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RATES AND THEIR INFLUENCE ON ELECTRIC POWER
FINANCING IN ARGENTINA

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Note: This text is subject to editorial revision.

THE INFLUENCE OF RATES ON THE FINANCING OF ELECTRIC POWER IN ARGENTINA

1. Main features of the existing regulations

There is no system of rates in Argentina. The electricity service developed on anarchical lines and without any legal or technical foundation to give it unity and a firm basis. Consequently the rates vary according to the different regulations, the whole process being disorganised, irrational and entirely lacking in method. This is largely because in Argentina, which has a federal and municipal system, the institutional structure is such that the public services are under local jurisdiction. Because of the independent functioning of the municipalities, each of them established its own method of providing an electricity service, with its own system of rates. This inevitably gave rise to a great variety of regulations. As the system that predominated in Argentina was to grant concessions to private enterprises, all the concession contracts established the rates at fixed levels with no adjustment clause, with the exception of the services in the Federal Capital, where the supply companies, the Compañia Argentina de Electricidad (CADE) and the Compañia Italo Argentina de Electricidad (CIADE) adopted a system of adjustment based on the value of the Argentine gold peso. In spite of this there was no adjustment until 1936, more than twenty-five years after the date of the concessions. In 1936 the two enterprises succeeded in obtaining an amendment of their respective concessions and the inclusion of a clause providing automatic adjustment for any change in the wage and fuel invoices. However, as there was no adjustment in relation to capital factors, the rate covered only direct costs, with no proper margin for capitalization, improvement and expansion. This was reflected in a deterioration in the service, similar to that in the interior of the country due to the application of inflexible rates which were not brought into line with the inflationary trend of the currency.

At present the situation is as follows.

In the Federal Capital and the surrounding areas (Greater Buenos Aires) there are three enterprises providing service to the public.

/SEGBA (Servicios

SEGBA (Servicios Eléctricos del Gran Buenos Aires), a joint enterprise (40 per cent public and 60 per cent private) with its main plants at Dock Sud and Puerto Nuevo. It has an installed capacity of 600,000 kW, and in 1959 it sold 2.4 million kWh of power.

ITALO (Compañía Argentina de Electricidad), a private enterprise, also with its main plants at Dock Sud and Puerto Nuevo, with an installed capacity of 300,000 kW. In 1959 it sold 8 million kWh.

Agua y Energía Eléctrica, a public enterprise, with its generating plant at San Nicolás, and with an installed capacity of 300,000 kW. Power is transmitted by high tension cable to Morón, whence it is distributed in interconnexion with SEGBA. In 1959 the company sold 7 million kWh.

Areas Served

SEGBA. The whole of the Federal Capital, and the sectors of Avellaneda, Lanús, Banfield, Lomas de Zamora, Quilmes, La Plata and Ensenada.

ITALO. Part of the Federal Capital, and the sectors of Avellaneda, Lanús, Quilmes and Lomas de Zamora.

Agua y Energía Eléctrica. The fourteen sectors of Greater Buenos Aires that constitute the north-west area and include the sectors of Vicente López, Olivos, San Isidro, San Fernando, Morón, Matanza, Martínez, Ciudadelas, Ramos Mejía, Haedo, etc.

Rates system. Each of the enterprises has its own rates system.

SEGBA. The system was established in the Final Agreement of October 1958 in implementation of Act No. 14772.

Every year before 1 December the enterprise must submit a calculation of rates based on article 8 of the Agreement, which reads:

"SECTION I. Rates for electric power supplied by SEGBA shall be established annually in accordance with the provisions of Section III of the present article, and shall be such that the revenue they produce covers the following:

- (a) operating costs, including national, provincial and municipal taxes and charges of any kind;

/ (b) interest

- (b) interest and repayments on any loans and other obligations that SEGBA may contract in the pursuit of its aims;
- (c) whatever allocation to the improvement fund may be required from the technical standpoint;
- (d) a net annual cumulative dividend of 8 per cent, after payment of all taxes, on the private share capital;
- (e) a net annual dividend, after payment of all taxes, on the capital assigned to the Government, which shall be 8 per cent unless the Federal Government expressly provides otherwise.."

When the enterprise's budget has been established, item by item including the return of 8 per cent on the capital, the resulting amount is divided by the estimated number of kilowatt-hours that SEGBA will sell in the following period, and this gives the rate that will apply.

In addition, section III of article 8 provides for an automatic adjustment of the rate if there are any changes in the price of fuel or in wages.

Thus it is clear that the service is provided at cost, as there is no longer any risk for the undertaking that supplies the service, since the rate, in accordance with express provisions of the Final Agreement, must fully cover all operating costs, direct and indirect, together with the financial obligations undertaken by the company for expansion and improvement. Lastly, the return on the capital is provided for in such a way that if it cannot be paid in full in a given year, the unpaid balance is carried forward to the following year and must be allowed for in the rate.

ITALO. The ITALO system was established by Order No. 8,028 of 1936, and although this too is a system that covers all liabilities, there have been no adjustments with respect to capital revaluation, and the return on the capital is not guaranteed. There have been annual rate adjustments based on the same system as for SEGBA, whereby the ITALO rate has absorbed any increased costs due to rises in wages and in fuel prices. On the other hand there has been no adequate return on capital.

Agua y Energía Eléctrica. As this company inherited the area formerly served by CADE and CEP, it has the same rate system as those concerns, which is the same as the ITALO system, that is, servicing of capital at the 1936 level and adjustments for changes in wages and fuel.

COMMENTS. An analysis of the existing rate systems shows that there are three different tariffs, the highest being SEGBA's, the second ITALO's and the lowest that of the Agua y Energía Eléctrica. Nevertheless there is a single standard tariff for the consumer throughout the capital and Greater Buenos Aires. When the SEGBA tariff has been calculated, the other two rates are brought up to the same level by adding a surcharge for the Electric Power Reserve Fund, which provides the payments required for the redemption of the CADE shares and for financing some of the plans for the electrification of the interior of the country.

The rate system has obviously entirely eliminated the business incentive that is the distinguishing feature of the competitive free enterprise system. There is no inducement either to improve the service or to reduce costs, since the capital is assured of a fixed interest that is protected against all eventualities. Hence the enterprises show no great interest in defending their positions when it comes to a labour agreement, since in the end the resulting increased costs will automatically be transferred to the rate charged and will not affect the company's profit. Thus ITALO always makes it known in any discussion of such an agreement that it will not accept any additional cost without prior authorization from the authorities to add that cost to the rates. Consequently the Power and Light Union has been able in the course of time without much difficulty to insist on working conditions and wages that are far beyond the reach of any other union and greatly superior to those prevailing in other countries. Because of the special nature of the electricity service as an essential item, the consumer is in practice obliged to pay whatever rate he is charged. Each increase in the rate is followed by a slight temporary decrease in consumption, but consumption soon returns to its former level; any opposition to the increase is hollow, because no one wants to be left without electricity.

/Although the

Although the tariff has not increased as much as other prices have in Argentina, this is undoubtedly due mainly to the failure to provide adequate return on capital. When this has been done, as in the case of SEGBA (although the assessed values should be viewed with reserve) the rate has risen sharply. In other words, it has been possible to maintain low rates even with rising wages and low productivity, at the expense of capital. The consequence has been a deterioration of both equipment and service that is too well known to require any comment.

In the interior of the country most of the main services are supplied by the Empresa Estatal Agua y Energía Eléctrica, which has a separate concession and a separate rate in each municipality. While frequent applications by the company have led to some adjustments of its rates, they are still inadequate, and the company is operating at a loss.

As long as there is no change in this rigid tariff system in the interior of the country there is little chance of any real improvement in the electricity service. In this connexion it should be noted that although the increases required in these tariffs are in general rather large, for the very reason that they have been kept at an artificially low level for so long a period, the consumers' reaction is less violent than the political reaction. In areas where there are few burning political issues, great importance is attached to the rates charged for public services. Hence the idea has developed that the municipalities should keep power of control over the services, including the right to grant concessions, but that questions relating to rates should be the province of a technical body at the federal level; in Argentina this might be a committee of the existing Federal Council for Electric Power (Consejo Federal de la Energía Eléctrica) established under the recently approved Power Act. This would bring to an end the local disturbances that usually result from the handling by political bodies of what is essentially a technical question, and would be a positive step towards the rational treatment of electricity problems and consequently towards an improved service.

2. Rate policy in relation to (a) present investment and
(b) future capital requirements

In Argentina SEGBA, as explained above, is the only company whose tariff system makes it possible to consider plans for expansion and improvement; all the other electricity companies have rates that are below what is needed to cover minimum capital requirements, and that in many cases do not even cover direct operating costs. Furthermore in Argentina, as in other Latin American countries, there is no production of heavy machinery for the electricity industry or electrical equipment in general, so that investment is necessarily contingent on the availability of foreign currency. Moreover the inflation that exists in all the Latin American countries, and is characterized by certain special features in Argentina, has led to a considerable increase in the amounts required to obtain equipment from abroad, in addition to the attendant increase in domestic costs. This has been a complicating factor in the problem of the availability of capital for the electricity sector.

Lastly, the situation that prevailed up till 1950 has now been reversed, and there are no longer any private enterprises apart from ITALO in the Federal Capital and a few very small plants in the interior of the country (of the order of 200 to 1,000 HP each). Practically the whole of the rest of the service is provided by co-operatives, municipal or provincial bodies, and, to a great extent, by the State enterprise - Agua y Energía Eléctrica. This means that the capital must be provided principally by the consumers, by public funds, or on credit either from the sellers of the equipment or from foreign loan institutions. The domestic market might have constituted one source of capital, if its potentialities in this respect had not been almost entirely destroyed by inflation. In any case, even when a domestic money market has been restored, the dismal record of the public electricity services in Argentina and the present lack of any proper rate system are not likely to attract national savings into the bonds or securities of an electricity enterprise.

/The consultants

The consultants who were engaged to undertake the electricity study carried out under the auspices of the United Nations and the World Bank came to the conclusion that 50 per cent of the capital required for re-equipment and expansion of the electricity system in Argentina should be provided from the rates. This relates to the costs that have in any case to be paid in local currency. It is assumed that the foreign currency requirements can be financed by loans from international financial institutions or from the companies selling the equipment required.

The Comisión de Asesoramiento y Coordinación Federal Energética, which has been operating in Argentina since 1957, has approved a rate plan for the Agua y Energía Eléctrica to cover the following basic items:

- (a) total operating costs
- (b) total cost of financial services
- (c) establishment of an improvement fund to provide 50 per cent of the capital required
- (d) a return of 8 per cent for the enterprise
- (e) adjustments for changes in the wage or fuel index
- (f) adjustments to the improvement fund in relation to replacement values.

It remains to be seen if the municipalities will agree to the replacement of the existing inflexible tariffs by this new system.

To recapitulate, everything points to the fact that in Argentina, in view of the nature of the enterprises concerned, the rate systems will have to take account of a high rate of capitalization at the consumer's expense.

Although the Power Act provides for the use of private capital in the generation of electric power, this will be a slow process, and is directly bound up with other factors affected by the country's general economic policy, with political problems, and with the imponderables that will decide whether or not the interest of foreign capital in this type of investment can be restored, in view of the improved

/outlook for

outlook for industry in general. For this reason any plan based on an over-optimistic view of the possibilities of foreign investment would be uncertain of success, if not wholly nugatory. For some time yet all such plans will have to depend essentially on national savings as a source of funds, and the rates appear to be the most direct and appropriate channel available for this purpose.

3. Readjustment of rates due to revaluation of assets
(in local currency)

In view of the inflationary tendency of most of the Latin American economies, adjustment of the valuation of the assets in relation to a decline in the value of the currency appears to be clearly indicated in the provision of a public electricity service. This would ensure a copious electricity supply of a high standard, and would also ensure a general expansion in Argentina, more particularly in industry.

The Argentine Government applied this principle in the agreement concluded with CADE, which led to the establishment of the joint company of SEGBA. The procedure adopted was to convert the investment values to present worth, using the cost-of-living index according to the official figures. The result was almost identical with that obtained with the rate of exchange (paper peso to dollar) and a little lower than that obtained with the price indices used in calculating the national income, and the indices of non-agricultural products. This is not the place to discuss the soundness of the criterion used, but it should be emphasized that either by this procedure, or by a mere valuation, as in the case of the purchase of the assets of ANSEC, or any other company, the value of the assets of the electricity companies must be converted to present worth. This procedure has the double aim of maintaining the interest of the investment market when the enterprise is private or when private loans are used, and establishing adequate reserves in the case of public bodies, so that by converting inventory values to present worth, they can bring their improvement funds up to the level required for the new investment concerned.

/The revaluation

The revaluation of assets is essential if conditions favouring an improvement in the electricity supply are to be restored. As a result of a policy which it would not be appropriate to examine here, in Argentina all the undertakings concerned, most of which are public bodies, have their assets frozen at investment values, and there is great local political pressure to maintain this situation, which keeps the industry in a depressed state. The situation is all the more indefensible in that there is now an Argentine law providing for the revaluation of assets for the whole of industry and trade, in recognition of the economic trends that have developed in the country. It is hoped that this conversion of inventory values to present worth will gradually take place and the problem will disappear. However, it is essential to provide against its reappearance, in view of the strong inflationary tendencies previously referred to as characteristic of the Latin American economies. Hence it is necessary to include in the rates a correction factor to take account of currency depreciation. There are various ways of doing this. The first would be to adopt one of the four indices that are already in use in Argentina and that to some extent follow the depreciation curve. These are, first, the cost-of-living index based on the monthly findings of the Dirección Nacional de Estadísticas y Censos (National Directorate of Statistics and Censuses); secondly, the price index for non-agricultural products, which are deemed to be mostly of foreign origin; thirdly, the price index used in calculating the national income, customarily based on the findings of the Central Bank in each country; and lastly, the monetary index, or rate of exchange, that is, the relation of the national currency to the dollar or to some other hard currency. The figure used for SEGBA is whichever of these four indices gives the lowest figure, at the discretion of the Federal authorities. If these indices were applied annually to the inventory values, the value of the assets would rise, and there would be a consequent rise in the interest payable on the capital invested. This additional amount, divided by the estimated volume of power that would be sold during the following year, gives a figure which should

/be used

be used to correct the existing rate. An alternative method would be to make an annual valuation of the replacement value of the assets, and to set aside each year an amount corresponding to 2 1/2 or 3 per cent of this value for the purpose of establishing an improvement fund to provide a substantial part of the capital required for future investment. In that case the problem of the ownership of the capital thus formed would arise, especially in relation to private companies. Contracts that include a reversion clause might well provide that the improvement fund, or any remaining balance thereof, should revert to the authority granting the concession, together with the other assets. This is what has been done in the past in Argentina.

4. Degree of flexibility required in the rates to cover increases
in the cost of labour, fuel, etc.

It is clear that to the extent that corrections can be made in the rates for all the relevant factors, the private enterprise characteristics of the public electricity service tend to be eliminated, since what distinguishes an industrial enterprise in a competitive system is the commercial risk. Once this is removed the affair becomes merely a matter of investment at a fixed interest, with little likelihood of any improvement at the company's expense since, all risks having been eliminated, the profit margin is frozen. This would lead to serious difficulties if the private enterprise character of these undertakings were maintained. However, it is clear that in Latin America, as stated above, the electricity services tend more and more to come under public control, and hence the problem does not arise. However, if private companies were to continue to provide electricity service, or were encouraged to play a part in this field in the future, it would be advisable to look for some method of ensuring that the company would still have an interest in technical improvements and in effecting economies in operation, by granting them an additional share of the profits. There is a provision to this effect in the Argentine Federal Power Act, of which article 39, paragraph 3 reads:

/ "Any reductions

"Any reductions in costs resulting from greater technical efficiency shall be allotted in equal proportions to the consumers, on the one hand, and to the producing, transport or distributing enterprise or organization responsible for the reduction, on the other."

Subject to this reservation, and provided that an effort is made to ensure a flow of either public or private capital to the electricity industry by providing a fair and reasonable return, it is clear that rate adjustments must be in line with changes in wages and fuel prices. In Argentina the contracts of SEGBA and ITALO include the following formula to be applied for this purpose:

- (a) Adjustment a for the price of fuel is calculated according to the following formula: $a = \frac{P - p}{10} \times c$, where a is the plus or minus adjustment expressed in local centavos per kWh, P is the price of a ton of the fuel equivalent of 7.5 million calories, rounded to local peso units, and determined as indicated below, p is the basic price of a ton of the fuel equivalent of 7.5 million calories calculated according to sub-section (b) of section III of the present article, rounded to local peso units, and c is the coefficient referred to in sub-section (c) of the said section III.

Fuel price P will be the average estimated cost per ton of the fuel equivalent of 7.5 million calories for all fuel to be consumed during the two months for which the adjustment is calculated, including all costs up to the time the fuel is consumed at the plant, and price p is the corresponding figure resulting from the calculation of the rates for the preceding period.

Coefficient c has been so determined as to cover in addition costs related to the supply of fuel, so that the rate will also cover any capital costs involved.

The calculation gives the following results for 1960:

/Operating costs

Operating costs with respect to which any future changes incorporated in the rates should take account of coefficient c:

	<u>Millions of pesos</u>
Fuel cost and purchase of power	1,864
Other costs (excluding taxes)	<u>290</u>
	2,154

Change in costs for each peso of change in the price of fuel above or below the price of 1,170 pesos per ton of 7.5 million calories:

$$2,154 \text{ million pesos} \times \frac{1}{1,170} = 1,841,000 \text{ pesos}$$

Adding to this change the corresponding increase or decrease in municipal income taxes gives an amount of 1,938,000 pesos.

Estimated sales 2,500 million kWh,
on which coefficient c is calculated as follows:

$$c = \frac{193,800,000 \text{ centavos}}{2,500 \text{ million kWh}} \times 10 = 0.775 \text{ centavos per kWh}$$

In a specific case where fuel increased from 1,170 to 1,310 pesos per ton of fuel equivalent to 7.5 million calories, the rate increase would be:

$$P = 1,310 \text{ pesos per ton}$$

$$p = 1,170 \text{ pesos per ton}$$

$$c = 0.775 \text{ centavos per kWh}$$

$$a = \frac{1,310 - 1,170}{10} \times 0.775 = 8.05 \text{ centavos per kWh}$$

- (b) Adjustment b for the hourly wage is calculated on the basis of the formula $b = 100 \times \frac{N - n}{n} \times s$. Here b is the plus or minus percentage adjustment to the rates; N is the estimated average weekly wage to be paid to all SEGBA staff, including the employer's contribution to the pension fund and other social security payments, during the two months for which the adjustment is calculated; n is the average wage during the preceding period; and s is the percentage correction to be made to the rates for each 1 per cent by which the hourly wage varies from n.

/Under the

Under the SEGBA agreement rate adjustments are made every two months provided that there have been changes in the relevant factors. There is a clause in the agreement providing that whenever such a change occurs there shall be an automatic and immediate adjustment.

It is clear that the extension of this procedure would eliminate one of the most disrupting factors in the provision of public services, which has led to violent discussions and high feeling in many Latin American countries, and especially in Argentina.

It would be advisable for this procedure to be embodied in all concession contracts, and the Argentine Federal Power Act has paved the way for this by incorporating it in its rates system.

5. Structure and application of rates

Once the average rate has been determined by the procedures laid down in the various contracts, and the various adjustments have been made, the next step is to establish a scale of rates according to the various types of consumption. At least the following types must be distinguished:

- Domestic consumption (household)
- Public lighting
- Electric transport
- Business consumption
- Industrial consumption
- Consumption in public buildings

General rules for establishing the most satisfactory rate levels cannot be laid down in advance; much depends on conditions in the area in question. Generally speaking there should be a tendency for the industrial rate to be lower than the domestic rate. This is not the case in Buenos Aires, where at present industry is paying higher rates than the domestic consumer. This would seem to be a mistake, as it militates against low-cost industrial production. Whatever the circumstances, it should be clearly understood that the production of electricity is not a separate "business" in the sense of being an end in itself;

/electricity, like

electricity, like water, should be instrumental in improving a nation's social progress and industrial expansion. Consequently, once basic rates have been adopted that will ensure the supply and servicing of capital, the rates should be sufficiently flexible to facilitate the development of basic industries, which is an essential requirement in Latin America for economic integration, development and social progress. In the production of electric power, as in any other economic process, there is a production sector and a consumption sector; in the latter, electricity is an element of convenience, whereas in the former it is one of the raw materials of the industrial process. As long as the need for a more rapid capitalization exists, the consumer rates will have to bear a heavier proportion of the costs in order to benefit industrial production, which should have the advantage of rates that are lower by a sufficient margin. With reference to the rate structure it is of interest to quote article 39 of the Argentine Federal Power Act, which lays down the constituent elements of the rates.

"The Federal Government shall establish prices and rates for power sold through the power stations and transmission lines of the National Grid System, and for public services under Federal control, and these prices and rates must be based on the following items, subject to the general principle of what is just and reasonable:

(a) Capital costs

1. Capital costs will be regarded as including sums allocated to the improvement fund, which shall be determined on the basis of a fixed percentage, to be established, on the replacement value of the installed capacity including all equipment and related material.
2. Sums allocated to the reserve fund.
3. Taxes.
4. Insurance.
5. Amortization of capital, provided that the instrument granting the concession or licence includes a provision for the total or partial reversion, without cost to the State, of the assets of the concessionaire or licensee when the concession or licence lapses.

/6. Interest

6. Interest on capital, which shall be governed by the rules of the licence or concession concerned.
- (b) Staff wage costs
 1. Salaries, daily wages and all other remuneration paid in accordance with the relevant legal provisions.
 2. All social benefits that have been established or may be established by legal measures and the amounts required annually for setting up or increasing special reserve funds to ensure that such obligations shall be met.
- (c) General costs, including administration and technical supervision and advice, which shall conform to the provisions of the present Act.
- (d) Fuels, lubricants and all other materials that may be required for consumption during the period in question for the generating, transforming, transmitting or distributing of electricity.
- (e) Cost of power purchased from other parties.
- (f) Interest on and incidental financial costs for any bonds and other forms of loan capital for operating purposes that have been previously approved by the Federal Government. The total of such interest may not exceed 10 per cent per annum on the capital in question.
- (g) Other costs not specified under the above headings, provided that they are causally related to operational activities.
- (h) Power loss of whatever nature, in accordance with standards to be established by the Ministry of Fuel and Power.
- (i) Adjustment clauses.
 1. Capital costs, maintenance costs and miscellaneous costs shall be adjusted annually.
 2. Changes in the costs of labour and fuel shall be reflected in an adjustment within thirty days of the date when they become effective, in accordance with rules to be established by the Ministry of Fuel and Power.

3. Any reduction in costs resulting from greater technical efficiency shall be allotted in equal proportions to the consumers, on the one hand, and to the producing, transport or distributing enterprise or organization responsible for the reduction, on the other."

The application of such provisions as the above will ensure a fair rate that provides for a reasonable return on capital. For additional clarification a copy is enclosed of the application of the above rules in the annual calculation of the SEGBA rates for the Federal Capital and Greater Buenos Aires.

6. Relation of the rates to improvement of the load factor

- (a) Rates for off-peak hours

In the Latin American countries there has been a development unknown in other economies, in that the working masses have rapidly attained relatively high wage levels and have insistently claimed the right to attain the highest levels of living. The consequence has been a high-cost production which is difficult to reduce once more to a level corresponding to social, political and economic conditions that should be regarded as having been superseded. Thus the aim of all industrial planning is to reduce costs by improved technology and maximum use of equipment. If in Argentina there were an electric power rate for the base-load hours at night, when more power is available because of lower consumption, many industries might make up shifts to use their equipment during these hours, even if they had to pay higher wages, if a low electricity rate were available to balance the extra cost. This would be a practical and economic method of increasing production and reducing costs. Moreover the flattening of the load curve would make it easier to operate in the electricity supply system.

- (b) Seasonal rates

There is no great seasonal variation in consumption in Argentina, but it might nevertheless be advisable at a more advanced stage in the development of the electricity industry, when the present shortage of power has been remedied, to consider the possibility of stimulating

/consumption during

consumption during the periods when for various reasons there is a drop in the sales of electricity. Thus a tourist centre like Mar del Plata, for example, has its peak consumption in summer, lasting for a total of barely four months, while for the rest of the year there is a marked drop in the load. It might be worth while to establish a low rate during this low-consumption period of eight months to encourage the introduction of industries that could operate on the basis of a four-month interruption in the summer.

(c) Rates to encourage consumption

It is obvious that in the present situation in Argentina when basic consumption requirements cannot be met, there is no possibility of establishing special rates to encourage consumption. That will have to wait until demand is fully met and an adequate reserve of power has been established.

7. The role of special taxes in the development of electric power

It has already been stated that one possible source, and the most reliable one, for the supply of capital is the electricity rate. Consequently it follows that the rates should not be burdened with taxes whose revenue is allocated for purposes other than the electricity services. This was the view taken by the National Congress when it passed the Power Act, of which one article provides that requests for loans will not be considered from provinces or municipalities where the rates are burdened by such taxes.

The Power Act provides for a method of financing electrical works through two electricity funds, the Fondo Nacional de Energía Eléctrica and the Fondo Especial de Desarrollo Eléctrico del Interior.

The Fondo Nacional de Energía Eléctrica is a fund intended to finance works out of the Federal budget, through the Agua y Energía Eléctrica, and is made up of the following items.

- (a) A contribution from the Federal Treasury, to be established annually.
- (b) A minimum of 50 per cent of the revenue collected by the Fondo Nacional de Energía Eléctrica; this percentage can be increased

/by the

by the Federal Government at the request of the Ministry of Fuel and Power. The Fondo Nacional de Energía Eléctrica is made up of the revenue from taxes on petroleum-derivative fuels, and constitutes the source of finance for part of the plans of the Yacimientos Petrolíferos Fiscales, Gas del Estado, Yacimientos Carboníferos Fiscales and, until the Power Act was approved, the Agua y Energía Eléctrica.

- (c) Royalties on the use of hydroelectric power sources.
- (d) Import duty of which the revenue is allocated to the electricity industry, to be established in each case by the competent authorities.
- (e) The surcharge of 0.10 Argentine pesos per kWh on the sale price of electricity. The Federal Government is empowered, subject to a prior order by the Consejo Federal de Energía Eléctrica, to modify this surcharge, but it must not exceed 15 per cent of the sale price.
- (f) Revenue from the sale of issues of national debt securities of which the amortization is chargeable to the fund.
- (g) Sums collected in the form of repayments and interest with respect to loans made from the fund's resources.
- (h) Donations, bequests, contributions and other resources not elsewhere specified.

Eighty per cent of the fund's revenue is allocated for the national plans of the Agua y Energía Eléctrica, and 20 per cent goes to increase the resources of the Fondo Especial de Desarrollo Eléctrico del Interior. The latter fund is made up as follows:

- (a) Surpluses from the rates and surcharges established by the Federal Government in the Federal Capital and Greater Buenos Aires.
- (b) Contributions from the Federal Treasury representing commitments undertaken by the Fondo de Restablecimiento Económico or other commitments provided in the Budget Act.
- (c) 10 per cent of the revenue of the Fondo Nacional de la Energía.
- (d) 20 per cent of the Fondo Nacional de Energía Eléctrica.

The Fondo Especial de Desarrollo Eléctrico del Interior is to be used for loans to provinces, municipalities, co-operatives and electricity consumers' associations. Loans may also be made to private companies for plants with an installed capacity not exceeding 2,000 kW.

The loans are made at an annual interest of 6 per cent and are repayable within fifteen years, but there is a provision for the extension of the loan period by ten years and a reduction of the interest to 3 per cent annually, with respect to rural electrification and to cases where the plans provide that not less than 80 per cent of the material and equipment shall be domestic.

It is estimated that this system will make it possible to obtain a sum of about 3,000 million pesos a year for the two funds, and perhaps more subsequently; although this does not fully cover the financial requirements of the country's electricity plans, it nevertheless makes available sufficient public funds to ensure the continuity of those plans. The difference should be made up by self-capitalization by means of the rates, external loans, and loans from firms that supply the equipment.

SUMMARY

1. It is recommended that the solution of tariff problems should be entrusted to technical bodies, preferably at the federal or national level, to replace the political bodies whose actions are always influenced by extraneous consideration.
2. With respect to the financing of plans, a substantial proportion of the capital should be provided by the electricity rates themselves, the balance being provided by external loans either from international financial organizations on a long-term loan basis, or from the suppliers of electrical equipment and materials on a medium-term basis.
3. It is recommended that rate systems should include a procedure for adjusting the value of the assets in local currency, in order to maintain the interest of investors and to provide adequate allocations to the improvement fund.
4. Whatever the circumstances, in order to obviate pointless and complicated discussions the rate systems should provide methods of adjusting the rates in line with changes in wages and fuel prices. In addition, there should also be some incentive to effect technical improvements in the service.
5. The tariff structure must be such as fully to cover all costs and to provide a reasonable return on the capital invested.
6. It would be advisable to encourage consumption outside peak hours by reduced rates, especially with respect to industrial establishments and the night base load.
7. A sound policy would refrain from establishing taxes on electricity consumption unless the resulting revenue is allocated for the establishment of public funds for electricity investment.

