demonstration project and not as an implementation scheme which could be a bankable project. The Caribbean Community representative clarified that it was not an easy task to convince the utility companies to incorporate wind farms in their generation scheme and that this made it necessary to treat this project, at least in its initial stages, as a demonstration activity. The representative from IDB indicated that his institution had a special relationship with the Caribbean and that, in fact, it gave funds to the Caribbean Development Bank. He further indicated that his institution would like to participate in the sugar industry projects, and that in relation to the wind energy projects, they were carrying out further studies on the resource evaluation in conjunction with the Caribbean Meteorological Institute. In this same field, he suggested that the wind project presently implemented in Barbados could become a bankable project. With respect to the solar project, he suggested that if it were expanded to contemplate a market study, his institution would be interested in granting a loan in order to promote massive diffusion. The representative from US-AID indicated that there were several areas of priority to his institution and that there would be interest in further negotiating possible financial support based on next year's fiscal budget.

The representative from IDRC sought clarification on the possibility of including research in some of the projects, and suggested areas such as fuel wood and charcoal utilization and the evaluation of the substitution of LPG by solar energy systems as candidates. The Caribbean Community delegate provided information on electricity prices in the Caribbean countries and indicated that there was a research component in the development of new species of fast-growing plants of high energy content. The delegate from UNDP indicated that there had been support from his institution in several Caribbean countries, mainly through IPF funding. He also indicated that his institution strongly supports the REAP and that requests had been submitted for further finance utilizing the UNDP Energy Account.

Referring to both sets of projects presented (OLADE and Caribbean Community), the representative from the Federal Republic of Germany indicated that his country's comments on the projects would be promptly sent and that his country was pleased to see that the Latin American and Caribbean region had taken action on an NRSE Consultative Meeting, a modality which his government fully supported.

/5. Conclusions

5. Conclusions

There was a general discussion on the conclusions of the meeting and on follow-up modalities. The representative from UNDP indicated that his institution had agreed with OLADE on a project of assistance to OLADE which, together with ongoing activities such as the joint UNDP/ECLAC Capital Goods Study, were elements to be considered in future negotiations. The representative from US-AID indicated that although bilateral co-operation is the main mode within his institution's priorities, there is scope for multilateral collaboration. His organization is helping institutions to act as centres of excellence on specific topics, and is very interested in the assessment of new technologies. He also indicated that a number of the training projects of OLADE, if grouped into subregions such as Central America or Eastern Caribbean States, could be of interest to US-AID. He felt that further discussion is necessary and that the meeting had been useful to identify areas of mutual interest. The representative from ENEA-Italy declared that the meeting had been useful and had served to disseminate detailed information on the region's interest and priorities. He would follow-up on a number of the proposals and would inform the Department of Development Co-operation on the results of the meeting. The representative from IDB declared that during the discussions he had indicated areas of interest for his institution and that it would now be necessary to elevate various projects to a bankable form, prioritize them and discuss the time-frame for their implementation. The representative from IDRC indicated that the meeting had been a very instructive one and that he would be happy to pursue further identification of research and institution building activities which the Centre could support. He stressed that in many cases, it is difficult to fund regional institutions, but that requests could be received from research groups working within regional projects and programmes.

The participants to the meeting endorsed the following conclusions suggested by the Chairman.

1. The meeting was a useful exercise in the context of gaining experience on the process of Consultative Meetings as a means to promote multilateral co-operation for the implementation of the Nairobi Programme of Action.

2. The objective of information exchange between the countries' priorities in relation to regional activities, and the interest of financing agencies was fulfilled.

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3. Many specific areas of mutual interest were identified and the meeting helped to continue opening doors and channels for future bilateral contacts and negotiations between the regional and subregional institutions and the organizations and governments interested in supporting regional NRSE activities.

4. ECLAC should assist in promoting further negotiations and should monitor the financial flow to NRSE projects and programmes in the Latin American and Caribbean region.

5. Based on this monitoring exercise and on the evolution of results, ECLAC could, in the future, convene another Consultative Meeting of this kind in order to discuss other projects, or modifications of projects already reviewed.

6. The report of this meeting should be distributed to all participants and other interested institutions and bodies.

/Annex I

Annex I

LIST OF PARTICIPANTS

Caribbean Community Secretariat (CARICOM)	Cesare F. Granger Head, Energy Unit
Caribbean Development Bank (CDB)	Bernard Yankey Director of Projects
	Jeffrey Dellimore Manager Technology and Energy Unit
	Trevor A. Byer Regional Energy Adviser
Department of International, Economic and Social Affairs (IESA)	Tahar Hadj-Sadok Head of the New and Renewable Sources of Energy Unit
Department of Technical Co-operation for Development (DTCD)	Edmond Leo Head, Energy Unit
Economic Commission for Latin America and the Caribbean (ECLAC)	Enrique V. Iglesias Executive Secretary (Chairman of the Meeting)
	Gustavo Best Co-ordinator, New and Renewable Sources of Energy
	Erik Blommenstein Economic Affairs Officer
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Interamerican Development Bank (IDB)	Gustavo Calderón Chief Unconventional Energy Section Project Analysis Department

/International

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Netherlands	Mrs. Piters-Kwiers Permanent Mission for the Kingdom of The Netherlands to the United Nations
Office of the Director-General for Development and International Economic Co-operation	Mohamed Yeganeh Special Co-ordinator for New and Renewable Sources of Energy
Organization of Eastern Caribbean States (OECS), Economic Affairs Secretariat	George Goodwin Senior Energy Officer
United Nations Development Programme (UNDP)	Michael Gucovsky Deputy Assistant Administrator Ricardo Tischauer Senior Regional Programme Officer Denis Bern Chief, Caribbean Unit Ramchandra S. Ragde Senior Technical Officer Energy Office
United States Agency for International Development (US-AID)	Robert Archer Latin American and Caribbean Office
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/Annex II

Annex II

DOCUMENTATION

Caribbean Development Bank and Caribbean Community (CARICOM) Secretariat, The Regional Energy Action Plan (REAP).

Latin American Energy Organization (OLADE), Consultative Meeting for the Promotion of Latin American and Caribbean Projects in the Area of New and Renewable Sources of Energy (Project Profiles).

/Annex III

Annex III

OPENING STATEMENTS

A. Statement addressed by Enrique V. Iglesias, Executive Secretary of the Economic Commission for Latin America and the Caribbean and Chairman of the Meeting

I would, in the first place, like to thank all the agencies and institutions who have accepted our invitation to attend this Consultative Meeting, and to you, our delegate friends, our most sincere appreciation for being with us today. I wish also to welcome our colleagues from OLADE and from the Caribbean institutions with whom we have been working very closely in the organization of this meeting. This has given us great pleasure and we thank them very sincerely for accepting working jointly with us.

This Consultative Meeting to discuss Latin American and Caribbean projects in the field of new and renewable sources of energy is a pioneer experience. Many of you may recall the difficulties delegations met at Nairobi to reach an agreement on this mechanism. It took many hours of profound negotiation and thought to reach concensus on the definition of a modality to be launched in order to promote the strengthening of multilateral co-operation as a means to implement the Nairobi Programme of Action. This Meeting is the first of its kind and is therefore of great interest in the follow-up process of the Nairobi Conference.

Looking back, it is clear that Nairobi had many successes. One of the main gains was the fact that for the first time the energy transition was discussed in a political forum. We are now in the process of the implementation of its recommendations and this meeting is in that context.

Analyzing what has happened in the energy scene since the Nairobi Conference, one is faced with a destabilization of the oil prices which, only on the surface, means a permanent decreased price. It would be a tragic and historical mistake to diminish the efforts directed to developing and utilizing renewable sources of energy because of recent anecdotes on prices and supplies of the conventional energy sources.

The field of new and renewable sources of energy is an open one in Latin America. There is considerable room for action when one considers the energy resource endowment of the region, its potential and the very important fact that Latin America and the Caribbean need to urgently expand and diversify their energy base if their development goals are to be approached. The present economic crisis in the region coupled with drastic balance of payments problems will be solved if among the urgent measures taken are to maximize the use of local resources and efforts. In this context, the utilization of indigenous renewable energy sources

/can play

can play a major role. Multilateral co-operation in this field is of great interest to the countries of our region and is the basis of the idea of convening this meeting.

I will not go into the details on how this meeting was organized or the nature and origin of the projects which we shall be discussing the next days. I would like to say that a tremendous effort was done by our friends of OLADE and of the Caribbean Community in order to bring to this meeting a solid set of projects which reflects the interests and priorities of their member countries. I am sure that the report of this meeting will refer to this preparation work.

I believe we have before us a very solid set of documents which forms a very reasonable framework on the expectations of the countries of our region in the area of new and renewable sources of energy. It is obvious that the projects here presented do not cover the full range of possibilities for action, nor was it thus pretended. The set of projects before you represents a first attempt in order to initiate this process of consultation. We believe it is very important to start the process of negotiation, in order to learn from the results and be in a position to evaluate it, better it and, if necessary, modify its conception. I think you would all agree that it is necessary to improve present financing mechanisms in this field and, in this context, even a modest result from this meeting would be of great significance for future work related to the enhancement of multilateral co-operation, the main call from Nairobi.

I would like to say a few words on our own expectations from this meeting. A first element is the exchange of views and perceptions on the various areas for action. The understanding of the areas of interest of the different agencies here represented, in the light of the priorities defined by our countries, will give us a tremendous insight on the potential for co-operation. In this context we shall hear with great interest of the work agencies are presently carrying out.

A second expectation we have from this meeting is related to possible commitments, at least in principle, of specific areas of interest to financing agencies; these commitments would set the field for follow-up and would form the base for future co-operation.

Lastly, we expect an expansion of the dialogue between supporting and implementation agencies in order to reach specific agreements for collaboration and co-operation; to this end, ECLAC will assist by promoting these future contacts and by monitoring and enhancing the continued relations.

/B. Statement

B. Statement addressed by Mr. Mohammed Yeganeh, Special Co-ordinator on NRSE, Office of the Director-General for Development and International Economic Co-operation

Mr. Chairman, distinguished participants and colleagues,

It is my pleasure and honour to welcome you warmly, on behalf of the Director-General for Development and International Economic Co-operation, Mr. Jean Ripert, to this Consultative Meeting for promotion of co-operation in implementation of regional projects in the field of new and renewable sources of energy in the Latin American and Caribbean region. Mr. Ripert regretted that because of prior engagement to attend meetings in Europe he was unable to be present here and participate in the deliberations.

This meeting is sponsored by the Economic Commission for Latin America (ECLA) in close co-operation with the Latin American Energy Organization (OLADE) and the institutions of the Caribbean Community, including CARICOM Secretariat, the Caribbean Development Bank (CDB) and the Organization of Eastern Caribbean States (OECS), and also in co-ordination with the Office of the Director-General. The meeting is in response to the recommendations of the Intergovernmental Committee on the Development and Utilization of New and Renewable Sources of Energy and the endorsement of the United Nations General Assembly, urging the regional commissions to take an active part in promotion of implementation of the Nairobi Programme of Action, in formulation and adoption of which, the able and energetic Executive Secretary of ECLA, as the Secretary-General of the Nairobi Conference, played a leading and most effective and successful role.

The Intergovernmental Committee, in its first session, held in New York in April 1983, stated that:

"At the regional level, the regional commissions should undertake the responsibility for identifying areas and making preparations for Consultative Meetings... in co-operation as appropriate with other interested participants. The Committee welcomes steps already taken by ECLA, in collaboration with OLADE, for making the necessary preparations for convening of a Consultative Meeting to mobilize resources for a set of regional projects in new and renewable sources of energy."

The Committee, again, about two months ago, urged the regional commissions to: "accelerate their efforts to prepare and convene Consultative Meetings at the regional level and to hold subsequent meetings as necessary".

While the regional commissions were given such a responsibility, the Intergovernmental Committee, with the endorsement of the General Assembly of the United Nations, invited all multilateral and bilateral donors "to participate effectively in the Consultative Meetings and to provide support for, and contribute to, their successful outcome".

/With this

With this reference to the legislative background of the present meeting, it may also be of interest to have in mind the terms of reference of Consultative Meetings. The Nairobi Conference on New and Renewable Sources of Energy, devised consultative meetings as a mechanism for promotion of implementation of the Nairobi Programme of Action. In this context it is stated that:

"In order to generate additional funding (the Conference had concluded that additional and adequate resources will be required for implementation of the Nairobi Programme) 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."

In further elaboration of the functions of consultative mechanism and preparation of guidelines for convening such meetings, the Intergovernmental Committee agreed that:

"The Consultative Meetings should be viewed as a mechanism to stimulate concerted action for the consideration and promotion of, and commitment to, the programmes and projects in the field of NRSE and for the generation of necessary additional and adequate financial resources to carry them out by providing a forum to the potential donors and other financial sources."

This regional meeting assumes a great importance as it is the first one to be convened, in accordance with its specific terms of reference, and its performance and results would reflect on the efficacy and usefulness of this new mechanism. The experiences gained here would also be of great value to others that are expected to follow at the regional and global levels. In fact, the Intergovernmental Committee has decided to consider at its third session, in early 1986, a general appraisal of the performance and suitability of Consultative Meetings.

Now, this forum provides an excellent opportunity to set in motion a process of dialogue for consideration and eventual implementation of a set of project proposals that will be presented by OLADE and CARICOM with the endorsement of governments in the region. The realization of these projects requires assistance and co-operation of the international community to supplement the regional and national efforts. We do hope that every effort will be made to make this meeting a success.

/C. Statement

C. Statement addressed by Eduardo Pascual, Director for Regional and International Co-operation, Latin American Energy Organization (OLADE)

First of all, on behalf of the Latin American Energy Organization (OLADE), I would like to extend our gratitude to the United Nations Organization, for its particular interest in making a reality of this Consultative Meeting to promote Latin American projects in the area of new and renewable sources of energy. This reflects the Organization's political decision to provide continuity to the efforts launched in the past and its willingness to give still another push to these sources of energy.

In this regard, mention should be made of the Conference on New and Renewable Sources of Energy, which was organized by the United Nations in Rome, in 1961, as a result of the growing concern about energy sector problems, especially in the developing countries. The United Nations held another conference on the same subject in Nairobi, in the month of August 1981; and from that gathering, emerged guidelines geared to promoting the development of these sources in order to meet energy needs, particularly in the relatively less developed countries. That conference also gave birth to the Nairobi Programme of Action, which contemplated specific operational measures to further promote international co-operation in this area, and which was, no doubt, the seed that is today flowering.

We would also like to make special mention of the important efforts that the Economic Commission for Latin America (ECLA) has been making in order to prepare the present meeting; without those efforts, this significant step in international co-operation would hardly have taken place.

Generally speaking, the activities that have been undertaken with an eye to fostering international co-operation in the energy sector have been numerous; and they have unquestionably managed to create growing awareness: first and foremost in the less developed countries, which have begun to seek co-operation formulas among themselves; and secondly, in international financial and co-operation agencies, which have begun to perceive the difficult problems that are afflicting these countries' energy sectors, particularly as a result of the profound crisis that the world has been traversing for a relatively long time now.

Over the last two decades, international economic relations have undergone notable changes. The process of articulation and interdependence in world economy became accentuated and made Latin America's ties with the industrialized countries even more intense. The region became more sensitive to the changes brought about in the economies of the latter, or to the policies they apply in the areas of finance or foreign trade. These respond to development strategies to stabilize their economies and upgrade their economic and financial position in the world, even when they can produce negative repercussions in the more backward nations.

/Profound

Profound changes have been generated in international economy and society within the framework of crisis characterized by a downward trend in the growth rate of the industrialized countries, persistent inflation, weakening in the basic equilibrium of the international monetary system, and the rise of protectionist tendencies. The repercussions of this general phenomenon are not the same for industrialized and underdeveloped countries. What in the former appears as a set of accentuated fluctuations in economic activity, in the developing countries appears as a truly ominous challenge to their very survival.

In recent years, the general context in which Latin American economies must function has become still more critical, as a result of the stagnation of their exports and, therefore, of their capacity to import. The staggering foreign debt, which continues to grow with the interest-rate policies set of late, has substantially reduced the Latin American and Caribbean countries' possibilities for building up a dynamic energy structure that could respond to the requirements of economic and social development.

Despite the critical outlook for the countries of our region, the efforts underway in the field of energy, in the search for a sounder, more diversified supply and broader co-operation mechanisms, indicate the political determination to face the challenge unleashed by the energy transition.

The crisis has made it possible to become fully aware of the new energy problem. The problem arose in terms of seeking a long-term energy alternative to meet the challenge of a necessary shift in the structure of energy production and consumption, reflecting the start of an energy transition. The task is to have this energy transition occur as an orderly, integral and fair change to a system of energy production and use based on a dynamic, flexible variety of energy sources. This calls for dynamic, versatile technological development tied in a congruent manner to a production structure which is qualitatively and quantitatively free from the heavy dependence on hydrocarbons observed at present.

The economic prospects for Latin America and its energy system point to the pressing need to expand the energy supply on the basis of native sources, particularly in the case of oil-importing countries. A good number of countries have available a broad-based but little-utilized energy potential. This, in principle, implies the transfer of important volumes of funds to less-developed countries, in order for them to be able to develop their capacity to use the existing energy resources. This is particularly urgent because, even in recessionary conditions, our countries must maintain a minimum energy consumption to keep the productive apparatus working.

/All of this

All of this clearly expresses the small margin that our countries have in the short-term to accomplish a significant substitution of oil by other sources. For a relatively prolonged period, oil will continue to be the major energy source, even when the aspiration is to decrease its relative importance by increasingly making use of hydroenergy, coal, geothermal and other resources as yet not sufficiently exploited.

In particular, an effective energy transition is only conceivable in the framework of a long-term strategy geared to the creation of a new industrial park wherein an energy pattern based on hydrocarbons as the primary source of energy is not structurally inherent. This may seem to be an unsurmountable task; but it is unavoidable and in fact it has been undertaken by some countries, partially, but with quite promising results. To assess and become familiar with such experiences, and to subject them to systematic follow-up, would contribute to enhancing the regional storehouse of operational knowledge within the focus of energy change pursued. The region will have to immediately take on the creation or development with celerity, should this be the case, of the scientific and technological base adequate for producing, incorporating and re-creating techniques and expertise associated with the rise and massive use of new sources of energy.

In the face of the most outstanding aspects of the energy problem of Latin America, and the basic considerations described in the preceding paragraphs, the Latin American Energy Co-operation Program (PLACE) expresses the whole of the objectives, policy guideline and programming areas to activate the efforts of regional and international co-operation.

The orientation of the PLACE is expressed in the objectives it intends to accomplish: to attain growing integration between the production and use of energy, so as to aid in strengthening the process of sustained development; to expand and diversify energy supply and scientific and technological capacity in this area; and to rationalize energy production and consumption.

In the face of the challenge presented by the need to accomplish the broad objectives of energy co-operation in the region, the Latin American countries clearly made themselves manifest during the Latin American Economic Conference held in Quito in January of this year, when they underscored the need to "intensify co-operation in order to achieve and maintain a high level of self-sufficiency in energy and technological autonomy" and to "increase and diversify the production of energy and rationalize its consumption" by strengthening regional capacity "in order to support its economic development and reduce its dependence on a limited number of energy sources..."

The Conference gave OLADE the mandate of promoting the channeling of international financial resources, especially toward the development and use of new and renewable sources of energy, in order to expand and diversify the energy mix of the countries of the region.

/The growing

The growing interest of the governments of the region in reducing the energy sector's reliance on hydrocarbons is more than evident. Over the last ten years, the Latin American countries, with varying levels of intensity, have begun to step up their efforts at planning energy development, by preparing national energy balances, assessments and forecasts of energy supply and demand, and formulations of future scenarios based on widely different options and policies. The new and renewable sources of energy are, slowly but surely being incorporated into these processes, as advances are made in evaluating their physical potential and their economic and technological viability. It is with this in mind that several countries in the region currently have efforts underway to formulate and implement national plans of action in the area of NRSE action framed within energy guidelines and policies in keeping with their plans for economic and social development.

The share that new and renewable sources of energy can be anticipated to have in the regional energy balance, and their development and use, will have to be major factors in expanding and diversifying the productive base of energy and in prolonging the estimated lifetime of the proven reserves of conventional resources. In the present situation, the countries of the region find themselves in a very difficult position, in which the importation of their energy inputs becomes more and more difficult to finance, and they are faced with heavy pressure on their balance of payments and with growing difficulties in making the investments that would assure the pace of development. This calls for a series of profound transformations in the energy mix of the countries, as expressed through a significant increase in the contribution of NRSE.

In the face of the magnitude of the task represented by the promotion of this type of action, our efforts must concentrate on technical co-operation among the region's countries, in addition to the human and technological capacities existing in the rest of the world. It is therefore indispensable to seek the technological and financial co-operation of the international community, as well as the exchange of the experience obtained in the development of NRSE, which may prove a highly productive exercise for the international community as a whole.

During the process of preparation for this Consultative Meeting, a series of projects were identified in the area of new and renewable sources of energy, involving a wide range of activities: from those aimed at evaluation of the potential of regional energy resources, at development and transfer of technology or at training, demonstration and dissemination, to those aimed to pre-investment and investment studies for specific projects, so that NRSE can rapidly be introduced into the energy balance of the countries of the region.

Project selection ultimately responded to the decision made by the countries with respect to the definition of strategies and priorities for the development of these sources. In this sense, the project package is

/geared

geared to supporting the elaboration and implementation of national strategies in the framework of the Latin American Energy Co-operation Program (PLACE), while at the same time supporting the general strategy that the region has laid out for the development and use of NRSE, a strategy whose strength and impact would be further bolstered through subregional, regional and international co-operation. Latin America's co-operation efforts in the field of energy would, in this way, be reinforced through international co-operation efforts revolving around the programs agreed upon in this area.

The mechanism that we would like to set up with the co-operation agencies that are honoring us with their presence here today, and thereby expressing their interest, is to pinpoint those areas and projects that would lend themselves to receiving technical and financial support, so that in a second stage working mechanisms can be established among OLADE, interested agencies and the beneficiary countries of the projects. In this way the profiles that are still being formulated can be defined more precisely, as a function of the type of co-operation that the agencies would be willing to provide, and of the commitments that OLADE could make to the ministers of energy and the respective technical divisions of the member countries.

These are trying times for the Latin American and Caribbean countries, and it proves quite complicated to predict the economic future, and even more complicated to predict the future of the energy sector. However, it is obvious that in a world as interrelated as ours, we can anticipate that the development of the Latin American and Caribbean countries - and, in general, that of all the developing countries - will have deep repercussions, even for the future development of the industrialized countries themselves. Hence, in today's world, technical and financial aid to our nations takes on special relevancy.

/D. Statement

D. Statement addressed (on behalf of the Caribbean Community) by Bernard Yankey, Director of Projects, Caribbean Development Bank

Mr. Chairman, distinguished representatives of participating agencies, I would first like to express our thanks to you and your staff for convening this meeting and to express the sincere appreciation of the Caribbean Community for the interest and goodwill being demonstrated today by the various agencies represented around this table.

We believe this meeting will be a signal event in the development of the energy sector of Member States of the Caribbean Community because our consultations will be devoted entirely to energy and your presence here is evidence of your interest in seeing us move forward.

There is an urgent need for CARICOM countries to expand their energy base and adjust their energy systems. A comprehensive Regional Energy Action Plan has been agreed to by CARICOM Heads of Government, and the Regional agencies have been mandated to implement the plan. The plan seeks to promote security of intra-regional supplies and markets of petroleum products, to improve the efficiency of energy use and to develop alternative sources of energy within the region.

The Regional Energy Action Plan or REAP, seeks to achieve these goals within the shortest possible time by fulfilling the following specific objectives:

(i) Promote security of intra-regional supplies and markets of petroleum products through a more coordinated and rational development of energy resources and systems of the region;

(ii) Develop and promote a major energy conservation programme in the region;

(iii) Identify and develop those alternative energy sources that are currently economic within the region;

(iv) Establish the petroleum potential of the region and devise mechanisms to encourage its orderly develpment, and

(v) Strengthen the capacity of national and regional institutions to deal with energy development and energy-related issues.

These are ambitious goals, but the REAP is not a wish list, nor is it a shopping basket of projects. REAP establishes our priorities, provides focus for our efforts and signals our determination to move forward from our present situation in a purposeful way.

The moment the plan was approved, we took action to implement all those areas that can be implemented using resources available to us.

/For example,

For example, we have made substantial progress on some important areas of energy conservation and the biogas programme is well underway and going well. Indeed, in most areas covered by REAP, we have tried to move towards implementation and to demonstrate in this way that we know what we want and will be working hard to achieve it, whatever the odds.

But, we cannot achieve the objectives of REAP without external assistance and co-operation. There are major funding gaps to be closed and important resources yet to be developed. High among these needs are human resources and institutional development. These resources must be developed hand-in-hand with new and renewable sources of energy (NRSE) which are the focus of this consultation.

We hope the meeting will therefore consider the strengthening of the capacity of national and regional institutions as an important area for our consultation. In most areas, substantial progress in developing NRSE will be dependent on achieving better planning, better energy sector management and improved and expanded technological capacities in identifying, evaluating, preparing and implementing energy projects.

The main thrusts of the NRSE component of REAP are:

(i) Project identification and preparation work involving resource assessments and studies up to the pre-feasibility or pre-investment levels, and

(ii) Investment promotion/resource utilization programmes to accelerate adoption of viable technology options for the region by means of demonstrations, information transfer, and technical assistance activities directed at potential users in the countries concerned.

REAP establishes clear priorities amongst the NRSE and focusses regional action on the following areas:

(a) Biomass energy, especially

(i) Bagasse

(ii) Fuelwood and charcoal production and use, and

(iii) Agricultural wastes

(b) Hydropower - mainly small hydropower

(c) Geothermal energy

(d) Wind energy

/(e) Solar

(e) Solar energy, especially water heating and crop drying, and

(f) Biogas - essentially for addressing environmental problems associated with wastes.

Information on the proposed REAP activities in each of the above areas is at Appendix IV of the REAP document that has been circulated for this meeting. We expect to discuss the specifics later in the consultation.

Finally, I would like to congratulate the Chairman for bringing us together around this table. The Caribbean and Latin American organizations working in the energy sector are well known to each other. We have been co-operating with OLADE for several years and in many areas. Although PLACE and REAP are separate and discrete documents, there are many areas for collaboration, synergy and complimentary between the two programmes which will be pursued. This consultation is one such area.