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**THE ESCWA RENEWABLE ENERGY PROMOTION MECHANISM:
BACKGROUND, PROCEDURES FOR REALIZATION, STATUS
AND RECOMMENDED ACTIONS**

Note: This document was prepared for presentation at the Initiation Seminar for the ESCWA Renewable Energy Promotion Mechanism, held in Beirut on 5 October 2000. This report has been reproduced in the form in which it was received, without formal editing.

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THE ESCWA-REPM BACKGROUND, REALIZATION PROCEDURE, STATUS AND RECOMMENDED ACTIONS

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ABBREVIATIONS

REPM	Renewable Energy Promotion Mechanism
ENRED	Energy, Natural Resources and Environment Division
EIS	Energy Issues Section
CU	Coordination Unit
NFP's	National Focal Points
NE's	National Entities
RE	Renewable Energy

THE ESCWA-REPM, BACKGROUND, REALIZATION PROCEDURE, STATUS AND RECOMMENDED ACTIONS

I. BACKGROUND

In 1997, ESCWA developed a regional programme for the promotion of renewable energy applications. The programme recognized the need for an appropriate coordination and promotional mechanism to coordinate the available renewable energy expertise and resources for the mutual benefit of the member Countries MC. It was in the light of this realization that the creation of a renewable energy promotion mechanism in the ESCWA region was recommended, and a preliminary project proposal was prepared.

The core objective of the mechanism was determined to be the fostering of subregional and regional cooperation among the countries in the region in order to accelerate the diffusion of renewable energy technologies in field applications.

The outline for the REPM project proposal presented in the above-mentioned 1997 ESCWA study was first sent to MC's for review and comments on August 1998. It was reviewed and further elaborated to reflect some of the views and questions that emerged from in-house discussions and from comments received from some member States, regarding in particular the objectives and financial resources for the implementation of REPM activities. The updated version of the proposal is shown in Annex 1.

II. REALIZATION PROCEDURE AND ACTIONS UNDERTAKEN

A. THE REALIZATION PROCEDURE

Based on the initial views expressed by countries and in the light of the updated proposal, an effective procedure was developed for the initiation, realization and activation of the REPM. The objective was to ensure a consensus among the ESCWA member States on the objectives and functions of the REPM, as well as streamline a process for its effective realization. Such a procedure targeted the following:

- (a) To reach a consensus among the member States regarding the membership of the mechanism and identification of national focal points NFPs;
- (b) To prepare a memorandum of understanding between the NFPs to set the REPM basic objective operational links, obligations and operational conditions;
- (c) To coordinate with the ESCWA member States regarding the preparation of renewable energy country profiles identifying national resources, institutional activities, capabilities and needs in this field;
- (d) To prepare a compendium of the country profiles identifying possible areas of cooperation among the ESCWA member States based on the capabilities and needs identified by the country profiles;
- (e) To organize an initiation seminar among the national focal points to endorse the memorandum of understanding and review the compendium of the country profiles;
- (f) To activate actions by the REPM Coordination Unit ESCWA/ENRED to carry out the tasks identified by article 6 of the proposal, in cooperation with NFPs. This would include the following:
 - (i) To continue the consultations with the remaining ESCWA member States regarding their joining the REPM, or to identify possible links with it;
 - (ii) To develop an inventory of renewable energy institutions, expertise and business entities;
 - (iii) To prepare a two-year work plan for consultation with national focal points;

- (iv) To promote action for implementation of the project proposed by ESCWA on "Dissemination of RE services for the rural villages in the ESCWA member States as a starting activity for the REPM;
- (g) To follow up the REPM operational phase activities.

B. ACTIONS UNDERTAKEN

During 1999-2000, the Energy Issues Section of ESCWA has taken several actions to establish the procedures required for creation of the REPM and to follow up with the ESCWA member States to facilitate its realization. The measures taken by the ESCWA secretariat to implement this objective, are outlined below. It should be viewed in the context of the updated project proposal given in Annex 1 of this paper.

1. *Consultations with the ESCWA member States*

In order to investigate the views of the concerned authorities in the ESCWA member States regarding the concept, objective and membership of the REPM, the ESCWA secretariat has taken the following measures:

(a) Promotional consultative interviews

The concerned staff members of the ESCWA secretariat have undertaken missions to several ESCWA member Countries, during which meetings and interviews were held with different energy authorities as well as other national authorities whose mandates are concerned with the planning, development, promotion and utilization of renewable energy in the member States. The REPM project proposal was presented and discussed with these authorities, in addition contacts were initiated with authorities in other member countries through different forums, namely Bahrain and Jordan.. Table 1 shows the list of countries and organizations visited and/or contacted.

(b) Development of a consensus on joining the REPM

In order to initiate the implementation of the REPM, ESCWA Secretariat has taken actions to reach a consensus among the member States regarding their joining the mechanism. In this regard, the following is concluded:

- (i) All member States were contacted through their embassies in Beirut. The ESCWA Secretariat submitted the project proposal to each member State, requesting to forward the proposal to the concerned authorities for consideration and feedback. In addition, each member State that decided to join the REPM was requested to nominate a National Focal Point "NFP" to represent it in the operations of the REPM;
- (ii) The State of Kuwait had questions relating to the financial obligations mentioned in the REPM proposal. ESCWA responded to those questions, and copies of the reply were sent to all member States, specifying that the financial obligations to be imposed would be covered as follows:

- All ESCWA coordination efforts and staff time would be in kind;
- All in-country expenses or efforts would be an internal matter to be decided on by the national focal points;
- Services offered by specific national entities would be borne by the beneficiaries of the other national entities; and

-In all cases, and in particular for training, seminars, and feasibility studies, the Coordination Unit would direct efforts for raising funds through the relevant regional and United Nations funding agencies.

In conclusion eleven ESCWA members have agreed to join the REPM and have nominated NFPs. As detailed in section III of this paper.

TABLE 1. COUNTRIES AND ORGANIZATIONS VISITED OR CONTACTED BY ESCWA STAFF MEMBERS FOR CONSULTATIONS ON THE REPM

Country	National organization contacted
Bahrain	-University of Bahrain
Egypt	-The New and Renewable Energy Authority (NREA) -The Organization for Energy Planning (OEP) -The Egyptian Electricity Authority (EEA) -The Egyptian Environmental Affairs Agency (EEAA)
Jordan	-National Center for Energy Research
Lebanon	-Electricité Du Liban (EDL) -American University of Beirut (AUB)
Oman	-Ministry of Electricity and Water -Sultan Qabous University
Palestine	-Palestinian Energy Center (PEC) -Palestinian Energy Authority
Saudi Arabia	-King Abdel Aziz City for Science and Technology
Syrian Arab Republic	-Ministry of Electricity -Renewable Energy Office - Cabinet of Ministers -The Higher Institute for Applied Science and -Technology (HIAST)
United Arab Emirates	-Ministry of Electricity and Water -Federal Environmental Agency -Ministry of Planning
Yemen	-Ministry of Electricity and Water -Environmental Protection Council

2. Actions for the preparation of RE country and Regional profiles

The initiation and activation of the REPM will be dependent on the appropriate assessment of needs and the identification of fields of cooperation. In order to identify possible areas for bilateral, subregional and regional cooperation in the field of renewable energy among the ESCWA member States, the following are necessary:

- (i) the available capabilities and expertise in each member State must be identified and classified;

- (ii) the state of development and utilization of different renewable energy resources must be assessed and qualified; and
- (iii) the specific needs for support in the member State must be specified.

To satisfy the above requirements ENRED/ESCWA has taken the following actions:

(a) Preparation of a framework for country profiles

It is most important that the country profiles of the different member States be prepared in a consistent form to facilitate the subsequent preparation of the compendium profile. In this context, the ESCWA secretariat has prepared a framework for the country profiles (see Annex 2) covering the different resources, technologies and types of activities in the field of renewable energy. It was also designed to elaborate on the available capacities, expertise and needs for cooperation in each ESCWA member State.

(b) Preparation of a model country profile

In recognition of the fact that the status of renewable energy development varies widely among the member States, and to make available a comprehensive model for the preparation of country profiles, the ESCWA secretariat prepared a renewable energy country profile for Egypt, in cooperation with the New and Renewable Energy Authority (NREA) of Egypt, the NFP for Egypt as an example to be used in the preparation of other country profiles.

Both the framework for the preparation of renewable energy country profiles and the model country profile for Egypt were sent to all NFPs to assist them in preparing their national profiles. As well ENRED has kept in contact to follow-up on the preparations of the individual profiles as a base for preparing the compendium of the country profiles and identifying the areas for cooperation among the ESCWA members.

3. Preparation of the REPM Memorandum of Understanding

The ESCWA secretariat has prepared a draft Memorandum of Understanding MOU (Annex3), to be endorsed by the member States to confirm their interest and participation in the REPM. The MOU is based on the project proposal and requires the approval of at least six of ESCWA members who have expressed interest in the REPM. In February 2000 the ENRED had submitted the memorandum to the NFPs for review and approval and followed up on their inquiries and initial signatures on the MOU.

4. Laying the ground for initiating the REPM activities

The ESCWA secretariat, in its 2000-2001 programme of work, has recognized the need for initiating and activating the REPM and included the following activities in its work programme to facilitate the initiation and activation of the REPM;

(a) Regional approach to disseminating renewable energy technologies in the ESCWA member States

This operational activity targets the development and implementation of an approach to disseminating renewable energy technologies in a variety of field applications in the ESCWA member States. It has the following core objectives:

- (i) To continue promoting measures for the initiation and activation of the REPM based on the above described procedures. This objective is being implemented in coordination with the REPM designated national focal points;
- (ii) To follow up on the marketing and implementation of the proposed project on Dissemination of Renewable Energy Technologies in the ESCWA MS;

(iii) To initiate in coordination with NFPs a new set of project proposals and/or activities to be implemented by the REPM.

The implementation of objective (i) above for promoting the realization and activation of the REPM has included the following activities; (1) Coordination with national focal points for the preparation of renewable energy country profiles,(2) Preparation of the renewable energy compendium of profiles for the ESCWA member States, including the identification of the potential regional cooperation opportunities,(3) Follow-up with the ESCWA member States on review and approval of the project Memorandum of Understanding; and (4) Organization of the current REPM initiation seminar, being held back-to-back with the expert group meeting (described in sub-section b below).

(b) Expert Group Meeting on Disseminating Renewable Energy Technologies in the ESCWA member States

This activity targeted the organization of the Expert Group Meeting on Dissemination of renewable energy technologies in the ESCWA member countries, which was held (2-4) October 2000. It constituted a forum for discussing and exchanging views on how to alleviate the constraints, with particular emphasis on: (i) renewable energy market prospects in the ESCWA member States; (ii) Experience in large scale applications of renewable energy; (iii) Market penetration strategies, policies and measures for the promotion of renewable energy applications.

As noted above the initial REPM seminar is being held back-to-back with the Expert Group Meeting; (i) To present and discuss the compendium of country profiles prepared by ESCWA; (ii) to review the final status of project MOU endorsements and (iii) To discuss the recommendations for the two-year programme of work of the REPM, to be prepared by the Coordination Unit in consultation with the NFPs.

III. THE CURRENT STATUS

The current implementation status of the REPM can be summarized as follows:

A- MEMBERSHIP AND ORGANIZATIONAL BODIES

Eleven ESCWA members have agreed to join the REPM and have nominated NFPs. As detailed in section III of this paper. Table 2 shows a list of the NFPs that have been nominated.

TABLE 2. NATIONAL FOCAL POINTS FOR THE REPM

ESCWA member	National focal point
Bahrain	Ministry of Electricity
Egypt	New and Renewable Energy Authority
Iraq	National Committee for Technology Transfer
Jordan	National Center for Energy Research
Kuwait	Ministry of Electricity and Water
Lebanon	Electricité du Liban
Oman	University of Sultan Qabous
Palestine	Palestinian Energy Authority
Syrian Arab Republic	Ministry of Electricity
United Arab Emirates	Ministry of Electricity and Water
Yemen	Ministry of Electricity and Water

With regard to the other ESCWA members, the authorities in Saudi Arabia have not yet responded to the REPM project proposal, and the authorities in Qatar have expressed unwillingness to join the REPM on the ground that they believe it may not be needed.

B. RENEWABLE ENERGY PROFILES

(1) Country profiles

In coordination with the NFPs of the countries that expressed interest in the REPM and some national experts, the Coordination Unit "CU" (ENRED) has directed efforts to ensure that the national renewable energy country profiles be prepared as a base requirement for the preparation of the compendium regional profile, where both are essential for the procedure for REPM initiation and activation. The current status (late Sept, 2000) is as follows:

-Six excellent to satisfactory country profiles are completed those are for Egypt, Jordan, Lebanon, Palestine, Syria and Yemen as well as a draft report from Oman.

-The country profiles of Iraq, Kuwait and United Arab Emirates are not yet received

(2) The Regional Compendium Profile

Based on the above described status of the country profiles together with the outcome of previous ESCWA studies and resources, the CU/ENRED prepared a draft for the regional compendium profile for the ESCWA region. The draft profile collates the outcome of referenced profiles and documents, and will be presented to the REPM initiation seminar for discussion. The CU will incorporate the conclusions and recommendations of the seminar into the draft profile and produce a final version for distribution to member States and NFPs.

C. MEMORANDUM OF UNDERSTANDING

The prepared MOU was sent to all REPM, NFPs and the CU/ENRED has already received information reflecting the consensus and readiness for endorsing it from ten of them, however only six had put their initial signature. The endorsement would be finalized during this initiation seminar.

D. THE REPM INITIATION SEMINAR

The seminar will be held on the fifth of October at Beirut. The CU/ENRED has taken the required actions for its organization and is looking forward for its conclusions and recommendations.

IV. RECOMMENDED ACTIONS

In view of the current REPM development status and the relevant activities initiated by the ESCWA Secretariat, the following actions are recommended for discussion, amendment and endorsement by the focal points during the REPM initiation seminar. It may also be seen as a base for the development of the first two year work programme of the mechanism.

(1) Finalization of the Renewable Energy Profiles

The CU to continue coordination with NFPs to complete country profiles not yet submitted, update and finalize the regional profile.

(2) To Ensure Full representation of MC

The CU has to re-initiate a consultative process with the remaining ESCWA-MC to join the REPM or to identify possible links with it.

(3) Identification of National Entities

The NFPs to direct efforts towards identifying the concerned and interested national Entities "NEs" in their respective countries, assess their capabilities or needs and develop an updated inventory of the national renewable energy institutions, expertise and business entities.

(4) Development of a Regional RE Inventories and Database

In coordination with the NFPs and on the basis of the outcome of recommendation No 1, the CU/ENRED would; (a) Develop a regional inventory of the regional energy institutions, expertise and business entities and communicated to the NFPs and (b) Take action for establishing and ESCWA regional renewable energy database with its first phase devoted for the subject inventory,

(5) To promote actions for implementation of the ESCWA proposed project

The CU in coordination with NFPs has to promote actions for the implementation of the project proposed on "Dissemination of Renewable Energy Services to the Rural Areas in ESCWA member Countries". These actions can be devoted to all or any of the five project proposed activities namely;

- 1-The Renewable Energy Assessment Study
- 2-Development of an awareness campaign on RE for sustainable development
- 3-RE capacity building activities
- 4- Market development and promotion
- 5-Demonstration of RE systems in rural areas;

(6) To initiate a new set of activity proposals

The NFPs would continue the assessment of need in their respective member countries and propose to the CU the required support. Upon identification of cooperating and/or contracting parties, the CU will coordinate efforts to facilitate the implementation.

It is to be noted that the CU/ENRED in its capacity as a UN body will direct efforts on the basis of the needs identified by NFPs towards raising possible funds for any of the specified activities as well as pooling technical expertise to support the implementation of any programme elements.

To this end, these recommendations are presented to the seminar for discussion, amending and/or endorsement. It may also be useful for identifying activities for the first two years activities of the REPM.



**The ESCWA-REPM
Background, Realization Procedure,
Status and Recommended Actions**

ANNEX I

**THE UPDATED PROPOSAL FOR THE
RENEWABLE ENERGY PROMOTION MECHANISM**

Annex I

THE UPDATED PROPOSAL FOR THE RENEWABLE ENERGY PROMOTION MECHANISM

The recommended outline for the REPM project proposal presented in the above-mentioned 1997 ESCWA study was reviewed and further elaborated to reflect some of the views and questions that emerged from in-house discussions and from comments received from some member States, regarding in particular the objectives and financial resources for the implementation of REPM activities. The following section reviews the updated version of the proposal.

A. CONTEXT

One of the principal objectives of the REPM is to overcome the constraints on the widespread use of renewable energy in the ESCWA member States. This can be done by utilizing their common capabilities built up during the past two decades. The REPM addresses the need in the ESCWA region to promote cooperation between the member States for the development of renewable energy technologies, in particular solar, wind and biomass technologies. In addition, the REPM targets the promotion of energy efficiency and conservation measures.

The REPM will provide the means for coordinating existing capabilities among the ESCWA member States to achieve global objectives for the development of renewable energy relevant to product design, industrial development, upgrading of manpower capabilities, testing and certification, operation and maintenance, and the diffusion of environmentally sound energy technologies in the market-place.

The proposal targets the creation of an REPM that can utilize the inherent capabilities among the countries in the region for their mutual benefit and enhance the opportunities for renewable energy technologies to penetrate the local market and the related development process. The REPM will also facilitate the access of the concerned parties in the member States to the appropriate regional or international organizations to support their activities and plans for the promotion and development of renewable energy.

B. BACKGROUND

Most of the renewable energy technologies that are already fully developed, or almost fully developed, have been intensively demonstrated and evaluated, and some of them have come into the market in the ESCWA region. Some ESCWA member countries have seriously and effectively developed their capabilities to acquire the technology, localize its manufacture and establish the required standards, codes and testing facilities needed to guarantee quality control of components and systems. Some applications of renewable energy technologies have been commercialized to some degree, and others have graduated from the demonstration phase to large-scale application, as is the case for grid-connected wind farms in Egypt and Jordan.¹

In view of the above, and the tremendous renewable energy resources available in the ESCWA member States, the current promising and rapidly developed state-of-the-art of renewable energy technologies, and the acute need for clean and sustainable energy resources, there is a huge potential for several renewable energy applications in the ESCWA member States that can be effectively utilized. This will require streamlining efforts in the appropriate direction to include renewable energy within overall energy plans and to implement programmes for the promotion of its applications.

In spite of the above, the development of renewable energy technologies, as well as their widespread use and market penetration, is still hampered by a number of constraints. Such constraints include: the lack

¹ ESCWA, "Renewable energy: an option for sustainable development in Arab States", paper presented by A. I. Hegazi at the Middle East and North Africa International Energy Conference, held in Cairo in February 1999.

of proper institutional framework, high costs, problems of marketability, the lack of local manufacturers, economic and financial constraints, and the lack of programmes to raise awareness in this field.

Over the past two decades, most of the ESCWA member States' activities in the renewable energy field were through bilateral cooperation programmes with developed countries, with very limited effective cooperation between the countries in the region. It became essential to promote cooperation between the ESCWA member countries in such a vital field, based on environmentally sound technologies that were almost fully developed and that could be promoted in the market-place on a commercial scale.

In addition, many countries in the region have acquired intensive experience in the different renewable energy fields. Some of these countries already have capable national institutions and have actively participated in the development of the components and systems needed for renewable energy technologies.

However, effective cooperation among the countries in the region is hampered by the absence of appropriate coordination and promotional mechanisms that can utilize the existing resources and capabilities to the mutual benefit of the countries and that can ensure that additional expertise and resources can be pooled and jointly utilized. In this context, the REPM is recommended as a tool for the enhancement of regional and subregional cooperation in the field of renewable energy.

C. OBJECTIVES

The objective of the REPM is to enhance the promotion of environmentally sound renewable energy technologies to contribute to the economic development of the ESCWA member States, using the tremendous resources available and the capabilities in the different countries, as well as ESCWA secretariat expertise and coordination links to international agencies.

1. *Development objectives*

The specific development objectives of the proposed REPM include the following:

(a) Accelerating the diffusion of environmentally sound renewable energy technologies for utilization in applications that are either highly replicable in the region or badly needed for remote and isolated areas. This would enhance the contribution of renewable energy resources to socio-economic development in the ESCWA member States;

(b) Fostering cooperation between the countries in the region by promoting the intraregional exchange of information and expertise and by helping to raise funds for joint activities (by soliciting financing from regional and international funding agencies and/or arranging bilateral financing between member countries);

(c) Making use of existing capabilities in member countries for their mutual benefit. Particular attention would be given to the milestones in progress made in equipment standardization, certification, field testing, training and the development of local industries;

(d) Emphasizing capacity-building in this field for the concerned personnel and institutions from the decision-making level to systems operation and maintenance;

(e) Enhancing public awareness in the region with regard to renewable energy applications and their environmental benefits and developing the technical expertise required to evaluate the contribution of renewable energy use to environmental conservation efforts;

(f) Developing national, subregional and regional capabilities in the areas that contribute most effectively to rural development, and supporting the establishment of small and medium-size renewable energy industries that can lead to the creation of job opportunities, conventional energy savings, and the realization of other economic social and environmental benefits.

2. Immediate objectives

The proposed set-up and linkages for the REPM are shown in the figure below. The Coordination Unit for the REPM and the national focal points in the member countries should cooperate fully with one another in working to promote and commercialize renewable energy technologies in the region, utilizing their combined capabilities and securing external expertise if required. Those associated with the REPM would be responsible for the following:

- (a) Developing a database on the status of renewable energy in each of the ESCWA member States, including expertise, institutions, capabilities, implementation status and projects in progress;
- (b) Exchanging information and expertise relating to different types of renewable energy technologies, in particular solar, wind, biomass, mini-hydro and energy conservation systems;
- (c) Undertaking optimization studies to compare and evaluate the economic feasibility of carrying out selected projects in renewable energy technologies in the different ESCWA member countries;
- (d) Undertaking, through coordination between the Coordination Unit, the national focal points and the concerned national entities, (i) economic studies on the current and potential renewable energy systems to identify the technologies and applications appropriate for the region; (ii) policy studies to identify the constraints hindering the use of renewable energy technologies and recommending corrective measures to overcome them; and (iii) the preparation of complete packages for dissemination to the countries in the region, and tailored to their needs;
- (e) Encouraging and coordinating the use of research and laboratory facilities in the respective member countries for the benefit of other countries in the region;
- (f) Organizing and/or coordinating training and educational programmes as well as bilateral and multilateral seminars and conferences in and for member countries (in particular, for operations and maintenance staff);
- (g) Promoting the trends and capacities for development of local renewable energy industries and the establishment of joint ventures with manufacturers from inside and outside the region. Within the context of such endeavours, training would be provided for engineers, technicians, economists and marketing personnel in renewable energy industries;
- (h) Supporting national entities in designing and installing renewable energy systems and training the operation and maintenance crews.

D. ORGANIZATIONAL SET-UP AND COORDINATION LINKAGES

1. The Coordination Unit

The proposed REPM would serve to facilitate coordination and the establishment of linkages between the ESCWA member countries. The REPM would be mobilized and administered by a Coordination Unit in Beirut and supported by the ESCWA secretariat.

The ESCWA secretariat would set up the Coordination Unit to mobilize and administer the REPM. The Coordination Unit would consist of ESCWA staff members; there would be a general coordinator, supported by three officers (a technical officer, a training and promotion officer, and a financial and administrative officer). The amount of time spent by this group on REPM-related tasks would be dictated by the requirements of the related work programme elements.

The Coordination Unit, with ESCWA as the central supporting agency, would be responsible for the following:

- (a) Providing a forum that could be used by the concerned national entities and companies in the region to establish and maintain contacts and carry out consultations;

- (b) Working with the national focal points to identify business opportunities that require cooperation between national entities;
- (c) Coordinating the capabilities in each country so that the renewable energy development objectives of individual ESCWA members anywhere in the region can be achieved with greater speed and efficiency;
- (d) Creating a central database that can be used to locate and promote business opportunities and to match capabilities to needs;
- (e) Organizing workshops, seminars and exhibitions in the ESCWA member States to facilitate the exchange of experiences in the design, execution and management of projects on renewable energy;
- (f) Promoting technology transfer and licensing arrangements for manufacturers for the benefit of the countries in the region;
- (g) Identifying barriers to the use of renewable energy technologies and recommending corrective measures and commercialization packages.

The central supporting agency should nominate a general coordinator for the Coordination Unit, who would be responsible for preparing the annual programme of work for the REPM and reporting to the ESCWA secretariat and the national focal points on the progress made in carrying out REPM-related activities.

2. The central supporting agency

ESCWA has a mandate to promote cooperation in the region, and the secretariat's technical advisory services can be made available to member States upon request. ESCWA is prepared to establish the Coordination Unit for the REPM at its headquarters in Beirut and would act, through its secretariat, as the central supporting agency for the programme. The secretariat is well qualified for the function of programme support, and has intensive experience with renewable energy efforts in the region, regular contacts with concerned authorities, international exposure in the field and links with United Nations bodies and financing agencies. The secretariat also has access to relevant databases, computer facilities, training tools and marketing capabilities, as well as the experience required to support REPM activities in collaboration with experts from the member countries. The secretariat can also offer office facilities and services that could be utilized for the activities of the Coordination Unit.

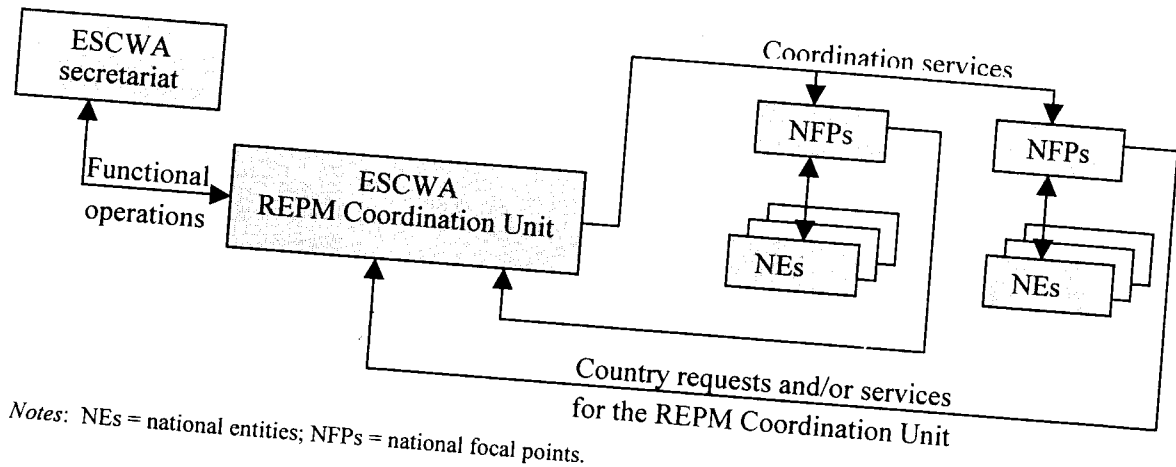
3. National focal points

Each member country joining the REPM should select an entity to serve as its national focal point. These focal points would be responsible for representing their respective Governments in the mechanism activities and operation; serving as liaison between the national entities and the Coordination Unit; exchanging country data with the Coordination Unit, as well as other information required to facilitate effective intraregional cooperation and mobilization of joint activities; and identifying and regularly updating a list of national business entities qualified to participate in the REPM. These recommendations will not entail any liability for the focal points.

4. National entities

Upon the recommendation of the national focal points, official national entities could associate themselves with the REPM. The national focal points would identify and evaluate the capabilities of the national entities and support the promotion of their commercial/business activities and services within the ESCWA member countries. Each national entity would pay an annual association fee of US\$ 2,000 in addition to a costs-plus-commission fee to the REPM when a contract is concluded for the benefit of the national entity through the efforts of the REPM.

Figure. The REPM, proposed organization and coordination links



E. PROCEDURES FOR REALIZATION

The revised procedures for establishing the REPM would be as follows:

1. The ESCWA secretariat, through the Energy Issues Section of the Energy, Natural Resources and Environment Division, would support the identified national focal points in preparing their national renewable energy profiles, in accordance with the framework to be prepared by the Energy Section.
2. The Coordination Unit would prepare a compendium of the country profiles (in which potential areas of cooperation would be identified), based on the capacities and needs of the ESCWA member States as outlined in the country profiles.
3. The ESCWA secretariat would organize an expert group meeting attended by representatives of national focal points and experts to discuss the proposal for the REPM as well as the compendium of country profiles, and recommend specific actions to be undertaken to develop the programme.
4. Following the approval of the project proposal, the ESCWA secretariat would select staff members for the Coordination Unit.
5. Once staff have been assigned to the Coordination Unit, the Unit, with support from the ESCWA secretariat and in full coordination with the identified national focal points, would complete the identification of national focal points, compile an inventory of specialized institutions and business entities in the member countries, prepare a two-year work plan for consultations with the national focal points, and carry out the different functions of the REPM.

It is believed that the activation of the REPM will contribute to the acceleration of renewable energy development in the ESCWA region.

**The ESCWA-REPM
Background, Realization Procedure,
Status and Recommended Actions**

ANNEX II

**THE FRAMEWORK FOR RENEWABLE ENERGY
COUNTRY PROFILES**

Annex II

THE FRAMEWORK FOR RENEWABLE ENERGY COUNTRY PROFILES

This framework is prepared by ESCWA to ensure the consistency of country profiles to be prepared by member States (MS) to enable the CU of the REPM to prepare the compendium of country profiles and identifying the potential cooperation fields.

The following guidelines describe the contents of the country profiles together with a brief description of the content of each item. In case that there is no information relative to a specific item and/or not available, it has to be specified in the designated space. Any further information has to be added by the end of the profile.

1. The Framework Structure

The country profiles will be structured in seven chapters as follows:

- I. Introduction**
 - A. Geographical information
 - B. Demographic information
 - C. Economic activities and indicators
- II. The energy situation**
 - A. Conventional energy resources and production
 - B. Renewable energy resources
 - C. Primary and final energy consumption
 - D. Electricity production and consumption
 - E. Rural energy resources and consumption
- III. The institutional framework**
 - A. Strategies, policy issues and planning measures
 - B. The renewable energy institutional framework
- IV. The renewable energy development status**
 - A. Resource assessment (RA)
 - B. Research and development (R&D)
 - C. Demonstration and field testing (D&FT)
 - D. Technology transfer and local manufacturing
 - E. Field application of mature technologies
 - F. Standards, testing and certification (ST&C)
 - G. Education and training
 - H. Information system and data bases
- V. Current coordination and cooperation programmes**
 - A. With other ESCWA-MS
 - B. With regional and UN organizations
 - C. With donor agencies and/or countries

VI. Potential fields of cooperation with other ESCWA-MS

- A. Services offered by MS
- B. Services the MS are in need for

VII. Member State renewable energy capacity for supporting regional cooperation

- A. Education and training
- B. Research and development, training and certification
- C. Professional expertise
- D. Equipment production facilities
- E. Systems design capacity

VIII. Additional information

As deemed necessary by MS.

2. The Guidelines for Preparation

I. INTRODUCTION²

This part would include a brief on the MS basic data and information relevant to the development of RE, in particular:

1st. Geographical Information, including:

- Location "Latitudes & Longitudes"
- Total MS area (Km²)
- Rural and Remote areas (Km²)
- Main topographical features

2nd. Demographic Information, including:

- Total population (million)
- Urban/rural population distribution
- Population Gender distribution

3rd. Economic Activities and Indicators, including:

- Major Economic Activities
- Total GDP 1998
- GDP distribution by economic sectors
- GDP / capita

² The introduction is expected not to be more than one page single spaced

II. THE ENERGY SITUATION

This part has to include brief and clear description of the energy sector status and its role in the MS economy. It will be used to identify the potential needs for renewable energy development and its possible applications in the specific MS;

A. Conventional Energy Resources and Production.

Specify 1998 figures for available resources, reserves and production, particularly for Oil, Natural Gas and Hydro resources, as well as the projections for 2005 & 2010 " as appropriate"

B. Renewable Energy Resources

Specify the available renewable energy resources in the member State "MS" including, but not limited to:

One. Solar energy resources.

- Annual Average global radiation in kWh/m²/year
- Direct normal radiation in kWh/m²/year
- Number of sunshine hours in hr/year

Two. Wind energy resources

Specify the areas where wind energy is available and the annual average wind speed in each site.

Three. Biomass resources

Specify the total and specific type of available biomass resources both for Rural and Urban areas as well as industrial wastes "if valid", including;

- Total annual production in million ton /year
- Specific production / capita in Kg /capita /day
- Moisture content (%)

d. Hydro resources

Specify the locations, heights in meter and water flows (m³/min) for available resources, particularly small and mini hydro resources "as appropriate"

e. Other renewable resources

Specify any other available renewable resources in the country and its stage of exploitation. I.e. geothermal, oil shale,...etc.

C. Primary and Final Energy Consumption.

Specify the total primary energy and the final end-use consumption in 1998, its growth rate during 1990's and the projections for non-commercial resources to year 2010. This would include;

- Total energy consumption by source
- Total sectorial energy consumption
- Per/capita energy consumption

D. Electricity Production and Consumption.

- The total installed capacity (Mw)
- The gross production by plant type (Twh)
- The final consumption in (Twh) by sector.

E. Rural Energy Resources and Consumption.

Specify the available energy resources for rural population, as well as the energy needs and consumption by application.

III. THE INSTITUTIONAL FRAMEWORK

A. Strategies, Policy Issues and Planning Measures.

Explain the existing strategies, policy issues and plans for RE development that are adopted or enacted by the MS

2nd. The Renewable Energy Institutional Structure.

Specify the core institutions that are responsible for renewable energy development and those who are contributing to any stage of such development (i.e. from planning to commercialization) as well as existing coordination mechanisms.

IV. THE STATUS OF RENEWABLE ENERGY DEVELOPMENT

A. Resource Assessment "RA".

- Describe briefly the actions taken or planned for RE resource assessment including:
 - Available measuring stations and its geographical distribution
 - The type and duration of produced data and /or documents (such as data bases or Atlas....etc)

B. Research and Development R&D

Explain the main fields of R&D on renewable energy technologies and systems that have been implemented or planned in the MS for the different RE application/technology options including.

a. Solar thermal R&D

- Domestic Solar water Heating "DSWH"
- Solar Industrial processes heat "SIPH"
- Solar space climatization "SCC".
- Solar thermal Electricity Generation "STEG".

b. Photovoltaic R&D

- Small scale remote application
- Grid connected system

c. Wind Energy R&D

- Wind Electricity
- Wind pumping

d. Biomass R&D

- Rural applications
- Urban applications

e. Other R&D activities on renewable energy

C. Demonstration and Field Testing D&FT

Describe the D&FT projects and activities that have been implemented, its performance results, problems faced and lessons learned for the same set of technology/applications options described in item B above.

D. Technology Transfer and Local Manufacturing

Describe the implemented, running or planned programmes for technology transfer of renewable equipment to the MS and the associated local manufacturing activities and capabilities.

E. Field Application of Mature Technologies

Describe the status of field applications for different renewable energy technologies including.

- The current level of application and/or commercialization
- The benefits gained or problems faced
- The social acceptability and market potentials
- The social acceptability and market potentials as appropriate

F. Standards, Testing and Certification "T&C"

List and specify the available facilities, laboratories or institutions that are concerned with testing and certifying RE component or systems as well as the relevant standard specifications and testing procedures.

G. Education and Training "E&T"

Explain the available education and training activities, the concerned institutions' capabilities in the field and the areas of available training programmes.

H. Information Systems "IS" and Data Bases "DB"

Specify the relevant available facilities, capabilities and expertise.

V. CURRENT COORDINATION AND COOPERATION PROGRAMMES

List and describe briefly the main co-operation programmes in the R.E. field between the MS and;

- 1st.** Regional and UN Organization
- 2nd.** Donor Agencies and/or Countries
- 3rd.** Other ESCWA Member States (MS)

The programme description may include objectives, technologies, projects capacity and achievements.

VI. POTENTIAL FIELDS OF COOPERATION WITH OTHER ESCWA-MS

List the R.E. activities and services that:

- 1st.** The MS can offer to other MS.
- 2nd.** The MS is in need for.

This item will be useful for the coordination unit of the REPM in identify joint activities among MS.



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اللجنة الاقتصادية والاجتماعية لغربي آسيا

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Energy, Natural Resources and Environment Division
Energy Issues Section

Annex III

MEMORANDUM OF UNDERSTANDING
ON
ESTABLISHMENT AND ACTIVATION OF THE
RENEWABLE ENERGY PROMOTION MECHANISM "REPM"
IN THE ESCWA REGION

Beirut, October, 2000



MEMORANDUM OF UNDERSTANDING
ON
ESTABLISHMENT AND ACTIVATION OF THE
RENEWABLE ENERGY PROMOTION MECHANISM “REPM”
IN THE ESCWA REGION

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Article VI: “Objectives and functions of the REPM bodies”

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Article VIII: “Coming into force, validity, amendment, termination”

Introduction

The ESCWA region enjoys tremendous Renewable Energy "RE" resources. Several member States "MS" have acquired intensive experience in the different RE fields, while some of them have been recognized as active participants to the technological development of RE equipment, as well as having capable national institutions, whereas the experience of others has been limited to minor initiatives that were not met with sufficient success

In view of the above it became essential to promote cooperation between the ESCWA member countries in such vital field, specially based on environmentally-sound technologies, that are approaching the state of maturity and need to be pushed to the market place in a commercial scale.

However, the realization of an effective cooperation among the ESCWA "MS" has been faced by the absence of appropriate coordination or promotion mechanisms that can utilize the existing resources and capabilities to the mutual benefit of "MS". It is due to such background that UN-ESCWA has prepared a project proposal for the creation of a RE Promotion Mechanism "REPM" in the ESCWA region as a tool for enhancing the regional and subregional cooperation in the field of RE. (Annex No 1)

In order to investigate the views of the ESCWA-MS regarding the concept, objective and membership of the mechanism, the ESCWA secretariat has forwarded the proposal to all member States and conducted consultations with the concerned national authorities on the subject to reach consensus among them regarding the joining to the mechanism,

In conclusion, as by October 2000, eleven ESCWA-MS have agreed to join the mechanism and nominated concerned national authorities to represent them as National Focal Points (NFP's) in the mechanism. Therefore, this memorandum of understanding among the NFPs is issued to set the objective of the mechanism and the responsibility of each party. Its endorsement by each NFP would imply its commitment to the mechanism objectives and implementation procedures.

Article I

Definitions

As given by the project proposal in annex 1, the abbreviations used in this document shall mean;

- “CSA” the Central Supporting Agency “UN-ESCWA”
“CU” the Coordinating Unit “ENRED/ESCWA”
“NFPs” the National Focal Points “as identified in article III below”
“NE’s” the National Entities

Article II

Objectives of the mechanism

The objective of the REPM is to enhance regional and subregional cooperation among ESCWA-MS for the promotion of environmentally sound Renewable Energy Technologies “RET” to contribute to the economic development of the MS’s, based on the tremendous resources available and the capabilities built within the countries and that of UN-ESCWA expertise and coordination links to the international agencies.

Article III

Establishment of the Mechanism

The establishment of the “REPM” will be considered endorsed and effective at the date that at least six of the NFPs complete signature and endorsement of this memorandum of understanding and in accordance with its provisions.

Article IV

Organizational setup and coordination linkages

The cooperating parties “CU” and “NFPs” agree that the REPM set-up described in part D of the attached proposal will be established to carry out the functions of the mechanism. They also agree that;

- a- Member countries who agreed to join the mechanism will be represented by the National Focal Points listed hereinafter (NFPs) as nominated by their respective countries
- b- Should a member country replace its nominated NFP, the CSA should be notified to that effect 15 days from the effective date of the new assignment.

- c- ENRED of UN-ESCWA will act as a CU for the REPM supported by UN-ESCWA.
- d- On recommendation of the concerned NFPs, national Entities "NE's" can be associated to the mechanism.

COUNTRY	NATIONAL FOCAL POINT
State of Bahrain	Ministry of Electricity and Water
Arab Republic of Egypt	New and Renewable Energy Authority
Republic of Iraq	National Committee for Technology Transfer
The Hashemite Kingdom of Jordan	National Energy Research Center
State of Kuwait	Ministry of Electricity and Water
Republic of Lebanon	Electricite du Liban
Sultanate of Oman	Sultan Qaboos University
Palestinian Authority	Palestinian Energy Authority
Syrian Arab Republic	Ministry of Electricity
United Arab Emirates	Ministry of Electricity and Water
Republic of Yemen	Ministry of Electricity and Water

Article V

Obligations and coordination procedures

The obligations of the REPM partners and coordination procedures will be set-up in accordance with parts D and E of the attached proposal and the consensus of the national focal points on any new issues to be identified during the operational phase of the mechanism.

Article VI

Objectives and functions of the REPM bodies

The functions of the REPM bodies, namely CU, NFPs, and NEs will be as stated by part D of the attached proposal.

Article VII

Membership and accession to the mechanism

- 1- The nominated focal points are eligible to be members in the mechanism. Should the government change the nomination, the newly appointed focal point will automatically replace the current one in all its obligations.

- 2- Countries shall join the mechanism when their designated focal points will sign this memorandum of understanding which shall be deposited with the CU;
- 3- The CU shall keep a register of all such instruments of accession and shall keep other member countries informed of every new accession to the mechanism.

Article VIII

Coming into force, validation, amendment and termination

- 1- This operational mechanism of cooperation shall come into force on: 5th October, 2000 and shall be valid up to: 4th October 2010 .
- 2- After two years of its operations, the CU together with the NFP's shall assess the status of the mechanism and shall issue a report to the Committee on Energy at ESCWA, outlining the results achieved, and the institutional changes required to improve the mechanism operations.

Done in Beirut on: 5th October 2000 in two originals one in English and one in Arabic

In case of divergence in interpretation of one of the texts of this operational mechanism of cooperation the Arabic text shall prevail.

In witness whereof the undersigned, being duly authorized to do so by their respective governments, have signed this document for establishing the "Renewable Energy promotion Mechanism".

For **State of Bahrain**
Ministry of Electricity and Water

Signature:

Name:

Title:

For **Arab Republic of Egypt**
New and Renewable Energy Authority

Signature:

Name: Eng. Mahmoud S. Zannoun

Title: Executive Chairman
NREA

For **Republic of Iraq**
National Committee for Technology Transfer

Signature:

Name:

Title:

For **Hashemite Kingdom of Jordan**
National Energy Research Center

Signature:

Name:

Title:

For **State of Kuwait**
Ministry of Electricity and Water

Signature:

Name:

Title:

For **Republic of Lebanon**
Electricite du Liban

Signature:

Name: Eng. George Mouawad

Title: Director-General
Electricite du Liban

For **Sultanate of Oman**
Sultan Qabous University

Signature:

Name: Dr. Hilal Bin Ali Al-Hanai

Title: Academic Assistant Director
For Innovation and Industrial
Relations
Sultan Qabous University

For **Palestinian Authority**
Palestinian Energy Authority

Signature:

Name:

Title:

For **Syrian Arab Republic**
Ministry of Electricity

Signature:

Name: Eng. Sufian Al-Aloa

Title: Deputy Minister
Ministry of Electricity

For **United Arab Emirates**
Ministry of Electricity and Water

Signature:

Name:

Title:

For **Republic of Yemen**
Ministry of Electricity and Water

Signature:

Name: Eng. Ahmed Hasan Alaini

Title: Deputy Minister
Ministry of Electricity and Water

For **UN-ESCWA**
Energy, Natural Resources and
Environment Division (ENRED)

Signature:

Name: Mr. Omar Touqan

Title: Chief, ENRED