

ELECTRICITY COMMISSION  
ELECTRICITY (SUPPLY) ACTS, 1882 to 1936

# GENERATION OF ELECTRICITY IN GREAT BRITAIN

YEAR ENDED 31st DECEMBER, 1946

Analyses and Summaries of the Returns of Fuel Consumption  
and Units Generated at the Stations operated by  
Authorised Electricity Undertakers, etc.



LONDON: HIS MAJESTY'S STATIONERY OFFICE

1947

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## PREFACE

The analyses and summaries of the Returns made to the Electricity Commissioners of units generated and fuel consumed at the generating stations in Great Britain during the year ended 31st December, 1946, follow the general form of the Return published for the year, 1945, omitting the continuity Tables (Nos. VIII and XI) which were included in that Return.

In the Return particulars are given of the units generated and units sent out from the generating stations, with the derivative figures for average fuel consumption, thermal efficiency and load factor based in each case on units sent out. In a number of instances, however, where information as to units sent out was not available, the derivatives have been calculated on the basis of units generated.

Stations containing more than one type of plant have been classified in accordance with the type by which the major portion of the output of the station was generated. In arriving at the average consumption of fuel and thermal efficiency in such cases, and also in cases where more than one class of fuel was consumed at a station, the actual fuel consumption has been converted (on the basis of the average calorific values of the fuels employed) into an equivalent tonnage of the class of fuel from which the largest portion of the output of the station was obtained. Where the whole or a portion of the output was derived from sources other than coal, coke and oil, the average consumption of fuel and thermal efficiency have been omitted.

In calculating thermal efficiencies, a unit of electricity (kilowatt-hour) has been taken as the equivalent of 3,412 mean British Thermal Units.

The load factor has been based on the hours of generation including banking, and an indication is given in every instance of the range of running plus banking hours. The load factor has not been calculated, however, where the hours of generation excluding banking during the year were less than the equivalent of one-shift operation (say 2,400 hours), and figures for the average consumption of fuel and thermal efficiency have also been omitted in such cases.

The Returns from electricity undertakers covered 344 stations which were generating electricity during 1946, a decrease of two on the number included in the previous Return. The difference is due to the discontinuance of generation at 5 stations before 1st January, 1946, to the bringing into operation 3 existing stations which did not generate in the previous year. Selected generating stations comprising separate sections have been counted as single stations, but in the cases of those selected generating stations comprising separate sections physically separated and operated and controlled as separate entities the operating results of each section have been shown in addition to the results for the station as a whole.

During 1946 the 344 stations operated by electricity undertakers generated 41,252,550,045 units, an increase of 10·6 per cent. over the corresponding figures for 1945. Of the units generated, the proportion used on works was of the order of 5·6 per cent. The stations consumed 25,482,933 tons of coal and coke, an increase of 11·7 per cent., and 34,067 tons of oil fuel as compared with 19,741 in the preceding year.

A further subdivision of the particulars as between Public Authority and Company Undertakers will be included in the Annual Report of the Commissioners for the year 1946-47.

An Appendix to the present Return shows that during 1946 the generating stations of Railway and Transport Authorities and certain non-statutory stations were responsible for an output of 1,548,914,688 units generated. These stations consumed 1,096,268 tons of coal and coke and 33 tons of fuel oil.

A. E. MARSON,  
Secretary to the  
Electricity Commissioners.

Electricity Commission,  
Savoy Court,  
Strand, W.C.2.

July 1947.

APPENDIX.

Railway and Transport and certain Non-Statutory Generating Stations.

Particulars of Individual Stations—1946.

S. = Steam Station (Coal, Coke or Oil fired boilers).  
O. = Oil Engine Station.  
WH. = Waste Heat and/or Waste Gas.  
RD. = Refuse Destructor.

WP. = Water Power.  
(b) = Station closed before end of year.  
(d) = Complete particulars not available.  
(g) = Based on Units Generated (see Preface).

Hours of Generation:

(A) = 8,700.  
(B) = 6,900-8,700  
(C) = 2,400-6,599 } Including banking, with minimum of 2,400 running hours.  
(D) = Under 2,400.

Owners of Station. (1)	Name of Station. (2)	Area (see Table I) (3)	Group (see Table II) (4)	Units Generated.		Units Sent Out.	Average Fuel Consumption (Coal or Oil) per Unit Sent Out (see Preface). (8)	Thermal Efficiency (approximate) based on Units Sent Out. (9)	Maximum Load Sent Out by Generators during Year. (10)	Station Load Factor based on Units Sent Out. (11)
				By (5)	Number (6)	Number (7)				
<b>Railway Authorities :—</b>										
London, Midland and Scottish Railway Co. :—										
Western Division .. .. .	Formby .. .. .	NW.	G.	S.	13,572,282	—(d)	3·69(g)	8·98(g)	8,400(g)	18·4(A)(g)
	Stonebridge Park .. .. .	SE.	E.	S.	85,330,125	—(d)	2·11(g)	16·68(g)	22,500(g)	43·3(A)(g)
Midland Division .. .. .	Derby .. .. .	C.	G.	S.	19,674,554 } 755,590 }	—(d)				
London and North-Eastern Railway Co. :—										
Great Central Section .. .. .	Immingham .. .. .	ME.	G.	S.	12,509,309	—(d)				
Scottish Section .. .. .	Mallaig .. .. .	NS.	O.	O.	33,982	32,500				
	Riccarton .. .. .	SS.	O.	O.	15,338	14,600				
London Passenger Transport Board..	Lots Road .. .. .	SE.	B.	S.	549,788,700	514,967,974	1·58	19·66	118,234	49·7(A)
	Neasden .. .. .	SE.	D.	S.	163,459,100	151,877,800	1·73	17·25	57,400	30·2(A)
Mersey Railway Co. .. .. .	.. .. .	NW.	H.	S.	7,716,900	7,164,570	2·75	9·89	3,024	27·0(B)
Southern Railway Co. .. .. .	Wimbledon .. .. .	SE.	D.	S.	158,440,910	151,961,150	1·76(g)	18·70(g)	45,200(g)	40·0(A)(g)
<b>Transport Authorities :—</b>										
Bournemouth Corporation .. .. .	.. .. .	SW.	H.	S.	5,857,520	5,072,620	—(d)	—(d)	2,850	20·3(B)
Glasgow Corporation .. .. .	Pinkston .. .. .	CS.	D.	S.	132,781,600	131,547,735	1·88	15·92	33,150	45·3(A)
London Passenger Transport Board ..	Greenwich .. .. .	SE.	C.	S.	332,337,900	309,598,700	1·50	19·98	80,600	43·8(A)
South Lancashire Transport Company	Atherton* .. .. .	NW.	H.	S.	6,964,400	6,663,834	—(D)	—(D)	5,854	—(D)
<b>Certain Non-Statutory Stations :—</b>										
Glasgow Corporation .. .. .	Govan Destructor Station	CS.	I.	RD.	4,018,401	4,018,401	—	—	3,500	21·3(C)
Llangollen and District Electric Light and Power Co., Ltd.	.. .. .	NW.	O.	WP.	28,624 } 10,937 }	37,484	—	—	29	—(D)
North-Eastern Electric Supply Co., Ltd.	Redcar .. .. .	NE.	G.	WH.	12,923,100	12,328,400	—	—	1,700	84·7(B)
	Warrenby .. .. .	NE.	F.	WH.	32,252,800	30,174,200	—	—	4,500	78·3(B)
Rhondda Urban District Council ..	Refuse Destructor .. .. .	SW.	G.	RD.	10,442,616	9,688,605	—	—	1,870	72·8(B)

\* A Selected Station under the North-West England and North Wales Electricity Scheme, 1928.

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