

SUPPLEMENT TO THE **HISTELEC NEWS**

JANUARY 1997

EXTRACT FROM THE WESTERN MORNING NEWS AND MERCURY 15th JANUARY 1930

ELECTRIFYING THE WEST

SCHEME TO COVER 17,000sq.miles
ANTICIPATED COST OVER £6,000,000
CAPITAL SAVINGS OF £1,383,506
from our London Correspondent

The Central Electricity Board publish today details of the South West England and South Wales electricity scheme. The scheme deals with an area of about 17,234 square miles - nearly twice that of any previous scheme - covering the counties of Devon, Cornwall, Somerset, Dorset, Hereford, Monmouth, Wiltshire and Hampshire; parts of the counties of Berkshire, Gloucester, Oxford, West Sussex, and the Isle of Wight, as well as the whole of South Wales. At the last census this area had a population of 6,085,000. It embraces densely populated industrial centres, including coal-mining districts, important sea ports, china clay districts and the tin-mining districts of Cornwall.

At present there are 165 authorised undertakers in the area, owning between them 107 public gen. stations. The consumption of electricity in 1927-28 was about 77 units per head of the above mentioned population. It is anticipated that this will increase to an average of 205 units in 1935-36.

The area involved includes besides the china clay districts of Devon and Cornwall and the tin-mining district of West Cornwall, the important maritime towns of Plymouth, Falmouth, Southampton, Bristol, Newport, Cardiff and Swansea; the growing industrial districts around Swindon, Bristol, Bath, Stroud, Frome and Melksham and the densely populated coal-mining districts. There is an increasingly tendency with the advent of cheap power to establish new industries in the Southern portion of Great Britain, and this process should be facilitated by the recent authorisation of important distribution undertakings in this area for affording supplies to many towns which have hitherto been without any.

In accordance with their usual practice, the Commissioners, in determining which generating stations should be selected stations, have had regard to the questions of cost of delivering fuel to the stations and facilities for coal storage; availability of water for condensing purposes; technical characteristics of the station, such as size and type of boiler-house

efficiency, steam pressures etc.; proximity to load and possibilities of the site for further extension of the station.

GENERATING STATIONS HAYLE SELECTED AND POSSIBLE THREE OTHERS IN WEST

The Central Electricity Board will select and operate six existing stations and two new stations (one in the neighbourhood of Southampton and one in South Wales). The stations determined to be selected are :- Cardiff (Cardiff Corporation), Hayle (Cornwall Elec. Power Co.), Newport (Newport Corporation) Portishead (Bristol Corporation), Southampton (Southampton Corporation), Upper Boat (South Wales Elec. Power Dist. Co.) representing six of the 107 public gen. stations now in operation in the South Western Area.

The scheme also provides for the working, if necessary of eleven other generating stations under temporary arrangements between the Central Board and the owners, namely the stations at :-

Bath (Bath Corporation)
Exeter (Exeter Corporation)
Feeder Road (Bristol Corporation)
Llanelly (Llanelly & District Elec. Supply Co.Ltd.)
Lydney (West Glouc. Power Co.Ltd.)
Moredon (Swindon Corporation)
Newton Abbot (Torquay Corporation)
Oxford (Oxford Elec. Co.Ltd.)
Plymouth (Plymouth Corporation)
Portsmouth (Portsmouth Corporation)
Swansea (Swansea Corporation)

It is also contemplated that a few of the remaining stations in outlying portions of the area will continue to be operated independently for the time being until it becomes economically practicable for the undertakers concerned to obtain supplies from the Board's system.

OVERHEAD TRANSMISSIONS

The scheme provides for overhead primary transmission lines to be operated at a voltage of 132,000 volts between phases, the carrying capacity of each primary line covered by the estimates being not less than 50,000 kilowatts. Ring mains have been regarded, as heretofore, as an essential feature of the design of the system and have been adopted (except for the time being in the case of the spur line from Exeter to Hayle) so as to afford alternative routes to

the points of supply. In the case of the spur line to Cornwall, the extension of the Hayle Generating Station from time to time will afford the alternative source of supply of any of "grid" points fed from that line.

The routes for the primary transmission lines have been carefully surveyed by the engineers, who have been assisting the Commissioners, and local assistance has also been given by many of the engineers in the area.

719 MILES BY 1942-43

The scheme involves the provision of about 719 circuit miles of primary transmission lines or one mile for every 1,250 kilowatts of generating plant estimated to be installed in the area for the purpose of the scheme during the next 13 years by 1942-43.

The present scheme thus necessitates between two and three times the amount of primary transmission lines per kilowatt of generating plant installed, as compared with the average of previous schemes, this feature reflecting the greater extent of the area served and also its sparser character and lower stage of electrical development. Incidentally the interconnection of transforming stations will result in the release for revenue earning purposes of about 180,000 kilowatts of plant now kept as spare and representing about £3,060,000 of capital.

Broadly speaking it is contemplated that two of the selected stations, namely Portishead and Upper Boat, will supply the base load, while the remainder will be used to meeting the peak load. The transmission system for the South Western Area will connect up through Reading, and possibly along the South Coast also, with the system of the Central Board in the South East of England, and through Worcester with the system of the Board in Central England, thus becoming a contributory portion of the comprehensive system of Great Britain. In addition to main and secondary transmission lines provided for in the scheme, various other secondary transmission lines, which have already been or will be constructed by some of the principal undertakers in the area, will serve for the giving of supplies in bulk to other undertakers not connected directly with the Board's system.

WEST COUNTRY COMPANIES

The Commissioners have come to the conclusion that it is necessary for the proper interconnection and working of the selected stations generating stations in the area, that the frequency of the system of the authorised undertakers in South Wales and Cornwall should be changed to the standard of 50 cycles per second. In addition to the Cornwall and South Wales Power Companies already mentioned, the undertakings

affected in this respect will include those of Camborne Elect. Supply Co., Penzance & District Elect. Supply Co., Truro Elect. Supply Co., The Urban Elect. Supply Co. (Illogan and Redruth) and the West Cornwall Elect. Supply Co.

The expenditure involved is materially less than contemplated in other areas where standardisation has already been decided upon and is in the process of being carried out. It should be noted the annual charges in respect of the cost of standardisation of frequency will be apportioned by the Commissioners on a prescribed basis and borne by all authorised undertakers throughout Great Britain.

EXPENDITURE OF OVER £6,000,000

The cost of the scheme to the Board for the erection of the transmission system is estimated at £4,163,484. In addition there will be an expenditure by undertakers of £1,934,360 on extensions of certain existing stations. It is estimated that the full advantages of the scheme can be secured with a saving of about £1,383,506 on capital expenditure (up to 1936-37), as compared with capital expenditure that would be necessary if the present system were continued. After this date, the saving on capital expenditure would be progressively greater as compared with individual development.

The Commissioners have outlined a provisional plan of working the stations with the necessary estimates. These suggestions are, of course tentative, since the working of the scheme, including the fixing of the tariffs, is the responsibility of the Board, but taking the figures as they stand, the Commissioners estimate that in the five years 1932-37, there will be a saving to the undertakers in the area of about £1,390,475 or an average of £280,000 per annum.

ADVANTAGE TO CONSUMERS

As roughly about two thirds of existing undertakings are in the hands of local authorities, and only one third in the hands of companies, it will be seen that the benefit of the economies effected will in the main be reaped by the general public, either in the capacity as ratepayers or as consumers, and as a matter of fact it is calculated that generally speaking the consumers will reap the advantage.

Note :- The article finished with a list of undertakings and dates. It was anticipated that benefit would be gained by the majority of the 47 undertakings in the South West by Oct/Nov.1932.