



UNITED NATIONS  
ECONOMIC  
AND  
SOCIAL COUNCIL



LIMITED

ST/ECLA/CONF.7/L.1.06  
6 December 1960

ENGLISH  
ORIGINAL: SPANISH

LATIN AMERICAN ELECTRIC POWER SEMINAR

Held under the joint auspices of the Economic Commission for Latin America, the Bureau of Technical Assistance Operations and the Resources and Transport Economics Branch of the United Nations, with the collaboration of the Government of the United Mexican States.

Mexico City, 31 July to 12 August 1961

CENTRAL AMERICA AND THE PROBLEMS OF ELECTRIFICATION

by J. M. Dengo

NOTE: This text is subject to editorial revision.



Electrification in Central America had its beginnings at the end of the last century at almost the same time as the growth of electricity in other more developed countries. It started first in the hands of private enterprises, supplying power in the principal cities and other places that were attractive markets and with enough customers to make it a good business. Generally these early developments made use of falls, which were easy to exploit in a simple way or, in some cases, existing industries transformed the steam engines which were their means of generation, and were thus able to electrify their own installations for their own supply and to pass the surplus to other consumers. In some countries, the electrification of small villages and estates had a surprising development with primitive hydroelectric installations. Later these activities were consolidated into specialised enterprises of public utility, many of them subsidiaries of international or local combines. In general it can be said that the electrification of the public services has been selective and limited to the centres of population and, while it has served to raise the standard of living in those centres, it has lacked the features of a universal service, which are necessary if it is to be of any real aid in economic development.

In recent times, and in recognition of the necessity of satisfying in a more extensive, continuous and methodical way the productive activities of the different countries, the Central American governments have taken in one way or another a more active part in the orientation of the provision of electric power in their countries. Thus we have the beginning of efforts directed towards the establishment of modern standards of regulation, of the formation of a rule of public services and the creation of organizations to encourage it and of specialised national enterprises for either the partial or entire running of the power sources. Efforts were made to eliminate the historic crises of the exhaustion of generating capacity which have plagued these countries, and combined solutions were looked for which would guarantee not only the greater extension of the services and the continuity of the same but also the more sensible and greater use of the available resources. From the point of view of organization in general, it can be said that there have been no tendencies towards the excluding of  
/private capitals,

private capitals, as the countries have tried to take advantage of the possibilities offered under the circumstances by them and also by the State resources.

However, the utilization of the electric power is still fundamentally to fulfil the necessities of living and of comfort rather than to fulfil needs of production. The industrialization of Central America is only just beginning and it is principally apparent, with the exception of a few important installations, in numerous workshops which, however, reduce the manufacturer to the category of a small consumer almost on a par with the domestic consumer. For this reason in many cases they have not been able to take the firm stand that the big industrialists in other countries have taken before the public utility companies, making felt their competitive power and lessening the might of the monopolies by showing that the existing relations are only an alternative to the fact that the industries themselves could, advantageously, produce their own power.

The electric enterprises have had the upper hand in their relations with the consumers from the fact that the latter are few, scattered and disunited. This state of affairs is harmful for both sides as regards the setting up of a policy of mutual benefit, so that the problems of rates, expansion, and others just as fundamental, have not been aired with a spirit of reflection by the parties with common interests but with opposed points of view. The enterprises have not in many cases understood the true necessities of the countries and the opportunities which the state of affairs could bring, and, on the other hand, the public have had no clear understanding of the problems of the enterprises. Thus we often find a spirit of nationalism which is prejudiced against the legitimate aspirations and proposals of a policy which would be for the general national good.

As regards the foregoing situation, the most palpable fact is that the private enterprises took full advantage of it and developed with able commercial vision the obvious and immediate productive markets and the power resources of low cost and high returns, but there has come a time when the problem has passed this stage and only to go on supplying power for the ever growing established markets is hardly an important aspect of the matter of electrifying a country. The next stage, from the point of

/view of

view of the supply, is to give electricity either for domestic or productive purposes to those extensive areas of land which, because they are not thickly populated and have a low consumption of power, give an unfavourable balance between investments and income to private companies. Vast areas which are indicated for programmes of economic encouragement and the accumulative benefits will be the return for the investments made.

The new method of taking complete advantage of the resources, and of the preservation and protection of the national wealth of the countries, has brought to an end the old system of the isolated use, or partial advantage being taken of the resources, and the taking of what we might call the cream of a hydroelectric locality and spoiling the greater overall possibilities by producing a limited installation at a low basic cost.

The electrification of Central America is at this moment entering upon this stage and it has a great chance of arriving at positive achievements, utilizing to the full, and with objectivity, not only human resources but also the resources - technical, financial and political - of the State and of the private enterprises, if it is able to avoid failure by a useless struggle of different schools of thought which so often hamper and confuse the practical solution of national problems.

From the point of view of organization, the electric industry of Central America can be classified as essentially within the limits of rural electrification with a few urban centres, with a consumption principally domestic and commercial, and with the beginnings of industrial activities. By the measure of its size, the problems of Central America are on a level of "petty electrification" in contrast with what we could call the problems of electrification on a bigger scale in the larger countries of the Hemisphere with their great urban, industrial and mining centres. It should be noted as well that in the larger countries of the Hemisphere there are also problems of electrification on a small scale equivalent to those of Central America, when they concern regions whose conditions resemble those of the Isthmus. This leads us to think that in a Latin American Seminary for the treating of the Hemisphere's electrical problems, it will be necessary to recognise the special features which the essential parts of the electric problem present, when they are treated on either the level of petty or greater electrification.

/The essentials

The essentials of planning, organization, finance, rates, technology in the developments, technology in the exploitation, and administration of the services are equally present in great or petty electrification, but the formation of a guiding policy in each case differs substantially and is influenced in a deciding manner by economic factors.

The basis for the formulation of this policy needs a clear and judicial evaluation of the necessities, as much present as potential, of the population; an analysis of the real possibilities derived from existing natural resources; and what we could call the financial feasibility of the plans or accomplished projects. By financial feasibility is meant an objective analysis of the economic justification of the works to be undertaken, also the real possibilities of obtaining funds to carry them out or, in other words, the ability to finance them.

The problems of obtaining the capital required is in general underestimated and treated with lightness and excessive optimism in the first stages of a programme of electrification, and only later is it found that a project essentially well conceived fails or is delayed through the lack of practical and effective knowledge of the markets of capital. The problem is possibly more acute in relation to petty electrification, where the financial balance of the programme is extremely tenuous, and the monetary returns small or non-existent in the first stages of the programme or of the enterprise. In many cases this is complicated by the tendency to want to produce grandiose works which are not in proportion with the investments and the markets. The projects which are made a political symbol or an opportunity of technical exhibitionism have been factors which hamper the setting in motion of programmes of urgent necessity in many place.

As regards electrification on a large scale, the market has generally had a previous development and is a typical problem of guaranteeing its uninterrupted growth: the economic returns are assured and the problem consists not so much in presenting a good revenue as in obtaining a continued supply of the prodigious monetary resources that the increasing service requires.

We hope that the Latin American Electric Power Seminar, where many of the problems outlined here can be examined and where will be brought to  
/bear the

bear the experience, the ideas and the knowledge of the experts of various countries, will be an important step in the progress of our Hemisphere.

