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- 3 Krishnaswami Chetti, M.R.Ry. Rao Bahadur C. V. (Electrical Engineer, Corporation of Madras)
- 4 Venkataramana Ayyangar, M.R.Ry. C. V., Coimbatore
- 5 Subrahmanya Ayyar, M.R.Ry. N., representative of the Municipal Council of Coimbatore
- 6 Hood, Mr. H. M., C.I.E., I.C.S., Secretary to Government, Home Department
- 7 Green, Mr. L. B., acting Director of Industries
- 8 Seshasayee, Mr. V., Trichinopoly
- 9 Atkins, Mr. J. W., Messrs. Octavius, Steel and Company, Coimbatore
- 10 Subba Rao, M.R.Ry. L., Chairman, Municipal Council, Cocanada

(1)

**QUESTIONNAIRE ISSUED BY THE MADRAS ELECTRICITY BOARD
COMMITTEE.**

N.B.—The questionnaire is issued in order to assist witnesses in the preparation of their evidence. It is not to be regarded as exhaustive, nor is it desired that each witness should necessarily attempt to deal with all the questions raised. Replies should be as brief as possible and should reach the Secretary of the Committee on or before 31st January 1936.

A

Present state of electrical development and efficiency of present methods of management and control. Probable future situation and necessity, if any, for a change in methods to meet the needs of the Presidency.

General.

1. Is the present state of electrical development in this Presidency by means of one or two State undertakings and a large number of small and scattered private and municipal licensees satisfactory and adequate for the needs of the Presidency or should there be planned development and a co-ordination of all undertakings?
2. If co-ordination and planning are desirable, can Government be regarded as a suitable agency to direct and control such functions including the commercial operation, in whole or in part, of the reorganized industry?
3. What measures do you think should be adopted to improve electrical development in general?

Particular.

4. Do you consider that the existing company electric supply undertakings with which you are acquainted are on the whole efficient and give satisfaction to consumers? If not, in what way do you think they are defective and have you any suggestions to offer for improving them?
5. Do you consider that the existing municipal electric-supply undertakings with which you are acquainted are on the whole efficient and give satisfaction to consumers? If not, in what way do you think they are defective and have you any suggestions to offer for improving them?
6. Do you think that Government is or is not a suitable agency for generation and supply of electric power to the public? If not, what objections do you consider might be urged against Government owning and working electric supply concerns as State commercial enterprises?
7. Are the relations between the electric supply companies with which you are acquainted and the local authorities satisfactory and do they co-operate with each other? If not, are the differences between them fundamental or due merely to special local circumstances?
8. Do you consider it possible to effect closer co-ordination and co-operation among the various agencies of supply, including Government and, if so, in what way do you think it can best be achieved?

b

9. Have any licensees to your knowledge established show rooms, adopted hire purchase of motors and domestic appliances, assisted wiring or tried in any such way to attract consumers and adopt generally a progressive commercial policy?
10. Assuming that existing licensees are handicapped to a great extent by lack of capital, do you consider it possible to do anything and if so what to make cheap capital more easily available to them?
11. Can you enumerate any factors which retard or are likely to retard electrical development in licensed areas?
12. Do the existing licensees who generate power experience difficulty in finding a sale for their output or is development retarded because consumers find that licensees are not able to meet increases in demand especially for industrial purposes? Please refer to any specific instances within your knowledge.
13. Have you reason to believe that there are cases where new industries would have come into existence or existing industries would have been extended if cheap electric power had been available in sufficient quantities?
14. (a) Do you consider that the provision of cheap electric power will promote
 - (i) the growth of cottage industries such as soap making, match-making, carding, rice-hulling, toy-making, etc., extensively,
 - (ii) the growth of large scale industries either generally or in special areas?
- (b) If so, what industries do you think are likely to develop and where?
- (c) Do you think the development generally is likely to be on such a large scale as to make the provision of greatly increased supplies of cheap electric power essential?
15. Are there areas in this Presidency where, in your opinion, better arrangements could be made for the generation and supply of electric energy, and what arrangements would you suggest for the purpose?
16. Bearing in mind the long distances to be covered by transmission lines to load centres, do you think that it would be more economical to generate at certain specified centres, and supply power throughout a 'grid' area as in England or South Africa? Can the Province be economically divided into convenient administrative units having an independent power and transmission system?

B

- Is an Electricity Board justified on economic or other grounds and if so, what should be its general functions and its authority over licensees?*
17. On a consideration of the prospects of electrical development, industrial and otherwise, and the probable future situation generally, do you think that conditions, similar to those in Great Britain and South Africa which necessitated the creation of a Central Electricity Board and the Electricity Commission respectively, now exist in this Presidency, and that the time is opportune for similar arrangements to be made in this Presidency?

18. Assuming that a Board or Commission should take over control from Government consequent on plans being approved for the production of a uniform supply of cheap power throughout the Presidency, is the demand for power, particularly for industrial uses, likely to justify the expense of any body or bodies to be constituted or could a Board be justified on any other grounds?
19. Is there any likelihood of an Electric Supply Board in this Presidency acting in the matter of supply mainly as a clearing house as in Great Britain, buying electricity from authorized undertakers from sources where it can be most efficiently generated and distributed in bulk and distributing and selling it in areas where it is required, erecting where necessary connecting lines between station and station and district and district, or is it likely that private undertakers, able to finance and run large power stations, hydro-electric or thermal, will not be forthcoming and that the Board will be forced to undertake generation also as well as grid transmission?
20. If generation on a large scale at certain places centrally situated, either from hydro-electric stations or thermal stations worked by an Electric Supply Board or by Government is economical, and consequently desirable, do you think that the generating agency should confine its activities to bulk supply, and supply beyond a certain K.W. to individual industrialist consumers, leaving retail distribution to licensees or do you consider that retail distribution also may be entrusted to the generating agency wherever such a course is necessary?
21. In case a generating station owned by a private licensee is selected as a main power station in a 'grid' area, do you think that the owner of the station should first sell all his output to the Board, and then repurchase from the Board for his requirements as is done in Great Britain?
22. If you think that a statutory Board is essential for rapid electrical development, and industrial growth, what powers would you recommend to the Board as regards
- (a) closing down of generation stations,
 - (b) extension of generating stations,
 - (c) extension and development of supply,
 - (d) control of licensees in the matter of
 - (i) tariffs,
 - (ii) limitation of profits,
 - (iii) financial policy, and
 - (iv) commercial policy,
 - (e) propaganda work in non-licensed areas?

C

Desirability of constituting one or two bodies and method of meeting the cost.

23. If an Electricity Board or Commission is formed, should there be two bodies as in England, one for technical and administrative control and the other for the purpose of executing the works and operating the properties, or one body to combine all the functions as proposed for Ceylon? If an intermediary body is

considered necessary between an Electricity Board and the Minister-in-charge what should be the constitution of that body and should it be a Government department under the Minister?

24. Would you recommend that licensed undertakings and Government undertakings (if they continue to function as such) be charged any royalty to meet the expenses of the Board (or the Commission if a Commission is also constituted as an intermediary between the Minister-in-charge and the Board)? If you are in favour of levying a royalty, do you consider it should be on the capital invested in the undertaking, or at so much per unit generated or purchased in bulk?

(2)

NOTE.

N.B.—This note is not to be regarded as in any way an expression of the Madras Government's views on any of the points arising.

(i)—ARRANGEMENTS IN FORCE FOR THE GENERATION AND DISTRIBUTION OF ELECTRICITY IN THE PRESIDENCY OF MADRAS.

The present arrangements in the Madras Presidency which are described in detail in the next few paragraphs grew up inevitably as there was no formulated scheme of generation, and there was no demand for licences to take up generation and supply on a large scale. In the circumstances the Government naturally granted licences for limited areas with limited scope. This procedure which was inevitable at the beginning has resulted in individual generation and independent undertakings each pursuing an unco-ordinated and unrelated policy of development.

The following arrangements now exist in this Presidency for the generation and distribution of power:—

- (1) Government agency for areas served by hydro-electric stations.
- (2) Local bodies within their jurisdiction.
- (3) Private companies.

(1) *Government agency.*—In this category are included all hydro-electric stations and a few thermal stations. The Government generate power and supply it in bulk to licensees (companies or local bodies) for retail distribution. All power in *rural* areas in the Coimbatore and Nilgiris districts is distributed by Government direct without the intervention of a licensee. Thus the Government function both as a generating and distributing agency in certain areas.

(2) *Local bodies.*—A large number of municipal councils have been granted licences under section 3 of the Indian Electricity Act for generation and distribution of electric energy. In the areas commanded by existing and future hydro-electric schemes, distributing licences for supply of low tension power only are granted to local bodies subject to the condition that during the initial stages or for a minimum period of three years the business is managed by the Electricity department at the cost of and on behalf of the municipal councils. There are now ten municipalities in which Government manage the distribution of energy on this principle. In non-hydro-electric areas, municipal councils which have been granted licences generate energy with oil engines and manage the distribution undertakings without the

help of Government. There are fourteen local bodies (municipal councils and panchayat boards) which run such undertakings in this manner.

Municipal councils and local boards, whether they are in hydro-electric areas and consequently buy energy in bulk from Government and distribute it in retail, or whether they are in non-hydro-electric areas and generate for themselves as well as distribute, are financed by loans advanced by Government except a few which are financed by loans granted by district boards.

(3) *Private companies.*—Certain private companies have also been granted licences for distribution and for generation and distribution of energy. There are 30 companies which are actually now supplying energy or will do so shortly.

2. Thus there are three distinct agencies with different interests. Although supply is governed by the Indian Electricity Act of 1910, and the technical features of the several generating and distributing systems are subject to the Indian Electricity Rules, it is impossible to have a uniform system of supply at economical and cheap rates owing to the varied interests. The practice of granting licences to individual small companies and municipal councils has resulted in even adjacent undertakings establishing works different in type of plant and mains. This state of affairs was unavoidable when the use of energy had not developed, but it is doubtful if it should be allowed to continue any longer when electrical development is rapidly increasing in all directions. There has been a great growth of small uneconomical stations and in many cases the managements have failed to develop their areas satisfactorily either owing to want of proper technical advice or for want of adequate finance. On the other hand, considerable expenditure is being incurred and this expenditure is not utilized to the best advantage and not only is waste taking place but there are obstacles in the way of rapid and efficient development along right lines. As instances of the disadvantages under which the three classes of agencies referred to above labour, the following may be quoted:—

Government.—Before a project or a scheme (either original or extensions) is taken up sanction of Government has to be obtained, and funds provided after obtaining the vote of the Council if the expenditure exceeds a certain limit. This takes some time. After sanction to the project is accorded, and funds are provided the formalities that have to be gone through in securing the services of suitable technical officers on the standard scales of pay approved by Government contribute to further delay in taking up the works. It has been suggested that the subjecting of electrical enterprises to the ordinary rules and practices intended for civil departments of Government has been a great obstacle to the rapid development of such enterprises.

Municipal.—These bodies invariably apply to Government for loans either for new schemes or for extensions. The Government consider the applications mainly from the view point of the financial position of the local authority to repay the loan, and not with regard to the efficiency or stability of the projected scheme and its public utility. Activities in the case of these licensees are confined to municipal areas, which is not the most economical area for electric supply.

Private Companies.—Considerations of finance and the lack of efficient technical organizations are serious obstacles for any healthy development.

(ii)—ARRANGEMENTS IN FORCE IN GREAT BRITAIN FOR GENERATION AND SUPPLY OF ELECTRICAL ENERGY.

The legislative history of electric supply in Great Britain may be divided into three distinct periods (a) up to 1919, (b) from 1919 to 1926 and (c) after 1926.

Prior to 1909, electricity was generated and distributed mainly by authorized undertakers under the Acts of 1882 and 1888, which were passed at a time when electricity was used principally for lighting and its application for power purposes was almost unknown. The Board of Trade was empowered to grant concessions by means of provisional orders (licences) for supply of electricity within any area subject to the right of the local authorities of such areas to purchase the works and mains of the licensees. Subsequently, facilities more consistent with the development of the application of electric power to industry were granted in several private Acts, but these were restrictive and burdensome in many particulars and were not effective in providing a comprehensive system of supply. A general Act was also passed in 1909, which gave somewhat wider facilities to electrical undertakers, but its provisions were not influenced by a sufficiently large and comprehensive outlook.

The unsuitability of the legislation and conditions relating to electricity supply were emphasized by the findings of three important committees appointed during the Great War (1914–1918), to consider various aspects of the situation, viz., the Electrical Trades Committee, the Coal Conservation Sub-Committee and the Electric Power Supply Committee. An extract from a letter written by the Electrical Trades Committee to the President of the Board of Trade in January 1917 is given below:—

“ Witnesses have been unanimous in showing how greatly the electricity supply industry is now handicapped by the following facts—

- (a) Electrical legislation in the past has restricted the power expansion of the supply industry—the electrical areas are too parochial and entirely discordant from the economic area of electric supply. The result has been a great growth of small uneconomical stations, with resultant waste of coal and generally higher charges for energy than would have been the case from larger areas and greater concentration of plant in larger units and more economically placed power stations.
- (b) Past lack of foresight in the granting of authority for the supply of electricity has allowed even adjacent undertakings to establish works differing not only in type of plant and mains but also in pressures and frequencies with the result that linking up and interchange of power is now extraordinarily difficult and costly.
- (c) At the present time all new or extension orders authorizing electric supply must be sanctioned by the Board of Trade

and confirmed by Parliament. All administrative matters affecting electrical undertakers generally are determined by the Board of Trade.

- (d) In the case of municipal electrical authorities, loans for extensions or for new projects have to be submitted to, and sanctioned by, the Local Government Board or in the case of the County of London, by the London County Council. These authorities confine themselves mainly to a consideration of the financial record of the undertaking or to questions affecting lands and have little regard to the efficiency or suitability of the projected expenditure.

There is no authority at the present time, nor is there any effective legislation which empowers any authority to ensure that the best system shall be adopted in the national interest in any district."

The Electric Supply Committee presided over by Sir Archibald Williamson endorsed the above views in their report to the Board of Trade and stated that the state of affairs was contrary to national interests, wasteful of fuel resources, deprived industries of the advantages which a well-devised system of generation and distribution of electricity would give, and thereby handicapped them in competition with other countries. The Committee recommended—

- (1) that generating stations and main transmission lines ought, as a general rule, to be publicly owned and for this purpose a District Electricity Board should be set up in each of the districts when constituted to which generation and the main transmission system should be transferred;
- (2) that the District Electricity Boards should have full powers to acquire all the generating stations and main transmission systems within their districts, to link up and develop the supply of electricity, to erect new stations where necessary and to acquire and utilize wherever practicable surplus electricity and waste gas and heat and other sources of power.

As a result of these recommendations, the Act of 1919 was passed, which marked the commencement of the second period of electrical development. The Act provided for the appointment of Electricity Commissioners for promoting, regulating and supervising the supply of electricity, but they were left with very inadequate powers, being required, in fact, to secure the requisite co-operation and co-ordination by mere powers of suasion. Such co-ordination was not achieved, local interests preventing the carrying out of sound technical schemes advised by the Commissioners. In 1925, another Committee presided over by Lord Weir was appointed to review once again the national problem of the supply of electrical energy and to present a report on the broad lines of policy which should be adopted to ensure its most efficient and effective development. The Committee after examining some expert witnesses came to the conclusion that all energy should be generated in certain selected main stations, that existing small and uneconomical stations should be closed down and that a "gridiron" of high tension transmission mains should be erected inter-connecting all the selected stations and coupling up with existing regional transmission systems and other existing stations. The Committee recommended that a Board should be created by Act of Parliament termed the "Central Electricity Board." The Board

should be assisted by a carefully selected managing director and an expert staff. The capital of the Board should be raised by means of electricity stock guaranteed as to principal and interest. The Board should, as a first duty, construct as early as possible a "gridiron" system of H.T. transmission lines. Accordingly the Electricity (Supply) Act, 1926, was passed, the first provision of which was to set up the new Electricity Board and to define its powers and duties.

Thus there are two distinct bodies in Great Britain to control and administer matters relating to electricity supply, the one known as the Electricity Commission constituted by the Electricity (Supply) Act, 1919, and the other known as the Central Electricity Board created by the Electricity (Supply) Act, 1926.

The Electricity Commissioners.—The Commissioners, not exceeding five in number, one of whom is the Chairman, are appointed by the Board of Trade. They are a Government department, a branch of the Ministry of Transport and are responsible to the Minister. Their main function is to prepare schemes for the Electricity Board such as closing down certain power stations, supplying in areas where there are no authorized undertakers, fixing the cost of production, borrowing money, etc.

The Central Electricity Board.—The Electricity (Supply) Act, 1926, provides for the setting up of a Central Electricity Board consisting of a chairman and seven other members appointed by the Minister of Transport after consultation with such representatives or bodies of specified interests as the Minister thinks fit.

General powers and duties.—The Board is charged with the duty of carrying out schemes prepared in consultation with the Commissioners and with the duty of buying energy from owners of selected stations and selling it in bulk to authorized undertakers. The Board may not, except as expressly provided in the Act, themselves generate electricity, and may not supply electricity directly to persons who are not authorized undertakers. The fundamental idea of the functions of the Board is that it acts in a sense as a clearing house. It buys electricity from authorized undertakers and sells it again. The effect is that electricity is bought by the Board where it can be most efficiently generated and distributed in bulk to the districts which require it, erecting where necessary the connecting lines between station and station and district and district. The Board may, by agreement, use the main transmission lines of authorized undertakers or other persons, and may enter into arrangements for the purchase of surplus electricity from any local authority, company or person producing electricity by the utilization of water-power, water-heat, or otherwise.

Financial powers.—The Board have power to borrow money with the consent of the Commissioners and subject to regulations to be made by the Minister of Transport with the approval of the Treasury up to a maximum of £33,500,000, but power may be conferred on the Board by special order to borrow in excess of that amount. For the purpose of raising money the Board may issue stock to be called Central Electricity Stock. The Act empowers the Treasury to guarantee in such manner as it thinks fit, the interest and the principal of any loan proposed to be raised by the Board up to an aggregate amount of loans not exceeding £33,500,000.

The necessity and propriety of the Treasury guaranteeing principal and in any case interest is explained by W. S. Kennedy as follows:—

“ The object of this guarantee is of course to enable the Board to raise money for their undertaking at a lower rate of interest than might otherwise be possible. The Board is not to make profits and can hold out therefore no glowing prospects of high dividends to the speculative and adventurous investor. And in the early days, they will possess no works nor any undertaking on which the loans could be a charge; they are therefore not in a position of an established company, which can point to its past record as a guarantee of future success. Under such circumstances, the financial world might have been unwilling to lend money except at such a rate of interest as would react unfavourably on the finances of the Board and so on the price of electricity to the public. The treasury guarantee turns the Board's stock into a very safe investment, and it should not be difficult to raise the required capital at a reasonable rate. If this can be done, and if the industry as a whole (electric supply companies) acts in the spirit and co-operates wholeheartedly with the Board to make their enterprise a success, there is very little prospect of the treasury being called upon to find any money. Possibly a few thousand pounds for management expenses may have to be advanced during the first years but this is not a serious matter. Any moneys advanced by the treasury are a charge on the Board's undertaking and revenues next after the principal and interest of the loan guaranteed and any sinking fund payments the Board may be making to repay the loan. The treasury has to lay before Parliament every year a statement of any money advanced to the Board, so opportunity is given for criticisms and discussion of the financial aspect of the Board's work in Parliament.”

The powers of borrowing may be exercised by the Board for discharging its duties, such duties including the construction or acquisition of transmission lines, generating stations and such other works as the Board are authorized to construct or acquire; and the payment to authorized undertakers or owners of ‘selected’ stations of the expenses properly incurred by them in amending or altering the frequency employed in their undertaking or station in pursuance of a requirement of the Board under the Act.

The Act also provides for the keeping of accounts by the Board, their audit, and the preparation and publication by the Board of an annual statement of accounts. The Board are also required to make an annual report to the Minister of Transport of their proceedings under the Act, such report to be laid before each House of Parliament.

(iii)—ARRANGEMENTS IN FORCE FOR THE GENERATION AND SUPPLY OF ELECTRICAL ENERGY IN SOUTH AFRICA.

Shortly after the Great War, the Government of the Union of South Africa, recognizing that the general utility of electric power in almost all phases of human activity and its transcending influence in the development of a country had been forcibly demonstrated, took steps to ensure that in future the electricity supply industry of the Union would be directed along lines which had been indicated by

experience in more highly developed countries. In 1919, the Government invited Mr. Merz of London, the eminent Consulting Engineer, to visit South Africa and he submitted a report on the "Electric Power Supply in the Union of South Africa." The various sections of this important document are entitled—

- (1) Industrial future of the Union;
- (2) the production and distribution of power;
- (3) demands for electric power;
- (4) the present position; and
- (5) consideration of policy to be adopted.

His recommendations are summarized in the following few quotations:—

- (a) "A cheap supply of power, especially of electric power, not only assists the development of existing industries, but also causes new classes of industry to spring up."
- (b) "The best way to raise wages is to use more power and thereby increase output, and these considerations will apply to the special labour conditions in South Africa."
- (c) "The supply of electric power is both a legislative and a technical question."
- (d) "The Union is in a much better position than Great Britain and other old countries as regards the possibility of initiating a new policy of electrical supply . . . Advantage can be taken of the experience of Great Britain and other countries to avoid their mistakes."
- (e) "One of the first steps that should be taken is the passing of a general Act unifying and regulating both the present supply of electric power for all purposes, and the establishment of new undertakings."
- (f) And finally "The Act should establish a small body of Electricity Commissioners with an obligation to encourage new schemes for the development of electric power supply."

The Government of the Union of South Africa then appointed a committee under the chairmanship of Sir Robert Kotzé to consider the questions arising out of Mr. Merz's report. As a result of the deliberations of this committee, the Electricity Act No. 42 of 1922 was passed. This was the outcome of the general recognition that cheap electric power is a factor of vital importance in industrial development and that machinery should be provided for actively directing development of the supply of electricity along lines that have been indicated by close study of past experience in the Union and abroad. The question to be faced was what form this machinery should take. On the one hand it was recognized that electricity is a public utility and an instrument of industry and should therefore not be generated and sold primarily for profit. On the other hand it was futile to expect a Government Department to conduct the generation and supply of electricity on business lines.

The Electricity Act, No. 42 of 1922, provided for the establishment of two separate and distinct bodies:—

- (1) The Electricity Control Board.
- (2) The Electricity Supply Commission.

(1) *The Electricity Control Board* is the controlling authority under the Act in respect of the supply of electricity by the Commission and by private undertakings. The Board consists of not less than three or more than five persons whom the Minister shall designate and any one or more of whom may be persons employed in the Public Service. The Board grants licences and permits for the establishment of electricity undertakings, and approves tariffs for the supply of current. The Board has also powers to revoke a licence if the licensee violates any of the terms of his licence or of the Act, or with the licensee's consent. The function of the Electricity Control Board is thus mainly to protect consumers against any possibility of electricity supply undertakers abusing their virtual monopoly of supply in their respective areas by unduly raising prices or otherwise working to the detriment of consumers.

(2) The constitution, duties and functions of the *Electricity Supply Commission* are as follows.

The Commission consists of not less than three and not more than five members. Each of the members is appointed by the Governor-General and holds office for such period, at such salary or other remuneration and on such conditions as the Governor-General may decide at the time when the appointment is made. Its functions are the establishment, acquisition, maintenance and working of undertakings for an efficient supply of electricity to Government Departments, the South African Railways and Harbours, local authorities, companies and other persons. The Commission also undertakes the investigation of new or additional facilities for the supply of electricity within an area and for the co-ordination and co-operation of existing undertakings so as to stimulate the provision wherever required of a cheap and abundant supply of electricity. The Act further prescribes that the Commission's undertakings shall be carried on as far as possible neither at a profit nor at a loss.

Though the members of the Commission are appointed by the Government, it is not a Government Department. It is a corporate body required to operate like a private concern free from Parliamentary control and political influences, but subject like all private electricity undertakings to the jurisdiction of the Electricity Control Board. The Commission differs from private enterprise primarily in that it is required to operate as far as practicable on the basis of neither profit nor loss, and received financial assistance from Government during the first seven years of its existence. This financial assistance took the form of loans and not of an outright grant. The loan bears interest payable semi-annually and provision has to be made by the Commission for repayment of the advance within a certain definite period.

The Commission's auditors, like the Commissioners themselves, are appointed by the Government and in other ways also, the Commission's financial operations are subject to Government control and supervision.

Doubts were at first expressed whether such a concern could be kept free from political influence and whether the maximum efficiency could be expected from the employees of a concern which did not work for profit. In answer to the first part of the question it is perhaps sufficient to remark that the Commission's life so far has extended over the period of two governments (1923-1933), and the

complete absence of any attempts on the part of either to make political appointments to the Commission can almost be said to have become a tradition. The second part of the question is answered by the fact that the position to-day as compared with the programme which the Commission drew up ten years ago is that developments during the past ten years have surpassed all expectations as summarized below.

The quantity of electricity consumed in the Union in 1933 was twice what it was in 1923, while the number of towns enjoying the amenities of electricity increased by 110 per cent during the same period. The Commission owns four steam driven and one small hydro-electric power stations with a total installed generating capacity of 350,000 horse-power. Its 750 miles of transmission lines and cables serve an area of 11,000 square miles. The capital invested in the Commission was £8,000,000 till the end of 1933. The Commission has paid £1,854,000 to Government in interest on loans, debenture interest amounting to £478,000, and the addition of £212,000, the cost of raising the loans, gives a total of over 2½ million pounds which the Commission has paid to date (1933) to meet its financial obligations to the Government. Besides this, the Commission has accumulated Redemption and Reserve Funds to the value of £816,000 which are invested in gilt-edged securities. The Commission's assets now exceed its liabilities by £1,200,000 while its revenue is over 1 million pounds per annum.

Thus it will be seen that the arrangements in force in Great Britain and in South Africa, are almost similar. In both countries, two distinct bodies exist: one for charge of administrative control (a Government department) and the other (a corporate body) for active working of electric-supply undertakings, and to ensure efficient supply to the public generally and to industries in particular. The functions and duties of the Electricity Commission of Great Britain correspond to those of the Electricity Control Board of South Africa, while the Central Electricity Board in Great Britain corresponds to the Electricity Supply Commission in South Africa. There is the further difference in the functions assigned to the Central Electricity Board of Great Britain and those assigned to the corresponding body in South Africa, viz., the Electricity Supply Commission, in that while the former is not except in extraordinary circumstances permitted to generate energy or sell it to any consumer direct, but only to buy it from selected stations, and sell it in bulk to authorized undertakers, the latter's main function is to generate energy from its own stations, and sell it to big consumers in bulk or retail it to small consumers direct according to circumstances or to buy in large quantities from authorized owners of stations, if they have surplus power to sell.

The accounts relating to the Electricity Board of Great Britain and to the Electricity Commission of South Africa show that the bodies are self-supporting after reducing the tariff to the lowest possible minimum. South Africa with a population of about a fifth of that of the Madras Presidency invested about Rs. 11 crores and derived a profit of about 8 per cent on the investment. It should, however, be noted that the railways, harbours, and bulk supplies to industrial and mining companies contribute to the large revenue. The same may be said of Great Britain.

THE MADRAS ELECTRICITY BOARD COMMITTEE—
QUESTIONNAIRE.

PART D.

*Constitution and powers of an Electricity Board and its
relations with Government.*

25. What are your views regarding the constitution of an Electricity Board; the qualifications for appointment to membership of the Board; the appointing authority; and the tenure of office of each member?
- Do you consider that members of the Legislature should or should not be eligible for membership? Should any Government official be an ex-officio member?
26. What powers should the Board have regarding establishments?
27. How do you think an Electricity Board, if established, could finance its schemes? Could it and should it be allowed to raise loans in the open market or should Government lend all the money required by the Board?
28. Do you consider that sufficient capital will be forthcoming in the Presidency or in India if a suitable Corporation or Board floats a debenture loan or issues stock? Will such capital be forthcoming without a Government guarantee?
29. What powers do you consider the Government should exercise over such a Board in regard to
- (a) its annual expenditure,
 - (b) its powers of borrowing, if it is permitted to borrow,
 - (c) the apportionment of the revenues of the Board,
 - (d) the utilization of surplus revenues of the Board by the Government,
 - (e) appeals against the decision of the Board by licensees, consumers and other aggrieved parties,
 - (f) the award of licences for the distribution and sale of electricity,
 - (g) statutory electrical inspections, and
 - (h) control of water powers of the Presidency?
30. Do you think that the budget of the Board should be subject to criticism and approval by the Legislative Council or would such a procedure handicap the Board in its work?