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Economic Commission for Latin America and the Caribbean

CENTRAL AMERICAN ISTHMUS: FRAMEWORK FOR PROJECTS OF THE ELECTRICAL SUB-SECTOR

This document was prepared for presentation at the First Meeting of Central American Governments with Cooperating Governments and Institutions, to be held in Geneve, Switzerland, from 4 to 6 July 1989.

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1. Background

The energy sector has been considered of particular interest in the Special Plan for Economic Cooperation for Central America (PEC). 1/ The governments identified it as one of the priority areas for international co-operation, in view of its economic development potential. It was so designated given the present difficulties in ensuring electrical energy supply in the short term. This situation is due, in part, to delays in the implementation of some large-scale hydroelectrical projects, as well as to the reduced precipitation recorded in the last few years, and has led to the intensive use of thermal plants, resulting in a deterioration in equipment. Poor maintenance due to the difficult economic situation has resulted in minimal care and maintenance for such equipment, which is in urgent rehabilitation in most of the countries.

With the exception of Honduras, the countries of Central America presently face difficulties in balancing supply and demand, particularly when the volume of water available for generating electricity is below average. Even in the case of Honduras, which still has a surplus of hydroelectric power, there is a need to repair the thermal plants, since it is estimated that this surplus may be exhausted in 1991-1992. Repair work might permit the rehabilitation of the thermal plant system by that time.

Any growth in agricultural activities and manufacturing industries would increase demand for electricity. This in turn would accentuate present imbalances, which would pose a serious obstacle to the reconstruction and economic development expected to occur in the medium term. Large investments

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1/ Prepared pursuant to United Nations General Assembly Resolution 42/204 of 11 December 1987.

in the electrical sub-sector are therefore necessary to satisfy present and future demand for electricity.

The countries of the Central American Isthmus closely co-ordinate the operations and planning of their electrical systems which are integrated in two blocs: a) Guatemala and El Salvador, and b) Honduras, Nicaragua, Costa Rica and Panama.

Electric interconnection has been accomplished through bilateral agreements. Regional interconnection is not complete since the line between El Salvador and Honduras has not been built. In spite of this, the technical and economic benefits of this physical integration achieved to date are of special importance.

Institutional integration exists through two fora: the Central American Sub-Committee for Electrification and Hydraulic Resources (SCERH), comprised of the highest authorities of the electrification institutions of the Central American Isthmus, and the Regional Group of Electrical Integration (GRIE), in which the chiefs of operations and planning from these institutions participate. The legislative bodies of five countries of the region have ratified the creation of the Central American Electrification Council (CEAC). This important mechanism for regional integration could become the competent institution for the execution of regional electrical projects, once it is consolidated and begins operations.

2. Justification for the projects

Projects in the electrical sub-sector included in the Special Plan are geared toward improving electric energy production and the supply capacity of national electric enterprises in Central America. They also include other possible ways of generating electricity. These projects are justified by the

fact that they aim at balancing supply and demand for electricity. On the economic side, their justification is based on increased production capacity and greater efficiency in generating electricity, as well as increased supply.

The priority projects, both regional and national, that are included in the catalogue, form part of the interconnected system for the Central American Isthmus. By facilitating energy exchange through transactions among the countries, these projects could have an significant impact in the region.

3. The projects

The national electrical enterprises of Central America have selected a group of projects, which consist of repair and rehabilitation works needed for the generating plants and the electrical network, the replacement of some damaged components, small constructions to complement existing plants, and the acquisition of spare parts, both for rehabilitation and the normal maintenance of equipment for three years.

In mid- 1988 the electrical companies, with the support of the Economic Commission for Latin America and the Caribbean (ECLAC), prepared a catalogue[2/] of short-term priority investment projects.

The electric companies, the World Bank and ECLAC are working jointly to update this catalogue and reassess priorities. As a result of this work, an index card for each case will be prepared, which will provide a brief description, a technical justification, an economic evaluation, a detailed cost profile and a calendar for its execution when possible.

2/ See ECLAC, Perfiles de proyectos del subsector eléctrico centroamericano incluidos en el Plan Especial de Cooperación Económica de las Naciones Unidas (LC/MEX/R.112/Rev.1), 22 July 1988 and its addenda of 8 November 1988.

The catalogue of priority projects will cover only three years and is expected to be completed in October 1989. Given the adverse financial situation faced by the electric companies, a longer time period must be considered. Since present national capacity expansion plans are very modest and are constantly being reduced, there is the risk of not achieving a supply-demand balance in the future, unless medium and long term projections are revised at the same time that priority projects are considered.

The Central American Bank for Economic Integration has designed one programme on alternative and renewable sources of energy and another on electrical energy. Both provide for regional coverage. The first programme includes small projects for the five countries of Central America at an estimated cost of US$ 10.7 million. For the second programme, which will cover generation, transmission and distribution aspects, CABEI has selected projects totaling US$ 133.6 million. One of these is the construction of the 230 kV, 160 km long interconnecting line between El Salvador and Honduras, at an estimated cost of US$ 27 million (80% in foreign exchange).

In order to estimate the energy balance for a longer term it is necessary to invest in new projects. Some of these are in an advanced stage of preparation and steps have been taken to obtain funding for them. This portfolio includes projects that refer to both conventional generation of electricity and the use of new sources of energy.

4. Outlook for the electric sub-sector in the medium and long term

In view of the acute financial crisis faced by the electric enterprises of the Central American Isthmus, plans for the expansion of electrical generation are constantly being cut back. At present such plans refer to relatively small plants. A growing difficulty in balancing supply and demand

for electrical energy is therefore anticipated for the next 10 to 15 years. This situation may worsen in years when water flows drop below average levels. It is recommended that longer term electrical generation needs be evaluated, in addition to the present support initiatives for short term investment projects. This evaluation should take into consideration the fact that the thermal generation plants are, on average, twenty or more years old, and that their availability will decrease in the future.

It should be mentioned that while global consumption of energy has declined as a result of the economic crisis that has seriously affected the countries of the region, electrical production has steadily increased. In 1980, 9.1 TWh were generated in the Central American Isthmus, while in 1988 the figure was 12.6 TWh, an average annual increase of 4.2%.

5. The Central American Electrification Council (CEAC)

During the Sixth Meeting of Managers and Presidents, held in Panama City, Panama, 29-30 March 1979, the state-run electrical energy companies in the Central American Isthmus created the Central American Electrification Council (CEAC), which has been ratified by the Legislative Assemblies of five countries in the region.

The constitutive agreement of the CEAC 3/ assigns this institution the main task of achieving better use of the energy resources of its member states. To accomplish this it recommends the efficient and rational generation, transmission and distribution of electric energy among the Central American countries.

3/ Approved during the Ninth Meeting of Managers and Presidents, held in San José, Costa Rica, 18 April 1985.

It is of prime importance that duly established and organized counterparts exist in the countries to ensure that international economic co-operation with the electric power sector is used to best advantage and oriented toward priority needs in each country and that it appropriately supplements ongoing national initiatives. The international community could support the formal establishment and organization of CEAC. This support could be manifested through a project for institutional strengthening that would include: a) co-operation to integrate the technical staff of CEAC and enable them to initiate their activities; b) co-operation to formally establish CEAC (facilities, library, computing equipment and others); and c) promotion of regional technical groups that would form CEAC, etc.

With the consolidation of CEAC it would become easier to formulate and execute regional projects, such as the following: the addition of larger scale plants than those presently under consideration in the national programmes to increase electrical generation; the establishment of a regional center for specialization in electrical systems; and the creation of a regional laboratory for electrical testing.