

ELECTRICITY

RURAL
DEVELOPMENT

1948 to 1956



MERSEYSIDE AND NORTH WALES
ELECTRICITY BOARD

FOREWORD

THE OBJECT OF THIS BOOKLET is to give the reader an idea of what has been done by the Merseyside and North Wales Electricity Board in North Wales, Cheshire and Shropshire, in the eight years from April, 1948, to March, 1956, particularly in the field of rural electrification. It also hazards a glance into the future.

No concern of our size can carry on its business without being criticized at some time or another for something it is said to have done or not to have done. We welcome constructive criticism; it stimulates us, and shows that people are taking an interest in what we do.

No doubt we have our critics among those who still await a supply of electricity in the countryside, and to them we would say that we are proceeding as quickly as we can with our electrification programme, but however quickly we proceed some must, of necessity, wait longer than others for supply.

We think we are doing a good job in the rural areas and we hope others think so too.

RURAL ELECTRIFICATION

THE BROAD PLAN

THE integration of the Electricity Supply Industry under the Electricity Act of 1947 allowed the problem of rural electrification to be tackled comprehensively for the first time.

We of the Merseyside and North Wales Electricity Board were confronted with a particular problem because out of a total area of about 4,800 square miles, some 4,000 square miles consisted of open country in which considerable work in the field of rural electrification still remained to be done.

Recognizing the part electricity could play in promoting rural prosperity, and despite the many preoccupations arising out of the reorganization of the Industry following its nationalization, we set about the task of quickening the pace of development in the rural areas.

Our rural electrification policy is to bring supplies to farms and other rural dwellings as rapidly as a balanced programme of expenditure of our capital allocation will permit.

The area covered by our rural electrification programme comprises the Counties of Anglesey, Denbigh, Caernarvon, Merioneth, Flint, Montgomery and parts of Cardiganshire, Shropshire and Cheshire. This area of about 4,000 miles in extent is administered by our No. 4 Sub-Area, whose head office is at Rhostyllen, near Wrexham.

In 1948 we decided that development work should be carried out in each of these counties simultaneously, the amount of the work going on in each county depending upon the needs of each county in relation to the needs of the others.

The target date for the completion of the main bulk of the work is 1968.

PUTTING THE PLAN INTO ACTION

The counties were divided on the map into a number of sections each of approximately 20 square miles in area. Altogether some 190 sections were thus formed and, after a preliminary survey, statistics were produced showing the approximate number of consumers to be expected per mile of high voltage line in each of the sections. Initially, and then from time to time, sections from each of the counties were selected to form development "stages". Five such stages have now been selected. The order of selection was largely governed by the survey statistics already mentioned. Although the number of consumers per mile of line did not form the sole criterion for selection, the sections which showed the best return in that sense were generally chosen first.

When the sections for the 5th stage were selected in 1955, we departed slightly from the section basis of selection by including along with thirty-six normal sections several "link" schemes, most of them running through valleys. These schemes were designed to link some of the section schemes into a cohesive pattern while enabling supplies to be given in the valleys traversed by the linking mains.

It would, of course, have been attractive and in many ways preferable to have decided, as a matter of policy, that supply would be provided first to those premises nearest to existing supply lines and substations. By those means the development would have been initially, at least, more rewarding from the financial standpoint but, the programming of work, the delimitation of areas to be developed and the equitable distribution of our resources throughout the areas without a supply would have been difficult.

Once a section has been selected, the work involved in its development takes the form of a continuous process. First the district is canvassed to find out who wants a supply of electricity. Then a technical scheme is planned and prepared, the cost estimated and expenditure on the scheme is authorized. Then follows a detailed survey of the section; landowners and tenants are visited and wayleaves sought. Various statutory consents as well as consents from Local Authorities and Planning Authorities are also necessary before construction can start. This preliminary work takes at least twelve months and much depends upon the co-operation of the landowners and tenants. Happily, that co-operation has been forthcoming to a remarkable degree but, on the comparatively few occasions when resistance has been met, work on the particular section has been held up considerably.

The actual work in the field is carried out by special construction gangs organized and controlled by Sub-Area Headquarters in Wrexham. All possible mechanical means are used to speed up the work. For example, pole-hole borers specially made for the job have removed much of the manual drudgery involved in the erection of poles and stepped up the rate of progress considerably.

EXPENDITURE ON CAPITAL ACCOUNT

Capital Expenditure

During the eight years from April, 1948, to the end of March, 1956, the expenditure incurred in the development area alone (No. 4 Sub-Area) was as follows:

	£
Provision of electricity in connection with New Housing	635,038
Rural Electrification	3,686,169
System Reinforcement	2,587,840
Other Expenditure	3,634,909
	£10,543,956

Total annual capital expenditure in the Sub-Area rose from £660,000 in 1948/1949 to £2,246,128 in 1955/1956.

The proportion of total expenditure on system reinforcement in the North Wales part of our area is high. The increase in the use of electricity in North Wales, and the parts of Cheshire and Shropshire included, is running at the rate of about 20% per annum. This means, of course, that every five years or so our plant has to be more or less doubled.

An important and considerable item not charged to rural electrification in the foregoing figures is the amount spent on 33,000V lines which have to be placed in certain areas before we can even start 11,000V distribution and subsequent low voltage connections to individual properties. The time lag between the erection of a 33,000V line and the remaining distribution lines may be considerable, so please do not refuse us a wayleave for a 33,000V line if we cannot promise you an immediate supply in return. The chicken as it were, must come before the egg.

THE RESULTS

IN THE NORTH WALES DEVELOPMENT AREA

Mains and Substations

	<i>Miles of mains in commission</i>	<i>No. of Transforming Stations in commission</i>
At 31st March, 1948 ..	3,110	1,310
At 31st March, 1956 ..	6,248	7,122
<i>Increase ..</i>	3,138	Increase 5,812

In eight years, therefore, we have commissioned more mains and more transforming stations than were commissioned in the preceding 45 years.

Consumers connected

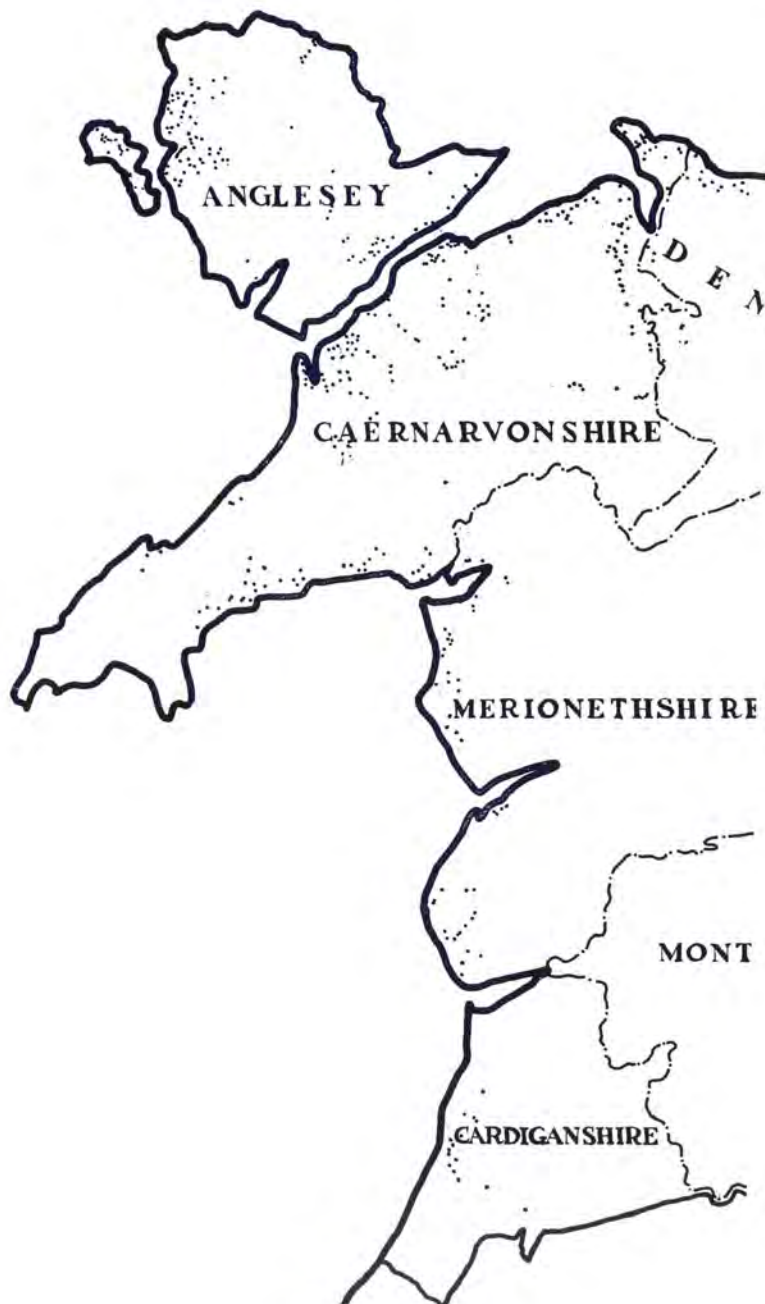
Receiving electricity at 31st March, 1948 ..	153,256
Receiving electricity at 31st March, 1956 ..	229,924
<i>Increase ..</i>	76,668

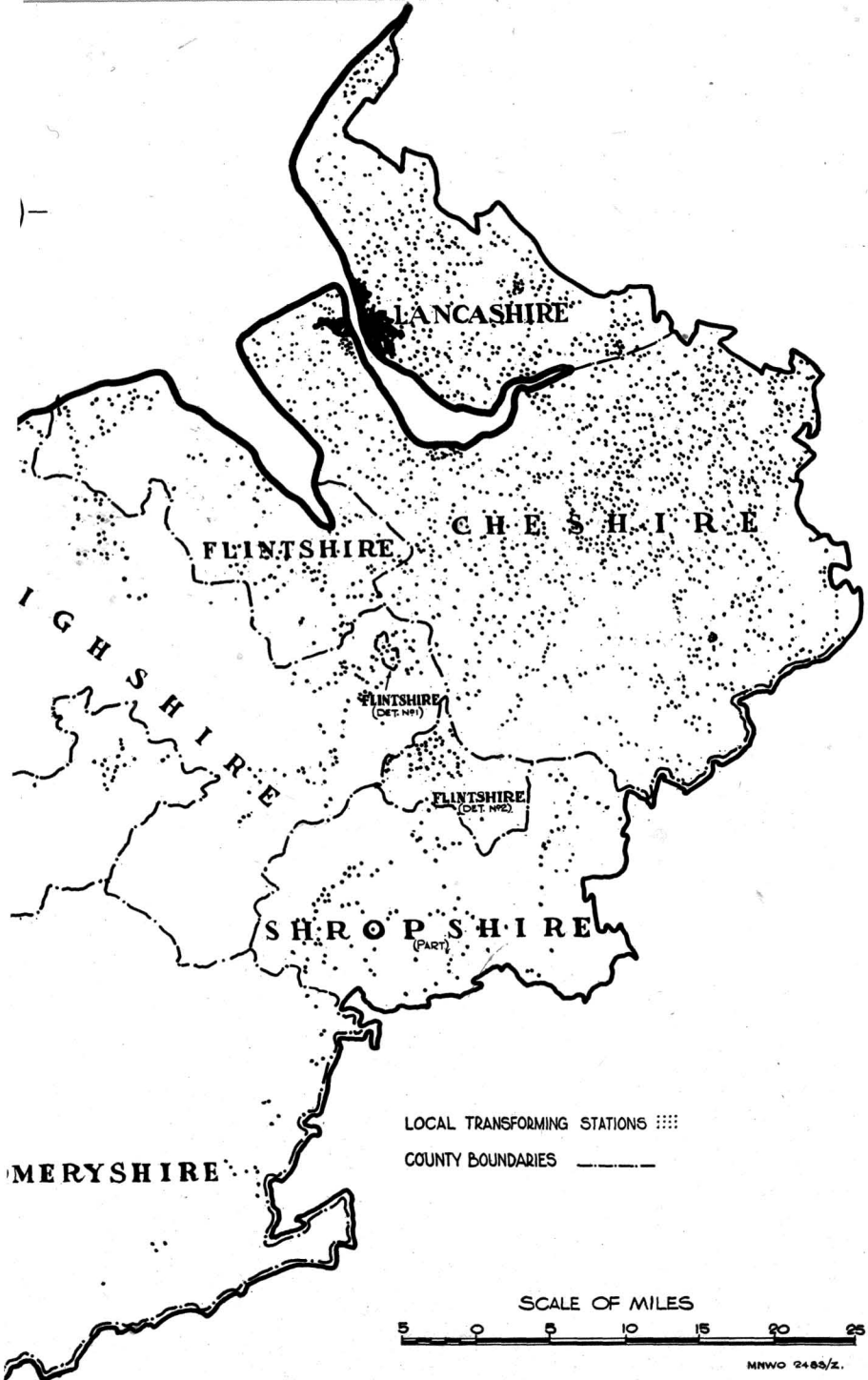


THEN



TRANSFORMING STATIONS
AT
VESTING DAY 1948

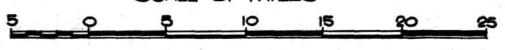




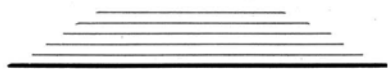
LOCAL TRANSFORMING STATIONS ::::

COUNTY BOUNDARIES - - - - -

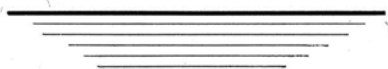
SCALE OF MILES



MNWO 2485/Z.

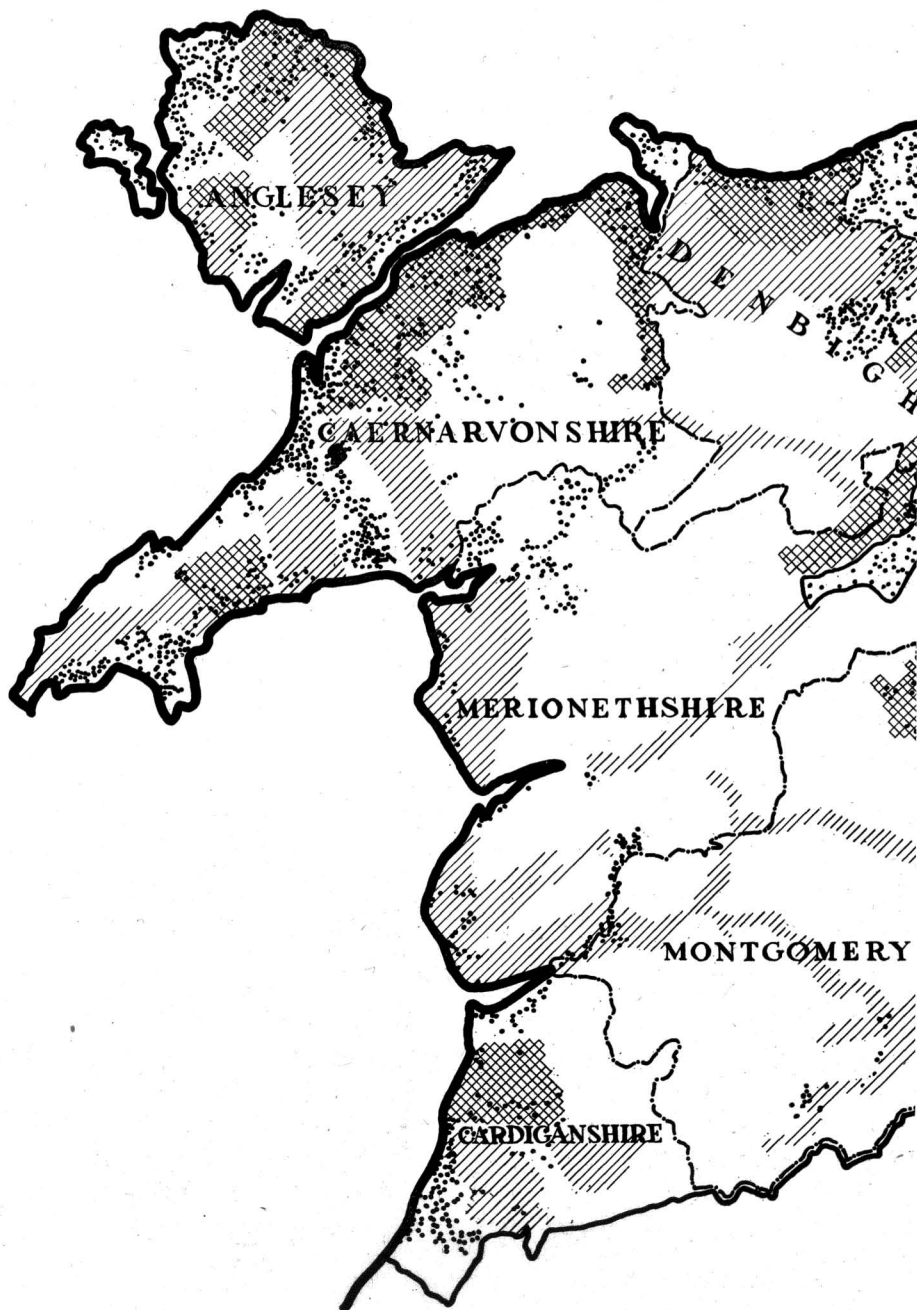


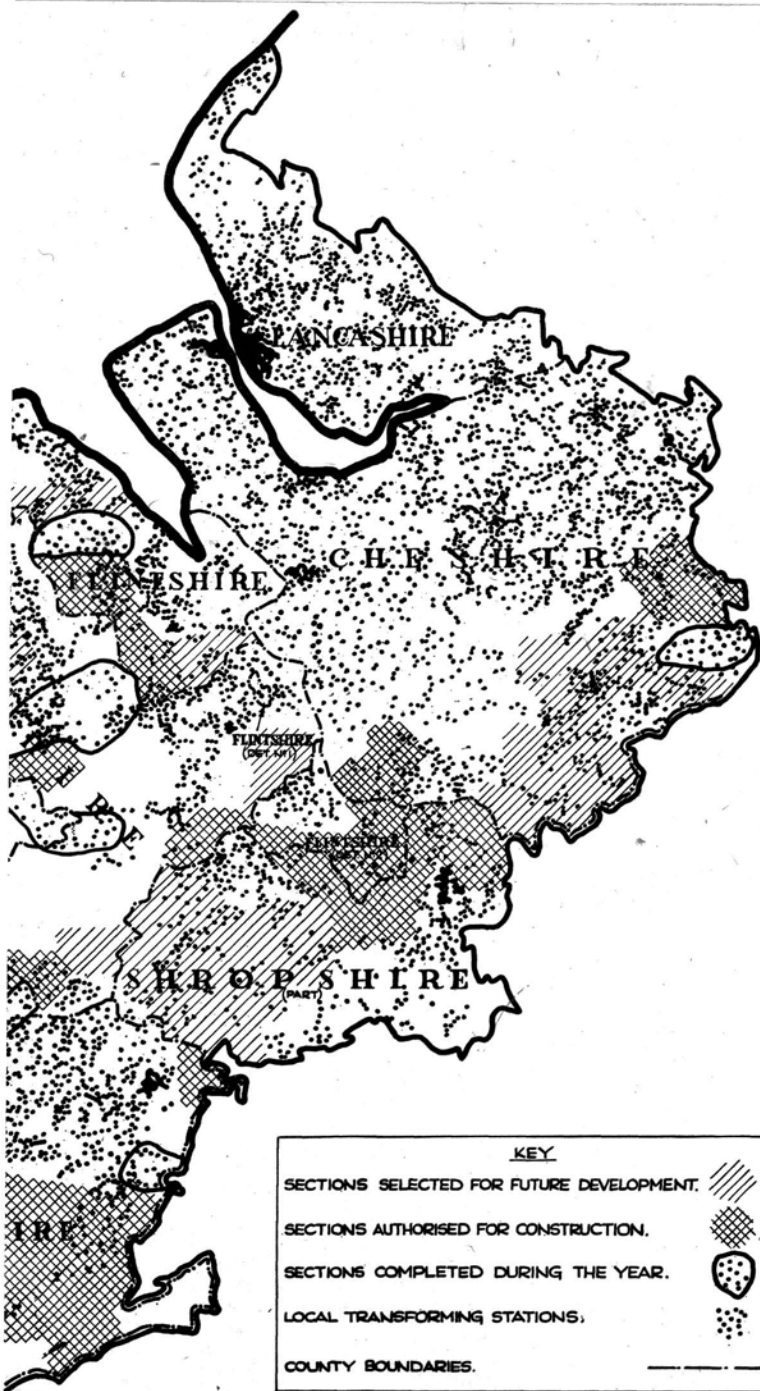
NOW








**MANWEB
PLANNED RURAL
ELECTRIFICATION**

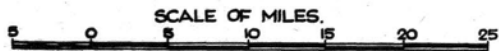
AT 31ST MARCH 1956.





KEY

SECTIONS SELECTED FOR FUTURE DEVELOPMENT.	
SECTIONS AUTHORISED FOR CONSTRUCTION.	
SECTIONS COMPLETED DURING THE YEAR.	
LOCAL TRANSFORMING STATIONS.	
COUNTY BOUNDARIES.	



Farms connected

Connected at 31st March, 1948	5,222
Connected at 31st March, 1956	12,928
<i>Increase</i> ..	<u>7,706</u>

The numbers of farms connected annually have been:

1948/49	367	1952/53	992
1949/50	362	1953/54	1,328
1950/51	367	1954/55	1,647
1951/52	854	1955/56	1,789

These figures speak for themselves. Our rate of progress is not equalled anywhere else in the country.

Units sold

	<i>Units</i>	<i>Average price per unit sold</i>
Year ended 31st March, 1949 ..	409,038,000	1.297d.
Year ended 31st March, 1956 ..	880,825,000	1.383d. (7%)
<i>Increase</i> ..	<u>471,787,000</u>	<u>.086d.</u>

Annual Revenue per Consumer

	<i>MANWEB</i>	
	<i>No. 4 Sub-Area</i>	<i>National Average</i>
Domestic Consumers	£8.8	£9.9
Farms	£17.7	£37.2
Commercial	£40.6	£52.8

We hope that farmers in Wales will follow the lead of those in England who have long known how much labour can be saved by the extensive use of electricity on the farm. ELECTRICITY IS NOT A LUXURY—IT IS AN ECONOMY.

SERVICE

WE attach considerable importance to our Electricity Service Centres, where our customers may see the latest appliances for the home and receive advice on the use of electricity.

Service Centre staff are specially trained to deal with any request for information about anything electrical. We hope that the public will make full use of the facilities offered at these centres.

There are thirty-six Centres in No. 4 Sub-Area, nine having been newly opened since nationalisation. We would like to have many more, and, no doubt, in time we will have more, but at the present time most of our capital is needed for the extension and reinforcement of the electricity supply cable network. However, so that our customers in the more remote areas may keep abreast of things electrical, several vans have been fitted up for demonstration and consumer service. These have proved popular and successful and are becoming well-known in the outlying districts.

Another of our innovations which has received considerable publicity, is the use of two-way radio vans. All our North Wales Districts are equipped with these vans which have proved invaluable in restoring electricity after breakdowns and in speeding up the general service to the consumer.

During the last two years, our agricultural advisory service has been increasingly in demand in North Wales. Staff in all districts have been specially trained to know the needs of the modern farmer and we commend all our farming friends to make the utmost use of the service we provide.

We do not mind how much trouble we go to to help farmers in electrical matters and we hope they will never hesitate to ask for our advice.

Our duty is to serve the public and in this Industry we have a long and honourable tradition of service of which we are justly proud. Nevertheless, we will always welcome suggestions for improving our service, and will give such suggestions the most careful consideration.

A GENERAL REVIEW

DURING the first five years of nationalisation development was impeded by:

- (a) a shortage of generating capacity and an overloading of the transmission and distribution mains, a legacy from the wartime interruption of normal construction work;
- (b) the severe limitations which the Government found it necessary to impose on post-war capital investment.

Even so, we pressed on with new rural electrification schemes as far as our resources permitted, until 1951. In that year, the restrictions on capital investment were intensified and the Government decided that no more new schemes should be started. The ban was relaxed to some extent in 1952, but it was not until 1953 that permission was given to expend additional capital specifically to accelerate progress in this important field. Nevertheless, record progress in rural electrification was made in those first five years.

In June, 1953, the Government announced that the Electricity Supply Industry would be allowed to spend more money on rural electrification. We welcomed this relaxation and immediately set about quickening the pace of the development in the countryside, and we were able to say, after a careful review, that by 1968, if the capital situation remained unchanged, the vast bulk of our rural programme would have been fulfilled. By the summer of 1955 the whole involved process of development had once more been geared up to reach a momentum never previously attained. We had for two years and more exceeded handsomely the original target of new rural connections and were looking optimistically to the future when the country was again faced with grave economic difficulties.

The Government, confronted by the new crisis, imposed restrictions on all forms of capital investment and the Electricity Supply Industry was called upon once more to play its part in the conservation of the country's resources. All projects involving expenditure of capital were substantially pruned or postponed and our plans for development in the countryside received a considerable setback. We have, however, rearranged our capital programme so that the planned expenditure on rural projects only bears the same rate of reduction as expenditure on reinforcement and other important works.

Experience has shown that a steady planned programme is necessary for rapid progress at the lowest cost. This is impossible without continuity of national policy and promotional development and the Electricity Supply Industry has always urged the need for such continuity.

The problems of alternate acceleration and deceleration of progress within comparatively short periods of time are acute. On the one hand, for instance, new staff must be recruited and trained. On the other, those staff become redundant and in many cases completely lost to the Industry; long term plans for the purchase of plant at advantageous prices are frustrated and it is difficult to maintain zeal and morale in the field.

A LOOK AT THE FUTURE

IN 1953 we drew up plans for development for the fifteen years up to 1968 on the assumption that there would be no change in national policy.

We are now asked, "How will the new restrictions affect the programme"? As it appears to us, the answer is that assuming the rate of rural expenditure continues at the new reduced level, we shall still be able to fulfil our programme, largely because of the way in which we have gone ahead of our programme during the last three years. The reductions in capital in effect mean that we shall revert to something like our original programme.

In the long term, therefore, subject to the reservation already mentioned, there will be no appreciable difference but, in the short term, especially over the next two years or so, many people who previously had reasonable expectations of an early supply of electricity may now find that they will have to wait longer. We regret this but it is unavoidable.

The present economic uncertainty makes it impossible for us to give any kind of work schedule for the counties for more than two years ahead. We have informed the Local Committees of the Electricity Consultative Council of what we hope to be able to achieve during the next two years, but beyond that we do not feel able to go. Any indication which we may have given in the past which goes beyond that period should we think in fairness be regarded in the light of the country's present economic position.

FACTS AND FIGURES

about the NORTH WALES AREA

(the Board's No. 4 Sub-Area)

IN EACH WORKING WEEK LAST YEAR MANWEB . . .

CONNECTED 171 Private Houses
36 Farms
18 Commercial and Industrial Premises.

COMMISSIONED 16 miles of cables and mains
30 transformer points.

READ 17,000 meters, and emptied 4,000 meters.

SOLD £12,000 worth of appliances
17½ million units of electricity.

THE AVERAGE PRICE PER UNIT SOLD IN
NORTH WALES HAS SINCE 1948 INCREASED
ONLY 7 PER CENT