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Sixth Session  
Bogotá, Colombia  
29 August 1955

COMMITTEE V

(Problems of Energy and Industrial Development)

SUMMARY RECORD OF THE SECOND MEETING

Held at Bogotá, on Tuesday,  
6 September 1955 at 10.30 a.m.

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/PRESENT:

PRESENT:

<u>Chairman:</u>	Mr. ZAMORA	Mexico
<u>Rapporteur:</u>	Mr. BAKULA PATIÑO	Peru
<u>Members:</u>	Mr. ROMANUTTI	Argentina
	Mr. BORGES FERREIRA	Brazil
	Mr. HESS ESTRADA	Costa Rica
	Mr. RODRIGUEZ MARTIN	Cuba
	Mr. PITARQUE	Ecuador
	Mr. WYTHE	United States of America
	Mr. BRONGNIART	France
	Mr. APOLON	Haiti
	Mr. BUESO ARIAS	Honduras
	Mr. CUEN BARRAGAN	Mexico
	Mr. BOJORGE	Nicaragua
	Mr. FABREGA	Panama
	Mr. WRIGHT	( United Kingdom
	Sir KEITH JOPSON	(
	Mr. FERNANDEZ GOYECHEA	Uruguay
	Mr. ALAMO BLANCO	Venezuela

Also present:

Representatives of specialized agencies:

Mr. SACO	Food and Agriculture Organization
Mr. LARSEN	International Bank for Reconstruction and Development

/ Secretariat:

Secretariat:

Mr. PREBISCH

Executive Secretary

Mr. DORFMAN

( Secretaries to the

Mr. LEUSCHNER

( Committee

Mr. VUSKOVIC

Assistant Secretary

PROBLEMS OF ENERGY

The CHAIRMAN recalled the order of discussion agreed at the previous meeting, and invited the Committee to consider problems of energy.

Mr. WYTHE (United States of America) said that his delegation had so far only had an opportunity to study the summary of the preliminary report (E/CN.12/373). It fully endorsed the suggestion that the study be carried further and proposed that a committee of experts be set up for the purpose. A number of detailed comments on the report had been handed in to the Secretariat.

Incidentally, in connection with the question of alternative sources of energy, the Committee might be interested to know that the First World Symposium on Applied Solar Energy was soon to be held at Phoenix, Arizona.

Mr. ROMANUTTI (Argentina) suggested that detailed work on the Secretariat studies might be best dealt with in separate working groups on energy and industrial problems respectively, while corrections to the statistical data might for convenience be sent in by delegations to ECLA Headquarters. In the meantime, he would like to make a few comments on a number of points in document E/CN.12/373/Rev.1, with which his delegation was by and large in agreement.

/ The prospects

The prospects for new types of energy such as wind-power, solar and geo-therman energy merited some attention from ECLA, while the future potentialities of nuclear energy warranted a periodic review of long-term planning in the light of developments in that field.

Describing Argentina's general policy in regard to energy, he said that the National Energy Council was responsible for planning and control and a series of State undertakings took charge of the exploitation of energy sources, industrialization, transport, marketing, etc., while the Treasury Department worked in close collaboration with the planning authorities in fixing priorities and regulating investments.

Reviewing the various chapters of the summary report in turn, he emphasized the reference in Chapter I to the necessity for further integration of the study of energy in all its aspects with the other problems peculiar to Latin America at its present stage of development.

The reduction of working hours in many industries, referred to in Chapter II, hardly applied to Argentina, where the tendency was rather towards the use of night power or other means of increasing load diagrams.

The estimated figures in table 8 (Chapter III) for coal consumption in Argentina were on the low side, and those for vegetable fuels proportionately too high. The question of sugar cane bagasse as a fuel was bound up with the general

/ question of

question of substitution and with currency policy. The tendency noted in the chapter for the Latin American countries to make greater use of light fuels was contrary to the trend in Argentina.

It would be unwise to put too much faith in the estimates of potential energy resources given in table II (Chapter IX). Prospecting operations might well alter the entire picture, as had happened in Argentina with coal and natural gas.

On the basis of the points he had raised, the Argentine delegation would submit recommendations for discussion by the working groups and the Committee.

The CHAIRMAN said that he understood the Argentine representative to have made two proposals: that detailed comments on statistical matters be submitted in writing to the Secretariat and that a statement be made towards the end of the Committee's work on the subject of nuclear energy.

Mr. FERNANDEZ GOYECHEA (Uruguay) declared that the development of Latin American industry was in no way inspired by a desire for autarky. Nor did it run contrary to the proposals for the intensification of international trade on which Latin America pinned its hopes of a better world. It was motivated solely by the need to maintain a rise in the standard of living parallel to that occurring in the industrialized countries.

In the case of Uruguay, solutions had to be adapted to the modern size of its domestic market. While a reasonable

amount of expansion might be given to industries catering for domestic needs, going as far in some cases as to leave a surplus for export, the greatest scope for industrial development lay in the processing of its basic products, which offered a way of increasing trade without the need for heavy investment. In a word, Uruguay's industrial development would take the form of substitution of imports and exports and the processing of its basic products to the level of finished or semi-finished goods.

The industrialized countries should do their best to facilitate such development since, it would enhance Uruguay's purchasing power abroad. As far as the under-developed countries were concerned, his delegation considered that while endeavouring to increase sales of their industrial products, they should exchange them not for consumer goods but rather for capital equipment.

The Uruguayan Government laid great hopes on practical investigation of the possibility of making its economy and export trade complementary to those of its sister States. That, indeed, was the most important objective of its delegation to Committee III. The success of Latin American industrial development depended on the creation of a propitious economic climate which meant overcoming rigidity in the machinery for controlling imports for industrial use, lowering rates of interest, enlarging capital markets and making arrangements for medium and long-term credit.

/ On the

On the first point, his country had already made some progress, but much remained to be done to lower the high cost of money and stimulate savings, which would not necessarily involve a reduction in essential consumption.

Similarly, it was essential to organize flexible credit systems and suitable financing and marketing plans.

Mr. ALAMO BLANCO (Venezuela) said that the preliminary report (E/CN.12/384 and Add.1) was a highly successful work which clearly demonstrated the need for further and more extensive study of the subject. In particular, he agreed with the reference in footnote 7 of the main document to the desirability of deeper enquiry into the replacement of manual labor by mechanization.

On a point of detail, he would suggest that the fundamental definitions on which the study was based should be given a more prominent position at the beginning of the document.

The development of energy resources being a matter of major interest, he would like to give a few details on the position in Venezuela, which possessed a wealth of completely untapped resources in the more inaccessible parts of the country.

The most important project on foot was a long term scheme for the hydroelectric development of the Rio Caroní in conjunction with the establishment of an iron and steel industry. The description of the scheme in the report was,

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for various reasons, rather incomplete. The river had an average flow of 4,500 cu.m. per sec., a theoretical potential of 8 million kw. and an economically utilizable potential of 4 million kw. The project - which it was hoped to complete in 1957-58 - envisaged an initial capacity of 150,000 kw; as the engineering works would be much greater, 300,000 kw. might be reached in a second stage merely by installing additional turbines. Available potential represented eight times existing installed capacity in Venezuela, while the first stage would provide an increase of one third of that capacity.

The plant would be located near the site of the future iron and steel works on the banks of a river rendered navigable, by dredging, by the largest ocean-going cargo-carriers. If operated to full capacity, the scheme would have a cost per kwh. of 3 millions.

To ensure the lowest possible production cost, his Government was naturally anxious to attract large-scale consumers to the area and was contemplating the establishment of an electrolytic aluminium industry. Power consumption represented 15 per cent of the final cost of aluminium, and at the moment alumina was being carried 9,000 km. by sea from Jamaica to British Columbia because of the low cost of power in that province.

The Río Caroní project was merely part of a scheme for creating a zone of industrial development which would

/ embrace about

embrace about one fourth of the national territories with a total present population of only 125,000.

The report emphasized the importance of efficient energy utilization. It was difficult to compare standards of efficiency owing to differences in capacity and technical level in the various countries. There was no doubt, however, of the loss to the economy entailed by low average yields. The Venezuelan delegation would like more attention to be paid to transmission and distribution losses, which were very high, the total loss by the time power reached the consumer being estimated at 20 per cent. Higher efficiency of utilization could sometimes be obtained by establishing heavy power-consuming industries in the neighborhood of plants, replacing small and uneconomic plants by larger, more efficient and better located ones, and by inter-connected power networks.

Another problem in that connection was the dispersion of markets. As long as the degree of urbanization was low, population scattered and urban centres far apart, industrialization would always be a difficult problem.

Since, in the words of the report, energy was an essential pre-requisite for the development of production, the Venezuelan Electrification Plan budgeted for ambitious increases in output, in excess of estimated future consumption, on the ground that it was better to have surplus capacity than run the risk of a deficit in supply.

/ Development would

Development would be in the hands of limited companies financed almost entirely by Government capital, with the Venezuelan Development Corporation acting as holding company.

He thought that greater emphasis might be placed on studies of the direct and indirect influence of the transport factor on the practical utilization of energy. There could, for instance, be no set answer to the question whether it was more economic to transmit energy as power or transport the crude sources to the point of consumption. Everything depended on local circumstances. In that connexion it was not clear whether account had been taken in the concept of "net energy available to the consumer", of the monetary and energetic cost of transporting refinery products in the case of petroleum. In Venezuela, the cost of transport varied a great deal according to region and product, often making it advisable to locate new industrial centres near waterways, as the most economic means of transport.

Although reluctant to trespass in a field in which he was a complete layman, he would like to sound a note of caution regarding the potentialities of nuclear energy. Power production from nuclear energy and from water resources had certain features in common. In both cases, fuel costs were negligible while installation costs were very high. However, whereas the lowest practicable cost in existing technical conditions was 0.3 mills per kWh in the case of hydro-power, it was 4 mills per kWh in the case of nuclear energy. In view, therefore, of the

/imperative need

imperative need to expand capital resources, it might be unwise to pin all hopes on the development of nuclear energy and neglect other cheaper sources of energy which were available.

Again, although one of the chief advantages of nuclear energy was its mobility - the fact that it was not tied to its sources of supply - freedom of location of plants might be considerably restricted by the need for abundant water supplies and the problem of disposal of radio-active waste products.

Mr. BRONGNIART (France) said that he hoped the Commission would be given the means to make any necessary adjustments to the excellent reports before the Committee and to carry the studies further. 1/

Among the requirements for energy development were statistics relating to the search for sources of energy, economy in energy and nuclear energy. Furthermore, quite apart from the question of financing, which was not a matter for the Committee, the development of energy resources implied the existence of a large technical staff. Steps would have to be taken, therefore, to train engineers, cadres and skilled workers and give them a status guaranteeing continuity of action and a certain independence. A further requirement was a State service capable of controlling and planning development. If, for instance, French production in 1955 was 75% greater than in 1939, it was largely because France had had a body of well-trained specialists and workers to turn United States aid to best account. The restoration of power supplies to Paris

1/ For the full text of this statement, see Information Document No. 44.

immediately after the Liberation had been a striking example of the initiative of which such well-trained engineers and workers were capable.

Referring to the search for new sources of energy, he said that France, which had been one of the pioneers in theoretical nuclear research, was catching up on the lead lost as a result of the war and a 15,000 kw nuclear power station would be coming into operation in 1957. France would gladly give Latin American countries the benefit of the experience of its scientists and engineers in that field.

However, new sources of energy had never completely ousted old ones so far and, though one source might appear to have marked superiority, it was necessary to study its merits from the standpoint of quantity, quality and geographical location before committing financial resources.

Waterways, as pointed out in Council Resolution 533 (XVIII), could be developed for other purposes than power production. In that connexion, the establishment by the Economic Commission for Asia and the Far East of a Bureau for the assembly of documentation on flood control, dams, the use of water for power, sanitation and water supply might be of interest to Latin America.

France was also making efforts to exploit other sources of power. A plant to develop 700,000,000 kWh from tidal power was being established, while two windmill plants of 1,000 and 1,500 kw capacity were already in operation.

/A 7,000 kw

A 7,000 kW plant was being constructed at Abidjan, Cote d'Ivoire, to utilize the thermal energy of the sea.

Solar energy, too, could be used either for the fusion of metals and generation of steam, or for thermo- or photo-electric purposes. Geo-thermic energy was already being harnessed in Italy in a plant of 270.000 kW capacity and plants on similar lines might well be practicable in Chile.

While none of those sources of energy was so important as nuclear power, it could not replace every other source for a long time. Moreover, it was impossible at the moment to obtain any reliable figures for the cost of producing such power. It would therefore be a serious mistake to await the arrival of the atomic age and neglect traditional sources meanwhile.

In connexion with the question of efficient utilization, the Advisory Committee of Energy Utilization established in France to guide the public in the use of energy resources might be of interest to the Commission.

As could be seen from the joint declaration of the Executive Secretaries of the Commission and of the Inter-American Economic and Social Council, all were agreed on the need for obtaining as complete and accurate statistics as possible at the earliest moment. He would, however, suggest that the Commission contact such international bodies as the International Organization for Standardization in order to place statistics on a sound terminological basis. In the matter of comparability, it might be preferable to use the kWh as a common unit instead of the ton of petrol equivalent, since  
/the former

the former was one of the few units identical in both the Anglo-American and the metric systems.

The CHAIRMAN suggested that, if the Committee was in favour of the idea put forward by the Argentine representative, members might attach themselves to either of two working groups to deal with energy and the various industrial studies respectively. In the meantime, the Committee would go on to the next item on its programme of work, namely the iron and steel industry.

It was so decided.

Mr. ROMANUTTI (Argentina) said that the question of economic size of plants referred to in the Study of the Iron and Steel Industry was well illustrated by the two Argentine plants of San Nicolás and Zapla. The former represented a high production capacity combined with scarcity of raw material supplies, which meant that in the early stages more than half the steel for rolled products would have to be imported. At Zapla, raw materials were both plentiful and cheap, but the ten-year-old pilot plant now in the course of expansion had a low production capacity. The consideration given in the Study to the possibility of using raw materials from the Zapla region in the San Nicolás plant had been helpful in confirming previous conclusions. In the same way, the studies carried out by the Expert Working Group had been valuable in convincing non-specialist bodies in Argentina of the soundness of the prospects for development.

/The general

The general conclusion reached in the studies carried out in Brazil and Colombia made it clear that certain problems were common to most Latin American countries; and it might be well to give further studies to a number of them, such as diversification of production and specifications of grades of steel. There was a danger of inexperienced steel-makers producing an uneconomic range of steel goods, or types of steel not corresponding to the specifications required.

Mr. WRIGHT (United Kingdom) said that, as a major producer of iron and steel, the United Kingdom regarded the developments in Latin America with sympathy, and British industry would willingly co-operate. His delegation agreed in the main with the conclusions reached in the Study on the Iron and Steel Industry in Latin America, Volume II of which was an admirable piece of work; but it had misgivings as to the reliability of some of the statistics and tables in Volume I, and queried the soundness of the basis used for the cost figures.

In view of the high installation costs in Latin America, it would be most useful to know what further installations were being planned, and which steel transformation plants were likely to be developed first.

The United Kingdom delegation welcomed the news of the proposed Seminar to be held in Sao Paulo. Such technical specialist meetings could be of the utmost value.

The meeting rose at 12.15 p.m.